Appendix E: Terrestrial Report

407 TRANSITWAY - KENNEDY ROAD TO BROCK ROAD

MINISTRY OF TRANSPORTATION - CENTRAL REGION

TERRESTRIAL ECOSYSTEMS REPORT

PLANNING AND PRELIMINARY DESIGN STUDY

407 TRANSITWAY

FROM EAST OF KENNEDY ROAD TO EAST OF BROCK ROAD
CITY OF MARKHAM (YORK REGION) AND
CITY OF PICKERING (DURHAM REGION)

G.W.P. 13-20003

prepared for:

Ontario

MINISTRY OF TRANSPORTATION
CENTRAL REGION

prepared by:

LGL LIMITED
environmental research associates

OCTOBER 2015
(revised October 2016)

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1.0 INTRODUCTION

1.1 Background

This project involves the planning and preliminary design for the 407 Transitway from east of Kennedy Road to east of Brock Road. The Transitway will be a high-speed fully grade separated facility on a separate right-of-way running parallel, and crossing over or under 407 ETR. This 18 km section has EA approval for the 60 metre Transitway from Markham Road to beyond Brock Road (to Highway 35/115). This study will document the requirements for EA approval under TPAP for the section from Kennedy to Markham Road as well as for the stations that will be required from Kennedy Road to Brock Road. The station designs will include bus access to and egress from the stations, bus platforms, layout of access to and from the arterial road, integration with local transit (bus platforms), parking spaces, Passenger Pick Up and Drop Off (PPUDO), shelters, buildings and other amenities. The Transitway and the stations will initially be designed to support the busway service with provisions for future conversion to light rail transit technology.

This is a total project management (TPM) assignment, where the consultant delivers all aspects of the study on behalf of MTO. The TPM prime consultant is Parsons. Parsons has assembled a team of engineering and environmental specialists to provide the services required for this study. LGL Limited was retained by Parsons to conduct a natural heritage investigation in support of the environmental assessment for the 407 Transitway.

This report documents the results of the terrestrial ecosystems investigation and has been prepared as per the requirements of the Environmental Reference for Highway Design (MTO 2013). This report updates work completed by LGL Limited in 2005 for the Regional Municipality of York as part of the Highway 7 Transit Improvements Individual Environmental Assessment and in 2010 for the Ministry of Transportation as part of the 407 Transitway from East of Highway 400 to East of Kennedy Road.

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 on in April, May and June 2015.

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, findings and environmental sensitivity / significance is presented for each environmental discipline (physiography and soils, vegetation and wildlife).

The Environmental Reference for Highway Design Checklists for Terrestrial Ecosystems are presented in **Appendix A.**

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

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

Vascular plant lists are presented in **Appendix D**.

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

Correspondence with regulatory agencies is presented in **Appendix F**.

1.4 Study Team

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

- Constance Agnew, LGL Limited – natural sciences manager;
- Lisa Catcher, LGL Limited – physiography and soils assessment, terrestrial ecosystems (vegetation) assessment; and,
- Judson Venier, LGL Limited – terrestrial ecosystems (wildlife) assessment.

2.0 STUDY AREA

The study area is located in the City of Markham, Regional Municipality of York and the City of Pickering, Regional Municipality of Durham. The study area is also located in the Province's Parkway Belt West Plan, which is a multi-purpose corridor providing right-of-way for freeways, regional transit, aerial hydro transmission lines, utilities and public open space. The project limits are presented in **Figure 1**.

The study area considered for the secondary source natural heritage investigation includes a one kilometre wide corridor centred along 407 ETR from east of Kennedy Road in the City of Markham to east of Brock Road in the City of Pickering. Primary field investigations focussed on the facility footprint, including runningway, station locations and adjacent lands up to 120 m from the future infrastructure footprint. The results of the natural sciences investigation are documented in further detail in the Environmental Project Report.

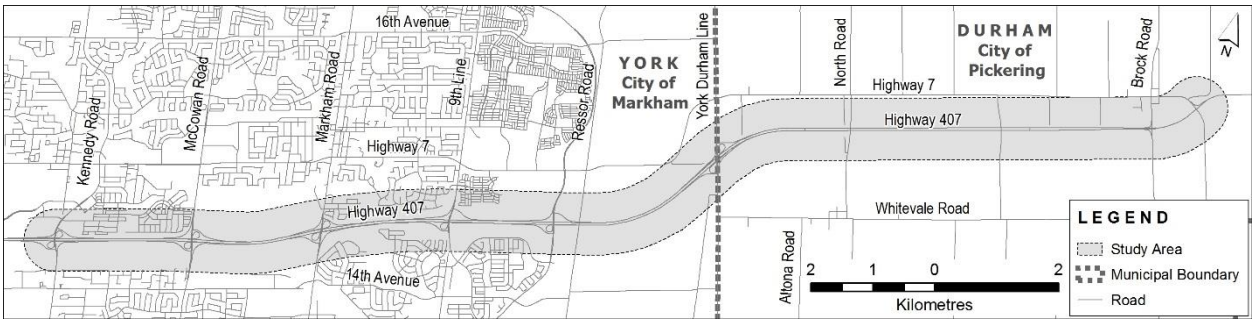


FIGURE 1. KEY PLAN OF STUDY AREA.

3.0 EXISTING CONDITIONS

This section describes the existing conditions in the study area related to natural heritage, including physiography and soils, vegetation and vegetation communities, wildlife and wildlife habitat and designated natural areas.

3.1 Physiography and Soils

3.1.1 Purpose

A secondary source investigation was undertaken to identify physiographic features and soils within the study area as shown in **Figure 1**.

3.1.2 Data Sources

Information regarding physiography and soils within the study area was obtained through:

- 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. 1955. *Soil Survey of York County.* Prepared for Agriculture Canada and the Ontario Ministry of Agriculture and Food; and,
- Olding, A.B., R.E. Wicklund, and N.R. Richards. 1956. *Soil Survey of Ontario County*. Prepared for Agriculture Canada and the Ontario Ministry of Agriculture and Food.

3.1.3 Findings

The study area is located within the Peel Plain and South Slope physiographic regions, which extend through the central portions of the Regions of York and Durham. The Peel Plain is a level to undulating tract of clay soils with imperfect drainage, through which the Rouge River and its tributaries have carved deep valleys. The South Slope is an interlobate moraine characterized by scattered drumlins pointing directly up-slope, with streams, including those of the Petticoat Creek and Duffins Creek watersheds, cutting sharply sloped valleys (Chapman and Putnam, 1984).

Soils surrounding Highway 407 in the study area are classified as: Peel clay and clay loam; Berrien sandy loam; Malton clay; Milliken loam; and, Woburn loam (Olding et al., 1956 and Hoffman and Richards, 1955).

3.1.3.1 Peel clay and clay loam

Peel clay and clay loam 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.

3.1.3.2 Berrien sandy loam

Berrien sandy loams 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. This soil is very friable and erosion prone though runoff is low.

3.1.3.3 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.

3.1.3.4 Milliken loam

Milliken loam soils are moderately well drained to imperfectly drained with a gently to very gently sloping topography. This soil type is composed of medium textured calcareous till and is slightly stony. This soil type is friable, but imperfect drainage in some areas causes erosion to be slight under natural conditions.

3.1.3.5 Woburn loam

Woburn loam soils are well drained and occur on moderately sloping topography. This soil type is composed of loam and calcareous till with stones and boulders occurring near the surface. This soil type is very friable, and erosion is slight under natural conditions.

3.2 Vegetation Communities

3.2.1 Purpose

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation and field investigations. Air photos were interpreted to determine the limits and characteristics of vegetation communities. A field investigation of the vegetation communities within the facility footprint of the 407 Transitway from Kennedy Road to east of Brock Road was conducted on April 29, May 1, May 6, June 9 and June 10, 2015.

Vegetation communities were classified according to the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee *et al*. 1998). The communities were sampled using a plotless method for the purpose of determining general composition and structure of the vegetation. Plant species status was reviewed for Ontario (Oldham 2009), and the Toronto and Region Conservation Authority (2009). Vascular plant nomenclature follows Newmaster *et al*. (1998) with a few exceptions that have been updated to Newmaster *et al.* (2007). Vegetation communities are presented in **Figures 2a-2c**.

3.2.2 Data Sources

The information relating to terrestrial habitat features was obtained through:

- WSP and HDR. 2004. CPDP Class EA for Region Services in The City of Pickering;
- 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.;
- Natural Heritage Information Centre. 2013. Biodiversity Explorer. Ontario Ministry of Natural Resources. Available online at: http://nhic.mnr.gov.on.ca/. Accessed May 2013;
- City of Markham. 2005. City of Markham Official Plan;
- York Region. 2009. York Region Official Plan;
- City of Pickering. 2010. City of Pickering Official Plan;
- Durham Region. 2013. Durham Region Official Plan;
- Ministry of Municipal Affairs and Housing. 2005. *Greenbelt Plan*; http://www.mah.gov.on.ca/Page189.aspx;
- Schollen and Company Inc. 2008. *Seaton Natural Heritage System: Management Plan and Master Trails Plan*;
- Toronto and Region Conservation Authority. 2009. Flora Scoring and Ranking;
- Rouge Park Alliance. 2001. *Rouge North Management Plan: A Strategy to Guide the Realization of the Rouge Park from Steeles Avenue to the Oak Ridges Moraine.* http://www.rougepark.com/about/plans/mgmt_plans.php;

- Steve Varga. 2015. Personal Communication May 2015. Ministry of Natural Resources and Forestry, Management Biologist;
- Ministry of Transportation. 1997. *Highway 407/Transitway Markham Road Easterly to Highway 7 East of Brock Road: Environmental Assessment Report;*
- The Sernas Group. 2013. *Seaton Lands Master Environmental Servicing Plan Amendment. Prepared for the City of Pickering*;
- 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;and
- field investigation and mapping on April 29, May 1, May 6, June 9 and June 10, 2015.

3.2.3 Findings

3.2.3.1 Designated Natural Areas

Designated natural areas include areas identified for protection by the Ontario Ministry of Natural Resources and Forestry, Toronto and Region Conservation Authority and upper tier and lower tier municipalities.

Mixedwood Plains Ecozone

The Ontario portion of the Mixedwood Plains Ecozone is bounded along its southern and western edges by Lake Huron, Erie, and Ontario, and the St. Lawrence River (Crins, Grey, Uhlig, and Wester, 2009). The Mixedwood Plains Ecozone is the most densely populated area in Canada, and most of its natural areas have been converted for human uses (Crins, Grey, Uhlig, and Wester, 2009). The flora and fauna are among the most diverse in Canada, and the number of species at risk is high (Crins, Grey, Uhlig, and Wester, 2009).

Lake Erie-Lake Ontario Ecoregion

The Lake Erie-Lake Ontario Ecoregion extends from Windsor and Sarnia east to the Niagara Peninsula and Toronto, with shoreline on Lakes Huron, Erie, and Ontario (Crins, Grey, Uhlig, and Wester, 2009). This ecoregion contains the most diverse flora and fauna in Canada and is the most imperilled in Canada because of the amount of natural habitat that has been drained, curt, and converted to agricultural and suburban land uses (Crins, Grey, Uhlig, and Wester, 2009). Approximately 78% of the ecoregion has been converted to cropland and pasture, 7% is developed land (Crins, Grey, Uhlig, and Wester, 2009). Of the remaining forest remnant, dense deciduous forest covers 10.3%, sparse deciduous forest covers 1.0%, and mixed deciduous forest covers 0.8% of the ecoregion (Crins, Grey, Uhlig, and Wester, 2009).

Environmentally Significant/Sensitive Areas

A total of two Environmentally Significant/Sensitive Areas (ESA) exist within 150 m of the proposed facility footprint. Milne Woods ESA, is one of the largest natural areas in the City of Markham and contains a Class 4 wetland. It is located on the north side of 407 ETR between McCowan Road and Markham Road and is approximately 140 m north of the proposed facility footprint. In addition, the West Duffins ESA is located north and south of 407 ETR between York Durham Line and North Road. The proposed facility footprint bisects the northern portion of the West Duffins ESA.

Provincially Significant Wetlands

The Cedar Grove Provincially Significant Wetland Complex (PSW) is located within 120 of the study. Specifically, a portion of wetland complex is located on the north and south side of the 407 ETR between Ninth Line and Donald Cousens Parkway. The location of the Cedar Grove PSW is presented in **Figure**

2b. In addition, a portion of the Milne Park PSW Complex is located on the north side of the 407 ETR. The location of the Milne Park PSW is presented in **Figure 2a**.

Non-provincially Significant Wetlands
A total of four non-provincially significant wetlands are located within the study area. These include the Whitevale Wetland located south of 407 ETR and west of North Road and three wetland pockets associated with the Locust Hill Wetland Complex located south of 407 ETR between Reesor Road and York Durham Line.

Areas of Natural and Scientific Interest
There are no Areas of Natural and Scientific Interest (ANSIs) located within 120 m of the study area.

Greenbelt
A portion of the study area between Reesor Road and North Road is a component of the Greenbelt Plan (2005) including 'Protected Countryside' and 'Natural Heritage System'.

Rouge Park North Management Plan
Lands north and south of 407 ETR between Reesor Road and York Durham Line are a component of the Rouge Park North Management Plan. Specifically, the Rouge Park North Management Plan identified the lands surrounding Milne Park and Bruce's Conservation Area as 'Special Management Zones.'

Natural Heritage System
The York Region Official Plan (2009) identifies a portion of the study area between Kennedy Road and York Durham Line as a component of the 'Regional Greenlands System', 'Woodlands', and 'Conservation Area/Regional Forest' of York Region.

The Durham Region Official Plan (2013) identifies a portion of the study area between York Durham Line and Brock Road as a component of the 'Regional Greenlands Systems' and a 'Key Natural Heritage and Hydrological Feature' of Durham Region.

The City of Markham Official Plan (2005) identifies a portion of the study area between Markham Road and York Durham Line as 'Hazard Lands' and 'Environmental Protection Area' of the City of Markham.

The City of Pickering Official Plan (2010) identifies a portion of the study area between York Durham Line and Brock Road as 'Natural Areas'.

3.2.3.2 Vegetation Communities

Vegetation communities within the study area consist of a mixture of forest, wetland and cultural communities. The majority of the vegetation within the study area has been disturbed by existing land uses including agricultural, residential, and infrastructure. 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.

Natural/semi-natural features within the study area are restricted to the valleylands associated with the watercourses in the study area. The valleyland units contain a mixture of forest and wetland communities. These areas are generally of higher quality and contain a high proportion of specialized and native plant species.

A total of twenty four ecosites were identified within the study area. These communities include: Dry-Moist Old Field Meadow (CUM1-1), Mineral Cultural Savannah (CUS1), Mineral Cultural Thicket (CUT1), Mineral Cultural Woodland (CUW1), Coniferous Forest (FOC, FOC1-2, FOC2-2, and FOC4-1), Deciduous Forest (FOD5, FOD6-5, FOD7, and FOD7-2), Mixed Forest (FOM7-1 and FOM7-2), Meadow Marsh (MAM2-2, MAM2-5, MAM2-10), Shallow Marsh (MAS2, MAS2-1), Coniferous Swamp (SWC1-1), Deciduous Swamp (SWD2-2), Swamp Thicket (SWT2 and SWT2-2), and Open Aquatic (OAO).

There are several areas that are not identified by the ELC such as areas of manicured grass (M) which include mown lawns, gardens and planted trees. All vegetation communities identified through air photo interpretation are described in **Table 1**. All of the vegetation communities identified within the study area are considered widespread and common in Ontario and are secure globally.

3.2.3.3 Vegetation

A total of 286 plant species have been recorded within the study area. Ten of these plants could only be identified to genus and are not included in the following calculations. Of the 276 plants identified to species, 183 (66%) plant species identified are native to Ontario and 93 (33%) plant species are considered introduced and non-native to Ontario. A list of vascular plant is presented in **Appendix D**.

3.2.3.4 Species at Risk

One plant species regulated under the Ontario *Endangered Species Act, 2007* was identified during LGL's botanical investigation. A total of 14 butternut (*Juglans cinerea*) were identified south of the preferred facility footprint in the valleylands associated with a tributary of Urfe Creek. The location of the butternuts is presented on **Figure 2C**. Butternut is regulated as Endangered under the Ontario *Endangered Species Act, 2007*.

In addition, a review of MNRF Natural Heritage Information Centre (2015) for plant species at risk within the study area was conducted. One butternut element occurrence was identified in the valleylands associated with West Duffins Creek. It should be noted that the presence of this tree was not confirmed during LGL's botanical investigation.

A total of 35 TRCA plant species of concern (L1 to L3) were identified within the study area. **Table 2** presents the list of those rare species and in which vegetation community each species was identified. A description of TRCA plant species rank is presented at the end of the plant species list in **Appendix E**.

3.3 Wildlife and Wildlife Habitat

3.3.1 Purpose

A review of secondary source data was undertaken in 2014 and field surveys were conducted on April 28, 29 and May 8, 13, 14 and 29, 2015 to document wildlife habitat and wildlife occupation and to characterize the nature, extent and significance of wildlife usage within the project limits. The purpose of this search was to characterize the extent and significance of natural heritage features and determine the potential for wildlife usage.

The study area investigated included all habitats along a one kilometre wide corridor centred along 407 ETR for the secondary source review from east of Kennedy Road to east of Brock Road. Field investigations of the wildlife and wildlife habitat were conducted for the facility footprint and adjacent lands up to a distance of 120 m from the infrastructure footprint for the 407 Transitway between Kennedy Road and Brock Road.

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIAL – NATURAL/SEMI-NATURAL			
FOD	Deciduous Forest		
FOD5	Dry-Fresh Sugar Maple Deciduous Forest	**Canopy:** includes sugar maple (*Acer saccharum* ssp. *saccharum*), red ash (*Fraxinus pennsylvanica*), white elm (*Ulmus americana*), and basswood (*Tilia americana*). **Understory:** includes chokecherry (*Prunus virginiana* var. *virginiana*), alternate-leaved dogwood (*Cornus alternifolia*), red-berried elder (*Sambucus racemosa* var. *racemosa*), and sugar maple. **Ground Cover:** includes Virginia water-leaf (*Hydrophyllum virginianum*), zig-zag goldenrod (*Solidago flexicaulis*), yellow avens (*Geum aleppicum*), and stellate sedge (*Carex rosea*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Moderately dry to fresh moisture regime, sugar maple dominant (5).
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest	**Canopy:** includes sugar maple, American beech (*Fagus grandifolia*), red oak (*Quercus rubra*), yellow birch (*Betula alleghaniensis*), and basswood. **Understory:** includes ironwood (*Ostrya virginiana*), chokecherry, sugar maple, and bitternut hickory (*Carya cordiformis*). **Ground cover**: includes ostrich fern (*Matteuccia struthiopteris* var. *pensylvanica*), wild lily-of-the-valley (*Maianthemum canadense*), purple trillium (*Trillium erectum*), stellate sedge, and Virginia water-leaf.	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Moist to fresh moisture regime, sugar maple dominant (6). • Hardwood associates (-5).
FOD7	Fresh-Moist Lowland Deciduous Forest	**Canopy:** includes bur oak (*Quercus macrocarpa*), trembling aspen (*Populus tremuloides*), eastern white pine (*Pinus strobus*), sugar maple, and black walnut (*Juglans nigra*) **Understory:** includes common buckthorn (*Rhamnus cathartica*), guelder rose (*Viburnum opulus*), and tartarian honeysuckle (*Lonicera tatarica*). **Ground Cover:** includes blue cohosh (*Caulophyllum thalictroides*), graceful sedge (*Carex gracillima*), bitter nightshade (*Solanum dulcamara*), moneywort (*Lysimachia nummularia*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Middle to lower slopes, seepage areas and bottomlands topographic positions (7).
FOD7-2	Fresh-Moist Ash Lowland Deciduous Forest	**Canopy:** includes Manitoba maple (*Acer negundo*), red ash, sugar maple, and slippery elm (*Ulmus rubra*). **Understory:** includes chokecherry, common buckthorn, riverbank grape (*Vitis riparia*), American fly honeysuckle (*Lonicera canadensis*), and red ash. **Ground cover:** includes field horsetail (*Equisetum arvense*), yellow rocket (*Barbarea vulgaris*), and dame's rocket (*Hesperis matronalis*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Middle to lower slopes, seepage areas and bottomlands topographic positions (7). • Green ash or black ash dominant (-2).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOC	Coniferous Forest		
FOC	Coniferous Forest	**Canopy:** includes European larch (*Larix decidua*), white spruce (*Picea glauca*), Austrian pine (*Pinus nigra*), and Scotch pine (*Pinus sylvestris*). **Understory:** includes white spruce, white elm, choke cherry, and eastern white cedar (*Thuja occidentalis*). **Ground cover:** includes prickly gooseberry (*Ribes cynobati*), common valerian (*Valeriana officinalis*), reed canary grass (*Phalaris arundinacea*), and zig-zag goldenrod.	• Tree cover > 60 % (FO). • Coniferous trees > 75 % of canopy cover (C).
FOC1-2	Dry-Fresh White Pine-Red Pine Coniferous Forest	**Canopy:** includes eastern white pine, eastern white cedar, and eastern hemlock (*Tsuga canadensis*). **Understory:** includes alternate-leaved dogwood, smooth juneberry (*Amelanchier laevis*), and paper birch (*Betula paprifera*). **Ground cover:** includes garlic mustard (*Alliaria petiolata*), tall meadow-rue (*Thalictrum pubescens*), and blue-stem goldenrod (*Solidago caesia*).	• Tree cover > 60 % (FO). • Coniferous trees > 75 % of canopy cover (C). • Dry to fresh soil moisture regime (1) • White pine or red pine dominant (-2).
FOC2-2	Dry-Fresh White Cedar Coniferous Forest	**Canopy:** includes eastern white cedar, eastern hemlock, white elm, and red ash. **Understory:** includes riverbank grape, bitter nightshade, eastern white cedar, and common buckthorn, **Ground cover:** includes garlic mustard and swallow-wort (*Cynanchum rossicum*), and moneywort.	• Tree cover > 60 % (FO). • Coniferous trees > 75 % of canopy cover (C). • Dry-Fresh Cedar Forest (2). • White Cedar dominates (-2).
FOC4-1	Fresh-Moist White Cedar Coniferous	**Canopy:** includes eastern white cedar, eastern white pine, basswood, white elm and Scotch pine. **Understory:** includes common buckthorn, red-osier dogwood (*Cornus sericea* ssp. *sericea*), large-fruited thorn (*Crataegus punctata*) black walnut, and balsam poplar (*Populus balsamifera* ssp. *balsamifera*). **Ground Cover:** includes downy yellow violet (*Viola pubescens*), bulblet bladder fern (*Cystoteris bulbifera*), Canada anemone (*Anemone canadensis*), celandine (*Chelidonium majus*), moneywort, and spotted touch-me-not (*Impatiens capensis*).	• Tree cover > 60 % (FO). • Coniferous trees > 75 % of canopy cover (C). • White cedar dominant (4). • Dominated entirely by white cedar (-1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOM	Mixed Forest		
FOM7-1	Fresh-Moist White Cedar-Sugar Maple Mixed Forest	**Canopy:** includes eastern white cedar, sugar maple, yellow birch, and Manitoba maple. **Understory:** includes alternate-leaved dogwood, tartarian honeysuckle, staghorn sumac (*Rhus hirta*), purple flowering raspberry (*Rubus odartus*), and black walnut. **Ground Cover:** includes tall meadow-rue, coltsfoot (*Tussilago farfara*), dame's rocket, blue cohosh, may-apple (*Podophyllum peltatum*), and downy yellow violet (*Viola pubescens*).	• Tree cover > 60 % (FO). • Coniferous trees > 25 % and deciduous trees > 25 % of canopy cover (M). • Middle to lower slopes, seepage areas and bottomlands topographic positions (7). • White cedar and sugar maple dominant (-1).
FOM7-2	Fresh-Moist White Cedar-Hardwood Mixed Forest	**Canopy:** includes eastern white cedar, balsam poplar, trembling aspen, white elm, black maple (*Acer nigrum*), and eastern cottonwood (*Populus deltoides* ssp. *deltoides*). **Understory:** includes common elderberry (*Sambucus nigra* ssp. *canadensis*), high bush cranberry (*Viburnum opulus* var. *americanum*), red ash, and chokecherry. **Ground Cover**: includes large-leaved aster (*Eurybia macrophylla*), zig-zag goldenrod, lily-of-the-valley (*Convallaria majalis*), stellate sedge, creeping Charlie (*Glechoma hederacea*), and moneywort.	• Tree cover > 60 % (FO). • Coniferous trees > 25 % and deciduous trees > 25 % of canopy cover (M). • Middle to lower slopes, seepage areas and bottomlands topographic positions (7). • Hardwood associates (-2).
TERRESTRIAL – CULTURAL			
CUM	Cultural Meadow		
CUM1-1	Dry-Moist Old Field Meadow	**Emergent Trees/Shrubs**: includes black walnut, hybrid willow (*Salix X sepulcralis*), red-osier dogwood (*Cornus sericea* ssp. *sericea*), common buckthorn, and red ash. **Ground cover:** includes curly-leaf dock (*Rumex crispus*), wild carrot (*Daucus carota*), reed canary grass, tall goldenrod (*Solidago canadensis* var. *scabra*), awnless brome (*Bromus inermis* ssp. *inermis*), and common mullein (*Verbascum thapsus*).	• Cultural communities (CU). • Tree cover and shrub cover < 25 % (M). • This community can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).
CUS1	Cultural Savannah		
CUS1	Mineral Cultural Savannah	**Canopy:** includes trembling aspen, white willow (*Salix alba*), eastern white cedar, and balsam poplar. **Understory:** includes large-fruited hawthorn, common buckthorn, tartarian honeysuckle, and Manitoba maple. **Ground cover:** includes common comfrey (*Symphytum officinale* ssp *officinale*), common valerian, Canada goldenrod (*Solidago canadensis*), New England aster (*Symphyotrichum novae-angliae*), and Kentucky blue grass (*Poa pretensis* ssp. *pratensis*).	• 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	Mineral Cultural Thicket	**Canopy:** includes Colorado spruce (*Picea pungens*), Scotch pine, eastern white cedar, black walnut, and Norway maple (*Acer platanoides*). **Understory:** includes common buckthorn, tartarian honeysuckle, black walnut, Manitoba maple, and eastern white cedar. **Ground cover:** includes common milkweed (*Asclepias syriaca*), awnless brome, poverty oat grass (*Danthonia spicata*), ribgrass (*Plantago lanceolata*), and black medick (*Medicago lupulina*).	• Cultural community (CU). • Tree cover <25 %; shrub cover >25% (T). • Mineral soil (1).
CUW	Cultural Woodland		
CUW1	Mineral Cultural Woodland	**Canopy:** includes eastern white pine, Scotch pine, black cherry (*Prunus serotina*), English hawthorn (*Crataegus monogyna*), and black locust (*Robinia pseudo-acacia*). **Understory:** includes English hawthorn, common lilac (*Syringa vulgaris*), red ash, eastern white cedar, and common buckthorn. **Ground cover:** includes field hawkweed (*Hieracium caespitosum*), tall buttercup (*Ranunculus acris*), alleghany blackberry (*Rubus allegheniensis*), and tufted vetch (*Vicia cracca*).	• Cultural communities (CU). • 25 % < tree cover < 35 % • Mineral Soil (1).
WETLAND			
SWD	Deciduous Swamp		
SWD2-2	Green Ash Mineral Deciduous Swamp	**Canopy:** includes balsam poplar, red ash, and slippery elm (*Ulmus rubra*). **Understory:** includes large-fruited thorn, red-osier dogwood, common buckthorn, and red ash. **Ground cover:** includes lake-bank sedge (*Carex lacustris*), common comfrey, fowl meadow grass (*Glyceria striata*), bristly sedge (*Carex comosa*), and spotted touch-me-not.	• Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Deciduous tree cover >75% of canopy cover. • Ash dominant swamp (2). • Green ash dominant (-2).
SWC	Coniferous Swamp		
SWC1-1	White Cedar Mineral Coniferous Swamp	**Canopy:** includes eastern white cedar, yellow birch and black ash (*Fraxinus nigra*). **Understory:** includes eastern white cedar, and riverbank grape. **Ground cover:** includes sensitive fern (*Onoclea sensibilis*), spotted touch-me-not and swallow-wort.	• Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Conifer tree cover >75% of canopy cover (1). • Almost entire dominated by white cedar (-1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
SWT	Swamp Thicket		
SWT2	Mineral Thicket Swamp	**Canopy:** includes crack willow (*Salix fragilis*), eastern cottonwood, white willow, red ash. **Understory:** includes red-osier dogwood, Missouri willow (*Salix eriocephala*), Manitoba maple, and red ash. **Ground cover:** includes spotted-touch-me-not, reed canary grass, purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and broad-leaved cattail (*Typha latiolia*).	• Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Tree cover <25% hydrophytic shurbs >25% (T). • Mineral soil (2).
SWT2-2	Willow Mineral Thicket Swamp	**Canopy:** includes red ash, Manitoba maple, and crack willow. **Understory:** includes Missouri willow, red-osier dogwood, and Manitoba maple. **Ground cover:** includes fowl meadow grass, reed canary grass, fox sedge (*Carex vulpinoidea*), spotted-touch-me-not, and purple loosestrife.	• Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Tree cover <25% hydrophytic shurbs >25% (T). • Mineral soil (2). • Willow dominant (-2).
OAO	Open Aquatic		
OAO	Open Aquatic	Not applicable.	• Water depth >2 m (O). • No macrophyte vegetation, no tree or shrub cover (A). • Plankton dominated (O).
MAS	Shallow Marsh		
MAS2		**Emergent Trees/Shrubs:** includes red-osier dogwood. **Ground cover:** includes common reed and broad-leaved cattail.	• Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Water up to 2 m deep (MAS). • Mineral soil (2).
MAS2-1	Cattail Mineral Shallow Marsh	**Emergent Trees/Shrubs:** includes corkscrew willow (*Salix matsudana*), Missouri willow, and silver poplar (*Populus alba*). **Ground cover:** includes narrow-leaved cattail (*Typha angustifolia*), broad-leaved cattail, lesser duckweed (*Lemna minor*), common water plantain (*Alisma plantago-aquatica*), and water speedwell (*Veronica anagallis-aquatica*).	• Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Water up to 2 m deep (MAS). • Mineral soil (2). • Cattails are dominant (-1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

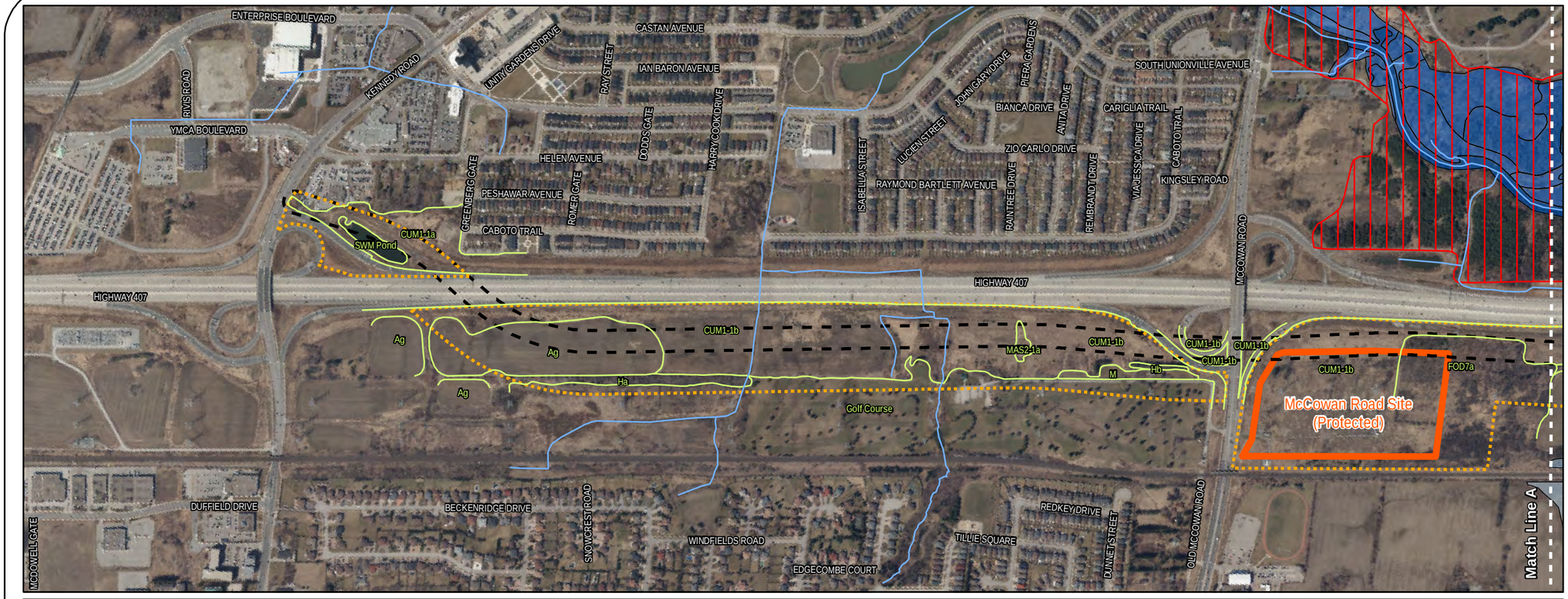
ELC Code	Vegetation Type	Species Association	Community Characteristics
MAM	Meadow Marsh		
MAM2-2	Reed-canary Grass Mineral Meadow Marsh	**Emergent Trees/Shrubs:** includes red ash, trembling aspen, and Missouri willow. **Ground cover:** includes reed canary grass, spotted joe-pye weed (*Eupatorium maculatum* var. *maculatum*), fox sedge, cursed buttercup (*Ranunculus sceleratus var. sceleratus*), dark-green bulrush (*Scirpus atrovirens*), and narrow-leaved cattail.	• Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Species less tolerant of prolonged flooding (MAM). • Mineral soil (2). • Reed-canary grass dominant (2).
MAM2-5	Narrow-leaved Sedge Mineral Meadow Marsh	**Emergent Trees/Shrubs:** includes red osier dogwood, eastern white cedar, white elm and white willow. **Ground cover:** includes cursed buttercup, blue vervain (*Verbena hastata*), perfoliate thoroughwort (*Eupatorium perfoliatum*), blue flag (*Iris versicolor*), Canada rush (*Juncus canadensis*), and porcupine sedge (*Carex hystericina*).	• Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Species less tolerant of prolonged flooding (MAM). • Mineral soil (2). • Narrow-leaved sedges dominant (-5).
MAM2-10	Forb Mineral Meadow Marsh	**Emergent Trees/Shrubs:** includes red-osier dogwood. **Ground cover:** includes purple loosestrife, cut-leaved water-horehound (*Lycopus americanus*), mouse-ear scorpion-grass (*Myosotis scorpiodes*), cursed buttercup, and watercress (*Rorippa nasturtium-aquaticum*).	• Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Species less tolerant of prolonged flooding (MAM). • Mineral soil (2). • Forb dominant (-10).
OTHER**	Manicured and Hedgerow		
M and H	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.	

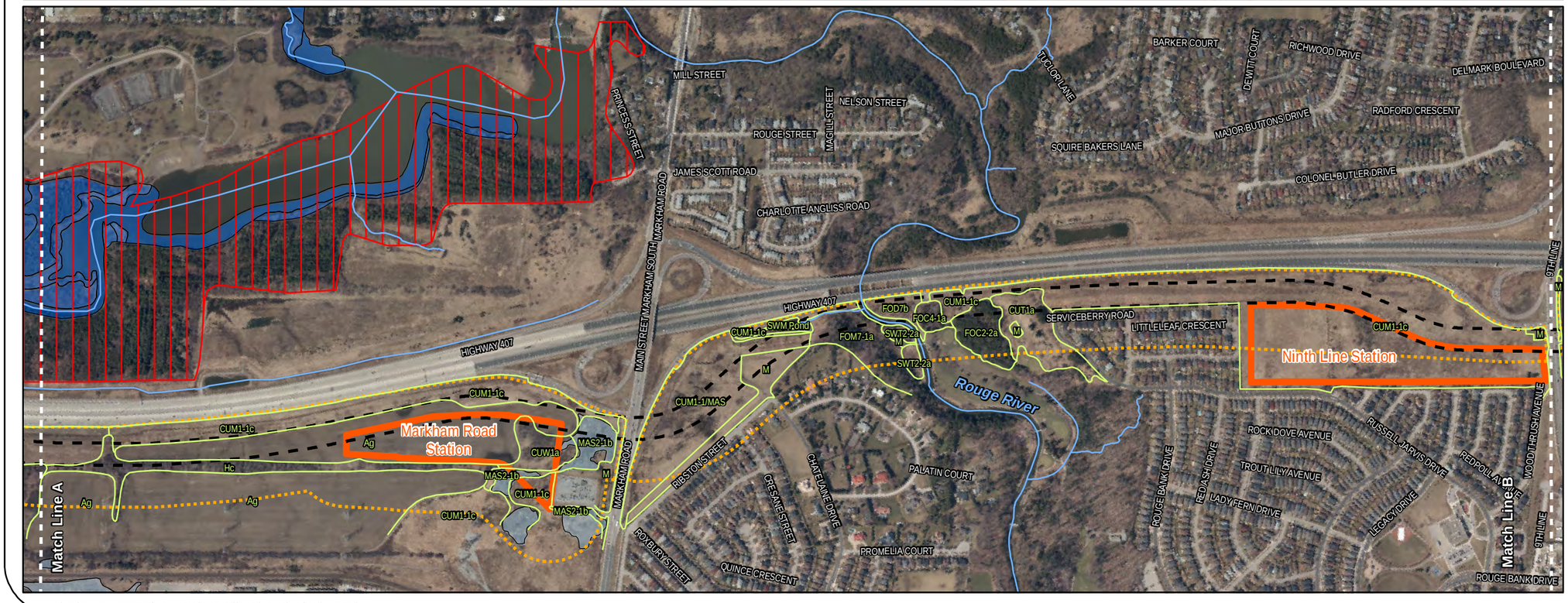
TABLE 2.
SUMMARY OF TRCA PLANT SPECIES OF CONCERN IDENTIFIED WITHIN THE STUDY AREA

Scientific Name	Common Name	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUS1b	CUW1b	CUW1g	FOC	FOC1-2	FOC2-2b	FOC4-1b	FOC4-1c	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOM7-1a	FOM7-2	Hedgerow A	Hedgerow H	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2d	MAM2-5
Equisetum fluviatile	water horsetail	L3			X																										
Equisetum pratense	meadow horsetail	L3	X				X		X						X	X	X			X	X						X	X	X	X	X
Osmunda cinnamomea	cinnamon fern	L2																		X											
Gymnocarpium dryopteris	oak fern	L3															X														
Picea glauca	white spruce	L3						X				X													X	X					
Caulophyllum thalictroides	blue cohosh	L2																X		X		X	X								
Ulmus rubra	slippery elm	L2																X		X	X										
Juglans cinerea	butternut	L3																		X											
Polygonum amphibium	water smartweed	L3																					X								
Salix petiolaris	slender willow	L3		X																			X								
Ribes hirtellum	smooth gooseberry	L3								X					X		X	X													
Geum laciniatum	rough avens	L3																		X											
Vicia americana	purple vetch	L3									X																				X
Circaea alpina	smaller enchanter's nightshade	L3									X																				
Cornus rugosa	round-leaved dogwood	L3																		X											
Rhamnus alnifolia	alder-leaved buckthorn	L3											X																		
Aralia racemosa ssp. *racemosa*	spikenard	L3															X														
Hydrocotyle americana	American marsh-pennywort	L3															X														
Lobelia siphilitica	great lobelia	L3															X														
Lonicera canadensis	American fly	L3																			X										

TABLE 2.
SUMMARY OF TRCA PLANT SPECIES OF CONCERN IDENTIFIED WITHIN THE STUDY AREA

Scientific Name	Common Name	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUS1b	CUW1b	CUW1g	FOC	FOC1-2	FOC2-2b	FOC4-1b	FOC4-1c	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOM7-1a	FOM7-2	Hedgerow A	Hedgerow H	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2d	MAM2-5
	honeysuckle																														
Viburnum acerifolium	maple-leaved viburnum	L3															X														
Viburnum opulus var. *americanum*	high bush cranberry	L2																						X							
Carex canescens ssp. *canescens*	silvery sedge	L3																		X											
Carex comosa	bristly sedge	L3																													
Carex plantaginea	plantain-leaved sedge	L3																	X	X											
Cladium mariscoides	water bog-rush	L1	X																												
Bromus ciliatus	fringed brome	L3																													
Elymus canadensis	nodding wild rye	L3			X																										
Sorghastrum nutans	Indian grass	L2				X																									
Lilium michiganense	Michigan lily	L3													X																
Streptopus lanceolatus var. roseus	rose twisted-stalk	L3													X																
Trillium cernuum	nodding trillium	L1												X																	
Trillium erectum	purple trillium	L3																	X	2											
Trillium grandiflorum	white trillium	L3															X		X	X											
Iris versicolor	multi-coloured blue-flag	L3																													X





LEGEND

- 407 Transitway
- 407 Transitway Station
- Field Investigation Area
- Evaluated Wetland - Provincial (Milne Park Wetland Complex)
- Wetland Not evaluated per OWES
- Environmentally Significant Area (Milne Woods)
- Greenbelt
- Watercourse

Vegetation Communities

- Vegetation Community Boundary

Ag	Agriculture
CUM1-1a-c	Dry-Moist Old Field Meadow Type
CUT1a	Mineral Cultural Thicket Ecosite
CUW1a	Mineral Cultural Woodland Ecosite
FOC2-2a	Dry-Fresh White Cedar Coniferous Forest Type
FOC4-1a	Fresh-Moist White Cedar Coniferous Forest Type
FOD7a,b	Fresh-Moist Lowland Deciduous Forest Ecosite
FOM7-1a	Fresh-Moist White Cedar-Sugar Maple Mixed Forest Type
Ha-c	Hedgerow
M	Manicured
MAS	Shallow Marsh
MAS2-1a,b	Cattail Mineral Shallow Marsh Type
SWT2-2a	Willow Mineral Thicket Swamp Type

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

200 100 0 200 Metres

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NATURAL HERITAGE

LGL LIMITED
environmental research associates

Project:	TA8429	**Figure:**	2a
Date:	October, 2016	**Prepared By:**	MWF
Scale:	1 : 10,500	**Checked By:**	LMC

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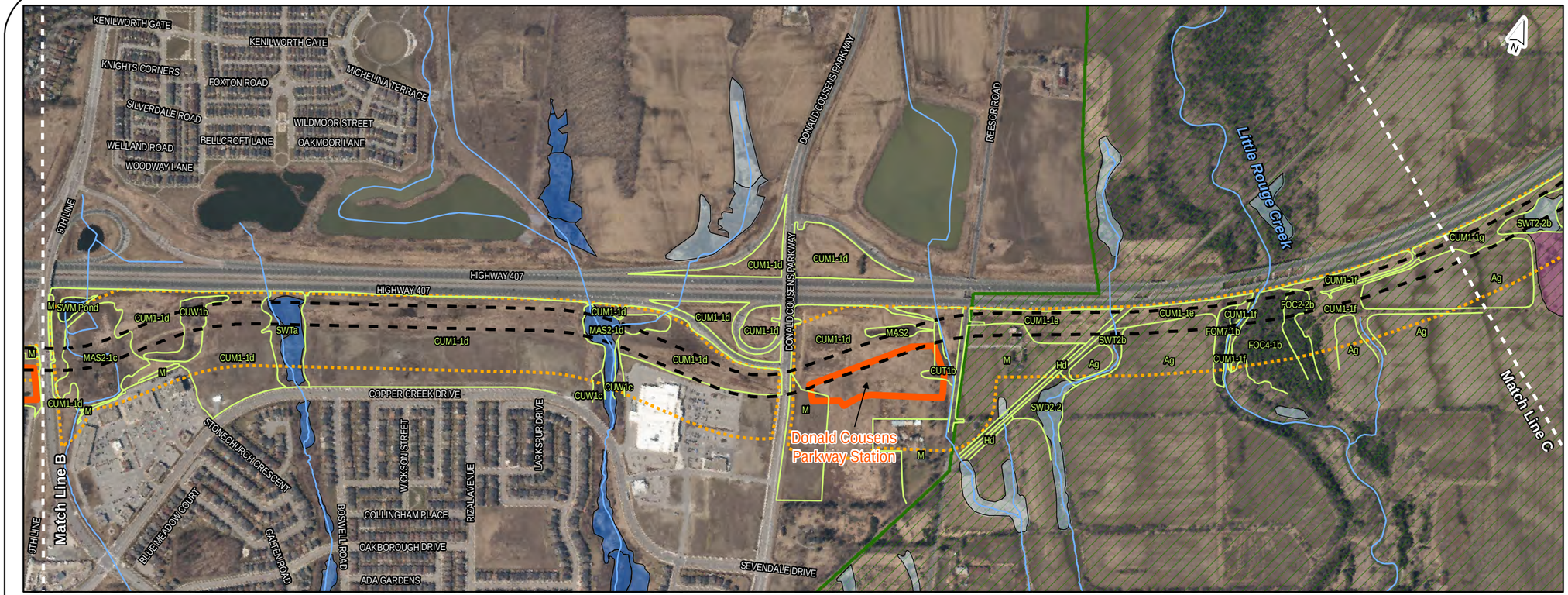

LEGEND

- 407 Transitway
- 407 Transitway Station
- Field Investigation Area
- Evaluated Wetland - Provincial (Cedar Grove Wetland Complex)
- Evaluated Wetland - Other (Locust Hill Wetland Complex)
- Wetland Not evaluated per OWES
- Environmentally Significant Area (West Duffins Creek)
- Greenbelt
- Watercourse

Vegetation Communities

- Vegetation Community Boundary

Ag	Agriculture
CUM	Cultural Meadow
CUM1-1d-j	Dry-Moist Old Field Meadow Type
CUS1a,b	Mineral Cultural Savannah Ecosite
CUW1b-f	Mineral Cultural Woodland Ecosite
FOC	Coniferous Forest
FOC2-2b	Dry-Fresh White Cedar Coniferous Forest Type
FOC4-1b	Fresh-Moist White Cedar Coniferous Forest Type
FOM7-1b	Fresh-Moist White Cedar-Sugar Maple Mixed Forest Type
FOM7-2	Fresh-Moist Ash Lowland Deciduous Forest Type
Hd-g	Hedgerow
M	Manicured
MAM	Meadow Marsh
MAM2-2a,b	Reed-canary Grass Mineral Meadow Marsh Type
MAS2	Mineral Shallow Marsh Ecosite
MAS2-1c-e	Cattail Mineral Shallow Marsh Type
SWD2-2	Green Ash Mineral Deciduous Swamp Type
SWTa	Thicket Swamp
SWT2b	Mineral Thicket Swamp Ecosite
SWT2-2b	Willow Mineral Thicket Swamp Type

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

200 100 0 200 Metres

NATURAL HERITAGE

LGL LIMITED
environmental research associates

Project:	TA8429	**Figure:**	2b
Date:	October, 2016	**Prepared By:**	MWF
Scale:	1 : 10,500	**Checked By:**	LMC

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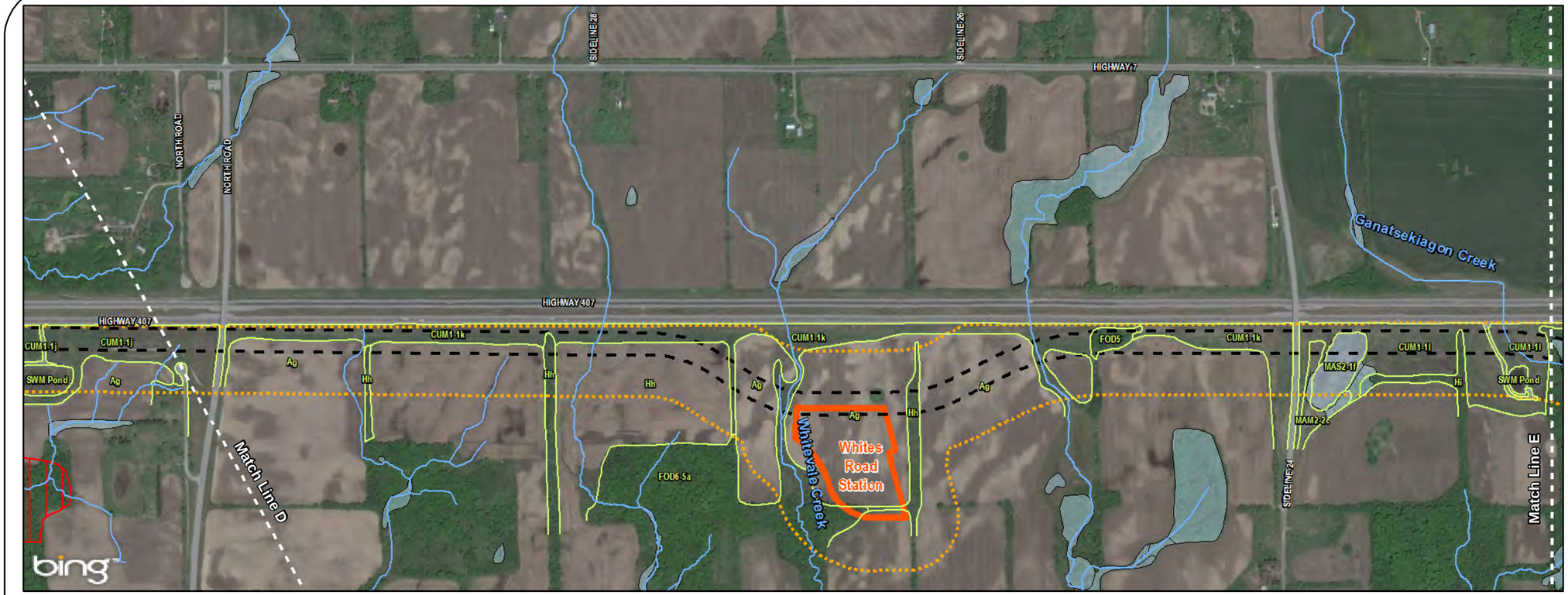

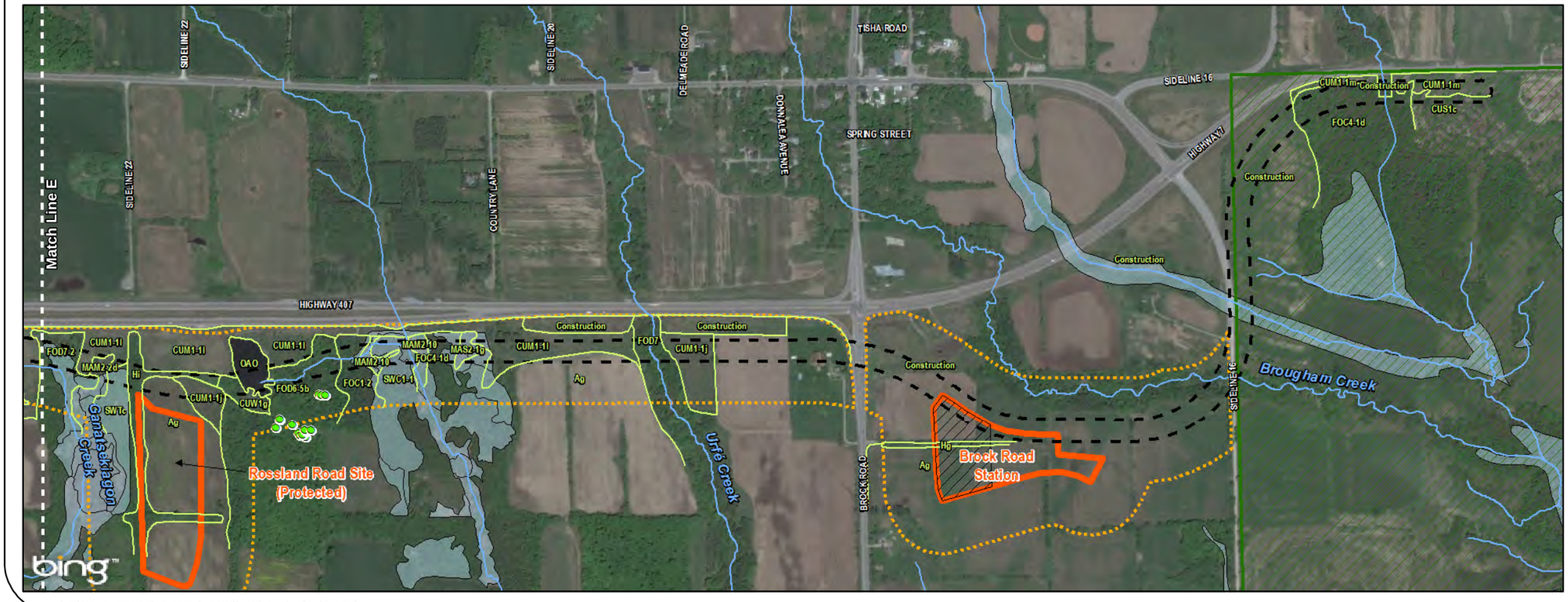

LEGEND

- 407 Transitway
- 407 Transitway Station
- Potential Future Station
- Brock Road Station Impacted Area
- Field Investigation Area
- Wetland Not evaluated per OWES
- Environmentally Significant Area
- Greenbelt
- Watercourse
- Butternut

Vegetation Communities

- Vegetation Community Boundary

Ag	Agriculture
CUM1-1j-m	Dry-Moist Old Field Meadow Type
CUS1c	Mineral Cultural Savannah Ecosite
CUW1g	Coniferous Plantations
FOC1-2	Mineral Cultural Savannah Ecosite
FOC4-1d	Mineral Cultural Thicket Ecosite
FOD5	Mineral Cultural Woodland Ecosite
FOD6-5a,b	Coniferous Forest
FOD7	Deciduous Forest
FOD7-2	Mixed Forest
Hg-i	Hedgerow
MAM2-2c,d	Manicured
MAM2-10	Meadow Marsh
MAS2-1f,g	Shallow Marsh
SWC1-1	Deciduous Swamp
SWTc	Thicket Swamp

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

200 100 0 200 Metres

N

NATURAL HERITAGE

LGL LIMITED
environmental research associates

Project:	TA8429	**Figure:**	2c
Date:	October, 2016	**Prepared By:**	MWF
Scale:	1 : 10,500	**Checked By:**	LMC

C:_TA\TA8429 - 407 Transitway Kennedy to Brock\Maps\Natural Heritage\NHc.mxd

Information concerning species at risk, previously recorded within the study area limits, was obtained from the Natural Heritage Information Centre (NHIC). Data requests from MNRF Aurora District and TRCA were made and data were received from both agencies. More general information relating to wildlife and wildlife habitat was obtained following a review of published and non-published sources, including data provided by Bird Studies Canada.

3.3.2 Data Sources

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

- 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;
- 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. 378pp;
- Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide.* Fish and Wildlife Branch, Wildlife Section, Peterborough;
- Ontario Ministry of Natural Resources. 2001. *Index List of Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario*. Wildlife Section, Peterborough;
- Ontario Ministry of Natural Resources and Forestry. 2015. *Natural Heritage Information Centre Biodiversity Explorer*. Website available online at: http://nhic.mnr.gov.on.ca/. Ministry of Natural Resources and Forestry. Peterborough, Ontario;
- Field investigations on April 28, 29, May 8, 13, 14, 29 and September 1, 2, 2015.

3.3.3 Findings

3.3.3.1 Wildlife Habitat

There are many natural heritage features located along the 407 Transitway, especially in the eastern half of the study area, where major watercourse crossings occur. The Rouge River, Little Rouge Creek, Whitevale Creek, and Urfe Creek combined with wetland complexes such as the Locust Hill Wetland Complex and Whitevale Wetlands make up the most dominant natural heritage features along the 407 Transitway, or in the immediate vicinity, that wildlife would use as potential breeding areas and travel corridors throughout the year. Numerous woodlots exist along both sides of 407 ETR, some of them considered environmentally sensitive, such as the Milne Woods ESA and West Duffins ESA. Interspaced between these natural heritage features are numerous open areas classified as cultural meadows, thickets and agricultural lands.

Evidence of wildlife use was widespread throughout the study area. Widely distributed species, based on observations during field work, include White-tailed Deer (*Odocoileus virginianus*), Coyote (*Canis latrans*), Song Sparrow (*Melospiza melodia*) and Red-winged Blackbird (*Agelaius phoeniceus*). Storm water management (SWM) ponds, wetlands associated with watercourse crossings and valleylands associated with large watercourse crossings contained the highest diversity of species. Some SWM ponds

supported breeding Green Frogs (*Lithobates clamitans*) and several with large open water components were used as foraging areas for Tree Swallow (*Tachycineta bicolor*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*) and Barn Swallow (*Hirundo rustica*). Old fields and agricultural lands contained species typically associated with these habitats. The 407 Transitway corridor crossed the larger valleys associated with the more significant watercourses with bridges. These areas provided significant corridors for wildlife movement as indicated by the high number of tracks observed. Roadkill was not observed, with the exception of a single Great Blue Heron (*Ardea herodias*) and a White-tailed Deer, indicating that the majority of corridor crossings by wildlife species occur under the larger structures. The structures also provided nesting areas for birds.

3.3.3.2 Wildlife Species

A list of wildlife recorded within habitats along the 407 Transitway corridor by LGL and others, including wildlife expected to be present based on habitat conditions observed, is presented in **Table 3**. A total of 105 wildlife species (75 observed, 30 expected) are listed in **Table 3** as occurring or expected to occur within the study area.

A total of 60 bird species were observed within the study area during field investigations. As the field surveys were conducted during the spring migration period, some of the species observed were likely migrants passing through the study area on the way to breeding areas to the north. Based on the habitat types present in the study area, additional bird species (13) that inhabit open country, thicket, forest, forest edge, wetland, aquatic and anthropogenic habitat types may be expected to breed within and immediately adjacent to the study area. Almost all species observed or expected to occur within the study area are typical of the natural, rural and urban habitats associated with the 407 Transitway corridor specifically and Southern Ontario in general.

Twenty three bird species identified during field investigations are designated as priority species for conservation by Bird Studies Canada (see **Table 3**). These species are representative of all habitat types within the study area. Nests, or potential nesting activity, of some of these species were observed under the larger watercourse crossing structures (bridges) and are discussed below.

Six herpetofauna species were observed in the study area during field investigations. Based on the habitat types present, an additional nine species may be expected to occur within or adjacent to the study area. Breeding evidence (calls and/or tadpoles) of American Toad (*Anaxyrus americanus*), Wood Frog (*Lithobates sylvatica*), Leopard Frog (*L. pipiens*) and Green Frog (*L. clamitans*) were observed in some wetland habitats, including storm water management facilities. The large pond located between Sideline 24 and Brock Road contained habitat for Painted Turtles (*Chrysemys picta*), which were observed, and likely provides habitat for Snapping Turtle (*Chelydra serpentina*), Northern Watersnake (*Nerodia sipedon*) and toads/frogs.

3.3.3.3 Wildlife Species at Risk

A review of the NHIC database for rare species records indicated four species at risk have been documented. Eastern Ribbonsnake (*Thamnophis sauritus*-SC) was documented in the eastern half of the study area where more suitable habitat for this species exists; however it has not been recorded since 1984. Snapping Turtle (*Chelydra serpentina*-SC), last recorded in 2003, was predominantly recorded in the western half (urbanized section) of the study area. Bobolink (*Dolichonyx oryzivorus*-THR), last recorded in 2003, has been documented around Reesor Road, north of 407 ETR, along North Road south of 407 ETR and along Brock Road. Eastern Meadowlark (*Sturnella magna*-THR) was last recorded in 2004 and was documented north of 407 ETR west of the York-Durham Line and around Brock Road. No Bobolink or Eastern Meadowlark were recorded during 2015 field investigations.

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC[1]	ESA[1]	Legal Status[1]	Local[2]
Herpetofauna	*Plethodon cinereus*	Red-backed Salamander*			FWCA(P)	
	Anaxyrus americanus	American Toad				
	Lithobates sylvatica	Wood Frog				
	Lithobates pipiens	Leopard Frog				
	Lithobates clamitans	Green Frog				
	Hyla versicolor	Gray Treefrog*			FWCA(P)	
	Pseudacris crucifer	Spring Peeper*				
	Chelydra serpentina	Snapping Turtle*	SC	SC	SARA(1)/FWCA(G)	
	Chrysemys picta	Painted Turtle			FWCA(P)	
	Thamnophis sirtalis	Eastern Gartersnake				
	Thamnophis sauritus	Eastern Ribbonsnake*	SC	SC	SARA(1)	
	Nerodia sipedon	Northern Watersnake*				
	Storeria dekayi	Dekay's Brown Snake*				
	Storeria occipitomaculata	N. Red-bellied Snake*				
	Lampropeltis triangulum	Milksnake*	SC	SC	SARA(1)/FWCA(P)	
Birds	*Branta canadensis*	Canada Goose			MBCA	
	Anas platyrhynchos	Mallard			MBCA	
	Anas rubripes	American Black Duck*			MBCA	BSC
	Ardea herodias	Great Blue Heron			MBCA	
	Buteo jamaicensis	Red-tailed Hawk			FWCA(P)	
	Accipiter cooperi	Cooper's Hawk*			FWCA(P)	BSC
	Falco sparverius	American Kestrel*			FWCA(P)	BSC
	Rallus limicola	Virginia Rail*			MBCA	BSC
	Porzana carolina	Sora*			MBCA	BSC
	Charadrius vociferus	Killdeer			MBCA	
	Actitis macularis	Spotted Sandpiper			MBCA	BSC

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC[1]	ESA[1]	Legal Status[1]	Local[2]
	Zenaida macroura	Mourning Dove			MBCA	
	Columba livia	Rock Pigeon				
	Megascops asio	Eastern Screech Owl*			FWCA(P)	
	Ceryle alcyon	Belted Kingfisher			FWCA(P)	
	Picoides pubescens	Downy Woodpecker			MBCA	
	Picoides villosus	Hairy Woodpecker			MBCA	
	Colaptes auratus	Northern Flicker			MBCA	
	Dryocopus pileatus	Pileated Woodpecker			MBCA	BSC
	Contopus virens	Eastern Wood Pewee	SC	SC	MBCA	
	Empidonax traillii	Willow Flycatcher			MBCA	
	Empidonax alnorum	Alder Flycatcher*			MBCA	BSC
	Empidonax minimus	Least Flycatcher*			MBCA	BSC
	Sayornis phoebe	Eastern Phoebe			MBCA	BSC
	Myiarchus crinitus	Great Crested Flycatcher*			MBCA	
	Tyrannus tyrannus	Eastern Kingbird			MBCA	BSC
	Vireo olivaceus	Red-eyed Vireo			MBCA	
	Vireo gilvus	Warbling Vireo			MBCA	
	Cyanocitta cristata	Blue Jay			FWCA(P)	
	Corvus corax	Common Raven				
	Corvus brachyhrynchos	American Crow				
	Eremophilia alpestris	Horned Lark			MBCA	BSC
	Tachycineta bicolor	Tree Swallow			MBCA	
	Stelgidopteryx serripennis	N. Rough-winged Swallow			MBCA	BSC
	Petrochelidon pyrrhonota	Cliff Swallow			MBCA	BSC
	Hirundo rustica	Barn Swallow	THR	THR	MBCA	BSC
	Poecile atricapillus	Black-capped Chickadee			MBCA	BSC
	Sitta canadensis	Red-breasted Nuthatch			MBCA	BSC

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC[1]	ESA[1]	Legal Status[1]	Local[2]
	Sitta carolinensis	White-breasted Nuthatch			MBCA	
	Troglodytes aedon	House Wren*			MBCA	
	Regulus calendula	Ruby-crowned Kinglet			MBCA	BSC
	Turdus migratorius	American Robin			MBCA	
	Mimus polyglottos	Northern Mockingbird			MBCA	BSC
	Dumetella carolinensis	Gray Catbird			MBCA	BSC
	Toxostoma rufum	Brown Thrasher			MBCA	BSC
	Sturnus vulgaris	European Starling				
	Bombycilla cedrorum	Cedar Waxwing			MBCA	
	Mniotilta varia	Black-and-white Warbler			MBCA	BSC
	Oreothlypis ruficapilla	Nashville Warbler			MBCA	BSC
	Geothlypis trichas	Common Yellowthroat*			MBCA	
	Dendroica petechia	Yellow Warbler			MBCA	
	Dendroica pensylvanica	Chestnut-sided Warbler*			MBCA	BSC
	Setophaga caerulescens	Black-throated Blue Warbler			MBCA	BSC
	Setophaga palmarum	Palm Warbler			MBCA	
	Spizella pusilla	Field Sparrow			MBCA	BSC
	Spizella passerina	Chipping Sparrow			MBCA	
	Pooecetes gramineus	Vesper Sparrow			MBCA	BSC
	Passerculus sandwichensis	Savannah Sparrow			MBCA	BSC
	Melospiza melodia	Song Sparrow			MBCA	
	Melospiza georgiana	Swamp Sparrow			MBCA	BSC
	Zonothrichia albicollis	White-throated Sparrow			MBCA	BSC
	Piranga olivacea	Scarlet Tanager*			MBCA	BSC
	Cardinalis cardinalis	Northern Cardinal			MBCA	
	Pheucticus ludovicianus	Rose-breasted Grosbeak			MBCA	
	Passerina cyanea	Indigo Bunting			MBCA	
	Quiscalus quiscula	Common Grackle				

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC[1]	ESA[1]	Legal Status[1]	Local[2]
	Agelaius phoeniceus	Red-winged Blackbird				
	Quiscalus quiscula	Common Grackle				
	Molothrus ater	Brown-headed Cowbird				
	Icterus galbula	Baltimore Oriole			MBCA	
	Caprodacus mexicanus	House Finch			MBCA	
	Carduelis tristis	American Goldfinch			MBCA	BSC
	Passer domesticus	House Sparrow				
Mammals	*Didelphis virginianus*	Opossum*			FWCA(F)	
	Eptesicus fuscus	Big Brown Bat*			FWCA(P)	
	Sylvilagus floridanus	Eastern Cottontail*			FWCA(G)	
	Sciurus carolinensis	Gray Squirrel			FWCA(G)	
	Tamias striatus	Eastern Chipmunk			FWCA(P)	
	Marmota monax	Woodchuck*				
	Ondatra zibethicus	Muskrat			FWCA(F)	
	Castor canadensis	Beaver			FWCA(F)	
	Peromycus sp.	White-footed (Deer) Mouse*				
	Microtus pennsylvanicus	Meadow Vole				
	Erethizon dorsatum	Porcupine				
	Procyon lotor	Raccoon			FWCA(F)	
	Mustela vison	American Mink			FWCA(F)	
	Mephitis mephitis	Striped Skunk*			FWCA(F)	
	Canis latrans	Coyote			FWCA(F)	
	Vulpes vulpes	Red Fox*			FWCA(F)	
	Odocoileus virginianus	White-tailed Deer			FWCA(G)	

[1, 2] Refer to Appendix E for Acronyms and Definitions used in species lists.
*species not observed directly but expected to occur within the study area based on secondary source review and/or habitat characteristics

Four species at risk have been documented within or in proximity to the study area in the past and are presented in **Table 4**. Eastern Meadowlark and Bobolink are considered Threatened and regulated under the federal *Species at Risk Act* (SARA) and provincial *Endangered Species Act, 2007* (ESA). Both species are also protected under the *Migratory Birds Convention Act* (MBCA). The Snapping Turtle and Eastern Ribbonsnake are both listed as Special Concern in Ontario. The *Fish and Wildlife Conservation Act* (FWCA) also protects the Snapping Turtle.

Two species at risk, Barn Swallow and Eastern Wood Pewee (*Contopus virens*) were confirmed to be present within the study area during field investigations. The Barn Swallow is regulated under the ESA and SARA and Eastern Wood Pewee is listed as Special Concern in Ontario. Forty nine (49) recorded bird species are protected under the *Migratory Birds Convention Act* (MBCA) and one reptile, three bird and six mammal species are protected under the *Fish and Wildlife Conservation Act* (FWCA).

Five additional species at risk have been identified as having potential to occur within the study area, based on NHIC data and habitats present. Three of these species are listed as Special Concern in Ontario and are not regulated under the ESA (See **Table 5**). The remaining two species, Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*), are both Threatened provincially and federally and are regulated under the ESA and SARA.

These two species, along with Barn Swallow, are discussed below.

Eastern Meadowlark
Review of the NHIC database indicated records of Eastern Meadowlark within the vicinity of the York-Durham Line and Sideline 20. The NHIC database had relatively recent (2003 and 2004) records for Eastern Meadowlark. The Eastern Meadowlark, a species with a broad distribution across southern Ontario, is regulated Threatened under the ESA and the SARA. The Eastern Meadowlark, formerly a prairie species, has adapted to agricultural practices of the European settlers (hayfields, pastures, etc.) (Cadman *et al.* 2007). As farming practices have become more efficient, Eastern Meadowlark numbers have declined. No individuals of this species were observed during the field investigations and, although they were conducted outside of the MNRF identified Eastern Meadowlark survey window, they were completed during a time (mid-spring) when this species typically returns to Southern Ontario to establish territories. However, even though this species was not observed, it is not possible to determine if Eastern Meadowlark are present / nesting within the study area. During the Spring 2015 field investigations LGL identified habitat which has the potential to be suitable to support Eastern Meadowlark. These areas are a cultural meadow north of Russel Jarvis Drive west of Ninth Line and the cultural meadows located between Donald Cousens Parkway and Reesor Road.

Bobolink
Review of the NHIC database indicated records of Bobolink as recently as 2003, within the vicinity of the North Road, Sideline 20 and Brock Road. The Bobolink, a species with a broad distribution across southern Ontario, is regulated Threatened under the ESA and 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). Bobolink are also commonly associated with agricultural lands. No individuals of this species were observed during the field investigations and, although they were conducted outside of the MNRF identified Bobolink survey window, they were completed during a time (mid-spring) when this species typically returns to Southern Ontario to establish territories. However, even though this species was not observed, it is not possible to determine if Bobolink are present / nesting within the study area. During the Spring 2015 field investigations LGL identified habitat which has the potential to be suitable to support Bobolink. These areas are a cultural meadow north of Russel Jarvis Drive west of Ninth Line and the cultural meadows located between Donald Cousens Parkway and Reesor Road.

TABLE 4.
SUMMARY OF WILDLIFE ELEMENT OCCURRENCE RECORDS WITHIN THE STUDY AREA

1 Km Square	Scientific Name	Common Name	1 Km Square Approximate Location	Date Last Observed
17PJ3757	*Chelydra serpentina*	Snapping Turtle	Quadrant northwest of 407 ETR and McCowan Road	7/14/2003
17PJ3857	*Chelydra serpentina*	Snapping Turtle	Quadrant along 407 ETR east of McCowan Road	7/14/2003
17PJ3958	*Chelydra serpentina*	Snapping Turtle	Quadrant northwest of 407 ETR and Markham Road	7/14/2003
17PJ4058	*Chelydra serpentina*	Snapping Turtle	Quadrant along 407 ETR east of Markham Road	7/14/2003
17PJ4058	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant along 407 ETR east of Markham Road	7/4/1984
17PJ4059	*Chelydra serpentina*	Snapping Turtle	Quadrant northeast of 407 ETR and Markham Road	7/14/2003
17PJ4359	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant at intersection of 407 ETR & Donald Cousens Pkwy	5/17/1968
17PJ4459	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant southeast 407 ETR and Reesor Road	5/17/1968
17PJ4460	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant northeast 407 ETR and Reesor Road	5/17/1968
17PJ4461	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant north of Highway 7 and east of Reesor Road	5/17/1968
17PJ4560	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant southwest of 407 ETR and York Durham Townline	5/17/1968
17PJ4561	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant at intersection of 407 ETR and Highway 7	5/17/1968
17PJ4561	*Sturnella magna*	Eastern Meadowlark	Quadrant at intersection of 407 ETR and Highway 7	29/5/2004
17PJ4661	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant south of 407 ETR east of York Durham Townline	5/17/1968
17PJ4662	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant north of 407 ETR east of Sideline 34	5/17/1968
17PJ4762	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant around intersection of 407 ETR and North Road	5/17/1968
17PJ4762	*Dolichonyx oryzivorus*	Bobolink	Quadrant around intersection of 407 ETR and North Road	6/8/2003
17PJ4862	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant south of 407 ETR east of North Road	5/17/1968
17PJ4962	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant south of 407 ETR west of Sideline 4	5/17/1968
17PJ4963	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant southwest of Highway 7 and Sideline 24	5/17/1968
17PJ5063	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant around 407 ETR and Sideline 22	5/17/1968

TABLE 4.
SUMMARY OF WILDLIFE ELEMENT OCCURRENCE RECORDS WITHIN THE STUDY AREA

1 Km Square	Scientific Name	Common Name	1 Km Square Approximate Location	Date Last Observed
17PJ5163	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant south of 407 ETR and Country Lane intersection	5/17/1968
17PJ5164	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant around 407 ETR and Sideline 20 intersection	5/17/1968
17PJ5164	*Dolichonyx oryzivorus*	Bobolink	Quadrant around 407 ETR and Sideline 20 intersection	6/30/2003
17PJ5164	*Sturnella magna*	Eastern Meadowlark	Quadrant around 407 ETR and Sideline 20 intersection	6/30/2003
17PJ5263	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant south of 407 ETR around Brock Road	5/17/1968
17PJ5263	*Dolichonyx oryzivorus*	Bobolink	Quadrant south of 407 ETR around Brock Road	6/30/2003
17PJ5264	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant northeast of 407 ETR and Brock Road intersection	5/17/1968
17PJ5264	*Dolichonyx oryzivorus*	Bobolink	Quadrant northeast of 407 ETR and Brock Road intersection	6/30/2003
17PJ5364	*Thamnophis sauritus*	Eastern Ribbonsnake	Quadrant south of Highway 7 and east of Sideline 16	5/17/1968

Barn Swallow

Barn Swallow is regulated as Threatened under the ESA and the SARA. The Barn Swallow generally builds mud nests on bridges, walls, ledges and barns (Cadman *et al.* 2007). The Barn Swallow typically forages in open areas such as agricultural lands, meadows or over water. During field investigations several individuals were observed foraging over agricultural fields and open water areas throughout the study area. Two potential unoccupied Barn Swallow nests were observed under the Crossing D1/D2 structure of the 407 ETR. No other Barn Swallow nests were identified within any other culverts or under/on any other structures within study area. Habitat considered suitable to support foraging Barn Swallow was identified across much of the study area, with the exception of forested habitats, and many were observed foraging over agricultural lands and open water habitats.

TABLE 5.
WILDLIFE SPECIES AT RISK SUMMARY

Scientific Name	Common Name	Location (s)	S-rank	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
Sturnella magna	Eastern Meadowlark	CUM north of Russel Jarvis Drive west of Ninth Line and CUM between Donald Cousins Parkway and Reesor Road (potential)	S4B	THR	THR	2004	Open country and agricultural	Open country and agricultural habitat types identified may provide habitat suitable to support Eastern Meadowlark.
Dolichonyx oryzivorus	Bobolink	CUM north of Russel Jarvis Drive west of Ninth Line and CUM between Donald Cousins Parkway and Reesor Road (potential)	S4B	THR	THR	2004	Open country and agricultural	Open country and agricultural habitat types identified may provide habitat suitable to support Bobolink.
Hirundo rustica	Barn Swallow	CUM north of Cresthaven Golf Club between Kenndy Road and McCowan Road; Marsh east of Markham Road; SWM pond west of Rouge River; CUM between Donald Cousens Parkway and Reesor Road; potential nests under structure D1/D2 crossings between York-Durham Line and North Road	S4B	THR	THR	2014	Open country and agricultural	Open country, agricultural and aquatic habitat types identified provide habitat suitable to support foraging Barn Swallow. Potential unoccupied nests identified under D1/D2 structure.

*Preferred habitat is based on a review of secondary sources; however, these species may be found in other habitats.
For definitions of the acronyms used in this table, refer to **Appendix D**.

4.0 IMPACT ASSESSMENT AND MITIGATION

4.1 Physiography and Soils

The clay and loam soils located along the Transitway facility footprint 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, grading revisions, culvert extension, 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 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 during detail design following the Environmental Guide for Erosion and Sediment Control during Construction of Highway Projects (MTO 2007). Erosion and sedimentation control measures will include:

- placing straw bale flow checks at regular intervals in ditches down-gradient from areas of soil disturbance in rural sections;
- 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 Communities

Implementation of the 407 Transitway between Kennedy Road and Brock Road has the potential to result in impacts to vegetation and vegetation communities. Effects on vegetation related to the construction of the Highway 407 Transitway between Kennedy Road and Brock Road 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 preferred runningway for the 407 Transitway, and the associated stations. Overall, there will be a loss of 110.284 ha of vegetation communities which includes a loss of 86.224 ha due to the preferred runningway, and a loss of 24.06 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 community discussed per the preferred runningway and each of the five Transitway stations and one temporary bus garage.

4.2.1 Runningway Impacts

Table 6 provides a summary of the vegetation removals required per segment of the preferred runningway of the 407 Transitway between Kennedy Road and Brock Road. A discussion of the impacts to each segment is provided below.

TABLE 6.
SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY RUNNINGWAY

Transitway Segment	Total Area to Be Impacted (Ha)
Kennedy Road to West of Markham Road	
Cultural Communities (CUM1-1a and b)	10.93
Forest Communities (FOD7a)	1.30
Wetland Communities (MAS2-1a)	0.11
Anthropogenically Influenced Lands (Agricultural, Hedgerow, and SWM Pond)	5.88
Subtotal Kennedy Road to West of Markham Road	***18.22 ha***
Markham Road Station to Ninth Line Station	
Cultural Communities (CUM1-1/MAS, CUM1-1b to d, and CUT1a)	8.75
Forest Communities (FOC2-2a, FOC4-1a, FOD7b, and FOM7-1a)	1.46
Wetland Communities (MAS2-1b)	0.30
Anthropogenically Influence Lands (Agricultural, Manicured, Hedgerow, and SWM Pond)	1.47
Subtotal Markham Road Station to Ninth Line Station	***11.98 ha***
Ninth Line Station to Donald Cousens Parkway Potential Future Station	
Cultural Communities (CUM1-1c and CUW1c)	5.104
Wetland Communities (MAS2-1c and d and SWTa)	0.91
Anthropogenically Influence (Manicured)	0.04
Subtotal Ninth Line Station to Donald Cousens Parkway Potential Future Station	***6.054 ha***
Donald Cousens Parkway Potential Future Station to Whites Road Station	
Cultural Communities (CUM/MAM, CUM1-1d to k, CUS1a and b, and CUW1e and f)	18.36
Forest Communities (FOC, FOC2-2b, FOC4-1 b and c, FOM7-1b, and FOM7-2)	2.34
Wetland Communities (MAM2-2 a and b, MAM2-5, MAS2-1e and SWTb)	1.36
Anthropogenically Influence Lands (Agricultural, Manicured, Hedgerow, and SWM Pond)	8.52
Subtotal Donald Cousens Parkway Potential Future Station to Whites Road Station	***30.58 ha***
Whites Road Station to Rossland Road Station	
Cultural Communities (CUM1-1k and l)	4.18
Forest Communities (FOD5 and FOD7-2)	0.97
Wetland Communities (MAM2-2c and d, MAS2-1f, and SWTc)	0.89
Anthropogenically Influence Lands (Agricultural, and Hedgerows)	3.48
Subtotal Whites Road Station to Rossland Road Station	***9.52 ha***
Rossland Road Station to Brock Road Station	
Cultural Communities (CUM1-1l and j, and CUW1g)	2.74
Forest Communities (FOC1-2, FOC4-1d, FOC6-5b, and FOD7)	3.70
Wetland Communities (OAO, SWC1-1, MAM2-10 and MAS2-1g)	0.97
Anthropogenically Influence Lands (Agricultural)	0.32
Subtotal Rossland Road Station to Brock Road Station	***7.73 ha***
Transitway East of Brock Road Station	
Cultural Communities (CUM1-1m, and CUS1c)	0.97
Forest Communities (FOC4-1d)	1.18
Subtotal East of Brock Road Station	***2.15 ha***
Total Impacted Area (ha) for the Transitway Runningway	***86.234***

4.2.1.1 Kennedy Road to West of Markham Road

A total of 18.22 ha of naturalized and/or planted area will be removed as a result of the proposed 407 Transitway runningway between Kennedy Road to west of Markham Road. The largest impact will be to cultural meadow communities (CUM1-1a and b). Overall, impacts resulting in the loss of vegetation within these cultural meadow communities is considered to be minor. 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.

In addition impacts will occur to one forest (FOD7a) and one wetland (MAS2-1a) community. Edge impacts will occur to the Lowland Deciduous Forest community. New forest edges are exposed to a greater potential for non-native and invasive species infiltration further into the forest, and as such, forest edge management is recommended. Impacts to the shallow marsh community will result in the removal of the majority of the wetland. Shallow marsh communities are widespread and common throughout Ontario and as a result, impacts are considered to be minor.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, hedgerows and a SWM Pond. Impacts to these lands are considered to be minor.

4.2.1.2 Markham Road Station to Ninth Line Station

A total of seven ELC community types will be impacted as a result of the proposed Transitway runningway between the Markham Road station and Ninth Line Station including cultural meadow (CUM1-1), cultural thicket (CUT1), coniferous forest (FOC2-2a and FOC4-1a), lowland deciduous forest (FOD7b), white cedar-sugar maple deciduous forest (FOM7-1) and cattail shallow marsh (MAS2-1b), with a total of 11.98 ha of land 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 meadow and cultural thicket communities are considered to be minor.

Impacts to the FOC2-2a and FOM7-1 communities will result in the removal of the edge of the community adjacent to 407 ETR. Forest edge management should be implemented to protect the newly exposed forest edge. Impacts to the FOD7b and FOC4-1a will result in the removal of the majority of the community. Compensation should be provided for the removal of these two forest communities.

Impacts to the cattail shallow marsh community will result in the removal of a large portion of the community adjacent to 407 ETR. Efforts should be made to retain the remaining portion of the MAS2-1b community to the extent possible. Cattail shallow marsh communities are widespread and common in Ontario and the loss of a portion adjacent to the preferred runningway is not expected to have any negative impacts to the remaining portions of cattail shallow marsh within the study area.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, hedgerow, manicured lands and a SWM Pond. Impacts to these lands are considered to be minor.

4.2.1.3 Ninth Line Station to Donald Cousens Future Potential Station

Impacts to vegetation communities between Ninth Line and the Donald Cousens Future Potential Station will result in the removal of approximately 6.054 ha of vegetation communities including the removal of a portion of cultural meadow (CUM1-1c), cultural woodland (CUW1c), shallow marsh (MAS2-1d), swamp thicket (SWTa) and manicured lands.

Impacts to the cultural meadow (CUM1-1c) and cultural woodland (CUW1c) are considered to be minor. 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 cattail shallow marsh (MAS2-1d) and swamp thicket (SWTa) will result in the removal of a small portion of the northern edge of each community. Impacts to the cattail shallow marsh (MAS2-1d) and swamp thicket (SWTa) will result in the removal of a small portion of the northern edge of each community. These wetland communities form part of the newly designated Provincially Significant Cedar Grove Wetland Complex. The runningway will cross over these areas in order to avoid and/or minimize impacts to this wetland complex.

Impacts to anthropogenically influenced lands will include the removal of a portion of manicures lands. Impact to these manicured lands are considered to be minor.

4.2.1.4 Donald Cousens Parkway Future Potential Station to Whites Road Station

Impacts to vegetation communities between the Donald Cousens Parkway Future Potential Station and the Whites Road Station will result in the removal of approximately 30.58 ha of vegetation communities including the removal of a portion of cultural meadow (CUM/MAM, CUM1-1d to k), cultural savannah (CUS1a and b), cultural woodland (CUW1e and f), coniferous forest (FOC, FOC2-2b, FOC4-1b and c), mixed forest (FOM7-1b and FOM7-2), meadow marsh (MAM2-2a and b, MAM2-5), shallow marsh (MAS2-1e) and swamp thicket (SWTb).

Impacts to the cultural meadow (CUM/MAM, CUM1-1d to k), cultural savannah (CUS1a and b), and cultural woodland (CUW1e and f) are considered to be minor. 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.

Construction of the runningway will result in the removal of the northern edge of the white cedar coniferous forest (FOC2-2b and FOC4-1b and c), ash lowland deciduous forest (FOM7-2) and white cedar-sugar maple mixed forest (FOM7-1b). Though removal of the northern portion of the communities can have a negative impact, the adjacent forest lands are large and will likely continue to persist post-construction. Forest edge management should be implemented to protect the newly expose forest edges. Impacts to the coniferous forest (FOC) community will result in the removal of a small portion of the southern edge of the community. The coniferous forest community is highly disturbed as a result of the existing Highway 407 ETR alignment and as a result, impacts to the FOC community are considered to be minor.

Impacts to the meadow marsh (MAM2-2a and b), cattail shallow marsh (MAS2-1e) and swamp thicket (SWTb) will result in the removal of a small portion of the northern edge of each community. These wetland communities are widespread and common throughout Ontario and the loss of a portion of these vegetation communities is not expected to have any negative impacts to the remaining portions within the

study area. Impacts to the narrow leaved sedge meadow marsh (MAM2-5) and green ash deciduous swamp (SWD2-2) will result in the removal of the majority of the community, it is likely this community will cease to exist to post-construction. Compensation should be provided for the impacts to these wetland communities.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, hedgerow, manicured lands and a SWM Pond. Impacts to these lands are considered to be minor.

The **Rouge National Urban Park** transverses the study area within this section. It starts east of the CP/Havelock Railway (Proposed GO Line) tracks eastward to York-Durham Line. Impacts to vegetation communities within this subsection will result in the removal of approximately 10.17 ha of vegetation communities including 1.25 ha of wetlands (SWT2b, SWT2-2b, MAM2-2a, MAS2-1e), 5.62 ha of cultural meadow (CUM1-1e, CUM1-1f, CUM1-1g, CUM1-1h), 0.14 ha of deciduous forest (FOM7-1b), 0.76 ha of coniferous forest (FOC4-1b, FOC2-2b, FOC), 2.39 ha of hedge and agricultural areas.

4.2.1.5 Whites Road Station to Rossland Road Station

Impacts to vegetation communities between Whites Road Station and Rossland Road Station will result in the removal of approximately 9.52 ha of vegetation communities including cultural meadow (CUM1-1k and l), deciduous forest (FOD5 and FOD7-2), and wetland communities (MAM2-2c and d, MAS2-1f, and SWTc).

Cultural meadow communities are typically disturbance tolerant vegetation communities dominated by non-native and invasive plants species and as such, removal of a portion of cultural meadow communities is considered to be minor.

Impacts to the sugar maple deciduous forest (FOD5) will result in the removal of the entire portion of the community with an exception of a narrow strip adjacent to the existing 407 ETR. Impacts to the lowland deciduous forest (FOD7) community will result in the removal of a small portion of the southern edge of the community and as such, these impacts are considered to be minor. Forest edge management is recommended along the new edge of the FOD7 community.

Impacts to the cattail shallow marsh (MAS2-1f), meadow marsh (MAM2-2c and d), and swamp thicket (SWTc) will result in the removal of a portion of the edge of each community. Efforts should be made to retain the remaining portion of these wetland communities to the extent possible. All of these wetland community types are widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and hedgerows. Impacts to these lands are considered to be minor.

4.2.1.6 Rossland Road Station to Brock Road Station

A total of 7.73 ha of vegetation and vegetation communities will be removed as a result of the Highway 407 Transitway preferred runningway between the Rossland Road Station and Brock Road Station. Impacts will occur to cultural meadow (CUM1-1l and j) communities, cultural woodland (CUW1g), coniferous forest (FOC1-2, FOC4-1d), deciduous forest (FOD6-5b and FOD7), and wetland communities (MAM2-10, MAS2-1g, OAO, and SWC1-1).

Impacts to the cultural meadows (CUM1-1l and j) and cultural woodland (CUW1g) are considered to be minor. 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 coniferous forest (FOC1-2, FOC4-1d) and deciduous forest (FOD6-5b and FOD7) will bisect the northern portion of the communities, creating a forest fragment. Though forest fragmentation can have a negative impact, the remaining portion of these communities to the south are large and as such, it is likely they will continue to persist post-construction. Forest edge management is recommended to prevent further impacts to the coniferous and deciduous forest communities.

Construction of the 407 Transitway will result in the removal of a small portion of the open aquatic (OAO) and coniferous swamp (SWC1-1). Impacts to the meadow marsh (MAM2-10) and shallow marsh (MAS2-1g) will remove a large portion of the community and only small fragment will remain. Efforts should be made to retain the remaining portion of these wetland communities to the extent possible. All of the above mentioned wetland communities are widespread and common in Ontario.

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

4.2.1.7 East of Brock Road Station

Impacts to vegetation communities east of Brock Road will result in the removal of approximately 2.15 ha of vegetation communities including the removal of a portion of a cultural meadow, cultural savannah and coniferous forest. Impacts to the cultural meadow (CUM1-1m) and cultural savannah (CUS1c) community are considered to be minor. Both cultural meadow and cultural savannah are disturbance tolerant vegetation communities dominated by non-native and invasive plant species. These communities are widespread and common throughout Ontario.

The impact to the coniferous forest communities will involve the removal of a small portion of the coniferous forest (FOC4-1d) adjacent to Highway 7. Newly exposed forest edges are exposed to a greater potential for non-native and invasive species infiltration further into the forest. Therefore forest edge management is recommended to prevent negative impacts to the remaining portions of sugar maple deciduous forest.

4.2.2 Station Impacts

Table 7 provides a summary of the vegetation removals required per station for the preferred station locations for the 407 Transitway between Kennedy Road and Brock Road. Impacts associated with storm water management ponds at the respective stations are not included in the calculations below. A discussion of the impacts to vegetation and vegetation communities per station is provided below.

TABLE 7.
SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY STATIONS

Transitway Segment	Total Area to Be Impacted (Ha)
Markham Road Station	
Cultural Communities (CUM1-1c and CUW1a)	1.24
Wetland Communities (MAS2-1b)	0.13
Anthropogenically Influenced Lands (Agricultural)	3.57
Subtotal Markham Road Station	***4.94 ha***
Ninth Line Station	
Cultural Communities (CUM1-1c)	8.14
Subtotal Ninth Line Station	***8.14 ha***
Donald Cousens Parkway Future Potential Station	
Cultural Communities (CUM1-1d and CUT1b)	2.41
Anthropogenically Influence Lands (Manicured)	0.06
Subtotal Reesor Road Station	***2.47 ha***
Whites Road Station	
Cultural Communities (CUM1-1k)	0.07
Anthropogenically Influence Lands (Agricultural and Hedgerow)	4.26
Subtotal Whites Road Station	***4.33 ha***
Rossland Road Future Potential Station/Temporary Bus Garage	
Anthropogenically Influence Lands (Agricultural and Hedgerow)	3.24
Subtotal Rossland Road Future Potential Station	***3.24 ha***
Brock Road Station	
Anthropogenically Influence Lands (Agricultural and Hedgerow)	1.47
Subtotal East of Brock Road Station	***1.47 ha***
Total Impacted Area (ha) for the Stations	***24.59 ha***

4.2.2.1 Markham Road Station

Construction of the Markham Road Station will result in the removal of a portion of cultural meadow (CUM1-1c) and cultural woodland (CUW1a). Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. In addition, a small portion of cattail shallow marsh (MAS2-1b) will be removed as a result of the proposed construction of the Markham Road Station. Efforts should be made to retain the remaining portions of the shallow marsh community post-construction. Shallow marsh communities are widespread and common across Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and hedgerows. Impacts to these lands are considered to be minor.

4.2.2.2 Ninth Line Station (west side of Ninth Line)

Impacts associated with the construction of the Ninth Line Station will occur to a cultural meadow (CUM1-1c) community. Cultural meadow communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural meadow communities are considered to be minor. Cultural Meadows are widespread and common throughout Ontario.

During the PIC concerns were raised by local residents in regards to the location of the Ninth Line Station and as such, the study team is considering the option of the Ninth Line station being on the east side of Ninth Line. Impacts associated with the potential construction of the Ninth Line Station on the east side of Ninth Line will result in the removal of 6.38 ha of natural areas including cultural meadow (CUM1-1d), cultural woodland (CUW1b), cattail shallow marsh (MAS2-1c), and swamp thicket (SWTa). Impacts to the cultural communities are considered to be minor. Impacts to the shallow marsh (MAS2-1e) will remove the majority of the community and only a small portion will remain. It is likely the remaining portion of the shallow marsh community will persist post construction. Impacts to the swamp thicket will involve the removal of a portion of the community, only a small portion of this community will be retained. Efforts should be made to ensure the remaining portion of this swamp thicket community is retained.

4.2.2.3 Donald Cousens Parkway Future Potential Station

Impacts associated with the construction of the Donald Cousens Parkway Future Potential Station will occur to cultural meadow (CUM1-1d) and cultural thicket (CUT1b). Impacts to the cultural communities is considered to be minor. Impacts to anthropogenically influenced lands will include the removal of a portion of manicured lands. Impacts to these lands are considered to be minor.

4.2.2.4 Whites Road Station

Construction of the Whites Road Station will result in the removal of a portion of cultural meadow, agricultural lands and hedgerow. Overall, impacts to vegetation and vegetation communities are considered to be minor. It is anticipated plant species displaced and/or disturbed within the cultural meadow community will re-colonize available lands adjacent to the Whites Road Station.

4.2.2.5 Rossland Road Potential Future Station/Temporary Bus Garage

Impacts to vegetation and vegetation communities associated with the construction of the Rossland Station will result in the removal of agricultural lands and hedgerows. Overall, impacts to vegetation and vegetation communities are considered to be minor.

4.2.2.6 Brock Road Station

Impacts to vegetation and vegetation communities associated with the construction of the Brock Road Station will result in the removal of a portion of agricultural lands and hedgerow. A portion of the Brock Road Station has already been cleared for the Highway 407 East – Phase 1. Overall, impacts to vegetation and vegetation communities are considered to be minor.

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 3.1.3.2** a total of 14 butternut trees were identified during LGL's botanical survey. The butternut trees are located over 25 m from the preferred runningway. Consequently, no impacts to the butternut trees identified by LGL are anticipated and as such, no requirements under the *Endangered Species Act, 2007* are needed to address the presence of these trees. A detailed butternut survey should be conducted during the detail design phase to ensure no butternut seedlings are present within the preferred runningway and station locations.

As noted in **Section 3.1.3.2** a total of 35 TRCA plant species of concern where identified within the study area. Efforts should be made during the detail design and construction phase to locate regionally rare plants that will be impacted due to the proposed 407 Transitway and associated station. Where possible, these plant species should be transplanted into the newly created edge of those impacted communities, but outside the limit of disturbance.

Impacts to Designated Natural Areas

As noted in **Section 3.1.3.1** no ANSI's are within 120 m of the study area. A portion of the Cedar Grove Wetland Complex will be removed as a result of the proposed construction of the runningway. Approximately 0.67 ha of PSW will be removed as a result of the proposed 407 Transitway runningway impacts. Compensation for the removal of the PSW is recommended.

Environmentally Significant/Sensitive Areas

No impacts will occur to both the Milne Woods ESA. Impacts to the West Duffins ESA are anticipated as the transitway runningway will be crossing this area. Overpass structures are proposed to cross this area to minimize impacts. Further refinements will be considered during the Detail Design stage of the project. .

Non-provincially Significant Wetlands

No impacts will occur to the Whitevale Wetlands. A small portion of the Locust Hill Wetland west of York Durham Line will be removed. Compensation for the removal of this wetland feature is recommended.

4.2.3.1 Compensation

Compensation for the removal of wetland and forest communities should be provided. Compensation should be provided at a rate determined with agencies during the detail design phase.

Impacts to wetland communities within the study area will primarily be to wetlands which have developed due to the presence of drainage ditches, have been created due to concentrated development which has resulted in increased runoff in localized areas, as well as wetlands along low grade areas along agricultural fields. These wetland vegetation communities include meadow and shallow marshes, swamp thickets and deciduous swamps. However, the function of these wetlands, as well as habitat qualities still provide a valuable function that includes 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 Transitway and its related components, that being said, mitigation/compensation for the impacts to wetlands should be undertaken during the detail design phase.

Impacts to forest communities within the study area will primarily result in the new creation of forest edges. Forest edge management should be implemented to protect the new community edge as the majority of forest within the study area are component of larger valley systems.

"The McCowan Road, York-Durham Line and Rossland Road Protected Sites have been identified as areas for potential vegetation compensation. The type of vegetation community for compensation will be determined during Detail Design in consultation with Parks Canada and other agencies. "

4.2.3.2 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;
- changes to hydrology; and,
- increased noise.

Forest edge management in accordance with the TRCA *Forest Edge Management Plan Guidelines* (2004) is recommended at the forest communities described above. 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.
- A plan must be in place to immediately mitigate the spread/invasion of aggressive plant species.

- A monitoring plan must be developed to ensure that the newly planted material survives and fulfils the intended function and to ensure that the inadvertent spread of aggressive or non-native plant species is appropriately managed.

During the detail design phase a forest edge management plan should be prepared for those communities where forest edge management is recommended.

4.2.3.3 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 or garlic mustard, the appropriate removal and control of these species by a qualified specialist should be undertaken;
- 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.).

4.2.3.4 Planting Plans

A detailed planting plan should be developed during the detail design phase 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 which will be presented on site-specific plans to be developed by an experienced landscaped architect.

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.

4.2.3.5 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 Kennedy Road and Brock Road has the potential to result in impacts to wildlife and wildlife habitat. Effects related to the construction of the 407 Transitway between Kennedy Road and Brock Road and associated facilities could include:

- Displacement of Wildlife and Wildlife Habitat;
- Barrier Effects on Wildlife Passage;
- Wildlife/Vehicle Conflicts;
- 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 Kennedy Road to West of Markham Road

Much of the habitat within this segment consists of cultural meadow or active agricultural lands. A small deciduous forest and a small marsh are also present as well as a SWM pond. The natural heritage features potentially impacted by the 407 Transitway runningway consist entirely of disturbed low quality wildlife habitat. 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 human development.

4.3.1.2 Markham Road Station to Ninth Line Station

The runningway in this section will affect cultural meadow, marsh and forest habitat. Residential development is much closer to the runningway in this section than in the previous one. However, a large valley exists in which a substantial buffer is present. The cultural meadow west of the Ninth Line Station location has the potential to contain Eastern Meadowlark and/or Bobolink habitat, although none were observed during field investigations. As such, the species in this area may be more sensitive to disturbance than the communities in other portions of this segment. However, as mentioned above, 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.

4.3.1.3 Ninth Line Station to Donald Cousens Parkway Future Potential Station

The majority of the lands within this segment consist of cultural meadow and marsh habitats. No significant species or habitat are located in this section and a relatively large buffer exists for much of the area south of the runningway. 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 Donald Cousens Parkway Future Potential Station to Whites Road Station

The relatively long section of runningway between these two stations consists mainly of cultural vegetation communities bordering agricultural lands (see **Section 4.2.1.4**). There are two large, forested valley crossings as well, one of which is associated with the West Duffins Creek Environmentally

Significant Area. The runningway will cross this designated area but impacts will be minimized by proposing overpass structures over this area. In addition, there is a small portion of the Locust Hill Wetland Complex, a non-provincially significant wetland, that will be affected by the runningway to the west of York/Durham Line. The effects on the forested valleys and wetland habitats have previously been disturbed by the creation of the 407 ETR corridor. Effects on all other cultural and agricultural habitats are also expected to be minor as no significant wildlife species or habitats were noted during field investigations in these areas.

Wildlife impacts to the **Rouge National Urban Park** are anticipated to be minor after the implementation of mitigation measures such as forest edge management, vegetation compensation and maintaining north-south corridor passages along Petticoat Creek and Little Rouge Creek.

4.3.1. 5 Whites Road Station to Rossland Road Station

The majority of the habitat in this segment consists of cultural meadows and agricultural lands. There are two significant valley crossings as well, which are forested. With the exception of the valleys, no significant effects on wildlife and wildlife habitat are expected to occur as a relatively large buffer exists to the south between the 407 Transitway and human landscapes. With regard to the valleys, a small area of forest cover will be removed, but these removals will be along edges previously disturbed by the creation of the 407 ETR corridor. As such, limited negative effects are anticipated.

4.3.1.6 Rossland Road Station to Brock Road Station

Most of the wildlife habitat in this segment consists of agricultural lands and cultural meadows and hedgerows. A small deciduous forest and swamp habitat will also be affected. Efforts should be made to minimize impacts to these latter two habitats as they are not commonly occurring throughout the 407 Transitway corridor.

4.3.1.7 East of Brock Road Station

Much of the land within this segment is currently under construction for the Highway 407 East Phase 1 project. The eastern portion of this segment consists of a coniferous forest associated with Brougham Creek. Efforts should be made to minimize impacts to this forest habitat.

4.3.2 Station Impacts

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

4.3.2.1 Markham Road Station

Construction of the Markham Road Station will result in the removal of a portion of an agricultural field, cultural meadow and cultural woodland habitat. It will also be constructed directly adjacent to marsh habitat. The impacts to these communities are considered to be minor. As stated in Section 4.2.2.1, efforts should be made to retain the remaining portions of the shallow marsh community post-construction.

4.3.2.2 Ninth Line Station (west side of Ninth Line)

Impacts associated with the construction of the Ninth Line Station will occur to a cultural meadow community, the western portion of which could potentially be Eastern Meadowlark and/or Bobolink habitat. Although these communities are subject to regular disturbance, especially in this urban setting, and they are widespread and common throughout Ontario, further surveys for species at risk should be conducted in the western portion of this station location to ensure that no species at risk are affected by the construction of this station.

During the PIC concerns were raised by local residents in regards to the location of the Ninth Line Station and as such, the study team is considering the option of the Ninth Line Station being on the east side of Ninth Line. Impacts associated with the construction of the Nine Ninth Line Station on the east side of Ninth Line will occur to cultural meadow, cultural woodland, marsh and swamp habitat. The impacts to the cultural communities are considered to be minor whereas the impacts to the marsh will remove the majority of the community. The wetland habitat is associated with a tributary of the Rouge River (R5), which will need to be piped or realigned to accommodate the station. Although no SAR were observed in the wetland, habitat-specific species exist there (e.g., Swamp Sparrow- *Melospiza georgiana*) and would be displaced. Efforts should be made to ensure the remaining portion of this community is retained.

4.3.2.3 Donald Cousens Parkway Future Potential Station

Impacts associated with the construction of the Donald Cousens Parkway Future Potential Station will occur to cultural meadow and cultural thicket habitats, and marsh habitat associated with an existing SWM pond. The cultural meadow/thicket communities provide potential habitat for Eastern Meadowlark and/or Bobolink in this area. In addition, Barn Swallow were observed in these habitats and could potentially be using the barn structures in the southeast portion of this area for nesting. As such future surveys are needed during the appropriate seasons to determine whether these SARs are present in this habitat or not. In addition, impacts associated with the construction of this station will occur to manicured lands with limited habitat capability. Overall, impacts resulting in the loss of these manicured lands are considered to be minor.

4.3.2.4 Rossland Road Potential Future Station/Temporary Bus Garage

The construction of the Rossland Station will result in the removal of agricultural lands and hedgerow. Overall, impacts to wildlife habitat are considered to be minor.

4.3.2.5 Whites Road Station

Construction of the Whites Road Station will result in the removal of a portion of agricultural lands and hedgerow. Overall, impacts to wildlife habitat are considered to be minor.

4.3.2.6 Brock Road Station

The construction of the Brock Road Station will result in the removal of a portion of agricultural lands and hedgerow. A portion of the Brock Road Station has already been cleared for the Highway 407 East Phase 1 extension. Overall, impacts to wildlife and wildlife habitats are considered to be minor.

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

Three species at risk have been identified as potentially being present within the 407 Transitway study area based on records from the NHIC or based on field surveys undertaken in 2015 by LGL Limited (see **Section 3.3.3.3**). The following sections provide a brief review of each species' status, the results of field surveys carried out, and the potential impacts to those three species at risk and their populations within the vicinity of the study area.

4.3.3.1 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 the study area in two locations. Both of these locations will be affected by the construction of stations. As such, further field investigations, undertaken during the appropriate season using MNRF protocols for surveying for these species, should be conducted to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.2 Barn Swallow

Barn Swallow is listed as 'Threatened' and is provincially regulated as 'Threatened' under the ESA. As previously noted (see **Section 3.3.3.3**) a number of Barn Swallow were identified foraging over terrestrial and aquatic habitats within the study area. 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. Furthermore, no structures suitable for Barn Swallow nesting will be affected by the construction of the runningway and stations. As such, impacts to this species are expected to be minimal.

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 accommodate wildlife passage. These crossings are (from west to east): Rouge River (R4); Little Rouge Creek (R10); West Duffins Creek and tributaries (D1, D2, D3); Urfe Creek (D15), Brougham Creek (D16) and Brougham Creek (D17). At present, these large structures provide passage to both small wildlife species (e.g., raccoons, frogs) and large species (e.g., white-tailed deer). The fencing mentioned above also functions to funnel wildlife species towards these corridors by forcing them to move laterally until they reach a suitable crossing area.

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. A minimum clearance height of 3 m for structures that will provide passage for large animals 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).

During detail design, or once structure sizes are determined, OR can be calculated for each of the new structures to determine whether large animals can use the structures for passage. It should be noted that structures sizes for the 407 ETR are already 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 very minor at present within the 407 ETR corridor as large corridors exist at the larger watercourse crossings (valleylands), which are 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.

4.3.6 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 become acclimatized to the noise, light and visual conditions associated with the operation of the highway and only those fauna that are tolerant of human activities tend to persist. Given that wildlife found within the study area are 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.

4.3.7 Potential Impacts to Migratory Birds

A number of bird species listed under the *Migratory Birds Convention Act* (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. To comply with the requirements of the MBCA, disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the window of April 1 to August 15. In the event that these activities must be undertaken from April 1 to August 15, a nest survey will be conducted by a qualified avian biologist to identify and locate active nests of species covered by the MBCA. If an active nest is located, a mitigation plan shall be developed and provided to Environment Canada – Ontario Region for review prior to implementation.

5.0 CONCLUSION AND RECOMMENDATIONS

The following environmental protection measures should be included in the detail design package:

- Vegetation cover will be used to protect any exposed surfaces in accordance with OPSS 804 (Construction Specification for Seed and Cover);
- Seed mix, mulch or an erosion control blanket will be placed in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization;
- Tree protection fencing should be placed 1 m outside of the dripline of trees to minimize impacts and no construction activity shall occur within the tree protection zone;
- NSSP (Operation Constraint – Migratory Bird Protection – General) to ensure the contractor is in compliance with the MBCA.
- All clearing shall occur outside of the migratory bird nesting timing window (typically running from April 1 to August 15 to avoid the breeding season for the majority of the bird species, unless a pre-clearing nest search is undertaken to confirm the absence of bird nests);
- Wildlife salvage shall occur prior to clearing and grubbing activities where possible, particularly in wetland habitats, to preserve vulnerable wildlife species (e.g., herpetofauna). All applicable permits will be obtained prior to any salvage activities; and,
- Further 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 Bobolink, Eastern Meadowlark and Barn Swallow, any potential impacts of the bridge rehabilitation work on these species, and any requirements under the Ontario ESA.
- Further field investigations, should be undertaken during the appropriate season using MNRF protocols for Bobolink, Eastern Meadowlark and 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

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.

Chapman. L.J. and D.F. Putnam. 1984. *The Physiography of Southern Ontario, 3rd Edition.* Ontario Geological Survey Special Volume 2.

City of Markham. 2013. *City of Markham Official Plan – Office Consolidation.*

City of Pickering. 2010. *City of Pickering Official Plan – Office Consolidation*.

Clevenger, A. P., B. Chruszcz, and K. E. Gunson. 2001. Highway mitigation fencing reduces wildlife-vehicle collisions. Wildlife Society Bulletin 29:646-653.

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.

DFO/OMNR/TRCA. 2014. Distribution of Species At Risk Mapping; Toronto and Region Conservation Authority (Map 1). April 2011.

Dobbyn, J.S. 1994. *Atlas of the Mammals of Ontario*. Federation of Ontario Naturalists. Toronto.

Durham Region. 2013. *Durham Region Official Plan – Office Consolidation*.

Harding, J. H. 1997. *Amphibians and Reptiles of the Great Lakes Region*. The University of Michigan Press, Michigan. 378pp.

Hoffman, D.W. and N.R. Richards. 1955. *Soil Survey of York County.* Prepared for Agriculture Canada and the Ontario Ministry of Agriculture and Food.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Department and Transfer Branch. SCSS Field Guide FG-02 North Bay, Ontario. 225 pp.

LGL Limited. 2010. *Natural Heritage Report, 407 Transitway from East of Highway 400 to Kennedy Road (W.P. 252-96-00) – Planning and Preliminary Design Study*. Prepared for the Ontario Ministry of Transportation, Central Region. King City, Ontario.

LGL Limited. 2005. *Highway 7 Corridor and Vaughan North-South Link Public Transit Improvements Individual Environmental Assessment*. Prepared for the Regional Municipality of York. King City, Ontario.

LGL Limited. 2003. *Natural Heritage Report, Highway 7 Corridor and Vaughan North-South Link Public Transit Improvements Individual Environmental Assessment.* Prepared for the Regional Municipalityof York. King City, Ontario.

Natural Resources, Ministry of. Natural Heritage Information Centre website (http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm). Ministry of Natural Resources. Peterborough, Ontario.

Newcomb, L. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Toronto, Ontario.

Newmaster, S.G., A. Lehela, P.W.C. Uhlig, S. McMurray and M.J. Oldham. 1998. Ontario Plant List. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, Ontario, Forest Research Information Paper No. 123, 550 pp. + appendices.

Newmaster, S.G. and S. Ragupathy. 2005. *Flora Ontario – Integrated Botanical Information System* (FOIBIS) 2007 species scientific names obtained March 2007 from the University of Guelph.

Oldham, M.J. and S.R. Brinker. 2009. Rare Vascular Plants of Ontario. Fourth Edition. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. Peterborough, Ontario. 188 pp.

Ontario Ministry of Municipal Affairs and Housing. 2005. *Greenbelt Plan*. http://www.mah.gov.on.ca/Page189.aspx.

Ontario Ministry of Natural Resources and Toronto and Region Conservation Authority. 2010. *Draft Rouge River Fisheries Management Plan.* Published by the Ontario Ministry of Natural Resources and the Toronto and Region Conservation Authority. Queens Printer for Ontario.

Ontario Ministry of Transportation. 1997. *Highway 407/Transitway Markham Road Easterly to Highway 7 East of Brock Road: Environmental Assessment Report.*

Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide*. Fish and Wildlife Branch, Wildlife Section, Peterborough.

Ontario Ministry of Natural Resources. 2001. *Index List of Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario*. Wildlife Section, Peterborough.

Riley, J.L., W.D. Backowksy, P.W. Ball, D.M. Britton, P.M. Catling, C.A. Campbell, W.J. Crins, K.L. McIntosh, S.M. Mckay-Kuja, M.J. Oldham, A.A. Reznicek, D.A. Sutherland, and S. Varga. 1989. *Niagara-Haldimand. Distribution and Status of the Vascular Plants of Central Region*, Ontario Ministry of Natural Resources, Parks and Recreational Areas Section. Central Region. Richmond Hill, Ontario 100pp.

Rouge Park Alliance. 2001. *Rouge North Management Plan: A Strategy to Guide the Realization of the Rouge Park from Steeles Avenue to the Oak Ridges Moraine.* http://www.rougepark.com/about/plans/mgmt_plans.php.

Toronto and Region Conservation Authority. 2002. *A Watershed Plan for Duffins Creek and Carruthers Creek.* Published by the Toronto and Region Conservation Authority.

Toronto and Region Conservation Authroity and Rouge Park. 2012. *Petticoat Creek Watershed Action Plan.* Published by TRCA and Rouge Park.

WSP Canada Inc. and HDR Inc. 2004. *Central Pickering Development Plan Class EA for Region Services.* Prepared for the City of Pickering.

Yanes, M., J.M. Valesco and F. Suarez. 1995. *Permeability of roads and railways to vertebrates*: the importance of culverts. Biological Conservation 71:217-222.

York Region. 2010. *York Region Official Plan – Office Consolidation*.

APPENDIX A
ENVIRONMENTAL REFERENCE FOR HIGHWAY DESIGN CHECKLISTS

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 Commitment[1]
			Planning Documents	Terrestrial Ecosystems Report	TESR[2]	DCR[3]	Contract	
PROJECT SCOPE								
	1. Was the Terrestrial Ecosystems (and/or wetlands in particular) Speciality identified in the Request for Proposals?		N/A	N/A	N/A	N/A	N/A	N/A
	2. Were wetlands identified during the course of the project?		N/A	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*		Y				
Determination of Significance	4. For the wetland(s), has the habitat function, significance and sensitivity to disturbance been determined?	*Y*		Y				
Assessment of Impacts	5. Has encroachment upon wetlands been considered?	*Y*		Y				
	6. Has changing the surface water balance of wetlands been considered?	*Y*						Y
	7. Has changing the groundwater balance of wetlands been considered?	*Y*						Y
	8. Has discharging impacted water (sediment and other contaminants) directly or indirectly into wetlands been considered?	*Y*						Y
	9. Have the potential permanent and temporary impacts to wetlands (listed above) been assessed in terms of:							

[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	
	(a) Highway design alternatives?	*Y*		Y				
	(b) Alternative methods of construction?	*Y*						Y
	(c) Highway operation/maintenance?	*Y*						Y
	10. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	*Y*		Y				
Environmental Protection / Mitigation								
	11. Has a preliminary mitigation strategy been completed?	*Y*		Y				
	12. Has a detailed mitigation strategy been completed?	*Y*						Y
COMPLIANCE								
Environmental Protection Requirements[4]								
WET-2	13. Avoid the loss of wetland features and functions.							
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.							
Environmental Protection Requirements for projects in Designated Areas:								

[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.

Project Activity or Compliance Requirement		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[1]
			Planning Documents	Terrestrial Ecosystems Report	TESR[2]	DCR[3]	Contract	
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).							

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:

5. Review the project activity or compliance requirement.
6. Determine if it applies to the project (yes or no) and complete the "applies" column.
7. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
8. 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 Commitment*[5]
				Planning Documents	Terrestrial Ecosystems Report	TESR[6]	DCR[7]	Contract	
PROJECT SCOPE									
	1.	Was the Terrestrial Ecosystems (and/or woodlands in particular) Speciality identified in the Request for Proposals?		N/A	N/A	N/A	N/A	N/A	N/A
	2.	Were woodlands identified during the course of the project?		N/A	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*		Y				
Determination of Significance	4.	For the vegetation communities, has the significance and the sensitivity to disturbance been determined?	*Y*		Y				
Assessment of Impacts	5.	Has encroaching into woodlands or other vegetation communities been considered?	*Y*		Y				
	6.	Has the impact of road salt/spray been considered?	*Y*		Y				
	7.	Have the potential permanent and temporary impacts to woodlands and other vegetated areas (listed above) been assessed in terms of:	*Y*						
		(d) Highway design alternatives?			Y				
		(e) Alternative methods of construction?							Y
		(f) Highway operation/maintenance?							Y

[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

Project Activity or Compliance Requirement		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[5]
			Planning Documents	Terrestrial Ecosystems Report	TESR[6]	DCR[7]	Contract	
	8. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	*Y*		Y				
Environmental Protection / Mitigation								
	9. Has a preliminary mitigation strategy been completed?	*Y*		Y				
	10. Has a detailed mitigation strategy been completed?							Y
COMPLIANCE								
Environmental Protection Requirements[8]								
VEG-2	11. Habitat for designated vegetation species protected under the Ontario Endangered Species Act shall be avoided.							
VEG-3	12. Maintain the diversity of native vegetation in an area and natural connections between them.							
VEG-4	13. Avoid significant woodlands and significant valleylands, including woodlands providing habitat for sensitive species.							
VEG-5	14. Consider municipal objectives for woodland forestry management.							
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.							

[8] 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 Commitment*[5]
			Planning Documents	Terrestrial Ecosystems Report	TESR[6]	DCR[7]	Contract	
VEG-7	16. Protect the features and functions of retained vegetation areas.							
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.							
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.							
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)							

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:

9. Review the project activity or compliance requirement.
10. Determine if it applies to the project (yes or no) and complete the "applies" column.
11. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
12. 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 Commitment*[9]
			Planning Documents	Terrestrial Ecosystems Report	TESR[10]	DCR[11]	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	N/A
GENERAL PROJECT ACTIVITIES								
Assessment								
Background Data and Field Investigations	*3. Have the following been determined and mapped:*	*Y*		Y				
	16. Wildlife habitat including significant wildlife habitat areas?	*Y*		Y				
	17. Wildlife species including species of conservation concern?	*Y*		Y				
	18. Wildlife species and use of the area including migratory, over-wintering and nesting species?	*Y*		Y				
Determination of Significance	*4. Has the significance and the sensitivity to disturbance of the following been determined:*	*Y*		Y				
	(a) Wildlife and natural corridors?	*Y*		Y				
	(b) Significant wildlife habitat?	*Y*		Y				
Assessment of Impacts	*5. Has loss of wildlife habitat been considered?*	*Y*		Y				
	6. Has obstructing wildlife movement been considered?	*Y*		Y				

[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

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment[9]
			Planning Documents	Terrestrial Ecosystems Report	TESR[10]	DCR[11]	Contract	
	7. Has wildlife mortality and/or interference during transportation project construction and operation been considered?	*Y*		Y				
	8. Have noteworthy species and habitats (including Species at Risk) been considered?	*Y*		Y				
	9. Have the potential permanent and temporary impacts been assessed in terms of:	*Y*		Y				
	(a) Highway design alternatives?	*N/A*		N/A				
	(b) Alternative methods of construction?	*N/A*		N/A				
	(c) Highway operation/maintenance?	*N/A*		N/A				
	13. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	*Y*		Y				
Environmental Protection / Mitigation								
	14. Has a preliminary mitigation strategy been completed?	*Y*		Y				
	15. Has a detailed mitigation strategy been completed?	*Y*						Y

Project Activity or Compliance Requirement		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[9]
			Planning Documents	Terrestrial Ecosystems Report	TESR[10]	DCR[11]	Contract	
COMPLIANCE								
Environmental Protection Requirements[12]								
WLD-2	*16. The destruction of migratory birds, their eggs or their nests is not permitted.*							
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.*							
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.*							
WLD-4	*19. Avoid habitat for species designated by regulation under the Ontario Endangered Species Act.*							
WLD-5	*20. Avoid, or if avoidance is not possible, minimize encroachment on significant portions of the habitat of threatened and endangered species.*							
WLD-6	*21. Protect other wildlife species identified in the schedules in the Fish and Wildlife Conservation Act.*							
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.*							
WLD-8	*23. Maintain the diversity of wildlife habitat in an area and natural connections between them.*							

[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.

Project Activity or Compliance Requirement		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[9]
			Planning Documents	Terrestrial Ecosystems Report	TESR[10]	DCR[11]	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.*							
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.*							
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.*							
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.*							
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*		Y				

SECTION
14

MINISTRY OF TRANSPORTATION

APPENDIX 14.A
Checklist for Designated Areas

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

TABLE OF CONTENTS

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:

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

2 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*[13]
			Planning Documents	Terrestrial Ecosystems Report	TESR[14]	DCR[15]	Contract	
OAK RIDGES MORAINE: COMPLIANCE								
General								
	1. Was the need to assess Oak Ridges Moraine EPRs identified in the Request for Proposals?	*N*	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 Requirements[16]								
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.							

[13] 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)
[14] Transportation Environmental Study Report including amendments
[15] Design Construction Report including amendments
[16] 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 Commitment*[13]
			Planning Documents	Terrestrial Ecosystems Report	TESR[14]	DCR[15]	Contract	
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.*							
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?	*N*	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.							

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[13]
			Planning Documents	Terrestrial Ecosystems Report	TESR[14]	DCR[15]	Contract	
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.							
GREENBELT: COMPLIANCE								
General								
	17. Was the need to assess Greenbelt EPRs identified in the Request for Proposals?	*N*	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?	*N*	N/A	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.							

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[13]
			Planning Documents	Terrestrial Ecosystems Report	TESR[14]	DCR[15]	Contract	
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.							
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?		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/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.							

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		*Applies (Y/N)*	*Documented in:*					*Future Commitment*[13]
			Planning Documents	**Terrestrial Ecosystems Report**	**TESR**[14]	**DCR**[15]	**Contract**	
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 WILDLIFE HABITAT AND MOVEMENTS

Compliance Requirement for Wildlife Habitat and Movements within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment[17]
			Planning Documents	Terrestrial Ecosystems Report	TESR[18]	DCR[19]	Contract	
OAK RIDGES MORAINE: COMPLIANCE								
General								
	1. Was the need to assess Oak Ridges Moraine EPRs identified in the Request for Proposals?	*N*	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 Requirements[20]								
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.							

[17] 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)
[18] Transportation Environmental Study Report including amendments
[19] Design Construction Report including amendments
[20] 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 Commitment*[17]
			Planning Documents	Terrestrial Ecosystems Report	TESR[18]	DCR[19]	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?	*N*	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*[17]
			Planning Documents	Terrestrial Ecosystems Report	TESR[18]	DCR[19]	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?	*N*	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?	*N*	N/A	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*[17]
			Planning Documents	Terrestrial Ecosystems Report	TESR[18]	DCR[19]	Contract	
OTHER DESIGNATED AREA: COMPLIANCE								
General								
	22. Was need to assess Greenbelt EPRs other designated areas identified in the Request for Proposals?		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/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).							
	(d) Provide buffers adjacent Designated Areas.							

APPENDIX B
ECOLOGICAL LAND CLASSIFICATION FIELD SHEETS

PLANT SPECIES LIST	SITE: 407 TRANSITWAY
	POLYGON: MAM2-5
	DATE: JUNE 10/15
	SURVEYOR(S): UMF

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 1	2	3	4	COLL.
ACENEGU				A	
VICCRAC				R	
LONTATA			O	O	
POAPRAT				A	
RANACRI				O	
SYMNOVAN6				R	
SOLCAN				O	
AGRSTOL				O	
ULMAMER		O	O		
THUOCCI	R	R	O		
CYNROSS				O	
EQUPRAT				A	
DAUCARO				O	
HIECAES				O	
TYPA SP				O	
JUNCUS CANA		O	O	A	SAM
JUNCUSEFU				O	
SOLGIGA				R	
GALIAPAR					
CARHYS				D	SAM
SCIMICR				O	SAM
THALDIOC				R	
MENTARVE				R	
CORSERS			R	R	
VERHAST				O	
RANACRI				R	
SYMPUNI				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.
IRIVERS				R	
EUPMACU				R	
EUPPERF				R	
SALIX ALBA			R		SAM
PLAMAJOR				O	
SYMNOAN				O	
LYCAMER				R	
BIDENFRON				R	
RANRECUR					SAM
SCIRMICR				R	

entered

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

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☒ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☒ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE	COVER	COMM. TYPE	OTHER
☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☐ TREED	☐ INCLUSION ☐ COMPLEX	☐ 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	ULMRUBR
3	SUB-CANOPY	4	2	ULMRUBR > THUOCCI
4	UNDERSTORY	4	1	LONTATA = THUOCCI
5	GROUND LAYER	6/7	5	

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

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

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

entered

— fragmented

13

PLANT SPECIES LIST	SITE: 407 TRANSITWAY
	POLYGON: FOD5
	DATE: JUNE 10/15
	SURVEYOR(S): LJC/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 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
TILAMER	R	R				ARCLAPP				R	
ACENEGU		R				GEUALLE				R	
VITRIPA				O		ARTRI				R	
ACESASA	D	A	O	O		ECHLOBA				R	
VIRWATE				O							
ALLPETI				O							
RUBIDAM			O								
CIRLUTE				O							
RHACATH			O	A							
SAMRACE			R								
CARROSA				R							
POAINSE				O							
CARWILP				R							
ULMRUBR			O								
RUBODOR			O								
CORALT			R								
CARCORD				R							
PRUVIRG			O	O							
SOLALTI				O							
SOLFLEX				O							
BLUCONO				O							
FRAPENN			R	R							
TAROFFI				R							
RIBCYNO (SMOOTH)			O								
TRIL SP.				R							
ULMAMER			R								
BETALLE				R							

LGL LIMITED

POLYGON	SITE:		POLYGON: FOD5
	SURVEYOR(S):		DATE:
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDROCK	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDROCK	☒ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLLING UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		☒ DECIDUOUS	☐ BOG
		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE/CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION
SITE			**COVER**	**COMM. TYPE**	**OTHER**
☐ OPEN WATER			☐ OPEN	☐ INCLUSION	☐ HEDGEROW
☐ SHALLOW WAT.			☐ SHRUB	☐ COMPLEX	
☒ SURFICIAL DEP.			☒ TREED		
☐ BEDROCK					

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	4	2	ACESASA
3	SUB-CANOPY	3	2	ACESASA
4	UNDERSTORY	3-4	1	ACESASA = ULMRUBR = RHACATH
5	GROUND LAYER	5/6	4	RHACATH > ACESASA = CIRLUTE

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:

			< 10cm		10-24cm		25-50cm		> 50cm
TREES		A		A		R		R	
STANDING SNAGS									
DEADFALL/LOGS	FIRM	A		O		R			
	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 TRANSITWAY
POLYGON: CUWC (MAS2-1d)
DATE: JUN 9/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
CUWC					
CRAPUX			D		
CYNROS				A	
CORSTO			O		
RHACATH			A		
FRAVIRG				O	
GEUALE				O	
MALPUM			R		
VITRIP			O		
RIBCYN				O	
FRAPENN	R				
ACENEG	O		O		
PINSTRO	R				
PICRUB	R				

SPECIES CODE	LAYER 1	2	3	4	COLL.
MAS2-1d					
DNRAQST				A	
TYPLAT.				D	
TYPANG				D	
CORSTO			R		
SALERI			R		
SALSP.	R				
EQUFLU				O	
FRAPENN	R				
LYTSALI				O	
VIBOPU			R		

PIC 137-138

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: CUWC
SURVEYOR(S): LMC
DATE:
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☑ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☒ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☒ WOODLAND ☐ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☒ TREED

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	ACENEG > FRAPENN = PICRUB
3	SUB-CANOPY			
4	UNDERSTORY	3	3	CRAPUN > RHACATH > CORSTO
5	GROUND LAYER	5/6	2	CYNROS > GEUALE = FRAVIR

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

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

COMMUNITY MATURITY

☐ PIONEER ☒ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
	POLYGON: FOC4-12
	DATE: Apr 29 & JUN 10/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL
EURMAR				O	
SOLCAS				R	
TUSFAR				O	
ARTRIP				O	
CARLAC				O	
PICGLA				R	
AMPBRA				O	
CIRLUT				R	
ARCMIN				R	
AGEALT				R	
VIBACE			A		
CORALT			O		
VITRIP			O		
ACERUB	R				
ACESAC	R	R			
SAMNIG			O		
LONSIM				R	
FRAPEN	R				
FRANIG	R				
MENARV				O	
SOLDUL				O	
HYDAME				O	
ARIARE				O	
VERVIR				O	
TOXRAD				O	
EQUARV				O	
EQUPRA				R	
GYMDRY				R	

SPECIES CODE	LAYER 1	2	3	4	COLL
TSUCAN	R		R		
THUOCC	D	D	R		
THAOCC				O	
POAPRA				O	
ULMAME		R			
QUEMAC		R			
BETALL	R				
TILAME		R	R		
POPTRE		R	R		
RIBHIR				O	
TIACOR				O	
AMELAEV			O		
PRUSER		R			
PRUVIR				O	
AMDBRA				O	
CIRLUT				O	

STAND CHARACTERISTICS	SITE:	POLYGON: FOC4-12
	SURVEYOR(S): LMC	DATE:
	UTMZ: UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☒ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☒ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☒ TREED

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	THUOCC >> TSUCAN = ACESAS > ACERUB
3	SUB-CANOPY	3	1	THUOCC > ACESAS = ACERUB
4	UNDERSTORY	4	1	VIBACE > CORALT = AMELAEV
5	GROUND LAYER	5-7	1	EURMAC = POAPRA > THAOCC

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	R	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm	R	25-50cm		> 50cm
DEADFALL/LOGS	FIRM	R	< 10cm	R	10-24cm	R	25-50cm		> 50cm
	DECAYED		< 10cm		10-24cm		25-50cm		> 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 TRANSITWAY
	POLYGON: Fodo-5 a
	DATE: May 6 to JUN 10, 2015
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
ACESACA	D	D			
FRAPENN		A	A		
QUERUBR	A				
CARCARO		R	R		
ONOSENS				R	
IMOCAPE				R	
ARITRI				O	
TRIGRAN				R	
ERYAMER				O	
GERROB				O	
CAROSE				R	
CORALT			O		
GLYSTRI				R	
CARDIPH				O	
THEPALU				O	
TRIPEC				R	
ALLPETI				A	
BETALL		R			
ULMAMER	-	R	R		
FRAPENN	A	A	A		
TSUCANA	O				
PINSTRO	O				
RHACATH			O		
TILAMER	O	O			
CYNROS				O	
RUBALL				O	
VITRIPA	R	R	R		
VIOSOR				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.
VIORUR				O	
HESMATR				O	
PRUVIRG			O		
CARPLAN				R	
HYDVIRG				A	
MAICANA				A	
MAIRAC				O	
ACTRUB				O	
CIRLUT				A	
GEUCANA				O	
PODFOL				O	
THUOCC				O	
OSTVIRG		O	O		
SORTEX				O	
JUGNIGR	R				
MATSTRU				O	
SALIC			O	O	
RHURAD				O	
GEUCANA				O	

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY	POLYGON: Fodo-5a
	SURVEYOR(S): LMC	DATE:
	UTMZ:	UTME: UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☒ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☒ TREED		

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	ACESACA>QUERUBR=FRAPENN
3	SUB-CANOPY	2,3	2	ACESACA>FRAPENN=FRAPENN
4	UNDERSTORY	1	2	FRAPENN=FRAPENN>PRUVIRG
5	GROUND LAYER	5,6	1	HYDVIRG=MAICANA=CIRLUT

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☒ MATURE ☐ OLD-GROWTH

SOIL ASSESSMENT

	1	2	3	4
TEXTURE				
DEPTH TO MOTTLES	0 =	0 =	0 =	0 =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				

SOIL PROFILE

PLANT SPECIES LIST	SITE: 407 TRANSITWAY
	POLYGON: Hedgerow D
	DATE: May 6/15
	SURVEYOR(S): LMC

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 HD	LAYER 1	2	3	4	COLL.
VITRIP			O	O	
JUGNIGL	O		O		
CYNROS				O	
CORSTO			A		
ACENEGV	O	O	O		
SYMOFF				A	
FRAPENN				A	
CORFLM			O		
CRAUNC			R		
ULMAME	R	R	R		
TILAME	R		R		
BROINE				O	
PRUVIRG					
DAUCARO			O		
BERTHUN				O	
RANACR				R	
PHYAMU				O	
BROCIL				R	
LONJAP				R	
VERTHAP				R	
HEOCARO				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY		POLYGON: HD
	SURVEYOR(S): HD		DATE: May 6
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

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	JUGNIGR = ACENEGV > ULMAME
3	SUB-CANOPY	2	1	ACENEGV > ULMAME
4	UNDERSTORY	1	1	CORSTO > JUGNIGR = ACENEGV
5	GROUND LAYER	5 (D)		CYNROS > SYMOFF = FRAPENN

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
POLYGON:	CUMHIN
DATE:	JUN 9/15
SURVEYOR(S):	LMC

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 1	2	3	4	COLL.
CUMHIN					
FRAPENN	R				
TRIPRAT				O	
RANACRI				A	
POAPRAT				O	
TRIPRAT				O	
QUEMACR	R				
INPLAT				O	
DAUCARO				O	
CHRLEUC				O	
VIBLENT			R		
CORSTOL			R		
ASCSYRI				O	
PHAARUN				A	
TILAMER	R				
PINNIGR	RR				
GLECHHA				O	
VICCRAC				O	
[illegible]CMINN				O	
MELALBA				O	
SYMLATE				O	
CYNBOES				A	
TAROFFI				R	
EQUPRAT				R	
TRIPRAT				O	
HEICHES				O	
POAPRAT				A	
INUHEL				O	
LINVULG				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
LOTCORN				O	
PHRAUST				A	
VERTHAP				O	
OENBIEN				O	
CRA SP.			R		

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY		POLYGON: CUMHIN
SURVEYOR(S): LMC		DATE: JUN 9/15
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	3	1	FRAPENN=QUEMACR=TILAMER
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5,6	5	PHRAUST=RANACRI=SYMLATE

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

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 TRANSITWAY
	POLYGON: CUM-1K & MAM2-2b
	DATE: JUN 10/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
CUM-1K					
CIRVUG				O	
CORSTO			R		
ACENEGN	R				
SYRVUG			R		
POPDELT	R				
MELALBA				A	
SOLALT1				A	
ASTSP.				A	
ARCMINN				O	
PHAARUN				A	
PHYHIRT			R		
JUNVIRG			R		
TUSFAR				O	
DAUCARO				O	
ACCSYR1				O	
SALERIO			R		
CORAR1				A	
VICCRAC				O	
PLAMAJO				O	
VERTHAP				R	
TRIDRAT				O	
BROINER				O	
POAPRAT				A	
CIRARV				O	
THUOCC				R	
CONCONZ				R	
OENBIEN				R	
MEDLUP1				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
HORJUBA				R	
DANSPC				O	
VITRIPA			R	O	
CYNROS5				A	
ARCLAPP				R	
RANSCEL				O	
MELOFF1				O	
TARAFF1				O	
MEDSAT1				O	
MAM2-2b					
PHYARUN	D				
SOLCAN				O	
SALERIO			R		
TYLLAT1				R	
PHRAUST				R	

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY		POLYGON: CUM-1K
	SURVEYOR(S): LMC		DATE: JUN 10/15
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDROCK	☐ VALLEY SLOPE		☒ FORB	☐ MARSH
	☐ CARB. BEDROCK	☒ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLLING UPLAND		☐ BRYOPHYTE	☐ FEN
SITE		☐ CLIFF	COVER	☐ DECIDUOUS	☐ BOG
☐ OPEN WATER		☐ TALUS	☒ OPEN	☐ CONIFEROUS	☐ BARREN
☐ SHALLOW WAT.		☐ CREVICE/CAVE	☐ SHRUB	☐ MIXED	☒ MEADOW
☒ SURFICIAL DEP.		☐ ALVAR	☐ TREED		☐ PRAIRIE
☐ BEDROCK		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	4,3	1	ACENEG=POPDELT=PHYHIRT
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	7,10	10	SOLALT1=MELALBA=CYNROS5

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		

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 TRANSITWAY
	POLYGON: FOR4-1d
	DATE: Apr 29, JUN 9/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
THUOCC	O	O			
BETALE		R	R		
PRUSER		R			
FRAPEN	O	O	O		
TUSFAR				O	
EQUPRA				O	
THEPAL				O	
ULMAME	R				
TILAME	R	R			
ANELAE			R		
RUBPUB				A	
AMPBRA				O	
CIRUTE				O	
VITRIP			O	O	
ACESAC	R	R			
VIBACE			O		
TOXRYD				O	
PRAPEN				R	
HYDAME				O	
CORDUL		O	O		
MENARE				R	
LOBSIP				R	
AGEALT				R	
ARCMIN				R	
EUPMAC				O	
SOLCAS				O	
CARLAC				O	
QUEMAC		R	R		

SPECIES CODE	LAYER 1	2	3	4	COLL.
TSUCAN	O	R			
CIRHIR				O	
TIICOR	O				
CORALT			O		
ACERUB	R				
GERROB				O	
ARITRI				O	
FRANIGR	A	R			
POPTREM	A	O			
TRIGRA				R	
RUBPET				O	
SAMCAN			O		
GYMDRY				O	

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY		POLYGON: FOR4-1d
	SURVEYOR(S): LMC		DATE:
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☒ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☒ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☒ TREED

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	2	6	THUOCC > TSUCAN > FRAPEN
3	SUB-CANOPY	3	1	THUOCC > FRAPEN > POPTREM
4	UNDERSTORY	4	1	FRAPEN > VIBACE = CORALT
5	GROUND LAYER	5 6	1	RUBPUB > GERROB = GYMDRY

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	A	10-24cm	O	25-50cm	E	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm	N	25-50cm	N	> 50cm
DEADFALL/LOGS	FIRM	R	< 10cm	R	10-24cm	R	25-50cm	N	> 50cm
	DECAYED	N	< 10cm	N	10-24cm	N	25-50cm	N	> 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 TRANSITWAY
POLYGON: CUM1-1d
DATE: May 1/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
CUM1-1d			R		
RHUHIRT				O	
ACESAR1				O	
CICINT1				O	
DAUCAR0				R	
HESMATR				O	
TRIPRAT				R	
LEUVUL				O	
TAROFF1				O	
ARCMINU				O	
PLAMAJO				O	
RUMCRIS				R	
VERTHAP				A	
PHAARUN				R	
ACESAR1				A	
CYNECHS				O	
BROINER				R	
RUDHIRT				R	
OENBIEN				O	
ACESAR1				O	
SETVIR1				A	
AGRSP.				A	
SOLSP.				O	
CHEALBU				O	
CIRVULG				A	
MEDLUP1				O	
PLALANC				O	
INUHELE					
QUERUBR	R				

SPECIES CODE	LAYER 1	2	3	4	COLL.
ROBPSEU	R				

PIC KO-191

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: CUM1-1d
SURVEYOR(S): LMC
DATE: May 1/15
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☐ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☒ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDROCK	☐ VALLEY SLOPE		☒ FORB	☐ MARSH
	☐ CARB. BEDROCK	☐ TABLELAND		☐ LICHEN	☐ SWAMP
SITE		☐ ROLLING UPLAND	COVER	☐ BRYOPHYTE	☐ FEN
☐ OPEN WATER		☐ CLIFF	☒ OPEN	☐ DECIDUOUS	☐ BOG
☐ SHALLOW WAT.		☐ TALUS	☐ SHRUB	☐ CONIFEROUS	☐ BARREN
☒ SURFICIAL DEP.		☐ CREVICE/CAVE	☐ TREED	☐ MIXED	☒ MEADOW
☐ BEDROCK		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	3	1	ROBPSEU = QUERUBR = ROBPSEU
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5/6	5	PHAARUN = CYNECHS = AGT 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		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		

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 TRANSITWAY
	POLYGON: MAS2-1C
	DATE: MAY 1/15
	SURVEYOR(S): MC

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 1	2	3	4	COLL.
TYLATI				A	
TYLANGU				A	
PHRAUST				P	
CARSTR			P		
SALERIO			R		
SALALB			P		

SPECIES CODE	LAYER 1	2	3	4	COLL.

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

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	4	1	CARSTR=SALERIO=SALALB
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5	4	TYLANGU>TYLATI>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		10-24cm		25-50cm		> 50cm	
STANDING SNAGS			< 10cm		10-24cm		25-50cm		> 50cm	
DEADFALL/LOGS	FIRM		< 10cm		10-24cm		25-50cm		> 50cm	
	DECAYED		< 10cm		10-24cm		25-50cm		> 50cm	

COMMUNITY MATURITY
☐ PIONEER ☒ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
	POLYGON: FOC9-10 (EAST OF REESOR RD / ROUGE VALLEY - LITTLE ROUGE CRK)
	DATE: JUNE 9/15
	SURVEYOR(S): LMC/NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER 1	2	3	4	COLL.
ULMAMER	R		R		
TNUOCCI	O	D	O	R	
JUGNIGR	O	O			
CORALTE			O		
FRAPENN	O		O	O	
RHACATH			O		
ACENEGU		O	O	O	
ACESASA					
PRUVIRG			O		
CRAPUNC			R		
SALSP.	R				
POPBALS	R				
ACTRUBR				R	
IMPGLAN				A	
URTDIOI				R	
ARCMINU				R	
HESMATR				O	
ARITRIP				O	
CYNROSS				O	
VIOPUBE				O	
LYSNUMM				O	
CYSBULB				A→D	
RIBHIRT			O		
EQUPRAT				O	
PLAMAJO				R	
SOLDULC				O	
CIRLUTE				O	
ALLPETI				O	
GEUMCANA				R	
ERIGANNU				R	
TUSFARF				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.
IMPCAPE				A	
VITRIPA				O	
CNEMATU				R	
TNAPUBE				R	
PODPELT				R	
LILMICH				R	
LYSCILI				O	
RNURADI				R	
BIDFRON				O	
CRYCANA				R	
DIAARME				R	
GERROBE				O→A	
VIOSORO				O	
SOLGIGA				O	
HYDVIRG				O	
OXASTRI (clb MONT)				O	
ERYAMER				O	
ECHLOBA				R	
ANECANA				O	
STRROSE				O	
MATSTRU				O	
ONOSENS				O	
SYMOFFI				O	
CATPALU				R	
MYTSCOR				R	
LEOCARD				R	
CARDIPH				R	
GERMACU				R	
TRILSP.				R	

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

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☒ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☒ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☒ TREED		

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	TNUOCCI = JUGNIGR = FRAPENN
3	SUB-CANOPY	3	4	TNUOCCI >> JUGNIGR
4	UNDERSTORY	4	2	ACENEGUN = PRUVIRG
5	GROUND LAYER	5-7	5	CYSBULB > IMPCAPE

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		O	< 10cm	A	10-24cm	O	25-50cm	?	> 50cm
STANDING SNAGS		O	< 10cm	R	10-24cm	/	25-50cm	/	> 50cm
DEADFALL/LOGS	FIRM	O	< 10cm	O	10-24cm	R	25-50cm	/	> 50cm
	DECAYED	R	< 10cm	R	10-24cm	/	25-50cm	/	> 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 TRANSITWAY
POLYGON: FOOT 2
DATE: APR 29 / MAY 1, 2015
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
VITRIPA		O	O		
FRAPENN	D	D			
ACENEGU	R				
IMPCAPE				D	
HESMATR				R	
PHACATH			O		
DACGLOM				D	
SOLRUGO				O	
GEUCANA				D	
PRUVIRG				O	
PLAMAXO				A	
ACESAC	C		R		
PRUVIRG			O		
FRAPENN	R				
CIRARV				R	
CRASP			O		
ERIPHIL				O	
VITRIPA		O	O		
ULMRUBR		R			
BIDFRON				O	
ASTERI				O	
SOLCAN				O	
LONCANA			R		
IMPCAPE				R	
GEUCANA				O	
BROVUL				R	
EQUPRA				O	
PLAMAXO				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.
HESMATR				O	

STAND CHARACTERISTICS

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

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

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	FRAPENN > ACENEGU = ACESAC?
3	SUB-CANOPY	3	1	FRAPENN > VITRIPA > ULMRUBR
4	UNDERSTORY	4	2	PHACATH > PRUVIRG = CRASP
5	GROUND LAYER	5,6	2	IMPCAPE = GEUCANA = PLAMAJO

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	N	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm	N	25-50cm	N	> 50cm
DEADFALL/LOGS	FIRM	R	< 10cm	R	10-24cm	N	25-50cm	N	> 50cm
	DECAYED	N	< 10cm	N	10-24cm	N	25-50cm	N	> 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 TRANSITWAY
	POLYGON: FODO-5b
	DATE: JUN10/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
HYDVIRG				R	
ACESASA	D	O	O	O	
RHUTYPH			O		
ULMRUBR			R		
TILAMER		O			
FRAVIRG				O	
EQUPRAT				O	
CARCANA				R	
RHACATH			A	O	
CARCORD			R	R	
PRUSER		R			
JUGCINE	O				
RUBAMER			R		
OSMCINN				R	
CARSTIP				R	
PLAMAJO				O	
SOLCANA				O	
FRAPENN			O	O	
RUBALLE			R		
CYNOSS				O	
MALBAC			R		
CORSTOL			R		
VICCRAC				O	
VITRIPA				R	
ROSMULT			R		
CARGRAC				R	
PAPINSE				R	
GEULACU				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.
SANCANA			R		
TUSFARF				R	
ERIANN				O	
POOPELT				R	
TAROFFI				R	
CRAMONO			R		
OXASTRI				R	
CORRUGO			R		
PINSTRO	R				
POAPRAT				O	
ALLPETI				R	
RIBAMER			R		
BETALLE	R		R		
CIRLUTE				R	
ARITRIP				R	
MAICANA				R	
CAUTHAL				R	
FAGGRAN	R			R	
PRUVIRG			O		
THAPUBE				R	
OSTVIRG		R			
POOBAS				O	
ASTNOANG				R	
CAREOSE				R	
CARPENN				R	
EPIHELL				R	
ACTRUBR				R	
TRIFREC				R	

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

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			COVER		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

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	ACESASA
3	SUB-CANOPY	3	3	ACESASA > TILAMER
4	UNDERSTORY	4	2	RHACATH > ACESASA = FRAPENN
5	GROUND LAYER	5-4	2	POPBALS = EQUPRAT = 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		O	< 10cm	A	10-24cm	R	25-50cm	\	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm	\	25-50cm	\	> 50cm
DEADFALL/LOGS	FIRM	O	< 10cm	O	10-24cm	\	25-50cm	\	> 50cm
	DECAYED	\	< 10cm	\	10-24cm	\	25-50cm		> 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:
	POLYGON: F006-56
	DATE:
	SURVEYOR(S):

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.
	1	2	3	4	
VIOSP.				R	
ATHFEI				R	
LYCCAN				R	
CORALT				R	
ARTLAT				R	
ACENEW			R	R	

SPECIES CODE	LAYER				COLL.
	1	2	3	4	

DISTURBANCE and STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
SITE:	407 TRANSITWAY
POLYGON:	CUWLO PSUTA
DATE:	MAY 6/15
SURVEYOR(S):	LMC

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 1	2	3	4	COLL.
CUWLO					
FRAMER		O			
TILAMER		O			
ROAPRAT				A	
PINSTRO	R				
VITRIPA		O		O	
JUGNIGR	D				
RESMULT			O		
FRAPENN	R	R			
RIBCYNO			O		
PINNIGR	A				
RHACATH			A		
GEUMAC				O	
ACEPEC	R				
ACENEG	A	O			
POPTREM		O			
CYNROS				A	
EQUARV				A	
HESMATR				A	
LONTATA			R		
ASTSP				A	

SPECIES CODE	LAYER 1	2	3	4	COLL.
SUTA					
PHRAUST				D	
SALERIO			O		
PHARUND				O	
POPDELT	R				
TYPLATI				A	
CORSTOL			R		
SALERIG	A				
SALAMY	A				
ACENEG	R				
VITRIPA				R	

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STAND CHARACTERISTICS			
SITE:	407 TRANSITWAY		POLYGON: CUWLO
SURVEYOR(S):	LMC		DATE:
UTMZ:	UTME:		UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDROCK	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDROCK	☒ TABLELAND		☐ LICHEN	☐ SWAMP
SITE		☐ ROLLING UPLAND	COVER	☐ BRYOPHYTE	☐ FEN
☐ OPEN WATER		☐ CLIFF		☐ DECIDUOUS	☐ BOG
☐ SHALLOW WAT.		☐ TALUS	☐ OPEN	☐ CONIFEROUS	☐ BARREN
☒ SURFICIAL DEP.		☐ CREVICE/CAVE	☐ SHRUB	☒ MIXED	☐ MEADOW
☐ BEDROCK		☐ ALVAR	☒ TREED		☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☒ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	2	4	JUGNIGR > PINNIGR = ACENEG
3	SUB-CANOPY	2	2	FRAMER = TILAMER = POPTREM
4	UNDERSTORY	4	2	RHACATH > RESMULT = RIBCYNO
5	GROUND LAYER	5	2	ROAPRAT = SOLCANA = HESMATR

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	N	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm	N	25-50cm	N	> 50cm
DEADFALL/LOGS	FIRM	N	< 10cm	N	10-24cm	N	25-50cm	N	> 50cm
	DECAYED	N	< 10cm	N	10-24cm	N	25-50cm	N	> 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 TRANSITWAY
	POLYGON: CUM1-1M
	DATE: May 1/15
	SURVEYOR(S): LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
DAUCARO				O	
POAPRAT				A	
RHUHIRT			R		
TAROFFI				O	
SETVIRI				O	
ELAANGU			R		
VERTHAP				R	
ACENEGU	R				
CERARUNC			R		
SOLCANA				A	
TUSFARF				O	
PHAARUN				A	
TILOFFI				R	
PHRAUST				R	
VITRIPA				R	
SORNUTA				O	
CICINTY				O	
TAROFFI				O	
CYNCROS				O	
SOLDULC			O		
BROINER				A	
VICCRAC				A	
CIRARVE				R	
TRIPRAT				O	
MATMATR				O	
MEDLUPU				O	
OENBIEN				O	
DACGLOM				R	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
ELYREPE				R	

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STAND CHARACTERISTICS			
SITE: 407 TRANSITWAY			POLYGON: CUM1-1M
SURVEYOR(S): LMC			DATE:
UTMZ:	UTME:		UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			COVER		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	3	1	ACENEGU=RHUHIRT=ELAANGU
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	7,10	5	POAPRAT=SOLCANA=PHAARUN

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
	POLYGON: MAS2-10
	DATE: JUN 9/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
TYPANGU				O	
LYTSALI				R	
CIRSTAR				O	
CIRRIGO				O	
PHRAUST				A	
CARVULP				O	
LEYMINO				O	
EQUARVE				O	
SALERI			R		
PHAARUN				A	
ALLIARIA				O	
SALALBA		R			
IMPLAT				O	
SALMATS	R				
POPBAL	R				
SYMOLD				O	
VERANA				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY		POLYGON: MAS2-10
	SURVEYOR(S): LMC		DATE:
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☒ WETLAND	☐ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☒ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDROCK	☐ VALLEY SLOPE	COVER	☒ FORB	☒ MARSH
☐ OPEN WATER	☐ CARB. BEDROCK	☒ TABLELAND		☐ LICHEN	☐ SWAMP
☐ SHALLOW WAT.		☐ ROLLING UPLAND	☒ OPEN	☐ BRYOPHYTE	☐ FEN
☒ SURFICIAL DEP.		☐ CLIFF	☐ SHRUB	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS	☐ TREED	☐ CONIFEROUS	☐ BARREN
		☐ CREVICE/CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	1	2	SALMATS > POPBAL > SALERI
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5	5	TYPANGU > PHRAUST = PHAARUN

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☒ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
POLYGON:	HEDGEROWC
DATE:	APR29/JUN10/15
SURVEYOR(S):	LMC

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 1	2	3	4	COLL.
VICCRAC				O	
RANACRI				O	
PHLORAT				O	
BROINER				O	
ASTLAT				A	
ACENEGU	A	R			
PHACAT			A		
POAPRA				A	
HESMATR				A	
GALTRI				R	
VITRIPA		R	R		
CYNDOS				A	
ACESPI				O	
GEUALB				O	
LAPLATA			R		
ECHCRU			R		
TRAOFF				R	
GLYSPE				O	
EQUARV				O	
MEDLUP				O	
TRIPRA				O	
DAUCAR				A	
SOLALT				A	
ARCMIN				R	
CUSCAS				R	
CORSTO			O		
INUHEL				O	
CIRARV				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
FRAPENN	A	A	R		
EQUPAL				O	
PARINS				R	
VIBOPU			O		

STAND CHARACTERISTICS			
SITE:	407 TRANSITWAY		POLYGON: HC
SURVEYOR(S):	LMC		DATE:
UTMZ:	UTME:		UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☐ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDROCK	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDROCK	☐ TABLELAND	☐ OPEN	☐ LICHEN	☐ SWAMP
☐ SHALLOW WAT.		☐ ROLLING UPLAND	☐ SHRUB	☐ BRYOPHYTE	☐ FEN
☐ SURFICIAL DEP.		☐ CLIFF	☐ TREED	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE/CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	2	2	ACENEGU=FRAPENN
3	SUB-CANOPY	3	1	FRAPENN>ACENEGU
4	UNDERSTORY	4	3	PHACAT>CORSTO=FRAPENN
5	GROUND LAYER	5,6,7	4	ASTLAT=POAPRA=HESMATR

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	N	> 50cm
STANDING SNAGS		O	< 10cm	R	10-24cm	N	25-50cm	N	> 50cm
DEADFALL/LOGS	FIRM	N	< 10cm		10-24cm	N	25-50cm	N	> 50cm
	DECAYED	N	< 10cm		10-24cm	N	25-50cm	N	> 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 TRANSITWAY
POLYGON: Hedgerow G
DATE: May 1/16
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
ACENEGU	D		D		
FRAPENN	D		D		
PHAARUN				A	
VITRIPA	A				
RHACATH			A		
SOLCANA				A	
CYNROSS				D	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: Hg
SURVEYOR(S): LMC
DATE:
UTMZ: UTME: UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ 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	3	ACENEGU>FRAPENN>VITRIPA
3	SUB-CANOPY			
4	UNDERSTORY	4,3	2	RHACATH>ACENEGU=FRAPENN
5	GROUND LAYER	5,4	2	PHAARUN>SOLCANA>CYNROSS

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

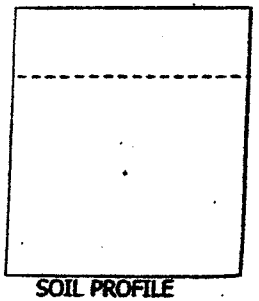
TREES		A	< 10cm	A	10-24cm	R	25-50cm	N	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm		25-50cm		> 50cm
DEADFALL/LOGS	FIRM		< 10cm		10-24cm		25-50cm		> 50cm
	DECAYED		< 10cm		10-24cm		25-50cm		> 50cm

COMMUNITY MATURITY

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 Transitway
POLYGON: CUMHa
DATE: June 9 15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
MELOFI				A	
PHLAST				R	
DAUCAR				A	
VITRIPA			R		
ELYREP				O	
AGRGIG	R		R		
TRIPRAT				A	
CHRLEUC				O	
FESRUBR				O	
LOTCORN				A	
MEDLUPU				A	
BROINE				O	
TAROFI				O	
MATMATC				R	
CORVAR				R	
ELYCANA			R		
RUMACET				O	
CIRARV				O	
CICINT				O	
VICCRAC				O	
SACCANA				O	
TRIPRA				R	
HIERAUM				R	
ACHMILL					
HORJUBA			R		
TUSFAR				R	
THUARV				O	
EQUARV				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
SILVUL				R	
CHEALB				O	
ACEPSEU			R		
SONOFI				O	
TRIHYB				O	
ARCMINN				O	
LOLPER				O	
TRIAPRA				O	
RUMCRI	R				
CIRSTOL			R		
LEUCAMP				R	
AGRSTO				R	

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: CUMHa
SURVEYOR(S): LMC
DATE: JUN 9/15
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDROCK	☐ VALLEY SLOPE		☒ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDROCK	☒ TABLELAND	COVER	☐ LICHEN	☐ SWAMP
☐ SHALLOW WAT.		☐ ROLLING UPLAND	☐ OPEN	☐ BRYOPHYTE	☐ FEN
☒ SURFICIAL DEP.		☐ CLIFF	☐ SHRUB	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS	☒ TREED	☐ CONIFEROUS	☐ BARREN
		☐ CREVICE/CAVE		☐ MIXED	☒ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	4,5	1	AGRGIG > RUMCRI > CIRSTOL = AGRSTO
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5,6	5	DAUCAR > MELOFI = LOTCOR > VICCRA

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

COMMUNITY MATURITY

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
POLYGON: Fo2-26
DATE: May 6/15
SURVEYOR(S): LMC / NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER 1	2	3	4	COLL
THUOCC	D	D			
ULMAMER			R		
FRAPENN	R		R		
ATHFIF				O	
ARCTRIO				R	
CYNROS				O	
LYSNUMM				O	
MAICANA				O	
SOLDUC				O	
HIECAES				R	
MATSTR				O	
CIRPEND				R	
OSTVIRG	R	R			
TSUCANA	D+P	P			
VITRIA				R	
PHACAT				R	
TRICEMA				R	

SPECIES CODE	LAYER 1	2	3	4	COLL

STAND CHARACTERISTICS

SITE:
SURVEYOR(S): LMC / NMF
UTMZ: UTME: UTMN:
POLYGON: Fo2-26
DATE:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☐ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☒ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDROCK	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDROCK	☒ TABLELAND	☐ OPEN	☐ LICHEN	☐ SWAMP
☐ SHALLOW WAT.		☐ ROLLING UPLAND	☐ SHRUB	☐ BRYOPHYTE	☐ FEN
☒ SURFICIAL DEP.		☐ CLIFF	☒ TREED	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS		☒ CONIFEROUS	☐ BARREN
		☐ CREVICE/CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>, MUCH GREATER THAN; >, GREATER THAN; =, ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	2	4	THUOCC1
3	SUB-CANOPY	3	2	THUOCC1
4	UNDERSTORY	4	1	ACENEGL=FRAPENN
5	GROUND LAYER	5&4	2	MATSTRU=ATHFIF

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

COMMUNITY MATURITY

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

SOIL ASSESSMENT

	1	2		
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 TRANSITWAY
	POLYGON: CUM1-19
	DATE: MAY 1/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
DAUCARO				A	
MELALBA				A	
TARAFI				R	
ASCSYR				O	
TYPLAT				R	
POAPRAT				A	
RHUHIRT			R		
MELALBA				A	
ROBECT				R	
CIRARV				R	
SONALT				O	
CICINTY				R	
TUSFAR				O	
FRAPENN	R				
VICCRAC				A	
AGENEU	R				
OENBIEN				R	
MEDLUP				A	
TRIPRAT				O	
DACGLOM				O	
CHEALBC				O	
LOTCORN				O	
ASTNOVAE				R	
PLALANC				R	
PHLPRAT				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

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STAND CHARACTERISTICS	SITE: 407 TRANSITWAY		POLYGON: CUMH1
	SURVEYOR(S): LMC		DATE:
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	3	1	FRAPENN=ACENEG
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5/67	5	DAUCARO=MELALBA=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		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	

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 TRANSITWAY
POLYGON: CUM1-11
DATE: JUN 9/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
PHLPRAT				O	
CICINTY				O	
FESRUBR				A	
SOCANA				A	
CONCANX				R	
PLAMAJO				O	
MEDLUPU				A	
DAUCARO				O	
PHAARUN				A	
ACENEGU	R				
VERTHAP				R	
LOTCORN				O	
CIRARV				O	
ACENEGU	R				
TUSFAR				R	
MEDSATI				R	
ASCSYR				R	
CHRLEUC				O	
TRAPRAT				A	
TRIREPE				R	
POAPRAT				A	
DACGLOM				O	
SILVULG				R	
TAROFF				R	
TRIREPE				R	
LOTCORN				O	
MALSP		R			
R. HACKEN		R			

SPECIES CODE	LAYER 1	2	3	4	COLL.
RHUHIRT			R		
PHRAUST				R	
DIOPUBS				R	
SOLSTI				A	
RANACRI				R	
LYTSALI				R	
CERARV			R		
ASTLAE				O	
CORVARI				O	

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: CUM1-11
SURVEYOR(S): LMC
DATE: JUN 9/15
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN, > GREATER THAN, = ABOUT EQUAL TO)
1	EMERGENT	3	1	ACENEGU
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5	5	FESRUBR = SOLSTI = SOCANA

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS

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

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 TRANSITWAY
	POLYGON: CUML-1C
	DATE: MAY 29/15
	SURVEYOR(S): LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
RHUHIRT			R		
JUNVIRG			R		
THUOCCI			R		
CYNROSS				O	
DAUCARO				A	
PHRAUST				R	
DACGLOM				O	
MALSP			R		
SOLALTI				A	
CHEALBU				O	
COOSTOL			R		
ACHMILL				R	
RIBCYNO				R	
RUBCOMM			R		
VICICRC				O	
ACENEGU	R				
CRAMONO			R		
HESMATR				O	
VITRIPA				O	
ASESVRI				A	
DIPFUSY				O	
SALERIO			R		
JUGNIGR	R				
POAPRAT				A	
ROBPSEU	R				
TYPLATI				O	
ELYCANA				R	
ALLPETI				O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
TAROFFI				O	
GERROBE				O	
VITRIPA				O	
LONTATA			R		
ARCMINU				O	
EQUFLUV				O	
SALALBA	R				
LYTSALI				R	
TUSFARF				O	
THUOCCI			R		
SYRVULG					
JUNESP					
PHRAUST			R		
RHUHIRT			R		
SALERIO			R		
COOSTOL			R		
POPDELT	R				
MEDLUPU				O	
BROINER				A	
ASTSP				O	

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STAND CHARACTERISTICS			
	SITE: 407 TRANSITWAY		POLYGON: CUM1C
	SURVEYOR(S): LMC		DATE: MAY 29
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			COVER		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	3	1	ACENEGU = JUGNIGR = ROBPSEU
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5,6	5	DAUCARO = BROINER = SOLALTI

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

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 TRANSITWAY
POLYGON: FOO7a
DATE: MAY 6/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
FOO7a					
QUEMAC	A				
RHUHIR				O	
FRAPENN	A				
SOLCANA				A	
VITRIPA			R	R	
CYNROS				A	
ULMAMER	R	R			
LYSNUMM				O	
TOXFAR				O	
GEUVILO				A	
ERYAMER				O	
THUOCCI	O	R			
FRANIGR	O	O			
PINSTRO		O			
BETALL	R				
HESMAT				O	
SORAUC			O	O	
ONOSENS				O	
ACTRUB				O	
TILAMER		R			
SALSP	R		R		
CORALT			O		
GERROS				O	
PARINS		R			
RHURADI				R	
ALLPET				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: FOO7a
SURVEYOR(S): LMC
DATE: MAY 6/15
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☒ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☒ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☒ TREED		

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	FRAPENN=QUEMAC>THUOCC=FRANIGR
3	SUB-CANOPY	3	2	FRANIGR=PINSTRO>ULMAMER
4	UNDERSTORY	4	2	RHUHIR=CORALT=BETALL
5	GROUND LAYER	5/6	1	SOLCANA=CYNROS=GEUVILO

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

COMMUNITY MATURITY

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☒ MATURE ☐ OLD-GROWTH

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 Transitway
POLYGON: CUMM/MAS
DATE: JUN10/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
DAUCARO				O	
TUSFAR				O	
PHRAUST				R	
TYPLATI				A	
LYTSALI				R	
SOLCANA				O	
MELALBA				R	
HESMATR				O	
TARGFFI				R	
VICCRAC				O	
POAPRAT				D	
ONOBIEN				R	
ELAANGU			R		
CIRARVE				R	
ERIPHIL				R	
ASCSYRI				R	
DAUSPC				O	
JUNVIRG			R		
SOLSPIO			R		
ALLIUM				R	
DACGLOM				R	
CHRLEUC				O	
CIRVULG				O	
SOLTI				O	
HEMFLAV				R	
HIERAS				R	
MEDLUPU				A	
FRAVIRG				D	

SPECIES CODE	LAYER 1	2	3	4	COLL.
PLAMAJO				D	
LYTSALI				R	
TYPLATI				A	
SALPETI			O		
RUBIFLT	R				
PHARAUN				A	
MYOSCOR				O	
CARSTIP				O	
JUNTENU				O	

STAND CHARACTERISTICS

SITE: 407 Transitway
POLYGON: CUM+V MAS
SURVEYOR(S): LMC
DATE: JUN10/15
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☒ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☒ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☒ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	34	1	ELAANGU=JUNVIRG=SOLSPIO
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	055		POAPRAT>TYPLATI=PHARAUN

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

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

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 TRANSITWAY
POLYGON: MAM2-20
DATE: JUN10/15
SURVEYOR(S): LNC

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 1	2	3	4	COLL.
FRAPEN				O	
ONOSENS				O	
RANSCE				O	
POPTREM	R				
SALSP.		R			
CORSTO			R		
VITRIPA			R	R	
VERHAST				O	
SOLCAN				O	
IMPCAPE				A	
PLAMAJO				O	
LYCAMER				R	
LYCUNI				R	
BIDFRON				R	
ASTLANC				A	
GALAPU				O	
APARIN	R				
TYPANG				O	
EUPMAC				O	
POAPAL				R	
PHAARU				O	
SCIMCP				O	
AGRSTO				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: MAM2-20
SURVEYOR(S): LNC
DATE:
UTMZ: UTME: UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☒ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☒ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE
☐ OPEN WATER
☐ SHALLOW WAT.
☐ SURFICIAL DEP.
☐ BEDROCK

COVER
☒ OPEN
☐ SHRUB
☐ TREED

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN, > GREATER THAN, = ABOUT EQUAL TO)
1	EMERGENT	3	1	POPTREM>FRAPEN=SALSP.
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5,6	5	PHAARU>IMPCAPE=ASTLANC

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

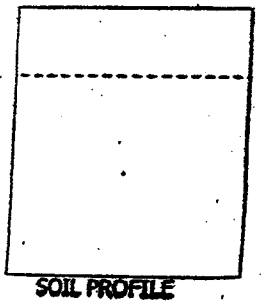
TREES		R	< 10cm	R	10-24cm		25-50cm		> 50cm		
STANDING SNAGS			< 10cm		10-24cm		25-50cm		> 50cm		
DEADFALL/LOGS	FIRM		< 10cm		10-24cm		25-50cm		> 50cm		
	DECAYED		< 10cm		10-24cm		25-50cm		> 50cm		

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 TRANSITWAY
POLYGON:	Hedgerow f
DATE:	JUN 9/15
SURVEYOR(S):	LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
TILAMER	O	O	O		
ACESASA	O		O		
RHACATH			A		
QUERUBR	R		O		
QUEMACR	O		O		
RHUHIRT			O		
FRAPENN	R	O	O		
PRUVIRG			A		
PODPELT				A	
ULMAMER	R		R		
PARINSE		R	R		
SOLALTI				O	
SOLFLEX				A	
FRAVIRG				O	
Comfrey				O	
RIRCYNO				O	
HYDVIRG				O	
Solomanseal				R	
ACTRUBR				R	
CARROTE				O	
OSTVIRG	R		O		
JUGNIGR	R		R		
POAPRAT				O	
ACEPLAT	R				
CIRARVE				R	
HESMATR				R	
PRUAVIU		R	R		
VITRIPA	R	R	R	R	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
PHAARUN				O	
ALLPETI				O	
LONTATA			R		
TAROFF				R	
ACESACC	R				
ACENEGU	R	R			
CYNROSS				A	
DACGLOM				R	
RANACRI				O	
MELALBA				D	
CIRVULG				R	
PRUSERO	R				

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY		POLYGON:
SURVEYOR(S): LMC		DATE: JUN 9/15
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			COVER		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

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	TILAMER > ACESASA = QUEMACR
3	SUB-CANOPY	3	1	TILAMER > FRAPENN > PRUAVIUM
4	UNDERSTORY	4	2	RHACATH = PRUVIRG > QUERUBR
5	GROUND LAYER	6-7	2	CYNROSS = RHACATH = SOLFLEX

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 Transitway
	POLYGON: CUM1-16
	DATE: April 26/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
TIAMAT				R	
PHRAUST				R	
JUNVIR	R				
CORSTOL			R		
PINSYLV	R				
DAUCARO				A	
BROINER				A	
CYNROSS				O	
AGENEGI	R				
AESSYLI				A	
ACPUNG	R				
SOLNIG			O	O	
LYTSALI				R	
MELALBA				O	
ELYREPE				O	
SOLNIT				A	
AST. SP.				A	
MEOSATI				R	
POAPRAT				A	
DANSPIC				A	
CIRARVE				O	
ARCMINN				O	
MEDLUPU				A	
TAROFFI				R	
CIRVUL				R	
PHARUN				A	
PANCAPI				O	
MELOFFI				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
VERTHAP				R	

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY		POLYGON: CUM1-16
	SURVEYOR(S): LMC		DATE: APR 26/15
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		☐ FLOATING LVD.	☐ RIVER
	☐ ACIDIC BEDROCK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDROCK	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDROCK	☐ TABLELAND		☐ LICHEN	☐ SWAMP
☐ SHALLOW WAT.		☐ ROLLING UPLAND	☒ OPEN	☐ BRYOPHYTE	☐ FEN
☒ SURFICIAL DEP.		☐ CLIFF	☐ SHRUB	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS	☐ TREED	☐ CONIFEROUS	☐ BARREN
		☐ CREVICE/CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH/BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	3	1	JUNVIR=PINSYLV=ACPUNG
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY	4	1	SOLNIG/CORSTOL
5	GROUND LAYER	5	6	BROINER-SOLNIT-AESSYLI

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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

picture 168

PLANT SPECIES LIST	SITE: 407 TRANSITWAY
	POLYGON: SWT2-29
	DATE: MAY 6/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
SWT2-29					
PHAGRUN				A	
SALSP	DO				
ACENEGU	R	R			
TSUCAN				O	
SOCANA				A	
ARCMIN				R	
CARSTR			O		
LYCSAL				O	
SOLDUL			R	R	
BROINE				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS	SITE: 407 TRANSITWAY	POLYGON: SWT2-29
	SURVEYOR(S): LMC	DATE: MAY 6/15
	UTMZ:	UTME: UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ 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	2	SALSP > ACENEGU
3	SUB-CANOPY	3	1	SALSP > ACENEGU
4	UNDERSTORY	4	1	CARSTR
5	GROUND LAYER	5,6	5	PHAGRUN-SOCANA > TSUCAN

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		O	< 10cm	O	10-24cm	N	25-50cm	N	> 50cm
STANDING SNAGS		R	< 10cm	R	10-24cm	N	25-50cm	N	> 50cm
DEADFALL/LOGS	FIRM	R	< 10cm	R	10-24cm		25-50cm		> 50cm
	DECAYED		< 10cm		10-24cm		25-50cm		> 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 TRANSITWAY
POLYGON: MAM-SC
DATE: MAY 6/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
SALERIO			R		
TYPLATI				O	
SOLCANA				O	
PHRAUST				R	
PHAARUN				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY | POLYGON:
SURVEYOR(S): LMC | DATE: MAY 6/15
UTMZ: | UTME: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	CONSISTENCY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☒ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☒ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK			☒ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>: MUCH GREATER THAN; >: GREATER THAN; =: ABOUT EQUAL TO)
1	EMERGENT	3	1	SALERIO
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5-7	4	PHAARUN>SOLCANA=TYPLATI

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

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

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 TRANSITWAY
POLYGON:	MAM2-10
DATE:	JUN 9/15
SURVEYOR(S):	LMC

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 1	2	3	4	COLL.
MYOSCO				A	
LYTSAL				O	
LEOCAR				R	
PHAARU				O	
TIPSO				O	
CORSTO			R		
EQUPRA				O	
RANSCE				A	
RORNAS				A	
VICCRA				O	
LYCAME				O	
VERANA				O	
BIDFRO				O	
ALIPLA				A	
LEMMIN				O	
JUNEFU				O	
SCHPUN				O	
SCIATR				O	
GLYSTR				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS			
SITE:			POLYGON: MAM2-10
SURVEYOR(S):	LMC		DATE: JUN 9/15
UTMZ:	UTME:		UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☒ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	4	1	CORSTO
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5,6	4	MYOSCO=RANSCE=RORNAST

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

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 TRANSITWAY
POLYGON: CUWG
DATE: APR 29/JUN 10
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
POPDELT				O	
RUMCRIS				A	
TILAMER	O	O			
ALLPETI				O	
HESMATR				O	
FRAPENN	O	A	R		
HYDVIRG				O	
CYNROSS				A	
ACENEGU	A	A	R		
ACESACA	A	O	R		
VITRIPA		O	O		
RHACATH			A		
CORALT			O		
CIRLUTE				A	
VICCRAC				A	
ROSMULT			O	O	
MALBACC			O		
CRAMONO			A		
SOLCANA				A	

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: CUWG
SURVEYOR(S): LMC
DATE:
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

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	ACENEGU=ACESACA
3	SUB-CANOPY	3	1	FRAPENN=ACENEGU>TILAMER
4	UNDERSTORY	4	3?	RHACATH>TILAMER
5	GROUND LAYER	5-7	3	RUMCRIS=CYNROSS=VICCRAC

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS

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

COMMUNITY MATURITY

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

SOIL ASSESSMENT

	1	2		
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 TRANSITWAY
	POLYGON: CUMHF
	DATE: JUN9/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
EQUPRAT				O	
ONOSENS				O	
ANECANA				O	
RANACR				A	
RANSCEL				O	
THADIOC				O	
URTDIOC				O	
DIAMER				R	
BARVULG				O	
HESMATR				O	
ROSNAST				O	
XSANUMM				A	
AMPBRAC				A	
TRIPRAT				O	
VICCRAC				O	
ACENEGU	R				
IMPCAPE				A	
IMPGLAN				A	
ASCSYR1				O	
CUNROSS				A	
MYOSCOR				O	
PLALANC				O	
PLAMAJO				O	
ARCLAPP				A	
ASTLAE				O	
BIDFRON				O	
CIRARV				O	
EUPMACU				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
TRIAGEU				R	
CHRLEUC				O	
SORCANA				O	
TUSFAR				A	
SOLGIG1				R	
SCIMICR				R	
BROINER				O	
ELYREPE				O	
FESRUBR				O	
GLYSTR1				O	
PHAARUN				O	
PHRAUST				O	

STAND CHARACTERISTICS	SITE:		POLYGON: CUM1-F
	SURVEYOR(S): LMC		DATE: JUN9/15
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOL. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			COVER ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = APPROXIMATELY EQUAL TO)
1	EMERGENT	3	1	ACENEGU
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	5	5	RANACR=MAIRACE=CUNROSS

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		

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

SOIL ASSESSMENT

	1	2		
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 TRANSITWAY
POLYGON: Fo2-29
DATE: JUN 10/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL
THUOCC	DR				
ALNRET				O	
VITRIPA	OO				
CYNROS				A	

SPECIES CODE	LAYER 1	2	3	4	COLL

STAND CHARACTERISTICS

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

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	CONFIGURITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ 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	4	THUOCC
3	SUB-CANOPY	4	3	THUOCC > VITRIPA
4	UNDERSTORY	4	2	VITRIPA
5	GROUND LAYER	5	1	CYNROS

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

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

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 TRANSITWAY
	POLYGON: HEX MAM/CUM
	DATE: APR 29/MAY 6/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL
HEDGROWE					
QUEMAC	A		R	O	
RHACATH			O		
SORAUCU		R	R		
ACESPI	A				
VICCRAC				A	
POAPRAT				A	
VITRIP		O	O		
FRAPENN	A	A			
DACGLOM				O	
PRUVIR			O		
PARQUIN				R	
BETPAPY	R	R			
CARACU				R	
EQUARVE				R	
TRAVIR				O	
RUBALL			R		
SOLCANA				O	
COPCOM			A		
POPTREM	R	R	R		
PHAARU				A	
DACGLOM				O	
HIEVIR				O	
ECHCRU			OO		
ACENEGU	R	R			
LONTATA			O		
TILAMER	R			R	

SPECIES CODE	LAYER 1	2	3	4	COLL
MAM/CUM					
PHAARU				D	
DACCAR				O	
CHEALB				O	
VICCRAC				A	
POAPRAT				A	
CICINT				R	
TRIPRAT				O	
ACENEGU	R				
CIRARV				O	
PLAMAJ				O	
TARAFF				O	
SOLCAN				A	
BROINE				O	
SENERIO			R		
VITRIP				R	
ACHMIL				O	
PHLPAN				O	
EQUPRA				O	
MEDSAT				O	
EQUPRA				O	
CLAMAR				R	
SCIATRO				R	
JUNTEN				O	
TUSFAR				R	
CARPER				O	

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

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			COVER		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = APPROXIMATELY 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	☐ > 50cm
	DECAYED	☐	< 10cm	☐	10-24cm	☐	25-50cm	☐ > 50cm

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

SOIL ASSESSMENT

	1	2	[illegible]	[illegible]
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 TRANSITWAY
POLYGON: FOM7-16
DATE: JUN9/5
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
THUOCC	D				
THUOCC				O	
POAPRA				O	
PHAARU				O	
FESRUB				O	
ELYREP				R	
ACESAS	O				
RHUHIR			R		
CUNROS				O	
FRAPEN	A			R	
CIRARV				R	
TSUCAN				O	
BRUNER				O	
TILAME	R			R	
JUNVIR	O	R			
TILAME		O	R		
VIO.SP.				O	
HESMAT				O	
CRAPUN			A		
RUBODO				R	
VITRIP		O	O		

SPECIES CODE	LAYER 1	2	3	4	COLL.

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY
POLYGON: FOM7-1
SURVEYOR(S): LMC
DATE: JUN9/5
UTMZ:
UTME:
UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	CONSPICUITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>>, MUCH GREATER THAN; >, GREATER THAN; =, APPROXIMATELY EQUAL TO)
1	EMERGENT			
2	CANOPY	2	5	THUOCC1>FRAPEN=ACESAS
3	SUB-CANOPY	3	2	TILAME>VITRIP>JUNVIR
4	UNDERSTORY	4	1	CRAPUN>TILAME=RHUHIR
5	GROUND LAYER	5	1	POAPRA=PHAARU=FESRUB

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

COMMUNITY MATURITY

☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

SOIL ASSESSMENT

	1	2		
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 TRANSITWAY
POLYGON:	CUS16
DATE:	May 6/15
SURVEYOR(S):	LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
TRIPSEU				R	
POAPRAT				A	
PHAARUN				A	
BROINER				O	
TAROFFI				O	
ASTNOANG				R	
SOLCANA				O	
VALOFFI				O	
VIBOPUL			O		
LONTATA			O		
DAUCARO				O	
SYMOFFI				R	
PLAMIDO				O	
FRAPENN	A	O			
DAUCARO				O	
EQUARVE				A	
ACENEGU	A	A			
EQUPRAT				O	
THUOCCI	D	R			
RHACATH			O		
VICCRAC				O	
POPBALS	O	O			
POPTREM	A	R	R		
MELALBA				O	
CRAAUNC			O		
KOSMUTI			O	O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

STAND CHARACTERISTICS			
SITE: 407 TRANSITWAY		POLYGON: CUS16	
SURVEYOR(S): LMC		DATE: May 6/15	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

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	THUOCCI > ACENEGU = POPTREM
3	SUB-CANOPY	3	1	ACENEGU > FRAPENN = POPBALS
4	UNDERSTORY	4	1	VIBOPUL = LONTATA = RHACATH
5	GROUND LAYER	5-7	3	POAPRAT = PHAARUN = EQUARVE

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
POLYGON:	FOM7-2
DATE:	JUN 10/15
SURVEYOR(S):	LMC/NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
POPTREM	O		A		
VITRIPA	O	O	O	O	
CHACATH			O		
SOLALTI				O	
JUNBUO				R	
RHAFRAN				O	
FRAPENN	A		A		
SIMOFFI				A	
PINSTRO	O				
THUOCCI	A		A		
CYNBOSS				O	
CRASP			R		
PHRAUST				R	
ROSMULTI				O	
GERMACU				O	
SYRVULG			R		
SALALBA	O	O			
SALPETI			O		
POPDELT		O			
EUPMACU				O	
ACESACC	O			O	
ASTLATE				A	
TYPANGU				R	
TILAMER		R			
FRAVIRG				O	
QUEMACR				R	
GLENELE				A	
AEGPODA				A	
SOLDULC				R	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
PRUVIRG			O		
MATSTRU				A	
DAEINE			O	O	
FRAALNU	O				
LYSNUMM				A	
CRAALE			O		
HYDVIRG				O	
CAROIPI				O	
CHEMAJU				O	
HEMFULV				R	
SOLFLEX				O	
SANCANA				R	
ACESASA	R	R	R	R	
ARITRIO				R	
TUSFARF				O	
EURMACR				R	
ULMAMER	R	R			
VIBTRIL			R		
ALLPETI				O	
CONMAJU				R	
GECROCE				O	
OXASTRI				O	
ASACANA				R	
DACGLOM				R	
ANECANA				O	
THADIOC				R	
ATHFILI				R	
ACTALBA				R	

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY		POLYGON: FOM7-2
SURVEYOR(S): LMC		DATE: JUN 10/15
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

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	FRAPENN=THUOCCI=FRAPENN
3	SUB-CANOPY	3	3	SALALBA=POPDELT=ACENEGU
4	UNDERSTORY	4	0	POPTREM=FRAPENN=THUOCCI
5	GROUND LAYER	5-7	3	LYSNUMM=MATSTRU>ASTLATE

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	R	> 50cm
STANDING SNAGS		O	< 10cm	R	10-24cm	R	25-50cm	R	> 50cm
DEADFALL/LOGS	FIRM	O	< 10cm	R	10-24cm	\	25-50cm	\	> 50cm
	DECAYED	\	< 10cm	\	10-24cm	\	25-50cm		> 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 TRANSITWAY
POLYGON: SWT2b & SWD2-2
DATE: May 6/15
SURVEYOR(S): LMC

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 1	2	3	4	COLL.
SWT2b					
FRAPENN	D		O		
IMPCAPE				A	
ASTPUNI				O	
VITRIPA			O	O	
VERHAST				R	
EUPMAC				O	
LYTSALI				R	
watermilfoil				O	
PHAARUN				D	
CYNROSS				A-D	
CRA SP.			R		
VIBOPUL			R		
CIRARVE				O	
MYOSCOR				O	
RHACATH				O	
SOLALTI					
SALALBA			R		
TYPLATI				O	
EQUPRAT				O	
MAL SP.			R		
VICCRAC				O	
BIDFRON				A	
RANSCEL				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
SWD2-2					
RHAFRAS	A	O	O		
FRAPENN	O	O	O	O	
CYNROSS				D	
POAPRAT				A	
FESRUBR				O	
VITRIPA		O	O	O	
PRUVIRG			O		
SYMOFFI				A	
SOLCANA				A	
VICCRAC				O	
TAROFF				R	
FRAVIRG				O	
SOLULC				R	
IMPCAPE				O	
POAPALU				O	
BIDFRON				O	
ECHLOBA				R	
CRA SP.		R			
ULMRUBR	R	R			
CARPENS				O	
CHACATH			O		
CORSTOL					
CARLACU				A	
CARSTIP				O	
GLYSTRI				O	

STAND CHARACTERISTICS

SITE: 407 TRANSITWAY | POLYGON: SWT2b
SURVEYOR(S): LMC | DATE:
UTMZ: | UTME: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☒ PARENT MATERIAL ☒ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☒ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLLING UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WAT. ☒ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☒ SHRUB ☒ TREED		

STAND DESCRIPTION

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	3-2	3	FRAPENN
3	SUB-CANOPY			
4	UNDERSTORY	4	1	FRAPENN > VITRIPA > SALALBA
5	GROUND LAYER	4	5-6-7	PHAARUN = CYNROSS = IMPCAPE

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

COMMUNITY MATURITY
☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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 TRANSITWAY
POLYGON: SWT2C
DATE: JUN 9/15
SURVEYOR(S): IMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
EUPPERF				O	
LYDAMER				A	
~~RHACATH~~			A		
~~TUSFARF~~				O	
IMPCAPE				A	
POAPALU				R	
RHACATH			A		
FRAPENN	A	A			
~~EQUPRAT~~				O	
GLYSTRIA				O	
PRUVULG				O	
PHAARUN				A	
LONCANA			R		
BIDFRON				O	
CORRUGO			O		
RUBIDEA				O	
CYNROSS				O	
SYMLANC				R	
EUPMACU				O	
LYCAMER				A	
ARCLUPP		R	R		
GEUCANA				O	
FRAVIRG				O	
ACENEGU	O	O	O		
RANSCEL				O	
GEX SP				R	
ERIRAMU				O	
VIBOPUL			R		

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
CORSTOL			O		

DISTURBANCE and STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: CUSLA
	DATE: JUNE 9/15
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER 1	2	3	4	COLL.
THUOCCI	D		R		
POPBALS	R		R		
VICCRAC				O	
SYMNOAN				O	
PHAARUN				O	
RHACATH			O	R	
VIBOPUL			R	O	
FRAPENN		O	R	R	
EQUARVE				O	
EQUPRAT				O	
BROINER				A	
SOLCANA				O	
CRATPUNC			R		
DAUCARO				O	
ROSMULT			R		
POAPRAT				O	
POPTREM	O				
IRISPSEU				R	
VALOFFI				O	
PLAMAJO				O	
ACENEGU			R	R	
TAROFFI				O	
LONTATA			R	R	
MELALBA				O	
SYMOFFI				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES — PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	SITE: 404 TRANSITWAY
	POLYGON: Hedgerow H
	DATE: Apr 29 / JUN 10/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
PHAGRA				A	
ACESAC	O	O			
ULMAME		R	R		
CYNROS				A	
FRAPEN	A				
THUOCC	O	O			
ROAPRA				A	
PLAMAJ				A	
HESMAT				A	
QUEMAC	R				
VITRIP		O	O		
TILAME	O				
DACGLO				A	
FRAVIR				O	
PRUPEN			R	R	
VICCRA				A	
MEDLUP				O	
DACCAN				A	
OSTVIR		R			
LONTAT			O		
RICLAU	R				
ECHCRU			R	R	
GERROB				O	
CARALB				R	
EQUARV				R	
CORALT			R		
CORFOE			O		
PRUVIR			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.
RUBPEL				R	
ARITRI				O	

DISTURBANCE and STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES — PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE: 407 TRANSITWAY
POLYGON: FOOTD
DATE: JUN 9/15
SURVEYOR(S): LMF

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 1	2	3	4	COLL.
ONOSENS				O	
PINSTRO	O	O			
THUOCC	O	O	O		
ULMAMER	R		R		
QUEMACR	A	R			
BETALL	A		R		
TILAMER	O	R			
SALSP.	R				
ALLALT				A	
HESMATR				O	
LYSNUMM				A	
ERVAMER				R	
ARITRID				O	
TUSFAR				O	
SOCANA				O	
FRAPENN	A	R			
FRANIGR	O	R	R		
SOLDULC			O	O	
CYNPOSS				A	
GEROBE				A	
TOXRYOB				O	
PHLHIRT			O		
VITRIPA				R	
PARVITA				O	
CORALT			O		
GEUALEP				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE:	407 TRANSITWAY
POLYGON:	Hedgerow B
DATE:	JUN 9/15
SURVEYOR(S):	LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
AGENEGU	A	A	A								
DINSYLV	D	A									
LONTATA			R								
ECHLOBA		O	O								
VITRIPA		A	O	R							
CYNROSS				O							
PHAARTH			A								
ALLPET				O							
ACESASA	R										
BROINER				O							
GOUT				O							
GARDENLILY				R							
POAPRAT				A							

DISTURBANCE and STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	LEVEL / EXTENT	NATURAL DISTURBANCES	LEVEL / EXTENT
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWA
	POLYGON: MAM2-2a
	DATE: May 6/15
	SURVEYOR(S): LMC / NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER 1	2	3	4	COLL.
EQUPRA				O	
RANSCE				O	
SALSP.			R		
MYOSCO				O	
GALPAL				R	
EUPMAC				R	
SOLCAN				O	
CARVUL				O	
SCIATR				O	
PHAARU				O	
TYPANG				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: Could
	DATE: May 6/15
	SURVEYOR(S): LYC

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 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
ACENEG	1	R									
ACEPEN				O							
VIBOPU			O								
PRUSER		A									
CYNROS				A							
POPTRE	O	O									
CRTSP.			A								
RHACATH			A								
FRAPEN	O	R									
THUOCC	R	R									
CORFOEM			R								
FRAVIRG				O							
HYDVIRG				O							
PLALANC				R							
GEUALEO				O							
EQUARVU				O							
POPSPS		O									
PRUVIRG			O								

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 404 TRANSITWAY
	POLYGON: MAS2-1e
	DATE: May 29/15
	SURVEYOR(S): MC

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.
	1	2	3	4	
TYPANGU				D	
PHAARU				O	
LEMMINO				R	
PHRAUST				O	

SPECIES CODE	LAYER				COLL.
	1	2	3	4	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 907 TRANSITWAY
	POLYGON: CUT1a
	DATE: MAY 6/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
CUT1a					
JUGNIGR	O				
THUOCCI		O	O		
PINSYL		R			
ACAPEN		O			
ACEPLAT	O				
RHACATH			O		
SORAUR				O	
TRIPRAT				O	
DAUCARO				O	
VERTHAP				R	
LONJAPA			O		
POAPRA				O	
ACHMILL	O		R		
ASTSP.				R	
MEDLUPU				O	
BROINE				R	
PANCAPI				O	
LOTCORN				A	
DIANAD				A	
HESMATR				R	
TAROFFI				A	
DAUCARO				O	
SETVIRI				R	
PLALANC				O	
ARCSYRI				R	
TUSFARF				R	
MELALBA				O	
DANSPIC				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: MA5D
	DATE: APR 20/15
	SURVEYOR(S): LMC

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.
	1	2	3	4	
PHRAUST				D	
CARSTR			R		
TYPLATI				S	

SPECIES CODE	LAYER				COLL.
	1	2	3	4	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE:	407 TRANSITWAY
POLYGON:	FOCT-2
DATE:	JUN 10/15
SURVEYOR(S):	LMC / NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
DRYCARU				O	
CARROSE				R	
PINSTRO	O				
ARITRIP				O	
TSUCANA		R			
THUOCCI	R	R			
SOLCAES				O	
ACTRUBR				O	
EURMACR				R	
THAPUBE				R	
QUERUBR		R			
BETPAPY		R			
CYNROSS				A	
GERROBE				O	
ACESACA		R			
RHACATH			R		
CORALTE			O		
AMELAEV			R		
ALLPETI				O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

DISTURBANCE and STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: CUWLE & CUMU-1°
	DATE: JUN 04/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
CUWLE				3	
HESUTP				A	
FRAPEN	R	R	R		
RHACATH			A		
QUEMAC	R		R		
SORATT				A	
VICCRAC				O	
POAPRAT				A	
PARVIRG		R	R	O	
VITRIPA		R	R		
TILAMER	R	R	R		
ARCMINN				R	
SORAUC				O	
PHAARUN				A	
RIBCYNO				R	
ASCSYRI				O	
RUBIDEA				O	
COMFREY				O	
ACENEGU	O	O	O		

SPECIES CODE	LAYER 1	2	3	4	COLL.
CUMU-1°				A	
POAPRAT				O	
CIRARV				O	
COMFREY				O	
SAPGOT				O	
DAUCARO				O	
CICINTY				O	
DAUSOC				A	
ASCSYRI				O	
TAROFFI				R	
SOCALB				O	
POAPRAT				A	
VETCH				A	
PHAARUN				A	
LONHIR				R	
RUDHIRT				R	
MATMATR				O	
DHPAUST				R	
ASTLAT				O	
TYPANG				R	
DHLPRAT				R	
TUSFAR				R	
Valerian				R	
FESRUBR				O	
CHRLEU				O	
PLAMAJ				O	
LOTCOR				O	
MEDLUP				O	
RUMCRIS				R	

PIC 127-128

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE: 407 TRANSITWAY
POLYGON: Hedgerow A & MAS2-1a
DATE: ~~Apr 29,~~ JUN 9/15
SURVEYOR(S): LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
Hedgerow A					
FRAPENN	A				
ACENEGU	A	A	A		
BEOWER				O	
JUGNIGR	O		O		
CYNROSS				A	
ACESASA	A	A			
PINSYLV	O	O	O		
HESMATR				O	
RHACATH			A		
ECHLOBA			O		
CIRLUTE				O	
PICGLAU	O				
DACGLOM				O	
PHAARUN				A	
DAUCARO				A	
SOLDULC			O	O	
THUOCCI		e	e		
FRAVIEG				A	
MAL SP.			O		
TILAMER	R	R			
POAPRAT				A	
ROSMULTI			O	O	
POPTREM	R				
RIBCYNO				O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
MAS2-1a					
PHAARUN				A	
TYPLATI				O	
CORSTOL			O		

DISTURBANCE and STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: FOMZ-1a
	DATE: Apr 29/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
FRAMER				R	
POPDEL				O	
CARTHA				O	
ACENEGN			A	A	
GEUROS				A	
THUOCC	D	O			
LONTAT			O		
VIOPUB				O	
THUOCC	D	O			
HESVIR				O	
MATSTR				O	
ULMAME	R	R	R		
FRAAME	R		R		
GEUALE				O	
RHACAT			A		
ACESAC	D	A			
BETALL		O			
ERITRI				R	
ALLPET				O	
CYNROS				A	
FRAAME	R				
VITRIP		O	O		
PINSYL	O				
DRYMAR				R	
CIRLUT				A	
CORALT			O		
TUSFAR				O	
GLEHED				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.
RHUCAN				O	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES — PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: MAS21C
	DATE: Apr 29/13
	SURVEYOR(S): LMC

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.
	1	2	3	4	
TVOLAT1				D	
PHRAUST				A	

SPECIES CODE	LAYER				COLL.
	1	2	3	4	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE: 407 TRANSITWAY
POLYGON: Hedgerow I
DATE: MAY 1/15
SURVEYOR(S): LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
PHAARUN				A	
RHACATH			O		
ACENEGU	A				
FRAPENN	O		A		
BIDFRON				O	
LYTSALI				R	
PLAMAJO				A	
IMPCAPE				O	
RANACRI				O	
GEUCANA				O	
JUNVIRG		R			
PRUVIRG			R		
CYNOFFI				A	
TAROFFI				O	
VITRIPA	O		O	O	
BROINER				O	
POATRIV			R		
EQUARVE				A	
VICCRAC				O	
CHELEUC				O	
PARINSE			O	O	
CRAPUNC			O		
ULMAMER	R				
HYDVIRG				R	
RIBCYNO				O	
EURMACU				O	
CIRVULG				R	
DACGLOM				O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
VICCRAC				O	

DISTURBANCE and STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	LEVEL / EXTENT	NATURAL DISTURBANCES	LEVEL / EXTENT
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
SITE:	407 TRANSITWAY
POLYGON:	FOR4-C
DATE:	MAY 6/15
SURVEYOR(S):	LMC

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 1	2	3	4	COLL.
EQUPRAT				C	
EQUARVE				O	
PINSTRO	O	R	R		
PINSYLV	O	R			
THUOCC	O	O			
RANACRI				O	
RANREPU				O	
THADOC				O	
ULMAMER	O	R			
TILAMER	R	R			
ECHLUTA				O	
SALALBA	R				
VICCRAC				O	
CYNROSS				A	
DAUCARO				O	
ACENEGU	R	R			
VITRIPA		O	O		
PARVITA		R	R		
RHACATH			A		
CORSTOL			O		
SOLDUL				O	
SYMOFFI				A	
VERHAST				O	
JUNCANA				R	
TUSFAR				O	
ASTNOVAE				O	
SOLGIGA				O	
SOLCANA				A	

SPECIES CODE	LAYER 1	2	3	4	COLL.
HIECAES				O	
EUPPER				R	
EUPMACU				R	
CIRVUL				O	
LYCAMER				R	
MENARV				O	
PLAMAJO				O	
GRAFINN	R	R			
GALPALU				O	
LONTATA			R		
ASTPUNI				O	
BIDFRON				O	

DISTURBANCE and STAND CHARACTERISTICS	
SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES — PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 402 TRANSITWAY
	POLYGON: FOC
	DATE: JUN 10/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
LARDECI	R	R			
ACCLAD	A	A	R		
RIBCYN			O		
POPTREM		R	R		
PINNIGR	A				
PINSYLV	A	R			
FEUCANA				A	
THUOCC	A	R	R		
VIOSP.				O	
QUEMAC		R			
PINSTRO	R		R		
PRUVIRG			O		
QUERUB		R			
RUBALL				O	
RUBIDE				O	
PHAARUN				O	
DACGLOM				O	
ULMAMER		R	R		
RHACATH			A		
PRUVIR		R	O		
VITRIP		O	O	O	
ACENEGU		R			
ACERUBR		R	R		
RHUHIRT			O		
CUNROSS				A	
HYDVIRG				O	
FRAGENU	R				
LONTATA			R		

SPECIES CODE	LAYER 1	2	3	4	COLL.
VIROFF				A	
EUPMAC				O	
TAROFF				O	
SOLFLEX				O	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		PLOUGHING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: CUM-10
	DATE: JUN 1998
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
PICGLAU	R				
PODBELT				O	
VITDIOC				O	
JUGNIGR		R			
HAMAMTR				A	
CRAPUNC			O		
GEUALEP				A	
PUBIDAE			O	O	
RUBOCCI			O		
TRIREF				O	
CIRLUTE				O	
VITRIB		R	R		
RAPRAT				A	
PHAARUN				O	
DACGLOM				A	
CARPENS				O	
ARTRIP				R	
TAROFFI				O	
SONCANA				O	
GREHEB				R	
HACVIR				O	
IMPCAPE				O	
CYNROS				A	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: FOC2-20
	DATE: May 6/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
THUOCCI	D		D		
CYNROSS				A	
VITRIPA	R		R		
ALLOETI				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE: 407 TRANSITWAY

POLYGON: CUW1F

DATE: JUN10/15

SURVEYOR(S): LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
PINSTRO	A	R			
PINSYLV	O	R			
THUOCCI	O	O	O		
RANACRI				O	
ULMAMER	R	R			
POPBALS	A	R			
CRAMUNC			A		
POTARGE				O	
PRUSERO		O			
PRUVIRG			O		
RUBALLE			O		
VICCRAC				O	
CORALTE			O		
CORSTOL			O		
RHACATH			A		
VITRIPA				A	
POAPRAT				A	
DACGLOM				O	
TAROFFI				A	
SOLCANA				O	
SOLGIGA				O	
CHELUEC				O	
HIECAES				O	
VIBOPULU			O		
LONTATA			O		
FRAPENN	A	O			
SYMOFFI				O	
CYNROS				O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

DISTURBANCE and STAND CHARACTERISTICS

SITE:

POLYGON:

DATE:

SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	LEVEL / EXTENT	NATURAL DISTURBANCES	LEVEL / EXTENT
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: CUM-1e
	DATE: MAY 6/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
TYPLAT				O	
SOENUT				R	
SETVIR				O	
POAPRA				A	
PHRAUST				O	
PHAARU				A	
DACGLO				O	
BROINER				O	
TUSFAR				R	
CRAUNC			O		
MEDLUP				O	
TRIPRA				A	
VICCRA				O	
ELAANG		R			
CENDEN				O	
VITRIPA				O	
ACENEG	R	R			
RHUHIR			R		
DAUCAR				O	
CYNROS				A	
SOLDUL			O	O	
VERTHAP				A	
CICINT				O	
TAROFF				A	
SONCHA				O	
MATMAR				O	
CIRARV				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE:
	POLYGON: FOM7-2
	DATE: JUN10/15
	SURVEYOR(S): LMC

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 1	2	3	4	COLL.
CUMLA					
CALPAL				R	
LAPCAN				O	
ACENEG		O	R	R	
FRAPENN	A	O	R	R	
RHUHIRT			O		
CARROSE				R	
ACENCAR	R	R			
SCIPTRO				R	
TAROFF				O	
POPBAL	R			O	
CARSTIP				R	
CARBEBB				R	
MYOSCOR				R	
GLYSTRI				R	
POAPAL				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 401 TRANSITWAY
	POLYGON: SUS2-2b
	DATE: May 1 to JUN 10/15
	SURVEYOR(S): LMC

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.
	1	2	3	4	
IMPCAPE				O	
FRAPENN	R				
BIDFERO				O	
PHAARU				A	
SALERIO		R	A		
SALFRAG	A		A		
LYTSALI				R	
GLYSTRI				R	
SOLALT				R	
VICCRA				O	
LYCAMER				O	
ACENEG	O	O			
ELYREP				R	
CANGER				O	
CYNROS				A	
CAREX			A		
CARVULP				A	
SCIATRO				O	
SYNOFF				O	
CHAGRA			O		
TOXRAD				O	

SPECIES CODE	LAYER				COLL.
	1	2	3	4	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 407 TRANSITWAY
	POLYGON: For4-1a
	DATE: Apr 29 / 15
	SURVEYOR(S): LMC

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.
	1	2	3	4	
THUOCC	D				
ONOSENS				O	
CYNROSS				O	
PHAARUN				R	

SPECIES CODE	LAYER				COLL.
	1	2	3	4	

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES — PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE:	407 TRANSITWAY
POLYGON:	CUWb [illegible]
DATE:	JUN 10/15
SURVEYOR(S):	LMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
LOSTATA			R		
PHLPRAT				A	
POAPRAT				A	
VITRIPA	O	O	O	R	
PARINSE					
ASCSYRI				O	
CIRARVE				A	
VICCRAC				O	
ROBPSEU					
JUGNIGR	O	O	O		
DAUSOC				O	
HESMATR				A	
FRAPENN	R		R		
GEUALEP				O	
ASTLATE				R	
SYRVUIG			O		
RUBIDEA				O	
ACENEGU		R			
EU(PINK)				O	
ENGHAWT			R		
PHAARUN				D	
SYMOFFI				R	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

DISTURBANCE and STAND CHARACTERISTICS

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST

SITE: 407 TRANSITNA
POLYGON: MAS2-19
DATE: MAY 15
SURVEYOR(S): JMC

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 1	LAYER 2	LAYER 3	LAYER 4	COLL.
TYPSP.				D	
PHRAUST				A	
PHAARUN				A	
SOLCANA				O	
GALSP.			R		
EUPMAC				O	

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

DISTURBANCE and STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WINDTHROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES

PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

PLANT SPECIES LIST	
	SITE: 404 TRANSITWAY
	POLYGON: SUC1-1
	DATE: JUN 9/15
	SURVEYOR(S): MC

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 1	2	3	4	COLL.
THUOCC	D	R			
IMPCAP				O	
ONOSEN				O	
FRAVIR		R	R		
EQUPRA				O	
BETPAL		R			
CYNROS				O	
CARROS				O	

SPECIES CODE	LAYER 1	2	3	4	COLL.

DISTURBANCE and STAND CHARACTERISTICS	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		DUMPING (RUBBISH)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIEN SPECIES	
TRACKS AND TRAILS		NOISE	
NATURAL DISTURBANCES	**LEVEL / EXTENT**	**NATURAL DISTURBANCES**	**LEVEL / EXTENT**
DISEASE / PESTS / DEATH		FLOODING (POOLS & PUDDLING)	
WIND(THROW (BLOWDOWN)		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		OTHER	

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY
EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE

TREE TALLY BY SPECIES PRISM FACTOR:

SPECIES CODE	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AV.
TOTAL							
BASAL AREA (BA)							MEAN
DEAD							

APPENDIX C
PHOTOGRAPHIC RECORD

PROJECT #TA8429
June 2015

PHOTO APPENDIX
Highway 407 Transitway from Kennedy Road to Brock Road

LGL LIMITED
environmental research associates

View to the west looking at a Sugar Maple Deciduous Forest (FOD5) community.

View to the east looking at a Cultural Meadow (CUM1-1) in the foreground and a White Cedar Coniferous (FOC4-1) in the background.

View to the south looking at a Cultural Savannah (CUS1) community.

View to the west looking at a Cultural Thicket (CUT1) community.

View to the east looking at a Shallow Marsh (MAS2) community.

View to the west looking at a White Cedar – Hardwood Mixed Forest (FOM7-2) community.

PROJECT #TA8429
June 2015

PHOTO APPENDIX
Highway 407 Transitway from Kennedy Road to Brock Road

LGL LIMITED
environmental research associates

View to the west looking at a Cultural Woodland (CUW1).

View to the east looking at a Cultural Meadow (CUM1-1) in the foreground and a Coniferous Forest (FOC) in the background.

View to the north looking at an Open Aquatic (OAO) community.

View to the west in a White Cedar Coniferous Swamp (SWC1-1).

View to the north looking at a Green Ash Deciduous Swamp (SWD2-2).

View to the west in a Sugar Maple – Hardwood Deciduous Forest (FOD6-5).

PROJECT #TA8429
June 2015

PHOTO APPENDIX
Highway 407 Transitway from Kennedy Road to Brock Road

LGL LIMITED
environmental research associates

View to the north looking at a White Cedar Coniferous Forest (FOC2-2).

View to the east inside a Lowland Deciduous Forest (FOD7).

View to the north inside a Ash Lowland Deciduous Forest (FOD7-2) community.

View to the west looking at a White Cedar – Sugar Maple Mixed Forest (FOM7-1) community.

View to the west looking at a Cultural Meadow (CUM1-1) in the foreground and Swamp Thicket (SWT) in the background.

View to the west looking at a Reed Canary Grass Meadow Marsh (MAM2-2).

PROJECT #TA8429
June 2015

PHOTO APPENDIX
Highway 407 Transitway from Kennedy Road to Brock Road

LGL LIMITED
environmental research associates

View to the north looking at a Cattail Shallow Marsh (MAS2-1) community.

View to the west looking at a Forb Meadow Marsh (MAM2-10).

View to the east looking at a Willow Swamp Thicket (SWT2-2) and a Sugar Maple Deciduous Forest (FOD6-5) in the background.

View to the west looking at a White Cedar – Sugar Maple Mixed Forest (FOM7-1) community.

APPENDIX D
VASCULAR PLANT LIST

APPENDIX D1
FOREST COMMUNITIES VASCULAR PLANT LIST

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	EQUISETACEAE	**HORSETAIL FAMILY**																							
	Equisetum arvense	field horsetail	G5	S5			L5							X		X				X					
	Equisetum pratense	meadow horsetail	G5	S5			L3						X	X		X			X	X					
	OSMUNDACEAE	**ROYAL FERN FAMILY**																							
	Osmunda cinnamomea	cinnamon fern	G5	S5			L2												X						
	THELYPTERIDACEAE	**MARSH FERN**																							
	Thelypteris palustris var. *pubescens*	marsh fern	G5T?	S5			L4								X			X							
	DRYOPTERIDACEAE	**WOOD FERN FAMILY**																							
	Athyrium filix-femina var. *angustum*	northern lady fern	G5T5	S5			L5				X								X		X				X
	Cystopteris bulbifera	bulbet bladder fern	G5	S5			L4						X												
	Dryopteris carthusiana	spinulose wood fern	G5	S5			L5		X																
	Dryopteris marginalis	marginal wood fern	G5	S5			L4																X		
	Gymnocarpium dryopteris	oak fern	G5	S5			L3									X									
	Matteuccia struthiopteris var. *pensylvanica*	ostrich fern	G5	S5			L5				X		X		X			X	X				X		X
	Onoclea sensibilis	sensitive fern	G5	S5			L5					X	X		X			X	X		X	X			
	PINACEAE	**PINE FAMILY**																							
*	*Larix decidua*	European larch	G?	SE2			L+	X																	
	Picea glauca	white spruce	G5	S5			L3	X																	
*	*Pinus nigra*	Austrian pine	G?	SE2			L+	X													X				
	Pinus strobus	eastern white pine	G5	S5			L4	X	X					X				X	X		X	X			X
*	*Pinus sylvestris*	scotch pine	G?	SE5			L+	X						X									X		
	Tsuga canadensis	eastern hemlock	G5	S5			L4		X		X					X		X	X		X				
	CUPRESSACEAE	**CEDAR FAMILY**																							
	Thuja occidentalis	eastern white cedar	G5	S5			L4	X	X	X	X	X	X	X	X	X						X	X	X	X
	ARISTOLOCHIACEAE	**DUCHMAN'S-PIPE FAMILY**																							
	Asarum canadense	wild ginger	G5	S5			L4																		X
	RANUNCULACEAE	**BUTTERCUP FAMILY**																							
	Actaea pachypoda	white baneberry	G5	S5			L4												X						X
	Actaea rubra	red baneberry	G5	S5			L5		X				X					X	X		X				
	Anemone canadensis	Canada anemone	G5	S5			L5						X												X
	Caltha palustris	marsh-marigold	G5	S5			L4						X												X
*	*Ranunculus acris*	tall buttercup	G5	SE5			L+							X							X				
	Ranunculus recurvatus var. *recurvatus*	hooked buttercup	G5	S5			L5							X											
	Thalictrum dioicum	early meadow-rue	G5	S5			L5							X		X									X

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	Thalictrum pubescens	tall meadow-rue	G5	S5					X				X					X	X					X	
	BERBERIDACEAE	**BARBERRY FAMILY**																							
	Caulophyllum thalictroides	blue cohosh	G	S5			L2										X		X		X		X		
	Podophyllum peltatum	may-apple	G5	S5			L4						X			X		X	X		X		X		
	PAPAVERACEAE	**POPPY FAMILY**																							
*	*Chelidonium majus*	celandine	G?	SE5			L+						X												X
	ULMACEAE	**ELM FAMILY**																							
	Ulmus americana	white elm	G5?	S5			L5	X			X		X	X		X	X	X	X			X	X	X	X
	Ulmus rubra	slippery elm	G5	S5			L2										X		X	X					
	URTICACEAE	**NETTLE FAMILY**																							
	Boehmeria cylindrica	false nettle	G5	S5			L4														X				X
	Laportea canadensis	wood nettle	G5	S5			L5													X					X
*	*Urtica dioica* ssp. *dioica*	European stinging nettle	G5T?	SE2			L+						X												
	JUGLANDACEAE	**WALNUT FAMILY**																							
	Carya cordiformis	bitternut hickory	G5	S5			L4										X	X	X						
	Juglans cinerea	butternut	G3G4	S3?	END	END	L3												X						
	Juglans nigra	black walnut	G5	S4			L5						X					X	X		X			X	
	FAGACEAE	**BEECH FAMILY**																							
	Fagus grandifolia	American beech	G5	S5			L4											X	X		X				
	Quercus macrocarpa	bur oak	G5	S5			L4	X								X					X	X			X
	Quercus rubra	red oak	G5	S5			L4	X	X									X	X						
	BETULACEAE	**BIRCH FAMILY**																							
	Betula alleghaniensis	yellow birch	G5	S5			L4								X	X	X	X	X			X	X		
	Betula papyrifera	white birch	G5	S5			L4		X																
	Ostrya virginiana	ironwood	G5	S5			L5				X							X	X		X				
	CARYOPHYLLACEAE	**PINK FAMILY**																							
*	*Dianthus armeria*	deptford pink	G?	SE5			L+						X												
	POLYGONACEAE	**SMARTWEED FAMILY**																							
	Polygonum amphibium	water smartweed	G5	S5			L3																		X
	TILIACEAE	**LINDEN FAMILY**																							
	Tilia americana	basswood	G5	S5			L5							X		X	X	X	X		X	X		X	X
	VIOLACEAE	**VIOLET FAMILY**																							
	Viola pubescens	downy yellow violet	G5	S5			L5						X					X	X				X		
	Viola sororia	woolly blue violet	G5	S5			L5						X					X	X						

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	Viola sp.	violet						X											X		X			X	
	CUCURBITACEAE	**GOURD FAMILY**																							
	Echinocystis lobata	prickly cucumber	G5	S5			L5						X	X			X								X
	SALICACEAE	**WILLOW FAMILY**																							
	Populus balsamifera ssp. *balsamifera*	balsam poplar	G5T?	S5			L5						X						X		X				X
	Populus deltoides ssp. *deltoides*	eastern cottonwood	G5T?	SU			L5																		X
	Populus tremuloides	trembling aspen	G5	S5			L5	X								X					X				X
*	*Salix alba*	white willow	G5	SE4			L+							X											X
	Salix petiolaris	slender willow	G4	S5			L3																		X
	Salix sp.	willow		?									X									X			
	BRASSICACEAE	**MUSTARD FAMILY**																							
*	*Alliaria petiolata*	garlic mustard	G5	SE5			L+		X	X			X				X	X	X			X	X		X
*	*Barbarea vulgaris*	yellow rocket	G?	SE5			L+													X					
	Cardamine diphylla	two-leaved toothwort	G5	S5			L4						X						X						X
*	*Hesperis matronalis*	dame's rocket	G4G5	SE5			L+						X					X	X	X		X	X	X	
	PRIMULACEAE	**PRIMROSE FAMILY**																							
	Lysimachia ciliata	fringed loosestrife	G5	S5			L5						X												
*	*Lysimachia nummularia*	moneywort	G?	SE5			L+				X		X								X	X			X
	GROSSULARIACEAE	**GOOSEBERRY FAMILY**																							
	Ribes americanum	wild black currant	G5	S5			L5												X						
	Ribes cynosbati	prickly gooseberry	G5	S5			L5	X																	
	Ribes hirtellum	smooth gooseberry	G5	S5			L3						X			X	X								
	SAXIFRAGACEAE	**SAXIFRAGE FAMILY**																							
	Tiarella cordifolia	false mitrewort	G5	S5			L4									X									
	ROSACEAE	**ROSE FAMILY**																							
	Amelanchier laevis	smooth juneberry	G4G5Q	S5			L4		X							X									
*	*Crataegus monogyna*	English hawthorn	G5	SE5			L+												X						
	Crataegus punctata	large-fruited thorn	G5	S5			L5						X											X	
	Crataegus sp.	hawthorn																		X					X
	Fragaria virginiana ssp. *virginiana*	scarlet strawberry	G5T?	SU			L5												X	X	X				X
	Geum aleppicum	yellow avens	G5	S5			L5										X			X	X	X	X		
	Geum canadense	white avens	G5	S5			L5	X					X					X	X	X	X				
	Geum laciniatum	rough avens	G5	S4			L3												X						
*	*Malus baccata*	Siberian crabapple	G?	SE1			L+												X						

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	Prunus serotina	black cherry	G5	S5			L5									X			X		X				
	Prunus virginiana var. *virginiana*	choke cherry	G5T?	S5			L5	X					X				X	X	X	X	X				X
*	*Rosa multiflora*	multiflora rose	G?	SE4			L+												X						X
	Rubus allegheniensis	alleghany blackberry	G5	S5			L5	X										X	X						
*	*Rubus idaeus* ssp. *idaeus*	red raspberry	G5T5	SE1				X									X				X				
	Rubus occidentalis	thimble-berry	G5	S5			L5												X						
	Rubus odoratus	purple flowering raspberry	G5	S5			L5										X							X	
	Rubus pubescens	dwarf raspberry	G5	S5			L4									X									
	FABACEAE	**PEA FAMILY**																							
	Amphicarpaea bracteata	hog peanut	G5	S5			L5									X									
*	*Vicia cracca*	tufted vetch	G?	SE5			L+							X					X						
	ONAGRACEAE	**EVENING-PRIMROSE FAMILY**																							
	Circaea lutetiana ssp. *canadensis*	yellowish enchanter's nightshade	G5T5	S5			L5						X			X	X	X	X		X		X		
	CORNACEAE	**DOGWOOD FAMILY**																							
	Cornus alternifolia	alternate-leaved dogwood	G5	S5			L5		X				X			X	X	X	X		X	X	X		X
	Cornus rugose	round-leaved dogwood	G5	S5			L3												X						
	Cornus sericea ssp. *sericea*	red-osier dogwood	G5	S5			L5							X					X						
	RHAMNACEAE	**BUCKTHORN FAMILY**																							
*	*Rhamnus cathartica*	common buckthorn	G?	SE5			L+	X	X		X		X	X	X		X	X	X	X	X		X		X
	VITACEAE	**GRAPE FAMILY**																							
	Parthenocissus vitacea	inserted Virginia-creeper	G5	S5			L5	X						X			X		X		X	X			X
	Vitis riparia	riverbank grape	G5	S5			L5	X		X	X		X	X		X	X	X	X	X	X	X	X	X	X
	ACERACEAE	**MAPLE FAMILY**																							
	Acer negundo	Manitoba maple	G5	S5			L+?	X					X	X			X		X	X	X		X		X
	Acer nigrum	black maple	G5Q	S4?			L4																		X
	Acer rubrum	red maple	G5	S5			L4									X									
	Acer saccharinum	silver maple	G5	S5			L4																		X
	Acer saccharum var. *saccharum*	sugar maple	G5T?	S5			L5		X				X		X	X	X	X	X	X	X		X	X	X
	Acer X *freemanii*	freeman's maple					LH	X																	
	ANACARDIACEAE	**SUMAC FAMILY**																							
	Rhus hirta	staghorn sumac	G5	S5			L5	X											X			X		X	
	Toxicodendron radicans ssp. *negundo*	poison-ivy	G5T	S5			L4						X			X		X	X						
	Toxicodendron rydbergii	western poison-ivy	G5T	S5			L5															X	X		

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	OXALIDACEAE	**WOOD SORREL FAMILY**																							
	Oxalis stricta	upright yellow wood-sorrel	G5	S5			L+?						X						X	X					X
	GERANIACEAE	**GERANIUM FAMILY**																							
	Geranium maculatum	spotted crane's-bill	G5	S5			L4						X												X
*	*Geranium robertianum*	herb-robert	G5	SE5			L+?		X				X			X			X			X	X		X
	BALSAMINACEAE	**TOUCH-ME-NOT FAMILY**																							
	Impatiens capensis	spotted touch-me-not	G5	S5			L5						X		X			X	X	X					
*	*Impatiens glandulifera*	glandular touch-me-not	G?	SE4			L+						X												
	ARALIACEAE	**GINSENG FAMILY**																							
	Aralia racemosa ssp. *racemosa*	spikenard	G5T?	S5			L3									X									
	APIACEAE	**PARSLEY FAMILY**																							
*	*Aegopodium podagraria*	goutweed	G?	SE5			L+																		X
	Cryptotaenia canadensis	honewort	G5	S5			L5						X												
*	*Daucus carota*	wild carrot	G?	SE5			L+							X											
	Hydrocotyle americana	American marsh-pennywort	G5	S5			L3									X									
	ASCLEPIADACEAE	**MILKWEED FAMILY**																							
*	*Cynanchum rossicum*	swallow-wort	G?	SE5			L+	X	X	X	X	X	X	X	X			X	X			X	X	X	X
	SOLANACEAE	**POTATO FAMILY**																							
*	*Solanum dulcamara*	bitter nightshade	G?	SE5			L+				X		X	X		X		X	X		X	X			X
	HYDROPHYLLACEAE	**WATER-LEAF FAMILY**																							
	Hydrophyllum virginianum	Virginia water-leaf	G5	S5			L5	X					X				X	X	X		X				X
	BORAGINACEAE	**BORAGE FAMILY**																							
	Hackelia virginiana	Virginia stickweed	G5	S5			L5														X				
*	*Myosotis scorpioides*	mouse-ear scorpion-grass	G5	SE5			L+						X												X
*	*Symphytum officinale* ssp. *officinale*	common comfrey		SE5			L+						X	X											X
	VERBENACEAE	**VERVAIN FAMILY**																							
	Verbena hastate	blue vervain	G5	S5			L5							X											
	LAMIACEAE	**MINT FAMILY**																							
*	*Glechoma hederacea*	creeping Charlie	G?	SE5			L+																X		X
*	*Leonurus cardiaca* ssp. *cardiaca*	common motherwort	G?T?	SE5			L+						X												
	Lycopus americanus	cut-leaved water-horehound	G5	S5			L4							X											
	Mentha arvensis	American wild mint	G5T5	S5			L5							X		X									
	PLANTAGINACEAE	**PLANTAIN FAMILY**																							
*	*Plantago major*	common plantain	G5	SE5			L+						X	X					X	X					

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	OLEACEAE	**OLIVE FAMILY**																							
	Fraxinus americana	white ash	G5	S5			L5													X			X		
	Fraxinus nigra	black ash	G5	S5			L4									X						X			X
	Fraxinus pennsylvanica	red ash	G5	S5			L5	X			X		X	X	X	X	X	X	X	X	X	X	X	X	X
*	*Syringa vulgaris*	common lilac	G?	SE5			L+																		X
	CAMPANULACEAE	**BLUEBELL FAMILY**																							
	Lobelia siphilitica	great lobelia	G5	S5			L3									X									
	RUBIACEAE	**MADDER FAMILY**																							
*	*Galium mollugo*	white bedstraw	G?	SE5			L+														X				
	Galium palustre	marsh bedstraw	G5	S5			L4							X											
	CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**																							
	Lonicera canadensis	american fly honeysuckle	G5	S5			L3													X					
*	*Lonicera tatarica*	tartarian honeysuckle	G?	SE5			L+	X						X							X		X		
	Sambucus nigra ssp. *canadensis*	common elderberry	G5	S5			L5									X			X						X
	Sambucus racemosa var. *racemosa*	red-berried elderberry	G5T4T5	S5			L5										X								
	Viburnum acerifolium	maple-leaved viburnum	G5	S5			L3									X									
*	*Viburnum opulus*	guelder rose	G5	SE4			L+														X				
	Viburnum opulus var. *americanum*	high bush cranberry	G5T5	S5			L2																		X
	VALERIANACEAE	**VALERIAN FAMILY**																							
*	*Valeriana officinalis*	common valerian	G?	SE3			L+	X																	
	ASTERACEAE	**ASTER FAMILY**																							
	Ageratina altissima var. *altissima*	white snakeroot	G5	S5			L5									X									
*	*Arctium lappa*	great burdock	G?	SE5			L+										X		X						
*	*Arctium minus*	common burdock	G?T?	SE5			L+						X			X									
	Aster lateriflorus var. *lateriflorus*	calico aster	G5T5	S5																	X				X
	Aster puniceus var. *puniceus*	purple-stemmed aster	G5T?	S5			L5							X											
	Bidens frondosa	devil's beggar-ticks	G5	S5			L5						X	X						X					
*	*Cirsium arvense*	Canada thistle	G?	SE5			L+																	X	
*	*Cirsium vulgare*	bull thistle	G5	SE5			L+							X						X					
	Erigeron annuus	daisy fleabane	G5	S5			L5						X						X		X				
	Erigeron philadelphicus var. *philadelphicus*	Philadelphia fleabane	G5T?	S5			L5													X					
	Eupatorium maculatum var. *maculatum*	spotted joe-pye-weed	G5T5	S5			L5							X											X
	Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5			L4							X											
	Eurybia macrophylla	large-leaved aster	G5	S5			L5	X	X							X									X

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
*	*Hieracium caespitosum*	field hawkweed		SE5			L+				X			X							X				
	Solidago caesia	blue-stem goldenrod	G5	S5			L5		X							X					X				
	Solidago canadensis	canada goldenrod	G5	S5			L5							X					X		X	X			
	Solidago canadensis var. *scabra*	tall goldenrod		S5			L5										X			X					X
	Solidago flexicaulis	zig-zag goldenrod	G5	S5			L5	X									X	X	X						X
	Solidago gigantean	giant goldenrod	G5	S5			L5						X	X						X					
	Symphyotrichum novae-angliae	New England aster	G5	S5			L5							X					X						
*	*Taraxacum officinale*	common dandelion	G5	SE5			L+	X									X		X		X				X
*	*Tussilago farfara*	coltsfoot	G?	SE5			L+						X	X		X			X			X	X	X	X
	ALISMATACEAE	**WATER-PLANTAIN FAMILY**																							
	Alisma plantago-aquatica	common water-plantain	G5	S5			L4													X					
	ARACEAE	**ARUM FAMILY**																							
	Arisaema triphyllum ssp. *triphyllum*	small jack-in-the-pulpit	G5T5	S5			L4		X		X		X		X	X	X	X	X		X	X	X		X
	JUNCACEAE	**RUSH FAMILY**																							
	Juncus canadensis	Canada rush	G5	S5			LX							X											
	Juncus dudleyi	Dudley's rush	G5	S5			L5																		X
	Juncus effusus ssp. *solutus*	soft rush	G5T?	S5			L4							X											
	CYPERACEAE	**SEDGE FAMILY**																							
	Carex bebbii	Bebb's sedge	G5	S5			L5																		X
	Carex canescens ssp. *canescens*	silvery sedge	G5T?	S5			L3												X						
	Carex gracillima	graceful sedge	G5	S5			L4												X		X				
	Carex hystericina	porcupine sedge	G5	S5			L4							X											
	Carex lacustris	lake-bank sedge	G5	S5			L4									X									
	Carex pedunculata	long-stalked sedge	G5	S5			L4				X														
	Carex pensylvanica	Pennsylvania sedge	G5	S5			L4												X		X				
	Carex plantaginea	plantain-leaved sedge	G5	S5			L3											X	X						
	Carex rosea	stellate sedge	G5	S5			L5		X					X	X		X	X	X		X				X
	Carex sp.	sedge																			X				
	Carex stipata	awl-fruited sedge	G5	S5			L5												X						X
	Carex vulpinoidea	fox sedge	G5	S5			L5										X				X				
	Scirpus atrovirens	dark-green bulrush	G5?	S5			L5							X											X
	Scirpus microcarpus	small-fruited bulrush	G5	S5			L4							X											
	POACEAE	**GRASS FAMILY**																							
*	*Agrostis stolonifera*	redtop	G5	S5			L+?							X											

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
*	*Bromus inermis* ssp. *inermis*	awnless brome	G4G5T?	SE5			L+																	X	
*	*Dactylis glomerata*	orchard grass	G?	SE5			L+	X												X	X				X
*	*Elymus repens*	quack grass	G?	SE5			L+																	X	
	Festuca rubra ssp. *rubra*	red fescue	G5T4	S5			L+																	X	
	Glyceria striata	fowl meadow grass	G5	S5			L5											X	X						X
	Phalaris arundinacea	reed canary grass	G5	S5			L+?	X				X												X	X
	Phragmites australis	common reed	G5	S5			L+?																		X
	Poa palustris	fowl meadow grass	G5	S5			L5																		X
	Poa pratensis ssp. *pratensis*	Kentucky bluegrass	G5T	S5			L+							X					X		X			X	
	TYPHACEAE	**CATTAIL FAMILY**																							
	Typha angustifolia	narrow-leaved cattail	G5	S5			L+																		X
	Typha sp.	cattail												X											
	LILIACEAE	**LILY FAMILY**																							
*	*Convallaria majalis*	lily-of-the-valley	G5	SE5			L+																		X
	Erythronium americanum ssp. *americanum*	yellow dog's-tooth violet	G5T5	S5			L5						X						X			X	X		
*	*Hemerocallis fulva*	orange day-lily	G?	SE5			L+																		X
	Lilium michiganense	Michigan lily	G5	S5			L3						X												
	Maianthemum canadense	wild lily-of-the-valley	G5	S5			L4				X							X	X						
	Maianthemum racemosum ssp. *racemosum*	false Solomon’s seal	G5T	S5			L5											X	X						
	Streptopus lanceolatus var. *roseus*	rose twisted-stalk	G5	S5			L3						X												
	Trillium cernuum	nodding trillium	G5	S5			L1				X														
	Trillium erectum	purple trillium	G5	S5			L3											X	X						
	Trillium grandiflorum	white trillium	G5	S5			L3									X		X	X						
	Trillium sp.	trillium											X				X								
	IRIDACEAE	**IRIS FAMILY**																							
	Iris versicolor	multi-coloured blue-flag	G5	S5			L3							X											
	SMILACACEAE	**CATBRIER FAMILY**																							
	Smilax herbacea	herbaceous carrion flower	G5	S4			L5														X				
	ORCHIDACEAE	**ORCHID FAMILY**																							
*	*Epipactis helleborine*	common helleborine	G?	SE5			L+												X						

APPENDIX D2
WETLANDS COMMUNITIES VASCULAR PLANT LIST

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
	EQUISETACEAE	**HORSETAIL FAMILY**																										
	Equisetum arvense	field horsetail	G5	S5			L5									X												
	Equisetum fluviatile	water horsetail	G5	S5			L3											X										
	Equisetum pratense	meadow horsetail	G5	S5			L3	X	X	X		X	X									X					X	X
	DRYOPTERIDACEAE	**WOOD FERN FAMILY**																										
	Onoclea sensibilis	sensitive fern	G5	S5			L5					X										X						
	CUPRESSACEAE	**CEDAR FAMILY**																										
	Thuja occidentalis	eastern white cedar	G5	S5			L4						X									X						
	RANUNCULACEAE	**BUTTERCUP FAMILY**																										
	Anemone canadensis	Canada anemone	G5	S5			L5						X															
*	*Ranunculus acris*	tall buttercup	G5	SE5			L+						X															
	Ranunculus recurvatus var. *recurvatus*	hooked buttercup	G5	S5			L5						X															
	Ranunculus sceleratus var. *sceleratus*	cursed buttercup	G5T5	S5				X	X			X	X												X		X	X
	Thalictrum dioicum	early meadow-rue	G5	S5			L5						X															
	ULMACEAE	**ELM FAMILY**																										
	Ulmus americana	white elm	G5?	S5			L5						X															
	Ulmus rubra	slippery elm	G5	S5			L2																X					
	BETULACEAE	**BIRCH FAMILY**																										
	Betula alleghaniensis	yellow birch	G5	S5			L4															X						
	CUCURBITACEAE	**GOURD FAMILY**																										
	Echinocystis lobate	prickly cucumber	G5	S5			L5																X					
	SALICACEAE	**WILLOW FAMILY**																										
*	*Populus alba*	silver poplar	G5	SE5			L+									X												
	Populus balsamifera ssp. *balsamifera*	balsam poplar	G5T?	S5			L5																X					
	Populus deltoides ssp. *deltoides*	eastern cottonwood	G5T?	SU			L5																			X		
	Populus tremuloides	trembling aspen	G5	S5			L5					X																
*	*Salix alba*	white willow	G5	SE4			L+			X			X			X	X									X	X	
	Salix eriocephala	Missouri willow	G5	S5			L5				X					X	X	X							X	X		
*	*Salix fragilis*	crack willow	G?	SE5			L+																		X	X		
	Salix matsudana	corkscrew willow	G?	SR			L+									X												
	Salix sp.	willow		?					X			X									X			X				
	BRASSICACEAE	**MUSTARD FAMILY**																										
*	*Rorippa nasturtium-aquaticum*	water-cress	G?	SE?				X																				
	ROSACEAE	**ROSE FAMILY**																										

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
	Crataegus punctata	large-fruited thorn	G5	S5			L5																X				X	
	Fragaria virginiana ssp. *virginiana*	scarlet strawberry	G5T?	SU			L5																X					X
	Geum canadense	white avens	G5	S5			L5																					X
*	*Malus pumila*	common apple	G5	SE5			L+																				X	
	Prunus virginiana var. *virginiana*	choke cherry	G5T?	S5			L5																X					
*	*Rubus idaeus* ssp. *idaeus*	red raspberry	G5T5	SE1																								X
	FABACEAE	**PEA FAMILY**																										
*	*Vicia cracca*	tufted vetch	G?	SE5			L+	X					X										X		X			
	ELAEAGNACEAE	**OLEASTER FAMILY**																										
*	*Elaeagnus angustifolia*	Russian olive	G?	SE3			L+									X												
	LYTHRACEAE	**LOOSESTRIFE FAMILY**																										
*	*Lythrum salicaria*	purple loosestrife	G5	SE5			L+	X								X		X						X	X		X	
	CORNACEAE	**DOGWOOD FAMILY**																										
	Cornus rugosa	round-leaved dogwood	G5	S5			L3																					X
	Cornus sericea ssp. *sericea*	red-osier dogwood	G5	S5			L5	X				X	X	X	X		X	X					X	X	X	X		X
	RHAMNACEAE	**BUCKTHORN FAMILY**																										
*	*Rhamnus cathartica*	common buckthorn	G?	SE5			L+																X		X		X	X
	VITACEAE	**GRAPE FAMILY**																										
	Vitis riparia	riverbank grape	G5	S5			L5					X											X			X	X	
	ACERACEAE	**MAPLE FAMILY**																										
	Acer negundo	manitoba maple	G5	S5			L+?																	X	X	X		
	Acer rubrum	red maple	G5	S5			L4																					X
	GERANIACEAE	**GERANIUM FAMILY**																										
	Geranium maculatum	spotted crane's-bill	G5	S5			L4																					X
	BALSAMINACEAE	**TOUCH-ME-NOT FAMILY**																										
	Impatiens capensis	spotted touch-me-not	G5	S5			L5			X		X										X	X	X	X		X	X
	APIACEAE	**PARSLEY FAMILY**																										
	Cicuta maculata	spotted water-hemlock	G5	S5			L5																				X	
*	*Daucus carota*	wild carrot	G?	SE5			L+						X															
	ASCLEPIADACEAE	**MILKWEED FAMILY**																										
*	*Cynanchum rossicum*	swallow-wort	G?	SE5			L+						X									X	X		X		X	X
	SOLANACEAE	**POTATO FAMILY**																										
*	*Solanum dulcamara*	bitter nightshade	G?	SE5			L+					X											X	X				
	BORAGINACEAE	**BORAGE FAMILY**																										

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
*	*Myosotis scorpioides*	mouse-ear scorpion-grass	G5	SE5			L+	X	X																		X	
*	*Symphytum officinale* ssp. *officinale*	common comfrey		SE5			L+									X							X		X			
	VERBENACEAE	**VERVAIN FAMILY**																										
	Verbena hastata	blue vervain	G5	S5			L5					X	X														X	
	LAMIACEAE	**MINT FAMILY**																										
	Lycopus americanus	cut-leaved water-horehound	G5	S5			L4	X				X	X												X			X
	Lycopus uniflorus	northern water-horehound	G5	S5			L4					X																
	Mentha arvensis	American wild mint	G5T5	S5			L5						X															
*	*Prunella vulgaris* ssp. *vulgaris*	common heal-all	G5T?	SE3			L+?																					X
	PLANTAGINACEAE	**PLANTAIN FAMILY**																										
*	*Plantago major*	common plantain	G5	SE5			L+					X	X															
	OLEACEAE	**OLIVE FAMILY**																										
	Fraxinus nigra	black ash	G5	S5			L4															X						
	Fraxinus pennsylvanica	red ash	G5	S5			L5					X						X					X		X		X	X
	SCROPHULARIACEAE	**FIGWORT FAMILY**																										
*	*Veronica anagallis-aquatica*	water speedwell	G5	SE5			L+	X								X												
	RUBIACEAE	**MADDER FAMILY**																										
	Galium palustre	marsh bedstraw	G5	S5			L4		X			X	X															
	CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**																										
	Lonicera canadensis	american fly honeysuckle	G5	S5			L3																					X
*	*Lonicera tatarica*	tartarian honeysuckle	G?	SE5			L+						X															
*	*Viburnum opulus*	guelder rose	G5	SE4			L+			X								X									X	X
	ASTERACEAE	**ASTER FAMILY**																										
*	*Arctium minus*	common burdock	G?T?	SE5			L+																	X				
	Aster lanceolatus ssp. *lanceolatus*	tall white aster	G5T?	S5			L5			X		X																X
	Aster puniceus var. *puniceus*	purple-stemmed aster	G5T?	S5			L5			X			X														X	
	Bidens frondosa	devil's beggar-ticks	G5	S5			L5	X				X	X										X		X		X	X
*	*Cirsium arvense*	Canada thistle	G?	SE5			L+																				X	
	Erigeron annuus	daisy fleabane	G5	S5			L5																					X
	Eupatorium maculatum var. *maculatum*	spotted joe-pye-weed	G5T5	S5			L5		X			X	X								X						X	X
	Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5			L4					X	X															X
*	*Hieracium caespitosum*	field hawkweed		SE5			L+						X															
	Solidago canadensis	canada goldenrod	G5	S5			L5		X		X		X								X		X	X				
	Solidago canadensis var. *scabra*	tall goldenrod		S5			L5																		X		X	

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
	Solidago gigantea	giant goldenrod	G5	S5			L5			X																		
	Symphyotrichum novae-angliae	New England aster	G5	S5			L5						X															
*	*Taraxacum officinale*	common dandelion	G5	SE5			L+																X					
*	*Tussilago farfara*	coltsfoot	G?	SE5			L+																	X	X			X
	ALISMATACEAE	**WATER-PLANTAIN FAMILY**																										
	Alisma plantago-aquatica	common water-plantain	G5	S5			L4	X								X												
	LEMNACEAE	**DUCKWEED FAMILY**																										
	Lemna minor	lesser duckweed	G5	S5			L5	X								X			X									
	JUNCACEAE	**RUSH FAMILY**																										
	Juncus canadensis	Canada rush	G5	S5			LX						X															
	Juncus effusus ssp. *solutus*	soft rush	G5T?	S5			L4	X					X															
	Juncus tenuis	path rush	G5	S5			L5			X																		
	CYPERACEAE	**SEDGE FAMILY**																										
	Carex bebbii	Bebb's sedge	G5	S5			L5									X												
	Carex comosa	bristly sedge	G5	S5			L3																X					
	Carex hystericina	porcupine sedge	G5	S5			L4						X															
	Carex lacustris	lake-bank sedge	G5	S5			L4																X					
	Carex pensylvanica	Pennsylvania sedge	G5	S5			L4																X					
	Carex rosea	stellate sedge	G5	S5			L5															X						
	Carex stipata	awl-fruited sedge	G5	S5			L5			X						X							X					
	Carex vulpinoidea	fox sedge	G5	S5			L5		X							X									X			
	Schoenoplectus pungens var. *pungens*	common three-square	G5	S5			L4	X																				
	Scirpus atrovirens	dark-green bulrush	G5?	S5			L5	X	X																X			
	Scirpus microcarpus	small-fruited bulrush	G5	S5			L4					X	X															
	POACEAE	**GRASS FAMILY**																										
*	*Agrostis stolonifera*	redtop	G5	S5			L+?			X		X	X															
*	*Bromus inermis* ssp. *inermis*	awnless brome	G4G5T?	SE5			L+																	X				
*	*Elymus repens*	quack grass	G?	SE5			L+																		X			
	Festuca rubra ssp. *rubra*	red fescue	G5T4	S5			L+																X					
	Glyceria striata	fowl meadow grass	G5	S5			L5	X															X		X			X
	Phalaris arundinacea	reed canary grass	G5	S5			L+?	X	X	X	X	X			X	X			X		X			X	X	X	X	X
	Phragmites australis	common reed	G5	S5			L+?			X	X			X		X	X	X	X	X						X		
	Poa palustris	fowl meadow grass	G5	S5			L5					X											X					X
	Poa pratensis ssp. *pratensis*	Kentucky bluegrass	G5T	S5			L+						X										X					

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
TYPHACEAE	**CATTAIL FAMILY**																										
Typha angustifolia	narrow-leaved cattail	G5	S5			L+		X	X		X				X	X	X	X									
Typha latifolia	broad-leaved cattail	G5	S5			L4				X			X	X		X	X		X						X	X	
Typha sp.	Cattail						X					X								X							
IRIDACEAE	**IRIS FAMILY**																										
Iris versicolor	multi-coloured blue-flag	G5	S5			L3						X															

APPENDIX D3
CULTURAL COMMUNITIES VASCULAR PLANT LIST

APPENDIX D3.
CULTURAL COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-1l	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow D	Hedgerow F	Hedgerow G	Hedgerow H	Hedgerow I
	EQUISETACEAE	**HORSETAIL FAMILY**																																							
	Equisetum arvense	field horsetail	G5	S5			L5																X	X	X															X	X
	Equisetum fluviatile	water horsetail	G5	S5			L3					X																														
	Equisetum pratense	meadow horsetail	G5	S5			L3	X							X									X																		
	DRYOPTERIDACEAE	**WOOD FERN FAMILY**																																								
	Onoclea sensibilis	sensitive fern	G5	S5			L5								X																											
	PINACEAE	**PINE FAMILY**																																							
	Picea glauca	white spruce	G5	S5			L3									X									X										X					X	
*	*Picea pungens*	Colorado spruce	G5	SE1			L+				X		X													X				X											
*	*Pinus nigra*	Austrian pine	G?	SE2			L+																					X														
	Pinus strobus	eastern white pine	G5	S5			L4																					X	X			X										
*	*Pinus sylvestris*	scotch pine	G?	SE5			L+				X		X													X							X		X	X					
	CUPRESSACEAE	**CEDAR FAMILY**																																							
	Juniperus virginiana	eastern red cedar	G5	S5			L5		X	X		X								X		X																			X
	Thuja occidentalis	eastern white cedar	G5	S5			L4					X											X	X	X	X				X		X		X					X	
	RANUNCULACEAE	**BUTTERCUP FAMILY**																																							
	Actaea rubra	red baneberry	G5	S5			L5																												X		X				
	Anemone canadensis	Canada anemone	G5	S5			L5								X										X																
*	*Ranunculus acris*	tall buttercup	G5	SE5			L+								X						X												X			X	X	X			X
	Ranunculus sceleratus var. *sceleratus*	cursed buttercup	G5T5	S5											X																										
	Thalictrum dioicum	early meadow-rue	G5	S5			L5								X																										
	BERBERIDACEAE	**BARBERRY FAMILY**																																							
	Podophyllum peltatum	may-apple	G5	S5			L4									X																		X		X				X	
	ULMACEAE	**ELM FAMILY**																																							
	Ulmus americana	white elm	G5?	S5			L5																										X			X	X	X		X	X
	URTICACEAE	**NETTLE FAMILY**																																							
*	*Urtica dioica* ssp. *dioica*	European stinging nettle	G5T?	SE2			L+					X			X	X																									
	JUGLANDACEAE	**WALNUT FAMILY**																																							
	Juglans nigra	black walnut	G5	S4			L5			X	X	X	X			X						X				X		X	X						X		X	X	X			
	FAGACEAE	**BEECH FAMILY**																																							
	Quercus macrocarpa	bur oak	G5	S5			L4																									X				X			X		
	Quercus rubra	red oak	G5	S5			L4										X																			X		X			
	BETULACEAE	**BIRCH FAMILY**																																							

APPENDIX D3.
CULTURAL COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-1l	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow D	Hedgerow F	Hedgerow G	Hedgerow H	Hedgerow I
	Ostrya virginiana	ironwood	G5	S5			L5																													X		X		X	
	CHENOPODIACEAE	**GOOSEFOOT FAMILY**																																							
*	*Chenopodium album* var. *album*	lamb's quarters	G5T5	SE5			L+					X					X							X																	
	CARYOPHYLLACEAE	**PINK FAMILY**																																							
*	*Dianthus armeria*	deptford pink	G?	SE5			L+								X																										
*	*Saponaria officinalis*	bouncing-bet	G?	SE5			L+											X																							
*	*Silene vulgaris*	catchfly	G?	SE5			L+														X				X																
	POLYGONACEAE	**SMARTWEED FAMILY**																																							
*	*Rumex crispus*	curly-leaf dock	G?	SE5			L+			X							X	X				X												X							
	TILIACEAE	**LINDEN FAMILY**																																							
	Tilia americana	basswood	G5	S5			L5																					X			X		X	X		X	X	X		X	
	CUCURBITACEAE	**GOURD FAMILY**																																							
	Echinocystis lobata	prickly cucumber	G5	S5			L5																		X									X	X					X	
	SALICACEAE	**WILLOW FAMILY**																																							
	Populus balsamifera ssp. *balsamifera*	balsam poplar	G5T?	S5			L5																	X						X		X								
	Populus deltoides ssp. *deltoides*	eastern cottonwood	G5T?	SU			L5		X			X								X																				
	Populus tremuloides	trembling aspen	G5	S5			L5															X	X	X				X		X				X							X
*	*Salix alba*	white willow	G5	SE4			L+					X										X					X														
	Salix eriocephala	Missouri willow	G5	S5			L5	X	X			X								X			X																		
*	*Salix fragilis*	crack willow	G?	SE5			L+															X																			
	Salix petiolaris	slender willow	G4	S5			L3		X																																
*	*Salix* X *sepulcralis*	hybrid willow	HYB	SE2			L+			X												X																			
	BRASSICACEAE	**MUSTARD FAMILY**																																							
*	*Alliaria petiolata*	garlic mustard	G5	SE5			L+					X													X									X		X	X		X		
*	*Barbarea vulgaris*	yellow rocket	G?	SE5			L+								X										X												X				
*	*Hesperis matronalis*	dame's rocket	G4G5	SE5			L+		X			X			X	X	X								X	X		X	X		X		X	X		X		X		X	
*	*Rorippa nasturtium-aquaticum*	water-cress	G?	SE?											X																										
*	*Thlaspi arvense*	field penny-cress	G?	SE5			L+													X																					
	PRIMULACEAE	**PRIMROSE FAMILY**																																							
*	*Lysimachia nummularia*	moneywort	G?	SE5			L+								X																										
	GROSSULARIACEAE	**GOOSEBERRY FAMILY**																																							
	Ribes cynosbati	prickly gooseberry	G5	S5			L5					X																X	X		X			X		X		X			X
	Ribes hirtellum	smooth gooseberry	G5	S5			L3																					X													

APPENDIX D3.
CULTURAL COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-1l	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow D	Hedgerow F	Hedgerow G	Hedgerow H	Hedgerow I
	ROSACEAE	**ROSE FAMILY**																																							
*	*Crataegus monogyna*	English hawthorn	G5	SE5			L+														X							X						X								
	Crataegus punctata	large-fruited thorn	G5	S5			L5					X		X		X								X					X			X				X					X
	Crataegus sp.	hawthorn																													X										
	Fragaria virginiana ssp. *virginiana*	scarlet strawberry	G5T?	SU			L5		X	X												X								X	X			X		X		X		X	
	Geum aleppicum	yellow avens	G5	S5			L5									X												X	X	X	X										
	Geum canadense	white avens	G5	S5			L5																																			X
*	*Malus baccata*	Siberian crabapple	G?	SE1			L+																										X									
*	*Malus pumila*	common apple	G5	SE5			L+					X									X									X												
	Malus sp.	apple								X												X												X								
*	*Potentilla argentea*	silvery cinquefoil	G?	SE5			L+																									X										
*	*Potentilla recta*	rough-fruited cinquefoil	G?	SE5			L+												X																							
*	*Prunus avium*	sweet cherry	G?	SE4			L+																													X		X				
	Prunus serotina	black cherry	G5	S5			L5																							X		X			X		X				
	Prunus virginiana var. *virginiana*	choke cherry	G5T?	S5			L5					X																		X		X			X	X	X		X	
*	*Pyrus communis*	common pear	G5	SE4			L+					X																													
*	*Rosa multiflora*	multiflora rose	G?	SE4			L+																	X	X				X					X	X						
	Rubus allegheniensis	alleghany blackberry	G5	S5			L5																									X									
*	*Rubus idaeus* ssp. *idaeus*	red raspberry	G5T5	SE1												X												X			X										
	Rubus occidentalis	thimble-berry	G5	S5			L5									X																									
	FABACEAE	**PEA FAMILY**																																							
	Amphicarpaea bracteata	hog peanut	G5	S5			L5								X																										
*	*Coronilla varia*	variable crown-vetch	G?	SE5			L+													X	X																				
*	*Lotus corniculatus*	bird's-foot trefoil	G?	SE5			L+											X	X		X				X	X															
*	*Medicago lupulina*	black medick	G?	SE5			L+				X	X	X	X			X	X	X	X	X					X															X	
*	*Medicago sativa* ssp. *sativa*	alfalfa	G?T?	SE5			L+	X			X		X							X	X																				
*	*Melilotus alba*	white sweet-clover	G?	SE5			L+		X		X		X						X	X				X		X															
*	*Melilotus officinalis*	yellow sweet-clover	G?	SE5			L+				X		X							X																					
*	*Robinia pseudo-acacia*	black locust	G5	SE5			L+					X																X														
*	*Trifolium pratense*	red clover	G?	SE5			L+	X		X				X	X		X		X	X	X	X			X	X															
*	*Trifolium repens*	white clover	G?	SE5			L+									X					X																				
	Vicia americana	purple vetch	G5	S5			L3																											X								

APPENDIX D3.
CULTURAL COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-1l	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow D	Hedgerow F	Hedgerow G	Hedgerow H	Hedgerow I
*	*Vicia cracca*	tufted vetch	G?	SE5			L+	X	X					X	X				X	X				X	X			X				X	X	X							X	X
	ELAEAGNACEAE	**OLEASTER FAMILY**																																								
*	*Elaeagnus angustifolia*	Russian olive	G?	SE3			L+		X					X																													
	LYTHRACEAE	**LOOSESTRIFE FAMILY**																																								
*	*Lythrum salicaria*	purple loosestrife	G5	SE5			L+		X		X	X	X								X																					X
	ONAGRACEAE	**EVENING-PRIMROSE FAMILY**																																								
	Circaea alpina	smaller enchanter's nightshade	G5	S5			L3																										X								
	Circaea lutetiana ssp. *canadensis*	yellowish enchanter's nightshade	G5T5	S5			L5									X																		X							
	Oenothera biennis	common evening-primrose	G5	S5			L5		X					X			X		X	X																					
	CORNACEAE	**DOGWOOD FAMILY**																																								
	Cornus alternifolia	alternate-leaved dogwood	G5	S5			L5																									X	X							X	
	Cornus racemosa	red panicled dogwood	G5?	S5			L4																							X							X			X	
	Cornus sericea ssp. *sericea*	red-osier dogwood	G5	S5			L5			X	X	X	X							X		X	X						X			X					X				
	RHAMNACEAE	**BUCKTHORN FAMILY**																																								
*	*Rhamnus cathartica*	common buckthorn	G?	SE5			L+			X											X		X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
	VITACEAE	**GRAPE FAMILY**																																								
	Parthenocissus vitacea	inserted Virginia-creeper	G5	S5			L5																	X				X			X	X					X		X	X
	Vitis riparia	riverbank grape	G5	S5			L5	X		X		X		X		X				X		X	X		X			X	X	X		X	X	X		X	X	X	X	X	X
	ACERACEAE	**MAPLE FAMILY**																																								
	Acer negundo	Manitoba maple	G5	S5			L+?	X			X	X	X	X	X				X	X	X		X	X	X	X		X	X	X	X		X	X	X		X	X	X		X
*	*Acer platanoides*	Norway maple	G?	SE5			L+																			X												X		X			
	Acer saccharinum	silver maple	G5	S5			L4																					X										X		X			
	Acer saccharum var. *saccharum*	sugar maple	G5T?	S5			L5																										X	X	X	X		X		X		
	ANACARDIACEAE	**SUMAC FAMILY**																																								
	Rhus hirta	staghorn sumac	G5	S5			L5			X		X		X			X		X	X	X	X	X		X												X		X			
	GERANIACEAE	**GERANIUM FAMILY**																																								
*	*Geranium robertianum*	herb-robert	G5	SE5			L+?					X																														X	
	BALSAMINACEAE	**TOUCH-ME-NOT FAMILY**																																								
	Impatiens capensis	spotted touch-me-not	G5	S5			L5								X	X							X																			X
*	*Impatiens glandulifera*	glandular touch-me-not	G?	SE4			L+								X																											
	APIACEAE	**PARSLEY FAMILY**																																								
*	*Aegopodium podagraria*	goutweed	G?	SE5			L+																												X							

APPENDIX D3.
CULTURAL COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-1l	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow D	Hedgerow F	Hedgerow G	Hedgerow H	Hedgerow I
*	*Daucus carota*	wild carrot	G?	SE5			L+	X	X	X	X	X		X			X	X	X	X	X	X		X	X	X								X			X				
	ASCLEPIADACEAE	**MILKWEED FAMILY**																																							
	Asclepias syriaca	common milkweed	G5	S5			L5		X	X	X	X	X		X		X	X	X	X	X	X			X	X		X				X									
*	*Cynanchum rossicum*	swallow-wort	G?	SE5			L+				X	X	X	X	X	X	X			X			X						X	X	X		X	X	X	X	X	X	X	X	X
	SOLANACEAE	**POTATO FAMILY**																																							
*	*Solanum dulcamara*	bitter nightshade	G?	SE5			L+				X		X	X											X										X							
	HYDROPHYLLACEAE	**WATER-LEAF FAMILY**																																							
	Hydrophyllum virginianum	Virginia water-leaf	G5	S5			L5																							X			X			X		X			X
	BORAGINACEAE	**BORAGE FAMILY**																																							
	Hackelia virginiana	Virginia stickweed	G5	S5			L5				X					X																									
*	*Lithospermum officinale*	common gromwell	G?	SE5			L+				X																															
*	*Myosotis scorpioides*	mouse-ear scorpion-grass	G5	SE5			L+		X						X																											
*	*Symphytum officinale* ssp. *officinale*	common comfrey		SE5			L+											X						X				X			X	X				X	X	X				
	LAMIACEAE	**MINT FAMILY**																																							
*	*Glechoma hederacea*	creeping Charlie	G?	SE5			L+									X																									
*	*Leonurus cardiaca* ssp. *cardiaca*	common motherwort	G?T?	SE5			L+										X																				X				
	PLANTAGINACEAE	**PLANTAIN FAMILY**																																							
*	*Plantago lanceolata*	ribgrass	G5	SE5			L+			X					X		X		X			X				X					X										
*	*Plantago major*	common plantain	G5	SE5			L+	X	X	X					X		X	X		X	X	X		X		X													X	X
	OLEACEAE	**OLIVE FAMILY**																																							
	Fraxinus americana	white ash	G5	S5			L5																					X													
	Fraxinus pennsylvanica	red ash	G5	S5			L5			X		X						X			X		X			X	X	X	X	X	X	X	X		X	X	X	X	X	X
*	*Syringa vulgaris*	common lilac	G?	SE5			L+					X							X								X														
	SCROPHULARIACEAE	**FIGWORT FAMILY**																																							
*	*Verbascum thapsus*	common mullein	G?	SE5			L+			X	X		X	X			X			X	X	X			X												X				
	CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**																																							
*	*Lonicera tatarica*	tartarian honeysuckle	G?	SE5			L+					X												X		X		X	X			X			X	X		X		X	
*	*Viburnum opulus*	guelder rose	G5	SE4			L+																	X							X		X								
	VALERIANACEAE	**VALERIAN FAMILY**																																							
*	*Valeriana officinalis*	common valerian	G?	SE3			L+											X						X																		
	DIPSACACEAE	**TEASEL FAMILY**																																							
*	*Dipsacus fullonum* ssp. *sylvestris*	wild teasel	G?T?	SE5			L+					X									X																				
	ASTERACEAE	**ASTER FAMILY**																																							

APPENDIX D3.
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	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-1l	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow D	Hedgerow F	Hedgerow G	Hedgerow H	Hedgerow I
*	*Achillea millefolium* var. *millefolium*	common yarrow	G5T?	SE?			L+	X				X																														
*	*Arctium lappa*	great burdock	G?	SE5			L+								X					X																						
*	*Arctium minus*	common burdock	G?T?	SE5			L+				X	X	X				X			X			X								X										
	Aster lateriflorus var. *lateriflorus*	calico aster	G5T5	S5								X			X			X			X						X	X													
	Aster sp.	aster								X	X	X	X				X			X		X				X			X												
	Bidens frondosa	devil's beggar-ticks	G5	S5			L5								X																										X
*	*Cichorium intybus*	chicory	G?	SE5			L+	X		X				X			X	X	X		X	X																			
*	*Cirsium arvense*	Canada thistle	G?	SE5			L+	X	X	X	X			X	X			X	X	X	X	X						X								X		X			
*	*Cirsium vulgare*	bull thistle	G5	SE5			L+		X		X		X				X			X																X		X			X
	Conyza canadensis	horseweed	G5	S5			L5													X	X																				
	Erigeron annuus	daisy fleabane	G5	S5			L5																X							X											
	Erigeron philadelphicus var. *philadelphicus*	Philadelphia fleabane	G5T?	S5			L5		X																		X														
	Eupatorium maculatum var. *maculatum*	spotted joe-pye-weed	G5T5	S5			L5	X							X																										
	Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5			L4	X																																
	Eurybia macrophylla	large-leaved aster	G5	S5			L5																																		X
*	*Hieracium caespitosum*	field hawkweed		SE5			L+		X														X									X									
*	*Inula helenium*	elecampane	G?	SE5			L+										X	X																							
*	*Leucanthemum vulgare*	ox-eye daisy	G?	SE5			L+	X	X	X					X			X	X		X	X	X									X									X
*	*Matricaria maritima* ssp. maritima	seaside camomile	G5T?	SE?										X				X																							
	Rudbeckia hirta	black-eyed Susan	G5	S5			L4										X	X																							
	Solidago caesia	blue-stem goldenrod	G5	S5			L5																																	X	
	Solidago canadensis	canada goldenrod	G5	S5			L5	X	X			X		X	X	X		X			X			X		X	X		X			X							X	
	Solidago canadensis var. *scabra*	tall goldenrod		S5			L5		X	X	X	X	X						X	X	X	X					X					X		X			X		X	X		
	Solidago flexicaulis	zig-zag goldenrod	G5	S5			L5																														X		X			
	Solidago gigantea	giant goldenrod	G5	S5			L5																									X									
	Solidago rugosa ssp. *rugosa*	rough goldenrod	G5T?	S5			L5																								X										
	Solidago sp.	goldenrod															X																								
*	*Sonchus arvensis* ssp. *arvensis*	field sow-thistle	G?T?	SE5			L+													X																					
	Symphyotrichum novae-angliae	New England aster	G5	S5			L5												X				X																		
*	*Tanacetum vulgare*	common tansy	G?	SE5			L+																															X				

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*	*Taraxacum officinale*	common dandelion	G5	SE5			L+	X	X	X	X	X	X	X		X	X	X	X	X	X	X		X		X						X				X		X			X
*	*Tussilago farfara*	coltsfoot	G?	SE5			L+		X	X		X		X	X			X	X	X	X	X				X														
	ALISMATACEAE	**WATER-PLANTAIN FAMILY**																																							
	Sagittaria latifolia	broad-leaved arrowhead	G5	S5			L4								X																										
	ARACEAE	**ARUM FAMILY**																																							
	Arisaema triphyllum ssp. *triphyllum*	small jack-in-the-pulpit	G5T5	S5			L4									X																								X	
	JUNCACEAE	**RUSH FAMILY**																																							
	Juncus sp.	rush										X																													
	Juncus tenuis	path rush	G5	S5			L5	X	X																																
	CYPERACEAE	**SEDGE FAMILY**																																							
	Carex albursina	white bear sedge	G5	S5			L4																																	X	
	Carex bebbii	Bebb's sedge	G5	S5			L5	X																																	
	Carex pensylvanica	Pennsylvania sedge	G5	S5			L4									X																									
	Carex rosea	stellate sedge	G5	S5			L5																															X		X			
	Carex stipata	awl-fruited sedge	G5	S5			L5		X																																	
	Cladium mariscoides	water bog-rush	G5	S5			L1	X																																	
	Scirpus atrovirens	dark-green bulrush	G5?	S5			L5	X															X																		
	Scirpus microcarpus	small-fruited bulrush	G5	S5			L4								X																										
	POACEAE	**GRASS FAMILY**																																							
	Bromus ciliatus	fringed brome	G5	S5			L3																																	X			
*	*Bromus inermis* ssp. *inermis*	awnless brome	G4G5 T?	SE5			L+	X		X	X	X		X	X		X			X		X		X		X										X		X			X
*	*Dactylis glomerata*	orchard grass	G?	SE5			L+		X			X		X		X			X		X		X									X		X		X		X	X
	Danthonia spicata	poverty oat grass	G5	S5			L4		X		X		X					X		X						X		X												
	Elymus canadensis	nodding wild rye	G5	S4S5			L3					X																													
*	*Elymus repens*	quack grass	G?	SE5			L+				X		X		X																										
	Festuca rubra ssp. *rubra*	red fescue	G5T4	S5			L+								X			X			X																			
	Glyceria striata	fowl meadow grass	G5	S5			L5								X																									
*	*Hordeum jubatum* ssp. *jubatum*	squirrel-tail grass	G5T?	SE5			L+													X																				
	Panicum capillare	witch grass	G5	S5			L5				X		X							X						X														
	Phalaris arundinacea	reed canary grass	G5	S5			L+?	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X	X				X			X		X	X	X	X		X
*	*Phleum pratense*	timothy	G?	SE5			L+			X								X	X		X	X						X												
	Phragmites australis	common reed	G5	S5			L+?	X	X	X	X	X	X	X	X			X			X	X	X																		

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	Poa compressa	Canada blue grass	G?	S5			L+			X												X																			
	Poa pratensis ssp. *pratensis*	Kentucky bluegrass	G5T	S5			L+	X	X		X	X	X	X		X		X	X	X	X		X	X		X		X	X			X	X		X	X	X		X		X	
*	*Setaria viridis*	green foxtail	G?	SE5			L+			X				X			X					X				X																
	Sorghastrum nutans	Indian grass	G5	S4			L2							X																												
	TYPHACEAE	**CATTAIL FAMILY**																																								
	Typha angustifolia	narrow-leaved cattail	G5	S5			L+											X																								
	Typha latifolia	broad-leaved cattail	G5	S5			L4		X	X	X	X	X	X					X			X																			
	LILIACEAE	**LILY FAMILY**																																								
*	*Allium schoenoprasum* var. *schoenoprasum*	chives	G5T5	SE2			L+		X																																	
*	*Hemerocallis fulva*	orange day-lily	G?	SE5			L+		X																											X						
	Maianthemum racemosum ssp. *racemosum*	false Solomon's seal	G5T	S5			L5																													X		X				
	IRIDACEAE	**IRIS FAMILY**																																								
*	*Iris pseudacorus*	yellow iris	G?	SE3			L+								X									X																		

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?).
Q =	Denotes that the taxonomic status of the species, subspecies, or variety is 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 that 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 *Endangered Species Act*.
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 **Niagara Haldimand** (Riley 1989)

Species status within the Durham Region was 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 Niagara Haldimand

APPENDIX F
CORRESPONDENCE

Southern Region
Aurora District Office
50 Bloomington Road West
Aurora, ON L4G 0L8

Ontario

Ministry of Natural Resources and Forestry

Ministere des Richesses Naturelles et des Forêts

May 19, 2015

Judson Venier
LGL Limited
22 Fisher Street, P.O. Box 280
King City, ON L7B 1A6
Phone: (905) 833-1244
Email: jvenier@lgl.com

Re: MTO Highway 407 Transitway

Dear Mr. Venier,

In your email dated August 5, 2014 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location. There are a number of Species at Risk recorded from your study area and the immediate vicinity. As of the date of this letter, we have records of:

Bobolink	THR	Eastern Meadowlark	THR
Barn Swallow	THR	Chimney Swift	THR
Milksnake	SC	Eastern Ribbonsnake	SC
Snapping Turtle	SC	Eastern Wood-pewee	SC
Wood Thrush	SC	Butternut	END
Redside Dace	END		

Please note regulated habitat for Redside Dace is present within your study area and the immediate vicinity:

- Rouge River north of the study area is recovery habitat for Redside Dace
- Robinson Creek north of the study area is occupied Redside Dace habitat
- Ganatsekiagon Creek south of the study area is occupied Redside Dace habitat
- Urfe Creek, within the study area, is recovery habitat for Redside Dace
- Sections of Ganatsekiagon Creek, Brougham Creek and Spring Creek within the study area are considered contributing habitat for Redside Dace.

These species may receive protection under the *Endangered Species Act 2007* and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitat. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the *ESA 2007* or the status and protection levels of currently listed species may change.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact me at 905-713-7369 or ESA.Aurora@ontario.ca (Attention: Megan Eplett).

Sincerely,

Megan Eplett
A\ Management Biologist
Ontario Ministry of Natural Resources and Forestry, Aurora District