Appendix E – Terrestrial Report



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

TERRESTRIAL ECOSYSTEMS EXISTING CONDITIONS AND IMPACT ASSESSMENT REPORT

PLANNING, PRELIMINARY DESIGN AND TPAP

407 TRANSITWAY

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

G.W.P. 16/20003

prepared for:

MINISTRY OF TRANSPORTATION CENTRAL REGION

prepared by:



JULY 2020

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JULY 2020

LGL PROJECT TA8733

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1.0 Introduction

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

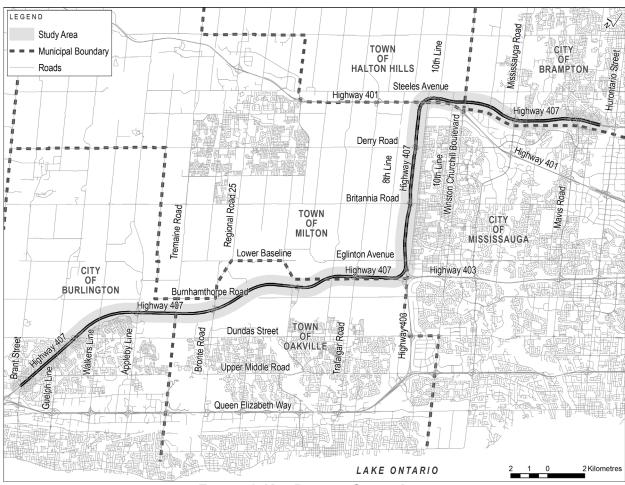


FIGURE 1. KEY PLAN OF STUDY AREA

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

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

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

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

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

2.0 Existing Conditions

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

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

2.1 Physiography and Soils

2.1.1 Purpose

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

2.1.2 Data Sources

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

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

2.1.3 Findings

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

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

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

Chinguacousy Clay Loam

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

Jeddo Clay Loam

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

Oneida Loam

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

Tuscola Silt Loam

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

Bottom Lands

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

2.1.4 Sensitivity/Significance

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

2.2 Vegetation and Vegetation Communities

2.2.1 Purpose

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

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

2.2.2 Data Sources

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

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

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

2.2.3 Findings

2.2.3.1 Designated Natural Areas

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

Provincially Significant Wetlands

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

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

North Oakville-Milton East PSW

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

North Oakville-Milton West PSW

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

Churchville-Norval PSW

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

Unevaluated Wetlands

Drumquin Unevaluated Wetland

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

Areas of Natural and Scientific Interest

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

Nelson Slope Forest Life Science ANSI

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

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

Zimmerman Valley Life Science ANSI

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

Trafalgar Moraine Earth Science ANSI

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

Oakville-Milton Wetlands and Uplands Life Science Candidate ANSI

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

Sixteen Mile Creek Valley Life Science Candidate ANSI

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

Greenbelt Plan

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

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

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

Niagara Escarpment Plan

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

Natural Heritage System

City of Burlington

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

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

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

Town of Oakville

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

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

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

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

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

Town of Milton

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

Town of Halton Hills

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

City of Mississauga

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

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

City of Brampton

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

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

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

2.2.3.2 Vegetation Communities

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

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

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

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

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

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

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

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

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIAL -	NATURAL/SEMI-N	ATURAL	
BLO	Open Bluff		
BLO1	Mineral Open Bluff	Ground Cover: examples include swallow-wort (Cynanchum rossicum), Canada goldenrod (Solidago canadensis), and garlic mustard (Alliaria petiolata).	 Tree cover ≤ 10% (BL). Tree cover ≤25%, shrub cover ≤25% (O). Mineral soils (1). Plant cover restricted by erosion related disturbances. Vegetation cover varies from patchy and barren to continuous herbaceous and shrub cover.
FOC	Coniferous Forest		to convinue as indicate as and shrue cover.
FOC2-2	Dry-Fresh White Cedar Coniferous Forest	Canopy: dominated by eastern white cedar (<i>Thuja occidentalis</i>). Includes white pine (<i>Pinus strobus</i>) and Manitoba maple (<i>Acer negundo</i>). Understorey: includes eastern white cedar, white pine, and Manitoba maple. Ground Cover: examples include swallow-wort (<i>Cynanchum rossicum</i>), Canada goldenrod (<i>Solidago canadensis</i>), and garlic mustard (<i>Alliaria petiolata</i>).	 Tree cover > 60% (FO). Coniferous trees > 75% of canopy cover (C). Soil moisture dry to fresh. Upper to middle slopes and tableland.
FOD	Deciduous Forest	· · · · · · · · · · · · · · · · · · ·	
FOD2-4a - b	Dry-Fresh Oak- Hardwood Deciduous Forest	Canopy: includes red oak, shagbark hickory, sugar maple and basswood. Understorey: includes sugar maple, shagbark hickory, red ash, (Fraxinus pennsylvanica), black walnut (Juglans nigra), ironwood (Ostrya virginiana), chokecherry and red raspberry (Rubus idaeus). Ground Cover: includes herb robert, enchanter's nightshade, Canada anemone (Anemone canadensis), and pointed broom sedge (Carex scoparia).	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Oak species dominant (2). Oak dominant with Sugar Maple, ash, beech, basswood associates (-4).
FOD5a - b	Dry-Fresh Sugar Maple Deciduous Forest	Canopy: includes shagbark hickory, black ash (Fraxinus nigra), sugar maple, black walnut, American beech (Fagus grandifolia) and eastern cottonwood (Populus deltoides). Understorey: includes Manitoba maple, black walnut, basswood, American beech, sugar maple, common buckthorn and staghorn sumac (Rhus typhina). Ground Cover: includes Canada goldenrod, enchanter's nightshade, sugar maple, shagbark hickory and riverbank grape.	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5). Heavily managed, grazed or disturbed sites.

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOD5-1a – b	Dry-Fresh Sugar Maple Deciduous Forest	Canopy: includes sugar maple, red oak, shagbark hickory and black cherry (<i>Prunus serotina</i>). Understorey: includes sugar maple, red ash, American beech, and alleghany blackberry (<i>Rubus allegheniensis</i>). Ground Cover: includes sugar maple, red ash, coltsfoot (<i>Tussilago farfara</i>), small jack-in-the-pulpit (<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>), zig-zag goldenrod (<i>Solidago flexicaulis</i>), herb robert, and garlic mustard (<i>Alliaria petiolata</i>).	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5). Almost entirely dominated by Sugar Maple (-1).
FOD5-2	Dry-Fresh Sugar Maple –Beech Deciduous Forest Type	Canopy: includes sugar maple, shagbark hickory, red oak, and Freeman's maple (<i>Acer X freemanii</i>). Understorey: sugar maple, shagbark hickory, chokecherry, red ash, and scarlet hawthorn (<i>Crataegus pedicellata</i>). Ground Cover: includes poison ivy (<i>Rhus radicans</i> ssp. negundo), sugar maple, enchanter's nightshade, garlic mustard and yellow avens (<i>Geum aleppicum</i>).	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5). Almost entirely dominated by Sugar Maple with Beech (-2).
FOD5-3a – e	Dry Fresh Sugar Maple-Oak Deciduous Forest	Canopy: includes red oak, white oak (<i>Quercus alba</i>), sugar maple, shagbark hickory, and basswood. Understorey: includes shagbark hickory, sugar maple, white ash, common buckthorn, chokecherry, and gray dogwood (<i>Cornus foemina</i> ssp. <i>racemosa</i>). Ground Cover: includes enchanter's nightshade, yellow avens, false Solomon's seal (<i>Maianthemum racemosum</i>), and Pennsylvania sedge (<i>Carex pennsylvanica</i>), zig-zag goldenrod, Virginia stickweed (<i>Hackelia virginiana</i>), and inserted Virginia-creeper (<i>Parthenocissus inserta</i>).	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5). Sugar Maple with Red Oak >> White Oak (-3).
FOD5-5	Dry-Fresh Sugar Maple Hickory Deciduous Forest	Canopy: includes shagbark hickory, red oak, basswood and sugar maple. Understorey: includes shagbark hickory, sugar maple, red ash, ironwood, common buckthorn, chokecherry and gray dogwood. Ground Cover: includes shagbark hickory, sugar maple, red ash, Canada goldenrod, poison ivy, and riverbank grape.	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5). Sugar Maple with Hickory (-5).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOD6-2	Fresh-Moist Sugar Maple- Black Maple Deciduous Forest	Canopy: includes sugar maple, black maple, red ash, red maple (Acer rubrum), and American beech. Understorey: includes sugar maple, basswood, black maple, red ash and wild black currant (Ribes americanum). Ground Cover: enchanter's nightshade, false nettle (Boehmeria cylindrical), pale touch-me-not (Impatiens pallida), ostrich fern (Matteuccia struthiopteris var. pennsylvanica), garlic mustard, and hog peanut (Amphicarpaea bracteata).	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with ash, red maple, white elm, yellow birch, basswood and beech associates (6). Black Maple present (-2). Moist well drained sites, often along floodplains.
FOD6-4	Fresh-Moist Sugar Maple- White Elm Deciduous Forest	Canopy: includes sugar maple, white elm (<i>Ulmus americana</i>), green ash, shagbark hickory and Manitoba maple. Understorey: includes common buckthorn and green ash. Ground Cover: river bank grape (<i>Vitis riparia</i>).	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Sugar maple with ash, red maple, white elm, yellow birch, basswood and beech associates (6). White elm present (-4). Moist well drained sites, often along floodplains.
FOD7-2a – b	Fresh-Moist Ash Lowland Deciduous Forest	Canopy: includes red ash, black ash, black walnut, sugar maple and red oak. Understorey: includes red ash, sugar maple, staghorn sumac and bur oak. Ground Cover: includes broad-leaved reed grass (Cinna latifolia), enchanter's nightshade, Pennsylvania sedge, inserted Virginia-creeper, reed-canary grass and Canada goldenrod.	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Elms, Willows, Black Walnut, Black Maple Basswoods dominate separately or in variable mixtures (7). Ash dominant (-2).
FOD7-3a – b	Fresh-Moist Willow Lowland Deciduous Forest	Canopy: includes silver maple (<i>Acer saccharinum</i>), eastern cottonwood, crack willow (<i>Salix fragilis</i>), Manitoba maple, and sycamore (<i>Platanus occidentalis</i>). Understorey: includes common buckthorn, staghorn sumac, Manitoba maple, tartarian honeysuckle (<i>Lonicera tatarica</i>), and riverbank grape. Ground Cover: includes inserted Virginia-creeper, riverbank grape, goldenrods (<i>Solidago</i> sp.), Canada rush (<i>Juncus canadensis</i>), and wild teasel.	 Tree cover > 60% (FO). Deciduous trees > 75% of canopy cover (D). Elms, Willows, Black Walnut, Black Maple Basswoods dominate separately or in variable mixtures (7). Willow dominant (-3). Resulting from cultural influences (i.e., historical clearing and planting or other disturbances. Typically associated with riparian zones.

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIAL -	CULTURAL		
CUM	Cultural Meadow		
CUM1-1a – i	Dry-Moist Old Field Meadow	Emergent Trees/Shrubs: includes black walnut, black locust (Robinia pseudo-acacia), hybrid willow (Salix X pendulina), Manitoba maple, sugar maple, red ash, Norway and Colorado spruce (Picea abies and P. pungens), white pine (Pinus strobus), Russian olive (Elaeagnus angustifolia), tartarian honeysuckle, hawthorn (Crataegus spp.), riverbank grape, and common buckthorn. Ground Cover: includes smooth brome (Bromus inermis), red fescue (Festuca rubra ssp. rubra) clovers (Trifolium spp.), bluegrasses (Poa spp.), orchard grass (Dactylis glomerata), reed-canary grass, common reed (Phragmites australis), wild teasel, and New England aster (Aster novae-angliae).	 Cultural community (CU). Tree cover and shrub cover ≤ 25% (M). Mineral soil (1). This community can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).
CUT1	Cultural Thicket	tous 2, and 1000 England about (115000 No vite anglitue).	1
CUT1a - e	Mineral Cultural Thicket	Emergent: includes trembling aspen, red oak, bur oak, basswood, and Manitoba maple. Understory: includes common buckthorn, gray dogwood, staghorn sumac, scarlet hawthorn, willows, sugar maple and American ash. Ground Cover: includes Canada goldenrod, smooth brome, orchard grass, bluegrasses, asters (Symphyotrichum sp.), thistles (Cirsium arvense and C. vulgare), bird's-foot trefoil (Lotus corniculata), and field sow-thistle (Sonchus arvensis).	 Cultural community (CU). Tree cover <25%; shrub cover >25% (T). Mineral soil (1).
CUT1-1	Sumac Cultural Thicket	Understorey: includes staghorn sumac and red ash. Ground Cover: includes smooth brome, daisy fleabane (Erigeron annuus), ox-eye daisy (Chrysanthemum leucanthemum) and garlic mustard.	 Cultural community (CU). Tree cover <25%; shrub cover >25% (T). Mineral soil (1). Sumac dominates (-1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUT1-4a – c	Gray Dogwood Cultural Thicket	Emergent: includes red oak, bur oak, and red ash. Understorey: dominated by gray dogwood, includes scarlet hawthorn, common buckthorn, red raspberry, and riverbank grape. Ground Cover: includes smooth brome, bluegrasses, reed canary grass (Phalaris arundinacea), perfoliate thoroughwort (Eupatorium perfoliatum), tufted vetch (Vicia cracca), Canada thistle, white clover (Trifolium repens), Canada goldenrod, giant goldenrod (Solidago gigantea).	 Cultural community (CU). Tree cover <25%; shrub cover >25% (T). Mineral soil (1). Gray Dogwood dominates (-1).
CUM1-1a/CUT1a to CUM1-1c/ CUT1c	Mineral Cultural Meadow/Mineral Cultural Thicket	Emergent: includes black walnut, eastern cottonwood, shagbark hickory, sugar maple and Austrian pine (<i>Pinus nigra</i>). Understorey: includes Manitoba maple, black walnut, red ash, trembling aspen, common buckthorn, staghorn sumac, and Russian olive. Ground Cover: includes reed-canary grass, common reed, Canada goldenrod, purple loosestrife (<i>Lythrum salicaria</i>), common wormwood (<i>Artemisia absinthium</i>), glandular touchme-not (<i>Impatiens glandulifera</i>), Indian hemp (<i>Apocynum cannabinum</i> var. <i>cannabinum</i>), common St. John's-wort (<i>Hypericum perforatum</i>) and riverbank grape.	 Cultural communities (CU). Tree cover and shrub cover < 25% (M). Tree cover <25%; shrub cover >25% (T). Mineral soil (1). These communities can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).
CUP	Cultural Plantation		
CUP1	Deciduous Plantation	Canopy: includes Norway maple, red ash, basswood, sugar maple and American beech. Understorey: includes red ash, staghorn sumac, common buckthorn, black walnut, American beech and shagbark hickory. Ground Cover: includes red ash, Canada goldenrod, and riverbank grape.	 Cultural community (CU). Plantation (P). Deciduous tree species >75% of canopy cover (1).
CUP1-3	Black Walnut Deciduous Plantation	Canopy: includes black walnut, basswood, shagbark hickory and sugar maple. Understorey: includes red ash, black walnut, sugar maple and riverbank grape. Ground Cover: includes inserted Virginia-creeper, riverbank grape, enchanter's nightshade, Pennsylvania sedge, and orchard grass.	 Cultural community (CU). Plantation (P). Deciduous tree species >75% of canopy cover (1). Black Walnut abundant (-3).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUW	Cultural Woodland		
CUW1a – j	Mineral Cultural Woodland	Canopy: includes black walnut, sugar maple, shagbark hickory, bur oak, black locust, and Manitoba maple. Understorey: includes common buckthorn, black walnut, bur oak, red ash, Manitoba maple, black locust, and riverbank grape. Ground Cover: includes reed canary grass, riverbank grape, Canada goldenrod, red ash, common ragweed (Ambrosia artemisiifolia), horseweed (Conyza canadensis), and smooth brome.	 Cultural communities (CU). 35% < tree cover ≤ 60% (W). Mineral Soil (1).
CUT1/ CUW1	Mineral Cultural Thicket/Mineral Cultural Woodland	Canopy: examples include white elm, Manitoba maple, sugar maple, black walnut and basswood. Understorey: examples include common buckthorn, honeysuckles, Manitoba maple and black walnut. Ground Cover: includes smooth brome, bluegrasses, Canada goldenrod, and wild carrot (Daucus carota).	 Cultural communities (CU). Tree cover <25%; shrub cover >25% (T). 35% < tree cover ≤ 60% (W). Mineral soil (1).
WETLAND			
MAM	Meadow Marsh	_	
MAM2	Mineral Meadow Marsh	Emergent: includes common buckthorn. Ground cover: dominated by reed-canary grass and included wild parsnip (<i>Pastinaca sativa</i>) and calico aster (<i>Aster lateriflorus</i> var. <i>lateriflorus</i>).	 Tree or shrub cover <25% (MA). Flooding seasonal, species less tolerant of prolonged flooding (M).
MAM2-2a – n	Reed-canary Grass Mineral Meadow Marsh	Emergent: includes Manitoba maple, white elm, red ash, Missouri willow (Salix eriocephala), white willow (Salix alba) and crack willow. Ground cover: dominated by reed-canary grass and includes purple loosestrife (Lythrum salicaria), common reed, cattails, blue vervain (Verbena hastata), American great bulrush (Scirpus validus), elecampane (Inula helenium), and tall white aster (Aster lanceolatus ssp. lanceolatus).	 Tree or shrub cover <25% (MA). Flooding seasonal, species less tolerant of prolonged flooding (M). Mineral soil (2). Reed-canary grass dominant (-2).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
MAM2-10	Forb Mineral Meadow Marsh	Emergent: includes European black alder (Alnus glutinosa) willows, and tartarian honeysuckle. Ground cover: includes spotted joe-pye-weed (Eupatorium maculatum ssp. maculatum), purple loosestrife, spotted touch me not, spotted water-hemlock (Cicuta maculate), and reed canary grass. Floating-leaved and submerged macrophytes (inclusion): a few floating plants were also observed as rare to occasional and includes common water-plantain (Alisma plantago-aquatica) and broad-leaved arrowhead (Sagittaria latifolia).	 Tree or shrub cover <25% (MA). Flooding seasonal, species less tolerant of prolonged flooding (M). Mineral soil (2). Forbs are dominant (-10).
MAS	Shallow Marsh		
MAS2a – b	Mineral Shallow Marsh	Emergent: includes white willow, Manitoba maple, black walnut, eastern white cedar, common buckthorn, gray dogwood and red-osier dogwood. Ground cover: includes common reed, reed canary grass, narrow-leaved cattail (<i>Typha angustifolia</i>), purple loosestrife, and common milkweed (<i>Asclepias syriaca</i>).	 Tree or shrub cover ≤25% (MA). Water up to 2 m deep, with standing or flowing water for much of the growing season (S). Mineral soil (2). Dominated by emergent hydrophytic macrophytes.
MAS2-1a - m	Cattail Mineral Shallow Marsh	Emergent: includes crack willow, Freeman's maple, silver maple and white elm. Understory: includes white elm and common buckthorn. Ground cover: dominated by cattails (<i>Typha anugstifolia</i> and <i>T. latifolia</i>), includes reed canary grass, purple loosestrife, common reed, wild teasel, rough-fruited cinquefoil (<i>Potentilla recta</i>), and blue vervain.	 Tree or shrub cover ≤25% (MA). Water up to 2 m deep, with standing or flowing water for much of the growing season (S). Mineral soil (2). Cattails are dominant (-1). Dominated by emergent hydrophytic macrophytes.
MAS2-9	Forb Mineral Shallow Marsh	Ground cover: American great bulrush (Scirpus validus), rush (Juncus sp.), cut-leaved water-horehound (Lycopus americanus), mouse-ear scorpion grass (Myosotis scorpioides), and spotted touch me not (Impatiens capensis). Floating-leaved and submerged macrophytes (inclusion): a few floating plants were also observed as rare to occasional and includes common water-plantain (Alisma plantago-aquatica) and common floating pondweed (Potamogeton natans).	 Tree or shrub cover ≤25% (MA). Water up to 2 m deep, with standing or flowing water for much of the growing season (S). Mineral soil (2). Forbs are dominant (-9). Dominated by emergent hydrophytic macrophytes.

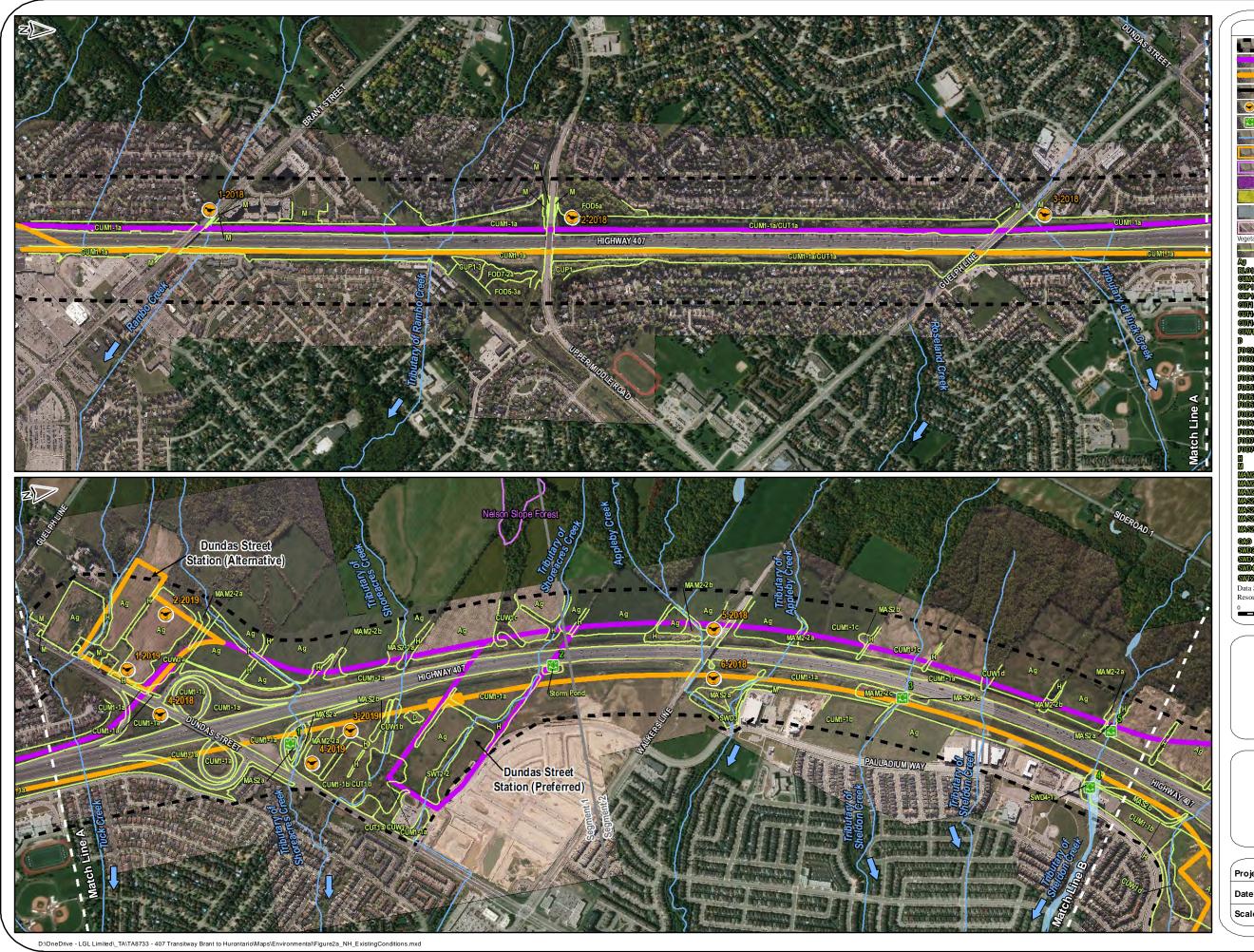
TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

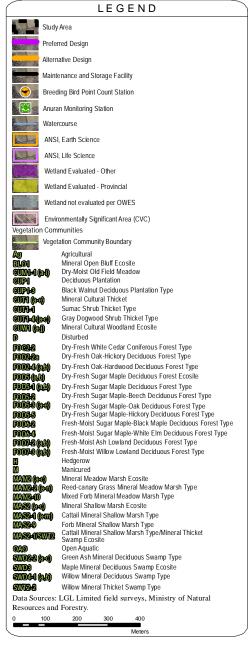
ELC Code	Vegetation Type	Species Association	Community Characteristics
MAS2a/MAM2a- MAS2c/MAM2c	Mineral Shallow Marsh/Mineral Meadow Marsh	Emergent: includes willows, Manitoba maple, red ash and common buckthorn. Ground cover: includes reed canary grass, common reed, and purple loosestrife.	 Tree or shrub cover ≤25% (MA). Water up to 2 m deep, with standing or flowing water for much of the growing season (S). Flooding seasonal, species less tolerant of prolonged flooding (M). Mineral soil (2). Dominated by emergent hydrophytic macrophytes.
MAS2-1/SWT2	Cattail Mineral Shallow Marsh/Mineral Thicket Swamp	Emergent: includes willows and red ash. Understory: includes sandbar willow (Salix exigua), pussy willow (Salix discolor), and red ash. Ground cover: includes narrow-leaved cattail and broadleaved cattail (Typha latifolia), reed canary grass, purple loosestrife.	 Tree or shrub cover ≤25% (MA). Water up to 2 m deep, with standing or flowing water for much of the growing season (S). Cattails are dominant (-1). Dominated by emergent hydrophytic macrophytes. Tree or shrub cover > 25% with variable flooding regimes (SW). Tree cover ≤25%; hydrophytic shrubs >25% (T). Mineral soil (2).
SWT			
SWT2-2	Willow Mineral Thicket Swamp	Emergent: includes Freeman's maple, white elm and Manitoba maple. Understory: includes Missouri willow, Manitoba maple, black walnut, and white elm. Ground cover: includes purple loosestrife, path rush (<i>Juncus tenuis</i>), awl-fruited sedge (<i>Carex stipata</i>) and black-eyed Susan (<i>Rudbeckia hirta</i>).	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Deciduous tree cover ≤25%; hydrophytic shrubs > 25% (T). Mineral soil (2). Willows are dominant (-2).
SWD			•
SWD2-2a - c	Green Ash Mineral Deciduous Swamp	Canopy: includes red ash and Manitoba maple. Understory: includes red ash, Manitoba maple, common buckthorn. Ground cover: includes reed canary grass.	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Deciduous tree cover >75% of canopy cover (D). Mineral soils and Ash dominant (2). Green Ash is dominant (-2).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
SWD3	Maple Mineral Deciduous Swamp	Canopy: includes silver maple, white willow, Manitoba maple, and trembling aspen. Understory: includes sandbar willow, pussy willow, Manitoba maple, red-osier dogwood, and fragrant sumac (<i>Rhus aromatica</i>). Ground cover: includes spotted touch-me-not, giant goldenrod, garlic mustard, Canada goldenrod, and field sowthistle.	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Deciduous tree cover >75% of canopy cover (D). Mineral soils and Maple dominant (3).
SWD4-1a - b	Willow Mineral Deciduous Swamp	Canopy: includes willows, eastern cottonwood, black locust and basswood. Understory: includes willows, round-leaved dogwood (Cornus rugosa), red-osier dogwood, common buckthorn and black locust. Ground cover: includes common reed, reed canary grass, cattails, wild carrot, Canada bluegrass (Poa compressa), blue vervain and purple loosestrife.	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Deciduous tree cover >75% of canopy cover (D). Mineral soils and less common associates of willow, white elm, birch and aspen (4). Willows dominant (-1).
OAO	Open Aquatic		
OAO	Open Aquatic		 Water depth >2 m (O). No macrophyte vegetation, no tree or shrub cover (A). Plankton dominated (O).
OTHER*	Manicured and Hea	lgerow	
M and H	Manicured grasses and planted shrubs and/or trees	Areas where large expanses of grass/shrubs/trees are maintained and/or planted. Planted/established trees/shrubs: includes sugar maple, red ash, red oak, black walnut, eastern cottonwood, hybrid willow, Norway maple (Acer platanoides), silver variegated dogwood (Cornus alba 'elegantissima'), Japanese Yew (Taxus cuspidata), Japanese knotweed (Polygonum cuspidatum), shagbark hickory, eastern white cedar, Colorado spruce, Norway spruce, and scotch pine (Pinus sylvestris), hawthorns (Crataegus spp.), honeysuckles (Lonicera spp.), staghorn sumac, and common buckthorn. Grasses: includes bluegrasses, smooth brome, reed-canary grass, Canada goldenrod, garlic mustard, yellow avens, thistles.	

*Not identified by the ELC.



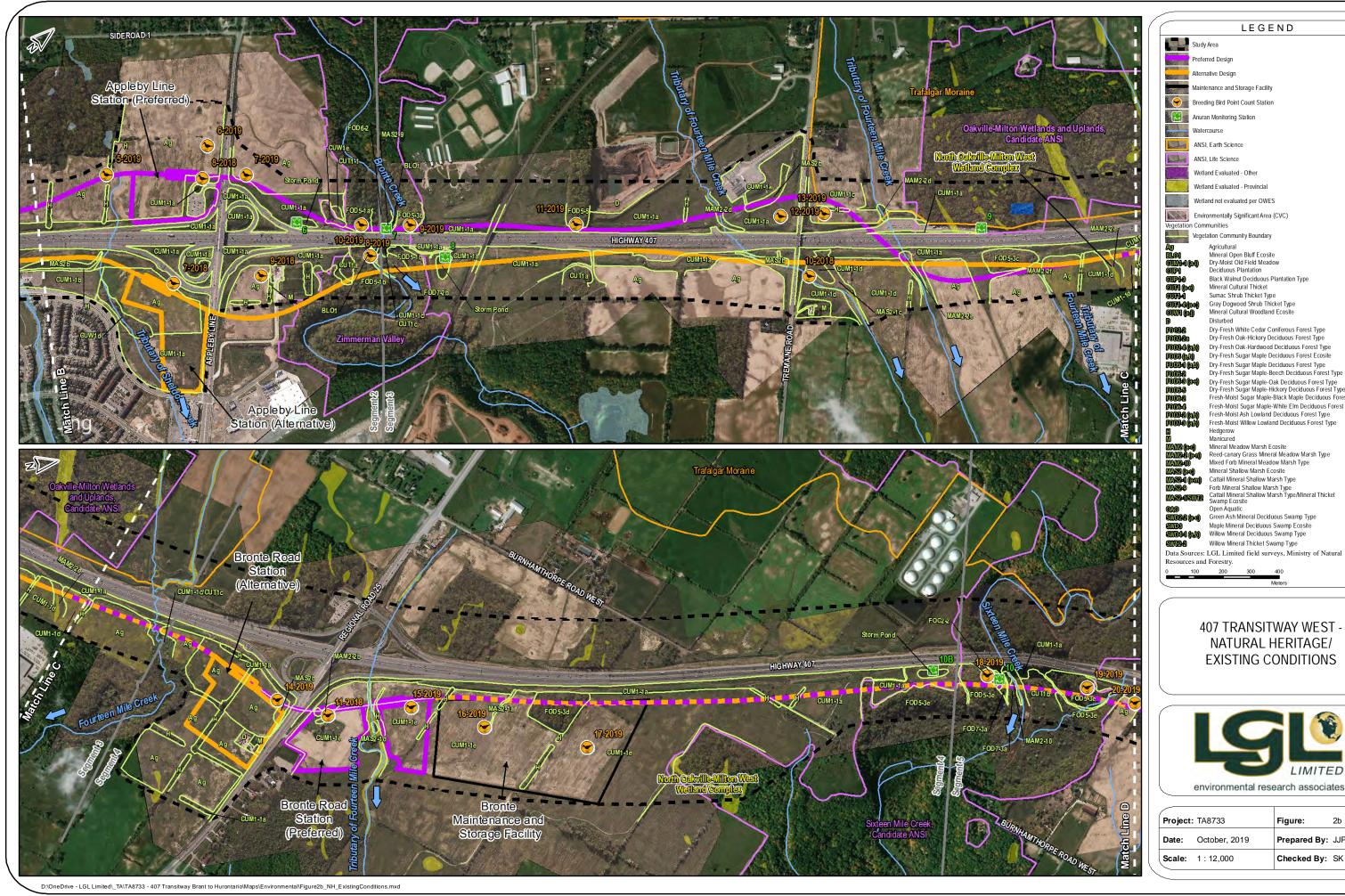


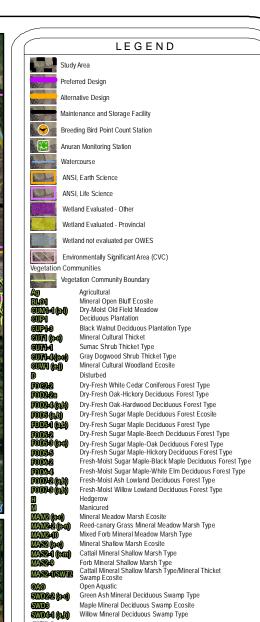


Project: TA8733 Figure: 2a

 Date:
 October, 2019
 Prepared By: JJP

 Scale:
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 Checked By: SK



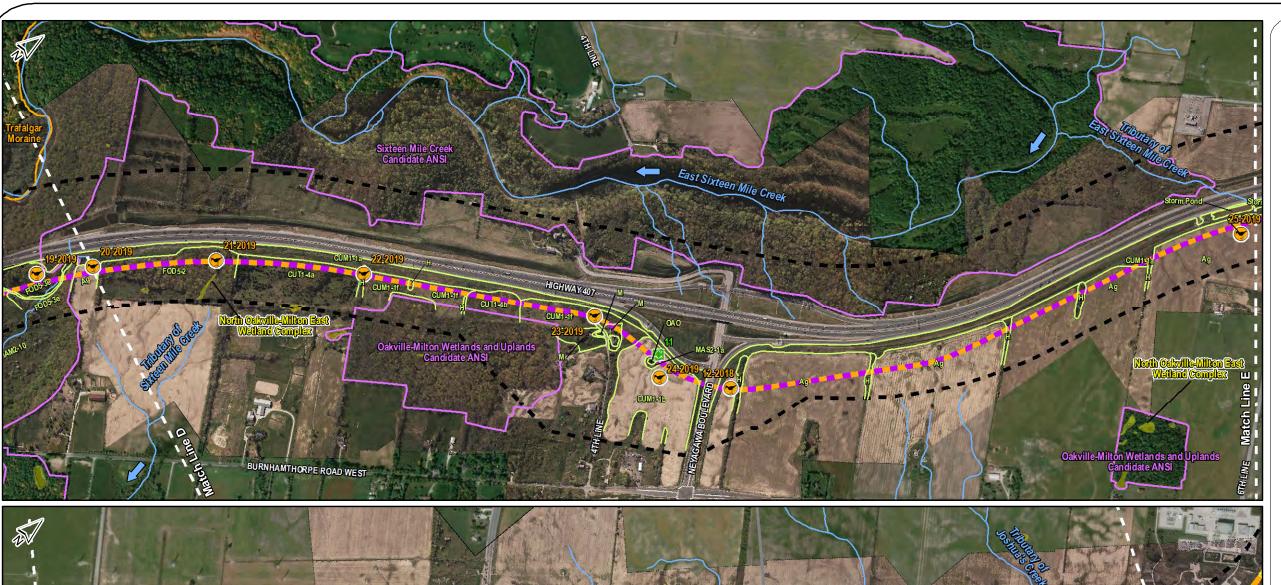


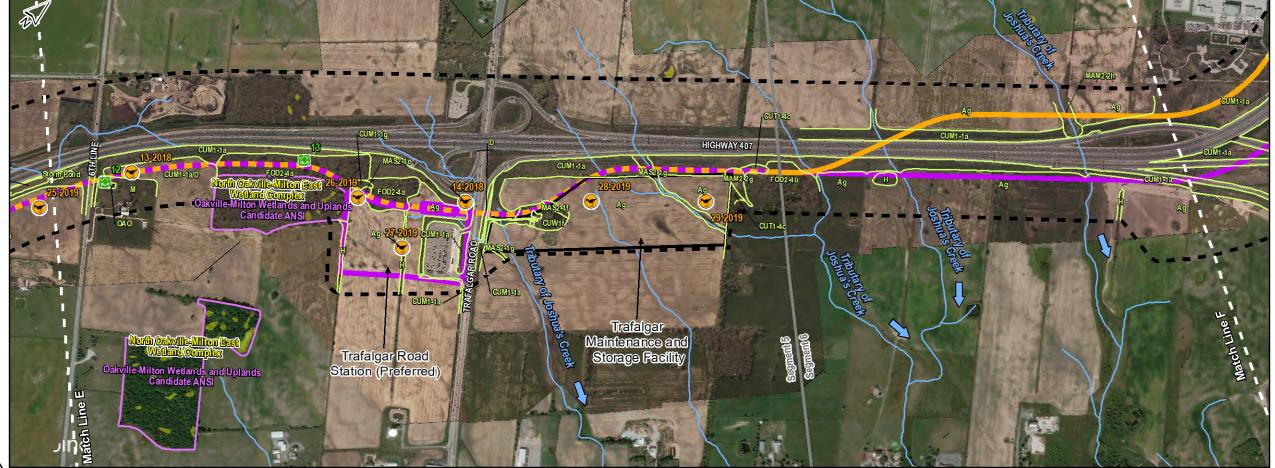
Willow Mineral Thicket Swamp Type

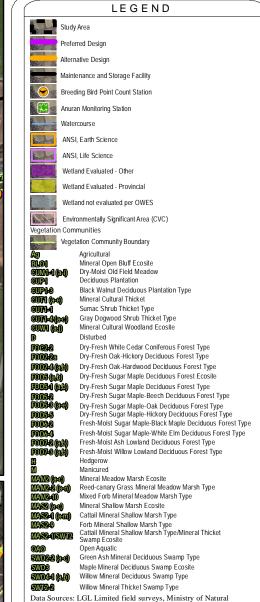


environmental research associates

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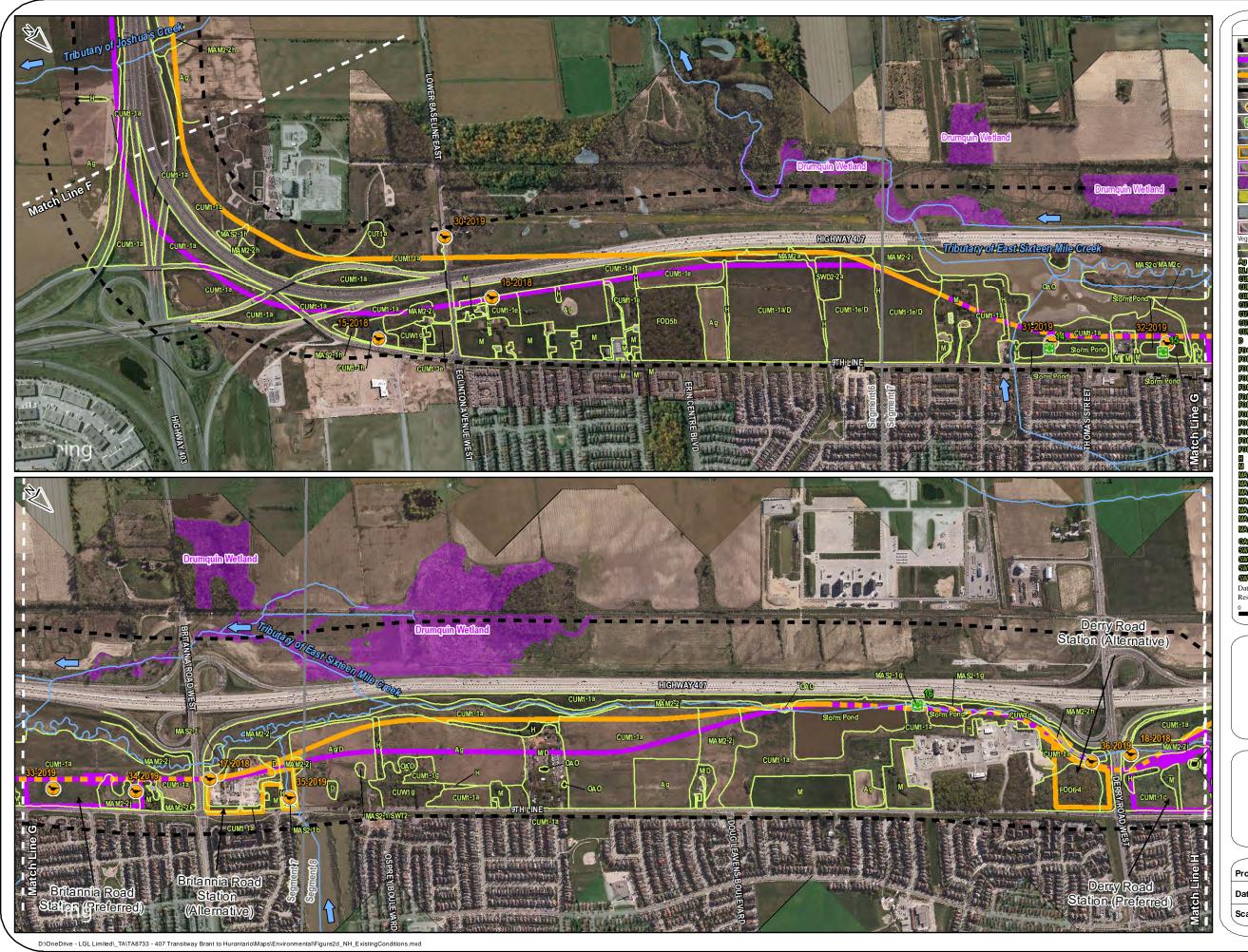
Resources and Forestry.

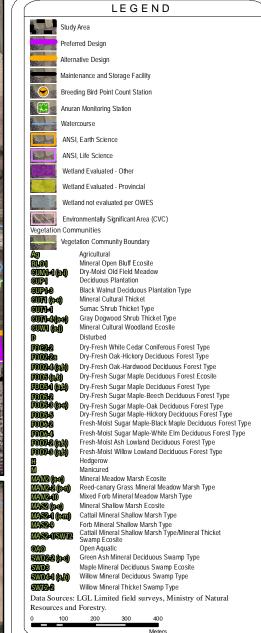


 Project: TA8733
 Figure:
 2c

 Date:
 October, 2019
 Prepared By: JJP

 Scale:
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 Checked By: SK

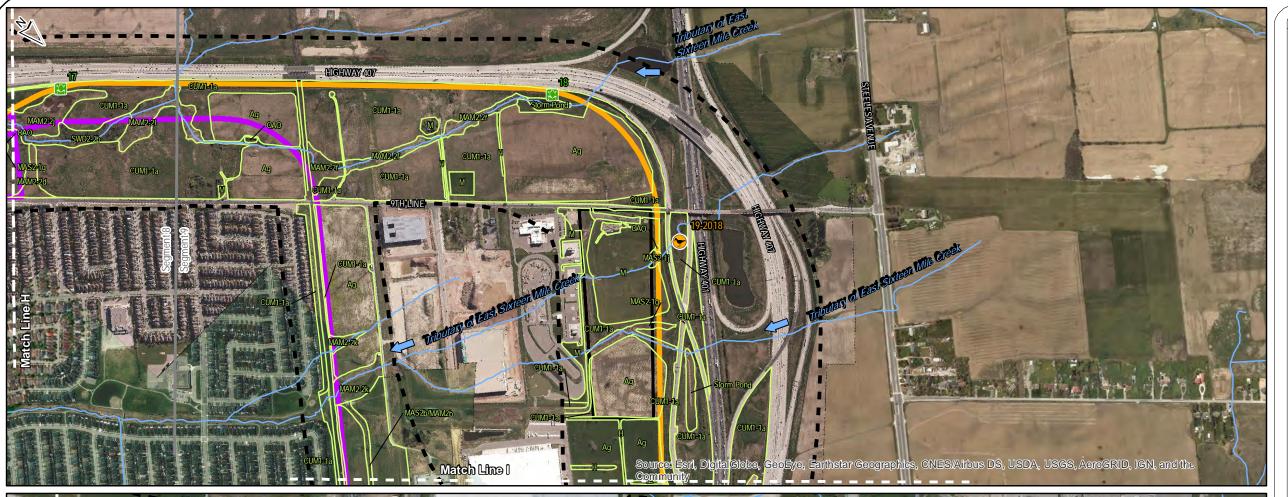


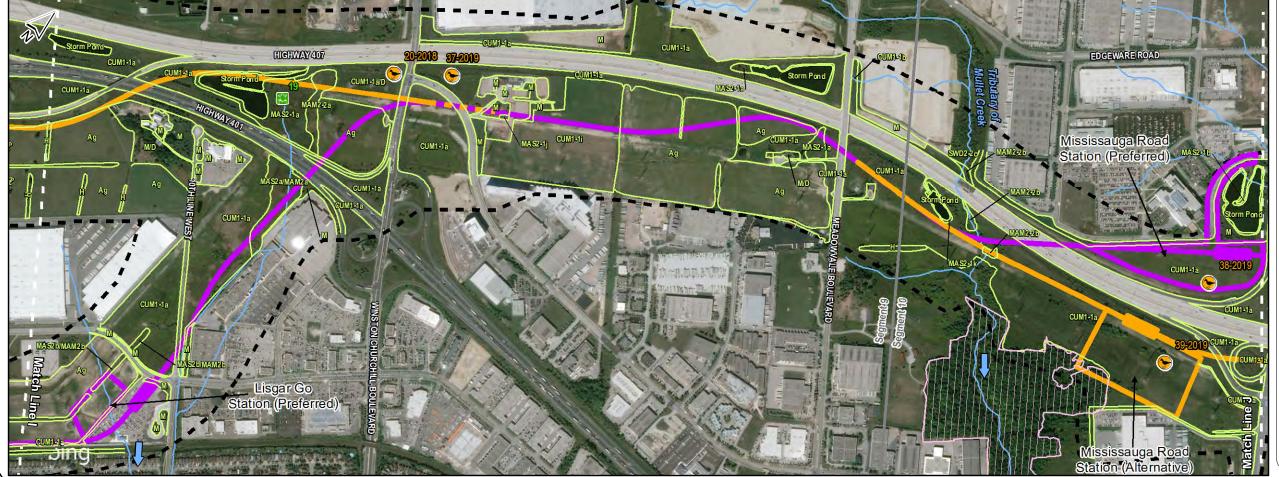


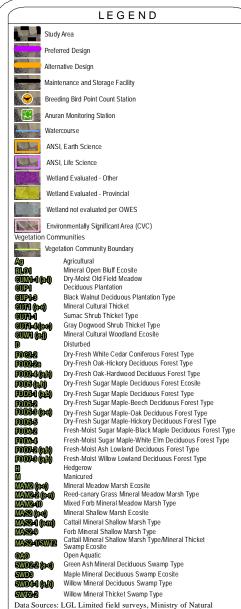


environmental research associates

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







Resources and Forestry.

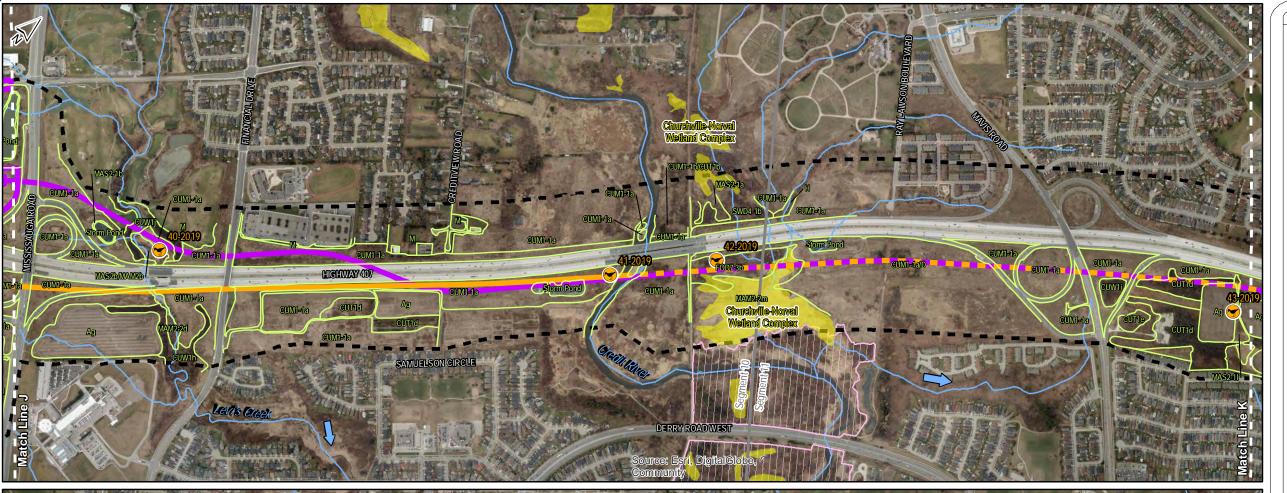
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 Project: TA8733
 Figure: 2e

 Date: October, 2019
 Prepared By: JJP

Checked By: SK









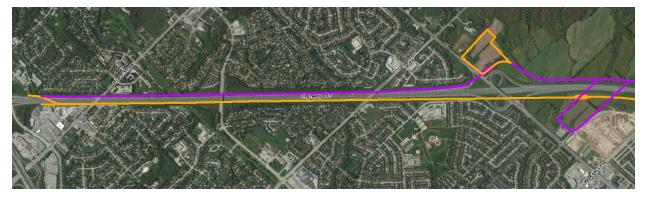
 Project: TA8733
 Figure:
 2f

 Date:
 March, 2020
 Prepared By:
 JJP

 Scale:
 1:12,000
 Checked By:
 SK

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

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



Alignment Option 1

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

Alignment Option 2

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

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

Dundas Street Station Option A

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

Dundas Street Station Option B

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

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



Alignment Option 1

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

Alignment Option 2

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

Appleby Line Station Option A

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

Appleby Line Station Option B

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

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



Alignment Option 1

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

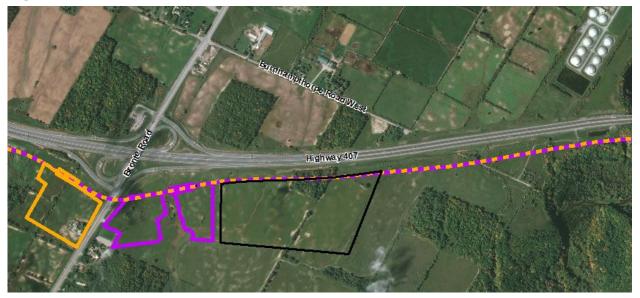
A Mineral Open Bluff is located along the eastern bank of Bronte Creek where vegetation cover is rare. Several high-quality forest communities were observed including a Dry-Fresh Sugar Maple Deciduous Forest, a Fresh-Moist Sugar Maple-Black Maple Deciduous Forest that is provincially ranked S3 (i.e.,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

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

Alignment Option 2

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

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



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

Alignment Options 1 and 2

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

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

Bronte Road Bus Station Option A

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

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

Bronte Road Station Option B

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

Bronte Road and Bronte Road Bus Storage Yard Option

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





Alignment Options 1 and 2

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

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

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

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

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

Trafalgar Road Station Option

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

Trafalgar Road Bus Storage Yard Option

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



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

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

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

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

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

Highway 407

Sth Line

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

Alignment Options 1 and 2

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

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

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

Britannia Road Station Option A

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

Britannia Road Station Option B

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

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



Alignment Options 1 and 2

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

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

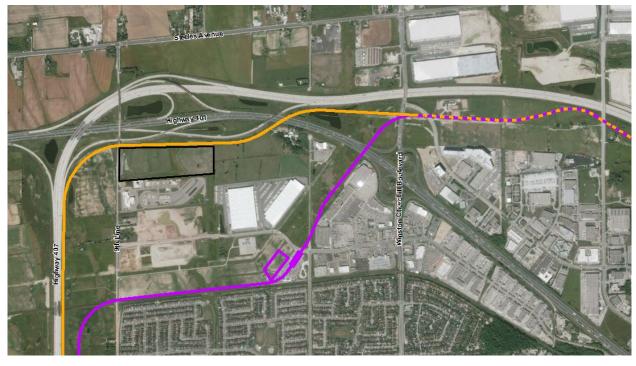
(*Podophyllum peltatum*). There are several Reed-canary Grass Mineral Meadow Marshes and a Green Ash Mineral Deciduous Swamp identified, these are typically associated with the Tributary of East Sixteen Mile Creek that crosses Segment S8. Mineral shallow marsh communities were also identified, and these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

Derry Road Station Option A

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

Derry Road Station Option B

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



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

Alignment Option 1

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

Alignment Option2

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

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

Winston Churchill Blvd Station Option

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

The Bus Storage Yard

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

sissavina Road

Lina in a Drive

Francial Drive

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

Alignment Option 1

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

Alignment Option 2

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

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

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

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

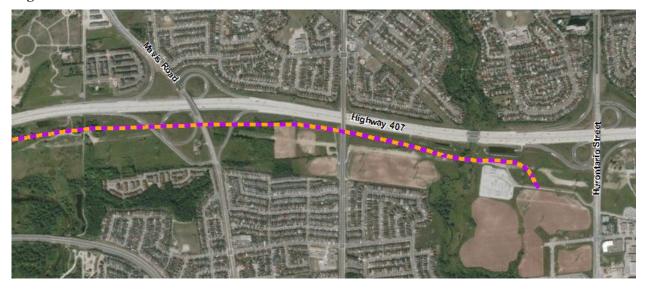
Mississauga Station Option A

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

Mississauga Station Option B

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

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



Alignment Options 1 and 2

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

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

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

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

2.2.3.3 Flora

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

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

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

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

2.2.3.4 Species at Risk

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

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

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

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

2.2.3.5 Sensitivity/Significance

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

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

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

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

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

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

			Rar	rity St	atus ¹				Stu	dy A	rea S	Segm	ents ²	2						s	tations	s ²				Yaı	Storage rd by ment ²
Plant Community	Scientific Name	Common Name	Halton - Varga	Peel - Varga	-	1	2	3	4	5	6	7	8	9	10	11	Dundas St	Appleby Line	Bronte Road	Trafalgar Road	Britannia Road	Derry Road	Lisgar Go	Mississauga Road	Mavis Road	Bronte Road	Trafalgar
MAM2-2a, MAM2-2c, MAM2- 2h, MAM2-2j and MAS2-1h	Scirpus microcarpus	small-fruited bulrush	R2				X				X	X		X													
FOD7-3b	Juncus canadensis	Canada rush			R																						
FOD2-4a, FOD5-2, FOD5-3c, FOD5-3d and MAM2-21	Carex scoparia	pointed broom sedge	R1	R5	R			Х	X	X	X	X	X							X						X	
FOD7-2a	Cinna latifolia	broad-leaved reed grass	U	R4	R	X																					

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

2.3 Wildlife and Wildlife Habitat

2.3.1 Purpose

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

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

2.3.2 Data Sources

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

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

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

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

2.3.3 Findings

2.3.3.1 Wildlife Habitat Summary

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

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

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

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

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

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

Alignment Option 1

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

Alignment Option 2

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

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

Dundas Street Station Option A

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

Dundas Street Station Option B

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

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

Alignment Option 1

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

Alignment Option 2

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

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

Appleby Line Station Option A

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

Appleby Line Station Option B

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

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



Alignment Option 1

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

Alignment Option 2

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



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

Alignment Option 1

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

Alignment Option 2

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

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

Bronte Road Station Option A

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

Bronte Road Station Option B

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

Bronte Road and Bronte Road Bus Storage Yard Option

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

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



Alignment Options 1 & 2 (Overlapped)

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

Trafalgar Road Station Option

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

Trafalgar Road and The Bus Storage Yard Option

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



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

Alignment Option 1

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

Alignment Option 2

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



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

Alignment Options 1 and 2

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

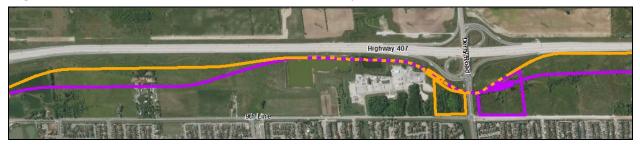
Britannia Road Station Option A

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

Britannia Road Station Option B

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

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



Alignment Option 1

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

Alignment Option 2

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

Derry Road Station Option A

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

Derry Road Station Option B

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

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



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

Alignment Option 1

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

Alignment Option 2

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

Winston Churchill Blvd Station Option

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

The Bus Storage Yard

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

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



Alignment Option 1

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

Alignment Option 2

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

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

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

Mississauga Station Option A

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

Mississauga Station Option B

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

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



Alignment Options 1 and 2

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

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

2.3.3.2 Wildlife Species

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

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

Birds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Wildlife	Scientific Name	Common Name	Spec	ies Status Local S	lation/	Source of Species Identification		
vviidille		Common Name	Canada SARA	Ontario ESA	Legal Status	Local	LGL ¹	Secondary Source ²
	Procyon lotor	Northern Racoon			FWCA(F)		*	
	Canis latrans	Coyote			FWCA(F)		*	
	Ondatra zibethica	Muskrat			FWCA(F)		*	*
	Mephitis mephitis	Striped Skunk			FWCA(F)		*	
	Odocoileus virginianus	White-tailed Deer			FWCA(G)		*	*

SARA – federal Species at Risk Act:

END - Endangered THR - Threatened SC - Special Concern

ESA - Ontario Endangered Species Act, 2007

END – Endangered THR – Threatened SC - Special Concern

Source of Species Identification:

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

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

Other:

Significant Wildlife Habitat Technical Guide:

SWH – Area Sensitive Species

INT - Interior Species

For definitions of species ranks, refer to Appendix E.

Legal Status:

MBCA - Migratory Birds Convention Act ESA - Endangered Species Act, 2007

SARA - Species at Risk Act

FWCA - Fish and Wildlife Conservation Act

(P) Protected Species (G) Game species (F) Furbearing mammals

Mammals

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

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

Herpetofauna

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

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

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

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

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

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

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

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

TABLE 4.

AMPHIBIAN SURVEY OF STUDY AREA AND ADJACENT LANDS BY LGL LIMITED

AWIPHIBIAN SURVE	T OF STUDY AREA	AND AD	JACE	:NI L/	ANDS BY LO	JL LII	VIIIED	
Scientific Name	Common Name	SARA	ESA	Local	Legal Status	Call Level Code	Habitat Type	
Anaxyrus americanus	American Toad	-	-	L4	-	3	SWM Pond along	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	2	Tributary of	
Lithobates clamitans		-	-	L4	-	1	Shoreacres Creek	
Anaxyrus americanus	American Toad	-	-	L4	-	1	Roadside SWM	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	2	Pond along	
Lithobates clamitans	Green Frog	-	-	L4	-	1	Tributary of Shoreacres Creek	
Pseudacris crucifer	Spring Peeper	-	-	L2	-	2	Cattail Marsh along Tributary of Sheldon Creek	
Anaxyrus americanus	American Toad	-	-	L4	-	1	Cattail Marsh	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	1	along Tributary	
Pseudacris crucifer	Spring Peeper	-	-	L2	-	2	of Sheldon Creek	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	3		
Pseudacris crucifer	Spring Peeper	-	-	L2	-	3	Swale/ Cattail	
Pseudacris triseriata	Western Chorus	THR	-	L2	-	1	Marsh	
Hyla versicolor		-	-	L2	_	1		
•		-	-	L2	_	1	CYVA D 1	
Pseudacris triseriata	Western Chorus	THR	-	L2	-	3	SWM Pond	
Pseudacris crucifer	Spring Peeper	-	-	L2	-	3	Bronte Creek watercourse crossing	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	1		
Pseudacris crucifer	Spring Peeper	-	-	L2	-	2	SWM Pond	
Pseudacris triseriata	Western Chorus Frog	THR	-	L2	-	1	Cattail Marsh	
Pseudacris crucifer	Spring Peeper	-	-	L2	-	3		
Pseudacris crucifer	Spring Peeper	-	-	L2	-	1	Sixteen Mile Creek valley	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	3	CWAAD 1	
Pseudacris crucifer	Spring Peeper	-	-	L2	-	2	SWM Pond	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	2	Agricultural Pond	
Hyla versicolor	Gray Tree Frog	-	-	L2	FWCA(P)	2	A : 1, 1D 1	
Lithobates clamitans	Green Frog	-	-	L4	-	1	Agricultural Pond	
Pseudacris crucifer	Spring Peeper	-	-	L2	-	2	Deciduous forest – potential vernal pools	
-	-	-	-	_	-	-	SWM Pond	
Lithobates clamitans	Green Frog	_	_	L4	_	1	SWM Pond	
-	-	_	_	·	-	-	SWM Pond along	
	Anaxyrus americanus Hyla versicolor Lithobates clamitans Anaxyrus americanus Hyla versicolor Lithobates clamitans Hyla versicolor Lithobates clamitans Pseudacris crucifer Anaxyrus americanus Hyla versicolor Pseudacris crucifer Hyla versicolor Pseudacris triseriata Hyla versicolor Pseudacris triseriata Hyla versicolor Pseudacris triseriata Pseudacris triseriata Pseudacris crucifer Pseudacris triseriata Pseudacris crucifer Hyla versicolor Pseudacris crucifer Pseudacris crucifer Hyla versicolor Pseudacris crucifer Pseudacris crucifer Hyla versicolor Pseudacris crucifer Hyla versicolor Hyla versicolor Lithobates clamitans	Anaxyrus americanus American Toad Hyla versicolor Gray Tree Frog Lithobates clamitans Green Frog Anaxyrus americanus American Toad Hyla versicolor Gray Tree Frog Lithobates clamitans Green Frog Lithobates clamitans Green Frog Lithobates clamitans Green Frog Lithobates clamitans Green Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris triseriata Frog Hyla versicolor Gray Tree Frog Pseudacris triseriata Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris triseriata Frog Pseudacris crucifer Spring Peeper Pseudacris crucifer Spring Peeper Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper Hyla versicolor Gray Tree Frog Pseudacris crucifer Spring Peeper	Scientific Name Common Name Additional content of the proof of th	Scientific Name Common Name Egg Anaxyrus americanus American Toad - Hyla versicolor Gray Tree Frog - Alnoxyrus americanus American Toad - Hyla versicolor Gray Tree Frog - Lithobates clamitans Green Frog - Pseudacris crucifer Spring Peeper - Anaxyrus americanus American Toad - Hyla versicolor Gray Tree Frog - Pseudacris crucifer Spring Peeper - Hyla versicolor Gray Tree Frog - Pseudacris crucifer Spring Peeper - Pseudacris triseriata Frog - Hyla versicolor Gray Tree Frog - Pseudacris crucifer Spring Peeper - Pseudacris triseriata Frog - Pseudacris crucifer Spring Peeper - Hyla versicolor Gray Tree Frog - Pseudacris crucifer Spring Peeper - Pseudacris crucifer Spring Pe	Scientific Name Common Name Egg Solution Anaxyrus americanus American Toad - - L4 Hyla versicolor Gray Tree Frog - - L2 Lithobates clamitans Green Frog - - L4 Anaxyrus americanus American Toad - - L4 Hyla versicolor Green Frog - - L2 Lithobates clamitans Green Frog - - L2 Pseudacris crucifer Spring Peeper - - L2 Pseudacris triseriata Western Chorus Frog - - L2 Pseudacris triseriata Western Chorus Frog - - L2 Pseudacris triseriata Western Chorus Frog - - L2	Scientific Name Common Name Xg Is a second of the seco	Anaxyrus americanus American Toad - - LA - 3 Hyla versicolor Gray Tree Frog - - LA - 1 Lithobates clamitans Green Frog - - LA - 1 Hyla versicolor Gray Tree Frog - - LA - 1 Hyla versicolor Gray Tree Frog - - LA - 1 Pseudacris crucifer Spring Peeper - - LA - 1 Anaxyrus americanus American Toad - - LA - 1 Anaxyrus americanus American Toad - - LA - 1 Pseudacris crucifer Spring Peeper - - L2 FWCA(P) 1 Pseudacris crucifer Spring Peeper - - L2 FWCA(P) 3 Pseudacris triseriata Frog - - L2 - 1 Pseudacris cruci	

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

TABLE 4.

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

Call Level Codes – Abundance Count (according to Bird Studies Canada):

Call Level One (1) – Individual males can be counted accurately.

Call Level Two (2) - Frogs can be generally counted but calls overlap thus no exact number can be obtained.

Call Level Three (3) - Calls continuous and overlapping, no reasonable estimate of numbers. For definitions of species ranks, refer to **Appendix E**

2.3.3.3 Wildlife Species at Risk

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

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

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

Scientific Name	Common Name	Date Last Observed
Hirundo rustica	Barn Swallow	2011
Dolichonyx oryzivorus	Bobolink	2005

^{*} No anuran species/individuals identified

TABLE 5.

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

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

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

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

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

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

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

Western Chorus Frog

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

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

Jefferson Salamander

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

Milksnake

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

Timber Rattlesnake

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

Common Five-lined Skink (Southern Shield population)

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

Snapping Turtle

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6. WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

TABLE 6.
WILDLIFE SPECIES AT RISK SUMMARY

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

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

Common Nighthawk

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

Chimney Swift

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

Eastern Wood Pewee

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

Bank Swallow

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

Barn Swallow

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

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

Canada Warbler

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

Golden-winged Warbler

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

Grasshopper Sparrow

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

Peregrine Falcon

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

Red-headed Woodpecker

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

Least Bittern

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

Louisiana Waterthrush

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

Eastern Whip-poor-will

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

Henslow's Sparrow

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

Wood Thrush

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

Bobolink

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

Eastern Meadowlark

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

Bats

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

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

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

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

TABLE 7.

LOCATION AND DESCRIPTION OF UNDERGROUND TUNNEL ENTRANCES POTENTIALLY SUITABLE AS BAT HIBERNACULA

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

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

3.0 IMPACT ASSESSMENT AND MITIGATION

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

3.1 Physiography and Soils

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

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

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

3.2 Vegetation and Vegetation Communities

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

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

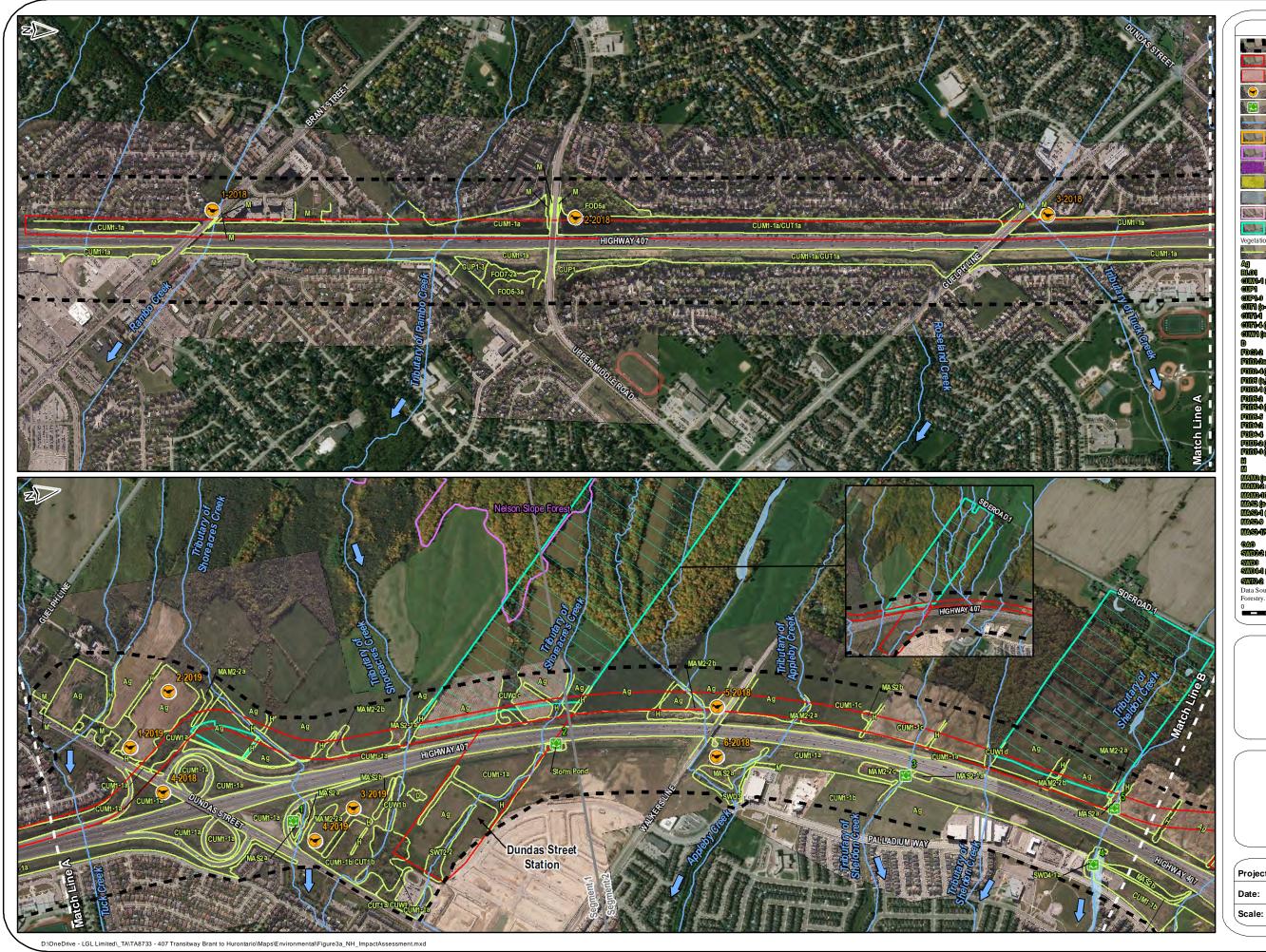
- displacement of and/or disturbance to vegetation and vegetation communities; and,
- displacement of and/or disturbance to rare, threatened or endangered vegetation and vegetation communities.

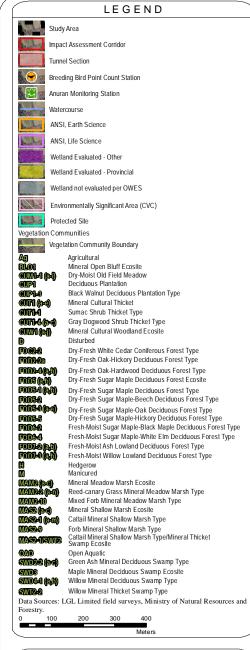
Displacement of and/or Disturbance to Vegetation and Vegetation Communities

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

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

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



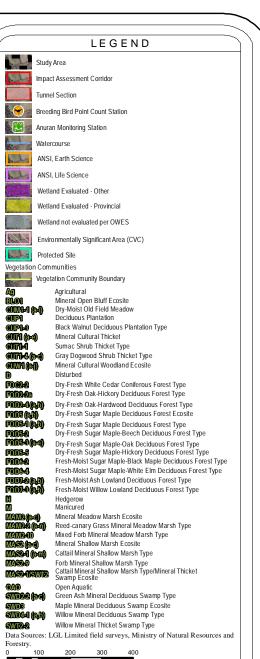




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	Date:	February, 2020	Prepared By:	JJP	
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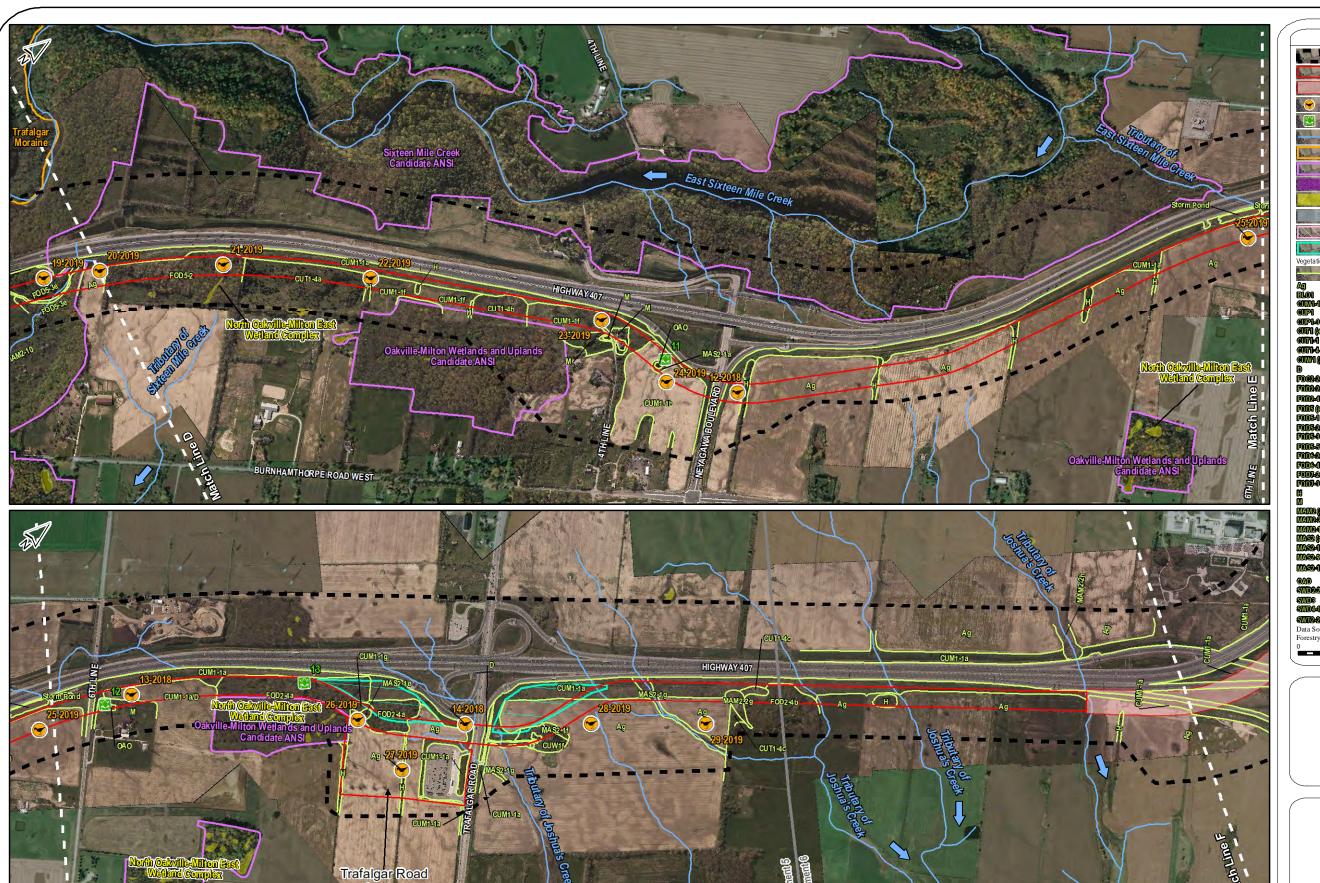


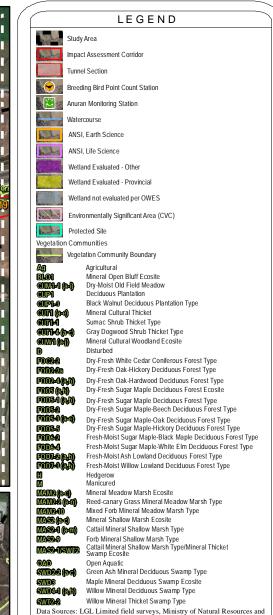


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 Figure: 3b

 Date: February, 2020
 Prepared By: JJP

 Scale: 1:12,000
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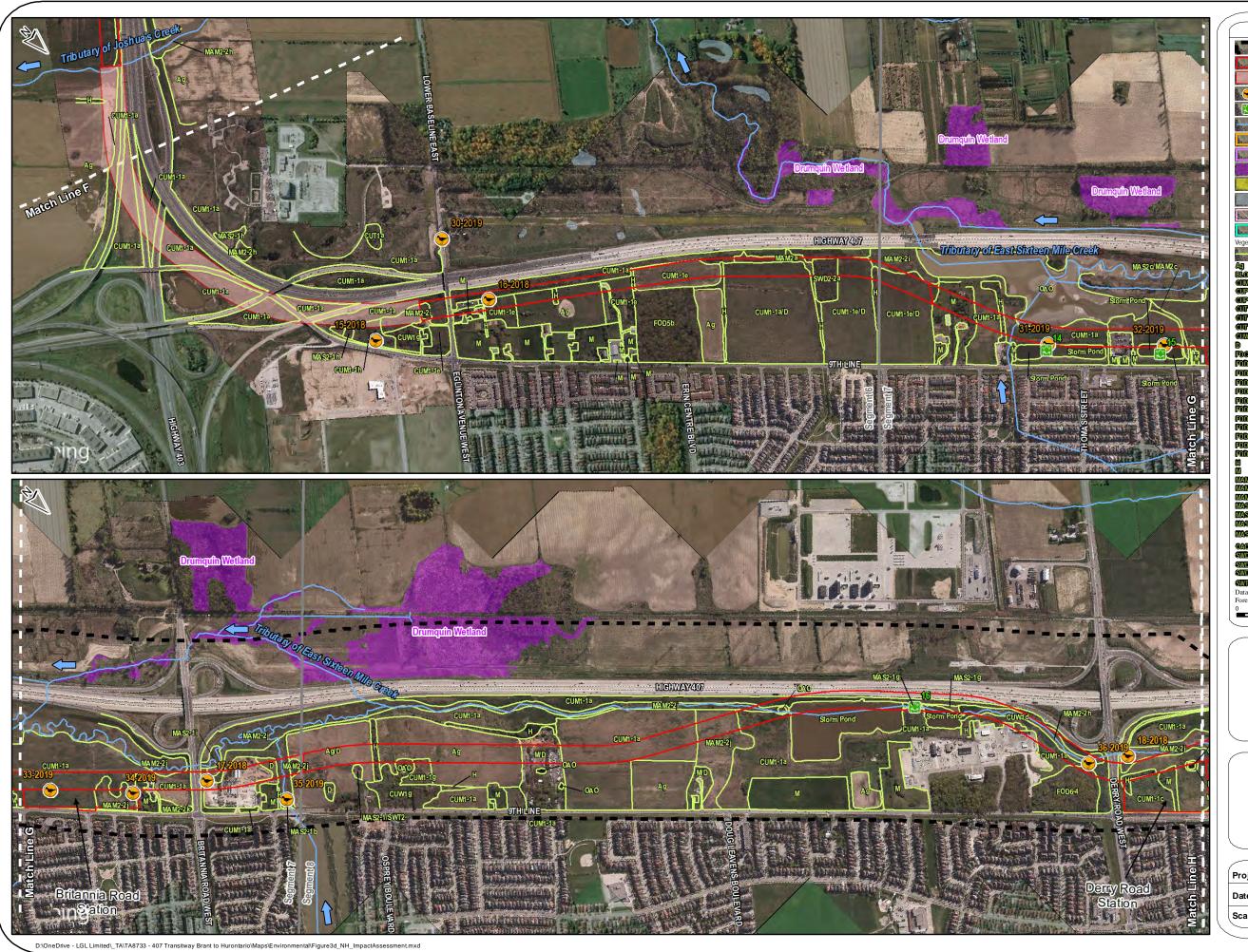


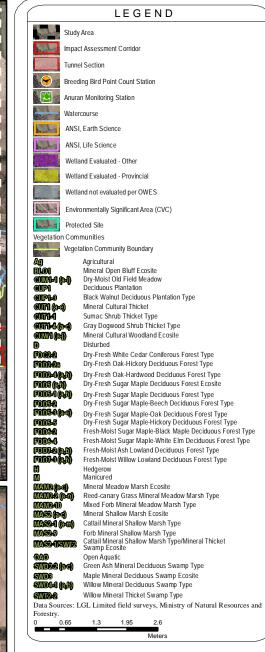


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Match Line



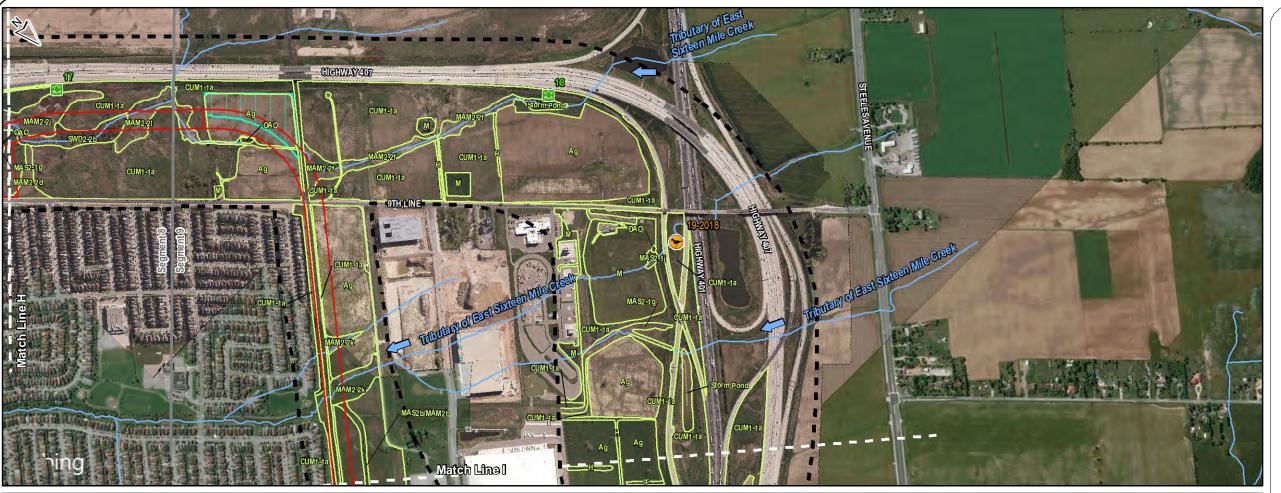


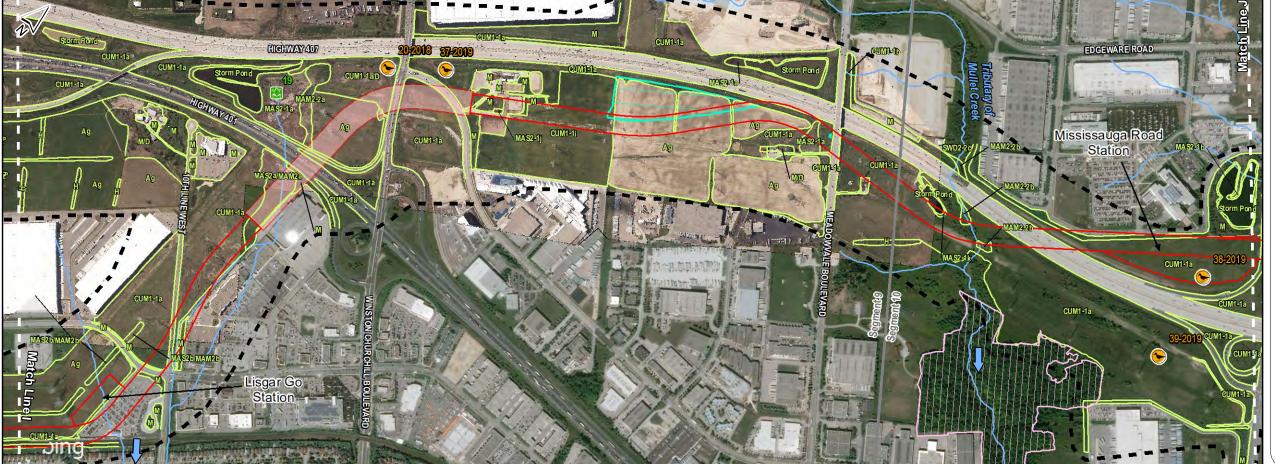


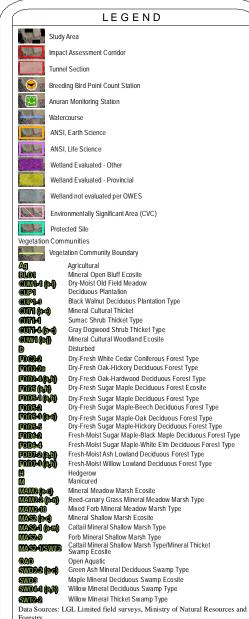
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 March, 2020
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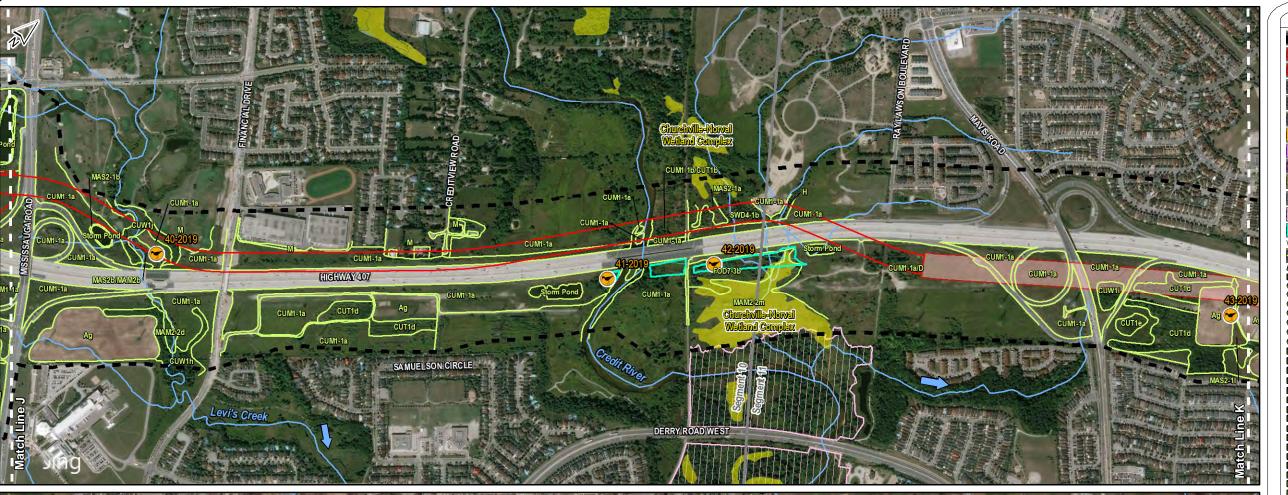




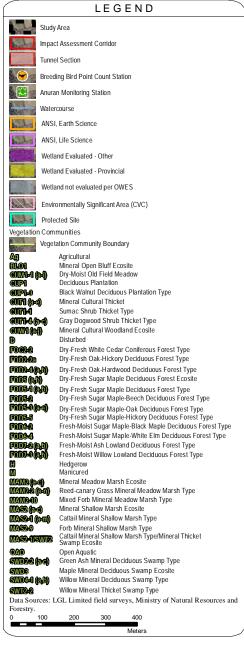




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Date:	February, 2020	Prepared By:	JJP	
Scale:	1:12,000	Checked By:	SK)









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

3.2.1 Runningway Impacts

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

TABLE 8.

SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY RUNNINGWAY

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

Table 8.

Summary of Vegetation Removals Within the Transitway Runningway

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Segment S8 - North of Britannia Rd to North of Derry Road

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

3.2.2 Station Impacts

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

TABLE 9.

SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY STATIONS AND BRONTE ROAD
BUS STORAGE YARD IMPACTS

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

Dundas Street Station

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

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

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

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

Appleby Line Station

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

Bronte Road Station and Bronte Road Bus Storage Yard

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

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

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

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

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

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

Trafalgar Road Station

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

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

Britannia Road Station

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

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

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

Derry Road Station

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

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

Lisgar GO Station

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

Mississauga Road Station

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

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

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

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

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

Impacts to Designated Natural Areas

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

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

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

Designated Natural Features

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

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

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

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

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

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

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

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

Plan Policy Areas

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

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

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

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

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

3.2.4 Vegetation Community Offsets

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Riparian Habitat and Valleyland Management

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

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

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

Forest Edge Management

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

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

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

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

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

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

Invasive Species Management

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

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

Planting Plans

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

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

Construction Best Management Practices

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

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

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

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

3.3 Wildlife and Wildlife Habitat

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

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

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

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

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

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

3.3.1 Runningway Impacts

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

3.3.2 Station Impacts and The Bronte Road Bus Storage Yard

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

Dundas Street Station

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

Appleby Line Station

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

Bronte Road Station

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

Bronte Road Bus Storage Yard

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

Trafalgar Road Station

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

Derry Road Station

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

Lisgar GO Station

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

Mississauga Road Station

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

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

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

Western Chorus Frog

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

Jefferson Salamander

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

Milksnake

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

Timber Rattlesnake

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

Common Five-lined Skink (Southern Shield population)

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

Snapping Turtle

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

Common Nighthawk

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

Chimney Swift

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

Eastern Wood Pewee

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

Bank Swallow

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

Barn Swallow

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

Canada Warbler

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

Golden-winged Warbler

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

Grasshopper Sparrow

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

Peregrine Falcon

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

Red-headed Woodpecker

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

Least Bittern

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

Louisiana Waterthrush

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

Eastern Whip-poor-will

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

Henslow's Sparrow

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

Wood Thrush

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

Bobolink

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

Eastern Meadowlark

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

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

Bats

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

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

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

3.3.4 Barrier Effects on Wildlife Passage

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

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

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

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

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

3.3.5 Wildlife/Vehicle Conflicts

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

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

3.3.6 Wildlife Passage Considerations for Enhanced Functionality

Vegetation Planting at Wildlife Crossing Structures

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

Internal Cover at Wildlife Crossing Structures

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

Substrate Materials within Wildlife Crossing Structures

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

Funnel Fencing

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

3.3.7 Disturbance to Wildlife from Noise, Light and Visual Intrusion

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

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

3.3.8 Potential Impacts to Migratory Birds

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

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

4.0 CONCLUSIONS AND RECOMMENDATIONS

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

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

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

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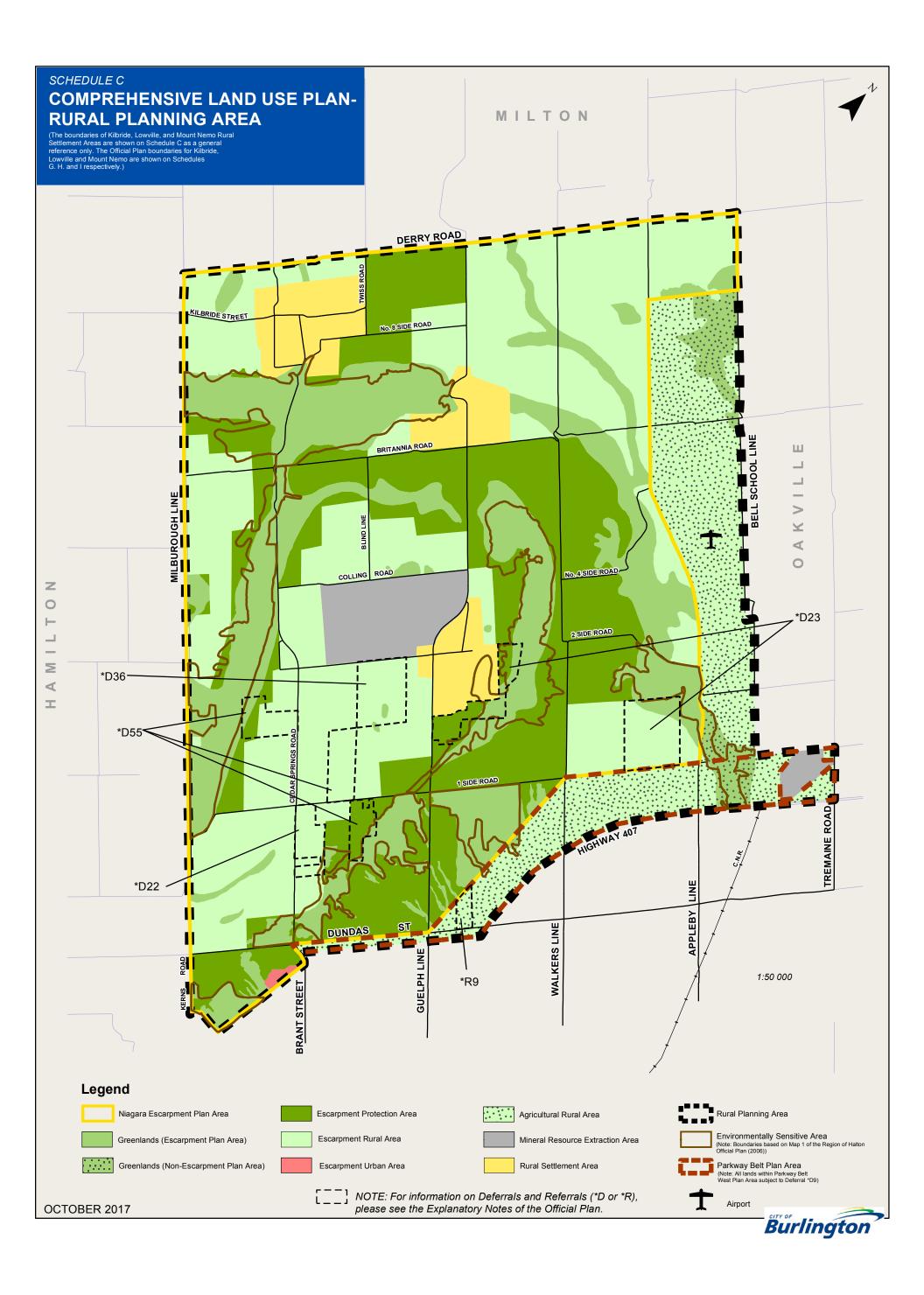
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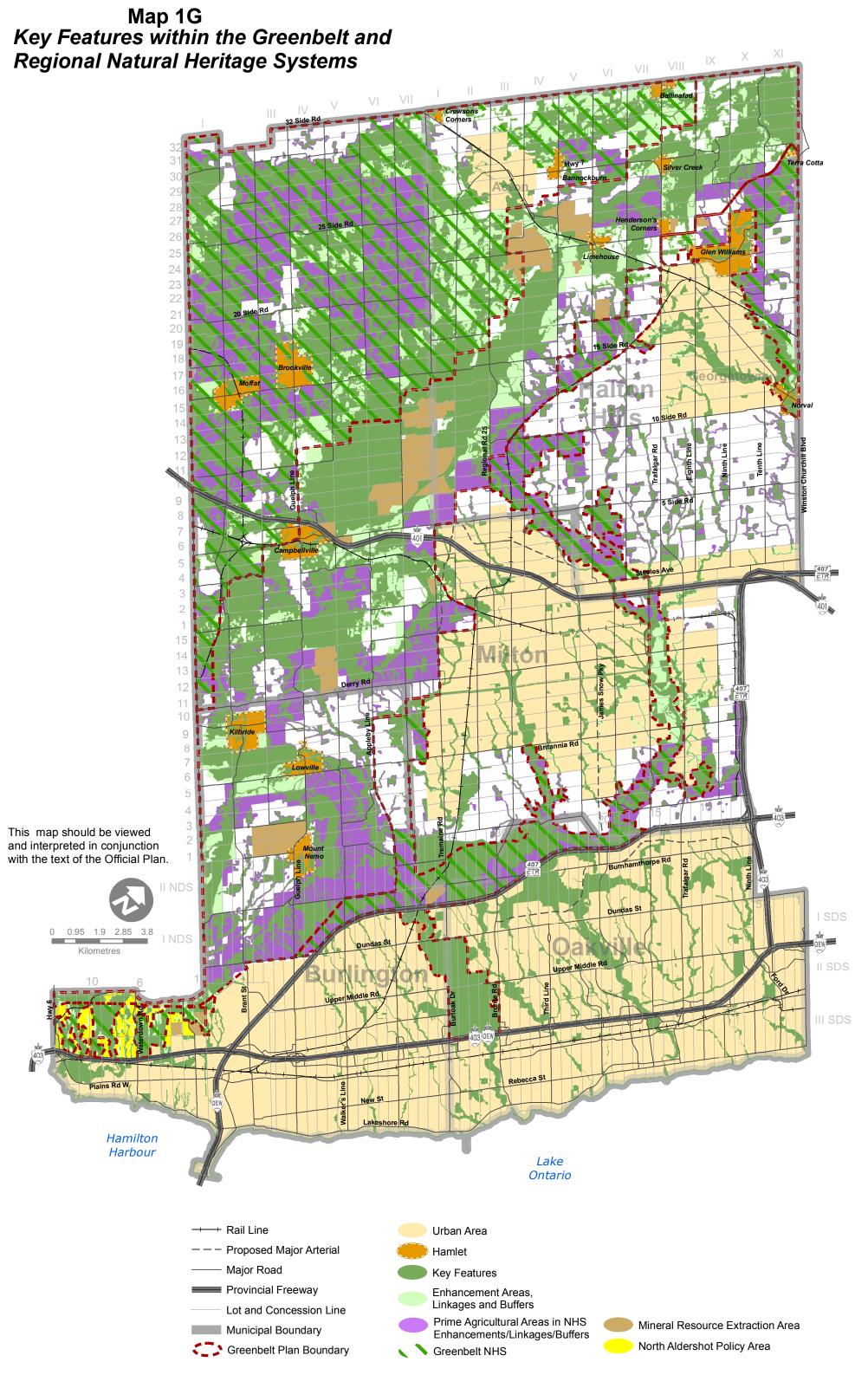
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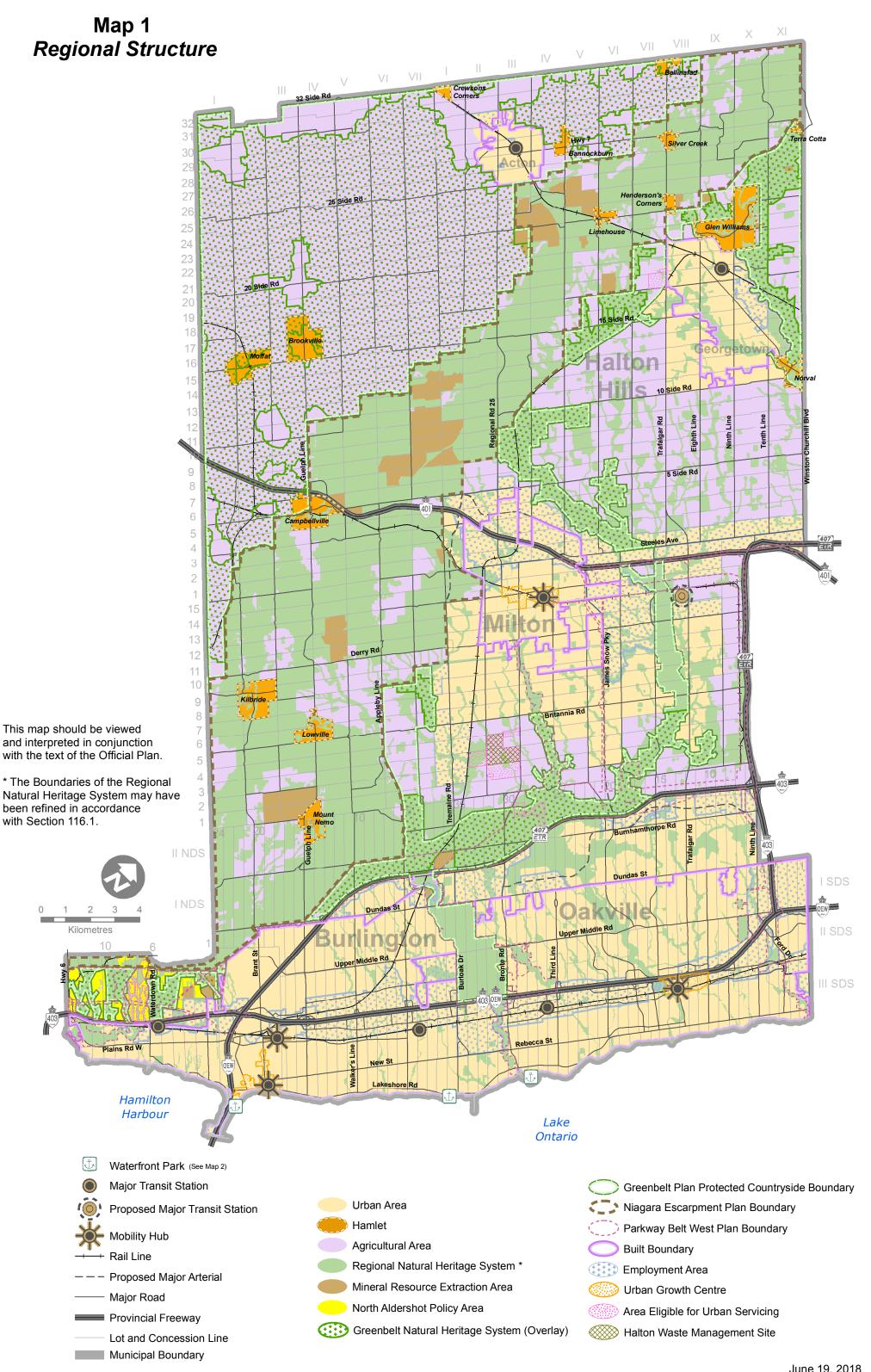
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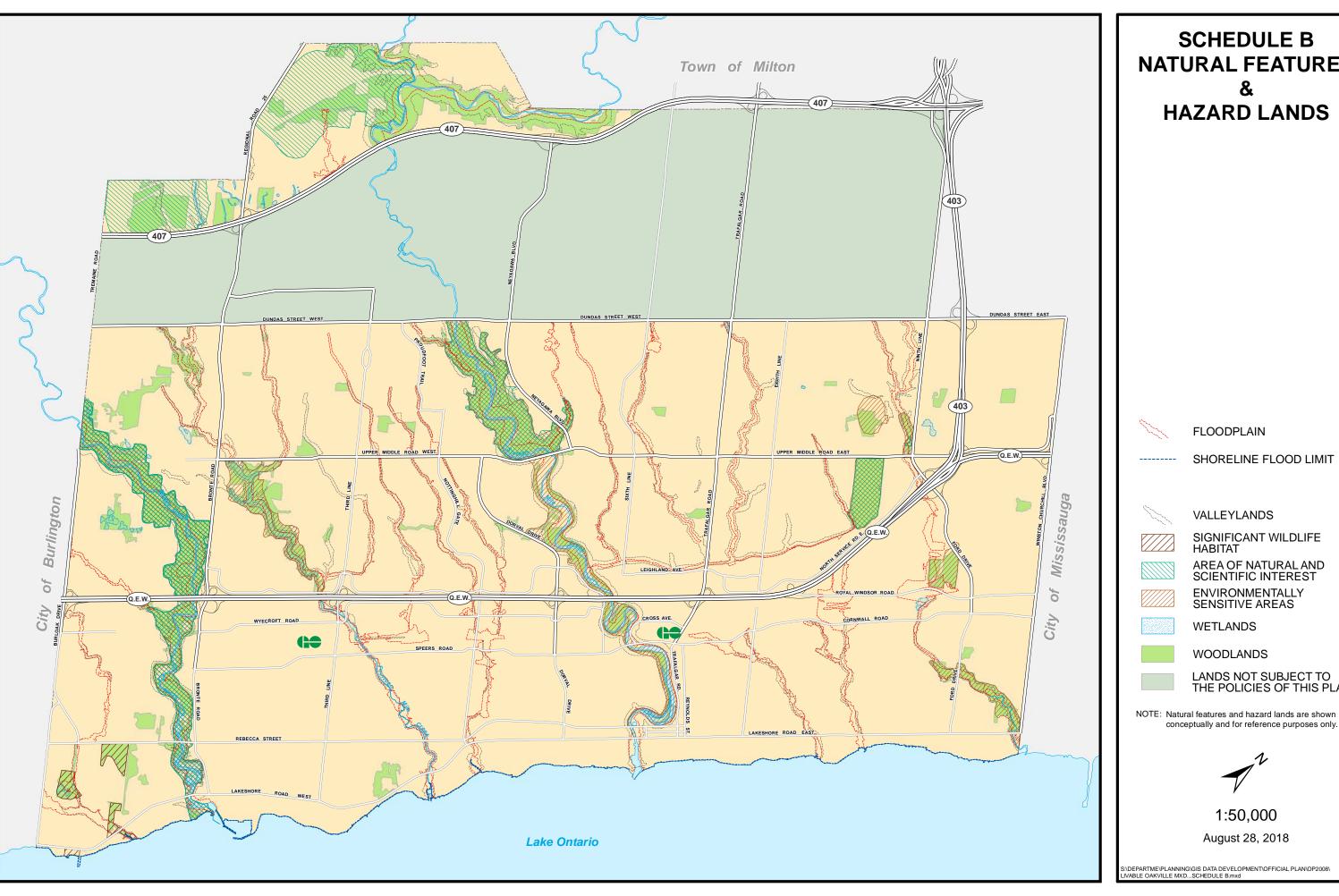
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APPENDIX A. MUNICIPAL OFFICIAL PLAN NATURAL HERITAGE SCHEDULES/ MAPS

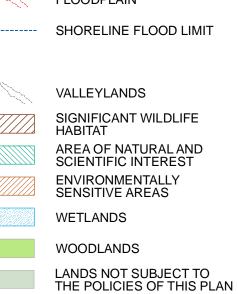








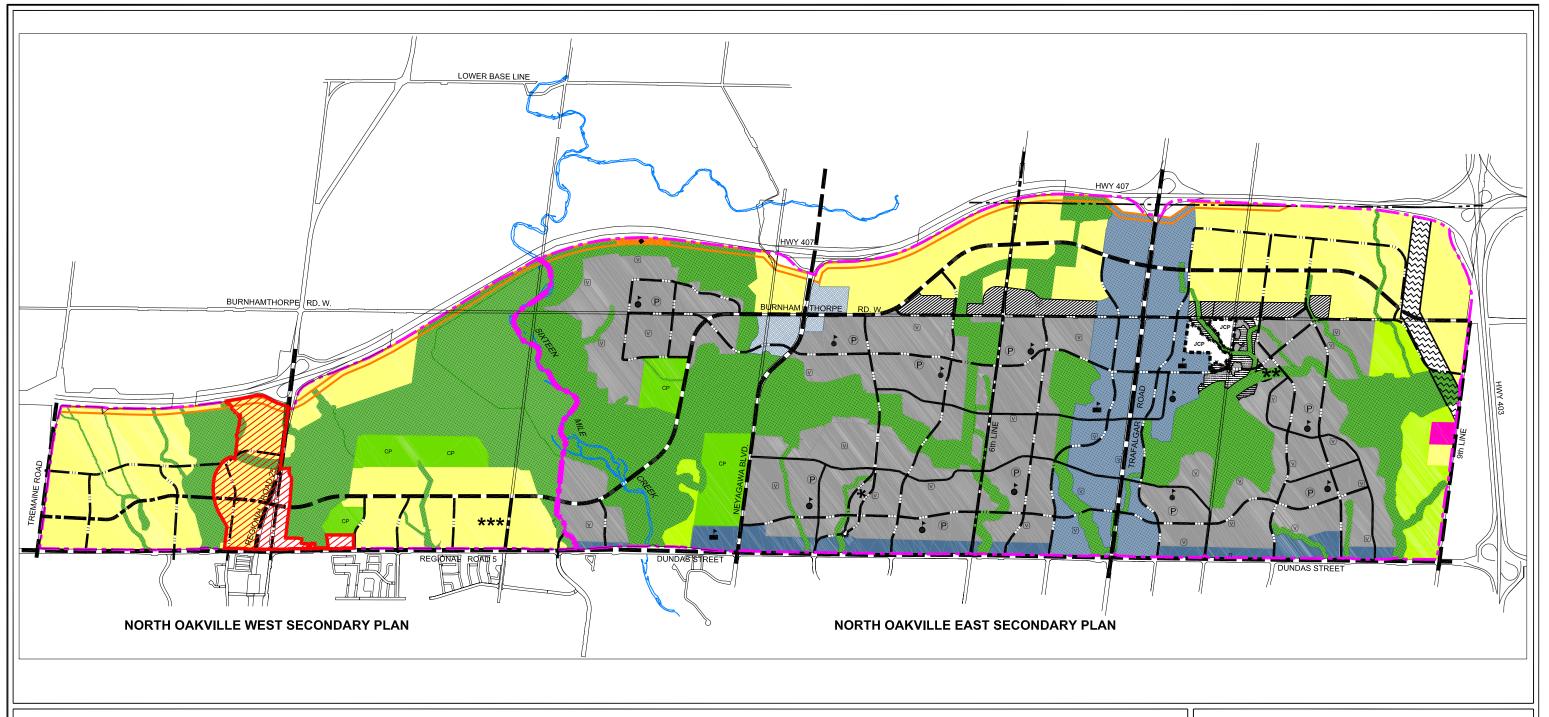
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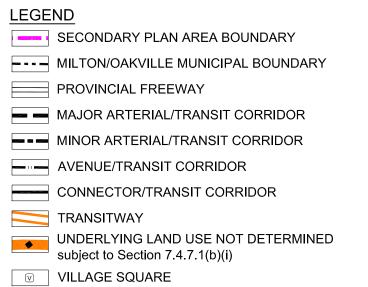


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UTILITY CORRIDOR

DUNDAS URBAN CORE AREA

NEYAGAWA URBAN CORE AREA

SPECIAL STUDY AREA

TRAFALGAR URBAN CORE AREA

TRANSITIONAL AREA

EMPLOYMENT DISTRICT

NATURAL HERITAGE SYSTEM AREA

*** HEALTH ORIENTED MIXED USE NODE

SUBJECT TO SECTIONS 7.4.7.3c viii & 7.4.14.3 d)

★ POLICY REFERENCE SEE POLICY SECTION 7.4.7.2

COMMUNITY PARK AREA

CEMETERY AREA

INSTITUTIONAL AREA

ELEMENTARY SCHOOL SITE

SECONDARY SCHOOL SITE

P NEIGHBOURHOOD PARK AREA

NEIGHBOURHOOD AREA

AREA STILL UNDER APPEAL

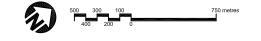
JOSHUA CREEK COMMUNITY PARK AREA

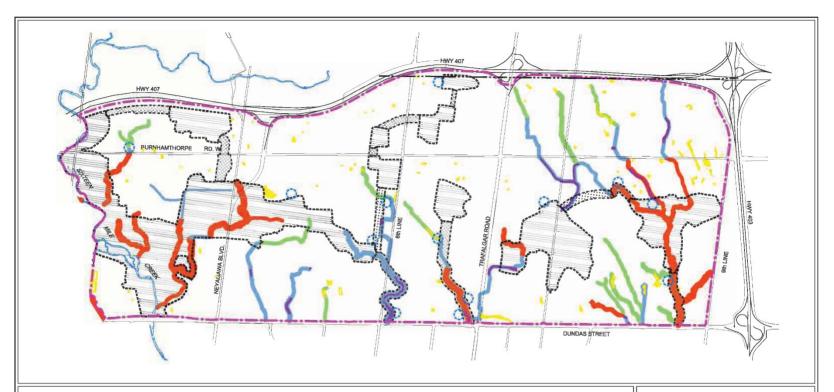
JOSHUA CREEK FLOODPLAIN AREA subject to Sections 7.4.13.1 & 7.6.17

Town of Oakville

North Oakville Secondary Plan

FIGURE NOW 2 & NOE 2
Land Use Plan





LEGEND

SECONDARY PLAN AREA BOUNDARY

--- OAKVILLE / MILTON MUNICIPAL BOUNDARY

**** CORE PRESERVE AREA

CORE PRESERVE AREA

LINKAGE PRESERVE AREA

OPTIONAL LINKAGE PRESERVE AREA

HIGH CONSTRAINT STREAM CORRIDORS

MED. CONSTRAINT STREAM CORRIDORS

OTHER HYDROLOGICAL FEATURES

LOW CONSTRAINT STREAM CORRIDORS

HYDROLOGIC FEATURES "A"

HYDROLOGIC FEATURES "B"

STORMWATER MANAGEMENT FACILITY

CONCEPTUAL STORMWATER MANAGEMENT FACILITY LOCATIONS WHICH MAY ENCROACH IN NHS

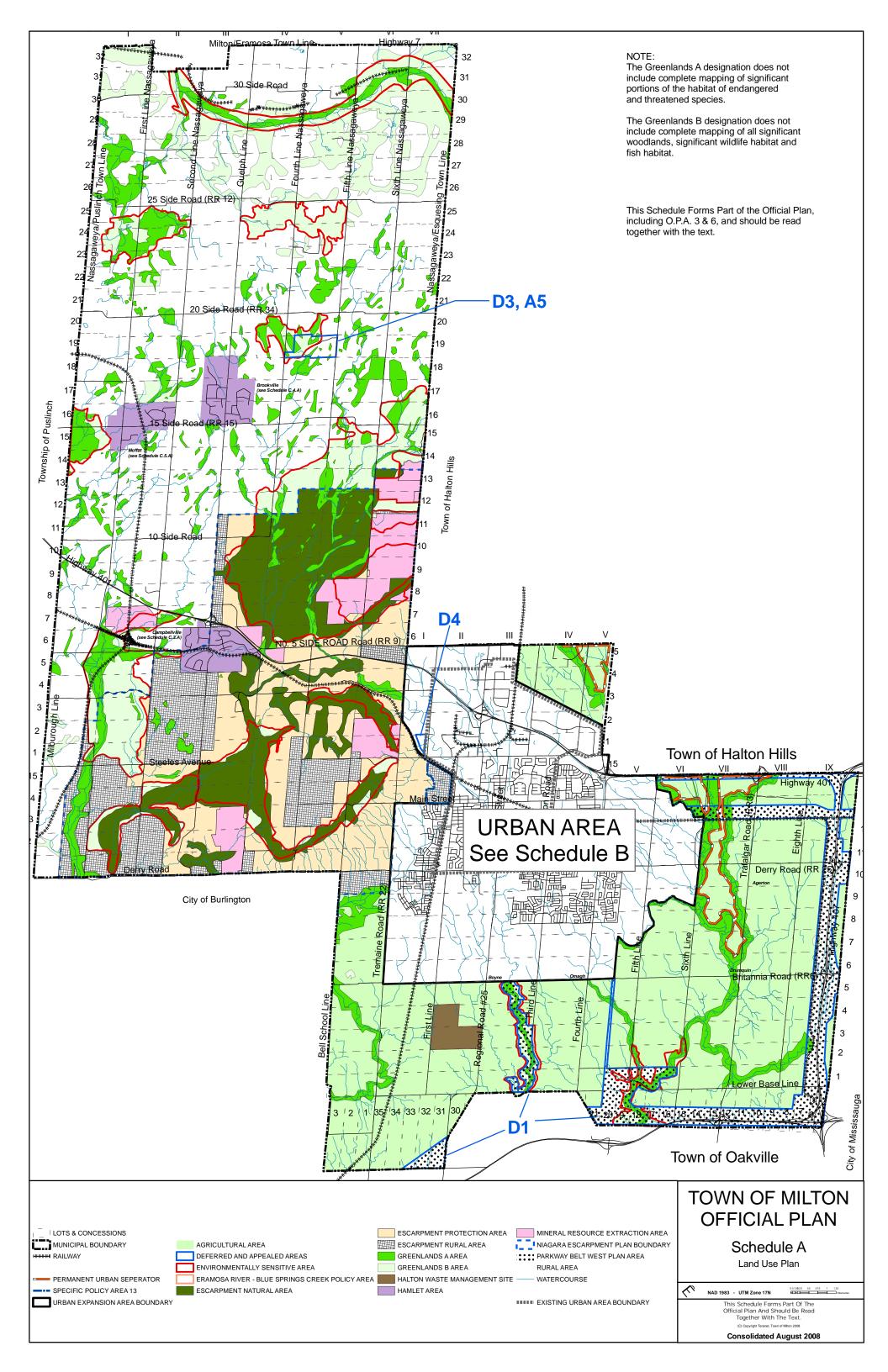
Town of Oakville

North Oakville East of Sixteen Mile Creek Secondary Plan

FIGURE NOE 3

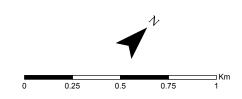
Natural Heritage Component of Natural Heritage and Open Space System including Other Hydrological Features



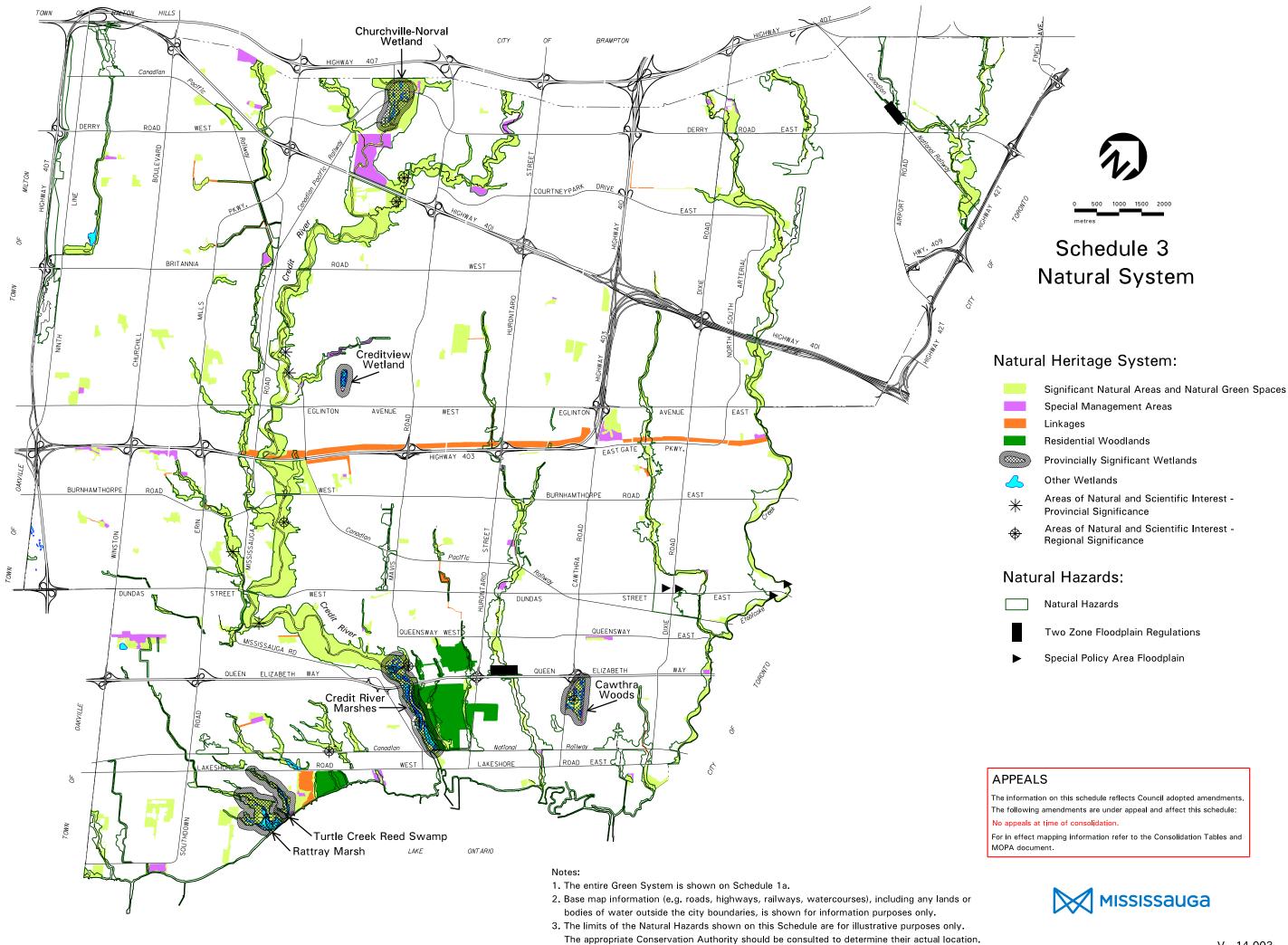


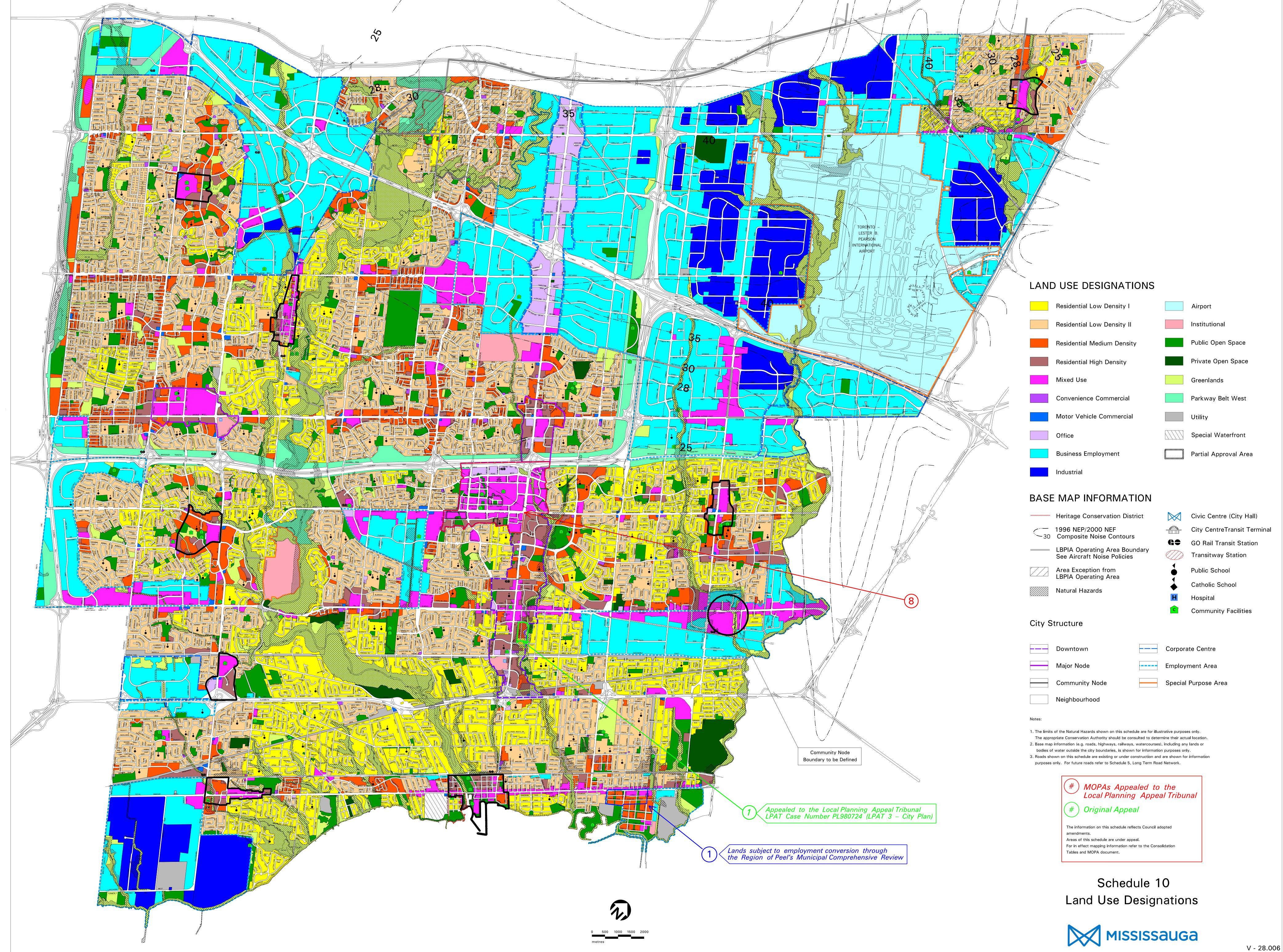
Phase 1B Employment Area Phase 2B Employment Area Prestige Industrial Area Gateway Area Major Parks and Open Space Area Private Open Space Area Greenlands Employment Phase 1A Employment Phase 1B Employment Phase 2A (Regional Phasing 2021-2031) Employment Phase 2B (Regional Phasing 2021-2031) Existing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

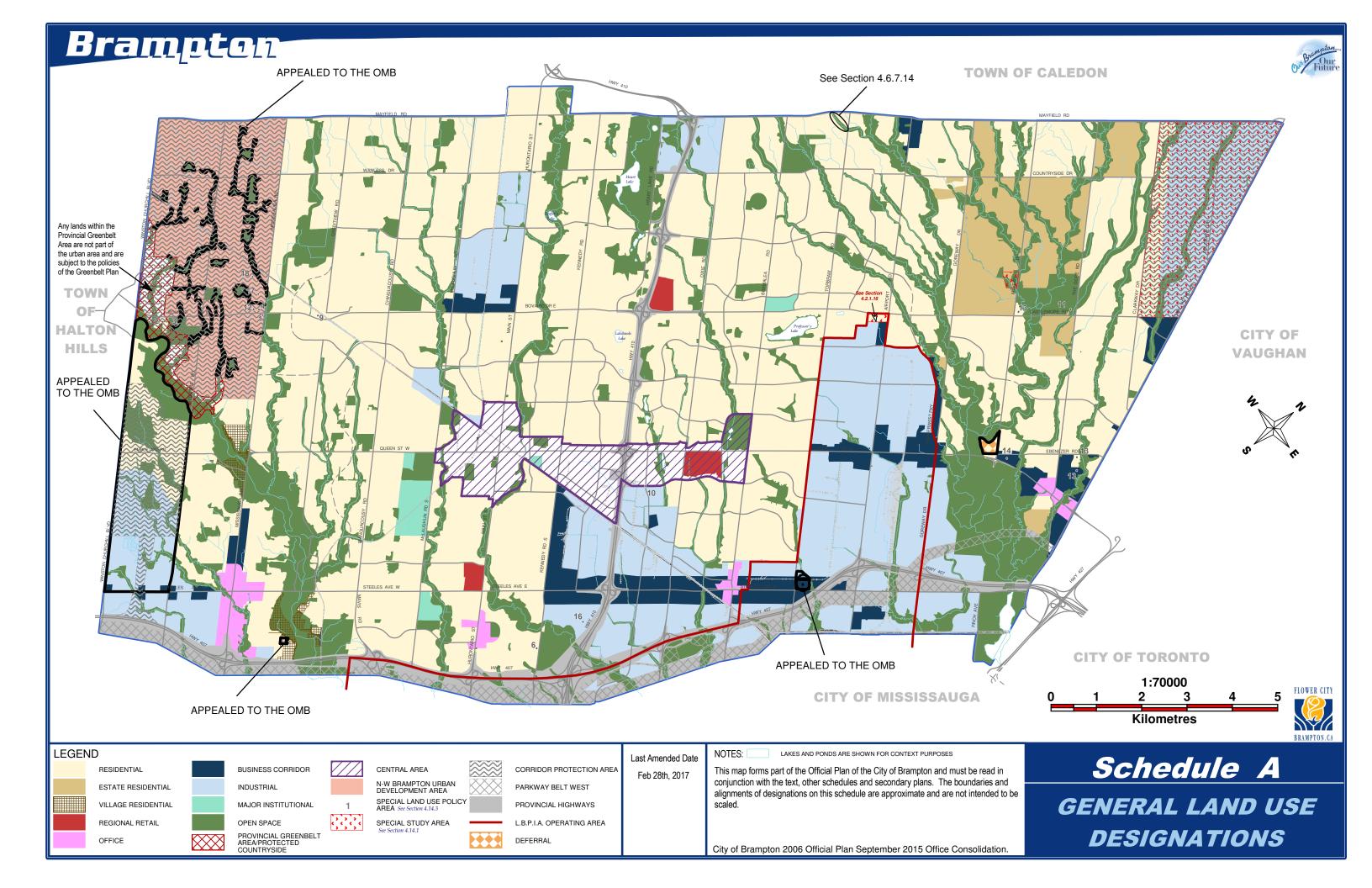
PREMIER GATEWAY EMPLOYMENT
AREA LAND USE PLAN

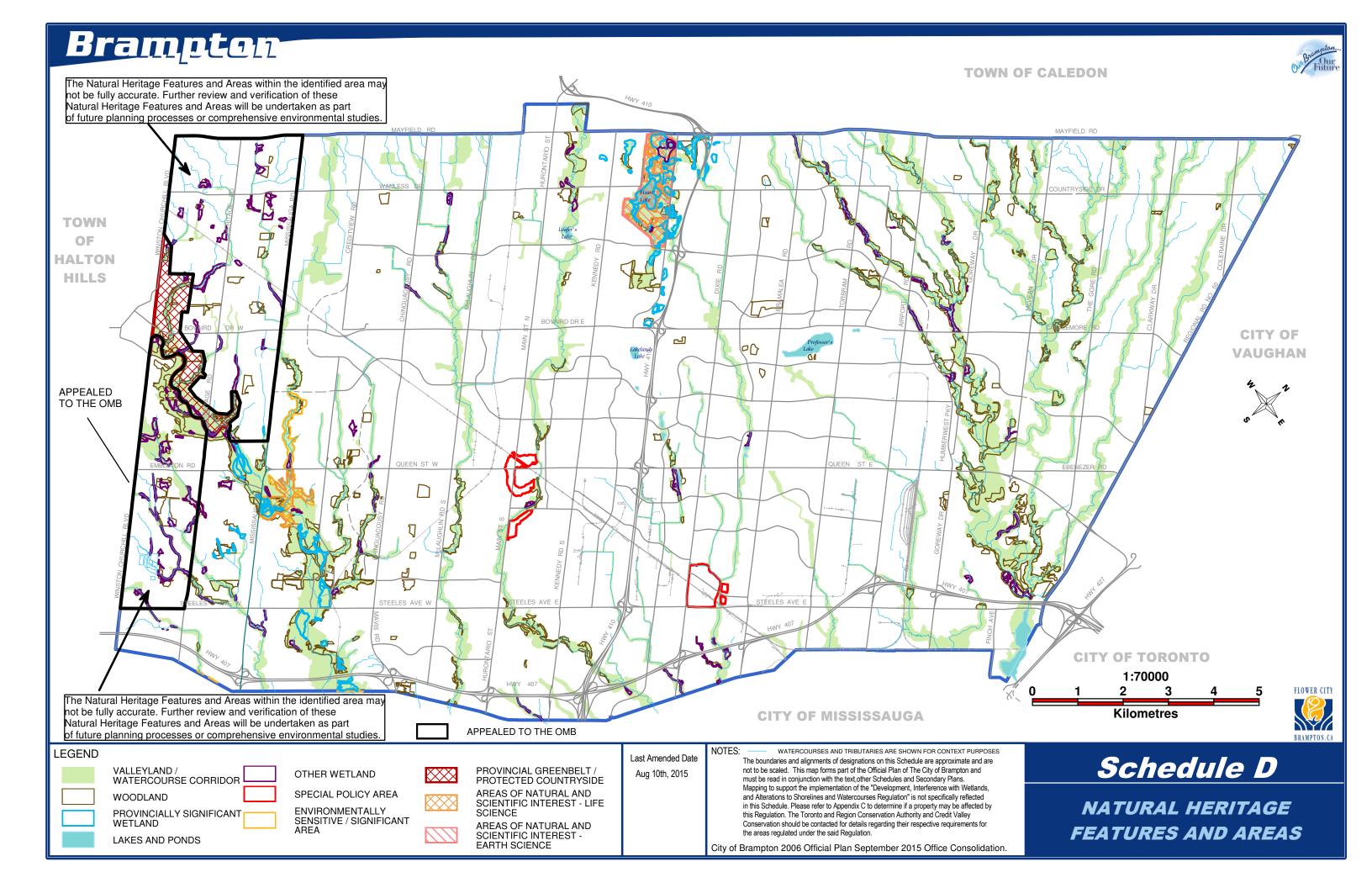


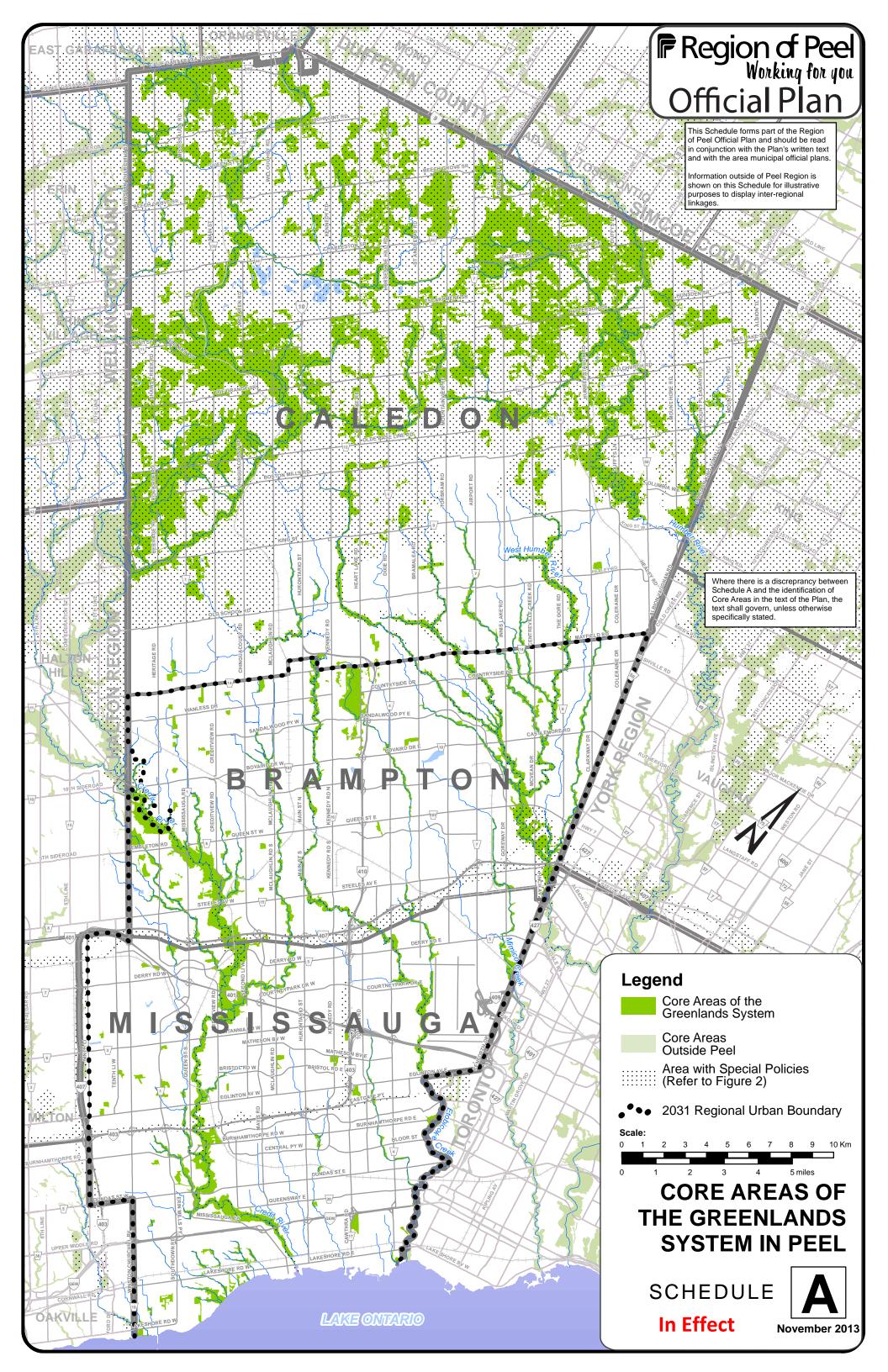


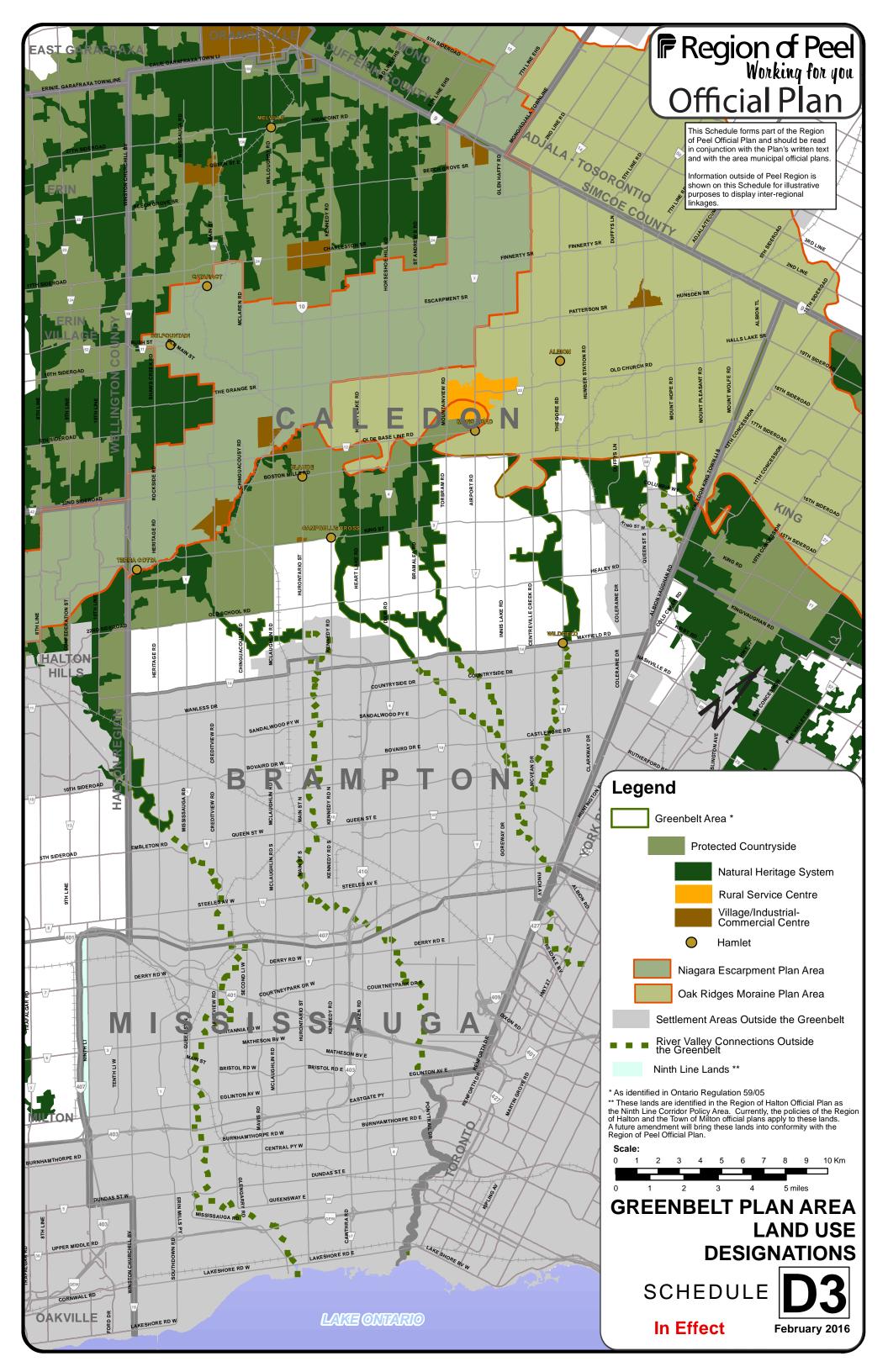


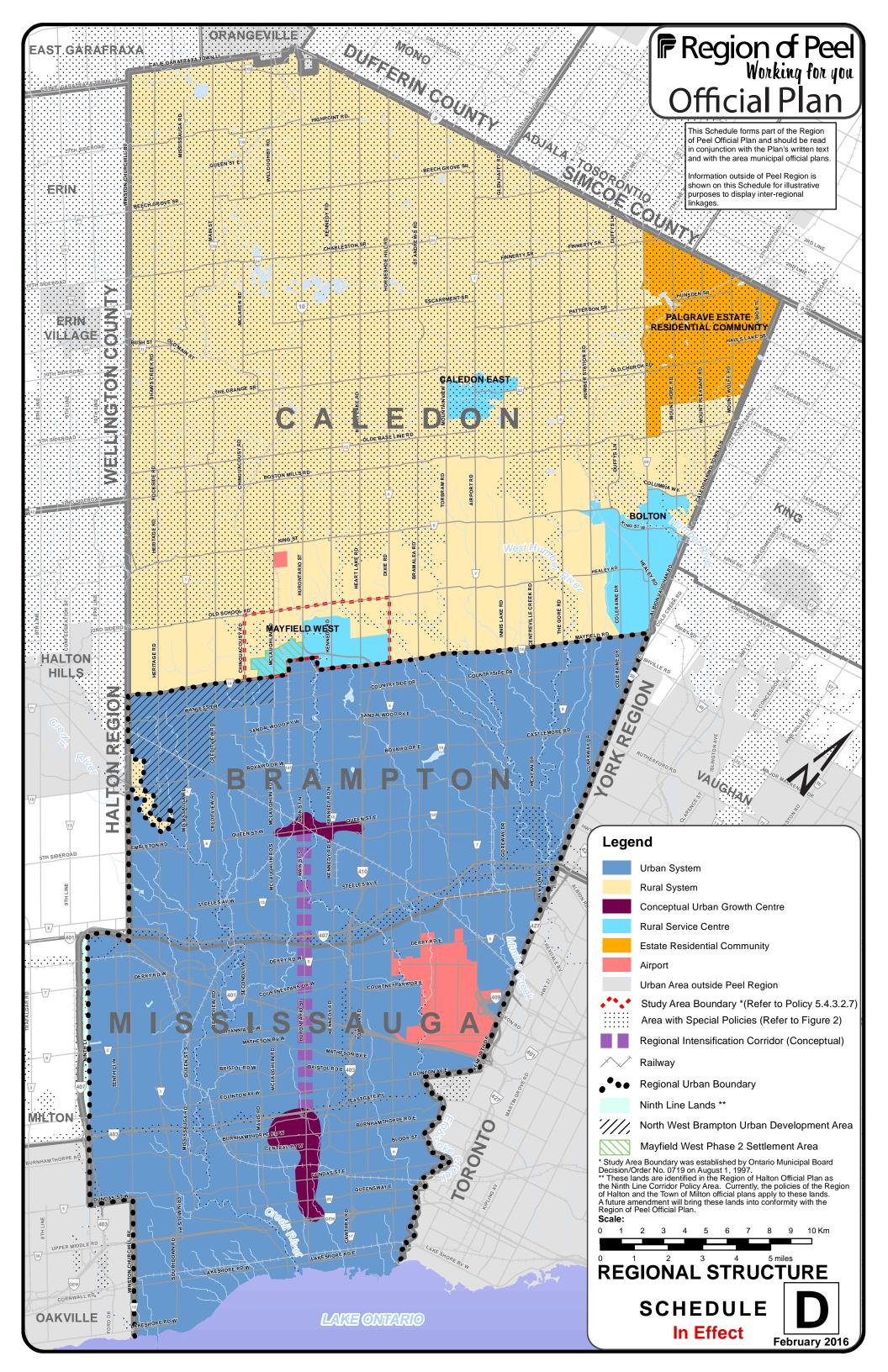












APPENDIX B. ECOLOGICAL LAND CLASSIFICATION FIELD SHEETS

2a-upper

□ PIONEER □ YOUNG

☐ MATURE

☐ OLD-GROWTH

COMMUNITY MATURITY:

DEADFALL/LOGS

DECAYED

FIRM

STANDING SNAGS

TREES

< 10cm < 10an

10-24cm 10-24cm

25-50am

> 50cm > 50cm

10-24cm 10-24cm

25-50cm

25-50cm

> 50cm > 50cm SIZE CLASS ANALYSIS:

GROUND LAYER UNDERSTORY

NCAR

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

< 10cm < 10cm

PLANT ISI SPECIES SURVEYOR(S): DATE: TUCK POLYGON: SITE: 407 Trans HUNGY FOD 7-29 0

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

CODE CODE			
	1 2 3 4	1 SPECIES CODE	2 3
JUGNIGR	0		_
CONTEND	0		
ALCIDD .	0		
+ Paling + TRAVIOR	<u>7</u>		
SUE RUBIC	ا ا ا		
RUACAT T	200		
PARTINSER			
ACE SASA	70		
TIL POER			
TRAPE US	Δ ()		
POPTREM	0		
POAPRAT	0		
MEHRULU	19 S		
GENCAND	70		
DACGOM	0		
CINLATI	≯°040		
PRUSERO			
PLLPETI	70		
CIRCUTE	0		
PE TRIA			
CARPETA	D		
CORRACE	7		
4			

D OPEN WATER
D SHALLOW WAT.
D SURFICIAL DEP.
D BEDROCK

O SHRUB

SITE

LAYER

끜

Ş

EMERGENT

SUB-CANOPY CANOPY

日のかべいり JUGNI

PUPTE

STAND DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO. FEATURE

C WETLAND

AQUATIC

D ORGANIC
D MINERAL SOIL
D PARENT MATERIAL
C ACIDIC BEDROCK
D SASIC BEDROCK
C CARB. BEDROCK

D LACUSTRINE
D RYPERINE
D RYPERINE
D TERRACE
D TERRACE
D VALLEY SLOPE
D TABLELAND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
D ALYAR
D RACCHAND
D BEACH/BAR
D SAND DUNE
D BLUFF

POLYGON DESCRIPTION:	
NOIL	

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

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%SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) CULTURAL OUER RUB HISTORY COVER AL D PLANKTON D LAKE

AL D PLANKTON D LAKE

AL D SUBMERGED D POND

D FOATING LVD D RIVER

D GRAMINOID D STREAM

D LICHEN D MARSH

D LICHEN D MARSH

D LICHEN D MARSH

D MEADOW

D MEADOW

D MEADOW

D MEADOW

D MEADOW

D PLANTATION

COMMETTED

D PLANTATION 25-50am D INCLUSION PLANT FORM COMMUNITY COMM. TYPE ☐ HEDGEROW OTHER

□ PIONEER 'YOUNG

☐ MATURE

□ OLD-GROWTH

COMMUNITY MATURITY:

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

DECAYED FIRM

< 10cm < 10cm

DEADFALL/LOGS

STANDING SNAGS | < 10cm

10-24cm

10-24cm

25-50am 25-50cm

> 50cm

25-50an 25-50cm

> 50cm > 50cm

> 50cm

10-24cm

TREES (

< 10cm

10-24cm

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

<0.2m

ACESASA = FRAPENS CAROVAT >> AGSASA

QUERUBE > CARONAT - ACESASA

SIZE CLASS ANALYSIS:

SPECIES PLANT SURVEYOR(S): NIME POLYGON: FODS-30 DATE: JULY SITE: 407 Inamoduoca <u>.</u>

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SDECIES CODE	5	LAYER		3	SPECIES CODE LAYER CO.		LAYER	#	-
מו בפונט כסטר	1 2	ω	4	E F	SPECIES CODE	ш	2	-	<u></u> 190 19
JUGNIGR	7						-	-	+
MIRIPA		0	2				_	+	
TRADMER	70	0	2				4	+	1
CAROURT	0	0	_				4	+	
BC H S D S D	0	0						-	
TURNE 18	10	70					_	-	1
REUNIA		0					-	+	1
QUERURE	77		/0					+	1
CORRACE		\sim					4	+	1
EL PATE		α					-		1
POPTREM		7	45				-	\dashv	
PRUSERO		N					-	-	
QUE MACR		2					4	1	1
RRUVIEG		0					\dashv	\dashv	
DRCGNOM			2				-	-	
QUE R B	70	0					-	+	
PODPE LT			0,				-	+	1
DRPENS							-	+	7
IRLUTE			\cup				-	\dashv	1
ENALED			\cup				-	+	
STURG		\sim	-				+	\forall	
CARROSE			-				\dashv	-	
							-	+	
			_				-	+	1
							+		
			-				\dashv		
			-				+	+	

D OPEN WATER
D SHALLOW WAT.
SURFICIAL DEP.
D BEDROCK

O SHRUB

COMPLEX COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

COVER

SITE

LAYER

Ŧ

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY EMERGENT

SUB-CANOPY UNDERSTORY

STAND DESCRIPTION:

COMMUNIT	PLANT FORM	HISTORY	TOPO. FEATURE	SUBSTRATE	SYSTEM
				CRIPTION:	PULYGON DES

D WETLAND

AQUATIC

D ORGANIC

"ETMINERAL SOIL

D PARENT MATERIAL

CACIDIC BEDROCK

D BASIC BEDROCK

CARB. BEDROCK

CULTURAL

D LACUSTRUNE
D RYPRIME
D RYPRIME
D TERRACE
D VALLEY SLOPE
D TABLEL AND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
D ALVAR
D ROCKLAND
D BRACH/BAR
D SAND DUNE
D SLUFF

AL D PLANKTON DI LAKE

AL D SUBMERGED DI POND

D FLANTING LVVD DE RIVER

D GRAMINOID DI STREAM

D LICHEN DI STREAM

D ECTUDIOUS DE SARGEN

C CONTERPOUS DE BARGEN

D CONTERPOUS DE BARGEN

D MEADOW

D MEADOW

D PLANTATION

COMM TYPE

D PLANTATION



S	SITE: III]
PLANT	POLYGON: FOR		(1)	
	DATE: JUN 15/19	1		3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	SURVEYOR(S): UMF			Colored C
VALUE CODES: D = I	LAYERS: $1 = \text{CANOPY TREES} > 10\text{m}$ $2 = \text{SUB-CANOPY } 3 = \text{SAPLINGS & SHRUBS}$ VALUE CODES: $D = \text{DOMINANT } A = \text{ABUNDANT } O = \text{OCCASIONAL } D = \text{OADE}$	3 = SAPLINGS & SHRUBS 4 =	= GROUND LAYER	> west & south s
SPECIES CODE	LAYER		LAYER	
	1 2 3 4	SPECIES CODE	4	E.
PINISTRO	70		-	
PUPITECT	P			
PCENEGUN	N R			
PICGLAN	カ			
VITRIPA	000			
TUGNIGR	RRRR			_1,
TILDMER	000			
FRENCRAN	ROO			1
川西かる市の	R			
CORSE	0			
TRUMBR	R) O			
ACESASA	(DOO			
CPROVAT	0000			
BETALLE	P			
CIRLLIE	C			
RAUTYPA	0			
RANGE	0			_1
ACE SACC	70			
ACEPLAT	~			
カストスランス	70			
SOLCAND	0			
QUEPLAN	-			
QUERURE	ORR			
をという	G			1.
				1

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

or south silver

POLYGON DESCRIPTION:

HISTORY

PLANT FORM COMMUNITY

OPEN WATER
SHALLOW WAT.
SURFICIAL DEP.
BEDROCK EI TERRESTRIAL

D WETLAND

AQUATIC SYSTEM SITE DORGANIC
DORGANIC
DEMINERAL SOIL
DARENT MATERIAL
DACIDIC BEDROCK
DERRACE
DACIDIC BEDROCK
DERRACE
DERRA SUBSTRATE TOPO, FEATURE O SHRUB D CULTURAL

RAL D PLANKTON DI LAGE
RAL DISUBMERGED DI POND
D FLANTING LVVD DI RIVER
D GRAMINOID DI STREAM
D FORB DI SWAMP
D BKYOPHYTE DE GRAGE
D CONIFEROUS DE BARGEN
D CONIFEROUS DE BARGEN
D MEADOW DI BARGEN
D MEADOW DI PLANTATION
COMM. TYPE

COVER

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

LAYER	H	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = AROUT FOLIAL TO)
1 EMERGENT	~		PINSTRO
2 CANOPY	7	v	SOUTH DEPOS
3 SUB-CANOPY	7	t	BYTESES Y CARONT
4 UNDERSTORY	/	7	No process success success
5 GROUND LAYER	/	/	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

			ı		
2	TO D-GBOW	MATURE	☑MID-AGE	☐ YOUNG	PIONEER
				MATURITY:	COMMUNITY
	SINC	R = RARE N = NONE	NT 0 = OCCASIONAL F	BONDANCE CODES: A = ABUNDANT	VECKDANCE COL
> 50cm	HDOC-C2	ac right			ABILIDANCE CO.

DEADFALL/LOGS DECAYED

< 10cm < 10cm < 10cm

10-24cm

25-50cm 25-50cm 25-50cm

> 50cm > 50cm STANDING SNAGS

TREES

< 10cm

10-24cm

25-50cm

> 50cm

> 50cm

10-24cm 10-24cm

SIZE CLASS ANALYSIS:

KK with Cuti-1 and would to smith Unche Sudo Lang 6

KOU TYPU

HA ARUN

YEPL BY

CORN

にってい

AVE SATI

MACIN

MUDANG

D PIONEER D YOUNG

☐ MID-AGE

☐ MATURE

□ OLD-GROWTH

COMMUNITY MATURITY:

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

< 10cm

10-24cm

25-50cm 25-50cm

> 50cm

> 50cm > 50cm

DEADFALL/LOGS

FIRM

< 10cm < 10cm

10-24cm 10-24cm

25-50cm

25-50cm

> 50cm

<0.2m

DECAYED

STANDING SNAGS

@ POD 10

RUSERO

SRUBR

10% BI

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THE DORD

TANKE TO

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PLANT SPECIES LSI SURVEYOR(S): DATE: JULY POLYGON: (UMI-) NAMITE OF LOS HANH BUS vī Q ニスリ

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE GROUND LAYER

SPECIES CODE 2 3 LAYER 4 COIF. SPECIES CODE 2 LAYER ω

0 0 D SHALLOW WAT.

ENSURFICIAL DEP.

D BEDROCK 5 GROUND LAYER 5. 1 5 6RAM INCID SPO > CORULAR HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60% LAYER SIZE CLASS ANALYSIS: STAND DESCRIPTION: GROUND LAYER SUB-CANOPY EMERGENT UNDERSTORY CANOPY SITE TREES 폭 CVR < 10cm SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) SUGNIGE JUGNIGE ARESP スナレーシャ appliture flugg ROW 10-24cm

8

PRINIRG

JOH PUN

KAT COCC

DOCK SU

BET PEND FRDATER

NEGT

ANCAP

PSUFU

COLAU CPUN6

□ OPEN □ SHRUB □ TREED

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

COVER

THPANGU

QUE RUBO

RARVE

RHUTHPH

D

子のたい NEW BON

E SASA

THENIER

PLEDUST

CABES

COLOR

)

NN168 RIANNU

HREPE

4

POLYGON DESCRIPTION:

EI CULTURAL HISTORY

PLANT FORM

COMMUNITY

D PLANKTON

D SIMMERGED

D FLOATING IVD

D GRAMINOID

D G

D LAKE
D RIVER
NO STREAM
NARSH
SWAMP
SWAMP
HEN
D BOG
D BARREN
MEADOW
P MEADOW
D PRAIREE
D THICKET
D SAVANNAH
D FOREST
FOREST
D PLANTATION

ONMACK ORVER

RIPA

ROINE

D WETLAND
D AQUATIC SYSTEM D ORGANIC

MINERAL SOIL

PARENT MATERIAL

ACIDIC BEDROCK

BASIC BEDROCK

CARB. BEDROCK SUBSTRATE LACUSTRINE
DITIONIAND
DITERRACE
UNALLEY SLOPE
STABLELAND
CRULING UPLAND
CLIFF
DITALUS
CREVICE/CAVE
ALVAR
DROCKLAND
DROCKLAND TOPO. FEATURE

	POLYGON		
UTMZ:	POLYGON SURVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	
		1	さいから はいままのは あるからない



		(I)
UTMZ:	PULYGON SURVEYOR(S):	SITE:
UTME:		
UMMI	DATE:	POLYGON:

S 10	SURVEYOR(S):	UST DATE: JULY 1	SPECIES POLICON: CU
	71	19	

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

POLYGON DESCRIPTION:

4 UNDERSTORY SUB-CANOPY CANOPY

ONER SP - FRAXSP FREGRAN > FRAX LAYER

H

CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

STAND DESCRIPTION:

1 EMERGENT

75.50		10-24cm		< 10cm		STANDING SNAGS
25-50cm	0	10-24cm	0	< 10cm	D	TREES

 DEADFALL/LOGS
 FIRM
 < 10cm</th>
 10-24cm
 2

 ABUNDANCE CODES:
 A = ABUNDANT O = OCCASIONAL R = RARE N = NONE
 2
 25-50cm

25-50cm

> 50cm > 50cm

COMMUNITY MATURITY:

□ PIONEER	
B(YOUNG	
☑ MID-AGE	
☐ MATURE	
□ OLD-GROWTH	



	_	SPECIES	
SURVEYO	DATE:	POLYGON:	SITE: 4
?(S):	51.	0	7 4
77	5 10	P1-3	\$ C
		8,	TIBU
	1		
	-		
		-	
		1	

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	IES CODE LAYER COLL SPECIES CODE	LAYER
	1 2 3 4		1 2 3 4
TILAMER	D N		1
SPICHONE	>		
FRAPENIS	040		
ACE SOSA	000		
ひからららて	<u> </u>		
PDRINSER	A		
MIRIPA	000		
PORPALU	5		
PR TRITE	70		
ORLUTE			
CAROVAT	O R	-	
SEUCANA			
TARPENS	0		
STVIRG	70		
	_		

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM
TERRESTRIAL O WETLAND O AQUATIC	O ORGANIC G MINERAL SOIL O PARENT NATERIAL O ACIDIC BEDROCK O BASIC BEDROCK C CARB, BEDROCK	D LACUSTRINE D RIVERINE D RIVERINE D BOTTOMILAND D TERRACE D VALLEY SLOPE D TABLELAND D ROLLING UPLAND D CLIFF	CULTURAL	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOID D FORB D FORB D LICHEN D BRYOPHYTE SACRECIDUOUS
		D TALUS D CREVICE/CAVE D ALVAR D ROCKLAND D BEACH/BAR D SAND DUNE D BLUFF		D CONJEROUS I MIXED
SITE		18	COVER	COMM. TYPE
O OPEN WATER O SHALLOW WAT. O SURFICIAL DEP. O BEDROCK			D OPEN D SHRUB PTREED	C COMPLEX

STAND DESCRIPTION:

LAYER	=	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOLIAL T
1 EMERGENT			
2 CANOPY	_	W	TUTALIGE
3 SUB-CANOPY	17	N	TILAMERYCAROVAT
4 UNDERSTORY	ار ع	w	TRAX SP
GROUND LAYER	4.3	£	PORINSETTRASE

SIZE CLASS ANALYSIS:

-						DE LOS COSTES
> 50cm	25-50cm	10-24cm	1	< 10cm	DECAYED	
/ > 50an	25-50cm	10-24cm	7	< 100m	LINA	DEADFALL/LOGS
1			0		1	
> 500	25-50cm	10-24cm	/	< 10cm	STANDING SNAGS	STANDIN
/ / Judia	C		1			
	○ 25-50m	10-24cm	D	< 10cm	IREES	

COMMUNITY MATURITY:

÷	_		,
	L TONEER	T DIONEED	
	D YOUNG	CANTON	
	MID-AGE	W	
T	MATIRE		
L OLO-GROW H	22222		



> 50cm > 50cm > 50cm > 50cm SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

☐ HEDGEROW

OTHER

SPECIES PRODUCTION OF STREET	7	CUTIA	2	POLYGON SURV	SITE: SURVEYOR(S): UTMZ:	UTME:	
	SURVEYOR(S):				UTMZ:	UTME:	
LAYERS: 1 = CANOPY VALUE CODES: D = 1	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	' 3 = SAPLINGS & SHRUBS 4	= GROUND LAYER				
SPECIES CODE	LAYER COLL	SPECIES CODE	LAYER	POLYGON DESCRIPTION:	SCRIPTION:		
	1 2 3 4	0.000	1 2 3 4	SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY
REMINE	D	TAROFF	-	☐ WETLAND		CI LACUSTRUME	□ NATURAL
ILLD DINGU	5	DIX GLON	0 (□ AQUATIC		I TERRACE	X
100000 D	P	TAL SP.	77		BASIC BEDROCK CARB. BEDROCK	TARI FI AND	
HELDCRA	0	VITRIPA	0			D ROLLING UPLAND	
PODPRET	b	SHRVULG	2			D CREVICE/CAVE	
FESRURA	0	SUM) CAN				- ALVAR	
THLPERE	70	DCG NEGU	2			☐ BEACH/BAR	
PCENE GI	~	ACE SASA	ROO			□ BLUFF	
101/ORN	P	ACE PLAT	0	SITE			
PERDUST	0	HUDDER	<u> </u>	O OPEN WATER	- 1		_
OCIVIY OCIVIY	70	DRUN SP.	0	E SURFICIAL DEP.			O TREES
BROINER	D	PRUVIRG	R	The state of the s			
CIRPRY	0	SUPPLY INC	7"	STAND DESCRIPTION:			
RUDOPTE	0	SOUPRUE	70	LAYER	HT CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQ	AT
FLAREPE	0	PIN CI 600	000	1 EMERGENT			
ARCMIUL	0	やっていったい	7	_	W	TUGNIGR =	1
USSUE OF	0000	PUPTREM	P	4 UNDERSTORY		DI I CWILLIA	/
RUMCRIS	\times_\t	CAULBE	70	_	7.4.2	2 2	0
FRAPEUN	0	DACGLOM	o (HT CODES: $1 = > 25m$ CVR CODES: $0 = NONE 1$	> 25m 2 = >10-25m 3	2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 =	0.5-1m 6
PIC DIND OF	0	MORALBA	70	STZE CLASS A	NALVETE.	TC:	4.
PUDERUN)	PSN S40	2	TREES	TREES C < 10cm	5	1
HEM FULV	70	ROBRSEW)	STANDI	(on 10-24cm	9 [9
POPDECT	R 6	TRAP INP	2	DEADFALL/LOGS	FIRM		9
CARCUAT	ORR	किर्ट ०६०	70	ARIJUDANCE CO	DECA	an 10-24an	19
DIDSMEI	77	GALVERU	P	COMMINITY MATE	- >	BITY:	S
SOLCAND	0			□ PIONEER	OUNG :	□ MID-AGE □ MATIRE	A
0,0 70,7						1	13

D PLANKTON

D SUBWIERGED

D FLOATING LUV

D FL

COMMUNITY

20-

PLANT ПSI SPECIES SURVEYOR(S): NMF DATE: JULY 15/19 POLYGON: CUTIA/CUWIA SITE: 407 Transituary

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

	LAYER		LAYER		AYER		
SPECIES CODE	1 2 3 4	COL.	SPECIES CODE	-	2 3	4	COLF.
JUGNIGRA	000				\rightarrow	+	
ACENEGUN	000	<u> </u>				7	
RHACATH	000				\dashv	-	
ELAANGU	70				-	7	
CORSERI	0				-	1	
PUDDRUN	0				+	-	
DAUCARO	0				-		
BROINER	700	0			-		
TAROFFI	70				-		
SUCRUBR	R				\dashv	+	
ACESISA	R 00				-	1	
FRAPENS	200				-		
BUTATA	0				-		1
TISTART	0				H	\Box	П
					+		
					+		
				-	+		
					1		
				-	1		

- un tramedium

POLYGON SURVEYOR(S):

SITE:

UTMZ:

STME:

UTMN: DATE: POLYGON:

i	POLYGON DES	CRIPTION:				
_	SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUN
1.01	A TERRESTRIAL	ORGANIC	☐ LACUSTRINE	□ NATURAL	☐ PLANKTON	- LAKE
_	E METONIO	MINERAL SUIL	L RIVERINE		O SUBMERGED	T POND

	The same of the sa	THOUSE STATE OF	DISTORT	PLANT FORM	COMMUNITY
EXTERRESTRIAL WETLAND AOUATIC	O ORGANIC MINERAL SOIL D PARENT MATERIA	D LACUSTRINE D RIVERINE	I NATURAL	☐ PLANKTON ☐ SUBMERGED	D LAKE
LI WOOM I	ACIDIC BEDROCK	I TERRACE		☐ FLOATING LVD ☐ GRAMINDID	□ RIVER □ STREAM
	CARB, BEDROCK	SLTABLELAND		I FORB	MARSH
		II ROLLING UPLAND		☐ BRYOPHYTE	
				EX.DECIDUOUS	D 80G
		LI PALUS		□ CONIFEROUS	BARREN
		O ALVAR		LI MIXED	II MEADOW
		ROCKLAND			INCOME.
		SAND DUNE			SAVANNAH
		II BLUFF			- POREST
					II PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER O SHALLOW WAT. RESURFICIAL DEP. O BEDROCK			X SHRUB X TREED	COMPLEX	□ HEDGEROW
CTAND DESCRIPTION.	DTTOM:				

SIZE CLASS ANALYSIS:

5 GROUND LAYER | 5-7 | 2-7 | BRO | \(\cap \infty \) \(\sigma \) \

PACATUY ECANOC

TUGNIGR > QUE RUBR

2 CANOPY 3 SUB-CANOPY

UNDERSTORY

1 EMERGENT

폭

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

			-			ARINDANCE CORES
> 5000	25-50cm	10-24cm		< 10cm	DECAYED	
> 500	25-50cm	10-24cm		< 10cm	7183	DEADFALL/LOGS
-						
> 50cm	25-50cm	10-24cm		< 10cm	GSNAGS	STANDING SNAGS
> 50mm	25-50cm	10-24cm	75	< 10cm	TREES	

☐ PIONEER	TAIOLILION
DNOON D	I I'M UKLIT:
□ MID-AGE	
MATHRE	



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

12

COMMUNITY MATURITY:	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	DECAYED < 10cm 10-24cm	DEADFALL/LOGS CIRM < 10cm 10-24cm		
	NE	25-50cm	25-50cm		
		> 50cm	> 50cm	, John	7 50

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ON TRIP PROVE

THE DEST

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SIZE CLASS ANALYSIS: CVR CODES: $0 = NONE \ 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 = > 35 - 60\% \ 5 = > 60\%$

LAYER	Ħ	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	i		la cia cia
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL D WETLAND D AQUATIC	D ORGANIC MINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D RASTC BEDROCK	CI LACUSTRINE CI RIVERINE CI BOTTOMLAND CI TERRACE CI TERRACE	CULTURAL	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOID	D LAKE D POND RIVER D STREAM
	CARB. BEDROCK	C TABLELAND C ROLLING UPLAND		☐ FORB ☐ LICHEN ☐ BRYOPHYTE	☐ MARSH ☐ SWAMP
				☐ DECIDUOUS	□ B0G
		CREVICE/CAVE		CONTEROUS	BARREN
		☐ ALVAR			PRAIRIE
	•	II REACH/RAR			D THICKET
		I SAND DUNE			E WOODLAND
					☐ FOREST ☐ PLANTATION
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			II OPEN II SHRUB II TREED	☐ INCLUSION	☐ HEDGEROW

POPDE LT

PCENT GU

カスベア

0 0

POLYGON DESCRIPTION:
SYSTEM SUBSTR

PLANT

POLYGON: H

SITE: 407 Transtitus

W

LSI

SURVEYOR(S):N ME DATE: JULY 15/19

SPECIES CODE

COLF

SPECIES CODE

<u>8</u>F

ジュアジスパ

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE



Za-lower

PLANT
SPECIES
LIST

SITE: 107 Transhown

CUNC

DATE: 207 Transhown

SURVEYOR(S): 10145

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

		2	ω	4	F	SPECIES COPE	1	2	ω	4	Ę.
(E)		9.	\mathbb{Z}	9							
iguri sask			_								
CAROVAT	0	0	70	0							
POPTREM		750									
MUGNINE.	10	ro	0	_							
STATURE			70								
REPLANT			1	2							
COR BALLE			70								
BUE MINE	70	0		7							
WADELL		70		_							
240705			2								
		0	2.	-							
PAR INDSE			N	N)							
CRUTE				0							
CINCED ON TO			Ø								
DC65050				C							
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UTMZ: UTME:	POLYGON SURVEYOR(S):	
UTMN:	DATE:	POLIGON:

POLYGON DESCRIPTION:

JBSTRATE	TOPO, FEATURE	HISTORY	Macs and Sound	COMMINANT
ANIC	I LACUSTRINE	O NATURAL	PLANKTON	LAKE
ERAL SOIL	O RIVERINE	I CULTURAL	☐ SUBMERGED	POND
ENT MATERIAL	D BOTTOMLAND		CI FLOATING LVD	D RIVER
OJC BEDROCK	O TERRACE		☐ GRAMINOID	□ STREAM
IC BEDROCK	D VALLEY SLOPE		□ FORB	□ MARSH
B. BEDROCK	A IABLELAND			□ SWAMP
	LI ROLLING UPLAND		I BRYOPHYTE	
	T CLE		EXCECTDUOUS	11 BOG
	CALUS		CONTEROUS	□ BARREN
	II CKEVICE/CAVE		O MIXED	D MEADOW
	II ROCKI AND			L PRAIRIE
	O BEACH/BAR			HICKET
	SAND DUNE			WOODLAND
	D BLUFF			- FOREST
		COVER	COMM. TYPE	ОТНЕВ
		OPEN	INCLUSION	□ HEDGEROW
		[(12)	5	
	D ORGANIC MINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK BASIC BEDROCK CARB, BEDROCK	SOIL ATTE	TOPO. FEATURE D LACUSTRINE SOIL D RIVERINE ATTERIAL D BOTTOMI, AND DROCK D VALLEY SLOPE SROCK STABLELAND D CRIFT D TALUS D CREVICE/CAVE D ALVAR D SAND DUNE D SUFF D SAND DUNE D BLUFF	ATTE TOPO, FEATURE HISTORY O LACUSTRINE O NATURAL O NATURAL O NATURAL O NOTONIAND O CULTURAL O CULTURA O CUL

STAND DESCRIPTION:

LAYER	=	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)
1 EMERGENT			
2 CANOPY	1	LE.	COROVATIO QUE MACE
SUB-CANOPY	الما	لني	LENDED SOLDENES SOLDES
+ UNDERSTORY		در	POTENTIAL VIEW NOT US
GROUND LAYER	7,7	L	CIRCUATE IN RIT A CATE

SIZE CLASS ANALYSIS:

	NAC.	The same of the			
	ME	R = RARE N - NO	A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	S: A = ABUNDA	ABUNDANCE CODES: /
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50am	25-50am	10-24cm	< 10cm	GSNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< 10cm	0	

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



POLYGON SURVEYOR(S): UTME:

PLANT LST SURVEYOR(S): POLYGON: SWTZ- 2 SITE: FOT

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABRINDANT O = OFFICE STORM B = 0.05

RUDRINKT COMPANY PHRANT ROOM UCHAPTER ROOM ACENTRIA NATERACY THEORY COTRODA DIPSTIFIT COTRODA DIPSTIFIT COTRODA DIPSTIFIT ACENTRIA DIPSTIFIT A	SPECIES CODE 1 2 3 4 COLL. SPECIES CODE	-	LAYER 2 3	业党	4	60 F	SPECIES CODE	=	LAYER 2 3	ᄱᄪ
	7		_	_	1			-	-	
	PURAUST		-	-				1	+	
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			75		0				-	
TO ROOM	MITRIPA			\leq	-					- 40
	MEGU	-	8						\dashv	
	KEYIRE!								4	- 1
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SALI CSALIA SALIA	SELICANDA		-	().					-	- 11
SALI CIGN CSRIS CSRIS	ALESACK		3	~					-	- 1
SACI SACI SACI SACI SACI SACI SACI SACI	-		_	75)	-				-	- 1
	D		_	70					\dashv	- 1
	0		-	2					-	
	LOTEDIAN		-	0					\dashv	- 1
	DIPSALE		1	Ħ	(II)					- 1
	DUN TENU			70	Ť				-	- 1
	CHISALI			0					-	- 1
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SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
II TERRESTRIAL	☐ ORGANIC	O LACUSTRUNE	NATURAL	I PLANKTON	AKE
A WETLAND	D MINERAL SOIL	C RIVERINE	CULTURAL	☐ SUBMERGED	ONO F
DAQUATIC	II PARENT MATERIAL	☐ BOTTOMLAND	-	III PLOATING LVD	LI RIVER
	LI ACIDIC BEDROCK	I TERRACE		☐ GRAMINOID	☐ STREAM
	LI BASIC BEDROCK	D VALLEY SLOPE		□ FORB	D MARSH
	CAKB, BEDROCK	*TABLELAND			D/SWAMP
		I ROLLING UPLAND		□ BRYOPHYTE	CL AT
				DECIDUOUS	90g
		D PALUS		CONTEROUS	☐ BARREN
		D ALVAR		LI MIXED	MEADOW
		☐ ROCKLAND			C PANALE
		D BEACH/BAR			SAVANNAH
		CI SAND DUNE			[] WOODLAND
	-				CI PLANTATION
SITE			COVER	COMM. TYPE	OTHER
SHALLOW WAT.			O SHRUB	INCLUSION	□ HEDGEROW
I BEDROCK			□ TREED	(C)-11-12-12-12-12-12-12-12-12-12-12-12-12-	

STAND DESCRIPTION:

LAYER HT CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
EMERGENT 3 / NOE NEGU = ILMINITED
CANOPY
SUB-CANOPY
UNDERSTORY 3-4 3 SOLEROUS ACRES ACRES
GROUND LAYER 5-7 5 VITRIP = LYTSOLI

-				NT O LOS	A = ARIND	BUNDANCE CODES: A = ARINDANT O = OCCASIONIN
> 50cm	25-50an	10-24cm		< 10cm	DECAYED	DEC
> 50cm	25-50cm	10-24cm		< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50an	10-24cm		< 10cm	NAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	7	< 10cm	TREES	

SIZE CLASS ANALYSIS:

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



UTMN: DATE: POLYGON: SUM LATE

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OR REACT SPINSS MPSP

DARRO CE LECL

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COMMUNITY MATURITY: 25-50cm 25-50cm > 50cm > 50cm

TC	LAYER	=	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT	W	_	P0902-17
2	CANOPY	W	_	DOENEGU = PINISTRA
ω	SUB-CANOPY			100000000000000000000000000000000000000
4	UNDERSTORY	t	17	
72	GROUND LAYER)	I	とうでアレヘコロロハう
23	CODES: 1 = > 25	5-+	7	PHODRIN SERVINOINS VITRIBA
13		m 2=>1 1=11	0-25m 0% 2 =	5 GROUND LAYER 5-3 5 PARARY S GRAMINOIDS VITRIPA HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%
	SIZE CLASS ANALYSIS:	m 2=>1 E 1=14	0-25m 0% 2 =	PHPARN S GRAMINOIDS WITRIPA = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%
Г	ZE CLASS ANAL	m 2 = >1 m 2 = >1 E 1 = 1-1 YSIS:	09-25m	Pho AR > GRAM ORRACE VITRIPA 13 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60% < 10cm Q 10-24cm 25-50cm > 50cm

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	
A TERRESTRIAL D WETLAND D AQUATIC	O ORGANIC MINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK	CI LACUSTRINE CI RIVERINE CI BOTTOMLAND CI TERRACE	CULTURAL	
٠	CARB. BEDROCK CARB. BEDROCK	D VALLEY SLOPE SETABLELAND D ROLLING UPLAND D CLIFF		
		D ALVAR ROCKLAND		
		SAND DUNE		
SITE			COVER	
D OPEN WATER D SHALLOW WAT. C'SURFICIAL DEP. D BEDROCK			OPEN SHRUB	

IMN	OTME:	UTMZ:
DATE:):	PULYGON SURVEYOR(S):
POLYGON:		SITE

PLANT

POLYGON: CUMINE

SITE: 407

LSI

SURVEYOR(S): DATE: JULY

SPECIES CODE

COLL

SPECIES CODE

2 3 LAYER

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LAYER

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

SITE: 407 Transduction

	SITE: LOT LOTE INTO		(2)
SPECIES	POLYGON: HDS20	3.6	
		1	
[[SURVEYOR(S): NIME		
VALUE CODES: D =	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	3 = SAPLINGS & SHRUBS 4 = DCCASIONAL R = RARE	= GROUND LAYER
SPECIES CODE	1 2 3 4 COLL.	SPECIES CODE	LAYER COLL
PURDUST	フ		
JUGN/6R	70		
ELADNGU	2		
TRUCCI	ア ー		
RUBIODE	70		
DX SHE	\sim		
POENEGG	70 P		
CORSERI	<u> </u>		
FORRACE	0		
VITRIPA	D		
ULMOMER	R		
TYPENOU	P		
TALXALI	1		
Ĺ			

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

POLYGON DESCRIPTION:

D PLANKTON D SUBMERGED D FLOATING LVD DX.GRAMINOID D FORB D LICHEN D BECCOUNTS CONIFEROUS MIXED D INCLUSION D COMPLEX	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
COVER COMM.TYPE TER WAT, USHRUB COMPLEX COMPLEX COMPLEX) TERRESTRIAL Y WETLAND) AQUATIC	D ORGANIC EXMINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK CARB, BEDROCK		D WATURAL	D PLANKTON D SUBMERGED D FLOATING LVD TO GRAMINOD D FORB D LICHEN D RECDUGUS C CONFEROUS C CONFEROUS MIXED	D LAKE D ROND D RIVER D SWAMP D SWAMP D SWAMP D SWAMP D SWAMP D FEN D BARREN
TER WAT, U SHRUB U TREED U TREED U TREED	SITE			COVER	COMM. TYPE	OTHER
	OPEN WATER SHALLOW WAT, SURFICIAL DEP. BEDROCK		11	XI OPEN SHRUB TREED	D INCLUSION	☐ HEDGEROW

4 UNDERSTORY 4 2 JUGNIGR > ELADNGU

5 GROUND LAYER 4/5 5 PHRAUS

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:

2 CANOPY
3 SUB-CANOPY

LAYER 1 EMERGENT

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

		< 10m
< 10cm 1	< 10cm 10-24cm	10-24cm
< 10cm		10-24cm
- TOUR		UD#2-01
	10-24cm	
101015)-24cm)-24cm	

COMMUNITY MATURITY:

The state of the s	L - + ()**	CIONE	
	D LOONG		
	□ MIU-AGE	7	
1	MATTIRE		
E OLO-GROW H	TO DOWN		



PLANT SPECIES LIST SURVEYOR(S): NH POLYGON: HASZQ SITE: HOD

SITE:
POLYGON SURVEYOR(S):

UTMZ:

UTME:

DATE:

POLYGON:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3

	SPECIES CODE	_	LAYER		3	SPECIES CODE LAYER COLL SPECIES CODE LAYER		LAYER	위	
RANTI DE LA ROLLINA DE LA ROLL		_			F	SPECIES CODE	ш	2	ω	
PNOU POR	PHRIDUST			Ū						
PNOU ROUND	A R	0	70							
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PLOST CEAT	6.00			0						
PANGU PO	REACHE		70						_	
PNON R	306M6N		0	70						
Pros.	VIRIDIR		3	0					_	_
Prov.	2-13-DC	70								4
Prox	W			70					_	1
	ELBENGL		70					4	_	
				-					_	
		+		1				1	-	-
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				-			1	+	+	+
				-			4	+	+	
				-			1	+	+	+
				-			1	+	+	+

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
□ TERRESTRIAL □ WETLAND □ AQUATIC	D ORGANIC D MINERAL SOIL D PARENT MATERIAL ACIDIC BEDROCK D SASIC BEDROCK CARB. BEDROCK	D LACUSTRINE D ROTTOMLAND D TERRACE FOR VALLEY SLOPE FOR TABLELAND D'ROLLING UPLAND D'ROLLING UPLAND D'ROLLING UPLAND D'ROLLING UPLAND D'ROLLING UPLAND D'ROLLING UPLAND D'ROLLING D'ROLLING UPLAND D'ROLLING	II NATURAL	D PLANKTON D SUBMERGED	D LAKE D POND ENTER SYMARSH D SYKAMP D HEN D BARBEN D BAR
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER SHALLOW WAT. SURFICIAL DEP. D BEDROCK			D OPEN D SHRUB D TREED	COMPLEX COMPLEX	□ HEDGEROW

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5	LAYER	=	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)	ING DOMINANCE TER THAN; = ABOUT E	OUAL TO)
۲	EMERGENT	W	-	200 AUS/A		
2	CANOPY					
ω	SUB-CANOPY					
4	UNDERSTORY					
Ŋ	GROUND LAYER	くり	4	TRAIST VYPANA	2014	
2 E	HT CODES: 1 = > 25m 2 = CVR CODES: 0 = NONE 1 = 1	n 2=>1 1=1-1	0-25m 0% 2 =	HT CODES: $1 = 25m$ $2 = 210.25m$ $3 = 2.10m$ $4 = 1.2m$ $5 = 0.5.1m$ $6 = 0.2.0.5m$ $7 = <0.2m$ CVR CODES: $0 = NONE$ $1 = 1.10\%$ $2 = >10.25\%$ $3 = >25.35\%$ $4 = >35.60\%$ $5 = >60\%$ CYTE CLARALYCYC.	0.2-0.5m 7 = <0.2m % 5 = >60%	
		TREES		cm 10-24cm		
			< 10cm		25-50an	> 50cm

	OI D-CBOWTH	□ MATURE	□ MID-AGE	D YOUNG	□ PIONEER □ YOUNG
	ń	COMMINITY MATIETTY.	o = occopyrate	Y MATI IDITY.	YTTNI IMMOD
Ī		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ANT O - OCCASIONA	ES: A = ARIND	ABUNDANCE COD
	25-50cm	10-24cm	< 10cm	DECAYED	
					ביים יארר/ רספים
	25-50cm	10-24cm	< 10cm	FIRM	DEADEALI /LOGG
	25-50cm	10-24cm	< 100m	COANCE ONLIGHAL	TOWNE



PLANT LST SPECIES SURVEYOR(S): DATE POLYGON: MANTHEMON TON HILLS MASZL

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

UTMZ:	FULTGUN SURVEYOR(S)	SITE:	
UTME:	(S):		
UTMN:	DATE:	POLYGON:	ALTO THE PROPERTY OF THE PARTY

POLYGON DESCRIPTION:

SYSTEM SUBSTR	SUBSTRATE	TOPO, FEATURE	HISTORY	DI ANT EODI	200
TEODECTRIA/				TOWN TOWN	LITHUMMONT
WETLAND	ORGANIC SOIL	II LACUSTRINE	C NATURAL	D PLANKTON	E AAG
- AQUATTC	II PARENT MATERIAL	AND BOTTOMLAND	700000	- FLOATING LVD	RIVE
	ACIDIC BEDROCK	II TERRACE		25 GRAMINOID	STREAM
	L BASIC BELKUCK	LI VALLEY SLOPE		□ FORB	MARSH
	C CARG. BEUKCCK	LIABLELAND		D LICHEN	□ SWAMP
		LI KOLLING UPLAND		LI BRYOPHYTE	
		100		III DECIDUOUS	□ B0G
		I ALUS		CONTEROUS	BARREN
		L CREVICE/CAVE		C MDXED	MEADOW
		☐ ROCKLAND			THICK!
		□ BEACH/BAR			SAVANNAH
					E WOODLAND
		נו פניטרר			- POREST
					II PLANTATION
STIE			COVER	COMM. TYPE	OTHER
SHALLOW WAT.			☐ OPEN ☐ SHRUB	C COMPLEX	☐ HEDGEROW
C SURFICIAL DEP,			O TREED	<u> </u>	
STAND DESCRIPTION:	DTTON:				

OVR CODES: 0 = NONE 1 = 1 - 10% 2 = >10 - 25% 3 = >25 - 35% 4 = >35 - 60% 5 = >60%

SIZE CLASS ANALYSIS:

					ABUNDANCE CODES: A - ABINDANT O CONTROL
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
-					
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
× 500m	25-50cm	10-24cm	< 10cm	G SNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< 10cm	IKEES	

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



SITE: 407 Thomadulo (3)

SPECIES
LIST
DATE: 246 9/19
SURVEYOR(S): NHE

SPECIES CODE LAYER LAYER LAYER LAYER LAYER LAYER LAYER DUANACULU DUA	10m 2 = A = ABI LAYER 2 3	2 = SUI ABUND FER	O NI O	COLL.	3 = SAPLINGS & SHRU OCCASIONAL R = RARE SPECIES CODE
SPECIES CODE 1 PHARECULA LATSON DICENSEGN	LAYE				
		0.0			
	P		\dashv		
	+	-	_		=
	_	-	+		
	\vdash	\vdash	\vdash		
	-	+	1		_
	-	+	_		
	+	+	+		_
	-	-	+		
	\vdash	\vdash	\vdash		
	+	+	+		_
	+	+	+		
		\vdash	\vdash		
	-	1			
		+	+		
	\vdash	\vdash			
	\vdash				
	+				1
	-		1		
	\vdash				
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U	POLYGON	100
UTMZ;	SURVEYOR(S):	SITE:
UTME:		
UTMN:	DATE:	POLYGON:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	DI ANY EQUIA	
				MACA SMCT.	AUTHOMMON
☐ TERRESTRIAL ☐ WETLAND	CI MINERAL SOIL	CI L'ACUSTRINE	D NATURAL	☐ PLANKTON	LAKE
- AQUATIC	II PARENT MATERIAL	□ BOTTOMLAND	COLOGO	D HOATING IV	POND
	☐ ACIDIC BEDROCK	I TERRACE		☐ GRAMINOID	STREAM
	LI BASIC BEDROCK	I VALLEY SLOPE		□ FORB	IN MARSH
	LI CAKB, BEDROCK	LI TABLELAND			SWAMP
		LI KOLLING UPLAND		I BRYOPHYTE	E E
				□ DECIDUOUS	□ B0G
		CREWICEICANT		CONTEROUS	☐ BARREN
		I CKEVICE/CAVE		- MIXED	IZ MEADOW
		D ROCKLAND			- PRAIRIE
		LI BEACH/BAR			II SAVANNAH
		I SAND DUNE			III WOODLAND
		C PCOTT			CI PLANTATION
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER SYSHALLOW WAT.			□ OPEN	COMPLEX COMPLEX	☐ HEDGEROW
12 SURFICIAL DEP.			□ TREED		

STAND DESCRIPTION:

LAYER	4	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	S/T	5	HADRUN

CVR CODES: 0 = NONE 1 = 1 - 10% 2 = > 10 - 25% 3 = > 25 - 35% 4 = > 35 - 60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS < 10cm 10-24cm 25-50cm > 50cm		NONE	2 - 285 MII			COMMINITE STATE OF
G SNAGS < 10cm	1, 20		ONAL DE DADE N	DANT O = OCCASI	ES: A = ABUNI	ABUNDANCE COD
6 SNAGS < 10cm 10-24cm 25-50cm 5NAGS < 10cm 10-24cm 25-50cm 5NAGS	\ r_0	25-50cm	10-24cm	< 10cm	DECAYED	
G SNAGS < 10cm 10-24cm 25-50cm 25-50cm 25-50cm 25-50cm 25-50cm 25-50cm 25-50cm	1 05					
< 10cm 10-24cm 25-50cm < 10cm 10-24cm 25-50cm	\ r_0	25-50cm	10-24cm	< 10cm		DEADFALL/LOGS
< 10cm 10-24cm 25-50cm < 10cm 10-24cm 25-50cm	1 30					
< 10-24cm	7 7 7	25-50cm	10-24cm	< 10cm	GSNAGS	STANDIN
10-24cm 25-50cm						
	× 50	25-50cm	10-24cm	< TOOM	INCES	

LI PIONEER D'YOUNG DIMID-AGE DIMATURE DOLD-GROWTH		
	L PIONEEK	
☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH		֡
☐ MATURE ☐ OLD-GROWTH	□ MID-AGE	
	☐ MATURE ☐ OLD-GROWTH	



SPECIES CODE PLANT LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE LST SPECIES THAMPLY RAPEZZ MONIOR TPICK RIPA と用るいと SURVEYOR(S): \J\ POLYGON: CUMIL DATE: JULY 1619 SITE: 407 1 2 3 4 LAYER COLL SPECIES CODE 2 3 LAYER 4 <u>6</u>

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

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL D WETLAND AQUATIC	ORGANIC MINERAL SOIL PARENT MATERIAL	CI LACUSTRINE CI RIVERINE CI BOTTOMLAND	INATURAL IN NATURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LYD	D LAKE
	☐ ACIDIC BEDROCK ☐ BASIC BEDROCK	C VALLEY SLOPE		GRAMINOID FORB	STREAM
	CARB, BEDROCK	TABLELAND		D LICHEN	SWAMP
		II ROLLING UPLAND		□ BRYOPHYTE	O FEW
				DECIDUOUS	BOG
		☐ CREVICE/CAVE		□ MDXED	MEADOW
		D ALVAR			PRAIRIE
		□ BEACH/BAR			D SAVANNAH
		LI SAND DUNE			MOODLAND
		C 950			D PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER O SHALLOW WAT.			□ OPEN □ SHRUB	COMPLEX	□ HEDGEROW
BEDROCK			7		
STAND DESCRIPTION:	PTION:				
The second secon					

5 GROUND LAYER 6/7 3 $\sqrt{|TR|PA} > FRAPENO HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >2-35% 4 = >35-60% 5 = >60%$ 1 EMERGENT UNDERSTORY SUB-CANOPY CANOPY

RHOGO THY PRUVIRG

DOGNEGU

JUGNIGE ZPOPTRE M

픅

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

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

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



20-1

□ OLD-GROWTH

-	ONE	AL R = RARE N = N	JNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	ES: A = ABUNI	ABUNDANCE COD
1	25-50cm	10-24cm	< 10cm	DECAYED	
1	25-50an	10-24cm	< 10cm	EIRM.	DEADFALL/LOGS
	25-50am	10-24cm	< 10cm	IG SNAGS	STANDING SNAGS
	25-50cm	10-24cm	< 10cm	TREES	

CVR CODES; $0 = \text{NONE } 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 = > 35 - 60\% \ 5 = > 60\%$

LAYER		3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
EMERGENT	4			
CANOPY				
SUB-CANOPY	ОРҮ			
UNDERSTORY	ORY			
CBOINE	GROUND LAYER	シナ	7	TYPLATI > PLA APIN

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL	D ORGANIC	11 LACUSTRINE	□ NATURAL	☐ PLANKTON	O LAKE
S WETLAND	MINERAL SOIL	O RIVERINE	TY CULTURAL	□ SUBMERGED	POND
LIAQUATIC	D PARENT MATERIAL	DI BOTTOMLAND		III FLOATING LVD	□ RIVER
	LI ACIDIC BEDROCK	I TERRACE		☐ GRAMINOID	□ STREAM
	LI BASIC BEDROCK	ID VALLEY SLOPE		□ FORB	MARSH
	CARB, BEDROCK	C TABLELAND		Z	SWAMP
		I ROLLING UPLAND		□ BRYOPHYTE	THE STATE OF THE S
		O CUFF		II DECIDUOUS	□ B06
		II TALUS		□ CONTHEROUS	BARREN
		CREVICE/CAVE		□ MIXED	II MEADOW
		EI ROCKLAND			PRAIRIE
		LI BEACH/BAR			I SAVANNAL
		SAND DUNE			☐ WOODLAND
		LI BLUFF			II FOREST
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER SHALLOW WAT.			□ OPEN	COMPLEX	□ HEDGEROW
□ SURFICIAL DEP, □ BEDROCK			O TREED	Ę	

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

PLANT

SITE: 407 Trans. + wow POLYGON: MASZ-19

LST

SPECIES CODE

COF.

SPECIES CODE

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LAYERS: 1 = CANDPY TREES > 10m 2 = SUB-CANDPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SURVEYOR(S): DATE: JULY 15/19



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ORRACE

CRUNG

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

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

TREES < 10cm	SIZE CLASS ANALYSIS:	HT CODES: $1 = 2.5m$ $2 = 2.0m$ $3 = 2.10m$ $4 = 1.2m$ $5 = 0.5.1m$ $6 = 0.2.0.5m$ $7 = <0.2m$ CVR CODES: $0 = NONE$ $1 = 1.10\%$ $2 = >10.25\%$ $3 = >25-35\%$ $4 = >35-60\%$ $5 = >60\%$	5 GROUND LAYER 577 5 CORNER	4 UNDERSTORY	
10-24cm		= 1-2m 5 = 0.5-1m 6 = >25-35% 4 = >354	BI -SYMLD		
25-50cm		= 0.2-0.5m 7 = <0. 50% 5 = >60%	TI-PODPE		
 > 50cm		2m	D		

2	LAYER	5	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOLIAL TO)
н	EMERGENT			
2	CANOPY			
w	3 SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	ナング	7	CORVAR ISYMPATI - PON PRAT
오크	CODES: $1 = > 25$ n CODES: $0 = NONE$	n 2=>1 1=1-10	0-25m 3	HT CODES: $1 = > 25m$ $2 = > 10-25m$ $3 = 2-10m$ $4 = 1-2m$ $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = < 0.2m$ CVR CODES: $0 = NONE$ $1 = 1-10\%$ $2 = > 10-25\%$ $3 = > 25-35\%$ $4 = > 35-60\%$ $5 = > 60\%$
IS	SIZE CLASS ANALYSIS:	YSIS:		

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RHURADI

TNUDIE CCRAC SYR

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SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMINITAL
I TERRESTRIAL	O ORGANIC	LACUSTRINE	□ NATURAL	D PLANKTON	LA A
D WEILAND	III MINERAL SOIL	□ RIVERINE	CULTURAL	□ SUBMERGED	POND
רי אליטאוזר	LI PAKENI MATEKIAL	LI BOTTOMLAND		☐ FLOATING LVD	LI RIVER
	LI ALLUSC BEDROCK	LIERRACE		☐ GRAMINOID	O STREAM
	LI BASIC BEDROCK	III VALLEY SLOPE		II FORB	III MARSH
	LI CAKE, BEDROCK	I TABLELAND		□ LICHEN	□ SWAMP
		LI ROLLING UPLAND		II BRYOPHYTE	型型
		1 6		☐ DECIDUOUS	90g
		LIALUS		CONJEROUS	□ BARREN
		III CKEVICE/CAVE		□ MIXED	☐ MEADOW
		T PROCK! AND			PRAIRIE
		D BEACH/BAR			ENDINE D
		T SAND DING			LI SAVANNAH
					II WOODLAND
		E			D FOREST
SITE			COVER	COMM_TYPE	OBUTO
OPEN WATER			□ OPEN	D INCLUSION	- HEDGEROW
CI SURFICIAL DEP.			O SHRUB	COMPLEX	

	POLYGON		
UTMZ:	SURVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	3
			さいちつかかけんのはないのではないます!

PLANT SPECIES

DATE: JULY

0

SURVEYOR(S): NIME

POLYGON: CHMI-

SITE: 407 Trans-Lugu

SPECIES CODE

COLF

SPECIES CODE

6 6 1

ORVER

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE

ENPESUL

RAUST



2

PLANT
SPECIES
LIST

SURVEYOR(S): JM =

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOWNNANT A = ABUNDANT 0 = OCCASIONAL R = RARE

							-> provered	September 1																
SPECIES CODE	PURCHOS	SM SP	C DECEMBE	JUGN 16K	TANDOMAD	WITRIPA	NOWELLING.	POPTRET.	KLACRE	TREVETU	RANTHELL													
-	0				70	791	0	70				+			+		+	-		1				
~ F		0		0		FO				2														_
AYER 2 3			P	<i>[</i> [3]	70	70	70		0	9	0								_	-			_	_
4						~				9				+	+		-	+	+	-	-	-	\vdash	_
COLT.																								
SPECIES CODE																								
	-	+				\dashv		1				+	H	+	+	7		۲	+	+	+			
_													U	T										
LAYER																		L		_				1
4														_	1			<u>L</u>		4	1	_	_	1
S F																				1				

POLYGON SURVEYOR(S): POLYGON:

UTMZ: DATE:

UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
TERRESTRIAL	[] ORGANIC	II LACUSTRINE	I NATURAL	☐ PLANKTON	O LAKE
D WETLAND	EI MINERAL SOIL	O RIVERINE	ET CULTURAL	□ SUBMERGED	I POND
LAQUALIC	II PARENT MATERIAL	LI BOTTOMLAND	3	II FLOATING LVD	O RIVER
	LI ACIDIC BEDROCK	II TERRACE		☐ GRAMINOID	STREAM
	LI BASIC BEDROCK	CI VALLEY SLOPE		□ FORB	MARSH
	LI CARB, BEDROCK	LT TABLELAND			□ SWAMP
		D ROLLING UPLAND		☐ BRYOPHYTE	THE STATE OF THE S
1.00				EL DECEDHOUS	1 BOG
		LI TALUS		CONJEROUS	□ BARREN
		LI CKEVICE/CAVE		□ MIXED	II MEADOW
		I ALVAX			PRAIRIE
		L KUCKLAND			I HICKET
		L BEACH/BAK			II SAVANNAH
		C SAND DUNE			IT WOODLAND
		בין פרטדר			- FOREST
					CECANALA
SITE			COVER	COMM. TYPE	OTHER
			D OPEN	C) COMPLEX	□ HEDGEROW
OPEN WATER SHALLOW WAT.			T YEAR		

TAND DESCRIPTION:

5	LAYER	퐄	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUND TO
-	EMERGENT			
2	CANOPY		£	WENNE SY PORTSE
ω.	SUB-CANOPY	E	2	SUBJUST > FRANKLIS
4	UNDERSTORY	U	الر	PUSP NATIONAL PROPERTY.
G	GROUND LAYER			

CVR CODES: $0 = \text{NONE } 1 = 1 \cdot 10\% \ 2 = > 10 \cdot 25\% \ 3 = > 25 \cdot 35\% \ 4 = > 35 \cdot 60\% \ 5 = > 60\%$

SIZE CLASS ANALYSIS:

			MAIN DANGE	ANCE CODES: A = ABUNDANT O = OCCASIONAL B - BARC ::	S: A = ABUNT	ABUNDANCE COD
> 50cm	25-50am	7	10-24cm	< 10cm	DECAYED	
/ > 50am	25-50cm	7	10-24cm	\ TOON	LINE.	DEADFALL/LOGS
1		ł			Cloud	
> 50000	25-50cm	7	10-24cm	< 10cm	G SNAGS	STANDING SNAGS
> 50cm	LUDG-62	k				
9	75 50	>	10-24m	- 10gm	TREES	

	L PIONEER O YOUNG
	□ MID-AGE □ MATI IRF
C OCC GROWIN	



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LSI SPECIES PLANT SITE: U

POLYGON: CULUI a

SURVEYOR(S): DATE: JULY 10/19

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

		LAYER	윤	-	FR	1	AVED		
SPECIES CUDE	н	2	ω 4	* 00 F	SPECIES CODE		2 3	4	COLF
SONOR	>	0	0			-	-		
(الله الم ورا				D			+		
CCINTY			70			1	+		
PURAUST			5				+		
ROSPSEND	0	0	0				+		
DE ENE 6U	0	0	~				+		
兄 むな する でに こく)		70	\simeq				1		
PER RITE							+		
PMSDRTE							1		
MANATIN		7	D				+		
COUCAVA			0						
何でランフス			0				+		
MUCARO							1		
BRO INER			70	_					
POPUE	10		_						
PLANACO			7						
RIMMORUS			21						
HODON (0						
DE DERE	P		-						
QUERUBR	2	Н							
30CCAND		_	P			-			
PRINCER		$\overline{}$	0						
TLPRA)			0.			-		4	
RUBIDAD		2				4		-	
12 0 O			77			-		-	
いのとうかっか		0	Ĭ			-		4	

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

D SHRUB TREED COVER

> COMPLEX COMPLEX COMM. TYPE

> > ☐ HEDGEROW

OTHER

STIE

LAYER

폭

CYR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CUSCION V PO CHAROL VORYUM

EMERGENT

STAND DESCRIPTION:

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

< 10cm < 10cm

DEADFALL/LOGS

DECAYED

FIRM

10-24cm 10-24cm 10-24cm

10-24cm

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm

> 50cm

> 50cm

> 50cm

STANDING SNAGS

< 10cm < 10cm

TREES (

SIZE CLASS ANALYSIS:

GROUND LAYER UNDERSTORY SUB-CANOPY CANOPY

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

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☐ PIONEER ☐ YOUNG

II MID-AGE II MATURE

□ OLD-GROWTH

O PLANTATION					
☐ FOREST			CI BLUFF		
C THICKET			☐ ROCKLAND ☐ BEACH/BAR		
O PRAIRIE	MIXED		D ALVAR		
S	CONTEROU		D TALUS		
000 P	DECIDUOUS		CLIFF		
II SWAMP	I LICHEN		ABLEDAND	בו כאגם, מבטגטבא	
□ MARSH	FORB		LI VALLEY SLOPE	II BASIC BEDKOCK	
STREAM	☐ GRAMINOID		L IEKKACE	II ACIDIC BEDROCK	
÷	III PLOATING LYE		BOTTOMLAND	LI PARENI MATERIAL	LI AQUALIC
POND	□ SUBMERGED	E CULTURAL	- RIVERINE	DMINERAL SOIL	CI WETLAND
	D DI ANICTONI	NATURAL	D LACUSTRINE	C ORGANIC	X) TERRESTRIAL
M COMMUNITY	PLANT FORM	HISTORY	TOPO, FEATURE	SUBSTRATE	SYSTEM

9	POLYGON	2
UTMZ:	SURVEYOR(S):	STIE:
UTME:		
UTMN:	DATE:	POLYGON:

			The second secon
	SITE:		POLYGON:
OLYGON	OLYGON SURVEYOR(S):		DATE:
	UTMZ:	итме:	UTMN:



SITE: 407 Transtwo

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

UMN: DATE: POLYGON:

10m 2 = SUB-CANOPY 3 = SAPI f A = ABUNDANT 0 = OCCASIO LAYER COLL. SPEI

POLYGON DESCRIPTION:

D MATURAL SUBMERGED SUBMERGED SUBMERGED PLANKTION OF COLUMN TYPE COVER COMM. TYPE TREED D PLANKTION FRANKING LO SUBMERGED FRANKING LO FRANKING LO FORM COMM. TYPE COMPLEX COMPLEX	Ŋ	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	- Community
COVER COMM. TYPE COVER COMM. TYPE COMPLEX COMPLEX COMPLEX	D TER AQU	RESTRIAL TLAND ATTC	D ORGANIC MINERAL SOIL PAREMY MATERIAL CACDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	D LACUSTRINE D RIVERINE SECTIONIAND D TERRACE D VALLEY SLOPE D VALLEY SLOPE D TABLELAND D ROLLING UPLAND D CLIPF D TALUS D TALUS D CALYBAR D SIAND DIJUNE	CULTURAL	D PLANKTON DE SUBMERGED DE PLOATING LVD POR FORB DE LUCHEN BY OPPHYTIE DE CONTEROUS DE MIXED	CONTRIBUTE CONTRI
STOPEN DINCLUSION DINCLUSION DINCED		SITE			COVER	COMM. TYPE	GENTO
	SHAL SURF BEDF	W WATER LOW WAT. TICIAL DEP. ROCK			O SHRUB	D INCLUSION	□ HEDGEROW
	21771	DIANG DESCRIPTION.	LITOIN.				

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	\ CO.

2 CANOPY

3 SUB-CANOPY

UNDERSTORY

LAYER

#

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

1 EMERGENT

5 GROUND LAYER 4.5 5 PHADRUN

HT CODES: 1 => 25m 2 => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m

CVR CODES: 0 = NONE 1 = 1-10% 2 => 10-25% 3 => 25-35% 4 => 35-60% 5 => 60%

RHACATH

	_
The second second second	☐ PIONEER
	SNNOA D
	□ MID-AGE
	MATURE
D OCC ONOWIN	O D CBOWTH



20-1

☐ PIONEER ☐ YOUNG

□ MID-AGE □ MATURE □ OLD-GROWTH

COMMUNITY MATURITY:

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

< 10gm

DEADFALL/LOGS

DECAYED

핕

STANDING SNAGS

< 10cm

10-24cm 10-24cm

25-50cm 25-50cm

25-50cm 25-50cm

> 50cm > 50cm > 50cm

10-24cm 10-24cm TREES

< 10cm

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

<0.2m

SIZE CLASS ANALYSIS:

いしてもである USFORF PLANT SPECIES CODE LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE LSI SPECIES たて BACE DISO 12 Dir SURVEYOR(S): DATE: JULY POLYGON: M SITE: 1 LAYER 2 ω 4 AMN 6 <u>60</u>F. ١ SPECIES CODE C LAYER 2 w 4 COL

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

O SHRUB

COMM. TYPE

☐ HEDGEROW

OTHER

COVER

SITE

LAYER

4

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

CANOPY SUB-CANOPY

GROUND LAYER

STAND DESCRIPTION:

PLANT FORM	HISTORY	TOPO FEATURE	SUBSTRATE	SYSTEM
			CRIPTION:	POLYGON DESC

D TERRESTRIAL
D WETLAND
D AQUATIC

ORGANIC

MINERAL SOIL

PARENT MATERIAL

CACIDIC BEDROCK

BASIC BEDROCK

CARB. BEDROCK

E CULTURAL

CI LACUSTRINE
CI RIVERINE
CI RIVERINE
CI REPLACE
CI TERRACE
CI VALLEY SLOPE
CI TABLELAND
CI CLIFF
CI TALLIS
CI CREVICE/CAVE
CALVAR
CI RACH/BAR
CI SAND DUNE
CI SLUFF

D PLANKTON

SUBMERGED

D PLOATING I/D

SQ GRAMINOID

D FORB

D LICHEN

D BRYOPHYTE

D BRYOPHYTE

D CONIFEROUS

CONIFEROUS

MIXED

D LAKE
D POND
D STREAM
D MARSH
D STREAM
D MARSH
D SHAWP
D FEN
D BOG
D BARREN
D REALINGET
D SAVANNAH
D WOODLAND
D PLANTATION

IJMN
DATE:
POLYGON



D PIONEER BYOUNG ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

20-

VERLAST LHISOLI

POTSIMP

RESER

200

70

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PO

VICCRAC TRADELL PORCOMP

SOL SP.

DAUCARD

BET SP

7

SPLERIO MEL ALBA

ROTT

70

TRIPL UR SER!

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SONDON

KORP XTU

STANDING SNAGS	SNAGS	1	< 10cm	1	10-24cm	1	25-50cm	1	> 50cm
DEADFALL/LOGS	ER.	0	< 10cm	7	10-24cm	7	25-50cm	1	> 50cm
	DECAYED	1	< 10cm	1	10-24cm	1	25-50cm	1	> 50cm

SIZE CLASS ANALYSIS: UNDERSTORY SUB-CANOPY CANOPY -NM SALSP COR SP SOLAUSA KIO

EMERGENT

LAYER

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SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

					Table 11 100
D TERRESTRUAL WETLAND AQUATIC	D ORGANIC MINERAL SOIL PARENT MATERIAL C ACIDIC BEDROCK D SASIC BEDROCK C CARS. BEDROCK	☐ LACUSTRINE ☐ RIVERRINE ★ WE BOTTOM AND ☐ TERRACE ☐ TABLELAND ☐ COLITY SLOPE ☐ TABLE ☐ TALLES ☐ CREVICE/CAVE ☐ ALVAR ☐ ROCCLAND ☐ BEACH/BAR ☐ SAND DUNE	X CULTURAL	D PLANKTON O SUBMERGED II FLOATING LYD II GRAMINOD II CORB II LICHEN II BRYOHYTE MI DECIDIOUS II CONITEROUS II MIXED	D LAKE D POND D STREAM D MARSH D STREAM D MARSH D SWAMP D BAREN D BARREN D
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			☐ OPEN ☐ SHRUB	D INCLUSION	☐ HEDGEROW

PHDDRUN

TYPU ANGU

TYPEXTYBE

SPLSP

O

SOLALBA

PET

0

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TILAMER

IRARVE

コロークラ

JRYULG

P

a Rugo

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO. FEATURE

PLANT FORM COMMUNITY

II NATURAL HISTORY

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

SURVEYOR(S): NAT	DATE: June 11/19	POLYGON: SNJD4-19	SITE: HWY 407 Transitual
	1	(4)	>

SPECIES CODE

2 3 LAYER

4

60 F

SPECIES CODE

2 LAYER ω C 4

8 F

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

LAND DAY

OPTHI

SOLEXIG

DECAYED CIOM 10-24cm ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE ☐ PIONEER ☑ YOUNG COMMUNITY MATURITY: ☐ MID-AGE ☐ MATURE □ OLD-GROWTH

25-50cm 25-50cm 25-50cm

> > 50cm > 50cm

<0.2m

25-50cm

> 50cm > 50cm ハゴトロラウ

SPECIES CODE 2 ω 4 COF. - post cond ☐ OPEN WATER
☐ SHALLOW WAT.
☐ SURFICIAL DEP.
☐ BEDROCK II TERRESTRIAL
III WETLAND
II AQUATIC HT CODES: 1 = 25m 2 = 210-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = 0.00 CVR CODES: 0 = NONE 1 = 1-10% 2 = 210-25% 3 = 25-35% 4 = 25-60% 5 = 260%SIZE CLASS ANALYSIS: LAYER STAND DESCRIPTION: GROUND LAYER UNDERSTORY SUB-CANOPY CANOPY EMERGENT SYSTEM SITE STANDING SNAGS ORGANIC
OMINERAL SOIL
SPARENT MATERIAL
CACIDIC BEDROCK
DASTC BEDROCK
CARB. BEDROCK TREES FIRM SUBSTRATE 폭 CVR < 10cm < 10cm < 10cm SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) ☐ LACUSTRINE
☐ RAYERINE
☐ RAYERINE
☐ TERRACE
☐ VALLEY SLOPE
☐ TABLELAND
☐ ROLLING UPLAND
☐ CLIFF
☐ TALUS
☐ CREVICE/CAVE
☐ ALYAR
☐ ROCKLAND
☐ BEACH/BAR
☐ SAND DUNE
☐ BLUFF TOPO. FEATURE 3 10-24cm 10-24cm 10-24cm V

O SHRUB

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

COVER

RHUDROM

RUBALLE

へつるこ

SPECIES CODE

CO F.

LAYER

POLYGON DESCRIPTION:

DE NATURAL CULTURAL HISTORY

PLANT FORM

COMMUNITY

D PLANKTON
D SLIBMIRKGED
D FLOATING (VD)
D GRAMINOD
D GRAMINOD
D FORB
D LICHEN
D RRYOPHYTE
D SOELDUOUS
CONITEROUS
D MIXED

D LAKE
D POND
D DRIVER
D STREAM
D MARSH
X SWAMP
D FEN
D BOG
D BARREN
D MEADOW
D PRAIRIE
D THICKET
D SAVANNAH
D WOODLAND
D POREST
D PLANTATION

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

PLANT

POLYGON: SWD3

DATE:

0

SITE: 407

LST SPECIES

SURVEYOR(S):

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

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



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PLANT LIST SURVEYOR(S): NM =

DATE: AUG 8/19 POLYGON: MASZO SITE: 407 CONSTITUTE

C

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOWINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

	1 2	3 4	#] E	SPECIES CODE	ь.	2 3	4	E F
LSMAHA					\dashv	-	-	
Choppan		70	/ 1			-	1	
LMTSALI		70				\dashv	\dashv	
ECHLOBA		カカ				-	7	
POPTREM	70					-	7	
	F	_						
	F	-				-	H	
	F	L			L	┝	r	
	1	1				+	t	
		7				+	\dagger	
						-1	1	
	F	-						
	F							
	F	L						
		F				-		
		-						
		-						
		L						

UTMZ: UTME:	OLYGON SURVEYOR(S):	2115;
UTMN:	DATE:	POLYGON:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
II TERRESTRIAL	O ORGANIC MINERAL SOIL	☐ LACUSTRINE ☐ RIVERINE	I NATURAL	D PLANKTON	LAKE
AQUATIC	PARENT MATERIAL	Z BOTTOMLAND	ES CULTUKAL	☐ FLOATING LVD	II POND
	☐ ACIDIC BEDROCK	II TERRACE		E GRAMINOID	STREAM
	LI BASIC BEDROCK	I VALLEY SLOPE		□ FORB	DMARSH
	L CARB, BEDROCK	II TABLELAND			☐ SWAMP
		D ROLLING UPLAND		☐ BRYOPHYTE	
		CLIFF		III DECIDUOUS	17 BOG
		LI IALUS		CONTITEROUS	□ BARREN
		L CREVICE/CAVE		II MIXED	II MEADOW
		I ALVAK			II PRAIRIE
		I BEACH/BAR			O THICKET
		II SAND DUNE			WOODLAND
		LI BLUFF			- FOREST
					LI PLANTATION
SITE			COVER	COMM, TYPE	OTHER
OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			OPEN SHRUB	COMPLEX D INCTUSION	☐ HEDGEROW

STAND DESCRIPTION:

LAYER HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO
EMERGENT 2		POPTREM
CANOPY		
SUB-CANOPY		
UNDERSTORY		
GROUND LAYER 4.5	7	DERAUST >>> PILA NO IN

SIZE CLASS ANALYSIS:

< 10cm	/ > 50cm	25-50cm	1	10-24cm	1	< 10cm	DECAYED	
< 10am \ 10-24am \ 25-50am \ < 10am \ 10-24am \ 25-50am \ < 10am \ 10-24am \ 25-50am \ < 10am \ 25-50am \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	/ / JUN		1		T			- ALE/ 1003
<10an	/	25-50mm		10-24cm		< 10cm	FIRM	DEADEAN /LOGE
< 10cm \ 10-24cm \ 25-50cm	7 300		T		1			
	1	25-50cm	/	10-24cm	/	< 10cm	G SMAGS	MINNAIC
-	1 2001		1		1			

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



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PLANT SPECIES CODE JUE DUBD SURVEYOR(S): NIME DATE: July POLYGON: CUMIN SITE: UGT 2 ω 4 COLF 2 SPECIES CODE 2 3 LATER C 4 COL.

	ALUE CODES: D = DOMI	
LAYER	ES > 10m 2 = SUB-CANOPY 3 = SAP	
LAVED	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	

POLYGON DESCRIPTION:
SYSTEM SUBSTR

SUBSTRATE

TOPO, FEATURE

HISTORY

PLANT FORM

COMMUNITY

OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK	SITE	□ AQUATIC	TERRESTRIAL
	110 PC	D PARRENT MATERIAL D PARRENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	ORGANIC
		D RIVERINE D BOTTOMLAND D TERRACE U YALLEY SLOPE A/TABLELAND D ROLLING UPLAND D CLIFF TALUS D CREVICE/CAVE D ALVAR D ROCKLAND D ROCKLAND D ROCKLAND D BALUFF D SAND DUNE D SLUFF	- LACUSTRINE
O OPEN O SHRUB	COVER	ם מודטאג	MATURAL
☐ INCLUSION	COMM. TYPE	D SUBMERGED D FLOATING LVD D GRAMINOD D FORB D LICHEN D BEYOPHYTE D DECEDUOUS CONFEROUS D MIXED	☐ PLANKTON
☐ HEDGEROW	OTHER	D POND D RYPER D STREAM D MARSH D SWAMP D SWAMP D EN D BOG D BARREN D RAJICE D THICKET D SAVANINAH SC WOODLAND D FOREST D PLANTATION	□ LAKE

VITRIPA

LAMER

TILETON

ENALLE

コヤビ

OUT RUAR

45 CE 3D MY OVA

CIRTA

STAND DESCRIPTION:

5	LAYER	4	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)
۳	EMERGENT			
2	CANOPY	-	£	QUER SP >> CAROVAT
ω	SUB-CANOPY	2	2	ACE SIACC = TILAMER
4	UNDERSTORY	3/4	7	SPECULT > FLACATIL
и	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:

PULPRAT

CHO CHO

DPENS

> 50cm	25-50cm	10-24cm		< 10cm	DECAYED	DECAYED < 10cm
, ,						בביים יאנגי ניספים
√ 55 m	25-50cm	10-24cm		< 10cm	FIRM	DEADEALI / LOCK
				0		
> 50cm	25-50cm	10-24cm		< 10cm	STANDING SNAGS	SIANDI
	25-50cm	10-24cm	C	< 10cm	IREC	

☐ PIONEER	COMMUNIT
☐ YOUNG	Y MATURITY:
II MID-AGE	
□ MATURE	
□ OLD-GROWTH	



	POLYGON SURVEYOR(S):	SITE:
I TIMNI:	DATE:	POLYGON:

☐ PIONEER ☐ YOUNG

□ MID-AGE □ MATURE □ OLD-GROWTH

COMMUNITY MATURITY:

DEADFALL/LOGS

DECAYED

IIR.

< 10cm < 10an

10-24cm 10-24cm

> 25-50cm 25-50cm

25-50an

> 50cm

> 50cm > 50cm

> 50cm

10-24cm

25-50cm

STANDING SNAGS

TREES

< 10gm

10-24cm

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

< 10gm

HT CODES: 1 = 25m 2 = 210-25m 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:

GROUND LAYER

PLANT SPECIES CODE LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE IST SPECIES UPL BE HPANGU SURVEYOR(S): DATE: TIME POLYGON: MASZ5 TON BUS LAYER 2 ω 4 マコ COLL 0 SPECIES CODE 2 LAYER ψı F 4 6 F

D OPEN WATER
D SHALLOW WAT.
SURFICIAL DEP.
D BEDROCK

O SHRUB

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

COVER

SITE

LAYER

폭

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY

EMERGENT

SALABA

SUB-CANOPY UNDERSTORY

STAND DESCRIPTION:

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

D NATURAL HISTORY

D PLANKTON

D SUBMERGED

D PLOATING IVD

SCGRAMINOID

D PORB

D LICHEN

D REYOPHYTE

D DECEDUOUS

CONITEROUS

D MIXED

D LAKE
D PONID
D PONID
D RAKEH
MARSH
U SWAND
D FEN
D BOG
D BARREN
MEADOW
MEADOW
THEADOW
D PRAIRIE
D THICKTE
D SAVANNAH
D ROBLAND
D ROBLAND
D POREST
D PLANTATION

D TERRESTRIAL
EXWETLAND
D AQUATIC

O ORGANIC

I D ORGANIC

I MINERAL SOIL

I PARENT MATERIAL

I SENTIONIAND

I TERRACE

I BASIC BEDROCK

I TABLELAND

CARB. BEDROCK

I TABLELAND

CARB. BEDROCK

I TABLELAND

CALIF

I TALLIS

I TORVICIG/CANE

I D ALVAR

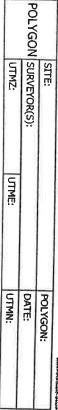
I BEACH/BAR

I SAND DUNE

I BLUFF

Black of Bush &

UTME:





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□ MID-AGE □ MATURE □ OLD-GROWTH

 DEADFALL/LOGS
 FIRM
 < 10cm</th>
 10-24cm
 2

 DECAYED
 < 10cm</td>
 10-24cm
 2

 ABUNDANCE CODES:
 A = ABUNDANT O = OCCASIONAL R = RARE N = NONE
 ☐ PIONEER ☐ YOUNG TREES
STANDING SNAGS FIRM < 10cm 10-24cm 10-24cm 10-24cm 25-50cm 25-50cm 25-50cm 25-50cm > 50cm > 50cm > 50cm

STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL	CI ORGANIC	☐ LACUSTRINE	□ NATURAL	E PLANKTON	PLAKE
WETLAND	X MINERAL SOIL	D RIVERINE	E CULTURAL	☐ SUBMERGED	ONO !
□ AQUATTC	II PARENT MATTERIAL	D BOTTOMLAND		III PLOATING LVD	D RIVER
	- ACIDIC BEDROCK	D TERRACE		GRAMINOID	□ STREAM
	☐ BASIC BEDROCK	D VALLEY SLOPE		□ FORB	MARSH
	CARB, BEDROCK	TABLELAND		II LICHEN	C SWAMP
		C ROLLING UPLAND		☐ BRYOPHYTE	E E
				II DECIDUOUS	11 BOG
		D TALUS		☐ CONJHEROUS	BARREN
		II CREVICE/CAVE		II MIXED	D MEADOW
		I ALVAR			☐ PRAIRIE
		LI ROCKLAND			I THICKET
		CAND NING			HANNAVAS []
		D VANO DOM			☐ WOODLAND
		E BEOFF			D PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER			OPEN	D INCLUSION	□ HEDGEROW
SURFICIAL DEP.			II TREED	C COMPLEX	

	POLYGON	
UTMZ:	PULYGUN SURVEYOR(S):	2115
UTME:		
UTMN:	DATE:	POLYGON:

PLANT SPECIES

POLYGON: MAS2-19 EON AMM :3LIS

Transit way

C

LST

SURVEYOR(S): NMF

DATE: JULY 16/19

SPECIES CODE

COLL

SPECIES CODE

COL.

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

PHOORUN

TYPANGU

THOLDTE



Park

COMMUNITY MATURITY:

☐ MID-AGE ☐ MATURE

□ OLD-GROWTH

DEADFALL/LOGS DECAYED

STANDING SNAGS TREES

< 10cm < 10cm

< 10cm

10-24cm 10-24cm

25-50cm 25-50cm

> 50cm > 50cm > 50cm > 50cm

10-24cm

25-50cm

25-50cm

10-24cm

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

< 10cm

5 GROUND LAYER 5.7 5 PLOADROW = SOLCALA / PUBDRAT / COTT 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%

UNDERSTORY

SUB-CANOPY CANOPY

SIZE CLASS ANALYSIS:

LSI PLANT SPECIES SURVEYOR(S): 3145 DATE: Ju POLYGON: SITE: 402 L

LAYERS: 1 = CANDPY TREES > 10m 2 = SUB-CANDPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

A COLL SPECIES CODE 1	LAYER CODE	LAYER	~	}			LAYER	۳	
	SFEGIES CODE		4	Ę	SPECIES CODE		2		
	D.		D				-	-	
	CAN		D					-	
	CICINTY		70					-	
	SHY LATE		5				_	-	
	DEUCERO		5				_		
	MMCRIS		2	128			_	-	
	NT NOPN		R						
	A C C L D P P		20				-	-	
	OPPRO!		P				-		
			5						
	OTCORN		1>				-		
	しかくのでも		10					1	
	DOSFRR		70				-	1	
	DIPSUEU		70				_		
	5		P				Ц	-	
	ARROUCG		70				201		
							-	7	
						_	-		
						-	-	-	
			I			-	╁		
						1	+		
						-	H	T	
						-	-		
							+		

D OPEN WATER
D SHALLOW WAT.
SURFICIAL DEP.
D BEDROCK

OPEN SHRUB COVER

D INCLUSION

II HEDGEROW

OTHER

COMM. TYPE

SITE

LAYER

푴

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
I TERRESTRIAL	ORGANIC	II LACUSTRINE	C NATURAL	C) PLANKTON	LAKE
D AOUATIC	MINERAL SOIL PARENT MATERIAL	CI RIVERINE	ECOULTURAL	SUBMERGED	POND
ACOVITE	LI PAKENI MAJEKUAL	TERRACE AND		II FLOATING LVD	DRIVER
	LI ACLUIC BEUROCK	LIERRACE		EL GRAMINOID	- STREAM
	O BASIC BEDROCK	II VALLEY SLOPE		II FORB	□ MARSH
	LI CARB, BEDROCK	BUABLELAND			- SWAMP
		C ROLLING UPLAND		□ BRYOPHYTE	
		- CLIFF		□ DECIDUOUS	1 BOG
		□ TALUS		CONTREROUS	BARREN
		☐ CREVICE/CAVE			MEADOW
		O ALVAR			D PRAIRIE
		LROCKLAND			I THIOKET
		LI BEACH/BAR			II SAVANNAH
		D SAND CONE			II WOODLAND
		C DECOLU			I FOREST
2772					

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



!	SITE: HOT TO	797		
SDECTES	POLYGON: CUI			
UST	O	0		
	YOR(S):	71		
LAYERS: 1 = CAN	<pre>DPY TREES > 10m 2 = 5UB-</pre> = DOMINANT A = ABUNDAL	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RAKE	BS 4 = GROUND LAYER	
SPECIES CODE	LAYER	COLL SELLEGS		
	1 2 3 4		1 2 3 4	
PHDARUN	t	- 45/07 BM	0	
PODPRAT	P		P	
CIDARUT		TRIPRIST	0	
TSNA SHA	0	PROBETT	0	
SUGNIGE	70	SOLALBO	70	
VITRIPAR	0	POPOECI	70	ė:
4 CTCORN	D	ULKAMER	RR	¥
CRATSP	\sim			
BRONER	P			• •
THUÇCCI	70			saci
REPER	_ る			
DSCSUR	2			
DESDSD	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
ROBPSEUD	7			
PICCLAIA				
たとうしかと	Ō			
やえかるの	70			
S. F. P. Z.D				
FUPPERT				
SYNODIC				
CKINTY	P			
の行うなる	R			
DOE PLAT	70			
ACE SIS D				
JUNEAR C				
10001				
THE CLIPS	<u> </u>			

☐ SHALLOW WAT.

M SURFICIAL DEP.
☐ BEDROCK

OPEN SHRUB

☐ INCLUSION

☐ HEDGEROW

OTHER

COVER

COMM. TYPE

SITE

LAYER

폭

S

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY

SUB-CANOPY

EMERGENT

UNDERSTORY

STAND DESCRIPTION:

5 GROUND LAYER | S-7| | S | POAPRAT = TKIREPE > PLA 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:

☐ PIONEER ☐ YOUNG

□ MID-AGE

□ MATURE

□ OLD-GROWTH

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE

DEADFALL/LOGS

DECAYED FIRM

< 10cm

< 10cm < 10cm < 10cm

10-24cm 10-24cm

> > 50cm > 50cm

10-24cm

25-50cm 25-50an 25-50an 25-50cm

> 50cm > 50m STANDING SNAGS

TREES

10-24cm

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

X TERRESTRIAL

WETLAND

AQUATIC

D ORGANIC

D NATEVILE

D PARENT MATERIAL

D STYDMIAND

C ACIDIC BEDROCK

D SASIC BEDROCK

C CARB. BEDROCK

D TERRACE

D MALLEY SLOPE

D TABLELAND

C CLIFF

D TALIS

D CREVICE/CAVE

D ALVAR

D BACH/BAR

D SAND DUNE

D BLUFF

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

MATURAL STORAL HISTORY

D PLANKTON

D SLIMMERGED

D FLOATING LVD

D GRAMINOID

FORB

LICHEN

D BECDDUOUS

CONIFEROUS

MIXED

D LAKE
OND PONID
ON D RIVER
O STREAM
O MARSH
O SWAMP
O HEN
O BOG
O BARREN
O MEADOW
O PRAIRLE
O THICKET
O FOREST
O PLANTATION



PLANT POLYGON: MAH2-2a SITE: 407 Trans, twey L

TF 0 = F	CDECTEC		OF FILM	1				
SURVEYOR(S): NATE LAYER LAYER 1 2 3 4 COLL. SPECIES CODE SPECIES CODE	_	DATE: Duc	010					
DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE 1 2 3 4 COLL SPECIES CODE SPECIES CODE		SURVEYOR(S	9: 77	ΤŢ				
AYER COLL SPECIES CODE 1	VALUE CODES: D :	PY TREES > 10n = DOMINANT A	1 2 = SUB-C	ANOPY 3	= SAPLINGS & SHRUBS 4 = CASIONAL R = RARE	GROUND	LAYER	
1 2 3 4	SPECIES CODE	-	TÉR (E F	SPECIES CODE	5	Ŕ	8
	PHADRUN	_					_	4
	L4750C1		R					
						-	1	
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				L				
			+				-	T
						-	+	

UTMZ:
UTME:
UTMN:

SITE

POLYGON DESCRIPTION:

SIWAIGOOC	TOPO. PEATOKE	HISTORY	PLANT FORM	COMMUNITY
O ORGANIC MINERAL SOIL PARENT MATERIAL	LACUSTRINE D RIVERINE N BOTTOMI AND	D NATURAL Z CULTURAL	D PLANKTON D SUBMERGED	D LAKE
ACIDIC BEDROCK	D TERRACE		A GRAMINOID	O STREAM
IC BEDROCK	TARI EL AND		□ FORB	NARSH
ם, פבטאטכא	C ROLLING UPLAND		O LICHEN	SWAMP
	O CLIFF		D DECIDUOUS	0.006
	□ TALUS		CONIFEROUS	BARREN
	II ALVAR		D MIXED	□ MEADOW
	☐ ROCKLAND ☐ BEACH/BAR			D THICKET
	I SAND DUNE			☐ WOODLAND
	C profit			CI PLANTATION
		COVER	COMM. TYPE	NAHEO
		II SHRUB	COMPLEX DINCLUSION	☐ HEDGEROW
		1		
	D ORGANIC MINERAL SOIL PARENT MATERIAL D PARENT METERIAL D ACIDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	~}	LOPOL PEATURE CI LACUSTREINE CI ROTTOMIAND CI TRERACE CI VALLEY SLOPE CI TABLES CI CREVICE/CAVE CI ALVAR CI ROCKJAND CI BEACHYBIAR CI SAND DUNE CI SLUFF CI SLUFF	LACUSTRINE DIAGUSTALINAL DIAGUSTRINE DIAGUSTRINE DIAGUSTRINAL DI NATURAL DI NATURAL DI NALLEY SLOPE DI TABLELAND DI CALIFF DIAGUSTALING UPLAND DI CALIFF DIAGUSTALING UPLAND DI BEACHIBAR DI SAND DUNE DI SAND DUNE DI LIFE DI LIFE DI TREED DI TREED

SIZE CLASS ANALYSIS:

1 EMERGENT
2 CANOPY

4 UNDERSTORY

SUB-CANOPY

LAYER

4

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

		TO NOT COSTO			
> 5000	25-50cm	10-24cm	< 10cm	DECAYED	
,					
> co-	25-50cm	10-24cm	< 10om	TIRM	DEADFALL/LOGS
-					
> 500	25-50cm	10-24cm	< 10cm	STANDING SNAGS	SIANDIN
,					
> 500	25-50cm	10-24cm	< 10cm	IKEES	

	PIONEER
	□ YOUNG
	□ MID-AGE
	MATURE
TO ONOWILL	I OI D-CBOWTL



20-6

D OPEN WATER
XSHALLOW WAT.
D SURFICIAL DEP.
D BEDROCK DEADFALL/LOGS DECAYED | S | GROUND LAYER | 4/5 | 5 | PURA UST >> PLLA ARUN HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60% ☐ PIONEER ☐ YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE LAYER STAND DESCRIPTION: SIZE CLASS ANALYSIS: COMMUNITY MATURITY: EMERGENT UNDERSTORY SUB-CANOPY CANOPY STANDING SNAGS TREES 폭 CVR < 10cm < 10cm < 10cm < 10cm ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) 10-24cm 10-24cm 10-24cm 10-24cm SY OPEN D SHRUB

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm > 50cm

PLANT LAVERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE LST SPECIES SITE: 407 SURVEYOR(S): DATE: JULY 16/19 POLYGON: MAS 20

PHADRUS

SPECIES CODE

8 F

SPECIES CODE

2 LAYER ω 4

COLF.

POLYGON DESCRIPTION	CKIPILON:				
SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	☐ ORGANIC	CI LACUSTRINE	□ NATURAL	D PLANKTON	TAKE
WETLAND	DEMINERAL SOIL	II RIVERINE	DI CULTURAL	☐ SUBMERGED	CNOS
□ AQUATIC	II PARENT MATERIAL	☐ BOTTOMLAND	_	III FLOATING LVD	RIVER
	☐ ACIDIC BEDROCK	I TERRACE		S GRAMINOD	□ STREAM
	D BASIC BEDROCK	II VALLEY SLOPE		□ FORB	MARSH
	LI CARB, BEDROCK	DISTABLELAND			□ SWAMP
		LI ROLLING UPLAND		II BRYOPHYTE	型
		1 2		II DECIDUOUS	11 BOG
		LIALUS		CONTITEROUS	□ BARREN
		II CREVICE/CAVE		MDGD	□ MEADOW
		ALVAR			□ PRAIRIE
		E ROCKENO			I THICKET
		LI BEACH/BAK			III SAVANNAH
		LI SAND DUNE			EI WOODLAND
					- FOREST
					III PLANTATION

SITE

COVER

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

UTMN:	UTME:	UTMZ:
DATE		POLYGON SURVEYOR(S):
POLYGON:		3115



2-27

PLANT SPECIES LIST SURVEYOR(S): NMI POLYGON: MAMZ-25 SITE: 407 0 (FIR

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 I Z 3 4 COLL. SPECIES CODE I Z 3 4 COLL. SPECIES CODE O O O O O O O O O O O O O O O O O O O	SPECIES CODE		PLDDRUN	PURLUST	POELL	SDL DL RD	TWSTDRT	SOLGAND	MIRIOD	MPLATE						90)										
LAYER COLL. SPECIES CODE 2 3 4 O O O O O O O O O O O O O O O O O O		Ŀ			70	70						İ	L	Ţ		1				-	-	4		İ		
COLL. SPECIES CODE	LAYE	-										H	-	+	+	+	+									
COLL. SPECIES CODE	7.0	4	シ	5			70	0	0	0					1	1		1			+		-	-	-	\vdash
SPECIES CODE	3																									L
	SDECTES CODE	C C C C C C C C C C C C C C C C C C C											9													
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 	뙤		-	+	+	4	+	+	-	+	-	-		H	H	+	+	1	+		\vdash	+	+		l	
J S		4 														I										

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

POLYGON DESCRIPTION:

LOFI GOIN DESCRIPTION:	CKITION:				
SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL WETLAND	O MINERAL SOIL	☐ LACUSTRINE ☐ RIVERINE	I NATURAL	☐ PLANKTON ☐ SUBMERGED	POND
D'AQUATTC	CI ACIDIC BEDROCK	☐ BOTTOMLAND ☐ TERRACE	_	I FLOATING LYD	STREAM
	CARR BEDROCK	CI VALLEY SLOPE		D FORB	ST MARSH
	L CAKB, BEDROCK	IN TABLELAND		- LICHEN	D'SWAMP
		C CLIFF		□ BRYOPHYTE	
		- TALUS		CONTINEROUS	□ BARREN
		ALVAR		□ MIXED	D MEADOW
		E ROCKLAND			HOOF
		L BEACH/BAR			☐ SAVANNAH
					II WOODLAND
					POREST
SITE			COVER	COMM TYPE	OTHER
OPEN WATER			R OPEN	TINCI LISTON	- LEDOSTON
SHALLOW WAT, SURFICIAL DEP.			O SHRUB	COMPLEX	LI HEDGEROW
STAND DESCRIPTION:	PTION:				

LAYER	3	CVR	PECIES IN ORDER OF DECREASING DOMINANCE
EMERGENT	الوا	-	SOPPETT : SOI BLAS
CANOPY			
SUB-CANOPY			
UNDERSTORY			
GROUND LAYER	R # h	7	HODELOV > PUR AVAI

SIZE CLASS ANALYSIS:

		The state of the s				
> 50cm	25-50cm	10-24cm		< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	-	< Toda	TANE.	DEADFALL/LOGS
1						
> 500mm	25-50cm	10-24cm		< 10cm	STANDING SNAGS	STANDIN
1000			-			
/ 50	25-50cm	10-24cm	7	< 10cm	I KEE	



PLANT
SPECIES
LIST

SITE: 407 Tomestand
POLYGON: MAD M 2-2b

DATE: Au6 8 | 9

SURVEYOR(S): NME

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

POLYGON: DATE: UTMN:

MATURE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	LAYERS: 1 = CANOPY TR	RES > 10	m 2 = St	IB-CANOPY	3 = SAPLINGS & SHRUBS 4 =	GROUNDIA	ž	
1 2 3 4 VOL. DRUN	VALUE CODES: D = DOI	MINANT	4YER	DANT O = C	OCCASIONAL R = RARE	LAY	男	
AUST PO	of Letter Coop	-	ω		SPECIES CODE	_	_	Ç
AUST R								
AUST P	SALALRA	70						
LACATA P	PURAUNT		0					
LACATA PARE	ORRACE		R					
PROPAGE AND AND AND AND AND AND AND AND AND AND	7	P						
	RHACATA		70					
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		1	1					
		-	-					
							1	
		F	-					
		+						
			1					
			7				1	1

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY

EMERGENT

SUB-CANOPY
UNDERSTORY

STAND DESCRIPTION:

II BEDROCK

POLYGON DESCRIPTION:

SYSTEM SUBSTRATE OPEN WATTER SUBSTRATE SUBSTRATE SUBSTRATE COMMUNITY C						
DAGANIC DI MINERAL SOIL DI MINERAL SOIL DI PARENT MATERAL DI ROPERINE DI SASTIC BEDROCK DI TERRACE DI CARB. BEDROCK DI TABLEJANID CARB. BEDROCK DI TABLEJANID DI CARB. BEDROCK DI CALIFF DI CALIFF DI CALIFF DI CALIFF DI DECIDIOUS DI SEVICE/CAVE DI SASTIC BEDROCK DI TABLEJANID DI BEACH/BAR DI SAND DUNE DI SAND DUNE DI SAND DUNE DI GRAMINOID DI BEACH/BAR DI SAND DUNE DI DECIDIOUS DI COMMETCUS DI COMETCUS DI COMMETCUS DI COMMETCUS DI COMMETCUS DI COMMETCUS DI	SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
PARENT MATERAL DE RIVERUNE PARENT MATERAL DE BOTTONIAND ACIDIC BEDROCK TERRACE ROSILE PARENT TABLELAND CARS. BEDROCK TABLELAND CREVICE/CAVE CREVICE/CAVE CREVICE/CAVE SAND DUNE BEACHYBAR COVER COVER COMM. TYPE TO DECIDIOUS COVER COMM. TYPE COVER COMM. TYPE TO DECIDION COVER COMM. TYPE	☐ TERRESTRIAL	ET ORGANIC	☐ LACUSTRINE	□ NATURAL	D PLANKTON	U LAKE
D PARKIN MATERAL E GOTONILAND O ACIDIC BERDROCK O TREBACE O BASIC BEDROCK O VALLEY SLOPE O CARS. BEDROCK O VALLEY SLOPE O CARS. BEDROCK O TABLE LAND O CLIFF O CLIFF O DECENDUOUS O CREVICE/CAVE O ALVAR O BROCKLAND O BROCKLAND O BROCKLAND O BROCKLAND O BROCKLAND O BROCKLAND O SHRUB O SHRUB O SHRUB O SHRUB O SHRUB O COMPLEX O SHRUB O SHR	LI WE LAND	MINERAL SOIL	C) RIVERINE	CULTURAL	☐ SUBMERGED	POND
D AKJUK BEDROCK DITERACE DITE	LI AQUATIC	D PARENT MATERIAL	ED BOTTOMLAND		III PLOATING LVD	□ RIVER
CARB. BEDROCK DYALLEY SLOPE CHORN CHOR		L ACIDIC BEDROCK	O TERRACE		GRAMINOID	O STREAM
CARB. BEDROCK TABLE_AND		LI BASIC BEDROCK	CI VALLEY SLOPE		II FORB	MARSH
COVER COMM.TYPE CALIFF COVER COMM.TYPE		CARB. BEDROCK	☐ TABLELAND			SWAMP
COUFF CREVICE/CAVE CREATIFE CREVICE/CAVE CREVICE/CAVE CONTEROUS CONTERO			II ROLLING UPLAND		□ BRYOPHYTE	핖
TALUS CONTEROUS CONTEROU			2		II DECIDUOUS	□ 8 06
COVER COMPLEX COVER COMM. TYPE BLUFF COVER COMM. TYPE SAND DUNE COVER COMM. TYPE SOPEN			LI TALUS		□ CONITEROUS	II BARREN
COVER COMM.TYPE BLUFF COVER COMM.TYPE SAND DUNE COVER COMM.TYPE SOME			II CREVICE/CAVE		O MIXED	I MEADOW
COVER COMM. TYPE COMMAND DIVINE COVER COMM. TYPE COMMAND DIVINE COVER COMM. TYPE COMPLEX			LALVAK			II PRAIRIE
D SAND DUNE D SAND DUNE COVER COMM. TYPE S OPEN D SHRUB COMPLEX			L RUCKLAND			I HICKET
COVER COMM. TYPE Status Date COVER COMM. TYPE Status Date COMPLEX			L BEACH/BAX			☐ SAVANNAH
COVER COMM. TYPE COVER COMM. TYPE						□ WOODLAND
COVER COMM. TYPE DI DEN DI INCLUSION DI SHRUB COMPLEX			0			O PLANTATION
ZHRUB COMPLEX	SITE			COVER	COMM. TYPE	OTHER
	SHALLOW WAT.			D SHRUB	COMPLEX COMPLEX	1) HEDGEROW

SIZE CLASS ANALYSIS:

> 50gm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm	< 10cm	SIANDING SNAGS	SIAMPLE
1 200					2
\ CD	25-50cm	10-24cm	< 10cm	TREES	

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

□ PIONE
ER D YOUNG
□ MID-AGE
□ MATURE
□ OLD-GROWTH



25-50am 25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm >> 50cm

☐ PIONEER Y YOUNG

□ MID-AGE □ MATURE □ OLD-GROWTH

COMMUNITY MATURITY:

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%

RHACKITH VCCC

ULMATIER > CRATSP

SIZE CLASS ANALYSIS:

STANDING SNAGS

FIRM

< 10cm < 10cm < 10cm

10-24cm 10-24cm TREES

GROUND LAYER UNDERSTORY SUB-CANOPY LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY EMERGENT STAND DESCRIPTION:

SPECIES PLANT ПST SURVEYOR(S): No Fine POLYGON: MAM2-2G DATE: AUG 3/19 FOP :311S Transitua I

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

CO F

SPECIES CODE

2 3 LAYER

COLT.

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					LI BEDROCK
☐ HEDGEROW	☐ COMPLEX	D OPEN CHRUB			D OPEN WATER SHALLOW WAT. SURFICIAL DEP.
OTHER	COMM. TYPE	COVER			SITE
D PLANTATION					
El WOODLAND			SAND DUNE		
D SAVANNAH			C) BEACH/BAR		
PRAIRIE			L ALVAX		
□ MEADOW	II MIXED		CREVICE/CAVE		
□ BARREN	☐ CONITEROUS		II TALUS		
1 BOG	☐ DECEDUOUS				
田田	I BRYOPHYTE		II ROLLING UPLAND		
III SWAMP	D LICHEN		III TABLELAND	CARB, BEDROCK	
MARSH	□ FORB		I VALLEY SLOPE	LI BASIC BEDROCK	
O STREAM	S GRAMINOID		□ TERRACE	☐ ACIDIC BEDROCK	
II RIVER	I PLOATING LVD		E BOTTOMLAND	PARENT MATERIAL	LI AQUATIC
POND	□ SUBMERGED	A CULTURAL	23 RIVERINE	MINERAL SOIL	METLAND
D LAKE	PLANKTON	O NATURAL	CI LACUSTRINE	C ORGANIC	☐ TERRESTRIAL
ALIMINMOS	PLANT FORM	HISTORY	TOPO, FEATURE	SUBSTRATE	SYSTEM

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



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COMMUNITY MATURITY:

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm

FIRM

< 10cm

10-24cm 10-24cm

> 50cm

SIZE CLASS ANALYSIS:

STANDING SNAGS

< 10cm < 10cm

	LIST	SPECIES	D ANT
SURVEYOR(S): NAT	DATE: JULY 12 19	POLYGON: BLO!	TOWN STATE TOWN HALL STILL

	SPECIES CODE LAYER 1 2 3 4 COLL. SPECIES CODE	LAYER 1 2 3	4	COLF	SPECIES CODE	LAYER 1 2 3
RVE	TUSEART		0/0			
LA SAVE	OFDDRUN		7			
	CIRARVE		P			
	F					
	*					
			_			1
			-			

STAND DESCRIPTION:

#

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT CANOPY

UNDERSTORY SUB-CANOPY POLYGON DESCRIPTION:

□ HEDGEROW	COMPLEX	III OPEN III SHRUB III TREED			SHALLOW WAT. SURFICIAL DEP. BEDROCK
OTHER	COMM. TYPE	COVER			ODEN MATER
D FOREST D PLANTATION			XX BLUFF		
SAVANNAH			☐ BEACH/BAR		
PRAIRIE			□ ALVAR □ ROCKLAND		
II MEADOW	MIXED TOOS		CREVICE/CAVE		
1 BO6	D DECEDUOUS		D TALUS		
O TO	□ BRYOPHYTE		D ROLLING UPLAND		
□ MARSH	I LOKE		D TABLELAND	CARB, BEDROCK	
□ STREAM	[] GRAMINOID		D VALLEY SLOBE	LI WITH BEDROCK	
ELVE S	II FLOATING LVD		D BOTTOMLAND	II PARENT MATERIAL	LI AQUATIC
I LAM	O SUBMERGED	I CULTURAL	III RIVERINE	II MINERAL SOIL	WETLAND
COMMUNITY	PLANT FORM	UNDICKT	100 00 0000000		TENEGRAL I
	THE PERSON NAMED IN	HISTORY	TOPO FFATIRF	SUBSTRATE	SYSTEM

POLYGON SURVEYOR(S): UTMZ: UTME:



SI		ίχ	DI ANT
SURVEYOR(S):	DATE: JULY	POLYGON: FOD	SITE: 407
N T T	12/19	3/2-2	TransHux
		of mario	N.5
	Š	E SOLL	
		2	
		COUNDA	11

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

CDECTED COOL	LAYER		IAYER
מ רשונט כסטר	1 2 3 4	LL. SPECIES CODE	1 2 3 4 COLL.
ACE SASA	* O D R O	SOLCOND	
コレクスはん	ア が	FAGGRAN	200
ACERUSA	70	TSUCAZA	70 7
CARINTU		TERLANT	70
HYDVIRG	9		0
CARCUAT	0	RIBATTER	70
IMPCAPE	0	LYCAMER	R
CIRCUITE	200	PARINSER	0
SOL FLEX	0	SOLCAIS	R
SMINERIS	70	MOLD SC	0
RYKUL	200	でのたかと	70
THOSTIL	C	SANCANA	Ö
IMPROLL	P	051V 126	7 ~
ACESANI		VERKT!	~
SIDL SP.	70		
4 075772 H	华		
コスロイボここ	RRRO		
DRCMINU	70		
ARITRITRI	R		
したいれる	0		
DZTCACD	0		
OFUT DILC	70		
OLL PETI	0		
AMPRRAC			
THE RUCK	7		
LI-MICH	70		
「世かじら	PO		

O OPEN WATER
O SHALLOW WAT.
SURFICIAL DEP.
O BEDROCK

☐ OPEN ☐ SHRUB ☐ TREED

COMPLEX DINCLUSION COMM. TYPE

> ☐ HEDGEROW OTHER

COVER

LAYER

폭

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

A-ACENIGE = FRASI

EMERGENT

CANOPY

STAND DESCRIPTION:

100					
D POND D RIVER D STREAM D WARSH D WARSH D BOG D BARREN D MEADOW D RAIRLE D KOODLAND HOREST D PLANTATION	D SUBMERGED D FLOATING LVD GRAMINOID D FORB LUCHEN D BRYOPHYTE CONIFEROUS MIXED	CULTURAL	DROTTOMIAND TERRACE VALLEY SLOPE TABLELAND ROLLING UPLAND CLIF TALUS CREVICE/CAVE ALVAR CRCKLAND DEACH/BAR SAND DUNE SAND DUNE	D PARENT MATERIAL ACIDIC BEDROCK BASIC BEDROCK CARB, BEDROCK	aquatic
	TI DI ANIETTONI	WATIRA	D LACUSTRINE	ORGANIC	TERRESTRIAL
COMMUNITY	PLANT FORM	HISTORY	TOPO. FEATURE	SUBSTRATE	SYSTEM

OIMZ:
UTME
UTMN:

POLYGON SURVEYOR(S):

DATE: POLYGON:

SITE:

☐ PIONEER	COLLEGIST
D YOUNG	1.27.027.1.
I MID-AGE	
MATURE	

SIZE CLASS ANALYSIS:

UNDERSTORY SUB-CANOPY

L

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%

PLANT LSI SPECIES SURVEYOR(S): NHE DATE: JULY 10/19 POLYGON: FODS-36/ Nonthead SITE: NUMBER OF

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

200	MININI A - ABONDANI O	MOUNDAIN O = OCCASIONAL R = RARE		
SPECIES CODE	Ę	SPECIES CODE	LAYER	COL
	4		1 2 3 4	Ţ,
QUEMACEO	70	CASOMILIO P P	0	
- QUEALBA	0	CHOORAU	R	ľ
QUERURR		PRPG GRASS	-1	
DENER	R 00 -	ACENIGR	-	
FREAME R	S# ()	PORCOMP	0	
DIFFER	\nearrow	かしていていると	70	
DIDDTIER	R	MSTELL	0	
OSTVIRG	P 0 0	RRONER	73	1
POPET	O	PRUJIR6	2	
TAMAGE	Þ	TRILGERAN	70	1 000 Visit
TSUCAND	R R .	SMINERS	P	معبيل
PLL PRAT		CIRCURE	0.	
PCEXTREE	7	SOUTLEX	2	
COROUDI	0	VI 72 PA	70	
RESPON	0000	ACE RUSE	R	
CARROSE	0	RIBBHER	R	
CARPENS	O # ≠	FREGRAND	P	
DULPET!	0			
SOLCAES	0			
DMBARTE	0			
LAMPURD	2			
PNEVIRG				
CURTICE	5			
HONZIGA	K R			
	70			_1
PRUSER				_1
PDRINGER	R			
		The second secon		L

UTME:	UTMZ:	
	OF GOIN SURVETURION	0014

SITE:

POLYGON DESCRIPTION:

OCTOON DESCRIPTION	COTLITOIR				
SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL O WETLAND	O ORGANIC MINERAL SOIL	C CRIVERINE	C CULTURAL	☐ PLANKTON ☐ SUBMERGED	□ LAKE
- AQUATIC	D PARENT MATERIAL	II BOTTOMLAND		II FLOATING LYD	D RIVER
	ACIDIC BEDROCK	II TERRACE		☐ GRAMINOID	STREAM
	LI BASIC BEDROOK	II VALLEY SLOPE		□ FORB	□ MARSH
	LI CARB, BEDROCK	II TABLELAND		ППОНВИ	□ SWAMP
		CI ROLLING UPLAND		II BRYOPHYTE	E E
				DECIDUOUS	10 BOG
		LIALUS		CONITEROUS	□ BARREN
		I CREVICE/CAVE		II MIXED	☐ MEADOW
		POCK! AND			L PRAIRIE
		☐ BEACH/BAR			D THICKET
		SAND DUNE			C WOODLAND
		C BLOFF			E FOREST
					C PLANTATION
SITE	9		COVER	COMM. TYPE	OTHER
SHALLOW WAT.	4	at a	O SHRUB	I INCLUSION	□ HEDGEROW
SURFICIAL DEP.			I TREED		
STAND DESCRIPTION:	DTTON:				

1 EMERGENT CANOPY SUB-CANOPY UNDERSTORY

DCE SASAVSPRUSER

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

SIZE CLASS ANALYSIS:

SYNAGS C < 10cm				The state of the s		
S SNAGS C < 10cm	> 50gm	25-50cm	10-24cm	< 10cm	DECAYED	
5 C < 10cm C 10-24cm C 25-50cm C >	> 50cm	C 25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
D Louis A London	V > 50cm	25-50cm	2 10-24cm	< 10cm	SORMS	MICHALE
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	> 50cm	A 25-50cm	10-24cm	< LUCTH	INCES	

COMMUNITY MATURITY:

☐ YOUNG MID-AGE ☐ MATURE
MID-AGE MATURE
□ MATURE



POLYGON:

SURVEYOR(S):	DATE: JULY 12/19	POLYGON: FODS -1 a (mudia luper	SITE: 407 Transitions
		sluce	Л

COECTEC COOL LAYER		LAYER	۳				AYFR	
SPECIES CUDE		2	ω 4	69 F	SPECIES CODE	-	2 3	4 COLF.
ACESDSA	D	2	$\frac{2}{6}$		CARSTIP	-	-	10
COUTHOL			70		POACAMP		+	2
TROPHNU		_	5		LEOCARD			74
VITRIPA					QUE RURR	2	-	
DUPETI		_	70		NACANA		1	V
IN PCA PE			75					_
CARONAT	70	P	0					
GENDINE		=	$\overline{}$					
ARITRITA			カ					
RUBALLE		grang.		PIC				
PRUSERO	\approx							4
ロガエコ		-	D					
SUCDAD		70						_
TAGGRAC	70	0	~					\perp
TLAMER		-	70			4		4
GERRORF			0			4		1
17R190		-						-
CIRLUTE		-	5			4		4
SOLFLEX			70					4
ALLPET!	_							-
SOLCAND		-	R			-		-
0X P 5 T 2 I		_	2			_		-
Solchel		-	2					4
1201T		-	TV			-		4
DEL JEC	_		R					-

-	POLYGON
2.	DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL	I ORGANIC	☐ LACUSTRINE	Z NATURAL CULTURAL	☐ PLANKTON	I LAKE
LAQUATIC	PARENT MATERIAL ACIDIC BEDROCK	D BOTTOMLAND D TERRACE		□ FLOATING LVD	REVER
	☐ BASIC BEDROCK	TO VALLEY SLOPE		II GRAMINOID	□ STREAM
	LI CARB. BEDROCK	TABLELAND		D LICHEN	CI SWAMP
		CLIFF		BRYOPHYTE	
		□ TALUS		CONIFEROUS	BARREN
		L CKEVICE/CAVE		□ MIXED	☐ MEADOW
		ROCKLAND		- "	PRAIRIE
		☐ BEACH/BAR			SAVANNAH
		LI VANO DUNE			E WOODLAND
		000			II PLANTATION
SITE			COVER	COMM. TYPE	OTHER
 OPEN WATER SHALLOW WAT. SURFICIAL DEP. 			O SHRUB	INCLUSION	□ HEDGEROW
SHALLOW WAT. SURFICIAL DEP. BEDROCK			☐ SHRUB ☐ TREED	I INCLUSION	□ HEDGERO

GON S	T ₁
SURVEYOR(S):	2115
DATE:	POLYGON:
	POLYGON SURVEYOR(S): DATE:



U PIONEER	COMMUNITY MATURITY:	ARIINDANCE COD	DEADFALL/LOGS	SIAMULE	2
D YOUNG	VATURITY VATURITY	DECAYED	MATA	STANDING SNAGS	100
u,	, ,	/	1	0 7	C
D'MID-AGE	0 = 000	< 10cm	< 10cm	< 10cm	V TOCK
	JONAL	/	7	r	Z
☐ MATURE	R = RARE N	10-24cm	10-24cm	10-24cm	10-24cm
	NON	1	10	A	Z
□ OLD-GROWT	m	25-50cm	25-50cm	25-50cm	25-50cm
HTW		7	1	70	
		> 50cm	> 50cm	> 50cm	> 50cm

4 UNDERSTORY
4 2 FROSP FORSO

5 GROUND LAYER 5 3
HT CODES: 1 = > 25m 2 = >10.25m 3 = 2.10m 4 = 1.2m 5 = 0.5.1m 6 = 0.2.0.5m 7 = <0.2m

CVR CODES: 0 = NONE 1 = 1.10% 2 = >10.25% 3 = >25-35% 4 = >35-60% 5 = >60%

1 EMERGENT 2 CANOPY

SUB-CANOPY

F

ACESA SA YO FAGGEAN

FRD SP = DCESDSO > FLGGRAN

STAND DESCRIPTION:

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

SIZE CLASS ANALYSIS:

- numerous dead of objects on the AMER

PLANT LST SURVEYOR(S): NMC DATE: JULY POLYGON: FOJ7-2 FUN HOMPH :3LIS 0 Transitway Bronte Crk & 407

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASTONAL R = AARE

SPECIES CODE LAYER CO.		LAYER	~	}			LAYER	뙤	-	
	1	2 3	4	Ę	SPECIES CODE	н	2	\neg	4	6 E
TORON	0							-	+	
BETALLE	70	C						+	\dashv	
DOESASA	0	0						+	+	
PRETINSE		P	D					-	+	
PERSON			5					+	\dashv	
カたいてくやと		0						+	+	
SOMEDIES								\dashv	-	
THERE	70	0	D				1	+	+	
と日内は日の	70						_	+	+	
SOLCAND			D				4	+	\dashv	
WIRDD		P	0	5			_	\dashv	\dashv	
FRANK	0	70					_	+	+	
SAUSP	7						4	\dashv	1	
QUERUBE	P						4	+	+	
SALSP	70						_	+	+	
	F							H	\vdash	
	-	+					-	+		
								+	1	
	F						\vdash		\Box	
	-					-	+	-		
	-						+	+		
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A

POLYGON SURVEYOR(S):

SITE

UTMZ:

UTME:

UTMN: DATE: POLYGON:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL WETLAND AQUATIC	O ORGANIC O MINERAL SOIL O PARENT MATERIA	C RIVERINE C RIVERINE	SKNATURAL CULTURAL	CI SUBMERGED	II POND
1,000	ACIDIC BEDROCK	I TERRACE		G GRAMINOID	- STREAM
	CI CARB. BEDROCK	CI VALLEY SLOPE		II FORB	O MARSH
		D ROLLING UPLAND		□ BRYOPHYTE	3
				Shondaya &	□ BOG
		CREVICE/CAVE		LI CONTHEKOUS	BARREN
		D ALVAR			☐ PRAIRIE
		☐ BEACH/BAR			II SAVANNAH
		SAND DUNE			KI WOODLAND
		DECEM			D PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			☐ OPEN☐ SHRUB ☑ TREED	☐ INCLUSION	☐ HEDGEROW

STAND DESCRIPTION:

LAYER	H	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	2	FRADEN DOFSES
3 SUB-CANOPY	ر ادر	L	TRAPEUNT ACKSBON VI
4 UNDERSTORY	t	374	とという
5 GROUND LAYER	ħ		
CAK CODES! (I =	> 25m 2 = :	10-25m	5 GROUND LAYER 5-7 5 SOLCANA FOR INSE 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 A	25m 2 = 1 NALYSIS:	10-25m	5 GROUND LAYER 5-7 5 SOLCANA = 20R NSE 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:
SIZE CLASS ANALYSIS: TREES	> 25m 2 = 1 VONE 1 = 1 NALYSIS:	10-25m 3 = 2 -10-25m 3 = 2 -10% 2 = >10	0-25% 3 = >25-35% 4 = >35-60% 5 = >60% 10-24cm 10-24cm 10-24cm 10-24cm
SIZE CLASS A STANDI	S: 1 = > 25m 2 = 1 ES: 0 = NONE 1 = 1 LASS ANALYSIS: TREES	10% 2 = >10 10% 2 = >10	2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m 0-25% 3 = >25-35% 4 = >35-60% 5 = >60% m 10-24cm 25-50cm R m 10-24cm 25-50cm R
SIZE CLASS AN STANDIN	> 25m 2 = 1 VONE 1 = 1 NALYSIS: TREES	10% 2 = >10 10% 2 = >10	2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m 0-25% 3 = >25-35% 4 = >35-60% 5 = >60% m 10-24cm 25-50cm m 10-24cm 25-50cm 7 10-24cm 25-50cm 7 10-24cm 7 10-24

COMMUNITY MATURITY:

	☐ PIONEER
	E YOUNG
1	□ MID-AGE
T. STONE	□ MATI IDE
II OLD-GROWIN	2000000

25-50cm 25-50cm



URVEYOR(S):	SIF 3019 10 2019	DATE:	DI VGON: C. C. C. CONSTRUCT	STE: MIN :IST -
		POLY	\$	Ì
	UTMZ:	GON SURVEYOR(S):	SITE:	

	AWY HOT T	CONSIDERAL		
LIST DATE:	July 10/2	910		
	TH			
VALUE CODES: D = DON	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	3 = SAPLINGS & SHRUBS 4 OCCASIONAL R = RARE	= GROUND LAYER	
SPECIES CODE	1 2 3 4 COLL.	SPECIES CODE	LAYER 1 2 3 4	COLT.
PEDARUN	R			- William Wealth
EUPPERF	P			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
TYPHA SP	70			mestern sides
DYOSCOR	C			्रिक्रक्रक्रक्रा
IMPCAPE	お			
PONCORD	P			
LACENE D	70			
SCIVALI	0			
EUPTIACH	ア			
JUNICUS SP.	0			
				L
				.1

POLYGON DESCRIPTION:

UTME:

DATE:

POLYGON:

	E	OF.	É							
SYSTEM	MWETLAND AQUATIC								SILE	D OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK
SUBSTRATE	D ORGANIC D'MINERAL SOIL D PARENT MATERIAL D ACIDIC REDROCK		בו כאני מבמאטכא		eani					
TOPO, FEATURE	D LACUSTRINE D RIVERINE D BOTTOMLAND	D VALLEY SLOPE	I ROLLING UPLAND	TALLE	CREVICE/CAVE	II ALVAX	SAND DUNE	E BLOTT		
HISTORY	E CULTURAL								COVER	OPEN SHRUB
PLANT FORM	D PLANKTON C'SUBMERGED THE PLANKTON	C GRAMINOID	D LICHEN D BRYOPHYTE	D DECEDUOUS	☐ MIXED				COMM. TYPE	☐ COMPLEX
COMMUNITY	D POND D RIVER	I STREAM	D SWAMP	□ B0G	II MEADOW	☐ PRAIRIE	SAVANNAH	☐ FOREST ☐ PLANTATION	OTHER	□ HEDGEROW

5 GROUND LAYER 5-7 SCIVALISPONCOCOM
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:

2 CANOPY 3 SUB-CANOPY

UNDERSTORY

1 EMERGENT

LAYER

끜

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

STAND DESCRIPTION:

1 00011			ADI MITTALE CO.		201111111111111111111111111111111111111
> 5000	25-50cm	10-24cm	< 10cm	DECAYED	
> 50m	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm	< 10cm	STANDING SNAGS	MANUE
> 50cm	25-50cm	10-24cm	< 10cm	TREES	

☐ PIONEER	
SNNOA,03.	
□ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



SPECIES SPEC													
POLYGON: FOR 5 - 1/8 ST ST BATE: JUN 2 0 0 SURVEYOR(5): NM E ECIES CODE LAYER COLL 1 2 3 4 COSASA A A A O SUSTRC SECIES CODE LAYER COLL SUSTRC R ADEL S R R R R R R R R R R R R R R R R R R R		SITE: 4		4	H	Ď,	YH IS	, o				- 1	7
STT	isi .	POLYGO		I	3	5	- 1	/	1				1
SURVEYOR(S): N/M S		DATE:	5	10	N		11.0	1				- 1	
FERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER		SURVEY	X	:(S	Z	3	17					- 1	
ECIES CODE 1 2 3 4 1 2 3 4 COLL SPECIES CODE 1 2 4 4 COLL SPECIES CODE 1 2 4 4 COLL SPECIES CODE 1 2 4 4 COLL SPECIES C	VALUE CODES: D =	PY TREES	1 10	m 2	BUN = SI	DAN O	ANOPY	3 = SAPLINGS & SHRUBS 4 CCASIONAL R = RARE	= GROUN	Ā	Ř	- 1	
1 2 3 4 1 2 3 4 1 2 3 4 1 3 1	SPECIES CODE	.]	7 0	1	7~	Ť	COLF.	SPECIES CODE		 ≩	男		6 E
NSTRG R NSTRG R NSTRG R NSTRIPA R NO R R NO R R R R R R R R R R R R R R R R R R R	ACESASA	D	> 1	_	-	9			-	1	U	4	
NSTRG R ISPARE R CHINK R R R R R R R R R R R R R R R R R R R	10	\supset			-	-							
MANER R RAPEUS ROO ERUSP ROO NITHAI R	1-1	70			-	-							
ROPENS R R RIPA R OO WITH R ALLOSA R R	TUSFORF				B								
RAPENS RR MITHAL ALLIEN RR RR RR RR RR RR RR RR RR RR RR RR R	ULMAMER		70	-	-	_							
TRIPA ROO	DRCHING				70	1							
ALLOWA R				70	P	<u> </u>							
ALCORA P	VITRIOD	-	R	h	6	F							
	M	-	7	-	1	-							
	XEW TIT		Г	7	\vdash	-							
	GEHLORA				7								
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POLYGON SURVEYOR(S): UTMZ: SITE: UTME: UTMN: DATE: POLYGON:

gana discouptor moto defined

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Sometimes of matters worderscowne

- Homo

should lake a ground

D B G POLYGON DESCRIPTION: SYSTEM LAKE
PONID
RIVER
STREAM
MARSH
SWAMP
EN
BOG
SARREN
MEADOW
RAIRIE
HILOGET
AVANNAH
VOODLAND
OREST
LANTATION
OTHER ALTNOWIN

SYSIEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D WETLAND AQUATIC	D ORGANIC PARENT MATERIAL ACDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	D LACUSTRINE D ROTTOMIAND TERRACE D HELFAND TABLELAND TABLELAND TALLE TABLE TABLE TABLE TALLS CREVICE/CAVE D LAVAR D ROCKLAND D BEACH/BAR SAND DUNE BEACH/BAR SAND DUNE	ELMATURAL G CULTURAL	☐ PLANKTON ☐ SUBMERCED ☐ HOATING LVD ☐ GRAMINOID ☐ FORB ☐ LOTEN ☐ BRYOPHYTE FA DECIDUOUS ☐ CONIFEROUS ☐ MIXED	D LAKE D POND D RIVER D STREAM D STREAM D STREAM D SWAMP D FEN D BOG D BARREN D MEADOW D MEADOW D PRAIRIE D THOREST D WOODLAND SK FOREST D PLANTATION
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER ID SHALLOW WAT. ID SURFICIAL DEP. ID BEDROCK			II OPEN II SHRUB X TREED	II INCLUSION	☐ HEDGEROW
STAND DESCRIPTION:	PTION:				

И	5 GROUND LAYER	
23	HT CODES: $1 = 25m$ $2 = 210.25m$ $3 = 2.10m$ $4 = 1.2m$ $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = 0.07$ CVR CODES: $0 = NONE$ $1 = 1.10\%$ $2 = 210.25\%$ $3 = 2.5-35\%$ $4 = 2.5-36\%$ $5 = 200\%$	1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%
IS	SIZE CLASS ANALYSIS:	

LAYER

=

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT

UNDERSTORY SUB-CANOPY CANOPY

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r

ACE SASA >> QUE RUBR ASP > SULM FREP

1	25-50cm	1	10-24cm	1	< 10cm	/	DECAYED	DECAYED < 10cm 10-24cm 2
7	25-50cm	1	10-24cm	1	< 10cm	С	FIRM	DEADFALL/LOGS
70	25-50cm	7	10-24cm	c	< 100m	0	STANDING SINAUS	TOWNS
6		1)	-	TANK!
0	25-50gm	>	10-24cm	P	< 10cm	C	TREES	

COMMUNITY MATURITY:

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

Spire?

TRAPERS SPECIES CODE PARIZ SO VALUE CODES: D = DOM LST. SPECIES ERUBE PATTR ND SURV POLY

PLANT

POLYGON DE SYSTEM A TERRESTRUL A WELLAND A QUATIC	POLYGON SURVEYOR(S): UTMZ: UTMZ: POLYGON DESCRIPTION: SYSTEM SUBSTRATE GHERASTRUAL GHERAST
1 988	SURVE SURVE

	1		
UNDERSTORY	SUB-CANOPY	CANOPY	EMERGENT
S	2	2	
	UNDERSTORY 3	SUB-CANOPY 2 UNDERSTORY 3	CANOPY 2 SUB-CANOPY 2 UNDERSTORY 3

T

DCESASOUCOROV

SASD C TROPECTO

STAND DESCRIPTION:

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

□ OPEN
□ SHRUB
□ TREED

COMPLEX COMPLEX

☐ HEDGEROW

OTHER

COVER

COMM. TYPE

労のころが

7

てかて所か

FAGGGAN

DE DI 2

TRADE UNIRG

	LI PIONEER	COMMUNITY	ABUNDANCE COD	DEADFALL/LOGS	SIANDI	
	□ YOUNG	MATURITY:	DECAYED DECAYED	TAKE	STANDING SNAGS	IRCES
	☐ MID-AGE		ᆡᄼ	< TOCIL	< 10cm	< 10cm
	☐ MATURE	O - OCCUSIONAL K = RAKE N = NONE	10-24cm	10-24cm	10-24cm	10-24cm
	□ OLD-GROWTH	NONE	25-50cm	25-50am	25-50an	25-50cm
1	보		> 50cm	> 50cm	> 50cm	> 50cm



UTME:

DATE: STMN:

POLYGON:

TOPO, FEATURE

PLANT FORM

COMMUNITY

COLTURAL COLTURAL HISTORY FOD from southern solds

C LACUSTRINE
C RYPERINE
D RYPERINE
C BOTTOMILAND
C TERRACE
C TABLELAND
C ROLLING UPLAND
C CLIFF
C TALUS
C CREVICE/CAVE
C ALVAR
C RACCHAND
C BEACH/BAR
C SAND DUNE
C BLUFF

AL O PLANKTON O LAKE

AL O PLANKTON O LAKE

AL O SUBMERCED O POND

O FLOATING LVD O RIVER

O FORB

O FORB

O BEYOPHYTE

O DECIDUOUS O BOG

CONITEROUS O BARREN

O MACED

O MEADOW

O MEADOW

O MEADOW

O PRAIRIE

O HIOGET

O SAVANNAH

O WOODLAND

O PRAIRIE

O POREST

O PLANTATION

COMM. TYDE

PLANT LSI SURVEYOR(S): NAF DATE: JULY 10/19 POLYGON: CUM 1-19 SITE: UOT Trainsituary JULY 12 4 8 Shy

POLYGON SURVEYOR(S):

UTMZ:

UTME:

UTMN: DATE: POLYGON:

SITE

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		LAYER	
	1 2 3 4	מורטונים כיסטר	1 2 3 4	Ę
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20074	<u>ラ</u>	TUPLATE	7	
PHADRUN	0	からととされ	0 (
RUMCRIS	7	DE MICH	ଅ (
BROILER	Þ	ELUTY DE	0	
PORPRIST	D	CONDRVE	Ŕ	
PALPRAT	0	SOLDWCC.	P	
FESDRUN		CORUBRI	A,	
SON DRUE	72	LACSERR	0	
CHRIENC	0	THINKYE) i	
OTCORN	0	DUPET!	V.	
TRIPROT	0	RUBIDAE	0	
TRIREPE	0	CIRVULG	0	
DXSVR	0	JEL DEBO	D (
PHROUST	p +	TAPPER	0	
RUSIDAE	2	TRAVIRG	70/	
TMPPERE	5	ICLURE PE	0	
PROMINU	700	DAUCARC	5/2	
25754R1	R	TEDSOT) (
ILCCUPC	D	RHACATH	2	
PARVE	2	FRU VIEG	P	
SEPTI	D	SALLEND	P	
V514745	70		1	
VITE PA	0			
OLCANA	0			
SALCONC.	0			
CRACE	2			

POLYGON DESCRIPTION:

/TS	8000 000	Γ		Γ
STAND DESCRIPTION:	D OPEN WATER D SHALLOW WAT. SURFICIAL DEP. D BEDROCK	SITE	R TERRESTRIAL O WETLAND AQUATIC	SYSTEM
PTION:			O ORGANIC / EMMINERAL SOIL PARENT MATERIAL CACIDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	SUBSTRATE
			CI LACUSTRINE CI ROYFRINE CI BOTTOMLAND CI TERRACE CI VALLEY SLOPE ATABLELAND CI ROLLING UPLAND CI CLIFF CI TALUS CI CALVAR CI ROCKLAND CI BALVAR CI SAND DUNE CI BALVEF	TOPO, FEATURE
	D OPEN D SHRUB D TREED	COVER	II NATURAL	HISTORY
	D INCLUSION	COMM. TYPE	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOID D FORB D LICHEN D BEYOPHYTE D DECIDUOUS X MIXED	PLANT FORM
	□ HEDGEROW	OTHER	U LAKE U POND U RIVER U STREAM MARSH U SWAMP HEN U BARREN PRAIDOW PRAIDOW PRAIRE U THICKET U SAVANNAH U SAVANNAH U SAVANNAH U SAVANNAH U SAVANNAH U SAVANNAH U SAVANNAH U PRAITON	COMMUNITY

| S | GROUND LAYER | $5-\lambda$ | S | GRO IN ER = POAPROT > CIRDRY 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% 4 UNDERSTORY SUB-CANOPY

POAPROT > CIRDRUE

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

1 EMERGENT

2 CANOPY

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	× 100m	10.70		
The state of the s	~ TOC!!!	10-24QT	25-50am	> 50cm
DEADFALL/LOGS FIRM	< 10cm	10-24cm	25-50am	> 50cm
DECAYED	< 10cm	10-24m	26.500	7

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



PLANT
SPECIES
LIST

SURVEYOR(S): N M F

| STIE: NWM 407 Transituary | (5) | (5) | (5) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7) | (7

SDECTES CODE	LAYER		
SE CETES CODE	1 2 3 4	COLL. SPECIES CODE	1 2 3 4 COLL
PHOARUN	D	-GUARUE	
ACENEGU	0 R		
SOL CANA	P		
RUTYPE	0		
PURAUST	0		
VITRIPA	0 >>		
RUDHIRT	70		
ASCSYRI	I IR		
RUBIDAE	R		
EUPPERT	70		
日からして	カ		
TYPUD SP	70		
APOCANN	0		
MPCAPE	70		
MSSATI	0		
LYTSPL)	70		
TUSFORF	R		
PRITABSI	<i>₽Q</i>		
ARCLOPP	0		
SULDUIC	7		
PARTINSE	0		
EUPMACH	7		
CAPTAC	一 ス		
POPPALL	0		
ALALRO	P		
多年(イト)	0		
Pron n	2		

LAYER

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

1 EMERGENT

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

POLYGON DESCRIPTION:

TOTOL TENIORE MISIONY PLANT FORM COMMINITY
D LACUSTRUNE D NATURAL D PLANKTON DE REVERNNE D CULTURAL D SUBMERGED AL D BOTTOMLAND K D TERRACE D VALLEY SLOPE T FORB
CANS. SELECTORY CANS. SELE
COVER COMM. TYPE

5 GROUND LAYER |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7| |5-7|

4 UNDERSTORY

CHUTYPU > ACENEGY

ACENEGUN> SOLALBA

CANOPY SUB-CANOPY

			NO AND CODES	100	ARING AND AND AND AND AND AND AND AND AND AND
> 50cm	25-50cm	10-24cm	< 10am	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
-				1	
> S00cm	25-50cm	10-24cm	< 10cm	GSNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	~10cm	TREES	

	D PIC
	NEER
	SUNOY D
	□ MID-AGE
	□ MATI IRF
C CC GOOW I	I OI D.CBOWTH



FRAPELON SPECIES CODE LEVING-LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE ED DRUN CRA PED DUCARC 古てのか 次のいっちゃ DR RATE TOYOL OPTREM SUBBUS PAPUN((SUPPR) SUFFER IS PURSO TOOR LPRAT てはる世界 マナ PPA CAUP DATE: Aus \$ 19 SURVEYOR(S): NOGE 1 2 3 4 LAYER 8 F ACESASA SPECIES CODE SCIPVACI SALERIC 255 DS MOOM 2 3 LAYER 4 COLF.

LAYER

3

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY SUB-CANOPY EMERGENT

QUERSO >>TIL AME

UNDERSTORY

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

PLANT

POLYGON: CUT C

east of 57

SITE: 407 Transitual

LSI

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMINA
S TERRESTRIAL	TI ORGANIC	חו ייטוכנוסואוב			1 Principalion
WEILAND	MINERAL SOIL	D RIVERINE	D CULTURAL	☐ PLANKTON ☐ SUBMERGED	POND
LI AQUALIC	PARENT MATERIAL	D BOTTOMLAND	2	II PLOATING LYD	D RIVER
	LI ACIDIC BEDROCK	I TERRACE		☐ GRAMINOID	STREAM
	LI BASIC BEURUCK	LI VALLEY SLOPE		II FORB	O MARSH
	L CAKE, BEDROCK	TABLELAND		D LICHEN	□ SWAMP
		LI ROLLING UPLAND		□ BRYOPHYTE	7
		E		25 DECEDUOUS	1 BOG
		LI TALUS		CONJEROUS	□ BARREN
		ALYAR		□ MIXED	D MEADOW
		ROCKLAND			D THICKET
		☐ SAND DUNE			CI SAVANNAH
		1 p.007			☐ FOREST ☐ PLANTATION
SITE			COVER	COMM. TYPE	OTHER
SHALLOW WAT.			D OPEN	COMPLEX	☐ HEDGEROW
SURFICIAL DEP.			TREED	£	
7					
	TICK.				

SIZE CLASS ANALYSIS:

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%

COMMUNITY MATURITY: ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

☐ PIONEER ☐ YOUNG

MATURE

□ OLD-GROWTH

COMMUNITY MATURITY:

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

DECAYED

< 10cm

FIRM

< 10cm < 10cm < 10cm

10-24cm 10-24cm

> 50cm

> 50cm

10-24cm

25-50am 25-50cm 25-50cm 25-50cm

> 50cm > 50cm

DEADFALL/LOGS

STANDING SNAGS

TREES

10-24cm

5 GROUND LAYER 5.7 5 820 10.62 > 501 5 HT CODES: 1 = 250 2 = 20.25m 3 = 2.10m 4 = 1.2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CVR CODES: 0 = 1.10 1 = 1.10% 2 = >10.25% 3 = >25.35% 4 = >35.60% 5 = >60%

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SIL

SIZE CLASS ANALYSIS:

PIANT	SITE: 407 Trains	Transmusy		7
S	ON:		(west of Bronte	0
LST	SURVEYOR(S): NM			
VALUE CODES: D =	PY TREES > 10m 2 = SUB-C = DOMINANT A = ABUNDAN	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RAFE	4 = GROUND LAYER	
במברובה רייטב	LAYER		LAYER	
arteates CODE	4	SPECIES CODE	4	COLF
ACESASA	0 ^			
RITUPA	a 70			
NNJADEL	r 0			
BROINTR	D			
PARTINSER	0			
VITRIPA	C			
SOLCANA	0			
CRAPEDY ((gg)			
DCGZEGA	70 70			
SAUSP	2			
The state of the s	70			
	-			
4				
			-	

D OPEN WATER
D SHALLOW WAT.
SURFICIAL DEP.
D BEDROCK

II OPEN II SHRUB

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

COVER

SITE

LAYER

푹

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT CANOPY SUB-CANOPY UNDERSTORY

WN

STAND DESCRIPTION:

☐ WETLAND
☐ AQUATIC

ORGANIC
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D LACUSTRUNE
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D TERRACE
U VALLEY SLOPE
O TABLELAND
D ROLLING UPLAND
CLIFF
D TALLES
D CREVICE/CAVE
D ALVAR
D ROCKLAND
D BEACH/BAR
D SAND DUNE
D BLUFF

COMM. TYOSE

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

HISTORY

PLANT FORM

COMMUNITY

XX NATURAL XX CULTURAL

PLANT LSI SPECIES DATE: JULY SURVEYOR(S): NM POLYGON: CUT ton aus Transitway Q 0

LAYERS: 1 = CANOPY TREES > 10m 2 = \$1.95-CANOPY 3 = \$APLINGS & \$HRURS 4 = \$0.00HD LAYER BRAUN BLANQUET: + PRESENT 1 = < 1.5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-10

양

RAUN BLANQUET: + PRESENT	اا	1=<1-5% 2=5-2% 3=25-50% 4=50-75% 5=75-100% ER	175% S.	S = 75-100	. 34		٤]،	DORGA.
PECIES CODE	1 2 3 4 001	SPECIES CODE	1 2		♣ 8 F	F	- AQUATIC	D PAREN
EST P	0				-			O BASIC
HACATH	00						SITE	Ş
OPPRAT	Þ						O OPEN WATER	
SOINER	0						BEDROCK	
DOPTREM	アデス							
OD MCDOO	0				0.	4		
ED DITER	R			7	_			
CESOSO	5 70						STAND DESCRIPTION	NOLLA
i i							LAYER	3
							1 EMERGENT	H
				T	t		3 SUB-CANOPY	+
			+	1			4 UNDERSTORY	T
				H			> ~!L	25m 2 = 3
			F	-	ŀ		SIZE CLASS ANALYSIS	SISAT
			F	F	+		# T	TREES
			F		l		STANDING SHAGS	Sames
			-	F	1		DEADFALL/LOGS	PIRM
							COMMUNITY MATURIT	NTURIT
							O PIONEER C	NOOA D
				-		<u></u>	SOIL ASSESSMENT	THE STATE OF
				-			TEXTURE	R
					+		סבייו זס אסודעב בעודוסא סו אסדעב	6 P
							DEPTH OF ORGANICS	R
				-			DEPTH TO BEDROCK	R Q
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STAND POLYGON DESCRIPTION CHARACTERISTICS SURVEYOR(S): (1) EN WATER
ALLOW WAT.
REFICIAL DEP.
DROCK RRESTRUAL FILAND UATIC MALEAS D ORGANIC
D MINERAL SOIL
D MINERAL SOIL
O PARENT MATERIAL
O ACIDIC BEDROCK
D BASIC BEDROCK
C CARB. BEDROCK SUBSTRATE SMLS: SITE DIACUSTRINE
DITYPERINE
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D TOPO. FEATURE UTME: SI SHRUB D NATURAL SI CULTURAL HISTORY COVER D PLANKTON
D SUBMERGED
D FLOATING LVD.
D GRAMINOID
D FORB
D LUCHEN
D BRYOPHYTE
AD RECEDUOUS
D CONIFEROUS
D MOXED PLANT FORM UMMI. DATE: POLYGON: D LAKE
D ROND
D. D RIVER
D STREAM
D SWAMP
D HARSH
D SWAMP
D BOG
D BARREN
D MEADOW
D PAAIRUE
E CHICKET
D SAVAMMAN
D PAAIRTION
D PLANTATION COMMUNITY

B-CAMOPY ERGENT ₹ Q **ERSTORY**

3

SPECIES IN ORDER OF DECREASING DOMINANCE

(>> MUCH CREATER THAN, > CREATER THAN, = ARYTHEQUAL TO)

DUND LAYER $|S-T| \le |POAPRAT| > DAUCARO$ DES: 1 = > 25m 2 = > 10.25m 3 = 2.10m 4 = 1.2m 5 = 0.5.1m 6 = 0.20.5m 7 = 2.005 0 = NONE 1 = 1.10% 2 = > 10.25% 3 = > 25-35% 4 = > 35-60% 5 = > 60% 10.000 0 = 0.0

REDGEN METTYPE

DECAYED	DEADFALL/LOGS	STANDING SNAGS	
1	FIRM	SOV	TRUESS
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm	> 50cm

DYOUNG

□ MID-AGE

☐ MATURE

DOLD-GROWTH

MOISTURE REGIME	DEPTH TO BEDROCK	DEPTH OF ORGANICS	DEPTH TO GLEY 6 =	TEXTURE		Contract the second
			6 9		_	
			6		2	
			6 E			
			0 0			

SOIL PROFILE

SURVEYOR(S):	DATE: July 12/9	POLYGON: CUTI-	SITE: 407 Transpound
			V

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	12112		Spacific Coops		5175	7	<u>-</u>
	1 2 3	4-	2000	1	2 3	4	- CO
MARTINAS	U	G)		-	-		1
TRAPENN	70	70			+	\forall	
BROINER		D			+	+	
PUAPPET					-		
ERI FHIL		25			+	1	
DAHCARO		70			+	7	
くていること	1				+	+	
ALLPETI	1				+		
ACE SASTO	8				+		
Trebondo	70			4	-		
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POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
STERRESTRIAL DI WETLAND D AQUATIC	I ORGANIC MINERAL SOIL PARENT MATERIAL	C) LACUSTRINE C) RIVERINE C) BOTTOMLAND	T-CULTURAL	D PLANKTON D SUBMERGED	I POND
20	ACIDIC BEDROCK	II TERRACE		☐ GRAMINOID	O STREAM
) C	EASIC BEDROCK	LI VALLEY SLOPE		II FORB	□ MARSH
	L CAKB, BEDROCK	ET TABLELAND		- LICHEN	□ SWAMP
		LI ROLLING UPLAND		□ BRYOPHYTE	EN C
		10.7		ST DECIDUOUS	□ B06
		I OBENICEICANE		CONTEROUS	☐ BARREN
		D ALVAR			
		D PLANT		LI MUXEU	☐ MEADOW
		□ BEACH/BAR		LI MIXEU	D PRAIRIE
				E E	D PRAIRIE THICKET SAVANNAH
				E 32	D MEADOW D PRAIRIE THICKET SAVANNAH WOODLANI
	11.	☐ SAND DUNE		L MXED	D MEADOW D PRAIRIE EL THICKET D SAVANNAH D WOODLAND D PCREST D PLANTATION
SITE	10		COVER	COMM'-LAbe	D MEADOW D PRAIRIE D THICKET D SAVANNAH D WOODLANI D FOREST D PLANTATIO

STAND DESCRIPTION:

LAYER	4	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
1 EMERGENT	W		RAPEUS
2 CANOPY	T	C.	PEG TYP
SUB-CANOPY			
+ UNDERSTORY			
5 GROUND LAYER	7	7	12010

SIZE CLASS ANALYSIS:

		DIND HOT CORES			A DI LUCION CONTRACTOR
> 50cm	25-50an	10-24cm	< 10cm	DECAYED	
, ,					A
\ S	25-50cm	10-24cm	< 10cm	FIRM	DEADEALL /LOGG
-					
> 50cm	25-50cm	10-24cm	< 10cm	STANDING SNAGS	STANDIN
> 50m	25-50cm	10-24cm	< 10cm	- KEES	

COMMUNITY MATURITY: ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH



SITE: WHY HOT Transitively (S)

SPECIES
LIST

DATE: JULY 2/19

SURVEYOR(S): WHE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS 8, SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

	SPECIES CODE LAYER COLL. SPECIES CODE 11 2 3 4 COLL. SPECIES CODE 12 3 4 COLL. SPECIES CODE 12 3 4 COLL. SPECIES CODE 13 2 3 4 COLL. SPECIES CODE 14 2 3 4 COLL. SPECIES CODE 15 2 3 4 COLL. SPECIES CODE 16 2 3 4 COLL. SPECIES CODE 17 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1 2 3 3 A O O	4 00
PENN PENN	DAR NOSE		<u> </u>
DELLAN OF SASA	MALSP		
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PETI PETI NSTRO CLEU O PONT O PRVE	COLATO		0
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ARVE O	1	R	
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0700	PICASIE	0	
	MOGNEGU	0	
	DIERUBR '	OOK	
000	ACE SUSIA	70	
	STSSEV	70 0	
3/242/2	AROVAT	000	
	EARVE		0

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

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL WETLAND	CI ORGANIC	CI LACUSTRINE	☐ NATURAL	☐ PLANKTON ☐ SUBMERGED	POND
LI AQUATIC	PARENT MATERIAL ACIDIC BEDROCK	D TERRACE		I PLOATING LYD	D RIVER
	D BASIC BEDROCK	C VALLEY SLOPE		II GRAMINOID	STREAM
	☐ CARB. BEDROCK	C) TABLELAND		D LICHEN	D SWAMP
		LI ROLLING UPLAND		☐ BRYOPHYTE	NE CI
		100		D DECIDUOUS	D 80G
		LIALUS		☐ CONTEROUS	BARREN
		III CREVICE/CAVE		□ MIXED	MEADOW
		E ROCKLAND			D HIORE
		LI BEACH/BAR			☐ SAVANNAH
		II BLUFF			☐ WOODLAND ☐ FOREST
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER SHALLOW WAT. SURFICIAL DEP.			O SHRUB	C COMPLEX	□ HEDGEROW
BEDROCK			C A		

STAND DESCRIPTION:

1 EMERGENT 2 CANOPY 2 CANOPY 3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER 5 GROUND LAYER 6 GROUND LAYER 6 GROUND LAYER 7 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:	LAYER	/ER	=	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
CANOPY SUB-CANOPY SUB-CANOPY UNDERSTORY UNDERSTORY UNDERSTORY TOODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m VR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60% SUB-CANOPY -	EMERGENT				
SUB-CANOPY UNDERSTORY GROUND LAYER GROUND LAYER T CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m VR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60% SIZE CLASS ANALYSIS:	2	CANOPY			
UNDERSTORY GROUND LAYER	ω	SUB-CANOPY			
GROUND LAYER	*				
IT CODES: $1 = 2.5 \text{m}$ $2 = 2.0.25 \text{m}$ $3 = 2.10 \text{m}$ $4 = 1.2 \text{m}$ $5 = 0.5 \text{-1m}$ $6 = 0.2 \cdot 0.5 \text{m}$ $7 = < 0.2 \text{m}$ VR CODES: $0 = \text{NONE}$ $1 = 1.10\%$ $2 = >10.25\%$ $3 = >25.35\%$ $4 = >35.60\%$ $5 = >60\%$ SIZE CLASS ANALYSIS:	51	UNDERSTORY			
SIZE CLASS ANALYSIS:	Ľ	UNDERSTORY GROUND LAYER			
	37	UNDERSTORY GROUND LAYER CODES: 1 = > 25n CODES: 0 = NONE	2=>1	.0-25m :) = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m > 10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

iaco	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10an	10-24cm	25-50cm	> Silon
				1 2001
DEADFALL/LOGS FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-74-		
	/	1745		

PIONEER
D YOUNG
□ MID-AGE
□ MATURE
□ OLD-GROWTH



TAG GRAN

POPGRAN

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ROVAT

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アンローフムロ

DAPOLU

RHURAD

0 V

SUARUM

PRUVIRG

KESASA

10 0

CARPENS

SYTHOANG

URMER

RCOSE

OSTVIRG

FRADHER

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SUE ALRA

ARSCOP

TARO TH

LLPETI

NECA CT

BLUTE

GEN ALLE

ROVIRY

DADRINE

DUMKO

OPCOMP

BROINER

ENCRAS

POPPRAI

いとくのからい

ESRUSA

VICCRAC SOLLANC

OLUDYA

SOLCANA

RATPEDI

DUE DURD

D

RUTCRIS

BRINSE TRAIL

08

Mug

NEER YOUNG MID-	AGE MATURE	□ OLD-GROWTH
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	i	THON THE	AND A I NOTE TO	ALL OCTOBER		
	100	1	WALL OF DADE 4	DI O - OCCASIO	= ABUND	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE
> 50cm	25-50cm	/	10-24cm	< 10cm	/	DECAYED
> 50cm	25-50cm	70	10-24cm	< 10cm		DEADFALL/LOGS FIRM
> 50cm	25-50cm	70	10-24cm	< 10cm	7	STANDING SNAGS
) > 50cm	25-50cm	C	10-24cm	< 10cm		TREES

SIZE CLASS ANALYSIS:

5 GROUND LAYER 5-7 | 4 | CDDES: 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% LAYER CANOPY SUB-CANOPY EMERGENT UNDERSTORY V CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; >> GREATER THAN; = ABOUT EQUAL TO). QUERUBR > ACES ASA> CAROVAT DESDSS >>>ERRONAT > OSTURO RESP

STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D WETLAND D AQUATIC	D ORGANIC D MINERAL SOIL D PARENT MATERIAL	CI LACUSTRINE CI RIVERINE CI BOTTOMIAND	Z-NATURAL CI CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD	POND
,	D ACIDIC BEDROCK	D TERRACE		CI GRAMINOID	STREAM
	CARB. BEDROCK	TABLELAND		C COHEN	SWAMP
		I ROLLING UPLAND	,	□ BRYOPHYTE	2
		D TALUS		CONTREROUS	□ BOG
		CREVICE/CAVE		□ MD(ED	MEADOW
		- ROCKLAND			I HICKE
	- *	SAND DUNE		/	☐ SAVANNAH
		E SEC			ZI FOREST PLANTATION
SITE			COVER	COMM. TYPE	OTHER
I OPEN WATER I SHALLOW WAT. SURFICIAL DEP.			□ OPEN □ SHRUB ¾ TREED	COMPLEX COMPLEX	□ H€DGEROW

POLYGON DESCRIPTION:

SPECIES CODE

COF

SPECIES CODE

2 3 LAYER

4

8 F

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE

PLANT

SPECIES

POLYGON: FOD5-3C

0/0

CON MAN HIS

ISI

SURVEYOR(S): NIME DATE: July



□ OLD-GROWTH

25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm > 50cm

25-50cm

OPEN WATER
SHALLOW WAT.
SURFICIAL DEP.
BEDROCK ☐ PIONEER ☐ YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONEDEADFALL/LOGS SIZE CLASS ANALYSIS: LAYER STAND DESCRIPTION: COMMUNITY MATURITY: CANOPY SUB-CANOPY UNDERSTORY EMERGENT STITE STANDING SNAGS DECAYED TREES FIRM 폭 CVR < 10cm < 10cm < 10cm < 10cm ☐ MID-AGE ☐ MATURE SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) C LACUSTRINE
C RYPERINE
C RYPERINE
C PALLEY SLOPE
STABLE AND
C ROLLING UPLAND
C ROLLING UPLAND
C ROLLING
C CLIFF
C TALUS
C CREVICE/CAVE
C ALYAR
C ROCKLAND
C BEACH/BAR
C SAND DUNE
C BLUFF 10-24cm 10-24cm 10-24cm 10-24cm O SHRUB COVER

	POLYGON		
UTMZ:	SURVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	1
			CONT. 218-0: 21-4:45

PLANT

LST SPECIES

DATE:

July

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POLYGON: MDH2-2d SITE: 407 Transitua

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SURVEYOR(S):

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

SPECIES CODE

2 3 LAYER

4

8

SPECIES CODE

2 LAYER w 4

<u>8</u>

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

CULTURAL HISTORY

D PLANKTON
D SUBMERGED
HOATING IVD
AG GRAMINOD
PORB
LICHEN
D HORD
D HORD
D HORD
CONIFEROUS
CONIFEROUS
D MIXED

D LAKE
D RIVER
D STREAM
ST MARSH
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STREAM
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D FOR
D FOR
D PLANTATION

☐ INCLUSION

☐ HEDGEROW

OTHER

COMM. TYPE

☐ TERRESTRIAL

 WETLAND
 AQUATIC

D ORGANIC

D MINERAL SOIL

PARENT MATERIAL

ACIDIC BEDROCK

BASIC BEDROCK

CARB. BEDROCK

DANI

RHAST TRIPA 8



POPTREM SUGNIGE RAPCION RESUSA RAHLTYPH RUDGOTE VITRIPA SPECIES CODE LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE SULT TOOK SPECIES PLANT DETATA RATPUN KOT PKI DATE: SURVEYOR(S): NHI POLYGON: Hedgerows FOH :BUS LIVE DUNG LAYER 2 ω Transitway 4 8 F 2 PUG SPECIES CODE 2010 2 LAYER ω 4 6 8 ☐ OPEN WATER
☐ SHALLOW WAT.
☐ SURFICIAL DEP.
☐ BEDROCK ☐ TERRESTRIAL
☐ WETLAND
☐ AQUATIC ☐ PIONEER ☐ YOUNG 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%ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONEDEADFALL/LOGS SIZE CLASS ANALYSIS: COMMUNITY MATURITY: STAND DESCRIPTION: LAYER POLYGON DESCRIPTION: EMERGENT GROUND LAYER CANOPY UNDERSTORY SUB-CANOPY

SITE

폭

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT:EQUAL TO)

O SHRUB

COMPLEX COMPLEX COMM. TYPE

LI HEDGEROW

OTHER

COVER

STANDING SNAGS

10-24cm 10-24cm

25-50an 25-50cm 25-50cm

10-24cm

25-50cm

TREES

DECAYED

< 10cm < 10cm < 10cm < 10cm

10-24cm

> 50cm > 50cm > 50cm > 50cm

☐ MID-AGE

☐ MATURE

□ OLD-GROWTH

FIRM

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

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

CULTURAL HISTORY

ORGANIC
OMINERAL SOIL
PARENT MATERIAL
ACIDIC BEDROCK
BASIC BEDROCK
CARB. BEDROCK

C LACUSTRINE
C RYPERINE
C BOTTOMIAND
C TERRACE
C TABLE AND
C ROLLING UPLAND
C CLIFF
C TALUS
C CREVICE/CAVE
C ALVAR
C ROCKLAND
C BEACH/BAR
C SAND DUNE
C BLUFF

D PLANKTON
D SUBMERGED
D FLOATING LVD
GRAMINOID

C LAKE
C POND
C RIVER
C STREAM
C STREAM
C SWAMP
C ENAMP
C ENAMP
C BOG
C BARREN
C MEADOW
C PRAIRUE
C THICKET
C SAVANINAH
C WOODLAND
C PLANTATION

ONE BURGO

GSANG

からえて BYDRIE

HL DEVE かくかつ

RUBOCC

PESTRURR ONCAND

D

RAPEDI DORTH FRANCER MOLPUM SILVULO

P

CARBESE

5

☐ MATURE

10-24cm 10-24cm 10-24cm 10-24cm AL R = RARE N = NOI	□ PIONEER □ YOUNG □ MID-AGE	COMMUNITY MATURITY:	ABUNDANCE CODES: A = ABUNDANT O = OCC	DECAYED < 10cm		FIRM < 10cm	STANDING SNAGS < 10cm	
25-50cm 25-50cm 25-50cm 25-50cm NONE	GE MATURE		ASIONAL R = RARE N =	10-24cm		10-24cm	10-24cm	T0-7-401
-	□ OLD-GROWTH		NONE	25-50cm	1000000	7F En	25-50am	25-500m

CVR CODES; 0 = NO	ONE 1 = 1-10	0% 2 = >10-25%	CVR CODES: $0 = \text{NONE } 1 = 1-10\%$ $2 = >10-25\%$ $3 = >25-35\%$ $4 = >35-60\%$ $5 = >60\%$	= NONE $1 = 1 - 10\%$ $2 = > 10 - 25\%$ $3 = > 25 - 35\%$ $4 = > 35 - 60\%$ $5 = > 60\%$	ä
SIZE CLASS ANALYSIS:	IALYSIS:				
	TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDIN	STANDING SNAGS	< 10cm	10-24cm	25-50cm	
1					
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50am	> 50cm
	DECAYED	< 10mm	10.76	21 70	

Sygnator

TYPED TO

PRINOPUL ESKUBR

TRIPAR

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THE COM

BUMBE

0

SOLRUGO

PUPTREM JUNUIRG

10

10

SUCENTA

VICCRAC

大かいしてのす

PROFT!

RIDCATE

LADVOK

SCSARI RARVE

> SALALAR PICPUNG

> > 70

SHACALE

JT CORN

MAT PERF

MANJOAN DERA

DRIVION PULPRAT SONDRUE

100

7

DACGLOH

ORUDE

D

PLAMOSO MMCMAN

DENBIEN

Г	ไร	Ω ∓	и	4	ω	ì
1	ZE CLASS ANALY	CODES: 1 = > 25m R CODES: 0 = NONE	GROUND LAYER	UNDERSTORY	SUB-CANOPY	
REES	SIS:	2=>1 1=1-1				
Λ		0-25m 0% 2 =				
10cm		3 = 2-10m >10-25%	PODP			
		4 = 1-2n 3 = >25-	RATI		٧	
10-24cm		1 5 = 0.5-1m 35% 4 = >3!	1000 N			
2:		6 = 0.2-0 5-60% 5	かる			
-50cm		1.5m 7 = <0. = >60%	2001			
V		ä	2			
	TREES < 10am 10-24am 25-50am >	< 10am 10-24am	>10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0. -10% 2 = >10-25% 3 = >25-35% 4 = >35-60% < 10an 10-24an	5 GROUND LAYER PODPRAT CORVAR - 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: < 10cm 10-24cm 25-50cm >	4 UNDERSTORY 5 GROUND LAYER 6 GROUND LAYER 7 OO PRAT CORNAR - VICER HT CODES: 1 = 25m 2 = 210.25m 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	3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER 5 GROUND LAYER 6 GROUND LAYER 7 CORES: 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: 7 REES 7 COOM

5	LAYER	=	CVR
1	EMERGENT		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY		
5	GROUND LAYER		

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

SYSTEM SUBSTRATE TOPO, FEATURE HISTORY	
## TERRESTRIAL □ ORGANIC □ LACUSTRUNE □ NATURAL □ AQUATTC □ PARENT MATTERIAL □ ROTTONLAND □ ACIDIC BEDROCK □ TERRACE □ BASTC BEDROCK □ TOMBLELAND □ CARB. BEDROCK □ TALLY SLOPE □ CARB. BEDROCK □ TALLY SLOPE □ CARB. BEDROCK □ TALLY SLOPE □ T	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOD D FORB D LICHEN D ECCONIFEROIS
CREVICE/CAVE ALVAR CROCKLAND C	T/MIXED
SITE	дміжер

POLYGON DESCRIPTION.

dated

RHAFRAG

PLANC

MELALBA

RUMCRIS PARAUST

PSYFU

SPECIES CODE

COLF.

SPECIES CODE

2 3 LAYER

4

COLL

N

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

PHADRIN

PLANT

6

LST SPECIES

SURVEYOR(S): NMF DATE: June 1/19 POLYGON: (UM) - 10 SITE: 407 Transitway

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



11.

PLANT SPECIES LIST SURVEYOR(S): CUMI-16 DATE: June 11 17 POLYGON: CUMI-1C SITE: 407 Transitual

RUBERDA ARCMINU MDL PWN BROINER SPECIES COME

LAYER

LAYER

LAYER

LAYER

LAYER

LAYER

COLL | SPECIES COME | LAYER

LAYER RHACKE TARACETI MORGHARITO (daise STCORN) THLDRNE DIPSYFU ICC RPC med somelen 2 3 4 V 0 0 100 F SPECIES CODE 1 2 3 4 8 F

STAND	SITE:			POLYGON:	۲٠
CHARACTERISTICS	RISTICS SURVE	SURVEYOR(S):		DATE	
	UTMZ:	S.	NAWE	UTMN.	
NOLLALADA UN NOSA TOA	NOTIGIAN				
MALEAS	STATE STATE				
	Sec.	TOPO, PENTURE	ANOUSTH	PLANT FORM	ALTHUMMOO
D AQUATIC	D ORGANIC EXMINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK D CARB, BEDROCK	D LACUSTRUME D RIVERUME D BOTTOMLAND D TERRACE D VALLEY SLOPE G TABLELAND	D MATURAL X CULTURAL	D PLANKTON D SUBMERGED D FLOATING LYD. D GRAMINOID E FORB	D LAKE D POND D RIVER D STREAM D MARSH
STITE		D ROLLING UPLAND	COVER	DBRYOPHITE	OFEN
OPEN WATER		D TALLS	S OPEN	O CONTITUROUS	D BARREN
EXSURFICIAL DEP.		D ALVAR D ROCKLAND	□ TREED	CHANGE	D PRAIRIE
	240	CI SAND DUNE			DANAMINAH
		D BUNFF			TRANST
	2				

STAND DESCRIPTION

	LATER	3	3	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MICH GREATER THAN > CREATER THAN : - APAIN FOUNT TO
H	EMERGENT			
2	CANOPY			
3	SUB-CANOPY			2.7
4	UNDERSTORY			
S	GROWN ON THE	4	Γ	THI DRUF & LOTCORN

SIZE CLASS ANALYSIS

	DPADEALI /LOGS	SPYNS BAITONYLS		CHECK CONTRACTOR
DECAYED	FIRM	SBWNS B	· TRUESS	2000
< 10cm	< 10cm	< 10cm	< 10cm	
10-24cm	10-24cm	10-24cm	10-24cm	
25-50cm	25-50cm	25-50cm	25-50cm	
> 50cm	> 50cm	> 50cm	> 50cm	

COMMUNITY MATURITY

PIONEER DYOUNG

OUNG C	
D MID-AGE	
O MATURE	
D-OLD-GROWTH	

G Q

SOIL PROFILE

A TOTAL ST

PLANT ПSП SPECIES SURVEYOR(S): NME DATE: JUNE 11 119 POLYGON: CUMICID tot hmy salls Transit way

POLYGON SURVEYOR(S):

UTMN: DATE: POLYGON:

STIE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SPECIES CODE	LAYER	3	CBECTES CODE		LAYER	3
	1 2 3	4 F	arectes cope	н	2 3	4 [-
PUKSATO		اليا				-
SOLCANA	dea	200				
TO STATE OF THE ST	pare .					
CECONO		tu-				
MHLATE		0				
MANORIU		0				
IDCOFF!		O.				
FERNULG	70					
PORPERT						
RINCE! P		R				
BITE RON	400	70				
IERTHAP		70				
PHOPRINI		0				
HALUS SP	70					
ALTION I	70					
YSTRPERE	-	P				-
THEAR	元					
OTCOLN	灭)					
HELALRO	70					
FESTRUBIC	70					-
RHACOTE	Po					
ICC RAC	70	5 m				1

_	
SYSTEM	POLYGON DESCRIPTION:
SUBSTRATE	CRIPTION:
TOBO EE	
HOLLY	
TOPO FEATIBE HIGTORY	

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
METLAND WETLAND	D ORGANIC	☐ LACUSTRINE	NATURAL	D PLANKTON	O LAKE
AQUATIC	D PARENT MATERIAL	II BOTTOMLAND	COLIORAL	II PLOATING LVD	RIVER
	☐ ACIDIC BEDROCK	I TERRACE		D GRAMINOID	STREAM
	D BASIC BEDROCK	CI VALLEY SLOPE		□ FORB	□ MARSH
	CARB, BEDROCK	73 TABLELAND			O SWAMP
		C ROLLING UPLAND		☐ BRYOPHYTE	E E
		COFF		D DECIDUOUS	□ 80G
		LITALUS		CONJHEROUS	☐ BARREN
		I CREVICE/CAVE		MD(ED	MEADOW
		ALVAK			D PRAIRIE
		ROCKLAND			
		LI BEACH/BAR			II SAVANNAH
		I SANO CONE			II WOODLAND
		LI BLUFF			II FOREST
SITE			COVER	COMM, TYPE	OTHER
OPEN WATER			II OPEN	D INCLUSION	II HEDGEROW
SURFICIAL DEP.			O TREED	II COMPLEX	

5 GROUND LAYER 5-7 5 SQUCANA=POLOMP > PLAAR! 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%	4	UNDERSTORY			
HT CODES: $1 = > 25m$ $2 = > 10-25m$ $3 = 2-10m$ $4 = 1-2m$ $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = < 0.27$ CVR CODES: $0 = NONE$ $1 = 1-10\%$ $2 = > 10-25\%$ $3 = > 25-35\%$ $4 = > 35-60\%$ $5 = > 60\%$	υı	GROUND LAYER	71	U	SOCODO DIROCO ONO V TUO DO
	23	CODES: 1 = > 25	n 2=> : 1=1-1	10-25m 10% 2 =	= 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2n -10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

3 SUB-CANOPY

LAYER

푹

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

1 EMERGENT

CANOPY

STAND DESCRIPTION:

TREES	< 10cm	10-24cm	25-50am	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFAIL / LOGS FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50m	

COMMUNITY MATIRITY.

_	
D PIONEER	0011101111
☐ YOUNG	
☐ MID-AGE	
□ MATURE	
☐ OLD-GROWTH	



□ OLD-GROWTH	☐ MATURE	☐ MID-AGE	☐ PIONEER ☐ YOUNG	2.	

< 10am 10-24am 25-50am < 10am 10-24am 25-50am 10-24am 25-50am T 0 = 0COASIONAL R = RARE N = NONE MID-AGE MID-AGE MATTIRE T O TO	25-50cm 25-50cm 25-50cm 4E
--	-------------------------------------

STEE CLASS ANALYSIS	ALYSIS:				
	TREES	< 10cm	10-24cm	25-50cm	
-					
STANDING SNAGS	G SNAGS	< 10cm	10-24cm	25-50cm	
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	
	DECAYED	< 10cm	10-74cm	35-50-	

LAYER	3	CVR	(>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)	TER THAN; = ABOUT EQUAL
1 EMERGENT				
2 CANOPY				
3 SUB-CANOPY				
4 UNDERSTORY				
5 GROUND LAYER				
CVR CODES: 0 = NONE 1 = 1 SIZE CLASS ANALYSIS:	2= V		TROUST V TYPAN	KU.
	ALYSIS:	10-25m :	TYPANGLE TO STAND LAYER PLUS DUST > TYPANGLE TO CORES: 1 = > 15.5 m 2 = > 10.25 m 3 = 2.10 m 4 = 1.2 m 5 = 0.5 · 1 m 6 = 0.2 · 0.5 m 7 = < 0.2 m CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10.25% 3 = > 25.35% 4 = > 35.60% 5 = > 60% SIZE CLASS ANALYSIS:	6(1 : 0.2-0.5m 7 = <0.2m % 5 = >60%
STANDIN	NE 1 = 1-1 ALYSIS: TREES	10-25m : 10-25m : 10-25m : 2 =	PURDUST > TYPAN 13 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = = >10-25% 3 = >25-35% 4 = >35-60 < 10am 10-24am	= <0.2m
	ES: 0 = NONE 1 = 1-1 LASS ANALYSIS: TREES STANDING SNAGS	10-25m 3 = 2 10% 2 = >10 (0% 2 = >10 < 10cm	2-10m 4 = 1-2m 5 = 0,5-1m 6 = 10-25% 3 = >25-35% 4 = >35-60 am 10-24cm am 10-24cm	% 5 = >60% 25-50cm > 50cm

STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
I TERRESTRIAL	CI ORGANIC	☐ LACUSTRINE	O NATURAL	□ PLANKTON	LAKE
WETLAND	MINERAL SOIL	II RIVERINE	XI CULTURAL	□ SUBMERGED	POND
AQUATIC	D'PARENT MATERIAL	☐ BOTTOMLAND)	I PLOATING LVD	□ RIVER
	ACIDIC BEDROCK	I TERRACE		C GRAMINOID	II STREAM
	LI BASIC BEDROCK	ED VALLEY SLOPE		□ FORB	MARSH
	LI CARB, BEDROCK	TABLELAND		II LICHEN	O SWAMP
		D ROLLING UPLAND		☐ BRYOPHYTE	E R
				D DECIDUOUS	□ B0G
		LALUS		☐ CONIFEROUS	□ BARREN
		D ALVAR		II MIXED	- MEADOW
		LI ROCKLAND			
		□ BEACH/BAR			O SAVANNAH
		C BLUFF			U WOODLAND
					II PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER			D SHRUB	COMPLEX COMPLEX	☐ HEDGEROW
BEDROCK			- TREED		

	POLYGON		
UTMZ:	SURVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	- Section of the sect
			AMERICAN COMMAN

SPECIES CODE

SPECIES CODE

COL.

PHRAUST TYPONGU

VERMOST

PLANT SPECIES LIST

SITE: 407 Translitusay

0

SURVEYOR(S): NMF

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



PLANT LST SPECIES SURVEYOR(S): NIM DATE: JULY 10 179 POLYGON: MAS 25 SITE: YWY 407 Trans twee

	4	ω	2	ш.	4		2 3 4	1-1	
3		Æ	5		SPECIES CODE	6 F	AYER	Т	SPECIES CODE

PUADRUK

D OPEN WATER
SI SHALLOW WAT.
SI SURFICIAL DEP.
D BEDROCK TERRESTRIAL
WETLAND
AQUATIC POLYGON DESCRIPTION: SYSTEM SITE ORGANIC

MINERAL SOIL

PARENT MATERIAL

DATEMIAN

CACIDIC BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CALIF

CALIVAR

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UBSTRATE TOPO, FEATURE ∆ OPEN □ SHRU8 □ TREED D NATURAL HISTORY COVER O SLAMKTON
O SLAMKROED
O ROATING IVD
A GRAMINOID
O ROB
O LICHEN
O BRYOPHYTE
O DECIDUOUS
O CONITEROUS
O MIXED C COMPLEX COMM. TYPE PLANT FORM D LAKE
D POND
D STREAM
N MARSH
D SWAMP
D FEN
D BOG
G BARREN
D MEADOW
PRAIRLE
D THICKET
G SAVANNAH
D WOODLAND
D FOREST
PLANTATION ☐ HEDGEROW COMMUNITY OTHER

STAND DESCRIPTION:

LAYER	#	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE >> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL
1 EMERGENT			14 (1 m) 1 m
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			LRDLS VOLD DRUG

SIZE CLASS ANALYSIS:

< 10cm 10-24cm 4 10-24cm 10-24cm 10-24cm 10-24cm						
 10an 10-24an 25-50an 10-24an 25-50an 	> 5001	25-50cm	10-24cm	< 10cm	DECAYED	
 10an 10-24an 25-50an 10-24an 25-50an 	1 2000					- Very 1003
< 10cm 10-24cm 25-50cm	/ []	25-50cm	10-24cm	< 10cm	FIRM	FADEALI /I DEC
< 10an 10-24an 25-50an	, 200					The second secon
TO-2-011	> 500~	25-50cm	10-24cm	< 10cm	G SNAGS	SIANUIN
UD06-67						
< (i)	> 500	25-50cm	10-24cm	< 100m	Ē	

COMMUNITY MATURITY:

O PIONEER	
D YOUNG	
☐ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



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

12

PLANT
SPECIES
LIST

DATE: AUG 8/19
SURVEYOR(S): NMF

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE LAYER LAYER	INANT A	A = ABUNDA	NT 0 = 0	CCASIONAL R = RARE	GROU	I AVED	
SPECIES CODE	1 2	ω 4	CO F	SPECIES CODE	1 2	u j	4
PUDRUN					-	-	
H-SOCI		\approx				\top	
DITRIPA		7			-		
POPTREM	70						
(CASP143)		P					
		\perp					
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		1					-
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		1			L	L	L

POLYGON SITE: POLYGON: POLYGON: DATE: UTMZ: UTME: UTMN:

POLYGON DESCRIPTION:

0 0000000000000000000000000000000000000	Maiore	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
COVER COMM.TYPE ITER WAT. DEP. DEP. DEP. COMPLEX DIRECT D) TERRESTRIAL I WETLAND I AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MATERIAL ☐ ACIDIC BEDROCK ☐ BASIC BEDROCK ☐ CARB. BEDROCK	D LACUSTRINE D RIVERINE D RIVERINE D RIVERINE D RETRACE D VALLEY SLOPE D VALLEY SLOPE D TABLELAND D ROLLING UPLAND D CLIFF D ALVAR D ALVAR D ROCKLAND D REACH/BAR D SAND DUNE D RUIFF	D CULTURAL	D PLANKTON C SUBMERGED D FLOATING LVD FOR CAMINODD C FORB LICHEN D ECCDUGUS C CONFEROUS MIXED	LAKE DOND RIVER STREAM MARSH SWAMP DESWAMP BOG BARREN DEARREN
TER JE OPEN I DICLUSTON WAT. I SHRUB II COMPLEX DEP. II TREED	SITE			COVER	COMM TYPE	OTHER
	OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			E OPEN I SHRUB I TREED	COMPLEX	□ HEDGEROW

5 GROUND LAYER | S | PILD AR UN >>> LYTSAL |
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:

2 CANOPY

3 SUB-CANOPY

UNDERSTORY

1 EMERGENT

POP TERM

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

							HC. AL	ABUNDANCE CODES: A - ABUNDANT O COCCUSTO
7	25-50cm	7	10-24cm	1	< 10cm	7	DECAYED	
7	25-50cm	7	10-24cm	7	< tion	1	TIKM	DEADFALL/LOGS
UDOC /	100000		1	1				
/	25-50m	7	10-24cm	1	< 10cm	/	IG SNAGS	STANDING SNAGS
/	TDuc-c2			7		1		
-	75 50	7	10-24		^109	7	TREES	

NO. A SCHOOL NEW WENT WENCE WENCE

COMMUNITY MATURITY:

☐ PIONEER	
SNNOAB	
□ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



		_	
	□ PIONEER	COMMUNITY	
	DANOA M	MATURITY:	CONTRACTOR OF
	□ MID-AGE		
	MATURE		The state of the s
C CCC GNOW IT	□ Ol D-GBOWTH		CIT

☐ PIONEER	COMMUN	ABUNDANC		The second second	DEADFALL/LOGS	ST	
ER MYOUNG	ITY MATURITY:	E CODES: A = ABUI	DECAYED		FIRM	STANDING SNAGS	TREES
		BUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	< 10cm		< 10cm	< 10cm	< 10cm
□ MATI IDE		NAL R = RARE N =	10-24cm		10-24cm	10-24cm	10-24cm
MID-AGE MATHER OF COMME		NONE	25-50cm		25-50cm	25-50cm	25-50cm
			> 50cm		> 50000	 > 50000	 > 50cm

SIZE CLASS ANALYSIS: CVR CODES: $0 = \text{NONE } 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 \approx > 35 - 60\% \ 5 = > 60\%$

H	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
12		SALALRA
2	-	WHIGHER > SALSP
5-4	5	PURAUST > TYPILANGII = PLINARILL
	7 7 4	- CVR

PHLARUN

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SPECIES CODE

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SPECIES CODE

COF.

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE

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SOLFRD JO

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL WETLAND	D ORGANIC D MINERAL SOIL	☐ LACUSTRINE ☐ RIVERINE	I NATURAL	☐ PLANKTON ☐ SUBMERGED	D LAKE
LI AQUATIC	II PARENT MATERIAL	DE BOTTOMLAND		EI PLOATING LVD	RIVER
	C ACIDIC BEDROCK	I TERRACE		S GRAMINOID	STREAM
	II BASIC BEDROCK	O VALLEY SLOPE		□ FORB	MARSH
	CARB, BEDROCK	C TABLELAND			SWAMP
		II ROLLING UPLAND		☐ BRYOPHYTE	9
				II DECIDUOUS	□ B06
		DTALUS		☐ CONTREROUS	□ BARREN
		LI CREVICE/CAVE		II MIDOED	☐ MEADOW
		L ALVAN			☐ PRAIRIE
		D BEACH/BAR			O SAVANNAH
					☐ WOODLAND
		7			I FOREST
SITE			COVER	сомм. ТүрЕ	OTHER
D OPEN WATER SIDEFICIAL DEB			D SHRUB	III COMPLEX	☐ HEDGEROW
BEDROCK					

POLYGON DESCRIPTION:

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

PLANT

POLYGON: MAS 2-1C

LST

DATE:

JUNG 11/19

SURVEYOR(S): NMF

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

NEER YOUNG MID-AGE	NEER ☐ YOUNG ☐ MID-AGE ☐ MATURE
☐ YOUNG ☐ MID-AGE	☐ YOUNG ☐ MID-AGE ☐ MATURE
☐ MID-AGE	☐ MID-AGE ☐ MATURE
	□ MATURE

PIONEER DYOUNG DMID-AGE DMATURE DOINGEDOWNER	COMMUNITY MATURITY:	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	DECAYED < 10cm 10-24cm 25-50cm		ubno-cz
ATTL		, John	> 500	> 50cm	> 50cm

HT CODES: 1 = > CVR CODES: 0 = NO	25m 2 = >10 ONE 1 = 1-10	25m 3 = 2-10m % 2 = >10-25%	HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%	1 => 25m 2 => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m 0 = NONE 1 = 1-10% 2 => 10-25% 3 => 25-35% 4 => 35-60% 5 => 60%
SIZE CLASS ANALYSIS:	VALYSIS:			
	TREES	< 10cm	10-24cm	25-50cm
STANDI	TREES STANDING SNAGS	< 10cm	10-24cm	25-50an 25-50an
STANDI	TREES VG SNAGS FIRM	< 10cm	10-24cm 10-24cm	25-50cm 25-50cm
STANDIN DEADFALL/LOGS	TREES VG SNAGS FIRM	< 10cm < 10cm < 10cm	10-24cm 10-24cm 10-24cm	25-50an 25-50an 25-50an

	TREES	SIZE CLASS ANALYSIS:	HT CODES: 1 = > 25m 2 = CVR CODES: 0 = NONE 1 = 1	5 GROUND LAYER 45	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY	1 EMERGENT	LAYER HT
	٨		>10-25m -10% 2 =	7					CVR
	< 10an 10-24an		HT CODES: $1 = 25$ m $2 = 10-25$ m $3 = 2-10$ m $4 = 1-2$ m $5 = 0.5-1$ m $6 = 0.2-0.5$ m $7 = 20.2$ m CVR CODES: $0 = 10$ 0 NONE $1 = 1-10\%$ $2 = 20-25\%$ $3 = 25-35\%$ $4 = 23-60\%$ $5 = 260\%$	PHADRUN YO PHR					SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
25-50cm			= 0.2-0.5m 7 = <0.2m 30% 5 = >60%	PUST					SING DOMINANCE ATER THAN; = ABOUT E
	> 50gm								EQUAL TO)

PLANT FORM	COMMUNITY
☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD ☐ FLOATING LVD ☐ FORB ☐ HORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECEDUOUS	D LAKE D POND RIVER D STREAM D MARSH D SWAMP D FEN D FOR
□ MIXED	IZ MEADOW I PRAIRIE I THICKET I SAVANNAH I WOODLAND I FOREST I PLANTATION
COMM. TYPE	OTHER
COMPLEX	□ HEDGEROW
	D PLANKTON D SUBMERGED D FLOATING LVI SI GRAMINOD D FORB D FORB D KRYOPHYTE D BECIDUOUS C COMMTYPE D MIXED

RUTICRIS

P

Do

PHODEUN

SPECIES CODE

SPECIES CODE

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

POLYGON SURVEYOR(S): UTMZ: UTME:
итме:

PLANT SPECIES LIST

SITE: AWY 407 Translaved POLYGON: MAM 2-28

SURVEYOR(S): NIME



POLYGON DESCRIPTION:

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

	IST	SPECIES	PI ANT
SURVEYOR(S): UMF	DATE: July 10/19	POLYGON: MAMZ-25	SITE: HUN 407 Tragstway
			S

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

SPECIES CODE LAYER COLL SPECIES CODE	LAYER	6 F	SPECIES CODE		LAYER	~
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DRSYFU	<u>a</u>				\dashv	
CRAPEDI	<u> </u>			1	+	7
SOLCANA	7				-	7
LYTHSAL	0				+	\forall
VERUAST	0			7	+	\dagger
EUPPERI	70				+	7
CARSTIP		PIC			+	1
CIRDRUE	7					
QUE MACR	0					
PLACATA	- O#				=	
KENEGU						
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POLYGON SURVEYOR(S):

POLYGON: DATE:

SITE:

TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
O LACUSTRINE	D NATURAL	□ PLANKTON	LAKE
RIVERINE	COLTURAL	□ SUBMERGED	POND
BOTTOMLAND	/	II FLOATING LVD	O RIVER
TERRACE		A GRAMINOID	☐ STREAM
STEY SLOPE		II FORB	□ MARSH
SELECTION AND		CCHEN	I SWAMP
ליייים מייים		LI BRYOPHYTE	
		DECEDUOUS	10 BOG
CREVICE/CAVE		II MEXED	MEADOW
A A			D PRAIRIE
ACH/BAR			C INICKET
AD DUNE			
BLUFF			D POREST
			II PLANTATION
	COVER	COMM. TYPE	OTHER
	D SHRUB	D INCLUSION	☐ HEDGEROW
	D TREED	ļ	
		TREATURE THE DALLAND ONLAND ON	FEATURE HISTORY PLANT FORM TRRUE GRANTIVAL GRANKTON DIVERSITY GRANTIVOL YCLOPE YCLOPE LAND UCA YCHAND OLICHEN UCA YCHAND OLICHEN OLICH

5 GROUND LAYER 4-6 5 PADRAWAYS 3-2-10m 4-1-2m 5-0.5-m 6-0.2-0.5m 7-<0.2m CVR CODES: 1 = 25m 2 = 210-25m 3 = 2-10m 4-1-2m 5-0.5-m 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:

2 CANOPY 3 SUB-CANOPY

UNDERSTORY

RHACATE & OVETACE

1 EMERGENT

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

RACA THOURTER

	1			ŀ		
7	25-50cm	10-24cm	7	< 10cm	DECAYED	
7	25-50cm	10-24cm	1	< 10cm	FIRM	DEADFALL/LOGS
7	25-50cm	10-24cm	1	/ > Thom	COMICO	Outropies Date of the control
1			1		CNACC	STANDIN
/	/ 25-50m	10-24cm	/	^ 10cm	TREES	

COMMUNITY MATURITY:

☐ PIONEER	00.11
R BYOUNG	
☐ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



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SPECIES			1410
	DATE: JULY 12/19		
	SURVEYOR(S): NHE		
VALUE CODES: D :	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY VALUE CODES: D = DOMINANT A = ABUNDANT O = 4	3 = SAPLINGS & SHRUBS 4 OCCASIONAL R = RARE	= GROUND LAYER
SPECIES CODE	LAYER COLL	SPECIES CODE	LAYER
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RLDOUT	0	£ 1	3 (
PLAMATO	A	BRO I NER	
TRIPRAT	A	POPUELT	70
DIPSIFU	Ā	POPTREM	
RUMCRIS	C	TRAX PEND	10
CRARVE	D		0 7
PELOFE	0	POLCO SN	A (
SOLCONA	0	VICCEACA	0
COUCANA	P	THURRYE	D (
TRIREPEN	<i>P</i>	MALSP	P
PSCSAIS!	0	SPLEXIO	0
SHILDIG	Po	SALALBA	P
FRIDNNU	0	PORCOMP	A
SOUCAND	A	CIRVIULG	~
CLADALE	79	BROTECH	R
PODPRAT	6	DIANDAME	0
DAUC MGO	D	SET VIRI	07
ELE ACIC	Pol Set Pro	RAUREO	0 0
BIDEFEDIN	700	LACSERO	
CULTETA	8	PALPRAT	~(
RECIT	7	TI SRUPA	ナ
CENTRAL	>	,	

POLYGON DESCRIPTION:

D OPEN WATER
D SHALLOW WAT.
SI SURFICIAL DEP.
D BEDROCK ☐ WETLAND
☐ AQUATIC STAND DESCRIPTION: SYSTEM SITE D ORGANIC

D MINERAL SOIL

D PARENT MATERIAL

C ACIDIC BEDROCK

D BASIC BEDROCK

C CARB, BEDROCK SUBSTRATE D LACUSTRINE
D RYFRINE
TO RYFRINE
TO DOTTONLAND
D TERRACE
D VALLEY SLOPE
ET TABLELAND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
D ALYAR
D ROCKLAND
D BEACH/BAR
D SAND DUNE
D BLUFF TOPO. FEATURE O SHRUB D CULTURAL HISTORY COVER D PLANKTON
D PLANTING LAD
D SLOWINGED
D GRAMINOID
M FORB
D LICHEN
D BRYOPHYTE
D BRYOPHYTE
D BRYOPHYTE
D CONIFEROUS
C CONIFEROUS
D MIXED COMPLEX COMM. TYPE PLANT FORM D LAKE
D POND
D ENYER
D STREAM
D MARSH
D SWAMP
D FEN
D BAREN
D BAREN
D PRAJEJE
D THICKET
D THOCKET
D FOREST
D PLANTATION ☐ HEDGEROW COMMUNITY OTHER

5 GROUND LAYER 5.7 5 PLANA 00 = TIZHRRAT = DIDSYFU 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:

LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT

UNDERSTORY SUB-CANOPY CANOPY

> 50cm	25-50cm	DECAYED < 10cm 10-24cm :	< 10cm	DECAYED	
1 10					Committee of the party of the p
× 500	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
1					
\ 500m	25-50cm	10-24cm	< 10am	STANDING SNAGS	STANDIN
, ,,					
v 500	25-50cm	10-24cm	< 10cm	TREES	

☐ PIONEER ☐ YOUNG □ MATURE □ OLD-GROWTH

V Sarants DIADRME MPCAPE SPECIES CODE ORPECS DRSCOP PRROSE KTDCAT SPECIES LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE BUNDE JUNE TON LATIRAT FURDO SRAPED CERUBR STVIRG RTHOR RDPENN PLES 10 VION IT RUBE ASASE DATE: SURVEYOR(S): NIME 70 2 3 LAYER D 0 4 COL. RUBOCC AMELI AE SOLDUIC PINSTRO SPECIES CODE SHIPLE IN SALLSE SCOPIA ARCRIT NOSENS TRIPE CMANIN 10 2 LAYER ω 75 4 - 14 miles Charly Some D OPEN WATER
D SHALLOW WAT.
D SURFICIAL DEP.
D BEDROCK ▼ TERRESTRIAL
□ WETLAND
□ AQUATIC ☐ PIONEER YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONELAYER DEADFALL/LOGS SIZE CLASS ANALYSIS: STAND DESCRIPTION: COMMUNITY MATURITY: SUB-CANOPY CANOPY UNDERSTORY EMERGENT SYSTEM

SITE

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

O SHRUB

COMPLEX

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

F C.

ACE SASAV

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FRA PENSE CHACATU->DRUVIPG

- LAME P

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POLYGON DESCRIPTION:

SUBSTRATE

TOPO, FEATURE

HISTORY

PLANT FORM

COMMUNITY

CULTURAL

ORGANIC

TYMINERAL SOIL

PARENT MATERIAL

ACIDIC BEDROCK

BASIC BEDROCK

CARB, BEDROCK

D LACUSTRUNE
D RIVERINE
D ROTTONIAND
D TERRACE
D VALLEY SLOPE
VA TRALELAND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
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EXPECIDUOUS
CONUEROUS
D MIXED

D LAKE
POND
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PLANT

POLYGON: FODS-3d SITE:407 TOWN

UTMN:	UTME:	UTMZ:	
DATE:		SURVEYOR(S):	Ş
POLYGON:		SITE:	2

STANDING SNAGS

TREES

< 10cm

< 10cm < 10cm

> 10-24cm 10-24cm

DECAYED

< 10cm

10-24cm 10-24cm

> 25-50cm 25-50cm 25-50cm

> > > 50cm

> 50am

> 50cm

25-50cm

> 50cm

図 MID-AGE

☐ MATURE

□ OLD-GROWTH

FIRM

- small water

□ PIONEER □ YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE DEADFALL/LOGS SIZE CLASS ANALYSIS: LAYER COMMUNITY MATURITY: SUB-CANOPY CANOPY EMERGENT UNDERSTORY STANDING SNAGS DECAYED TREES | < 10cm FIRM 끜 CVR < 10cm < 10cm < 10cm ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH SPECTES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) 10-24cm 10-24cm 10-24cm 10-24cm

25-50an

25-50am

25-50cm 25-50cm

> 50cm > 50am > 50cm > 50cm

PLANT LST SPECIES SURVEYOR(S): NMT FOH: BILS DATE: JULY 12/19 POLYGON: MAS2-Transitual O

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE

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SPECIES CODE

2 LAYER ω 4

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AND APCULTURAL COVER		3LLS
PE GRANINOD GROPE PE GRANINOD GROPE LAND GROPE DECOMB CONTROLVO TO GRANINOD DECOMB CONTROLVO TO GROPE CONTROLVO TO GROPE TO DECTUOUS TO MIXED		
JACULTURAL GUBNERGEN DE GRAVINOD PE GRAVINOD DE GRAVINOD DE GRAVINOD DE BROPHYTE DECEDUOUS CONIFEROUS VE GRAVEROUS DEMOCRATION DEMOCRATICATION DEMOCRATION DEMOCRATION DEMOCRATION DEMOCRATION DEMOCRATICATION DEM	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
PE SP-CULTURAL CI SUBMERGED CI PLORATING LVD CI PLORATING	LI SANO DUNE	
PE SP-CULTURAL CI SUBNERGED CI PLORTING LVD CI PLORTING LVD CI PLORE CI PLO	☐ BEACH/BAR	
PE CULTURAL CI SUBNERGED CI PLORATING LYD CANTING LYD CI PLORATING LYD CI PLORATING LYD CI PLORATING LYD CI	D ROCKLAND	
PE COULTURAL COLUMERCED COLUMENT COLUMN COLU	I CKEVILE/CAN	
PE CANDO CONTROL CONTR	LI IALUS	
D SP-CULTURAL CISUBNERGED CONTROL LAND CONTROL LA		
D SP-CULTURAL II SUBMERGED II PLOATING LVD II	LI KOLLING UP	
D SPOULTURAL CISUBMERGED COMPANY CONTROL CONTR	LI CARO, BEDRUCK	
D SUBMERGED C SUBM) [
D PLOATING LYD C	, C	
XP-CULTURAL CI SUBMERGED	1 0	- Strooms
L. Canada) C	ייבוטווס
D NATURAL PI ANKTON	00	LI LERRESTRIAL
TOWN TOWN COMMUNITY		
HISTORY NI ANT FORM	SUBSTRATE TOPO FFATIBE	SYSTEM

D OPEN WATER
SHALLOW WAT.
SI SURFICIAL DEP.
BEDROCK

O SHRUB

COMPLEX COMPLEX

□ HEDGEROW

STAND DESCRIPTION:

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☐ PIONEER WYOUNG

□ MATURE

☐ OLD-GROWTH

COMMUNITY MATURITY:

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

< 10cm < 10cm < 10cm < 10cm

> 10-24cm 10-24cm

10-24cm

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm

DEADFALL/LOGS

DECAYED

FIRM

STANDING SNAGS

TREES

10-24cm

> 50cm

SIZE CLASS ANALYSIS:

-									
					×				

5 GROUND LAYER 4-5 5 14 PANGU >>>PHD ARUN
HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

UNDERSTORY

SUB-CANOPY CANOPY D OPEN WATER
D SHALLOW WAT.
CX-SURFICIAL DEP.
D BEDROCK

D SHRUB

☐ INCLUSION

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

SITE

LAYER

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SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

SALFRAG

STAND DESCRIPTION:

SPECIES ISI SURVEYOR(S): NM DATE: Jak POLYGON: MAS 2-1d

PLANT

LOh :BUS

Transitury

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SPECIES CODE

2 3 LAYER

4

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SPECIES CODE

2 LAYER ω 4

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POLYGON DI		
ON DESCRIPTION:		

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

SIMIN: DATE POLYGON:

E WETLAND AQUATIC SYSTEM D ORGANIC D MINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK BASIC BEDROCK CARB. BEDROCK SUBSTRATE DIACUSTRINE DIACUS TOPO, FEATURE HISTORY TAY CULTURAL ☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD ☐ RAGRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONUFEROUS ☐ MIXED PLANT FORM D LAKE D POND LYD CHEEK STREAM N MARSH C SWAMP C FEN C BOG C BOG C BARREN C MEADOW C PRAIRLE C THICKET C SAVANNAH C WOODLAND D FOREST C PLANTATION COMMUNITY

POLYGON DESCR		
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	□ PIONEE
	R YOUNG [MID
	AGE MATURE
TO OKOWIN	□ OI D-CBOWTH

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				R = RARE N	ASTONAL	DANT O = OCC	ES: A = ABUN	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE
> 50cm	7	25-50cm	1	10-24cm	7	< 10cm	DECAYED	
> 50cm	7	25-50cm	7	10-24cm	1	< 10cm		DEADFALL/LOGS
> 50cm	7	25-50cm	1	10-24cm	7	< 10cm	STANDING SNAGS	SIANDIN
> 50cm	7	25-50cm	1	10-24cm	/	< 10cm	KEES	

STAND DESCRIPTION:	

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
TERRESTRIAL	O ORGANIC	- LACUSTRINE	II NATURAL	☐ PLANKTON	LAKE
D ACUATIC	DARRENT MATERIAL	- RIVERINE	TO CULTURAL	☐ SUBMERGED	□ POND
L AQUALIC	LI PAKENI MATEKIAL	LI BOTTOMLAND	_	II FLOATING LVD	□ RIVER
	LI ACLUIC BEDROCK	D TERRACE		XI GRAMINOID	□ STREAM
	LI BASIC BEURUCK	I VALLEY SLOPE		□ FORB	DWARSH
	LI CARB. BEDROCK	C) TABLELAND		D LICHEN	□ SWAMP
		D ROLLING UPLAND		II BRYOPHYTE	E E
		100		□ DECIDUOUS	□ B06
		LIALUS		II CONIFEROUS	BARREN
		LI CKEVICE/CAVE		II MEXED	☐ MEADOW
		E ALVAN			☐ PRAIRIE
		I REACH/RAD			I THICKET
		SAND DINE			HANNAVAS
					LI WOODLAND
					D PLANTATION
SITE	•		COVER	COMM. TYPE	OTHER
OPEN WATER			II OPEN	☐ INCLUSION	☐ HEDGEROW
S. SURFICIAL DEP.				D COMPLEX	

POLYGON DESCRIPTION:

ur.	PULYGUN SURVEYOR(S):	SITE
UTMZ:	RVEYOR(S):	le:
UTME:		
UTMN:	DATE:	POLYGON:

PLANT SPECIES LIST

POLYGON: MAM 2-26 STIE: HWY YOT TRUNSHWOW

SURVEYOR(S): NMF

SPECIES CODE

COLL

SPECIES CODE

COLT.

PRAUST

SALALBA PLADRUZ PCENEGU

MAMER

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE



□ OLD-GROWTH

25-50cm

> 50cm > 50cm

25-50cm 25-50cm

> > 50cm > 50cm

25-50cm

ONEX

2 3 LAYER 4 COL. SPECIES CODE 2 LAYER W 4 SOF-O OPEN WATER
O SHALLOW WAT.
O SURFICIAL DEP.
O BEDROCK D WETLAND

AQUATIC 5 GROUND LAYER 4-7 5 50 CANASCIRAR VETY NADAUSTA BY 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% OMMUNITY MATURITY: ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONEDEADFALL/LOGS LAYER SIZE CLASS ANALYSIS: STAND DESCRIPTION: POLYGON DESCRIPTION: SUB-CANOPY EMERGENT UNDERSTORY CANOPY SYSTEM SITE STANDING SNAGS D ORGANIC

NA MINERAL SOIL

PARENT MATERIAL

ACIDIC BEDROCK

BASIC BEDROCK

CARB. BEDROCK DECAYED TREES FIRM SUBSTRATE 폭 CVR < 10cm < 10cm < 10cm < 10cm ☐ MID-AGE SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) D LACUSTRINE
D RYPERINE
D RYPERINE
D ROTTONLAND
D TERRACE
D VALLEY SLOPE
OTABLEAND
D ROLLING UPLAND
D BEACH/BAR
D SAND DUNE
D SAND DUNE
D SLUFF TOPO, FEATURE 10-24cm □ MATURE 10-24cm 10-24cm 10-24cm

D SHRUB

COMPLEX COMPLEX COMM, TYPE

☐ HEDGEROW

OTHER

COVER

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SPECIES CODE

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

GROUND LAYER

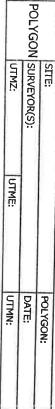
SURVEYOR(S): NIME DATE: JULY 12/19 POLYGON: CUMI-IG

PLANT

SITE: HOT

Transituar

LST SPECIES



EXCULTURAL HISTORY

PLANT FORM

COMMUNITY

D PLANKTON

D SUBMERCED

D FLOATING LVD

D GRAMINOID

D FORB

D LCHEN

D BECEDUOUS

C CONIFEROUS

D CONIFEROUS

D MIXED

D LAKE
D POND
LYD LI RIVER
D STREAM
D MARSH
SWAMP
LI FEN
D BOG
D BARREN
ME MEADOW
D PRAIRIE
D THICKET
SAVANNAH
D WOODLAND
D FOREST
D PLANTATION



NAME AND THE PERSON OF THE PER	☐ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OI D-GRON	COMMUNITY MATURITY:	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

DEADFALL/LOGS DECAYED

< 10cm < 10am < 10cm < 10cm

10-24cm 10-24cm

> 25-50cm 25-50cm

25-50cm

> 50cm > 50cm > 50cm > 50cm SIZE CLASS ANALYSIS:

TREES
STANDING SNAGS

10-24cm 10-24cm

25-50cm

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%

3 4 COLL. SPECIES CODE R R R R R R R R R R R R R	<u></u>	TANK TO LEURI	7
DATE: July 12 9 1	SPECIES	+	
SURVEYOR(S): NM/F 1		JULY 12 1	7
1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS 4 = GROUND LAVER CODE		SURVEYOR(S): NMF	
CODE 1 2 3 4 COLL. 1 2 3 4 COLL. PAIR PAIR PECIES CODE 1 2 3 4	VALUE CODES: D	DPY TREES > 10m 2 = SUB-CANOPY = DOMINANT A = ABUNDANT O =	11
	SPECIES CODE	LAYER COLL.	LAYER
TO PROPOSED	RL ACATH	D	
CO PRO PRO PRO PRO PRO PRO PRO PRO PRO PR	MUMPHER	10	
RAP RAP O O O O O O O O O O O O O O O O O O O	CARCUAT	-	
TO PROPERTY OF THE PROPERTY OF	BROINER		
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TO PROPER TO STATE OF THE PROPERTY OF THE PROP	DIPSHELL	70	
	SOLCAND	5	
R R R R R R R R R R R R R R R R R R R	DIMODID	10	
	VITRIAL	000	
CA TRANSPORTATION OF THE PROPERTY OF THE PROPE	QUE RUBK	<u>^</u>	
CA PROPRIOR REPORT	POPIZIT	-	
	16.5		
	JUGNIGE	R 72	
	JIL AMER	-	
	QUEDLED		
	POAPRIST	D	
	BROINER	7	
	RUMCEF	7	
	CORRACE	\nearrow	

O OPEN WATER
SHALLOW WAT.
SURFICIAL DEP.
BEDROCK

O SHRUB COVER

C INCLUSION

□ HEDGEROW

COMM. TYPE

OTHER

SITE

LAYER

끜

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

UNDERSTORY SUB-CANOPY CANOPY STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL WETLAND	ORGANIC MINERAL SOIL	CI LACUSTRINE	COLTURAL	☐ PLANKTON ☐ SUBMERGED	POND
, and a second	☐ ACIDIC BEDROCK	I TERRACE		☐ FLOATING LVD	RIVER
	☐ BASIC BEDROCK	C VALLEY SLOPE		TORB	MARCH
	LI CAKB, BEDROCK	II TABLELAND			SWAMP
		LI ROLLING UPLAND		□ BRYOPHYTE	
		1 2 7		□ DECIDUOUS	□ BOG
		D ALUS		CONTITEROUS	□ BARREN
		III CKEVICE/CAVE		□ MIXED	☐ MEADOW
		II ROCKLAND			PRAIRIE
		□ BEACH/BAR			D SAVANNAH
		D BLUFF			- WOODLAND
					0.00
					- PLANTATION

I ITMN:	UTME:	UTMZ:
DATE:		PULTGUIN SURVEYOR(S):
POLYGON:		

CO 1:311S POLYGON: +



DECAYED

< 10cm < 10cm < 10an < 10cm

10-24cm 10-24cm

25-50cm 25-50cm

> 50cm > 50cm > 50cm > 50cm

25-50cm 25-50cm

☐ MID-AGE

☐ MATURE ☐ OLD-GROWTH

FIRM

10-24cm

10-24cm

TREES

₹

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

OPEN SHRUB

☐ INCLUSION

- HEDGEROW

COVER

COMM. TYPE

OTHER

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE LSI PLANT SPECIES CODE SPECIES アレスごと SURVEYOR(S): NH DATE: POLYGON: COD BUS 2 3 LAYER MAS 4 20 COLF. 25 SPECIES CODE 2 LAYER ω 4 8 F D OPEN WATER
SE SHALLOW WAT.
SI SURFICIAL DEP.
D BEDROCK ☐ TERRESTRIAL

SP WETLAND

☐ AQUATIC ☐ PIONEER ÉNYOUNG DEADFALL/LOGS SIZE CLASS ANALYSIS: 5 GROUND LAYER 4-5 6 PHRAUST > アルムルン
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% ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE LAYER POLYGON DESCRIPTION: COMMUNITY MATURITY: STAND DESCRIPTION: POLYGON SURVEYOR(S): CANOPY UNDERSTORY SUB-CANOPY EMERGENT SYSTEM SITE STANDING SNAGS

DORGANIC

DAMINERAL SOIL

DAMINERAL SOIL

DACIDIC BEDROCK

DACIDIC BEDROCK

DASTIC BEDROCK

COMBAND

CARB. BEDROCK

COMBAND

COMB

SUBSTRATE

TOPO, FEATURE

HISTORY

PLANT FORM

COMMUNITY

I NATURAL

O SUBMERGED
O FLOATING IVD
SECRAMINOID
O FROB
O LICHEN
O BRYOPHYTE
O BRYOPHYTE
O CONIFEROUS
O MIXED

D LAKE
D RIVER
D STREAM
M MARSH
D SWAWP
D FEN
D SWAWP
D FEN
D BOG
D BARKEN
E MEADOW
PANTATION
D FOREST
D PANTATION

SITE

UTME:

DATE: SIMPLO

POLYGON:

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VIOCORY

DOPENS

MACLEY

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☐ PIONEER ☐ YOUNG COMMUNITY MATURITY: I MID-AGE I MATURE II OLD-GROWTH

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

Am 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%LAYER SIZE CLASS ANALYSIS: SUB-CANOPY CANOPY EMERGENT GROUND LAYER UNDERSTORY 끜 CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) V PLACAL SANGARO

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
□ TERRESTRIAL □ WEILAND □ AQUATIC	D ORGANIC MINERAL SOIL D PARENT MATTERIAL ACIDIC BEDROCK D BASIC BEDROCK C CARB, BEDROCK	D LACUSTRINE D RIVERRINE D BOTTOMIAND D TERRACE VALLEY SLOPE TABLELAND C ROLLING UPLAND C CLIFF D TALUS C CREVICE/CAVE D ALVAR D ROCCUAND D BEACH/BAR C SAND DUNE D BLUFF	E CULTURAL	D PLANKTON SUBMERGED ROATING LVD GEAMMOD GEAMMOD HORB LICHEN ENCOPHYTE DECIDIOUS CONIFEROUS MIXED	D LAKE D POND D RIVER D STREAM D STREAM D STREAM D SWAMP D BOG D BARKEN D BAG D BARKEN D READOW D PRAIRIE D THIOXET D SAVANNAN D FOREST
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED	COMPLEX COMPLEX	□ HEDGEROW

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

SPECIES

PLANT

TOT BILL

SPECIES CODE

COLF.

SPECIES CODE

2 LAYER

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COF.

POLYGON DESCRIPTION:

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URPJ

RIPD

REPORE

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CLARRE

DOGRAN

CERUBR

CARSCOP

12 SES

CARINTU POPPING

GALAPAR

BOTTOE

MLL PET

AMER

0 P LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SURVEYOR(S): DATE: JUNEY POLYGON: FODS

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* In Jusus E Sm all MASZ-1 < 0.1 mg

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	☐ PIONEER	COMMUNITY	ABUNDANCE COL			DEADFALL/LOGS		SIANDI		
	BI YOUNG	MATURIT	ES: A = A	DECAYED		MATA		STANDING SNAGS		TREES
I	ดิ	∴	BUND	1	1	1	1	/	-	0
	☐ MID-AGE		ANT O = OCCA	< 10cm		< 10cm		< 10cm		< 10cm
ľ	R		NOIS	7		7	1	7	l	大
10000	MATIJRE		VUANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	10-24cm		10-24cm		10-24cm		10-24cm
			NON	/	ŀ	7	Ī	7	Ī	7
TI OCO GROWIL	27760		-	25-50cm		25-50cm		25-50cm		25-50cm
WIT			t	7	-	/		7	-	7
				> 50cm		> 50cm	1 2000	V 500m	A. Journ	> 500m

5 GROUND LAYER 5-7 5 5 7-7 5 7

CORRACE YYRHACAT H

UNDERSTORY SUB-CANOPY

SIZE CLASS ANALYSIS:

SPECIES CODE	LAYER		
	1 2 3 4	SUPERIOR CODE	1 2 3 4 001.
VICCIPAC	S)	I PECT	
MATRPERT	0	てて	ייסי ויסי
WICCEAC .			-
PUDDRUN	6	KUNCUS	7
RICANA		SHMLAZ	J,
JUPPERT	70	POP(OMP	V
CORFOE	Ð	FRAJIRG	0
SOLCACIO	0	POTSIMP	9
OPPRET	D	TRIPEDI)
1800 P	0	RONDORI	01
METATA	A ()	700 SP	\nearrow
- SARVE	0	(UTSE)	70
RATPEDI	2	TILAMER	R
SOMONA	0	125KB	R)
NI NSAI		J & DRAIN	7
NTRIPA	2	COTCORN	0
QUEENAR	P	PUPTREM	70 70
TOCAL	0	(CES CAR)	
SHARK		0017200 T	
かいから	0	JUERUSR I	2
DRBER		REPORTE	ワク
STATE OF STATES	0	からアラカ	70
PULPRE	0	ADDED -	70
MESI SINGE	D.	CORFOE	0
明し何以前ので	7	SUL ALAL IN	
STER.	P	CRATPEDI	0
がいのと)	1000000	2

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

OPEN SHRUB

COMPLEX COMPLEX COMM. TYPE

> ☐ HEDGEROW OTHER

COVER

STIE

LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

CANOPY

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STAND DESCRIPTION:

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PLANT LSI SPECIES SURVEYOR(S):NMT DATE: July 3/19 POLYGON: CUTI-4 FOH :311S 0

POLYGON DESCRIPT			
ION:			

CARB. BEDROCK CARB. BEDROCK CALUMF CARB. BEDROCK CALUMF CALUMF CALUMF CALUMF CALUMF CARB. BEDROCK CALUMF CALUMF CALUMF CALUMF CARB. BEDROCK CALUMF CA	JAL DORGANIC DIACUSTRINE DI MINERAL SOIL DI RIVERINE Y	-	S I	
D PARENT MATERAL D ACTIDIC REDROCK D ESTERACE D WALLEY SLOPE D CARB. BEDROCK D TABLEAND T TABLEAND D CLIFF D CLIFF D CLIFF D CLIFF D CREVICE/CAVE D ALVAR D ROCKLAND D ROCKLAND D BEACH/BBAR D SAND DUNIE D BLUFF			100	L CANC
C DTERRACE GRAMINOID CALLEY SLOPE GROW D PARENT MATERIAL D BOTTOMLAND	-	TING LVD	POND	
D FORB D TABLEAND D DECEDUOUS TALLING UPLAND D DECEDUOUS D CREVICE/CAVE D ALVAR D ROCKLAND D BEACHBAR D SAND DUNE D BLUFF	7	□ GRAN	DIONIE	STREAM
T ROLLING UPLAND CUFF CUFF CARPICE/CAVE ALVAR BEACHBAR BEACHBAR CAND DUNE BUFF	10	□ FORB	_	MARSH
CE/CAVE CE/	1 -		<u> </u>	O SWAMP
CE/CAVE C CONTEROUS AND AND JEAR JEAR JEAR DUNE	L KULLING UPLAND	□ BRYO	ELAHAC	
CE/CAVE CONTREROUS ST. MIXED AND (BAR DUNE			Shond	□ B0G
E Z	T TALUS	CONI	FEROUS	BARREN
mz	III CREATCE/CAVE	MIXE!	0	II MEADOW
m	C AFFECT AND	_		D PRAIRIE
				N THICKET
CONC		_		☐ SAVANNAH
				☐ WOODLAND
	C pp			- FOREST

TY GON SU	SILE
RVEYOR(S):	
DATE:	POLYGON:
	POLYGON SURVEYOR(S): DATE:



76 - 1000

COMMUNITY MATURITY:

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

				100	ABUNDANCE CODES: A = ABINDANT O COASTONN
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADPALL/LOGS
> 50cm	25-50am	10-24cm	> TOCAL	COMMUNIC DIVINO	1
1			100	SEVEN DE	STAMPTE
> 500m	25-50cm	10-24cm	< 10cm	1 XEES	

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	4 UNDERSTORY 5 GROUND LYPER	3 SUB-CANOPY	CANOPY	1 EMERGENT	LAYER HT CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = AROUT-FOUAL TO)
7				,	W: = ABOUT FOUAL TO

STAND DESCRIPTION:

0

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
O METLAND D AQUATIC	I ORGANIC MINERAL SOIL ACIDIC BEDROCK CARB. BEDROCK	D LACUSTRANE D RAVERINE D SOTTOMILAND TERRACE D VALLEY SLOPE TABLE AND D COLLING UPLAND D CLIFF TALLIS D CREAT/CE/CAVE D ALVAR D ROCKLAND D SAND DUNE	A COLLURAL	D PLANKTON D PLANKTON D PLANTING LYO D GRAWBHOD D FORB D LYOPHYTE D EKYOPHYTE D LAKE D POND D RIVER D RIVER D SWAMP D RAING D BARREN D MEADOW D RAING D BARREN D MEADOW D RAING D SWAMP D RAING D BARREN D MEADOW D RAING D	
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER D SHALLOW WAT. SURFICIAL DEP. D BEDROCK			C TREED	CI COMPLEX	□ HEDGEROW

POLYGON DESCRIPTION:

	POLYGON	200
UTMZ:	SURVEYOR(S):	SITE:
UTME:		
UMIN:	DATE:	POLYGON:



L	705	
UTMZ:	SURVEYOR(S):	SITE
UTME		
UMN:	DATE:	POLYGON

PLANT SPECIES LIST

POLYGON: CATE: CATE: SURVEYOR(S):

SPECIES CODE

SPECIES CODE

2 3

4 6 F

D

LAYER

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 LAYERS: 1 = CANDPY TREES > 10m 2 = SUB-CANDPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODIES: D = DOMINANT A = ABUNDANT 0 = OCCASIDNAL R = RARE 1 2 3 4 LAYER BF. SPECIES CODE SACC 2 3 0 LAYER 4 <u>8</u>

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY EMERGENT

UNDERSTORY SUB-CANOPY STAND DESCRIPTION:

DEADFALL/LOGS DECAYED

STANDING SNAGS

TREES

DECAYED < 10cm 10-24cm 2

< 10cm < 10cm < 10cm

10-24cm 10-24cm 10-24cm

25-50cm 25-50cm

25-50cm

25-50cm

> 50cm > 50cm > 50cm 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 = > 22-33% 4 = > 35-40% 5 = > 60%

SIZE CLASS ANALYSIS:

COMMUNITY MATURITY:

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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

SPECIES PLANT

SURVEYOR(S): DATE: POLYGON: FOOT SET THREE

Page

9

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM
TERRESTRIAL O WETLAND O AQUATIC	D ORGANIC EL MINERAL SOIL D PARENT MATERIAL	II LACUSTRUME II RIVERIME II BOTTOMLAND	S NATURAL	D PLANKTON
ביאלמאיזיר	D ACIDIC BEDROCK	CI TERRACE		GRAMINOTO
	II BASIC BEDROCK	CO VALLEY SLOPE		II FORB
	LI CARB, BEDROCK	CINATE SATE		
		LI KOLLING UPLAND		I BRYOPHYTE
				STORCEDUOUS
		D CREVICE/CAVE		D MIXED
		ALVAR		
		D BEACH/BAR		
		O BLUFF		
stre			COVER	COMM. TYPE
II SHALLOW WAT.			CI OPEN	CI COMPLEX

3	-
i	1
ź	MP.
i	LA.
ž	-
I	10
ş	SI CO

COMMUNITY MATURITY:

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

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm 4 UNDERSTORY

5 GROUND LAYER

15 GROUND LAYER

16 GROUND LAYER

17 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% 5 =

SIZE CLASS ANALYSIS:

Observed only with o'mouse ors

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	MINANT A = ABUND	ANT O = O	CCASIONAL R = RARE	1 3400	A A A	ĝ		7
SPECIES CODE	1 2 3 4	- CO	SPECIES CODE	-	N	ω !	4	ço F
			THUOK	U	0			
			PINSTRO	0	0			
			ACENEGO	0	0			
								1
						1		
				_				
							_	
					ļ			

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN), > GREATER THAN, = ABOUT EQUAL TO).

SUB-CANOPY EMERGENT STAND DESCRIPTION:

SURVEYOR(S):	DATE: JULY 31 2019	POLYGON: Foca 2	SITE: TA 8788

PLANT SPECIES LIST

LI REGISCON	D COMPLEX	I SHRUB	-		I SHALLOW WAT. AT SURFICIAL DEP. I BEDROCK
1		Nago L			OPEN WATER
OTHER	COMM, TAPE	COVER			SITE
D LAKE D STREAM D SAKSH D SAKS	I PLANKTON I SLIMBEGGED I ROATING LVO I GRAMMODD I GRAM	D CULTURAL	D REACH/BAR C REVIEWE C ROTOMIAND C REPARAD C REPAR	M MINERAL SOIL M MINERAL SOIL PARENT MATERIAL CAZDIC BEDROCK CARB. BEDROCK CARB. BEDROCK	D WETLAND DAQUATIC
COMMUNITY	PLANT FORM	HISTORY	TOPO, FEATURE	SUBSTRATE	Maiste

PLANT SPECIES LIST DATE: SITE SURVEYOR(S): 17 Polor POLYGON: FODE-30 1 5000

404

POLYGON SURVEYOR(S):

UTMZ:

UTME:

POLYGON: DATE: :NMTU

SILE

N. Y.

SPECIES CODE		LAYER	70	3	CONTRACTOR CORE		LAYER	æ	}	
	1	2 3	4	{ [STAND SOL	ь.	2 3	4	Ę	
TPRACE		_	0		ACEGAR	0	U	Q		5250
SOLPIEX		-	0		HOENEGY!		00			7.7
たこのだっ		_	0		OUS PLUKE	0	0			
ACTPR		_	0		CASON A		K	0		
の四三を円の		-	3		FRESCAN		10	O		
CARPENS			70		PHOOFT4		7			
COR ROS		-	100		カルころ	7	0			
アンちのこと		-	0		TILANER		0			
DAIN DET			0		MANAMER	2	0			
ナロウエ		H	D		TSUC ANA	Ac-	10			
を見ていてい		-	0		FRAGAMER			0		
でいるこれでは		_	50							
CAN CENTE		_	9				-			
コナンショウナー		-	2				-	1		

P

POLYGON DESCRIPTION:

□ ORGANIC □ MINERAL SOIL □ MINERAL SOIL □ MINERAL SOIL □ RAYERIME □ PARENT MATTERAL □ BOTTONILAND □ BASIC BEDROCK □ TERRACE □ TABLELAND □ CARB. BEDROCK □ TABLELAND □ CREVICE/CAVE □ TALUS □ CREVICE/CAVE □ TALUS □ CREVICE/CAVE □ TALUS □ CREVICE/CAVE □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ LOTER ORGEN □ SAND DUNE □ SHUFF □ COMPALEX □ COMPALEX □ COMPALEX	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
ACUDIC BERRORCY CI CHERACE DASSIC BEDROCK CI VALLEY SLOPE CARB. BEDROCK CI TABLELAND COMPENDATE COLUMG UPLAND CI CARB. BEDROCK CI TABLELAND CI CARB.		C ORGANIC MINERAL SOIL	C) LACUSTRINE	CI QULTURAL	C) PLANKTON	PO CA
CARB. BEDROCK C VALLEY SLOPE C CARB. BEDROCK C TABLEAMD C ROCLING UPLAND C RECOUNTS C CLIFF C CLIFF C COMPLEXOUS C CREVICE/CAVE C CONTREROUS C SAND DUNE C SAND DUNE C SHRUB C COMPLEX	I AQUATIC	D PARENT MATERIAL ACIDIC BEDROCK	CI BOTTOMLAND		CI PLOATING LYD	RIVER
COVER BEDROCK COMPLEX COMPLEX		☐ BASIC BEDROCK	34CTS ASTTWA CO		D FORB	MARCH
COMPRIAND COMPRIAND		CARB, BEDROCK	DTABLELAND			SWAMP
COVER COMPLEX CALIFF CONTROLS CONTROLS CONTROLS CONTROLS COVER COMM.TYPE COMPLEX COMP			D ROLLING UPLAND		II BRYOPHYTE	
COVER COMM.TYPE					D DECIDUOUS	12 BOB
COVER COMM.TYPE			III IALUS		CONTEROUS	II BARREN
COVER COMM.TYPE			THE CHEVILLY CAVE		□ MD(2D	MEADOW
COVER COMM.TYPE COVER COMM.TYPE COVER COMM.TYPE			ROCKLAND			I HOUSE
COYER COMM.TYPE			CI SAND DUNE			HANNAYAS II
COMPER CONNICTIVE CONFIDENT CONFIDEN			□ BLUFF			O FOREST
D SHRUB C COMPLEX	auts			COVER	COMM. TYPE	MAHEO
	I OPEN WATER I SHALLOW WAT. I SURFICIAL DEP			OPEN	CI COMPLEX	II HEDGEROW

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

DEADPALL/LOGS DECAYED

< 10cm < 10cm < 10cm

10-24cm 10-24cm 10-24cm 10-24cm

25-50cm

25-50cm 25-50an

> > 50cm > 50cm

> 50cm

25-50cm

STANDING SNAGS

TREES

< 10cm

SIZE CLASS ANALYSIS:

s 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%

3 SUB-CANOPY

UNDERSTORY

CANOPY

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

STAND DESCRIPTION:

1 EMERGENT

25-526

г	1
☐ PIONEER	
D YOUNG	
☐ MID-AGE	
MATURE	
 OLD-GROWTH	

D PIONEER D YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

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

25-50cm 25-50gm 25-50gm 25-50cm

< 10cm < 10cm

10-24cm 10-24cm 10-24cm

> 50cm > 50cm > 50cm

> 50cm

DEADFALL/LOGS PIRM
DECAYED

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

SIZE CLASS ANALYSIS:

TREES STANDING SNAGS

1 2 3 4 W. PRUS OUE 1 2 3 4 P. P. P. P. P. P. P. P. P. P. P. P. P.	SPECIES CODE LAYER COLL SPECIES CODE LAYER	2	LAYER			CHECKE CODE	LAYER	}
EMANT O PUNGUT O PUNG		_	-		F	STECUES CODE	2 3	F
TOPPER OF TOPPER	EMPAI			0		8	0	
TOPPEUN DO LAMPET DO LAMPE	せてい	-		P		O	0	T
TARRY O	SA	-		0		- NEGEL	0	
TAPREM EMPRES EMPRES PANGUL 1P	147.8P	-		0				1
PENDST CMACUS PENDST PENDS PEN	133			D				
CHAPCES CHAPCES TORRES TORR	3			2				1
CMACLE CMACLE IN PRINGULA PENDEN IN	T			2				
PRAGUE TARILE	CHCHOIF.			0				
PPANES TARMED TARMES	MACE	-		0				
1 PENSUL 1 P	-		2	10				
1 PENGU 1 PENGU 1 PENGU	LONNERS			10				1
1 PLENT TO PRINT TO P	TUPE NO. 1			0				
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	3		F	╀				

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT

CANOPY SUB-CANOPY

GROUND LAYER UNDERSTORY STAND DESCRIPTION:

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

PLANT SPECIES LIST

SITE POLYGON:

27 FB

DATE: SURVEYOR(S):

SYSTEM	SUBSTRATE	TOPO, FEATURE	Ž =	HISTORY
CI TERRESTRIAL CI METLAND CI AQUATIC	D ORGANIC D PARENT MATERIAL ACIDIC BEDROCK	CI LACUSTRINE CI ROTTOMLAND CI TERRACE	D CULTURA	COUTURAL COUTURAL
	C) CARB, BEDROCK	O TABLELAND O ROLLING UPLAND O CLIFF		
		CI CREVICE/CAVE		
		SAND DUNE		
SITE			0	COVER
D OPEN WATER 2) SHALLOW WAT. D SURFICIAL DEP. D BEDROCK		27	C SHRUB	# £ ¥

3	in the last
1	A
M	ш
8	
100	8

J-85/2 cum.

SPECIES PLANT LST POLYGON: SURVEYOR(S): NOTE DATE: SITE: NWY

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

Security	Sarenas Sarenas
RHACEREC PHO DESIRE PH	SPECIES CODE
7 DOMODO \$	SPECIES CODE LAYER LAYER LOLL. SPECIES CODE DUBLING LAYER COLL. SPECIES CODE LAYER
TRILINA SCIR SP CARVILLE PINSHIU VITRIPA CARVILLE PINSHIU VITRIPA CARVILLE	SPECIES CODE
	LAYER COLL

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

JESP>> JUG

CANOPY EMERGENT

	POLYGONIS	S	
UTMZ:	URVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	STATE OF THE PROPERTY OF THE P

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL D WETLAND AQUATIC	O ORGANIC MINERAL SOIL PARENT MATERIAL	O LACUSTRINE O RIVERINE O BOTTOMLAND	EL CULTURAL	D PLANKTON D SUBMERGED D FLOATING LYD	D POND
	☐ ACIDIC BEDROCK	C VALLEY SLOPE		T GRAMINOID	O STREAM
	CARB, BEDROCK	TABLELAND		- LICHEN	SWAMP
		ROLLING UPLAND		□ BRYOPHYTE	四
				□ DECIDUOUS	BOG
		D MEUS		CONTEROUS	BARREN
		O ALVAR		II MOXED	以 MEADOW
		I ROCKLAND			
		LI BEACH/BAR			☐ SAVANNAH
		D BLUFF			E WOODLAND
					II PLANTATION
SITE			COVER	COMM.TYPE	OTHER
I OPEN WATER I SHALLOW WAT. SURFICIAL DEP.			O SHRUB	C INCLUSION	□ HEDGEROW
BEDROCK .			U TREED		

3 SUB-CANOPY
4 UNDERSTORY 5 GROUND LAYER

SIZE OF ACC ANALYSIS.	HT CODES: $1 = 25m \ 2 = 20-25m \ 3 = 2-10m \ 4 = 1-2m \ 5 = 0.5-1m \ 6 = 0.2-0.5m \ 7 = <0.2m$ CVR CODES: $0 = \text{NONE } 1 = 1-10\% \ 2 = >10-25\% \ 3 = >25-35\% \ 4 = >35-60\% \ 5 = >60\%$

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

DEADFALL/LOGS DECAYED

FIRM

< 10cm < 10an

10-24cm 10-24cm

10-24cm

25-50cm 25-50cm

> 50cm > 50cm

< 10cm

STANDING SNAGS TREES

< 10cm

10-24cm

25-50cm 25-50cm

> 50cm > 50cm

	II PIONEER	
	☐ YOUNG	
	□ MID-AGE	
	□ MATURE	
COLO CIVORALITA	OI D-GROWTH	



PLANT SPECIES LIST STIE: YOT

DATE: Judica POLYGON: CUMLIF

SURVEYOR(S):

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

															R Downey													
TRIPRD	人となるのかる	P20078	(FI-274	PESACO	MUMAMER	T RERUE	CORVARI	DACSON	BRO WER	CORVERI	デュアアドかり	DRIGHOM	DRCHINU	GDLAPAR	PICGLAU	やらいこと	JUGN 16R	OLEKEDE	DIDSMEN	PLDDR	ULMPUM!	PORPRET	WIC CR DO	さいとア	2-10 Jule	SPLIPPAG		SPECIES CODE
P	0	0		70	PP			ק	P	しまた	70.	0	2	0	700		スのア			シャ	O	<i>></i>	0.5	>	75	0	1 2 3 4	LAYER COLL.
PST_07	SUBANDERS	LOLPERE	LATSIRL	DIGSONG	本をでる	EUPESUL	AMBARTE	MELALSA	あった T	SOLDLED	PLAADUS	10/6/18/0E	CONCANA	THE WICH	名でいたと	20 ECURA	DANNA	BROTECH	PODCONP	RUPCRIS	FES PUBIC	PUTYE!	QUERUEN	LOTCORN	TRAPEZZ	SHILLER		L. SPECIES CODE
Pa	2	- 元	7	70	R		0	2	70	P		0		5	か	70	77	70	D				70	P	R	5	1 2 3 4	LAYER
																												3

	POLYGON		
UTMZ:	SURVEYOR(S):	SITE	
UTME:			
UTMN:	DATE:	POLYGON:	
			Participant of the Participant o

POLYGON DESCRIPTION:

RIAL DORGANIC CICACUSTRINE CINTURAL DORGANIC CICACUSTRINE	SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
CACIDIC BEDROCK D ACIDIC BEDROCK D WALLEY SLOPE CARB. BEDROCK Q TABLELAND CARB. BEDROCK Q TABLELAND D CLITHF D CLITHF D CLITHF D CACHOLOUS TALUS D CREVICE/CAVE D ALVAR D ROCKLAND D BEACH/BAR D SAND DUNIE D BLUFF D BLUFF CALIF D CALIF D BEACH/BAR D SAND DUNIE D BLUFF CALIF D GRAND D BEACH/BAR D SAND DUNIE D BLUFF CALIF D GRAND D BLUFF D GRAND D CALIF D GRAND D BLUFF D GRAND D GRAND D BLUFF D GRAND D GR	TERRESTRIAL D WETLAND AQUATIC	CI ORGANIC CI MINERAL SOIL CI PARENT MATERIAL	C LACUSTRINE C RIVERINE D BOTTOMLAND	E NATURAL	D PLANKTON D SUBMERGED	I POND
CARB. BEDROCK LI VALLEY SLOPE CARB. BEDROCK AND CHECKEN Q TABLEAND CROLLING UPLAND CREVICE/CAVE CREVICE/CAVE CREVICE/CAVE CREVICE/CAVE CRACKLAND CREVICE/CAVE CRACKLAND CRACKLAN	E ACOATIC	D ACIDIC BEDROCK	I TERRACE		E FLOATING LVD	□ RIVER □ STREAM
COLING UPLAND CONTROLLING UPLAND CONTROLLING CONTROLLI		CARB. BEDROCK	CI VALLEY SLOPE		o Pogg	MARSH
COLIFF DECIDIOUS CALVAR CREVICE/CAVE CREVIC			TO ROLLING UPLAND		II BRYOPHYTE	C SWAMP
CONTRACTOR OF MIXED CONTRACTO			O TALUS		DECEDUOUS	0 BOG
COLET			C CREVICE/CAVE		MIXED COOK	MEADOW
☐ SAND DUNE ☐ SLUFF			E ROCKLAND		,	PRAIRIE
D BUIFF			☐ BEACH/BAR ☐ SAND DUNE			SAVANNAH
COURT			I BUT			C POREST PLANTATION
COMEN COMMUNICATION	STILE			COVER	COMM. TYPE	OTHER
BLOPEN INCLUSION	I OPEN WATER I SHALLOW WAT. SURFICIAL DEP.			SHRUB SHRUB	COMPLEX COMPLEX	☐ HEDGEROW
BLOPEN DINCLUSION DISTRIBUTION	SITE OPEN WATER SHALLOW WAT. SERFICAL DEP.	CARS BEDROCK		COVER BLOPEN I SHRUB I TREED	COMMITTE COMMIT	D HEDO
	SURFICIAL DEP.			I TREED	į	

STAND DESCRIPTION:

LAYER	5	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
1 EMERGENT	N	_	SOLFER: STUGNIED
2 CANOPY			0.0000000000000000000000000000000000000
3 SUB-CANOPY			
4 UNDERSTORY	E.	N	REP CATAL FRODECE
5 GROUND LAVED	たい	S	CUCANTIPOAPRATI PROTIVE I TOTA

SIZE CLASS ANALYSIS:

 < 10am 10-24cm 25-50cm < 10cm 10-24cm 25-50cm < 10cm < 10-24cm 25-50cm < 10cm < 10-24cm < 25-50cm 			ARINDANCE CODES		100	ASI NO MONOR OF
< 10cm	> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
< 10am						2
< 10am 10-24cm 25-50am 10-24cm 25-50am	> 500	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
<10cm 10-24cm 25-50cm 410-24cm 25-50cm 25-50cm						
< 10cm 10-24cm	> 5000	25-50gm	10-24cm	< 10cm	IG SNAGS	STANDI
< 10cm 10-24cm 25-50cm						
	> 5000	25-50cm	10-24cm	< 10cm	TREES	

COMMUNITY MATURITY:

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

* un comour of small MDS2-1 CO.1 ha



PUBLICAIS

COMMUNITY MATURITY:

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

DEADFALL/LOGS DECAYED DECAYED

STANDING SNAGS

TREES

< 10cm

10-24cm

25-50cm

> 50cm

25-50cm 25-50cm

> 50cm > 50cm

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

< 10cm

10-24cm 10-24cm

10-24cm

25-50cm

SUFMACR

STOOPN

VOTRECT POTRECT

.

SIZE GLASS ANALYSIS:

5 GROUND LAYER 5.7 5 GRADMINOID SP >> FOR SS 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%

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT CANOPY SUB-CANOPY

UNDERSTORY

7

CORRACE >> RHACATH

STAND DESCRIPTION:

PLANT SI	POLYGON: CUTI-	Si-twar			11	و
	فر) 0				
ISL	SURVEYOR(S): NM	1)				
VALUE CODES: D = [1 = CANOPY TREES > 10m 2 = SUB-CANOPY DES: D = DOMINANT A = ABUNDANT O =	NOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	4 = GROUND LAYER	D LAYE	יא	
SPECIES CODE	LAYER	OII SPECIES CODE		LAYER	$^{\sim}$	3
	1 2 3 4	בטברי אברידבא נייטהב	-	2 3	4	COL
VICCRAC	0		-	-	+	
MATRPERE	T			\dashv		
SUSSIGN	<i>D</i>			-		
CNCANA	-			-		
JOR FOE	> >			+		
OLC PILD	0			-		
POPPERT	0			+	7	
DSCSME	P			\dashv		
NRPRYE	0			+		
RATPEDI	0			\dashv		
DIPSHEU	0			+		
VITRIPA	RR		_			
REDCATE	0			7		
DAUCARO	9			7		
JUD MOJO	0			7		
PTI_PRD-	7					
TESRUBR	0					
ELAUMBE	R					
SOINER				•	٠	
				I	ļ	

COMM. TYPE OTHER	INCLUSION	II OPEN			SHALLOW WAT.
D PLANTATION	8	COVER			OPEN WATER
					STE
CI WOODLAND			D BLUFF		
D SAVANNAH			☐ BEACH/BAR		
D PRAIRIE			E ALVAK		
0	□ MIXED		LI CREVICE/CAVE		
S	000		DTALUS		
	NA PEC		CLIFF		
	□ BRY		II ROLLING UPLAND		
<u> </u>			TABLELAND	☐ CARB. BEDROCK	
B MARCH	U TORB		II VALLEY SLOPE	☐ BASIC BEDROCK	
D GRAMINOID D STREAM	2 6		□ TERRACE	☐ ACIDIC BEDROCK	
70		E CULIOKAL	D BOTTOMLAND	D PARENT MATERIAL	□ AQUATIC
	Q P	NATURAL	O LACUSTRINE	MINERAL SOIL	WETLAND WETLAND
PLANT FORM COMMUNITY	ξ	HISTORY	TOPO. FEATURE	SUBSTRATE	STORES OF THE PERSON NAMED IN COLUMN

POLYGON SURVEYOR(S):

SITE:

UTMZ:

STME:

POLYGON: DATE: UTMN: 20-2m.

LI PLONEEK LI YOUNG □ MID-AGE □ MATURE □ OLD-GROWTH

	NONE	L R = RARE N =	NI O = OCCASIONAL R = RARE N = NONE	TOWNCE CODES: A = ABUNDAN	COMMUNITY N
> 50cm	25-50am	10-24cm	< 10cm	DECAYED	ARINDANCE CON
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50am	10-24cm	< 10cm	G SNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< 10cm	1	

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		The second second				
LAYER	ER	Ħ	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)	SING DOMINANCE ATER THAN; = ABOUT EO	UAL 75
-	EMERGENT			PICGLAU - QUER	786	
2 (CANOPY					
ω	SUB-CANOPY					
4	UNDERSTORY					
71	GROUND LAYER			THE REPUBLICAN	-REOIN FP	
SH	ODES: 1 = > ;	25m 2 = >1 NE 1 = 1-1(0-25m)% 2 =	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: $0 = NONE$ $1 = 1-10\%$ $2 = >10-25\%$ $3 = >25-35\%$ $4 = >35-60\%$ $5 = >60\%$	= 0.2-0.5m 7 = <0.2m 0% 5 = >60%	
ZIZ	SIZE CLASS ANALYSIS:	ALYSIS:				
		TREES	^	< 10cm 10-24cm	25-50cm	> 50cm
	STANDING SNAGS	SNAGS	^	< 10cm 10-24cm	25-50am	> 50cm
		FIRM	^	< 10mm	76 60	1

STA	D BE OF	- 1 Justin	D D D D D D D D D D D D D D D D D D D
STAND DESCRIPTION:	☐ OPEN WATER ☐ SHALLOW WAT. SE(SURFICIAL DEP. ☐ BEDROCK	SITE	⊠ TERRESTRIAL □ WETLAND □ AQUATIC
PTION:			D ORGANIC DYMINERAL SOIL DARENT MATERIAL D ALDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK
			☐ LACUSTRINE ☐ RIVERUNE ☐ BOTTOMAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ CLIFF ☐ TALUS ☐ CALYAR ☐ ROCKLAND ☐ BEACH/BAR ☐ SAND DUNE ☐ BLUFF
	ZY OPEN D SHRUB D TREED	COVER	COLTURAL COLTURAL
	COMPLEX DI INCLUSION	COMM. TYPE	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOID D FORB LICHEN D BRYOPHYTE D DECEDUGUS M MIXED
	☐ HEDGEROW	OTHER	D LAGE D POND D RIVER D STREAM D MARSH D SWAMP D BOG D BARREN D BOG D BARREN D PLANTATION

Campbell Street

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POLYGON DESCRIPTION:

SYSTEM SUBSTRATE TOPO. FEATURE HISTORY PLANT FORM COMMUNITY

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



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

PLANT SPECIES

POLYGON: CUMILIO

404:3US

0

SURVEYOR(S): DATE: JULY

LST

SPECIES CODE

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SPECIES CODE

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

PLANT SITE HUT Transityay ō

2 *17	1			1111	VALUE OF THE	J. W. W. W.					Ö
SDECTES POL	POLYGON:		T								
	DATE: Jul	5	_<	5	6119						
	SURVEYOR(S):	Š	1	250	71						
VALUE CODES: D = DC	REES >	10m	2 = ABU	SUB-	CANOPY VT 0 = 0	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCUSTONAL R = RARE	= GROUND LAYER	JUN (AYER		
SPECIES CODE		5	LAYER		3	SPECIES CODE		⋝	LAYER		3
	-	2	ω	4			1	2	ω	4	F
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PRONER)>-							
Pubpag				P							
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ACES ASA	0	J									
ACCELUIS.		×									
CARDVAT	0		0								
2010 P. C.				70							
CRATSP			0								
DIPSYFU	_			0							
PLARAL				0							
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POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL D WETLAND	D ORGANIC D MINERAL SOIL	☐ LACUSTRINE ☐ RIVERINE	O NATURAL	☐ PLANKTON	II LAKE
□ AQUATTC	II PARENT MATERIAL	D BOTTOMLAND		II FLOATING LVD	II RIVER
	LI ACIDIC BEDROCK	□ TERRACE		GRAMINOID	O STREAM
	L BASIC BEDROCK	LI VALLEY SLOPE		FORB	☐ MARSH
	LI CAKO, BEDKOCK	II POLITICI IN AND		CHEN	□ SWAMP
				D BRYOPHY IE	
		D TALUS		CONITEROUS	BARREN
		☐ CREVICE/CAVE		□ MIXED	II MEADOW
		LALVAK			PRAIRIE
		E XOCKLAND			DHICKET
		C SAND DUNE			CINANINAVA CI
		E BLOT			II FOREST
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER SHALLOW WAT.			BINAMS CO N340 CO	D INCLUSION	☐ HEDGEROW
☐ SURFICIAL DEP.			O TREED	ļ	

STAND DESCRIPTION:

LAYER	3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
SUB-CANOPY			
UNDERSTORY			
GROUND LAYER			

COURS: $0 = NONE \ 1 = 1-10\% \ 2 = >10-25\% \ 3 = >25-35\% \ 4 = >35-60\% \ 5 = >60\%$

SIZE CLASS ANALYSIS:

			The state of the s		100000000000000000000000000000000000000
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm	< 10cm	STANDING SNAGS	SIANDI
> 50cm	25-50cm	10-24cm	< 10am	TREES	

COMMUNITY MATURITY:

□ PIONEE	
R YOUNG	
G D MID	
-AGE DM	
□ MATURE □	
□ OLD-GROWTH	



PLANT SPECIES LIST SURVEYOR(S): POLYGON: FOD 2-40 DATE: JUN 3/19 SITE: 407 Transitus

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

4 COLL SPECIES CODE 1 2 3 4		CONTINUE COOL	CALCA	_	AYER	_	
COROUDT OOOR OUBAUSE OO R RESINSA OOO R RESINSA OOO R NITERA OOO R UITAMER OOO R CRAT PED OO PRUSERO R CARSCO R OUENCRO R R CARSCO R OUENCRO R OUENCRO R PARTSCO R OUENCRO R		CODE	2 3 4	 _	ω		COL.
REPUBLICO PRUSERO PRUSERO PRUSERO PRUSERO PRUSERO PRUSERO PRUSERO PROFINSE PARTORO PROFINSE		CORONAL	2000	-	-	_	
REPORTUTE RELINGE PRUSERO PRUSERO RUENICO R		OUERU AR	000 8	-		-	
PRUSICO R PRIVIES OUENICO PRUSICO PRIVIES OUENICO PRIVIES OU	Colored	- FRENCHUS		-		-	
PRUSERO R PARTINE QUENCRO R PARTINE PROPERIO PRO	0300	だしてもこと	0	-		4	
PRUSERO R PRUSERO R PRUSERO R PRUSERO R PRENCE R QUENCRO R PROCESIO R PROCE	STATE STATE	CLRLUT	0			-	
PRUSERO REPROPERTOR REPORTANCE ROLLENGUES REPORTANCE ROLLENGUES REPORTANCE ROLLENGUES REPORTANCES REPO	Į.	21012C	D	-		4	
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CARRACE CARRACE PEDI PRUSERO PEDI POLEMACRO RP ROLENACRO		マゴストア	\(\nabla_{\nabla}\)	-		-	
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PRUSERO R PARTINE PARTINE PARTINE QUENACRO RPR PARTICO R PARTOS QUENCO R PARTOS QUENCO R PARTOS QUENCO R PARTOS QUENCO R PARTOS PROPERIOS PROPERIOS PROPERIOS PROPERIOS PROPERIOS PROPERIOS PARTOS PARTINE PROPERIOS PARTOS		CULTUM?	Λ / / \ / \ / \ / \ / \ / \ / \ / \ / \ /	\dashv		4	
	Charles	CORRACE	7>	-		4	
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		PRUSERO	70	-		+	
		SUE TINON	70	-		+	
6 P P		PARTINSE	0	-		-	
P		QUENCRO	TOR D			+	
~		CARJCOR	P	-		-	
		SUBBICO	70	+		-	
		TEAVESC.	R	H		H	
				-		-	
						-	
						-	
					L	H	

* Access constraints

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMINITE
TERRESTRIAL	ORGANIC MINERAL SOIL	CI LACUSTRINE	EXNATURAL EXCULTURAL	D PLANKTON SUBMERGED	POND
ביאליטאוזר	ACIDIC BEDROCK	II BOTTOMLAND	/	D FLOATING LVD	RIVER
	☐ BASIC BEDROCK	EI VALLEY SLOPE		D FORB	MARSH
	LI CARB, BEDROCK	TABLELAND		CI LICHEN	□ SWAMP
		L' KOLLING UPLAND		II BRYOPHYTE	E E
		1 6		EXPECTIDUOUS	□ 80G
		I IALUS		CONIFEROUS	□ BARREN
		LI CKEVICE/CAVE		O MIXED	II MEADOW
		D ALVAS			☐ PRAIRIE
		D BEACH/BAR			II THICKET
					II WOODLAND
		E people			III FOREST
SITE			COVER	COMM. TYPE	OTHER
I SHALLOW WAT.			OPEN SHRUB	☐ INCLUSION	☐ HEDGEROW
II BEDROCK			ZI TREED	ļ	

STAND DESCRIPTION:

LAYER	#	CVR	PECIES IN ORDER OF DECREASING DOMINANCE >> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
EMERGENT			THE BURK
2 CANOPY	Ŋ	t.	ENDER VILL AMERINA
3 SUB-CANOPY	2 3	in	LATERN CARONATE OFFICE
4 UNDERSTORY	工	(v)	ACATA MARANAP > CARNIA
5 GROUND LAYER			77

CVR CODES: $0 = \text{NONE } 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 = > 35 - 60\% \ 5 = > 60\%$

SIZE CLASS ANALYSIS:

					A COLOR OF THE PARTY OF THE PAR
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	MATA	DEADFALL/LOGS
> 500	25-50cm	10-24cm	< 10am	GSNAGS	STANDING SNAG
> 50mm	25-50cm	10-24cm	< 10cm	INCES	

COMMUNITY MATURITY:

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



☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

COMMUNITY MATURITY:

DEADFALL/LOGS DECAYED

STANDING SNAGS

TREES

10-24cm 10-24cm 10-24cm

> 25-50cm 25-50cm

> 50cm > 50cm

DECAYED < 10cm 10-24cm 2

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

25-50cm 25-50am

> 50cm > 50cm

< 10cm < 10cm < 10cm HT CODES: 1 = 25m 2 = 250-25m 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:

GROUND LAYER

TRI GRAN SHOD DARY DRITRITE! PODPELT RUB SP ELLO OF OV SOLKUGO GERROSE PRPENS PRINNIRG BUE BICO SPECIES CODE SE PROPE IRLUTE ON - SO DRURE HRMACR OK DES 10 2 3 4 LAYER 0 D 10 70 0 COLF SPECIES CODE ERYANER 2 3 LAYER 4 8 F (metand \$00X Surge

LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY

QUERUBR > CAR ONAT

EMERGENT

SUB-CANOPY

UNDERSTORY

STAND DESCRIPTION:

PLANT SPECIES DATE: July 16/19 POLYGON: FOD2-49 SURVEYOR(S): SITE: 407 ō

ПST

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

POLYGON DESCRIPTION:

		PART INCHES				
	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
25	X TERRESTRIAL I WETLAND AQUATIC	O ORGANIC MINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK BASIC BEDROCK CARB. BEDROCK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMILAND ☐ TERRACE ☐ TABLELAND ☐ TABLELAND	D CULTURAL	D PLANKTON D SUBMERGED D HLOATING LYD D GRAMINOID D FORB D LICHEN D BRYOPHYTE	D LAKE D POND D RIVER D STREAM D MARSH D MARSH D SWAMP
			D. CLIFF D. TALUS D. CREVICE/CAVE D. ALVAR D. ROCKLAND D. BEACH/BAR D. SAND DUNE D. BLUFF		D BRYOPHYTE D-DECIDIOUS D CONITEROUS D MIXED	D FEN D BOG D BARREN D MEADOW PRAIRE D THICKET D SAVANINAH D WOODLAND ESFOREST D PLANTATION
	SITE			COVER	COMM. TYPE	OTHER
	D OPEN WATER SHALLOW WAT. SURFICIAL DEP. D BEDROCK			O OPEN O SHRUB O TREED	D INCLUSION	□ HEDGEROW

- western portun * ACCORD CONDITIONNE

UTMZ:	POLYGON SURVEYOR(S):	зпе:
Z: UTME:	VEYOR(S):	
UTMN:	DATE:	POLYGON:



□ PIONEER É YOUNG

☐ MATURE ☐ OLD-GROWTH

COMMUNITY MATURITY:

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

< 10cm

DEADFALL/LOGS

DECAYED

FIRM

< 10cm

10-24cm 10-24cm

25-50cm 25-50cm

25-50cm

> 50cm > 50cm > 50cm

10-24cm

STANDING SNAGS

< 10cm

TREES

10-24cm

25-50cm

SIZE CLASS ANALYSIS:

POPTREH	ACESASA ACESASA	PULCOMP RHACKTY COAPRAT	MEN HER	SPECIES CODE	PLANT SPECIES DELIST S
0 0 R	A R O R		0 0 0 0 0	AVERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE SPECIES CODE 1 2 3 4 COLL. SPECIES CODE	SITE: 407 TRANSHUZAM POLYGON: DATE: JULY 3/19 SURVEYOR(S): NIME
				PY 3 = SAPLINGS & SHRUBS 4 = OCCASIONAL R = RARE L. SPECIES CODE	Christ
				LAYER 1 2 3 4 COLL	

O OPEN WATER
O SHALLOW WAT.
O SURFICIAL DEP.
O BEDROCK

OPEN SHRUB

☐ INCLUSION

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

SITE

LAYER

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S

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

CANOPY SUB-CANOPY UNDERSTORY

S

_

JUGNICE > POPTREM

1

STAND DESCRIPTION:

* Private property no permission

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

HISTORY

INATURAL

INCULTURAL

G WETLAND
G AQUATIC

D ORGANIC

D MINERAL SOIL

D PARENT MATERIAL

C ACIDIC BEDROCK

D BASIC BEDROCK

CARB. BEDROCK

C LACUSTRINE
C RUFERINE
AL DEOTTOMIAND
K DTERRACE
C VALLEY SLOPE
SET TABLELAND
C ROLLING UPLAND
C CLIFF
C TALUS
C CREVICE/CAVE
C ALVAR
C ROCKLAND
D BEACH/BAR
C SAND DUNE
C BEUFF

D PLANKTON

D SUBMERGED

D ALOATING IVD

D GRAMINOID

D GRAMINOID

D FORB

D LICHEN

D BRYOPHYTE

PS DECEDUOUS

CONIFEROUS

D MIXED

D LAKE
D POND
D RIVER
D STREAM
D MARSH
D SWAMP
D HA
D BOG
D HA
D BARREN
D MEADOW
PRAIRLE
D THICKET
D SAVANNAH
SEWOODLAND
D POREST
D PLANTATION

DATE:	POLYGON SURVEYOR(S): POLYGON:	UTMN:	UTME:	UTMZ:	
		DATE:		SURVEYOR(S):	OLYGON.



Q SITE: 407 Transitual =

PLANT	1	Ç	1	= 0	(SSITE	Jan		i			-
SPECIES	POLYGON:	ž	ŀ	i C		JP52	1				
	DATE	TULY	7	W	٥	1					
	SURVEYOR(S):	l Se		3	H						
LAYERS: 1 = CANO VALUE CODES: D	OPY TREES	N 10	n 2 = = ABI	AGNI	CANOPY NT 0 = 0	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	= GROUND LAYER	ND C	AYER		
SPECIES CODE	_	5	LAYER		8 F	SPECIES CODE	П	5	LAYER		3
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O OPEN WATER
O SHALLOW WAT.
O SURFICIAL DEP.
O BEDROCK

OPEN SHRUB

COMPLEX INCLUSION

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

SITE

LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY EMERGENT

SALIX SP. > ACE SACC

SUB-CANOPY UNDERSTORY

STAND DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO. FEATURE

PLANT FORM

COMMUNITY

CULTURAL COLTURAL HISTORY

I TERRESTRIAL
WETLAND
AQUATIC

D ORGANIC

TO WINERAL SOIL

PARENT MATERIAL

ACIDIC BEDROCK

BASIC BEDROCK

CARB. BEDROCK

1

D LACUSTRINE
D REVIERNAE
D REVIERNAE
D TERRACE
D VALLEY SLOPE
TO TABLELAND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
D ALVAR
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D PLANKTON
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D ROATING LVD
D GRAMINOD

D LAKE
D POND
C RIVER
STREAM
S MARSH
D SWAMP
D FAIR
D BOG
D BARREN
D MEADOW
PRAIRLE
D THICKET
D SAVANNAH
D WOODDAND
D FOREST
D PLANTATION

POLYGON DESCRIPTION:	

DOI VOON		
DECORTITION:		

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

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10an	10-24cm	25-50cm	> 500m
DEADFALL/LOGS FIRM	< 10cm	10-24cm	25-50cm	> 50gm
DECAYED	< 10cm	10-24cm	25-50cm	\

5 GROUND LAYER 45 5 TYPANGUS > PHARUN
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%

□ PIONEER	COMMUNITY N	ARIJANCE CON	DEADFALL/LOGS	STANDIN	
□ YOUNG	ATURITY:	DECAYED	FIRM	STANDING SNAGS	interest
MID-AGE	COMMUNITY MATURITY:	< 10cm	< 10cm	< 10cm	/ Todal
□ MATURE	AL R = RARE N = NONE		10-24cm	10-24cm	TO-5400
□ OLD-GROWT	NONE	25-50cm	25-50cm	25-50am	25-50cm
코		> 50cm	> 50an	> 50cm	> 50cm

6	
PIONEER	LTAIOLUIC
E YOUNG	LING OKLIT:
□ MID-AGE	
☐ MATURE	
□ OLD-GROWTH	

☐ PIONEER	COMMUNITY	ABUNDANCE COD		このことには、 できないのできない こうしゅうしゅう	DEADFALL/LOGS		SIANDI		
E YOUNG	MATURIT	ES: A = AB	DECAYED		FIRM		STANDING SNAGS		IREES
ຄ	:	UND	1	1	/		/		7
□ MID-A	1	NT 0 = OCCA	< 10cm		< 10cm		< 10an		< 10cm
뮈		NOIS	7	1	1	1	7	İ	$\overline{}$
MID-AGE MATTIBE DID COM		UNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	10-24cm		10-24cm		10-24cm		10-24cm
	0.000	NO	1	Ī	1		7	Ţ	7
27			25-50cm		25-50cm		25-50cm		25-50cm
		Ī	1		/	/	1	1	1
			> 50cm	-	> 50cm	1000	1 500m		> 500m
		-175				_		_	-

1 EMERGENT 2 CANOPY 3 SUB-CANOPY 4 UNDERSTORY 4 UNDERSTORY 5 GROUND LAYER 1/5 5 TMP LATE >> PLANE HT CODES: 1 = > 35 m 2 = > 10-25 m 3 = 2-30 m 4 = 1-2 m 5 = 0.5-1 m 6 = 0.2-0.5 m 7 = <0.2 m CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60% SIZE CLASS ANALYSIS:	5	LAYER	нт	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)
2 CANOPY 3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER 4/5 5 TYP LATE >>PLATE -	EMERGENT			- 1	
3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER 4/5 5 740 LATE >> PAALU HT CODES: 1 = > 35m 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:	2	CANOPY			
4 UNDERSTORY 5 GROUND LAYER 4/5 5 TYP LATE >> PLATE 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:	ω	SUB-CANOPY			
S GROUND LAYER 14/5 5	4	UNDERSTORY			
HT CODES: $1 = > 25m \ 2 = >10\cdot25m \ 3 = 2\cdot10m \ 4 = 1\cdot2m \ 5 = 0.5\cdot1m \ 6 = 0.2\cdot0.5m \ 7 = <0.2m$ CVR CODES: $0 = NONE \ 1 = 1\cdot10\% \ 2 = >10\cdot25\% \ 3 = >25\cdot35\% \ 4 = >35\cdot60\% \ 5 = >60\%$ SIZE CLASS ANALYSIS:	2	GROUND LAYER	1/1	V)	TAPIDIE STEPPE
SIZE CLASS ANALYSIS:	84	CODES: 1 = > 25r R CODES: 0 = NONE	n 2=>1 1=1-1	0-25m : 0% 2 =	1 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%
	IS	ZE CLASS ANAL	YSIS:		

STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
II TERRESTRIAL SKWETLAND II AQUATIC	O ORGANIC O MINERAL SOIL O PARENT MATERIAL	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND	I ONATURAL IN CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LYD	D LAKE
•	☐ ACIDIC BEDROCK	I TERRACE		GRAMINOID	STREAM
	CARB. BEDROCK	D TABLELAND		II LICHEN	MARSH
		II ROLLING UPLAND		□ BRYOPHYTE	
				□ DECIDUOUS	□ B0G
		D MENS		E CONTITEROUS	☐ BARREN
		□ ALVAR		LIMIXED	- MEADOW
		ROCKLAND			LENOTH! D
		I SAND DING			☐ SAVANNAH
		D SAMO DOME			EI WOODLAND
		E programme			☐ FOREST ☐ PLANTATION
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER D SHALLOW WAT. Q SURFICIAL DEP.			D SHRUB	☐ INCLUSION	□ HEDGEROW
BEDROCK					

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UTMZ:	PULYGUN SURVEYOR(S):	SIE
UTME:		
UTMN:	DATE:	POLYGON:

PLANT SPECIES LIST

POLYGON: MAS2-16 DATE: SULV 3 | 0

SITE: 407 Trans two

SPECIES CODE

COLF

SPECIES CODE

SPE.

TAPRIT LACATE TO COR

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

SURVEYOR(S): 10 ME



	ECIES CODE	YERS: 1 = CAI		<u>C</u>	ECIES	ANT		
1 2 3 4	E LAYER COLL	YERS: $1 = \text{CANOPY TREES} > 10 \text{m}$ $2 = \text{SUB-CANOPY}$ $3 = \text{SAPLINGS \& SHRUBS 4} = \text{GROUND LAYER}$ LUE CODES: $D = \text{DOMINANT A} = \text{ABUNDANT O} = \text{OCCASIONAL R} = \text{RARE}$	SURVEYOR(S):	Character of All States	DATE: A CUMITION	BOLYGON:	STIE: LICITA T.	
_	L SPECIES CODE	PY 3 = SAPLINGS & SHRUBS 4 = OCCASIONAL R = RARE				Mery.		
1 2 3 4	LAYER	GROUND LAYER						
SYSTEM	POLYGON DESCRIPTION:				POLYGON			
SUBSTRATE	SCRIPTION:			UTMZ:	POLYGON SURVEYOR(S):	SITE:		

SOL(ANA

ALSO

TOPO. FEATURE

PLANT FORM COMMUNITY

COLTURAL COLTURAL HISTORY

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TRIPE

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DESITIP

HOMER

					1
		☐ SHRUB ☐ TREED			DESURFICIAL DEP.
□ HEDGEROW	D INCLUSION	□ OPEN			D OPEN WATER
OTHER	COMM. TYPE	COVER			3115
C PLANTATION					
- FOREST			□ BLUFF		
WGOD! AND			☐ SAND DUNE		
I SAVANNAH			☐ BEACH/BAR		
PRAIRIE			ROCKLAND		
MEADOW	II MIXED		I ALVAR		
D BARREN	CONJEROUS		DEVICE CANCEL		
□ B06	D DECEDUOUS		1 5		
DI-EN	☐ BRYOPHYTE		LI KULLING UPLAND		
□ SWAMP	D LICHEN		A I ABLELAND	L CAKE, BEDKOCK	
MARSH	FORB		LI VALLEY SLOPE	LI DAVIC BEDROCK	
STREAM	GRAMINOID		LIERRACE	LI ACIDIL BEDROCK	
□ RIVER	- PLOATING LVD	0	LI BOTTOMLAND	L PAKENI MATERIAL	ם אליטאוזר
DPOND	□ SUBMERGED	E CULTURAL	II RIVERINE	ELMINERAL SOIL	WEILAND
- I AKE	PLANKTON	I NATURAL	I LACUSTRINE	- ORGANIC	I TERRESTRIAL

STAND DESCRIPTION:

LAYER HT CVR SI	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO
1 EMERGENT	
2 CANOPY	
3 SUB-CANOPY	*
4 UNDERSTORY	

SIZE CLASS ANALYSIS:

	AL DE BARE NI NICHE		֡		
> 50cm	25-50cm	10-24cm	DECAYED < 10cm	DECAYED	
> 50cm	25-50am	10-24cm	< 100m	LINITA	DEADFALL/LOGS
1				CIDM.	
> 500	25-50cm	10-24cm	< 10cm	G SNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< 10cm	REES	

COMMUNITY MATURITY:

I PIONEER	00: 11:01:11
D YOUNG	-510211.
☐ MID-AGE	
□ MATURE	
□ OLD-GROWTH	

h P

PLANT SURVEYOR(S): NIME DATE: JULY 3/19 POLYGON: CUMI-1a STIE: LOT

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME

UTMN: DATE: POLYGON:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

SPECIES CODE	LAYER		LAYER
	1 2 3 4	COET. SPECIES CODE	1 2 3 4 COLL
DSCSUR	0	PRUVIRG	70
REPORT	カア	PURDUST))
DAUCOR	0	SILPERF	P(
BROITER	D	VICCERC	9
DIPSYFU	0	G 2-2	77
CONCANA	0	ACENEGA	70
でたってここ	0	TLAMER	70
SUMLETE.	0	PRUVIRG	70
STREET.	\(\nabla_1\)	RHURYUR	0
200 (P) S	<u> </u>	ELTGRAM	a
TOURLAND	D	CANUL	7
DICAND	7		
RANGE	D		
ニーカラア	0		
SPOFF1	70		
ONTE			
RAPENS	R		
MACSP	P		
		1	
J.CHANCE C	70		
SENCALA.	2		
ARBERR	0,		
USTIDON	P		
CHROCHEN	<u> </u>		
PENNON.	R		
PILION	70		

POLYGON DESCRIPTION:

SYSTEM SUBSTR	SUBSTRATE	TODO GEATINE			
	OCCUPANTE.	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D WETLAND AQUATIC	ORGANIC MINERAL SOIL PARENT MATERIA	O RIVERINE	CULTURAL CULTURAL	☐ PLANKTON ☐ SUBMERGED	D LAKE
200	ACIDIC BEDROCK	I TERRACE	-	D FLOATING LVD	RIVER
	☐ BASIC BEDROCK	☐ VALLEY SLOPE		II FORB	□ STREAM
	CARB, BEDROCK	TABLELAND		□ LICHEN	CI SWAMP
		LI KOLLING UPLAND		□ BRYOPHYTE	THE COL
				D DECEDUOUS	D BOG
		II ALUS		CONIFEROUS	☐ BARREN
		D ALVAR		MIXED	MEADOW
		E ROCKLAND			HICKET
		L BEACT/BAK			☐ SAVANNAH
		D SANO DONE			II WOODLAND
		1			POREST
STE					II PLANTATION
TITS			COVER	COMM. TYPE	OTHER
SHALLOW WAT.			□ OPEN □ SHRUB	COMPLEX	□ HEDGEROW
SURFICIAL DEP.			A TREED	E 6	
בדייים הבכיחידים ביי	1				
	100				

5 GROUND LAYER 5-7 5
HT CODES: $1 = 25m$ $2 = 20.25m$ $3 = 2.10m$ $4 = 1.2m$ $5 = 0.5 \cdot 1m$ $6 = 0.2 \cdot 0.5m$ $7 = < 0.2m$ CVR CODES: $0 = \text{NONE } 1 = 1.10\%$ $2 = 20.25\%$ $3 = 2.5 \cdot 35\%$ $4 = 2.5 \cdot 36\%$ $5 = 2.60\%$
SIZE CLASS ANALYSIS:

2 CANOPY
3 SUB-CANOPY

UNDERSTORY

REACETE

EMERGENT

LAYER

H

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

> 50cm	25-50cm	DECAYED < 10cm 10-24cm	< 10cm	DECAYED	
> 50cm	25-500m	110L2.01	1		DEADFALL/LOGS
1	77 70	10.340	< 10cm	FIRM	
> 50cm	25-50am	10-24cm	< 10cm	SWAGS	STANDING SNAGS
> 5000	25-50cm	10-24cm	< 10cm	TREES	

COMMUNITY MATURITY:

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



□ MATURE

□ OLD-GROWTH

10-24cm 10-24cm

25-50cm

> 50cm > 50am

10-24cm

25-50cm 25-50cm

> 50cm > 50cm 10-24cm

25-50cm

☐ OPEN WATER
☐ SHALLOW WAT.
☐ SURFICIAL DEP.
☐ BEDROCK ☐ PIONEER ☐ YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE DEADFALL/LOGS SIZE CLASS ANALYSIS: LAYER STAND DESCRIPTION: COMMUNITY MATURITY: UNDERSTORY SUB-CANOPY CANOPY EMERGENT SITE STANDING SNAGS DECAYED TREES FIRM 폭 CVR < 10cm < 10cm < 10cm < 10cm D LACUSTRINE
D RAVERINE
L D BOTTOMI AND
L D TERRACE
D TABLEL AND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
D ALVAR
D ROCKLAND
D BEACH/BAR
SAND DUNE
D BLUFF SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

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RESP

SHAN CENTE

O OPEN

C INCLUSION COMM. TYPE

☐ HEDGEROW

OTHER

COVER

RUNLS

ROL

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

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SURVEYOR(S): DATE: POLYGON: H TON BILLS

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SPECIES CODE

2 3 LAYER

4 60 F

SPECIES CODE

2 LAYER w 4

8 F

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

HISTORY

PLANT FORM

COMMUNITY

CULTURAL

D PLANKTON

D SUBMERGED

D FLOATING IVD

D GRAMINOED

D FORB

D LICHEN

D RYOPHYTE

D BRYOPHYTE

D CONIFEROUS

C CONIFEROUS

D MIXED

D LAKE
D CIVER
D CIVER
D STREAM
D MARSH
D SWAMP
D FEN
D BOG
D BAGREN
D BAGREN
D MEADOW
D PRAIRIE
D THICKET
D SAVANNAH
D WOODDAND
D FOREST
D PLANTATION

D TERRESTRIAL
D WETLAND
D AQUATIC

ORGANIC
OMINERAL SOIL
DARENT MATERIAL
ACIDIC BEDROCK
DASIC BEDROCK
CARB. BEDROCK

RYT

PLANT

SPECIES

2000

0 3

SITE POLYGON:

SURVE	DATE:	POLYGON:	SITE: 1
SURVEYOR(S): \	JULY:	ON: HD	T +0+
プログ	31/19	52-10	77. 150°Q
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		in the	
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SURV	OR(S):	ZMT					
LAYERS: 1 = CANOPY TRE	ES > 10m 2 = 1	SUB-CANOPY	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	GROU	GROUND LAYER	9	
SPECIES CODE	LAYER	 COL	SPECIES CODE		LAYER	[위	3
	1 2 3	4		н.	2	ω 4	
PURP UST		Þ				-	
TYPANGU		P				+	
RUMCRIS		<i>J</i> .				+	
120 2 CM		0				+	
OSIASUAG		0				+	1
RIACATT	7						1
ROTRECT		0				+	
PODRAT		7				\dashv	
					-	+	1
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					+		
					-		
					-		
		1			+	1000	
	_			_	=	_	

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

OPEN SHRUB COVER

> ☐ COMPLEX COMM. TYPE

> > □ HEDGEROW OTHER

SITE

1 EMERGENT LAYER

CANOPY

SUB-CANOPY UNDERSTORY

STAND DESCRIPTION:

폭

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

UTMN: DATE: POLYGON:

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-	3	đ	
CVC	POLYGON DESCR	2 000	Control
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LLL										,	(5)	2 2	1	7	Į
											Ġ.	210455	deapent to 2 cm	9,5 \$ 0	
									O AQUATIC	METLAND WETLAND	SYSTEM	POLYGON DESCRIPTION:	2 cm	~ 0.5 to 0.470 to 0.5 1	
						L CAKB, BEDROCK	D BASIC BEDROCK	☐ ACIDIC BEDROCK	II PARENT MATERIAL	ORGANIC MINERAL SOIL	SUBSTRATE	CRIPTION:		4+2	
	□ BLUFF	D BEACH/BAR	CI ALVAR	CREVICE/CAVE	CLIFF	N IABLELAND	II VALLEY SLOPE	I TERRACE	D BOTTOMLAND	I LACUSTRINE	TOPO, FEATURE				
) COLLOPAL	I NATURAL	HISTORY				
			į	CONITEROUS	D DECIDUOUS	D LICHEN	D FORB	GRAMINOID	I SUBMERGED	D PLANKTON	PLANT FORM				
C	D FOREST	O SAVANNAH	□ PRAIRIE	BARREN		SWAMP	E-MARSH	STREAM		□ LAKE	COMMUNITY				

SIZE CLASS ANALYSIS:

| 5 | GROUND LAYER | 4 | 5 | P | R | D | S | T | P | A | C |
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%

	200	ABUNDANCE CODES: A = ABUNDANT O = OFFACIONAL B = BARE N	DANT O - OFFICE	S: A = ABI	DUNDANCE COU
> 50am	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
- 0000					
> 5000	25-50cm	10-24cm	< 10an	GSNAGS	STANDING SNAGS
PIDOC /	1 0000				
\ FD-	25-50m	10-24cm	< 10cm	IREES	

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



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1	M YTINUMM	NDANCE CODE	DEADFALL/LOGS -	STANDING		IZE CLASS ANA	VR CODES: 0 = NO	GROUND LAYER	UNDERSTORY	SUB-CANOPY	CANOPY	EMERGENT	LAYER	TAND DESCRI	D BEDROCK	SHALLOW WAT.	SILE									II TERRESTRIAL ST WETLAND	SYSTEM
1	MMUNITY MATURIT	DECAYED DECAYED	DFALL/LOGS FIRM	STANDING SNAGS	TREES	SIZE CLASS ANALYSIS:	VR CODES: 0 = NONE 1 = 1-	GROUND LAYER 4 5	UNDERSTORY	SUB-CANOPY	CANOPY	EMERGENT	YER HT	STAND DESCRIPTION:	BEDROCK	SHALLOW WAT.	SILE					311		☐ BASIC			
T VOI INC	COMMUNITY MATURITY:	NDANCE CODES: A = ARIUNDANT	FIRM			IZE CLASS ANALYSIS:	VR CODES: 0 = NONE 1 = 1-10% 2 =	GROUND LAYER 4/5 5	UNDERSTORY	SUB-CANOPY	CANOPY	EMERGENT		TAND DESCRIPTION:	I SURFICIAL DEP.	SHALLOW WAT.	SILE					A11-0-		☐ BASIC BEDROCK			SYSTEM SUBSTRATE
DINI IOV KI	MMUNITY MATURITY:	NDANCE CODES: A = ARTINDANT O - OCC		STANDING SNAGS < 10cm	TREES < 10cm	IZE CLASS ANALYSIS:	VR CODES: $0 = NONE \ 1 = 1 - 10\% \ 2 = > 10 - 25\%$	GROUND LAYER 45	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR		SURFICIAL DEP. I BEDROCK	SHALLOW WAT.	SILE		□ SAN			D TAL	D CL C CL	☐ BASIC BEDROCK ☐ VAI	☐ PARENT MATERIAL ☐ ACIDIC BEDROCK	O ORGANIC O	SUBSTRATE
MYOUNG DATE ACE		DECAYED < 10cm	FIRM < 10cm	< 10cm	< 10cm	IZE CLASS ANALYSIS:		GROUND LAYER 4/5 5 PUADRUND	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR		SURFICIAL DEP. BEDROCK	SHALLOW WAT.	SITE		☐ SAND DUNE	D BEACH/BAR	O ALVAR	D TALUS	CLIFF	☐ BASIC BEDROCK ☐ VALLEY SLOPE	☐ PARENT MATERIAL ☐ ACIDIC BEDROCK		SUBSTRATE
ľ		DECAYED < 10cm	FIRM			IZE CLASS ANALYSIS:	ω-	GROUND LAYER 4/5 5 PUADRUND	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR						☐ SAND DUNE	D BEACH/BAR	O ALVAR	☐ TALUS ☐ CREVICE/CAVE	CLIFF	☐ BASIC BEDROCK ☐ VALLEY SLOPE ☐ CARB. BEDROCK 🗷 TABLELAND	☐ PARENT MATERIAL ☐ BOTTOMLAND ☐ ACIDIC BEDROCK ☐ TERRACE	O ORGANIC CI RIVERINE	SUBSTRATE TOPO, FEATURE
MYOUNG DATE OF THE PARTY OF THE		DECAYED < 10cm 10-24cm	FIRM < 10cm 10-24cm	< 10an 10-24an	< 10cm 10-24cm	IZE CLASS ANALYSIS:	ω-	GROUND LAYER 4/5 5 PUADRUND	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR			SHALLOW WAT.	COVER		C SAND DUNE	C BEACH/BAR	□ ALVAR	D TALUS	CLIFF	CT VALLEY SLOPE	☐ PARENT MATERIAL ☐ BOTTOMLAND ☐ ACIDIC BEDROCK ☐ TERRACE	O ORGANIC O	SUBSTRATE
MYOLING DATE DATE DIVINITY IN	MMUNITY MATURITY:	DECAYED < 10cm	FIRM < 10cm	< 10cm	< 10cm	IZE CLASS ANALYSIS:	ω-	GROUND LAYER 4/5 5 PUADRUND	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR		□ TREED	G OPEN	COVER		☐ BLUFF	D BEACH/BAR			ET ROLLING UPLAND	CT VALLEY SLOPE	☐ PARENT MATERIAL ☐ BOTTOMLAND ☐ ACIDIC BEDROCK ☐ TERRACE	I ORGANIC LACUSTRINE DINATURAL DINATURAL DI RIVERINE DI NATURAL DI NATURA DI NATURA DI NATURA DI NATURA DI NATURA	SUBSTRATE TOPO, FEATURE HISTORY
X YOUNG MID-AGE MATTIRE		DECAYED < 10cm 10-24cm	FIRM < 10cm 10-24cm	< 10an 10-24an	< 10cm 10-24cm	IZE CLASS ANALYSIS:	VR CODES: $0 = \text{NONE } 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 = > 35 - 60\% \ 5 = > 60\%$	GROUND LAYER 4/5 5 PUADRUND	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR		□ TREED				☐ SAND DUNE	D BEACH/BAR			D CLIFF	C) TABLELAND	☐ PARENT MATERIAL ☐ BOTTOMLAND ☐ ACIDIC BEDROCK ☐ TERRACE	I ORGANIC LACUSTRINE DINATURAL DINATURA SUBSTRATE TOPO, FEATURE	
□ PIONEER BYOUNG □ MID-AGE □ MATURE □ OI D-GROWTH		DECAYED < 10cm 10-24cm 25-50cm	FIRM < 10cm 10-24cm	< 10an 10-24an 25-50an >	< 10cm 10-24cm	IZE CLASS ANALYSIS:	ω-	GROUND LAYER 4/5 5 PUADRUND	UNDERSTORY	SUB-CANOPY	CANOPY		HT CVR		□ TREED	G OPEN	COVER			D BEACH/BAR D SAVANNAH	į	CONIFEROUS	D CLIFF	CT VALLEY SLOPE	☐ PARENT MATERIAL ☐ BOTTONLAND ☐ FOATING LYD ☐ ACCDIC BEDROCK ☐ TERRACE	D ORGANIC D LACUSTRINE D NATURAL D PLANKTON	SUBSTRATE TOPO, FEATURE HISTORY

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•	I TMF.			
CHAIN	I DWN.	DATE:	LOCIGON:	BOI VOON-

PLANT

SITE: 407

SPECIES

SPECIES CODE

PARTIC

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

GROUND LAYER LAYER 2 u 4

COLF.

SPECIES CODE

8 F

POLYGON DESCRIPTION:
SYSTEM SUBSTR

SUBSTRATE

SURVEYOR(S):

DATE:

-

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POLYGON: PTDM2-20

T Min			
	DATE:	POLYGON:	
			Contraction of the Party of the



70 0 0 O SHALLOW WAT.
SURFICIAL DEP.
BEDROCK ☐ PIONEER ☐ YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE5 GROUND LAYER \sim 4 BROINGR > 50 LCANA > P44 DRUN 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% DEADFALL/LOGS SIZE CLASS ANALYSIS: STAND DESCRIPTION: COMMUNITY MATURITY: LAYER SUB-CANOPY EMERGENT UNDERSTORY CANOPY STANDING SNAGS DECAYED TREES FIRM 끜 CVR < 10cm < 10cm < 10an < 10an ☐ MID-AGE CORRDCE >> RUACATH BUERUBR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) ☐ MATURE 10-24cm 10-24cm 10-24cm

10-24cm

25-50cm 25-50cm

> 50cm

> 50cm

25-50cm

> 50cm > 50cm

25-50cm

□ OLD-GROWTH

TODRUN PRUULI

OLCANA 0100

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

PLANT

SITE: LWW 407

SPECIES LSI

SURVEYOR(S): WAY

DATE: POLYGON:

SPECIES CODE

23 LAYER

4

8 F

SPECIES CODE

2

ω 4

DI TERRESTRIAL

O WETLAND

AQUATIC

I ORGANIC
IS MINERAL SOIL
IS PARENT MATERIAL
I ACIDIC BEDROCK
I BASIC BEDROCK
I CARB, BEDROCK

DIACUSTRINE
DIACUSTRINE
DITOMILAND
DITERRACE
VALLEY SLOPE
NATURE UPLAND
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D PLANKTON

I SUBMERGED

I FLOATING LVD

I GRAMINOID

I FORB

I LICHEN

I BYOPHYTE

B DECIDUOUS

CONIFEROUS

I MIXED

D LAKE
D ROND
D RAYER
D STREAM
D MARSH
D SWAMP
D HEN
D BOG
D BARREN
D PEAIRLE
MEADOW
D PEAIRLE
MODDLAND
FOREST
D PLANTATION

SITE

M OPEN M SHRUB TREED

C) COMPLEX

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

CO F

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO. FEATURE

HISTORY

PLANT FORM

COMMUNITY

NATURAL CULTURAL

RIPA

D

RURR

POLYGON | SURVEYOR(S): SITE UTME: DATE: STMN: POLYGON:

SURVEYOR(S):	DATE: JULY 3/1/9	SPECIES POLYGON: FODZ-45	SITE: HWY 407 TOWN - JUNE -
		POLYG	

	LAYER		I AYED
שרופונים כיטטני	4	COLL. SPECIES CODE	1 2 3 4 COLL
CDROVAT	0000	PRINIRC	2
SUERUR A		QUEBICO	70
CRATPEDI	0	1 E 4000.04	2
DEPORTU	000		P 0 0
ゴカアであれ	70	りなつなけるとも	2
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PCHCDCD	\[\bar{D}\]	GERMACH	0
GEUNCLE	0	LETAMA M	0
TRUTE	D	SICAES	0
HUGZ 16T	わ	TRIGRAN	0
PINSTRO	アスク	SOLFLEX	
PODPELT			
OSTVIRG	000		
GERROBE	708		
ピースもりつ	000		
QUETROP	70		
REWINDE	7		
コーアコロス	OROS		
TROGRAN	0,		
POPTRAM	D D		
PRUSERO	0		
TON STRUCK	70		
FRANKUS	5		
100 JUG 18 18	2		
NIT PAIN	カカ		
PRUPEUS /	RR		
PEDDRUM	0		

2 CANOPY

3 SUB-CANOPY

1 EMERGENT LAYER STAND DESCRIPTION:

폭

CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

4 UNDERSTORY

5 GROUND LAYER 5.7 4 CRODES: 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%

JS > ACESASA > PRUVIRGE

SIZE CLASS ANALYSIS:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TO TERRESTRIAL D'WETLAND D AQUATIC	ORGANIC TYMINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK BASIC BEDROCK CARB. BEDROCK	D LACUSTRINE D RIVERINE D ROTTOMLAND D TERRACE D VALLEY SLOPE D TABLELAND D ROLLING UPLAND D CLIFF D TALLES	X NATURAL D CULTURAL	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOID D FORB D FORB D LCOTEN D BRYOPHYTE AT DECIDIOUS	LAKE D POND RIVER D STREAM MARSH D SWAMP D FEN D BOG D BARREN
SITE			COVER	COMM. TYPE	OTHER
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			□ OPEN □ SHRUB ⅓ TREED	COMPLEX	□ HEDGEROW

	POLYGON	20000
UTMZ:	SURVEYOR(S):	יזוני.
UTME:		
UTMN:	DATE:	POLYGON:

LI PIONEER	1-0	ABUNDANCE COD			DEADFALL/LOGS		SIANDIN	
☐ YOUNG	MATURITY	ES: A - AF	DECAYED		FIRM		STANDING SNAGS	
ြ	7	NAC S	/		Ů		C	C
MID-AGE	900	T O - OCCAS	< 10cm		< 10cm		< 10cm	/ 10011
 	TOROL		/		70	1	U	0
☐ MATURE	Z II GREE	2	10-24cm		10-24cm		10-24cm	TU-Z4GM
	NON .	1	1	1	/	1	/	0
□ OLD-GROWTH			25-50cm		25-50cm		25-50cm	25-50cm
N H		1	/	1	/	1	/	_
		1 Juni	/ []	1 LOCAL	V 500	ווחחר	× 500	> 50cm

2d-up

	LIST DATE: Du	ָּלְלֵי ללי	DI ANT SITE: HUN
SURVEYOR(S): NA	51 E SMD	POLYGON: CUM - G	S TOP TOPS I WOU

	_	LAYER			LAYER	LAYER	
SPECIES CODE	1 2	ω	4	Ę	SPECIES CODE	1 2 3 4	COF
TO SADOS			D		TELALRA	5	
PUD DRUN			B		EUNREDE		
,					POACOMP		
DANCOKO			2		TESPURE		
LONDAK		70	_ (CRESER	Z.	
SOLCOUR			D		RUMC RIS	R	
PLE DUST			0		COPUDE!		
LOTCOKN			0		BROTE CH	2	
NICCERC			0		EUT GAM		
SONBRUE			2		CONCACA		7
LYTSAL!			0		DSCS-8		
RUDCATU		0	0		M DL PUNDA	70	
DIPSYFU			0		大子子に	9	
BROINE P			D		DCESNCC	P	
TYPANGU		_	70		CORRACE	0	
SCIPIN			/S)	PIC.	HELDE SE	0	Morms 12 713
カエグコアフ		P			ELED NOV	0	- 7
しいとはい			0		ULMPUT!	P /	
TODRUFF			Þ		REUTURA	R	
ORVICES			10		かいというか	P	
VITRIPA		10	\approx		RESASA	2	
TRAPENS		0			CONDEVE	0	
DCTATS		70			CERTAIN		
アカハマーアンは			7		ELEO SP	P	
NUMEDON			~				
SYMLDTE			0				
CICINA			N				

☐ OPEN WATER
☐ SHALLOW WAT.

■ SURFICIAL DEP.
☐ BEDROCK

□ OPEN □ SHRUB □ TREED COVER

> COMPLEX COMM. TYPE

> > **U HEDGEROW**

OTHER

SITE

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C. Carlotte					
INCITATION IS					
EI WOODLAND			III SALLET		
II SAVANNAH			LI BEACH/BAR		
I THICKET			II ROCKLAND		
☐ PRAIRIE	•		O ALVAR		
MEADOW	ZYMDXED		CREVICE/CAVE		
□ BARREN	☐ CONITEROUS		O TALUS		
□ 80G	D DECEDUOUS				
型型	D BRYOPHYTE		D ROLLING UPLAND		
□ SWAMP			CABLELAND	CARB, BEDROCK	
□ MARSH	□ FORB		D VALLEY SLOPE	☐ BASIC BEDROCK	
□ STREAM	GRAMINOID		I TERRACE	ACIDIC BEDROCK	
□ RIVER	III FLOATING LVD		LI BOTTOMLAND	LI PARENI MATERIAL	LI AQUALIC
II POND	☐ SUBMERGED	DECULTURAL	LI RIVERINE	MINEKAL SOIL	WEILAND
LAKE	II PLANKTON	NATURAL	LACUSTRINE	II ORGANIC	TERRESTRIAL
COMMONATA	PANT FORM	14010	10.00		
	DI AMP EODL	Addison	TOPO FEATURE	SUBSTRATE	MATEKS
				CRIPTION:	POLYGON DESCRIPTION

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

COMMUNITY MATURITY:

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

< 10cm < 10cm

10-24cm

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm > 50cm

10-24cm

DEADFALL/LOGS DECAYED

STANDING SNAGS

< 10cm ^ 10cm

10-24cm

10-24cm

TREES

SIZE CLASS ANALYSIS:

5 GROUND LAYER | \$\(\sigma - \gamma \) | \$\(\sigma \) | \$\(

3 SUB-CANOPY

UNDERSTORY

CANOPY EMERGENT LAYER

3

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

STAND DESCRIPTION:

-AGE MATIBE
A

☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

DEADFALL/LOGS PIRM DECAYED

SIZE CLASS ANALYSIS:

TREES
STANDING SNAGS

DECAYED < 10cm 10-24cm 2

ABUNDANT 0 = OCCASIONAL R = RARE N = NONE

< 10cm < 10cm

10-24cm 10-24cm

25-50cm 25-50cm

> 50cm

25-50cm 25-50cm

> 50cm > 50cm

7						
Τ	SYSTEM	SUBSTRATE	RATE	TOPO. FEATURE	HISTORY	PLANT FORM
- No	D TERRESTRIAL DEWETLAND DAQUATIC	E ORGANIC EMMIREAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK CRB. BEDROCK	SOIL MATERIA	DI LACUSTRINE DI RIVERINE DI ROTTOMIAND DI TERRACE UNALLEY SLOPE DI TABLELIAND DI ROLLING UPLAND CLITE DI TALUS CREVICE/CAVE DALVAR DI ROCKLAND DI BEACH/BAR DI SAND DUNE DI RUIFF	S CILTURAL	D PLANKTON SUBMIRRGED D SUBMIRRGED D FAATING LVD D GRAMINOID HORB D LICHEN D BKYOPHYTE D PECTUJOUS C CONIFEROUS D MIXED
Τ	SITE				COVER	COMMUTABE
	D OPEN WATER SASHALLOW WAT. D SURFICIAL DEP. D BEDROCK				OPEN SHRUB	CI INCLUSION
ड्	STAND DESCRIPTION:	PTION:				
5	LAYER	#	CVR S	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; = ABOU	F DECREASING AN; > GREATER	REASING DOMINANCE GREATER THAN; = ABOUT EQUAL TO
14	EMERGENT	4	F	ORFORM		
2	CANOPY					
ω	SUB-CANOPY					
4	UNDERSTORY			7		
Ŋ	GROUND LAYER	15/H	7	YPANGU > F	TRAIST	

HIND! TOBRUZ

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I R DONT OR FORD

POLYGON SURVEYOR(S):

UTMZ:

UTME:

UMMI: DATE: POLYGON: 2d-ups

DEADFALL/LOGS PINM SUCIN 10-24cm 2:

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

5 GROUND LAYER 5 5 PALADRUM 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%

1 EMERGENT

CANOPY SUB-CANOPY

UNDERSTORY

STAND DESCRIPTION:

₹

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

SIZE CLASS ANALYSIS:

STANDING SNAGS

< 10cm < 10cm

10-24cm 10-24cm

25-50am 25-50am 25-50cm

> > 50cm > 50cm

> 50cm

25-50cm

FIRM

COMMUNITY MATURITY:

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

	LST	SPECIES	DI ANT
SURVEYOR(S): NME	DATE: Aug J.	POLYGON: MAMZ-2	SITE HOT Transmover
			12

LIST DATE: AUG AUGUST	-17.5	1		
SE: 1 = CANDPY TREES > 10m 2 = SUB-CANDPY 3 CODES: D = DOMINANT A = ABUNDANT O = OC LAYER LAYER COLL. DIGUIU ANGU		OR(S):		
ES COD	LAYERS: 1 = CANOPY TR VALUE CODES: D = DON	inant a = abundan	ANOPY 3 = SAPLINGS & SHRUBS 4	= GROUND LAYER
1 2 3 4 PANGU A C PANGU A C PATTE CATTE	SPECIES CODE	LAYER	OII SPECIES CODE	LAYER
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SACT R	CORRACE	0		
SACT R	TOPUST			
CATE R	VER LAST	\nearrow		
RECATE	HISA I	P		
	FRATE	R		

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMINITY
II TERRESTRIAL	II ORGANIC	D LACUSTRINE	O NATURAL	I PLANKTON	D LAKE
☐ AQUATIC	D PARENT MATERIAL	DE BOTTOMILAND)	☐ FLOATING LVD	RIVER
	I ACIDIC BEDROCK	□ TERRACE		KI GRAMINOID	STREAM
	II BASIC BEDROCK	II VALLEY SLOPE		□ FORB	MARSH
	CARB, BEDROCK	☐ TABLELAND		II LICHEN	□ SWAMP
		II ROLLING UPLAND		II BRYOPHYTE	E E
		007		□ DECIDUOUS	□ BOG
		LIALUS		CONJEROUS	□ BARREN
		I CKEVICE/CAVE		II MIXED	SI MEADOW
		CON MODERA			LI PRAIRIE
		□ BEACH/BAR			CI SAVANNAH
		SAND DUNE			II WOODLAND
		C pc			C PLANTATION
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER O SHALLOW WAT. O SURFICIAL DEP.		-/	AZ OPEN II SHRUB II TREED	☐ COMPLEX	☐ HEDGEROW

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Ti Ti	POLYGON SURVEYOR(S):	SITE
UTMZ:	RVEYOR(S):	LE:
UTME:		
UTMN:	DATE:	POLYGON:

	SITE: 107 To	The same of	2.0			j
PLANT	POLYGON: \\ \D \S	7-17				1
	DATE: AUG 7	110				
	SURVEYOR(S):	こてて				
VALUE CODES: D	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUE VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	B-CANOPY :	3 = SAPLINGS & SHRUBS 4 = CCASIONAL R = RARE	GROUND LAYER	땼	
SPECIES CODE	1 2 3 4	CO F.	SPECIES CODE	LAYER 1 2 3	4	E COLF.
SCHANCE	N			-	-	
LYTEDU	70					
NY ROGERATE						
マログタレミコ	0					
THPANGU						
LICHAMER	0 P R R					
RIE RIE	PO 20					
NTRIPA	PR					
MAGNON						
CORFORD	0					
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POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL WETLAND	CF MINERAL SOIL	☐ LACUSTRINE	D NATURAL	D PLANKTON	LAKE
D AQUATIC	D PARENT MATERIAL	☐ RIVERINE ☐ BOTTOMLAND	包 CULTURAL	☐ SUBMERGED	POND
	☐ ACIDIC BEDROCK	LI TERRACE		E GRAMINOID	STREAM
	I BASIC BEDROCK	CI VALLEY SLOPE		II FORB	MARSH
	☐ CARB, BEDROCK	(Z) TABLELAND			D SWAMP
		C ROLLING UPLAND		□ BRYOPHYTE	田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田
				□ DECIDUOUS	□ 8 06
		LI TALUS		CONTEROUS	BARREN
		LI CREVICE/CAVE		□ MIXED	II MEADOW
		L ALVAK			☐ PRAIRIE
		☐ BEACH/BAR			O THICKET
					☐ WOODLAND
		D DECORATION			II FOREST
SITE			COVER	COMM, TYPE	OTHER
O OPEN WATER ST SHALLOW WAT.			AZ OPEN □ SHRUB	D INCLUSION	☐ HEDGEROW
I BEDROCK			□ TREED		

STAND DESCRIPTION:

LAYER	3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	w	-	ULH NH P
3 SUB-CANOPY	بر		UCHANER .
4 UNDERSTORY	Į.		DRADRAY TRAPENA
5 GROUND LAYER	J.	S	THOAN 60 I PHRAG TY OHA ADM

CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

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					RINDANCE CODES. A SHIPTING OF STREET
> 50gn	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50am	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
/ 20011					
\ E5	25-50cm	10-24cm	< 10cm	GSNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< 10cm	TREES	

The second secon	1.1011	PIONEER	
	E LOONG	D VOING	
	L MIDWIGE	7	
	MACCET	1	
1 (1)	- OPENING		



l)		ίΧ	PI ANT
SURVEYOR(S): NM+	DATE: DUG 7 10	POLYGON: SWDZ-2g	SITE: 407 Transituad

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOWINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

																				Sussid	300	7000		
												2					TRASP	SBL SP	JUGNIGR	REPODIL	FRAXPENS	していかての尺		SPECIES CODE LAYER COLL SPECIES CODE
																	0	m	2	ア	0 R O	RRR	1 2 3 4	LAYER
										,														
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POLYGON DESCRIPTION:	DESCRIPTION:	of hydrucky	Opposition Call	9	the column
SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL A WETLAND ☐ AQUATIC	CI ORGANIC EXMINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK CHARLES BEDROCK	D LACUSTRINE D RIVERINE D BOTTOMAND D TERRACE D VALLEY SLOPE NYTABLELAND D ROLLING UPLAND CLIFF D TALUS D CREVICE/CAVE D ALVAR D ROCKLAND D BEACH/BAR D SAND DINNE D BLUFF	C NATURAL	D NANKTON SUBMERGED D FLOATING LYD MIXED	LAKE D POND D POND D MARSH D STREAM D MARSH D STREAM D MARSH D FEN D FEN D FEN D FEN D FRAIRBE D FRAIRBE D WOODLAND D PLANTATION
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER SUSPECIAL DEP.			OPEN SHRUB	COMPLEX DINCLUSION	□ HEDGEROW

STAND DESCRIPTION:

5	LAYER	3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
۳	EMERGENT			
2	CANOPY	2	T	TROPEUNY ULADMER
ω.	SUB-CANOPY	W	N	FRAS8.
4	UNDERSTORY	3/2	T	RUDCATU > TRAS.
4	GROUND LAYER			*

CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

TREES < 10cm 10-24cm 1	<10am 10-24am 25-50am <10am 10-24am 25-50am 25-50am <10am 10-24am 25-50am <10am <10am 10-24am 25-50am <10am <10am 10-24am 25-50am <10am <1	COMMUNITY MATURITY:	ABUNDANCE CODES: A = ABU	DEADFALL/LOGS FIRM	STANDING SNAGS	TREES
10-24cm 10-24cm 10-24cm 10-24cm 10-24cm	10-24an 25-50an 10-24an 25-50an 10-24an 25-50an 10-24an 25-50an		< 10cm	< 10cm	< 10cm	< 10cm
	25-50cm 25-50cm 25-50cm 25-50cm		IONAL R = RARE N =	10-24cm	10-24cm	() 10-24cm

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

☐ PIONEER ☐ YOUNG

M MID-AGE

☐ MATURE

□ OLD-GROWTH

COMMUNITY MATURITY:

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

DECAYED

< 10cm

10-24cm

25-50am 25-50am 25-50am

> 50cm

> 50cm

FIRM

DEADFALL/LOGS

STANDING SNAGS

< 10cm

10-24cm 10-24cm

10-24cm

25-50cm

> 50cm

TREES

CORRACE DRHACATH

ACESASA = QUERUNO >TILAMER

ACESOSA > QUERUISA

SIZE CLASS ANALYSIS:

	SITE: YOF TOWN	Transtubu			N
SPECIES	POLYGON: FODSI	0			U
	DATE: JULY 3/	0.			
	C-	11.			
LAYERS: 1 = CANC	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	ANOPY 3 = SAPLINGS I	k SHRUBS 4 = GROUI = RARE	ND LAYER	
SPECIES CODE	LAYER	OI I	3		
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SUEMACR	0				
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DCESACC	2				
RUVIRG	0				
CIRCUTE	0				
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OPEN WATER
SHALLOW WAT.
SURFICIAL DEP.
BEDROCK

O OPEN O SHRUB

COMM. TYPE

☐ HEDGEROW

OTHER

COVER

SITE

LAYER

폭

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY

SUB-CANOPY UNDERSTORY

2/3

CC

STAND DESCRIPTION:

Sucral

A cup summer of days of another of days of another of days

D WETLAND

AQUATIC

D ORGANIC

D-MINERAL SOIL

D-PARENT MATERIAL

ACIDIC BEDROCK

BASIC BEDROCK

CARB. BEDROCK

D LACUSTRINE

C REVERINE

L D BOTTOMLAND

D TERRACE

C VALLEY SLOPE

OTABLELAND

D ROLLING UPLAND

C CLIFF

C TALUS

C CREVICE/CAVE

ALVAR

C ROCKLAND

D BEACH/BAR

C SAND DUNE

D BLUFF

D PLANKTON
D SLEMMERGED
D CAPATING LVD
D GRAMINOD
D GRAMINOD
D FORB
D LICHEN
D RECUDIOUS
COMITEROUS
D MIXED

D LAKE
D POND
O RIVER
O STREAM
O MARSH
SWAMP
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POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

NATURAL CULTURAL

4	PULYGON SURVEYOR(S):	2
UTMZ:	JRVEYOR(S):	SITE:
UTME:		
UTMN:	DATE:	POLYGON:



COMMUNITY MATURITY:

☐ MID-AGE

□ MATURE

□ OLD-GROWTH

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

< 10cm < 10cm < 10cm

> 10-24cm 10-24cm

25-50am 25-50cm

> 50cm

> 50cm

> 50cm

> 50cm

10-24cm

DEADFALL/LOGS

DECAYED

FIRM

STANDING SNAGS

TREES

< 10cm

10-24cm

25-50an 25-50cm

5 GROUND LAYER 4 5 FYP NGL >>> PAPARUN 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:

PLANT SPECIES P	10 1	Transitivay	Nay		w
	DATE: JULY	-6	2		
LAYERS: 1 = CANOP	SURVETUR(S): NMF	SIIB CAND			
VALUE CODES: D =	DOMINANT A = ABU LAYER	NDANT C	<u></u>	LAYER	-
SPECIES CODE	1 2 3	4 COL.	SPECIES CODE	1 2 3 4	
TYPDNGU		D			+
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		1			
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O OPEN WATER
O SHALLOW WAT.
SURFICIAL DEP.
O BEDROCK

OPEN SHRUB

COMPLEX COMM. TYPE

☐ HEDGEROW

OTHER

COVER

SITE

LAYER

#

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

EMERGENT

SUB-CANOPY CANOPY

UNDERSTORY

STAND DESCRIPTION:

UTMZ:	POLTGON SURVEYOR(S):	SITE	
UTME:			
UTMN:	DATE:	POLYGON:	
			Anglescone and designation described

UTMN:	UTME:	UTMZ:	
DATE:		LIGON SURVEYOR(S):	1001
POLYGON:		Q1 1.	

D TERRESTRIAL
D WETLAND
D AQUATIC

D ORGANIC
D MINERAL SOIL
D PARENT MATERIAL
D ACIDIC BEDROCK
D BASIC BEDROCK
CARB. BEDROCK

D LACUSTRINE
D RYPERINE
L D BOTTONILAND
D TERRACE
D VALLEY SLOPE
B TABLEAND
D ROLLING UPLAND
D CLIFF
D TALUS
D CREVICE/CAVE
D ALVAR
D RACYLAND
D BEACH/BAR
D SAND DUNIE
D BLUFF

AL D PLANKTON D LAKE

AL D SUBMERGED D POND
D FLOATING LVD D RIVER
D GRAMINOID D RIVER
D LICHEN D SWARSH
D LICHEN D SWARSH
D CONIFEROUS D BOG
D CONIFEROUS D BARREN
D MEADOW D PARREN
D PANTATION

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

NATURAL HISTORY

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Sin Constitution

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

UTMN: DATE: POLYGON:

1 2 3 4 VOL.	SDECIES CODE		LAYER	뜄	}	SPECIFIC CODE LAYER CO. LAYER		LAYER	명	
		1-	-	_		SPECIES CODE	ш	2	ω	
	CHRADELIA			7						
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☐ OPEN WATER
☐ SHALLOW WAT.
☐ SURFICIAL DEP.
☐ BEDROCK

D SHRUB COVER

> COMPLEX COMM. TYPE

> > ☐ HEDGEROW OTHER

SITE

LAYER

₹

CYR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY SUB-CANOPY EMERGENT

UNDERSTORY

STAND DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PI ANT FORM	Community
I TERRESTRIAL	ORGANIC	□ I ACHSTRINE	I NATI TAN	1	
MEILAND	MINERAL SOIL	CI RIVERINE	MATURAL CULTURAL	☐ PLANKTON ☐ SUBMERGED	POND
E AQUATIC	LI ACIDIC REDBOCK	LI BOTTOMLAND		EI FLOATING LVD	II RIVER
	D RASIC REDROCK	D IENONCE		GRAMINOID	O STREAM
	L PASS BEDBOCK	D VALLET SLOPE			MARSH
		T POLITICAL DIAME		LI CHEN	II SWAMP
				II BKYUPHY IE	
				TI DECIDUOUS	□ BOG
		I ALUS		□ CONITEROUS	☐ BARREN
		בו לאני לאני לאני		□ MDXED	☐ MEADOW
		E ALVAN			☐ PRAIRIE
		□ BEACH/BAR			C INJORET
		SAND DUNE			☐ WOODLAND
					□ FOREST
SILE					T. Canada

SIZE CLASS ANALYSIS:

5 GROUND LAYER 4 5 PH A ARUN >>> LYTS A U
HT CODES: 1 = > 25m 2 = > 10.25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = >10.25% 3 = >25-35% 4 = >35-60% 5 = >60%

	ABUNDANCE CODES: A LABINDANT O COLUMN	TARREST OF THE PARTY OF THE PAR	10. V - VOI 11	ABUNDANCECOD
25-50cm	10-24cm	< 10cm	DECAYED	
25-50cm	10-24cm	< 10cm	TIRM	DEADFALL/LOGS
25-50an	10-24cm	< TUGIN	COMICO	SIANDE DINTONALE
25-50cm	10-24cm	< TOOM	TAGE OF	CTANDITO
			1	

☐ PIONEER	
SNNOA.B	
□ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



PLANT SYRVILLG ノイトロラ田の QUEMA CR SPECIES CODE 大コスと >KUNIRG SEPLES LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT O = CCASIONAL R = RARE IST DICONA TUDGG スてのひる FAVE RARUE ONTATO RURCI TRIPA OSPSEU DO ST DESCET 50 Sp DATE: JULY 3/194 POLYGON: CHWIG SURVEYOR(S): SITE: 407 Trans-tual 1 2 3 4 LAYER COF SPECIES CODE STAGBORY PINSULV 11600 3 2 3 LAYER 4 CO F W

Servery 3 0000 c or रोप्पेक

> * Property entrance gasted POLYGON SURVEYOR(S): UTMZ: SITE: 020 (-c) SIME: (W. Fall) DATE: UTMN: POLYGON:

POLYGON DESCRIPTION:

From

the roudside

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%

GROUND LAYER UNDERSTORY LAYER

끜

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY SUB-CANOPY EMERGENT

V N

CORRACE > KENEGU

- ACENT GU

ESACC >> QUEHACR

STAND DESCRIPTION:

\ E0.00	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm	< 10cm	G SNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< 10cm	I KEES	

COMMUNITY MATURITY: ☐ MID-AGE □ MATURE □ OLD-GROWTH

medical distributed discourse SCAPLY LENDRING OF PARCHIME

SPECIES PLANT IST SURVEYOR(S): DATE: JULY 3//19 POLYGON: CUMI-19 SITE: WOT Transitual W

POLYGON SURVEYOR(S):

UTMZ:

UTME:

UTMN: DATE: POLYGON:

SITE:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

PACIFICATION 1	2 3	4	E F	SPECIES CODE	H	2 3	4	COLL
ı		D		SOCPRUM			9	
される そがた	_	Ь		ULMPUNIC		70		
OF SUC		D		へらとて		-	70	
CIRDRUE		0		PORPARIL	0			
		0		SMOK RUE		70		
DEUCARO		0				1		
のたくかえ		9				+		
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り、ハアスカ		0				1		
ELE ANGU	70					\dashv		
で エハカ・		0			4	+		
UNADRIO .		0						
DOSKITA		0				1		
MCMINU		0				1		
KINEGUN -	R					1	_	
PICGLAUC C							_	
ACEPUDN R					-			
RESERVE	7				-		_	
MPLSTE		0			-			
RIPRAT		0			-		4	
OTCORN)		0			-		4	
3 26PG		0			-		4	
MOTERT		P			+		4	
VICCRAC		DQ å			-	92	4	
当くりに		70			-		4	
UTGERT		ro.			1	1	1	

LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

UNDERSTORY SUB-CANOPY CANOPY

PHARA

STAND DESCRIPTION:

D SHALLOW WAT.

SURFICIAL DEP.

BEDROCK D WETLAND
D AQUATIC POLYGON DESCRIPTION: SYSTEM SITE L D ORGANIC

D RIVERNIE

D RATERIAL

D ROTTOMIAND

C D DESTROME

D ACIDIC BEDROCK

D RASIC BEDROCK

D RALLEY SLOPE

TRALELEY SLOPE

TRALELEY SLOPE

TRALELEY SLOPE

TRALEY SLOPE

TRALIS

D CAPPICE/CAVE

D ALVAR

D ROCKLAND

D BEACH/BAR

D SAND DUNE

D BLUFF SUBSTRATE TOPO, FEATURE O SHRUB II NATURAL HISTORY COVER D PLANKTON

D SUBMERGED

D CACATING LVD

D CRAMMODD

D CRAMMODD

D STREAM

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D MASSH COMPLEX COMM. TYPE PLANT FORM I HEDGEROW COMMUNITY OTHER

SIZE CLASS ANALYSIS: 5 | GROUND LAYER | 5-7+ | 5 | | 6R OINER = POR PRAT > VICCARC > PHA 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%

				- DE	
> 50cm	25-50cm	DECAYED < 10cm 10-24cm 2	< 10cm	DECAYED	BINDANCE
> 50cm	25-50an	10-24cm	< Toda	LIMIT	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm	< 10cm	GSNAGS	STANDING SNAGS
1, 2000					
> 500m	25-50cm	10-24cm	< 10cm	REES	

COMMUNITY MATURITY: ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

	LST	SPECIES	DI ANT
SURVEYOR(S): NJN □	DATE JULY 3///9/	POLYGON: CUMI-IN	SITE: 407 Transituary
			ע

SITE:
POLYGON SURVEYOR(S):

UTMZ:

UTME:

DATE:

POLYGON:

OFFICIES		<	2	1 -		-	ĺ			
SURVE	SURVEYOR(S):		2	市市					1	ĺ
LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS VALUE CODES: D = DOMINAUT A = ABUNDANT O = OCCASIONAL B = 0.05	ANALIS >	10m 2	IS = SU	B-CANOPY	3 = SAPLINGS & SHRUBS 4 =	= GROUND LAYER	ND L	AY		
SDECTES CODE		LAYER	70	3		-	5	AYER		
	-	2 3	4		SPECIES CODE		2	w	4	COLT.
SOLCAND			0			1				
CORRACE										
DIPSYFU			7							
1021DA		0								
VIRIPA		0	70							
SUPCETE		0	$\stackrel{\smile}{-}$							
して外口できる	P									
CURDRIVE			0							
ELE PROU		P								
CHRADIL			0							
あのできた		-	0							
EDPERT!			7							
NATE A			R			V.				
SONDARUE			P							
RS(SHR)			70					_		
SAT DOAZ		\vdash	0							
		\vdash								
		+					_		_	
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	F	+					_			
	-	+					-	-	-	
	-						4	_ _	4	
							4	-	-	
	_						_	_		

SYSTEM	SUBSTRATE	TODO SEATURE			
Maicic	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D AQUATIC	I ORGANIC MINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK RASTO REDROCK	D LACUSTRINE D RIVERINE D BOTTOMLAND D TERRACE	I NATURAL	D PLANKTON D SUBMERGED D FLOATING LYD D GRAMINOID	LAKE D POND D RIVER D STREAM

D PLANKTON D SUBMERGED D FRAMINOID D GRAMINOID D GRAMINOID D EACHONTE D DECTORUS CONIFEROUS CONIFEROUS D INCLUSION COMPLEX	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
COVER COMM.TYPE G OPEN G INCLUSION G SHRUB G COMPLEX G TREED	TERRESTRIAL WEILAND AQUATIC	D ORGANIC MINERAL SOIL PARENT MATERIAL ACIDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	II LACUSTRINE II RIVERUNE III BOTTOMIAND II TERRACE II VALLEY SLOPE SYTABLEAND IN COLLING UPLAND IN COLLING UPLAND IN CALLY CAVE IN ALVAR IN ACCULAND IN ROCKLAND IN ROCKLAND IN ROCKLAND IN BEACH/BAR IN SAND DUNE IN ROCKLAND IN BEACH/BAR IN SAND DUNE IN ROCKLAND IN BEACH/BAR IN SAND DUNE	E CULTURAL	D PLANKTON U SUBMERGED D FLANTING LVD D GRANINOID TX-FORB UCFORB D EXCOPHYTE D ECCOUGUS CONFEROUS CONFEROUS MIXED	D LAKE D POND RIVER D STREAM D MARSH D SWAMP D HEN D BOG D BARREN M MARSH D HORE D THICKET D SAVANNAH D MOODLAND D FOREST
□ OPEN □ INCLUSION □ SHRUB □ COMPLEX □ TREED	SITE			COVER	COMM, TYPE	OTHER
	OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			□ OPEN □ SHRUB □ TREED	D INCLUSION	□ HEDGEROW

	TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDIN	STANDING SNAGS	< 10cm	10-24cm	25-50m	
					upoc /
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	> 50cm
	710000				
	DECAYED	< 10cm	10-24cm	25-50cm	> 50cm
ABUNDANCE COD	ES: A = ABUN	NDANCE CODES: A = ABUNDANT O = OCCASIONAL	AL R = RARE N = NONE	IONE	
COMMUNITY	YATURITY:				
☐ PIONEER	A VOING				

5 GROUND LAYER 5 5 5 50 CANA >> ROINER
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:

1 EMERGENT
2 CANOPY
3 SUB-CANOPY

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SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

UNDERSTORY

					L	t	ŀ		ŀ		1							_
	\vdash	1			+	-	-	+	+	+	+	1			-	+	-	
O PIONEER X	COMMUNITY MATURITY:	אייייייייייייייייייייייייייייייייייייי	ABINDANCE COSES	DEADFALL/LOGS	SIANDING SNAGS	1	SIZE CLASS ANALYSIS:	CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3	5 GROUND LAYER	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY	1 EMERGENT	LAYER	STAND DESCRIPTION:	D SHALLOW WAT. SETSURFICIAL DEP. D BEDROCK	2116	-
NYOUNG	URITY:	A = ABU	DECAYED	FIRM	VAGS	TREES	SIS:	1 = 1-10	Ţ					3	ION:			
		NDAWI C	< 10cm	< 10cm	< 10cm	< 10cm		% 2 = >	S					CVR				
□ MID-AGE □ MA		NONE	cm 10-24cm	cm 10-24cm	on 10-24cm)an 10-24an		O'R CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-40% 5 = >60% 5	PHRAUSTUS PH					SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOU		×	1	_
□ MATURE □		ARE N = NONE	13					= 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m = >25-35% 4 = >35-60% 5 = >60%	TUS PHO DRUN					N ORDER OF DECREASING DOMINANCE GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)		O TREED	COVER	
□ OLD-GROWTH			25-50cm	25-50an	25-50cm	25-50cm		-0.5m 7 = <0 = >60%						THAN; = ABO		COMPLEX	COMM. TYPE	
Ĭ								2m						JT EQ			m	

STE

PHRAUST PH DORUN SPECIES CODE

COLL

SPECIES CODE

2 3 LAYER

4

TERRESTRIAL
WETLAND
AQUATIC

D ORGANIC

MINERAL SOIL

D PARENT MATERIAL

D ACIDIC BEDROCK

D BASIC BEDROCK

CARB. BEDROCK

D CARB. BEDROCK

CARB. BEDROCK

D ROLLING UPLAND

CARB. BEDROCK

D CLIFF

D TALUS

CREVICE/CAVE

D ALVAR

D BEACH/BAR

D SAND DUNE

D BUFF

AL D PLANKTON DI LAKE

VAL SUBMERGED DOND

D FOAD

THE PLANKTON DI LAKE

AL SUBMERGED DOND

D FOAD

D FOAD

D FOAD

D EXTOPHYTE DEAR

D DECIDIOUS DEAREN

D DECIDIOUS DEAREN

D MEADOW DEAREN

D MEADOW PALIFIE

THICKET

D SAVANNAH

D MOODLAND

PALITATION

COMM. TYPE

☐ HEDGEROW

OTHER

6 E

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

TOPO. FEATURE

HISTORY

PLANT FORM

COMMUNITY

E CULTURAL

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

PLANT SPECIES

POLYGON: MAM 29

SITE: 407 Transitway

W

SURVEYOR(S): NMF DATE: JULY 31 /19

LSI

	POLICON	201
UTMZ:	FOLTGON SURVEYOR(S):	Ctici
UTME:		
UTMN:	DATE:	POLYGON:

SURVEYOR(S):	DATE: JULY SILM	POLYGON: HAM2-21	NEWHENDT FOH HIS
			נע

	CKVEYOR(S):	1	1				
VALUE CODES: D = DON	EES > 10m	2 = SUB = ABUNDA	-CANOPY	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRURS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	= GROUND LAYER	N N	剪
SPECIES CODE	5	LAYER	3	כפברובל ניטעב		LAYER	뙤
	1 2	3 4	F	טירכונט כטטנ	H	2	ω 4
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ナーシャート		R					\dashv
CARVULI		R					-
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						-	+
						+	+

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

1 EMERGENT 2 CANOPY 3 SUB-CANOPY

UNDERSTORY

	NOPATON	2
UTMZ:	SURVEYOR(S):	211E:
итме:		
UTMN:	DATE:	POLYGON:

POLYGON DESCRIPTION:

D PLANKTON D SUBMERCED D FOATING LVD X GRAMINOID D FORB D LICHEN D ECCOUNTS CONIMEROUS COMM.TYPE D INCLUSION COMPLEX	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
T. AZ OPEN DINCLUSION DISHRUB DI COMPLEX P. DITREED	☐ TERRESTRIAL A WEILAND ☐ AQUATIC	D ORGANIC MINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D 8ASTC BEDROCK C BASTC BEDROCK C CARB. BEDROCK	D LACUSTRINE D RIVERUNE D BOTTONLAND D TERRACE U VALLEY SLOPE SQ TABLELAND D ROLLING UPLAND C CLIFF D TALLIS D CREVICE/CAVE D ALVAR D ROCKLAND D BEACH/BAR D SAND DUNE D SAND DUNE	E CULTURAL	D PLANNTON SUBMERGED D FLOATING LYD AT GRAMINOLD D FORB D HORB D BECDUOUS C CONITEROUS D CONITEROUS D MIXED	D LAKE D POND RIVER D STREAM O MARSH D SWAMP D BOG D BARREN D BARREN D PRAIRE D THICKET D SAVANNAH D PRAIRE D THOODLAND D FOREST D PANTATION
T. Q OPEN D INCLUSION D SHRUB D COMPLEX P. D TREED	SITE			COVER	COMM. TYPE	OTHER
	D OPEN WATER D SHALLOW WAT. SURFICIAL DEP. D BEDROCK			O SHRUB	D COMPLEX	□ HEDGEROW

SIZE CLASS ANALYSIS:

| 5 | GROUND LAYER | 4| 5 | PULL DRUN >>> CAR VULL|
| 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%

É	TO TOUT	25-50cm
		10.7%
	< 10cm 10	m 10-24cm 25-50cm
	< 10cm 10	m 10-24cm 75-50-m
	< TUCH 1001	n 10-24cm 25-50cm
	-	

	I PIONEER
1	NOUNG E
C . 140 700	I MID-AGE
E PANTONE	D MATING
L OLD-GROWIH	27



20-upn

LI MATURE LI OLD-GROWTH

Tores	200	1240		
71	TREES	< 10cm	10-24cm	25-50cm
STANDANC CA	2	2 40		
STANDING SNAGS	IAGS	< 10cm	10-24cm	25-50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm
	DECAYED			
		< 10cm	10-24cm	25-50gm

LAYER		3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
1 EMERGENT	NT			
2 CANOPY				
3 SUB-CANOPY	NOPY			
4 UNDERSTORY	TORY			
GROUND LAYER	LAYER			

AYER

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
O TERRESTRIAL	ORGANIC MINERAL SOIL	D LACUSTRINE	O NATURAL	D PLANKTON	I AKE
D AQUATIC	D PARENT MATERIAL	D BOTTOMLAND	ווי כטרו טופור	☐ FLOATING LVD	RIVER
	ACIDIC BEDROCK	D TERRACE		☐ GRAMINOID	□ STREAM
	D BASIC BEDROCK	II VALLEY SLOPE		□ FORB	O MARSH
	CARB, BEDROCK	CI TABLELAND		□ LICHEN	□ SWAMP
		D ROLLING UPLAND		□ BRYOPHYTE	型
		D TALUS		CONTEMBORS	1 80G
		CREVICE/CAVE		□ MIXED	I MEADOW
		D ROCKLAND			PRAIRIE
		□ BEACH/BAR			SAVANNAH
		CI SAND DUNE			☐ WOODLAND
					I PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER OF SHALLOW WAT.			☐ OPEN	I INCLUSION	□ HEDGEROW
SURFICIAL DEP. BEDROCK			O TREED		

SPECIES LIST

POLYGON: (1)

1

DATE: AUG7 19
SURVEYOR(S): NMF

SPECIES CODE

COLF

SPECIES CODE

COLF.

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

SPUDURD

DPENS

ガヤちばん

CESDS 1



 DEADFALL/LOGS
 PJRM
 < 10cm</th>
 10-24cm
 2

 DECAYED
 < 10cm</td>
 10-24cm
 2

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

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm

FIRM

< 10cm < 10cm

10-24cm 10-24cm 10-24cm

> 50cm

4 UNDERSTORY

SUB-CANOPY CANOPY LAYER

3

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)

EMERGENT

STAND DESCRIPTION:

SIZE CLASS ANALYSIS:

TREES
STANDING SNAGS

☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

PLANT SITE: 407 Transitivaly 2

	POLYGON:		1.1
LIST DATE:	P1 = 204 3		
	SURVEYOR(S): NIME		
VALUE CODES: D = DC	ANOPY TREES > $10m 2 = SUB$ -CANOPY $3 = SAPLINGS & SHRUE D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE$	LAYERS: $1 = \text{CANDPY TREES} > 10 \text{m}$ $2 = \text{SUB-CANDPY } 3 = \text{SAPLINGS & SHRUBS } 4 = \text{GROUND LAYER}$ VALUE CODES: $D = \text{DOMINANT } A = \text{ABUNDANT } 0 = \text{OCCASIONAL } R = \text{RARE}$	= GROUND LAYER
	LAYER COLL	SPECIES CODE	LAYER COIL
	1 2 3 4		1 2 3 4
ACEPLAT	70	POPPIDE	0
DICPUNC	70	ALWINGAN	R
SPC PC RD	70	QUELLACK	2
PIC GUILL	70 O		
POPDELT	プ		
DCE SACC	0		
POROIT	D		
DIP STAN P	0		
マオガラク	R		
PINNIGR	0 2		
DINSTRO	R		
TOU SP	0		
LOTCORN	0		
TRIPRE	0		
THOCK	۵		
PICARIE	0		
TRAX UP	R		
VIRSPUL	70		
TOO SOUTH TOO BOR	P		
AND WIS OUEDLAND	P PR		
ロアフロハン人	7		
POPSPAN	7		
Str 78	7		
PUBLICATION	D		
MEDEBO	_5		
BROINER	0		
D 2 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20		

POLYGON DESCRIPTION:

POLYGON SURVEYOR(S):

SITE

UTMZ:

UTME:

UTMN: DATE: POLYGON:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND	D ORGANIC MINERAL SOIL	CI LACUSTRINE	O CULTURAL	□ PLANKTON	D LAKE
AQUATIC	PARENT MATERIAL	D BOTTOMLAND	ניטיטער	II FLOATING LVD	RIVER
	ACIDIC BEDROCK	- TERRACE	-70	☐ GRAMINOID	STREAM
	LI BASIC BEDROOK	III VALLEY SLOPE		II FORB	□ MARSH
	LI CARB. BEDROCK	C TABLELAND		D LICHEN	☐ SWAMP
		LI KULLING UPLAND		☐ BRYOPHYTE	THE I
		16		D DECIDUOUS	II BOG
		LIALUS		☐ CONIFEROUS	□ BARREN
		LI CKEVICE/CAVE		O MIXED	II MEADOW
		L ALVAK			PRAIRIE
		□ BEACH/BAR			SAVANNAH
					☐ WOODLAND
		C BCC			- PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER SHALLOW WAT.			C SHRUB	C) COMPLEX	☐ HEDGEROW
] BEDROCK			2		

7		
No.	de	A
į	U	V.
-	5	
3	64	9

7 d-2m

COMMUNITY MATURITY:

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

POLYGON SURVEYOR(S):

UTMZ:

UTME:

DATE:

POLYGON:

TIA 10	SITE: 407 Tra	Consitua-	2				Ē
SPECIES	3	2-15			ı		
TST STEET	DATE: AUG +				1	- 1	
	SURVEYOR(S): UMF	市					
VALUE CODES: D	ANDPY TREES > $10m 2 = SUB$ -CANOPY $3 = SAPLINGS & SHRUE D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE$	JB-CANOPY DANT 0 = C	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	GROUN	GROUND LAYER		
SPECIES CODE	LAYER	0	SPECIES CODE		LAYER		3
	1 2 3 4			1	2 3	4	Ę
TYPLATE					-		
THPANGU	Þ						
PLADRIK)							
LYTHSPL)	70						
					+		
					+		
					-		
				I			
					-		
				L			

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL	ORGANIC ON	II LACUSTRINE	D NATURAL	☐ PLANKTON	□ LAKE
ACHATIC ACHATIC	DEMINERAL SOIL	RIVERINE	A CULTURAL	□ SUBMERGED	POND
CI WOOM IT	L PAKENI MATEKIAL	N BOTTOMLAND		II FLOATING LVD	□ RIVER
	LI ACLUIC BEDROCK	II TERRACE		E GRAMINOID	□ STREAM
	LI BASIC BEDROCK	LI VALLEY SLOPE		□ FORB	ST MARSH
	LI CAKB, BEDROCK	LI TABLELAND			SWAMP
		II ROLLING UPLAND		II BRYOPHYTE	四型
				□ DECIDUOUS	508
		LITALUS		CONTEROUS	BARREN
		LI CKEVICE/CAVE		- MDXED	□ MEADOW
		L ALVAK			PRAIRIE
		L ROCKLAND			I THIOGET
		L BEACH/BAK			III SAVANNAH
		D BLUFF			- WOODLAND
					III PLANTATION
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER SHALLOW WAT.			D SHRIB FI OPEN	D INCLUSION	□ HEDGEROW
☐ SURFICIAL DEP, ☐ BEDROCK			O TREED	ļ	

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL D AQUATIC	D ORGANIC D PARENT MATERIAL	TAL ST BOTTOMIAND	II NATURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING LVD	POND
	ACIDIC BEDROCK	\sim		GRAMINOID	STREAM
	CARB. BEDROCK	K CI TABLELAND		II FORB	SI MARSH
		_		□ BRYOPHYTE	O FI
				DECIDUOUS	1 BOG
		CREVICE/CAVE		II CONTIFEROUS	BARREN
				į	D PRAIRIE
		II REACH/RAD			D THICKET
					UNAVAVIOR TI
		O BLUFF			- PLANTATION
SITE			COVER	COMM, TYPE	OTHER
D OPEN WATER EN SHALLOW WAT.			D OPEN	D INCLUSION	□ HEDGEROW
☐ SURFICIAL DEP. ☐ BEDROCK			O TREED		
STAND DESCRIPTION:	IPTION:				
LAYER	HT CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOLIAL TO	OF DECREASING HAN; > GREATER	DOMINANCE	TOT IALK
1 EMERGENT					100
2 CANOPY					
3 SUB-CANOPY					
4 UNDERSTORY					
5 GROUND LAYER	5 17 N	TYPSP YS PT	PRACA		
HT CODES: 1 = > 25m CVR CODES: 0 = NONE	HT CODES: 1 = > 25m 2 = >10-25m CVR CODES: 0 = NONE 1 = 1-10% 2 =	3 = 2-10m 4 = >10-25% 3 =	1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = >25-35% 4 = >35-60% 5 = >60%	2-0.5m 7 = <0.2m 5 = >60%	
SIZE CLASS ANALYSIS	MLYSIS:				
	TREES	< 10an 10-24an	4cm	25-50an	> 50cm
STANDIN	STANDING SNAGS	< 10cm 10-24cm	*Com	25-50am	> 50cm
DEADFALL/LOGS	FIRM	< 10cm 10-24cm	4cm	25-50am	En
	DECAYED < 10mm			7	/ 2001



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PLANT
SPECIES
LIST

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

COL. SPECIES CODE 1		LAYER	;		AYER
	SPECIES CUDE	2 3 4		_	ω
	TYPONEU	J		\rightarrow	
	TYPLATI	3			
	PHADRUN	5			-
	PURPUST	0			
	SALDSC	N			
	SALACISA	RO			
	(OR SP				4
	SCIR SP	ア			4
	LYTSDU	P			-
	TRAPENS				
					-

UTMZ: UTME:	OLYGON SURVEYOR(S):	2116:
UTMN:	DATE:	POLYGON:

- Rast of Potentia

POLYGON DESCRIPTION:

STSIEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL SE WETLAND D AOUATIC	II ORGANIC EI MINERAL SOIL	C LACUSTRINE ROTTOMI AND	Q CULTURAL	☐ PLANKTON ☐ SUBMERGED	II LAKE
LI AQUATIC	D ACIDIC BEDROCK	I TERRACE		II FLOATING LVD	□ RIVER □ STREAM
	CARB, BEDROCK	TARI FI AND		D FORB	MARSH
	CAKE, DEDNOCK	C ROLLING UPLAND		O BRYOPHYTE	□ SWAMP
		CLIFF		III DECIDUOUS	□ B0G
		III CREVICESCANE		CONJEROUS	☐ BARREN
		AI VAR	-	LI MIXED	MEADOW
		D ROCKLAND		1	U PRAIRIE
		I SAND DING			II SAVANNAH
			\		II WOODLAND
					CI PLANTATION
SITE			COVER	COMM. TYPE	NAHEO
D OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			D OPEN	☐ COMPLEX	□ HEDGEROW

STAND DESCRIPTION:

LAYER HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL
EMERGENT		
CANOPY	-	SMS
SUB-CANOPY		
UNDERSTORY		
		TYD SO - PHONIC

SIZE CLASS ANALYSIS:

		-		-	BINDANCE CODES
- 20Cm	10-24cm		< 10cm	DECAYED	
75-50-	10-24cm	on /	< 10cm	TIKM	EADFALL/LOGS
				1	
25-50cm / > 50cm	10-24cm	7	< 10cm	SMAGS	SPANC SMICHALE
			1		TAME TO
/ 25-50cm / > 50cm	10-24cm	9	V Toom	1460	

U PIONEER	֡
E YOUNG	
☐ MID-AGE ☐ MATURE	
□ OLD-GROWTH	



> 50cm	25-50cm	10-24Gm	> TOTAL	arone.	Torrest > Torrest
ļ				DECAVED	76
> 50cm	25-50cm	10-24cm	< 10cm	S FIRM	DEADFALL/LOG
> 50cm	25-50cm	10-24cm	< 10cm	STANDING SNAGS	STAND
1 > outil	- Journ				
,	75-50-	10-24cm	^ 10gm	TREES	

< 10an 10-24an < 10an 10-24an	10-24cm
10-24cm	+
	25-50cm

LAYER	Ħ	Ç¥	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	SIN	1	12 1173 173 くく 17113 7 517

LAYER	H	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	SIN	1	DIA DELINI >> PILBAUST

JAPH SP

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TRIPA

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BRO NER

SYSTEM		TOPO, FEATURE	UE HISTORY	PLANT FORM
O TERRESTRIAL WETLAND AQUATIC	D ORGANIC D MINERAL SOIL D PARENT MATTERIA D ACIDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	IL LICUSTRINE IL LICUSTRINE IL RYPERINE FERAL DE OTTONIAND OCK DITERRACE OCK DITERRACE OCK DITERRACE OCK DITERRACE OCK DITERRACE OCK DITERRACE OCK DITERRACE OCKLING UPLAND OCEVICE/CAVE OC	II NATURAL SI CULTURAL	D PLANKTON D SUBWERGED D FLOATING LVD D GRAWINOD D FORB D LICHEN D BRYOPHYTE D DECEMUOUS CONIFEROUS D MIXED
3LLS			COVER	COMM. TYPE
O OPEN WATER SALSHALLOW WAT. O SURFICIAL DEP. D BEDROCK			M OPEN I SHRUB I TREED	C COMPLEX
STAND DESCRIPTION:	IPTION:			
LAYER	HT CVR	100	R OF DECREASING THAN; > GREATER	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT				
2 CANOPY				
3 SUB-CANOPY				
4 UNDERSTORY				
5 GROUND LAYER	S 51h 3	NUSDALL	NTS TH	2
HT CODES: $1 = > 25m \ 2 = > 10-25m \ 3 = 2-10m$ CVR CODES: $0 = NONE \ 1 = 1-10\% \ 2 = > 10-25\%$	25m 2 = >10-25 ONE 1 = 1-10%	1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%	5 = 0.5-1m 6 = 0.2-0.5m 7 = 5% 4 = >35-60% 5 = >60%	2-0.5m 7 = <0.2m 5 = >60%
SIZE CLASS ANALYSIS:	ALYSIS:			
	TREES	< 10cm 10	10-24cm	25-50cm
	G SNAGS	< 10an 10	10-24cm	25-50cm
STANDING SNAGS	FIRM		10-24cm	25-50cm
STANDIN DEADFALL/LOGS	DECAYED	< 10am 10		

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

PLANT SPECIES LIST

DATE: AUG 719
SURVEYOR(S): NME

POLYGON: MAM 2-2 SITE: 407 Transitual

SPECIES CODE

COLF.

SPECIES CODE

COLF

POLYGON DESCRIPTION: SYSTEM

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LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE



COMMUNITY MATURITY: ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

5 GROUND LAYER 5 5 7% A ARM N HT CODES: 1 = > 25m 2 = > 10.25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS C < 10cm

10-24cm 10-24cm

25-50am

> 50cm > 50cm

25-50an 25-50cm

> 50cm

10-24cm

25-50cm

TREES

< 10cm

FIRM

< 10cm

1 EMERGENT

SUB-CANOPY UNDERSTORY

CANOPY

SELALRA >> WILH AMER

*

PLAN PLAN POLYGON: MAM 2-2 SPECIES DATE: MAM 2-2 SURVEYOR(S): WM = LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY VALUE CODES: D = DOMINANT A = ABUNDANT 0 =	SUB-CAI	2-2k	SAPLINGS & SHRUBS 4 =	GROUND LAYER	A	ğ H		
DATE: DATE: SURVEYOR(S): LAYERS: 1 = CANOPY TREES > 10m 2 = VALUE CODES: D = DOMINANT A = ABU	SUB I	CANOPY	4	GROUN	5	¥	1 1 1	
SURVEYOR(S): LAYERS: 1 = CANOPY TREES > 10m 2 = VALUE CODES: D = DOMINANT A = ABL	SUB 3	CANOPY	1 1	GROUN	2	换		
VALUE CODES: D = DOMINANT A = ABL	SUB-	CANOPY	11	GROUN	D 14	换		
	17/11	NI O = C	COGIONAL X - NACE					
SPECIES CODE LAYER		COLF	SPECIES CODE	- 1	LAYER	ᆜ罗		6 F
	7			1	- 1	- (
INUHELE	7	Ð						
FRAPENS RRO								
RUDCATU								
ULMAMER RRR						3111		
SAL ALRO								
SOUCANA	4							
TYPEANGU	P							
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	+	L			-	-	_	
	+				-			

COMPLEX COMPLEX COMPLEX COMPLEX CHINANCE ABOUT EQUAL TO)	DOMIN THAN; =	F DECREASING IAN; > GREATER	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)	CVR CVR	3	LAYER
Z PE						
ž Pr					IPTION:	STAND DESCRIPTION:
	COMPLEX	D TREED				OPEN WATER SHALLOW WAT. SK-SURFICIAL DEP. BEDROCK
	COMP	COVER				SITE
LI FRAIRDE LI THICKET LI SAVANNAH LI WOODLAND LI FOREST LI PLANTATION			CI ROCKIAND CI BEACH/BAR CI SAND DUNE CI BLUFF			
ν.	II CONIT		III TALUS III CREVICE/CAVE			
BRYOPHYTE G FEN	D BRYOP		CLIFF	CAKB, BEDKUCK	C.	
MINOID II STREAM	□ FORB		C VALLEY SLOPE	BASIC BEDROCK	BASIC	
9	D FLOA		SCBOTTOMLAND	PARENT MATERIAL	II PAREN	□ AQUATIC
KTON LAKE	D PLANKTON	CULTURAL	CI LACUSTRINE	AL SOIL	I ORGANIC	II TERRESTRIAL METLAND
PLANT FORM COMMUNITY	PLAN	HISTORY	TOPO. FEATURE	SUBSTRATE	SUBS	SYSTEM

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

UTMZ:

SITE



TIST DV	DATE: NUG 7 119		
ISI	SURVEYOR(S): N MI		
VALUE CODES: D = C	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	3 = SAPLINGS & SHRUBS 4 OCCASIONAL R = RARE	= GROUND LAYER
SPECIES CODE	LAYER	SPECIES CODE	LAYER
	1 2 3 4	נו	1 2 3 4
うとけらい	777		
SPURKE	0		
CNOSTALA	0		
FRARENN	RR		
SDL 5P	ス		
LYTSALI	ゎ		
TUPLATI	D		
TUPPNOU	<u> </u>		

OLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
I TERRESTRIAL	ORGANIC SI-MINERAL SOIL	I LACUSTRINE	I NATURAL	- PLANKTON	LAKE
E AQUATIC	D PARENT MATERIAL	D BOTTOMLAND	A CULTURAL	SUBMERGED	POND
	☐ ACIDIC BEDROCK	O TERRACE		XI GRAMINOID	STREAM
	☐ BASIC BEDROCK	II VALLEY SLOPE	150	II FORB	MARSH
	CARB, BEDROCK	E TABLELAND	794		SWAMP
		C ROLLING UPLAND		□ BRYOPHYTE	THE COLUMN
		CLIFF		ECIDUOUS	90g
		LI TALUS		CONJEROUS	BARREN
		II CREVICE/CAVE		II MIXED	MEADOW
		I ALVAK			PRAIRIE
		E ROCKLAND			D THICKET
		C DEACH/DAK			II SAVANNAH
					II WOODLAND
		E people			D PLANTATION
SITE			COVER	COMM, TYPE	OTHER
OPEN WATER			X OPEN	I INCLUSION	☐ HEDGEROW
SURFICIAL DEP.			Z SHRUB □ TREED	□ CÓMPLEX	

3			
2			
או החיים החיים או			
-			

COMMUNITY MATURITY:

DEADFALL/LOGS PIRM DECAYED

TREES
STANDING SNAGS

< 10am

10-24cm 10-24cm

25-50cm 25-50cm

25-50cm

> 50cm > 50cm > 50cm

< 10cm

10-24cm

25-50cm

SIZE CLASS ANALYSIS:

DECAYED < 10cm 10-24cm 10-24cm 10-24cm 10-24cm

3 SUB-CANOPY
4 UNDERSTORY

LAYER

끜

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

STAND DESCRIPTION:

1 EMERGENT

CANOPY

5 GROUND LAYER 4/5 5 TYPSP > PH A DRUN
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%

JALEXIGY FRAPENI

	MATURE	U MID-AGE	PANOOL	LICINCER
--	--------	-----------	--------	----------



> 50cm

> 50cm

> 50cm > 50gg

1 2 3 4 OH. SPECIES CODE 1 2 3 4 OH. 1 2 3 4 OH. 1 2 3 3 4 OH. 1 2 3 4 3 4 3 4 3 4 4 4	SPECIES LIST LAYERS: 1 = CAN VALUE CODES: 1	PLANT SPECIES LIST DATE: AUS AUS AUS AUS AUS AUS AUS AUS AUS AUS	3 = SAPLINGS & SHRUBS 4 CCASIONAL R = RAKE	GROUND LAYER
		2 3 4	שרנינונים ניסטר	2 3 4
	というのと	0 7		
	DUERICOL	7		
	PINSTRO	0		
H & H & WC & D & D & D & D & D & D & D & D & D &	RCTIVU	C		
	DEUCERO	0		
1	(3)	0		
1	PICARIES	0		
1	PICGLAUC			
	RADCAGE	0		
P P P P P P P P P P P P P P P P P P P	FUDOBON	000		
A CO O PO	J	0		
	CE	0		
		70		
	REPORT.	0		
	D6507	0		
	SIDEMANO	0		
	NTRPD			
00	アインアノコ	0		
000	VITRIDA	-		
CES DS P	MONKEN	-		
	3			

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

☐ HEDGEROW

OTHER

COMMUNITY

D LAKE
D POND
STREAM
D STREAM
D STREAM
D STREAM
D STREAM
D STREAM
D STREAM
D FRAIRE
D HEN
D FRAIRE
D THICKET
D SCVANINAH
D WOODSLAND
D FOREST
D PLANTATION

SITE:



+ Plantai around them ponds

SPECIES PLANT LST SURVEYOR(S): NMF SITE: 407 Transitway DATE: DUG 7 19 POLYGON: CUMI-15

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTMN: DATE: POLYGON:

SPECIES CODE	LAYER		LAYER
	1 2 3 4	בדי ארבינדים ניסטנ	1 2 3
DRCMINU	3	VICC RAC	
PLDLDRUN	D	DANC ARO	
CONARVE	000	JUN 1709	9
STRIPA	00	かられる	0
12227 CG		BROWER	
FESRUSIC	0	RUMCRIS	
SONARUE	D	HENARUE	
1 - 407 a	0	CIPPED 2	
SOLCOND	0	COL PLPD	0
DSPCOHM		RESACC	70
CRDT SP	R	CACEPAT	70
PLAMAJO	C	AESHIPP	P
PLALDNO	0	0	P
Chranton	0.	CALSTO	70
SOLDUCC	P 2	CIRVIVE	R
CIRDRUC	O	50TATA	J
できてかにか	0	であたり	
なされる	70	DRTARS	
RUND IN	Z	AMBARTE	
PICGLDU	777	ece Aligu	70
PERAUST	0		
MCMOMEN	RRR		
RERATE	D		
TENOCCI	70 70		
FRAPENS	2020		
DO ENFOU	70		

LAYER

끜

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

SALAURA ACESACO

3 SUB-CANOPY

CANOPY EMERGENT

UNDERSTORY

ELCATHUCRATSP

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SYSTEM SUBSTR	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL	ORGANIC CON	CI LACUSTRINE	NATURAL	- PLANKTON	LAKE
CHATTAND	MINERAL SOIL	O RIVERINE	DE CULTURAL	□ SUBMERGED	D POND
LI AQUATIC	D PARENT MATERIAL	D BOTTOMLAND	1	III FLOATING LVD	□ RIVER
	ACIDIC BEDROCK	O TERRACE		GRAMINOID	□ STREAM
	LI BASIC BEDROCK	C VALLEY SLOPE		I FORB	O MARSH
	LI CARB, BEDROCK	TABLELAND			□ SWAMP
		II ROLLING UPLAND		☐ BRYOPHYTE	THE COL
		CLIFF		☐ DECIDUOUS	□ B O6
		LI TALUS		CONTEROUS	BARREN
		II AI VAR		MIXED	II MEADOW
		☐ ROCKLAND			HIGH
		II BEACH/BAR			SAVANNAH
		SAND DUNE			□ WOODLAND
		500			CI PLANTATION
SITE			COVER	COMM.TYPE	OTHER
OPEN WATER SHALLOW WAT.			Z OPEN D SHRUB	C) COMPLEX	☐ HEDGEROW
D BEDROCK		ii Pas	- TREED		
STAND DESCRIPTION:					
CITY OF CALL	PTION:				

1	3	5
i	O'R CODES: $1 = 2.5$ m $2 = 2.10$ c/sm $3 = 2.10$ m $4 = 1.2$ m $5 = 0.5$ -1m $6 = 0.2$ -0.5m $7 = 0$ CVR CODES: $0 = 0$ NONE $1 = 1.10$ % $2 = >10.25$ % $3 = >25.35$ % $4 = >35.40$ % $5 = >60$ %	GROUND LAYER
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STTE CLASS ANALYSTS.	ν, Ο Ε	Ē
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3	mä	(F)
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	25	N
	35	0
	8 11	15
	4 5	b
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	6 6	0
	% 0	11
	570	5
	v ST	2
	509	R
	e, II	
	1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%	V
	3	V
	-	27

		The second secon			-	
> 50cm	25-50cm	10-24cm		< 10cm	DECAYED	
1						
> 50cm	25-50am	10-24cm		< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm		< 10cm	STANDING SNAGS	STANDIN
> 50cm	25-50cm	10-24cm	7	< 10cm	REES	

	☐ PIONEER
	□ YOUNG
	□ MID-AGE
	□ MATURE
THE PERSON NAMED IN	□ OI D-GROWTH



manydood アヤテンい SPECIES CODE PLANT LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE LST SPECIES ENTEGU アンナー SPAC 200 SURVEYOR(S): NIME DATE: DUG 7/19 POLYGON: SITE: YOR 0 LAYER 2 3 4 DON HUND 0 <u>8</u> SPECIES CODE UNIA 2 LAYER ω 4 COLT.

O OPEN WATER
O'SHALLOW WAT.
SURFICIAL DEP.
O BEDROCK

D OPEN D SHRUB COVER

> COMPLEX COMM. TYPE

> > II HEDGEROW OTHER

SITE

LAYER

폭

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

SUB-CANOPY

CANOPY

GROUND LAYER UNDERSTORY STAND DESCRIPTION:

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

STE

POLYGON DESCRIPTION:	CRIPTION:				
SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
IN TERRESTRIAL WETLAND AQUATIC	D ORGANIC NATIONAL SOIL PARENT MATERIAL	D RIVERINE D BOTTOMLAND	D NATURAL CULTURAL	☐ PLANKTON ☐ SUBMERGED	II LAKE
1000	D ACIDIC BEDROCK	I TERRACE		GRAMINOID	O STREAM
590	II BASIC BEDROCK	☐ VALLEY SLOPE		□ FORB	MARSH
	LI CAKB, BEDROCK	A PARCELAND		O LICHEN	SWAMP
		CLIFF		DECIDUOUS	□ BOG
		LIALUS		CONJEROUS	□ BARREN
		II ALVAR		I MIXED	I MEADOW
75.5		ROCKLAND			O THICKET
		I SAND DINE			- SAVANNAH
		I BLUFF			II FOREST
					CI PLANTATION
SITE			COVER		

SIZE CLASS ANALYSIS: HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1.2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

		ABUNDANCE CODES: A - ADIANO CONTRACTOR	200	200	
> 50cm	25-50gm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50an	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50an	10-24cm	< TUDII	COMMIC O	COMMC ONTONIO
				S CHAPPE	STANDTA
> 50cm	25-50cm	10-24cm	< 10cm	TREES	

COMMUNITY MATURITY:

☐ PIONEER	
⊠ YOUNG	
☐ MID-AGE	
□ MATURE	
OLD-GROWTH	
	ER XYOUNG I MID-AGE I MATURE I OLD-



POLYGON:

Ze-mpp

PLANT
SPECIES
LIST

DATE: TOLY 20/18

SURVEYOR(S): N M P

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 CO.	LAYER	7	3		7	LAYER	25	
		1 2 3	4	E	SPECIES CODE	ш	2	ω 4	- E
	PODCOMO		D					\dashv	
	PHRAUST		70					+	
	TRIREPE			Ď				+	
	POA PRAT	-	D					+	
	BAGINER		0	D				+	
3	TAROFFI						4	\dashv	
	POPDELT	Ø					4	+	
	CAROVAT	0						\dashv	
	PCEXTREE	2					_	+	
	THUCCO!	0						+	
	DIC ABIE	0					-	+	
	PINNICE	0					4	+	
	RHACATL	R					-	\dashv	
	DCENEGU	70							
	らてけらどで	0					-		
	JUGNICE	0					-	+	
	LOTCORN)		D						
	FROMMER	000					-		
	FROPENS	0 0		Ţ			4		
	PICANG	0					-		
Hordina	CORALBA	Ø					-		
	(variousned lea	100					\dashv	1	
	TAXUS CUSP	7				1	+		
	KENEGU.	000	16.7				+		
	OVERUS R	カ					1	1	
	POLCUSP	00				-	+		
	SALXPEND	2				-	-		

UTMZ:	POLYGON SURV	SITE	
7.	SURVEYOR(S):		
UTME:			
UTMN:	DATE:	POLYGON:	The state of the s

DLYGON DESCRIPTION:

SYSTEM SUBS	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL ORGANIC WETLAND MINERAL SOIL	T SOIL	II LACUSTRINE	CULTURAL	☐ PLANKTON ☐ SUBMERGED	□ LAKE
H AQUALIC HI PARENT	PARENT MATERIAL ACIDIC BEDROOK	C TERRACE		- FLOATING LYD	RIVER
C BASIC BEDROCK	PROCK	II VALLEY SLOPE		GRAMINOID	STREAM
☐ CARB. BEDROCK	EDROCK	C) TABLELAND		C LOHEN	II SWAMP
		C ROLLING UPLAND		☐ BRYOPHYTE	O PEN
		100		☐ DECIDUOUS	□ BO6
		LIALUS		CONTEROUS	☐ BARREN
		D ALVAR		L MIXED	PRAIRIE
_		☐ ROCKLAND			D THICKET
		SAND DUNE			D WOODLAND
		C BLUH			C PLANTATION
SITE			COVER	COMM. TYPE	OTHER
			OPEN SHRUB	COMPLEX	□ HEDGEROW

STAND DESCRIPTION:

5	LAYER	3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1-4	EMERGENT			- 1 1 1 1 1 1 1 1.
2	CANOPY			
ω	SUB-CANOPY			
4	UNDERSTORY			
ы	GROUND LAYER			

CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

G SNAGS < 10cm					
1 < 10an 10-24an 25-50an		10an	10-24cm	25-50cm	> 50cm
	FIRM	10cm	10-24cm	25-50an	> 50cm
DECAYED < 10cm 10-24cm 25-50cm			10-24cm	25-50cm	7 50

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



2	SITE: LLW LL	Town work		
SPECIES	POLYGON: HDY	7-21		
LIST	DATE: JUN 20	N	المال المالة	5
	SURVEYOR(S):	ā	100000	1
VALUE CODES: [LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL B = 0.05	HCANOPY 3 = SAPLINGS	& SHRUBS 4 = GROU	ND LAYER
SPECIES CODE	LAYER	COI :	COPE	LAYER
	1 2 3 4	ACOUNT COL		2 3 4
PHARON	D	CRAMO	CNO	
しゃけるいの		NALS!		
INVERTE	R	10kg		0
PURALIST	A	VERT	PST	0
ナイフタト		ACENEG	16 UN	2
SOLDULC	0	וופני	SP.	0
-SOLCEN		DO ONN	0	
たるしなコー		TEANG	36U	70
というアアイ	70	CARBEBB	EBB	70
CRATPED	ř	SCIRVAL	חבו	0
TRAPENS	0	- シロションボー	De	-
ACENEGU	7	PHADRUN	RUN	0
SALERIC		SATIONS	2000	0
	>			

POLYGON DESCRIPTION:

SYSTEM

SUBSTRATE

G TERRESTRIAL

G WETLAND

G AQUATIC

D PARENT MATERIAL

D PARENT MATERIAL STAN
LAYER
LAYER
STAN
LAYER
FINANCIA
SIGNATURE
HT CORE
CVR CCC D LACUSTRINE TOPO, FEATURE HISTORY D NATURAL D SUBMERGED D POND PLANT FORM COMMUNITY TAPE SA

□ PIONEER	COMMUNITY MATURITY:	ABUNDANCE CODES:		DEADFALL /LOGS	STANDING SNAGS		SIZE CLASS ANALYSIS:	CVR CODES: 1 = > 25m	10	4 UNDERSTORY	3 SUB-CANOPY	_	1 EMERGENT	LAYER	STAND DESCRIPTION:	O OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK	SITE	D AQUATIC
D YOUNG			DECAYED	FIRM /	G SNAGS	TREES	ALYSIS:	1=:	1-	1	5	, W		# 0/	PTION:			D PARENT MITERIAL D ACIDIC BEDROCK D BASIC BEDROCK C CARB. BEDROCK
□ MID-AGE		A = ABUNDANT O = OCCASIONAL R = RARE	< 10cm	< 10cm	< 10cm	< 10cm		5m 3 = 2-10m 4: 2 = >10-25% 3:	TYPLA	MAUSE	7015	THUOC		CVR SPECIES IN	0 0			4^ *occooccoocc
☐ MATURE		NAL R = RARF N	10-74	10-24cm	10-24cm	10-24cm		4 = 1-2m $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = 3 = >25-35%$ $4 = >35-60%$ $5 = >60%$	TE = SCI	. >RHACK	PYDCEN	CIS ACE		REATER THAN; > 0) other	D SHRUB	8	TERRACE WALLEY SLOPE TABLELAND ROLLING UPLAND ROLLING UPLAND CALIFF TALUS CREVICE/CAVE ALVAR ROCKLAND BEACH/BAR SAND DUNE BLUFF
□ OLD-GROWTH	T T T T T T T T T T T T T T T T T T T	IIDOC-C7	75 500	25-50cm	25-50am	25-50cm		A	MALIS LYTSA	WY ELEANOU	reeu	とすると		로임	otherwise PHA ARUN	D OPO	COVER COMM. TYPE	DEVAL LI SUBMERGED DI FLOATING LVO DI GRAMINOID DI FORB DI LICHEN DI BRYOPHYTE L'DECIDUOUS DI CONIFEROUS MIXED
T		> 50cm		> 500	> 50cm	> 50cm			PLI					EQUAL TO)	D = 0	□ HEDGEROW	OTHER	D CRIVER C STREAM STREAM STREAM STREAM STREAM STREAM STREAM STREAM D BOG D BAGREN D MEADOW D PRAIRIE D THICKET D SAVANNAH D MOODLAND D FOREST D PLANTATION

FRANIGE

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POLYGON SURVEYOR(S):

UTMZ:

UTME:

UTMN: DATE: POLYGON: 2d- Dur.

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE 2 3 0 LAYER 4 COF. SPECIES CODE LAYER 2 w 4 SEL ☐ OPEN WATER
☐ SHALLOW WAT.
Ø SURFICIAL DEP.
☐ BEDROCK ASI TERRESTRIAL

G WETLAND

AQUATIC ☐ PIONEER ☐ YOUNG ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE DEADFALL/LOGS HT CODES: 1 = 25m 2 = 210-25m 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%LAYER SIZE CLASS ANALYSIS: STAND DESCRIPTION: POLYGON DESCRIPTION: GROUND LAYER UNDERSTORY CANOPY SUB-CANOPY EMERGENT SYSTEM SITE STANDING SNAGS DORGANIC

DARGANIC

NAMINERAL SOIL

DARENT MATERIAL

DACIDIC BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

CARB. BEDROCK

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CROCKLAND □ YOUNG DECAYED TREES FIRM SUBSTRATE W 폭 S < 10cm < 10cm < 10cm < 10cm ☑ MID-AGE SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) TOPO, FEATURE ERURRY LITATIER CATHOCARONAT PURRY ULTATER

OPEN SHRUB

COMPLEX COMPLEX

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

D

10-24cm

0

25-50cm 25-50cm

> 50cm

> 50cm

25-50cm

10-24cm 10-24cm 10-24cm

25-50cm

> 50cm

> 50cm

☐ MATURE ☐ OLD-GROWTH

CONFO STANDER STANDS

TRIPA CHACK

25720

SASA

RAPHES

PTAGE

PT ITE 040

古いまらり MAMER SPECIES CODE

RUBR

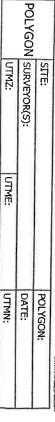
SPECIES PLANT

POLYGON: FOD6-4 SITE:407 Transdoon

LSI

DATE:

SURVEYOR(S):



SE NATURAL

D PLANKTON

O SUBMERGED

D FLOATING IVD

D GRAMINOID

D GRAMINOID

D FORB

D LICHEN

E BECOUGUS

BENOPHYTE

BENOPHYTE

BENOPHYTE

CONIFEROUS

D MIXED

D LAKE
D ROND
D D RIVER
D STREAM
D MARSH
D SWAMP
D HEADOW
D PEAIRUE
D THICKET
D SAVANNAH
D WOODLAND
ST FOREST
D PLANTATION

HISTORY

PLANT FORM

COMMUNITY



2d-000

x-8017-1108-トンコカマン

PLANT SPECIES LIST SURVEYOR(S): DATE: EUG POLYGON: CUMI-1a SITE: WAY 407

LAYERS: 1 = CAMOPY TREES > 10m 2 = SUB-CAMOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

CDECTES CODE	LAYER	COLL SPECIES CODE	519	8
SPECIES CODE	1 2 3 4		1 2	3
Arthres Glore 9		COHHBIND		70
print.	Τ>	45 KTO4		70
TURLUS	À	SOLDALC		7
YTSDLI	Þ	ACENEGU	R	
VER LAST	0	THIS PILET		2
CIRIZRUE	\sim			0
かって言語・	70	NITRIPA		2
7011 0 8 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	CICINTY.		0
010000		LOTCORN		0
6 CP 3 C	3	DENRIEN		
のしかとと	0	6A HELDLESS		R
FIELD PORTICE	50474	BROINER		D
OL CANA	X	LINC SHR		7
"ED APUN	0 6	SA KULYAMER	R	
47540	₩.			
でかっことい	<	13		
ONDARUE	0	* FLEDVOU		
のアアでアゴエ	≂	ENTGRAH -		0
XBV FU	0	DA SURVILG	R	
VERHAST	0	DENSE		J
WHNOLD G	2	X DCE SASA	0	
SALALBA	R	K JUNVIRG	R	
POPTREM R	R	K PERINDINK		8
DILLARIC	5	* WINDW!!	080	
CHING) Q	A BCE SACC	R	
CSHR	0	- SOLCANA		
ROFF	R	PONCOMP		
RERVE	0.6	ト COUZCACA		0

TREE TALLY BY SPECIES
SPECIES CODE

TALLY 1 TALLY 2 TALLY 3 TALLY 4 TALLY 5 TOTAL REL AV.

EYOR(S):	1	SEAVER ACTIVITY	BROWSE (e.g., DEER)	MINOTHROW (BLOWDOWN)	DISEASE / PESTS / DEATH	NATUNAL DISTURBANCES	TRACKS AND TRAILS	PLANTANG (PLANTATION)	LIVESTOCK (GRAZING)	GAPS IN THE CANOPY	SUGAR BUSH OPERATIONS	HANAGEHENT / DISTURBANCE		CHARACTERISTICS DATE:	DISTORBANCE POLYGON:	SITE:
PARAGEMENT / DISTURBANCE DUMPING (PUBBISH) EARTH DISPLACEMENT RECREATIONAL USE ALIEN SPECIES NOISE NATURAL DISTURBANCES PLOODING (POOLS & PLOOLING) FIRE SOIL BROSION OTHER		/				EXLENT /					\	LAUXA TANET /	EYOR(S):		GON:	
		OTHER	SOIL EROSION	FIRE	PLOCOING (POOLS & PUDDLING)	NATURAL DISTURBANCES	MOISE	ALIEN SPECIES	RECREATIONAL USE	EARTH DISPLACEMENT	(HSTBBTN). SNEAHING	MANAGEMENT / DISTURBANCE				

* Inempreted Hodgemus spaces.

BASAL AREA (BA)

FE.

DFALL/LOGS DECAYED TREES
STANDING SNAGS < 10cm < 10an < 10cm 10-24cm 10-24cm 10-24cm 10-24cm 25-50cm 25-50cm 25-50cm > 50cm > 50cm > 50cm > 50cm

													BROWER	POAPRAT	125	というです	DESOSA	SOLCOND	PRUNIRG	CORVARI	党がひてきって	QUERUBR	CARCHAT	PROMES	NOLDEBA	コルカフェログ	POPTREM		SPECIES CODE
													<u> </u>	0	ア	70	70 70	70	7	Ü	0	カアア	0	7º	<i>7</i> >	70 70 70	ro	1 2 3 4	וַּ
																													SPECIES CODE
ŀ	L	+					F	-		-																		1 2	LAYER
1	ļ	1					1				1																	3 4	
L	L																											(6
L FIONEER L Y	COMMUNITY MATE	ABUNDANCE CODES:		DEADFALL/LOGS T	STANDING SN	TR	SIZE CLASS ANALY	CVR CODES: 1 = > 25m	5 GROUND LAYER	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY	1 EMERGENT	LAYER	STAND DESCRIPTION		SURFICIAL DEP.	O SHALLOW WAT	SITE								G WETLAND G N		POLYGON DESCRI
E YOUNG	UTAMY	ABUNDANCE CODES: A = ABUNDANT	DECA	FIRM	STANDING SNAGS < 1	TREES < 1	SIZE CLASS ANALYSIS:	HT CODES: $1 = > 25m$ $2 = >10-25m$ 3 CVR CODES: $0 = NONE$ $1 = 1-10\%$ $2 = >$	5 GROUND LAYER	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY		HT CVR	DESCRIPTION:		SURFICIAL DEP.	O SHALLOW WAT	SITE				7		☐ BASIC BEDROCK				DESCRIF
LI YOUNG LI MID-AGE	UTAMY	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = R	DECA	FIRM < 10cm	< 10am	< 10cm	SIZE CLASS ANALYSIS:	HT CODES: $1 = > 25m$ $2 = > 10-25m$ $3 = 2-10m$ $4 = 1-2m$ $5 = CVR$ CODES: $0 = NONE$ $1 = 1-10\%$ $2 = > 10-25\%$ $3 = > 25-35\%$	5 GROUND LAYER	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY		HT CVR	DESCRIPTION:				SITE	II BLUFF	☐ BEACH/BAR	☐ ROCKLAND	☐ TALUS	☐ ROLLING UPLAND		☐ PARENT MATERIAL ☐ BOTTOMLAND ☐ ACIDIC BEDROCK ☐ TERRACE	☐ ORGANIC ☐ LACUSTRINE	SUBSTRATE	POLYGON DESCRIPTION:
E YOUNG	UTAMY	= ABUNDANT O = OCCASIONAL R = RARE N = NONE	DECAYED < 10cm 10-24cm	FIRM		_	SIZE CLASS ANALYSIS:	HT CODES: $1 = 25m$ $2 = 20.25m$ $3 = 2.10m$ $4 = 1.2m$ $5 = 0.5.1m$ $6 = 0.2.0.5m$ $7 = <0.2m$ CVR CODES: $0 = NONE$ $1 = 1.10\%$ $2 = 20.25\%$ $3 = 25.35\%$ $4 = 23.60\%$ $5 = 26.0\%$	5 GROUND LAYER	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY		#	DESCRIPTION:	I CONTROL OF THE PROPERTY OF T	D SURFICIAL DEP. D RENBROCK T RECED		SITE COVER	口即用	☐ BEACH/BAR		☐ TALUS ☐ CREVICE/CAVE	☐ CLIFF	☐ BASIC BEDROCK ☐ VALLEY SLOPE	☐ PARENT MATERIAL ☐ BOTTOMLAND ☐ ACIDIC BEDROCK ☐ TERRACE	☐ ORGANIC ☐ MINERAL SOIL ☐	SUBSTRATE	POLYGON DESCRIPTION:

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

LAYER

LAYER

LAYER

LAYER LST SURVEYOR(S): DATE: Aug. PLANT

SPECIES

POLYGON: SITE: HO?

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SYSTEM SUBSTR	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
O TERRESTRIAL O WETLAND	ORGANIC MINERAL SOIL	O LACUSTRINE	CULTURAL	☐ PLANKTON ☐ SUBMERGED	CI POND
LI AQUATIC	☐ ACIDIC BEDROCK	II TERRACE		☐ FLOATING LVD ☐ GRAMINOID	□ RIVER □ STREAM
	☐ BASIC BEDROCK	C VALLEY SLOPE		□ FORB	□ MARSH
	CARB, BEDROCK	☐ TABLELAND		O LICHEN	☐ SWAMP
		C ROLLING UPLAND		□ BRYOPHYTE	E E
		CLIFF		□ DECIDUOUS	10 BOG
		LIALUS		□ CONIFEROUS	□ BARREN
	- K- 13	O ALVAR		LI MIXED	D PRAIRIE
		☐ ROCKLAND			I HICKET
		SAND DUNE			HANNAVAS =
		II BLUFF			□ FOREST
					III PLANTATION
SITE			COVER	COMM. TYPE	OTHER
II OPEN WATER II SHALLOW WAT.			O SHRUB	COMPLEX	☐ HEDGEROW
1 BEDROCK					
7					
STAND DESCRIPTION:	PTION:				

UTMZ:	POLYGON SURVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	3
			Applicate directly granted



☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

FIRM

< 10cm

10-24cm 10-24cm 10-24cm

25-50cm

25-50cm

25-50cm 25-50cm

> 50cm > 50cm > 50cm | s | GROUND LAYER | 5-7 | 5 | 7 | 1 | 5 | 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

4 UNDERSTORY

1 EMERGENT

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY SUB-CANOPY

SIZE CLASS ANALYSIS:

TREES
STANDING SNAGS

< 10cm

PLANT	STIE: 40 \$ 10am Summer
SPECIES	POLYGON: MAM 2- 2d
LST	DATE: 1206 3/18
	SURVEYOR(S):

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	215	8	SPECIES CODE		FATER
	1 2 3 4		מיד מינים מטטר	1 2	w
PHONOLINE	7>			\rightarrow	_
とうしてめ	7			-	
HASALIN SALV	D ₂	0		-	
VERHAST				4	
				-	
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		j.		_	
		j		1	

DORGANIC O NACIOSTRINE MINIPAL SOIL PARENT MATERIAL DESTROBLAND CARB. BEDROCK CARB. BEDROCK CARB. BEDROCK DESTRUCTOMIAND CARB. BEDROCK DESTRUCTOMIAND DESTRUCTOMIAN	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TALUS COVER COMPLEX COVER COMPLEX COMPLEX	D TERRESTRIAL WETLAND AQUATIC	O ORGANIC MINIERAL SOIL MINIERAL SOIL MATERIAL D PACENT MATERIAL C ACIDIC BEDROCK D BASIC BEDROCK CARB, BEDROCK	D LACUSTRINE D RIVERINE D ROTTOMILAND D TERRACE D VALLEY SLOPE JA TABLE AND D ROLLING UPLAND	☐ NATURAL M CULTURAL	D PLANKTON D SUBMERGED D FLOATING LYD AG GRAMINOID FORB D FORB D LICHEN D BRYOPHYTE D DECIDUOUS	D RIVE
COVER COMM.TYPE			D ALVAR D BEACH/BAR D SAND DUNE D BLUFF			D PRAIRIE D THICKET D SAVANNAH D WOODLAND FOREST PLANTATION
☐ OPEN ☐ INCLUSION ☐ SHRUB ☐ COMPLEX	SITE			COVER	COMM. TYPE	OTHER
	O OPEN WATER SI SHALLOW WAT. O SURFICIAL DEP. O BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED	COMPLEX COMPLEX	□ HEDGEROW

DATE:	POLYGON:	
	ON:	OZEMI?

	I TME.	ITM7.	
DATE:		SURVEYOR(S):	POLYGON
POLYGON:		SITE:	

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

COMMUNITY MATURITY:

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

5 GROUND LAYER L	2	PHODRUNIVPLI	-SUA	
CVR CODES: 1 = > 25m CVR CODES: 0 = NONE 1	2 = >10-25 [= 1-10%	HT CODES: $1 = 25m$ $2 = 20-25m$ $3 = 2-10m$ $4 = 1-2m$ $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = <0.2m$ CVR CODES: $0 = NONE$ $1 \le 1-10\%$ $2 = >10-25\%$ $3 = >25-35\%$ $4 \approx >35-60\%$ $5 = >60\%$	m 6 = 0.2-0.5m 7 = <0.35-60% 5 = >60%	Zm
SIZE CLASS ANALYSIS:	SIS:			
TR	TREES	< 10cm 10-24cm	25-50cm	
STANDING SNAGS	AGS	< 10cm 10-24cm		> 50cm
			25-50gm	> 50cm

5	LAYER	Ħ	CVR	(>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)	TER THAN; = ABOUT EC
F	EMERGENT	W	-	SALALBA	
2	CANOPY				
ω	SUB-CANOPY				
4	UNDERSTORY				
ч	GROUND LAYER	15 T	V	PUDDEULIV PURD	7
ES B	HT CODES: 1 = > 25m 2 = CVR CODES: 0 = NONE 1 = 1	m 2=>1 E 1 = 1-1 YSTS:	0-25m 3 0% 2 =	HT CODES: $1 = 25m$ $2 = 20-25m$ $3 = 2-10m$ $4 = 1-2m$ $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = <0.2m$ CVR CODES: $0 = NONE$ $1 = 1-10\%$ $2 = >10-25\%$ $3 = >25-35\%$ $4 \approx >35-60\%$ $5 = >60\%$ SIZE CLASS ANALYSIS:	= 0.2-0.5m 7 = <0.2m 1% 5 = >60%
٦	THE COUNTY OF THE PARTY				
_		200	^	< 100m 10-24cm	25-50cm

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
I TERRESTRIAL WETLAND	C ORGANIC	II LACUSTRINE	I NATURAL	C PLANKTON C SUBMERGED	PONO
D AQUATIC	II PARENT MATERIAL	BOTTOMLAND	/	II FLOATING LVD	LI RIVER
	II ACIDIC BEDROCK	II TERRACE		GRAMINOID	STREAM
	II BASIC BEDROCK	C VALLEY SLOPE		□ FORB	D MARSH
	LI CAKB. BEDROCK	U TABLELAND			D SWAMP
		D ROLLING OPLAND		☐ BRYOPHYTE	NH I
				D DECIDUOUS	□ 80G
		- ALUS		CONJEROUS	□ BARREN
		D ALVAR		LI MIXED	MEADOW
		D ROCKLAND			THE PERSON
		☐ BEACH/BAR			SAVANNAH
		I SAND DUNE			☐ WOODLAND
		CBCOTT			II FOREST
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER			O SHRUB	I INCLUSION	□ HEDGEROW
I SURFICIAL DEP.			I TREED	<u> </u>	

POLYGON DESCRIPTION:

PLANT SPECIES LIST

POLYGON: MAM2-21

SURVEYOR(S): NMF

SPECIES CODE

COLF.

SPECIES CODE

8 E

YPON64 Chrondan

I SACI

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

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



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PLANT LSI SPECIES DATE: SURVEYOR(S): POLYGON: SITE: 40 50

STAND

SITE

CHARACTERISTICS SURVEYOR(S):

UTMZ:

UTME:

NMEL DATE:

POLYGON:

LAYERS: 1 = CANOPY TREES > 10m 2 = \$1,9 CANOPY 3 = \$4PLINGS & \$4RLIES 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1,5% 2 = 5,25% 3 = 25-50% 4 = 50,75% 5 = 75-100% LAYER LAYER

36 J. 500

TOTER CAZA

D

PUL DAIT UNGE

V

O SHALLOW WAT.
O SURFICIAL DEP.
O BEDROCK

112

D LACUSTRINE
D RIVERINE
L BOTTOMALAND
D TERRACE
BYTHELEAMD
D ROLLING UPLAND
C CLIFF
D TALLS
D CREVICE/CAVE
D ALVAR
D ALVAR
D SAND DUNE
D BUJFF

COVER

D OPEN
D SHRUB

AL DRANKTON OLAKE

OLIGINATING LVO. DRIVER
OFFICE DEVICE DEVICE
OFFICE DEVICE DEVICE
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SPECIES CODE

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SPECIES CODE

2 3

8 F

D AQUATIC

D ORGANIC

TE(MIMERAL SOIL

D PAGENT MATTERIAL

D ACIDIC BEDROCX

D BASIC BEDROCX

D CARB. BEDROCX

1

POLYGON DESCRIPTION

SYSTEM

SUBSTRATE

TOPO. FEATURE

PLANT FORM

COMMUNITY

ES CULTURAL HISTORY

LAYER	3	Ş	PECIES IN ORDER OF DECREASING DOMINANCE >> MICH CREATER THAN, > CREATER THAN, = ABOUT
1 EMERGENT	~		•
2 CANOPY	لر	2	TRAPEN S
3 SUB-CANOPY	2	N	FRAPEUS:>> ULTAMER
▲ UNDERSTORY	4	Ų	SON DEVISION OF SELECT
T-5 BEAVION IONE S	7	1	

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 = MONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

DECAYED < 10cm	DEADEALI / LOGS FIRM < 10cm	STANDING SNAGS < 10cm	· TRUETS A < 10cm	SIZE CLASS ANALYSIS
9	9	cm P	OH C	
10-24cm	10-24cm	10-24cm	10-24cm	
25-50cm	25-50cm	25-50cm	25-50cm	
> 50cm	> 50cm	> 50cm	> 50cm	

SOIL ASSESSMENT

PIONEER

D YOUNG

O MID-AGE

D MATURE

DOLD-GROWTH

COMMUNITY MATURITY

MOISTURE REGIME	DEPTH TO BEDROCK	DEPTH OF ORGANICS	- 5 ATLICA OL HILAGO	TECTURE		COAL MOUNTAINE
			6 1		1	-
			6 9		2	
			G 10	-		
			G 10			

SOIL PROFILE

	LST	SPECIES	PI ANT
SURVEYOR(S):	DATE: AUG	POLYGON: 1	TOH :3US
VMT	3 18	4	Transitiway

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

SDECTES CODE LAYER	_	LAYER		<u>}</u>			LAYER	였		i.
ר מולים	μ.	2 3	4	Ç	SPECIES CODE	H	2	ω	4	E
POPTREM	P	/ -							_	1
ULHAMER	P	0						4	_	1
COROVAT		0	70					4	_	
TRAPENO	0	0	9							
QUERUBR	70	D	70						_	
REDCRIT		U							-	
CORNDRI			D					_	_	
ARW IRG		P						4	4	
SOLCAND			7					_	4	- 1
ACESASA		72	P					-	4	
QUEMACR	70								-	
VITRIPA	R	70					_	-	-	
CRAT SP.		プ						-	-	
PHYOPUL		R						_	-	
								+	+	
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			_				_	+	╁	1
					5		+	+	+	
			_				+	+	+	1

1 EMERGENT

UNDERSTORY SUB-CANOPY CANOPY LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

- mean to pipeline facility

POLYGON SURVEYOR(S):

UTMZ:

UTMN: DATE: POLYGON:

SITE:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
D TERRESTRIAL D WETLAND	ORGANIC D MINERAL SOIL	LACUSTRINE RIVERINE	COLTURAL	☐ PLANKTON ☐ SUBMERGED	POND
- AQUATIC	D PARENT MATERIAL	BOTTOMLAND	1	☐ FLOATING LVD	RIVER
	LI ACIDIC BEDROCK	II TERRACE		☐ GRAMINOID	STREAM
	CARR REDROCK	TABLE AND		□ FORB	D MARSH
	D CAND. BEDNOCK	L MBLELAND		CLICHEN	☐ SWAMP
		LI KULLING UPLAND		□ BRYOPHYTE	H.
				II DECIDUOUS	□ BO6
		CREVICE/CAVE		☐ MIXED	☐ BARREN ☐ MEADOW
		D ALVAK			☐ PRAIRIE
		D BEACH/BAR			THICKET
		SAND DUNE			□ WOODLAND
		5			☐ FOREST☐ PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER SHALLOW WAT.			□ OPEN □ SHRUB	☐ INCLUSION	☐ HEDGEROW
בייייייייייייייייייייייייייייייייייייי			I REED		

SIZE CLASS ANALYSIS: 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%

	THE COPIES		100	
25-50cm	10-24cm	< 10cm	DECAYED	
25-50cm	10-24cm	< 10cm	TIKM	DEADFALL/LOGS
25-50gm	10-24cm	< 10cm	STANDING SNAGS	STANDIN
25-50cm	10-24cm	< 10cm	TREES	

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



PLANT LST DATE: Aug 3/18 SITE: 407 TOWNSTON

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SPECIES CODE LAYER CO.	LAYER	3	Control Control	LAYER	
COURT COURT	1 2 3 4	E F	SPECIES CODE	1 2 3 4	- 60 F
DRYE	0	9~ D	III MANTA	-	
SUNDRUE	A		SMLALBA	ね!	
DUCARO	A		LACSER	2	
OC ZTO			MERTIAAP	70	
SCHARVE	Þ		SECTE CL	70	
RONGHEOLD	0	===	DNADRVE	رر	
1480			DOT CO HO	5	
DINGOUST	0		POLPRAT	D	
MELALBA	0		0005DCC	R	
CONTEAND	0		NEIO)107	×	
SOLCAND	0				
CAURCG					
ECY REPE	D				
光のではア					
FRAPENS	7~				
21 77	0				
SAM COMOS) 				
PSS4	70		2		
アクアー	0	-			
PEDCO 1	2				
SORVICE			9		
PIC PUNG	70				
OBPSEU	70				
BROWER	D.		Y		
PERRUN)				
XIJSPIC .	0				
TUGCC)	70				

	POLYGON		
UTMZ:	N SURVEYOR(S):	SITE:	
UTME:			
UTMN:	DATE:	POLYGON:	100 miles
			ACCRECATION AND ADDRESS OF THE PARTY OF THE

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
O TERRESTRIAL	O ORGANIC MINERAL SOIL	O LACUSTRINE	CULTURAL	☐ PLANKTON	□ LAK€
E AQUATTC	☐ PARENT MATERIAL ☐ ACIDIC BEDROCK	II BOTTOMLAND		II GRAMINOTO	RIVER
	☐ BASIC BEDROCK	O VALLEY SLOPE		II FORB	I MARSH
	CARB, BEDROCK	☐ TABLELAND		- LICHEN	O SWAMP
	¥!	D ROLLING UPLAND		□ BRYOPHYTE	E E
		CLIFF		DECIDUOUS	□ 806
		I TALUS		CONIFEROUS	□ BARREN
		C CREVICE/CAVE		□ MIXED	II MEADOW
					PRAIRIE
		D BEACH/BAR			I THICKET
				v.es	□ WOODLAND
		O BLUFF			□ FOREST
					CI PLANTATION
SITE			COVER	COMM. TYPE	OTHER
SHALLOW WAT.			□ OPEN □ SHRUB	COMPLEX	☐ HEDGEROW
SURFICIAL DEP.			I TREED	ļ	

STAND DESCRIPTION:

SIZE CLASS ANALYSIS:

	-	-				
				1	フェクトイニク	
1000						מראטו ארר/ ניספס
/ 5	25-50cm	10-24cm		\ Todil	INT	DEADEAS / OCC
1 > 20CH	10001					
, 5	75-50mm	10-24cm		~ 10cm	GSNAGS	STANDING SNAGS
						7
> 50gm	MD0C-C7	HP47-0T	r	1 1000		
	77.77	10-34		^		

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



PCENEGUN SPECIES CODE CAREX SP LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE PLANT TRADENU LST PADOD I SPECIES mat & to SURVEYOR(S): DATE: Aug 3 POLYGON: SWD2-26 SITE: HWY HOT Transitway D 1 2 3 4 Jan 600 LAYER 0 C 0 乙ゴヤ 20 SF. SPECIES CODE 2 LAYER ω 4 <u>8</u>

consumunity in transaction

POLYGON DESCRIPTION:	CRIPTION:				
SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
II TERRESTRIAL	D ORGANIC	I LACUSTRINE	D NATURAL	CI PLANKTON	II LAKE
II AQUATIC	D PARENT MATERIAL	BOTTOMLAND	-	CI PLOATING LVD	O RIVER
	ACIDIC BEDROCK	□ TERRACE		☐ GRAMINOID	STREAM
	LI BASIC BEDROCK	II VALLEY SLOPE		□ FORB	☐ MARSH
	LI CAKB, BEUKUCK	C ROLLING UPLAND		O LICHEN	SWAMP
		- C117F			֓֞֝֞֜֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓
		□ TALUS		CONIFEROUS	BARREN
		CREVICE/CAVE		II MIXED	II MEADOW
		T ROCKI AND			PRAIRIE
		D BEACH/BAR			SAVANNAH
		I SAND DUNE			☐ WOODLAND
		ביייייייייייייייייייייייייייייייייייייי			POREST
SITE			COVER	COMM TYPE	Отиво
T OPEN WATER					
☐ OPEN WATER ☐ SHALLOW WAT. ☐ SURFICIAL DEP. ☐ BEDROCK			D SHRUB	COMPLEX COMPLEX	☐ HEDGEROW
STAND DESCRIPTION.	TON.				
Contract occording	11011				

EMERGENT SUB-CANOPY CANOPY

DOE CEGG FRAFENS LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

4 UNDERSTORY 3-4 7 ACENGE 3-2 RHACMIN
5 GROUND LAYER 5-7 4 9 NA ARUN
HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	DEADFALL/LOGS	STANDIA	
DECAYED	IRM	STANDING SNAGS	TREES
	C	17	0
< 10cm	< 10cm	< 10cm	< 10an
	7	1	0
10-24cm	10-24cm	10-24cm	10-24cm
			P
25-50cm	25-50am	25-50an	25-50cm
> 50m	> 50cm	> 50an	> 50cm

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

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E YOUNG
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. . .

		SPECIES	DI ANT
SURVEYOR(S): NMF	DATE: JULY 20/2018	POLYGON: MIDSZ-17	SITE: WWW 407 Transitualy
			t]

STAND

SITE:

CHARACTERISTICS SURVEYOR(S):

UTMZ:

UTME:

DATE:

STAN:

POLYGON:

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

SPECIES CODE

2 ω

4

8 F

D TERRESTRUAL
D WETLAND
D AQUATIC

D ORGANIC
DEMINERAL SOIL
DEPARENT NATERIAL
DEACHIC BEDROCK
DEASIC BEDROCK
D CARB. BEDROCK

POLYGON DESCRIPTION

SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

VITNUMMOO

D NATURAL DY CULTURAL HISTORY

PHRAUST

MPANGU

中

4-4

SPECIES CODE 2 3 LAYER 4 8 F

D OPEN WATER
SISHALLOW WAT.
D SURFICIAL DEP.
D BEDROCK

ELS

DIACUSTRINE
DRIVERINE
DRIVERINE
DRIVERINE
DRIVERIAND
DRIVERIAND
DROLLING UPLAND
DROLLING UPLAND
DROLLING
DRALING
OVER

D PLANKTON
O SUBMERGED
O FLOATING LVD.
Q GRAMINOID
O FORB
D LICHEN
O BRYOPHYTE
O DECIDIOUSIS
O CONIFEROUS
O MIXED

D SHRUB

DUCALVO SCIVALI マセラロやいて

> B 0

0

ローマインドレ

1 EMERGENT	5	LAYER	3	3	SPECIES IN ORDER OF DECREASING DOMINANCE: (>> MUCH GREATER THAN; > GREATER THAN; = ABYUT EQUAL TO)
2 CANOPY	1	EMERGENT			
	2	CANOPY			

5 GROUND LAYER 4 5 PHRAUST > TYPANGU
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
CAR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS

■ UNDERSTORY

	DEADEALL /LOGS	MIGNATE	
DECAYED	FJRM	STANDING SNAGS	TREES
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY

D PIONEER D YOUNG

URE DOLD-GROWTH	- MATURE	☐ MID-AGE	- YOUNG	男
-----------------	----------	-----------	---------	---

DEPTH OF ORGANICS DEPTH TO BEDINOCK
рертн то верярск

SOIL PROFILE

☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

COMMUNITY MATURITY:

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE

DECAYED

< 10am

10-24cm 10-24cm

25-50cm 25-50cm

> > 50cm > 50cm

> 50cm

> 50cm

25-50cm

10-24cm

25-50cm

DEADFALL/LOGS

FIRM

STANDING SNAGS

< 10cm < 10cm

TREES

< 10cm

10-24cm

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%

IZE CLASS ANALYSIS:

GROUND LAYER

UNDERSTORY SUB-CANOPY

	TIST C	SPECIES	DI ANT
SURVEYOR(S): NME	DATE: JULY 20/2018	POLYGON: M	SITE: 407 Transhupu
			70/5/15

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

ACEXTREE O THUOCCI PICASIES O R PICASIES O R ACENEGUN R O O RHACATH LONTATA R	SPECIES CODE POPOCOMP POPPELT CARONAT	LAYER 1 2 3	0 3 FR	COLL	ES CODE LAYER LAYER COLL. SPECIES CODE 1 2 3 4 COMP PRAT O DELT O O O O O O O O O O O O O
PRO 0	CAROVAT	0	0		
PRO OO O	ACEXTREE	0			
PRO	THUO CCI	0	0		
PROD	PICABIES	0	70		
P 0	PINNICE	R O			
	ACENEGUN	Ó	0		
	RHACATH		U		
	LONTATA		/ 4		
			\vdash		
	-2		1		
			+		
			+		
		-			

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

O SHRUB

COMPLEX

☐ HEDGEROW

COVER

COMM. TYPE

OTHER

SITE

LAYER

₹

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY EMERGENT STAND DESCRIPTION:

-	DI ANT EODL	HISTORY	TOPO, FEATURE	SUBSTRATE	SYSTEM
				RIPTION:	POLYGON DESC

D TERRESTRIAL

D WETLAND

AQUATIC

ORGANIC
OMINERAL SOIL
OPARENT MATERIAL
CACIDIC BEDROCK
OPARENT MATERIAL
CACIDIC BEDROCK
CACAB, BEDROCK

CULTURAL HISTORY

PLANT FORM

COMMUNITY

☐ LACUSTRINE
☐ RYPERINE
☐ RYPERINE
☐ BOTTOMIAND
☐ TERRACE
☐ VALLEY SLOPE
☐ TABLELAND
☐ ROLLING UPLAND
☐ CLIFF
☐ TALUS
☐ CREVICE/CAVE
☐ ALVAR
☐ ROCKLAND
☐ BEACH/BAR
☐ SAND DUNE
☐ BLUFF

D PLANKTON

D SUBMERCED

ROATING LVD

GRAMINOID

GRAMIN

D LAKE
D RIVER
D STREAM
D MARSH
D SWAMP
D FEN
D BOG
D BOG
D BORREI
D HEADOW
D PEAJRUE
D THICKET
D SAVANNAH
D FOREST
D FOREST
D PLANTATION

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



PLANT POLYGON: MAHZ-2+ COULT LOP NMH BUIS

4

POLYGON SURVEYOR(S):

SITE:

UTMZ:

OTME:

UTMN: DATE: POLYGON:

POLYGON DESCRIPTION:

PLANT FORM

COMMUNITY

SPECIES CODE	SPECIES LIST LAYERS: 1 = CANO LAYERS: 0	DATE: UST DATE: SURVEYOR(S): SURVEYOR(S): SURVERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER	3 = SAPLINGS & SHRUBS 4 =	GROUND LAYER	
LAYER COLL. 1 2 3 4 COLL. SPECIES CODE 1 2 3 4	LAYERS: 1 = CAND	DPY TREES > 10m 2 = SUB-CANOPY = DOMINANT A = ABUNDANT O = C	3 = SAPLINGS & SHRUBS 4 =)CCASIONAL R = RARE	GROUND LAYER	
1 2 3 4 WILL STELLS CODE 1 2 3 4	SPECIES CODE	LAYER	CBECTES CODE		2
MISALI O			מין דינונים כיסטר	2 3 4	F
M-SAL!	0	J			
	MISALI	0			

C OPEN WATER
C SHALLOW WAT.
B'SURFICIAL DEP.
C BEDROCK SITE

COMM. TYPE

OTHER

□ HEDGEROW

D TERRESTRIAL

WETLAND

D AQUATIC SYSTEM L D ORGANIC C LACUSTRINE DIAGNERAL SOIL C RIVERINE DARRIE TATTERIAL SZ'BOTTOMIAND C TERRACE C TRAILELAND C CARB. BEDROCK C TABLELAND C CARB. BEDROCK C TABLELAND C CLIFF C TABLELAND C CLIFF C TABLELAND C CLIFF C CLIFF C CALVAR C CALVAR C CALVAR C CACALAND C BEACHBAR C SAND DUNE C BLUFF SUBSTRATE TOPO, FEATURE O OPEN
O SHRUB D NATURAL HISTORY COVER D PLANKTON
D SLIMMERGED
D SLOWMERGED
D GRAMINOD
D GRAMINOD
D GRAMINOD
D FORB
D LICHEN
D BRYOPHYTE
D BRYOPHYTE
D DECEDUOUS
CONIFEROUS
D MIXED C COMPLEX

D LAKE
D RIVER
D STREAM
MARSH
D WARSH
D WOODLAND
D FOREST
D PLANTATION

LAYER	Ë	3	CVR.	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)
1	EMERGENT			
2	CANOPY			
ω	SUB-CANOPY			
-	UNDERSTORY			
9	GROUND LAYER	শ	7	PUARRIANTER

SIZE CLASS ANALYSIS: CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

-				-	ABINDANCE CODES
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
> 50cm	25-50cm	10-24cm	\ TUGN	STANDING SNAGS	MANAIS
> 50cm	25-50cm	10-24cm	^ 10cm	TAGE C	STANDIN

VEER YOUNG MID-AGE MATURE
☐ YOUNG ☐ MID-AGE ☐ MATURE
□ MID-AGE □ MATURE
□ MATURE



PLANT SPECIES LST SURVEYOR(S): NMI DATE: JULY 20 2018 SITE: 407 Transituay POLYGON: HAS2-19 1

PODPOLY DID DREN SPECIES CODE SUMLAND SOLDMIC SON ARVE LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRURS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% JERNAST WRAUST. DRVULI YPANGU TISPLI 1 2 3 4 LAYER 70 0 0 0 R 0 8 F SPECIES CODE 1 2 3 4 LAYER 8 F

DATE:	SURVEYOR(S):	CTERISTIC
POLYGON:	SITE:	STAND

;	SITE			POLYGON:	ج
CHARACTERISTICS	-	SURVEYOR(S):		DATE:	
	עזאני.		UTME:	UTMN.	
POLYGON DESCRIPTION	CRIPTION				
MALSAS	SUBSTRATE	TOPO, FEATURE	нистону	PLANT FORM	УПРИМИМОО
O TERRESTRUL SAWETLAND D AQUATIC	D ORGANIC EMINERAL SOIL D PARENT MATERIA D ACIDIC BEDROCK D BASIC BEDROCK D CARB, BEDROCK	DIACUSTRINE DRIVERINE DRIVERINE DROTTOMIAND DTERRACE DVALLEY SLOPE SCTABLELAND	D NATURAL DCOULTURAL	D PLANKTON D SUBMERGED D FLOATING LVD. ACGRAMINOID D FORB	D LAKE D POND D RIVER D STREAM Q MARSH
SILE		ROLLING UPLAND	COVER	D BRYOPHYTE	OFFIN
O OPEN WATER		DTALUS	DOPEN	DECIDUOUS CONTEROUS	D BARREN
D SURFICIAL DEP.		D ALVAR	□ TREED	O MIXED	D MEADOW
		O SAND DUNE			D WANNANA D
		LI BUUTT			D PLANTATION

STAND DESCRIPTION

5	LAYER	3	3	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH CREATER THAN, > CREATER THAN, = 40°UT EQUAL TO)
1	EMERGENT			
2	CANOPY			
3	SUB-CAHOPY			141
-	UNDERSTORY			
S	GROUND LAYER	イナ	5	TYPONGL YVPEDEDECT

CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

	DEADEALI /I OCK	STANDING SNAGS	
DECAYED	FIRM	Sames	TREES
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> S0cm	> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY

PIONEER DYOUNG

)		
2		
7		
2		
'n		
2		
5		
2		
7		

D MID-AGE

MATURE

□ OLD-GROWTH

MOISTURE REGIME	DEPTH TO BEDROCK	DEPTH OF ORGANICS	DEPTH TO GLEY G	DEPTH TO MOTTLES 9 =	TEXTURE	
			G =	9 -		1
			G=	9		2
			G.	9 =		G
			G=	0		記念は意味

SOIL PROFILE

PLANT LST SPECIES SURVEYOR(S): NH DATE: July 20, 2018 POLYGON: CUMI-IQ PRINTISUBUL EOF MAN SILE 1 S

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

SPECIES CODE LAYER COLL SPECIES CODE	LAYER		LAYER
	1 2 3 4	יי איניטיני ניטטר	1 2 3 4
CONTY	0	POACOMP)
LOTCORN	0 5 N	あることの2	A (
TAROFF!	0	MATPERF	0.
DRCMINU	0	LOL PERI	0
COZZERVE	C	TESARUN	(8)
SOLCAND	0	NL PETI	
RIREPE	0	V1-121 PP	
CIRDRUE	D	CINVITE	
MELDUSA	70	56.6	D
PLOMPTO	0	RUPID AN	70
PRRDN	7	TRAMER	P
TRIPRET	O	VICCRAC	0
RIHIBR	0	PARINER	0
ER PZZ	C	CIRVULG	9
PLACONC	0	SOLCANA	0/
HDARUN	P	STATE	D
RIVAT	D	CORVARI	0
SUMLATIO	- 0 0A	SOLIDUK	70
ACSERR	0	HADDERA	\sim
JCRIMO(CO) ORDIN	0	DIRSHIFU	P
CLE ANG	C	SUM NONO	0
会プロファンド	0	SALUKAN	777
OLDAL C	0	CROPUNC	2
DAMCDEO	Ö	MOL PUM	2
PERDU	D	2	0
POADRAI	>	RESPON	5)
まるつり	0		

☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

ACTERRESTRIAL WETLAND WETLAND AQUATIC ACDIC BEDROCK BASIC BEDROCK CARB. BEDROCK COUTHEROUS MIXED COVER COVER COVER COMM. TYPE OTHER COMPLEX COMPLEX CHECK COMPLEX CHECK COMPLEX CHECK CHECK COMPLEX CHECK CHECK COMPLEX CHECK CHECK CHECK COMPLEX CHECK CHECK CHECK COMPLEX CHECK CHECK COMPLEX CHECK CHECK CHECK COMPLEX CHECK CHECK CHECK COMPLEX CHECK CHECK CHECK COMPLEX CHECK CHECK CHECK CHECK CHECK CHECK CHECK CHECK COMPLEX CHECK CHECK CHECK CHECK COMPLEX CHECK CHECK CHECK COMPLEX CHECK	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
COVER COMM.TYPE DISTORN DIST	Ø TERRESTRIAL ☐ WETLAND ☐ AQUATIC	D ORGANIC ZMINERAL SOIL PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	C LACUSTRINE C RIVERINE C RIVERINE C ROTTOMILAND C TERRACE C VALLEY SLOPE C TABLELAND C ROLLING UPLAND C CLITF TALLIS C CREVICC/CAVE C ALVAR C RACCH/BAR C SAND DUNE C BLUFF	I NATURAL	D PLANKTON D SUBMERGED D FLOATING LVD SU GRAMINOID AG FORB C LICHEN D ECTDUOUS C CONITEROUS D MIXED	D LAKE D POND RIVER D STREAM MACSH D SWAMP D FOR D BARREN WILDOW D PARITE THICKET D SWAMNAH D WOODLAND D FOREST
DOVER COMM. TYPE	भा					
D TREED	SITE			COVER	COMM, TYPE	OTHER
	O PEN WATER O SHALLOW WAT. O SURFICIAL DEP. O BEDROCK			D SHRUB	☐ COMPLEX	□ HEDGER

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1	S	
ŧ	340	0
3	3	E Va

Ze-upr

DI ANT SITE: 407 Transitual 立

PLANT	ic t	0	DITUM.					1
SPECIES POLYGON:	GON:	DIS	M2-2K					
, .	DATE: DUG	T	_0_					
SURV	SURVEYOR(S):	て ゴ ハ	IJ,					
LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RAKE	ES > 10m 2	= SUB	-CANOPY	= SAPLINGS & SHRUBS 4 =		GROUND LAYER	Ř	
SPECIES CODE	LAYER	77	8 F	SPECIES CODE	П	LAYER	뭐	<u> </u>
	1 2 3	4			1-1	2	ω 4	_
PED DRUZ		0						
PHRAUST		0						
LYTSALI		5						
TYP DZGG		030					=	
SOLCONA		0						
SOLALBO	P				700		-	
していたボニ		P						
							+	
	F					-	+	
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		t				-	+-	
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						-	+	
						-	+	
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	-					-		
							t	
						H		

POLYGON DESCRIPTION:

HISTORY	PLANT FORM	COMMUNITY
O NATURAL	☐ PLANKTON ☐ SUBMERGED	D LAKE
	DI FLOATING LVD	O STREAM
	□ FORB	MARSH
	□ LICHEN	O SWAMP
	II BRYOPHYTE	E E
	II DECIDUOUS	□ 80G
	□ CONIFEROUS	□ BARREN
	O MIXED	☐ MEADOW
		☐ PRAIRIE
		D THICKET
		HANNAVAS
		WOODLAND
		CI PLANTATION
COVER	COMM. TYPE	OTHER
SHRUB	COMPLEX COMPLEX	☐ HEDGEROW
	COVER COVER	O D D D D D D D D D D D D D D D D D D D

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

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

DEADFALL/LOGS DECAYED

< 10cm < 10cm

> 10-24cm 10-24cm

> > 25-50cm 25-50cm

25-50cm

> 50cm > 50cm > 50cm

> 50cm

10-24cm

25-50cm

STANDING SNAGS

< 10cm < 10cm

TREES P

10-24cm

| 5 | GROUND LAYER | 5-7| | 5 | 71.4 | 12.0 | 12.0 | 12.0 | 13.0 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7 | 14.7

SIZE CLASS ANALYSIS:

LAYER

끜

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

CANOPY SUB-CANOPY EMERGENT

UNDERSTORY

STAND DESCRIPTION:

O PIONEER	1710111
D YOUNG	- STORE I
□ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



PLANT SPECIES LIST

DATE: July 20118 SITE: 407 Transitway

LIST	DATE: July 20	8110	*				
SUR	SURVEYOR(S): NMF	TH TH					
LAYEIS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 =	RSES > 10m 2 = 1	SUB-CWOPY <1-5% 2 =	3 = SAPLINGS & SHRUBS 4 = GROUND LAYER 5-75% 3 = 75-50% 4 = 50-75% 5 = 75-100%	330	D LAY 5 = 75	100%	
SPECIES CODE	LAYER	8 F	SPECIES CODE	П	LAYER	ا گرا	8 ·
CAROUAT	D 11 22 3	1		E	N	ω·	05/5
DANCARO		(A)		\Box	4	+	
LINUULG-	0				-	+	
SALICATI		0			-		
DIRSIEU	-	U			-	\dashv	
SOLCANA	0	0			Н		
BROINER		0				T	
RHAMCATH	0				_		
CROTSP	0				_		
ARCHINU		0			\dashv		
PHD DRUN	0				-		
POPPRAT				1	+		
		1		+	+	1	
				-	+	1	
					H		
				+	╁	I	
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			55		Н		
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STAND	SITE			POLYGON:	X.
CHARACTERISTICS		SURVEYOR(S):		DATE:	
	UTMZ:		UTME:	:NMITU	
POLYGON DESCRIPTION	SCRIPTION				
MALSAS	SUBSTRATE	TOPO, FEATURE	HUSTORY	PLANT PORM	THUMMOO
O TERRESTRIAL D WETLAND D AQUATIC	D ORGANIC D MINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK D CARB. BEDROCK	DIACUSTRINE DRIVERINE	D NATURAL	D PLANKTON D SUBMERGED D FLOATING LYD. D GRAMSHOOD D FORB	D LACE D POND D RIVER D STREAM D MARSH
STIE		D ROLLING UPLAND	COVER	BRYOPHYTE	OFFN
DOPEN WATER		D ONEVICE/CAVE	D OPEN	O CONJECTORIOUS	D BARREN
D BEDROCK		D ALVAR D ROCKLAND	U TREED		D PRAJRUE
		O BEACH/BAR			HAMMANAS
		D BUJET			D POREST
					DIFLANTATION

STAND DESCRIPTION

E	LAYER	3	3	MUCH GREATER THAN, - GREATING DOMIN
-	EMERGENT			
2	CANOPY			
3	SUB-CANOPY			
4	UNDERSTORY			
th.	GROUND LAYER			

CYR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS

1	DEADEALL /I DOS	STANDING SNAGS		
DECAYED	FIRM	Serves	THESE	
< 10cm	< 10cm	< 10cm	< 10cm	
10-24cm	10-24cm	10-24cm	10-24cm	-
25-50cm	25-50cm	25-50cm	25-50cm	
> 50cm	> 50cm	> 50cm	> 50cm	

COMMUNITY MATURITY PIONEER DYOUNG

PUNC
D MID-AGE
0

ID-AGE	
O MATURE	
D-OLD-GROWTH	

	-	2		
TEXTURE				1
PEPTH TO MOTTLES 9 .	9 =	. 0 -	8	9
OEPTH TO GLEY G .	9	6.	6-	6
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				Т
HOISTURE RECORE				

SOIL PROFILE

1. 100

PLANT
SPECIES
LIST

DATE: 407 Thomatubu
POLYGON: CUM |-10

DATE: 406 7 19

SURVEYOR(S): NMF

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

SPECIFIC CODE LAYER COLL	LAYER		3	CHECKE COST		LAYER	罗	-
	1 2 3	4	Ę.	SPECIES CODE	-	2	\neg	<u></u> ↓ COEF.
SAL SP	R			ACE PLAT		0		\dashv
ECEANGU	RR			ACESASA		\supset		-
PUPDELT	R			ACENEGIA	70	70	_	-
XLACOTT.	0			KENCATE			\nearrow	
LOTCORU		0		ARCHINU				0
DAUCARO		0		PICEASIE			0	
MELALRA		D		PIC PUNG			0	-
PHODIZUN		0		RUBSEWD			70	\dashv
POCEXIC	á			PARINSE				
SAMAHUN	222			SONDSDE			20	
SON ARVE		0		SONOLER			D	
TAROFFI		9						1
SOLCANA		D					_	\dashv
SYCOPC		70						-
SYMLATE		0					_	+
のたっかろか		0						\dashv
POA COMP		P					4	+
DPOCANN	2						-	+
ROINER								
かれている		7					_	+
ARTORSI		2					-	+
11CCEAC		0				_	-	\dashv
A-BARTE		0					+	+
1RADVE							-	+
DIPSYFU		0				4	\dashv	\dashv
RUMCRIS		~					+	+
PLRAUST		0				1	+	+

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

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
V TERRESTRIAL	ORGANIC	I LACUSTRINE	I NATI ITAN	T DI ANIVONI	
D WETLAND	III MINERAL SOIL	☐ RIVERINE	CULTURAL	I SUBMERGED	POND
☐ AQUATIC	II PARENT MATERIAL	☐ BOTTOMLAND	>	E HOATING I W	T RIVER
	I ACIDIC BEDROCK	☐ TERRACE		GRAMINOID	STREAM
	LL BASIC BEDROCK	TO VALLEY SLOPE		□ FORB	D MARSH
	LI CARB, BEDROCK	TABLELAND		D LICHEN	□ SWAMÞ
		LI ROLLING UPLAND		□ BRYOPHYTE	T T
				□ DECIDUOUS	908
		LIALUS		CONJITEROUS	□ BARREN
		LI UREVICE/CAVE	1.8	MIXED	MEADOW I
		I ALVAK			PRAIRIE
		L ROCKLAND			I HICKET
		C BCACT/BAK	8		II SAVANNAH
		L SANO DONE		•	II WOODLAND
		C BLUFF			O FOREST
					II PLANTATION
3LLS	-		COVER	COMM. TYPE	NHEE
SHALLOW WATER			□ SHRUB .	C) INCLUSION	□ HEDGEROW
D BEDROCK			□ TREED		

STAND DESCRIPTION:

LAYER HT CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUAL TO)
EMERGENT 3 /	POPDELTERGENEGU
CANOPY	
SUB-CANOPY	
UNDERSTORY	

SIZE CLASS ANALYSIS:

P	מייייייייייייייייייייייייייייייייייייי	DEADFALL/LOGS FIRM	STANDING SNAGS	N
	< 10cm	< 10cm	< 10cm	< 10an
25-50am 25-50am 25-50am 25-50am	10-24cm	10-24cm	10-24cm	₹ 10-24cm
	25-50cm	25-50cm	25-50cm	25-50cm

ABUNDANT 0 = OCCASIONAL R = RARE N = NONE

	U PIONEER
	□ YOUNG
	☐ MID-AGE
	MATURE
CON CHANGE	O D-GROWTH



	TST	SPECIES	DI ANT
SURVEYOR(S): NMF	DATE: NIC 7/19	POLYGON: MAM 2 - 29	CAN SITWAY
			\overline{x}

	tot alls	- (200	Transitway					-	0
SPECIES	POLYGON: MAM 2	51	7	20	-	1	1	-		C
	DATE:	MG	1/10							
	SURVEYOR(S): NMF	DR(S):	Z	T)						
VALUE CODES: D = DOMINANT A = ABUNDANT O = OC	PY TREES :	7 10m 2	rannar ans =	CANOPY NT 0 =	3 = SAPLINGS & SHRUBS 4 = OCCASIONAL R = RARE	GROUND LAYER	D LA	였		
SPECIES CODE	-1	LAYER 2 3	4	COLL	SPECIES CODE	<u></u>	LAYER 2 3	-	4	COLT.
PLADRUN			J				\rightarrow	_		
THEDNOU			0							
POPPROT			0				_			
SORMICE			70							
DAKSLOM			70		6		_	Н		
VICCICAC			5							
「おっている」			70					_		
CIRDRUM			0				Ü.,		_	
ACEXPRET	70							_		
ULMAHER	70)	70					_	-		
DOS 200	70			9					_	
							-		4	
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	-	-				-	+-	+	+-	
			2017			-	-	+	+	
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	-	+				-	+-	+	+	
		\blacksquare				-	+	+		
	-					+	+-	+	-	
									-	

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

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL D	ORGANIC SMINERAL SOIL	D LACUSTRINE	D NATURAL	☐ PLANKTON	I LAKE
AQUATIC	PARENT MATERIAL	GNATIMOTTOB	,	II FLOATING LVD	RIVER
	ACIDIC BEDROCK	D TERRACE		D.GRAMINOID	STREAM
	BASIC BEDROCK	I VALLEY SLOPE		□ FORB	MARSH
	CARB, BEDROCK	CI TABLELAND			□ SWAMÞ
		II ROLLING UPLAND		II BRYOPHYTE	THE COLUMN
				II DECIDUOUS	□ B0G
		LIALUS		CONTINEROUS	BARREN
		III CREVICE/CAVE		I MIXED	EL MEADOW
		☐ ROCKLAND			HIGH
		□ BEACH/BAR			☐ SAVANNAH
		D SANO DONE			II WOODLAND
					CI PLANTATION
SITE			COVER	COMM. TYPE	NEMBO
D OPEN WATER			SHRUB	☐ COMPLEX	□ HEDGEROW

STAND DESCRIPTION:

LAYER	4	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	7	TARRESTARACT

SIZE CLASS ANALYSIS:
TREES
STANDING SNAGS
 DEADFALL/LOGS
 FIRM
 < 10cm</th>
 10-24cm

 DECAYED
 < 10cm</td>
 10-24cm

 ABUNDANCE CODES:
 A = ABUNDANT O = OCCASIONAL R = RARE
 < 10cm 10-24cm 10-24cm 10-24cm

25-50am 25-50am 25-50am

> 50cm > 50cm

> 50cm

25-50cm

MATURE I OID-COOMTU	O MID-AGE O	☐ YOUNG	PIONEER
		MATURITY:	Y I INDIMINO



PLANT POLYGON: MAS2-10

CDECTEC POLIGON: MAN	5	?	7		0	_					
LIST DATE:	>	500	6.	-	-		1				
SURVEYOR(S):	EVC EVC	P(S	-	J.M.E	TÌ						
LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	EES >	10m	2 = ABI	AGIN BUS	CANOPY :) = SAPLINGS & SHRUBS 4 = CCASIONAL R = RARE	= GROUND LAYER	ND L	AYER .		
SPECIES CODE		LAYER	東		3	SPECIES CODE		٤	LAYER		<u>}</u>
	1	2	3	4	- E	מן בכונה כטטיב		2	ω	4	Ę
PLACEUST				0							
THPLATI				0							
TYPANGO				0							
VERILAST				O							
PHANRU				0							
LIGSTEN				2							
ULHONER	7		2	_							
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UTMZ;	POLYGON SURVEYOR	SILE
UTME:	(S):	
UTMN:	DATE:	POLYGON:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMINITY
I TERRESTRIAL WETLAND	O ORGANIC MINERAL SOIL	☐ LACUSTRINE	O NATURAL	D PLANKTON	D LAKE
DAQUATIC	☐ PARENT MATERIAL	☐ BOTTOMLAND		II FLOATING LVD	RIVER
	I ACIDIC BEDROCK	I TERRACE		SZ GRAMINOID	STREAM
	LI BASIC BEDROCK	CI VALLEY SLOPE		□ FORB	Q MARSH
	LI CARB, BEDROCK	M TABLELAND		D LICHEN	D SWAMP
		D ROLLING UPLAND		I BRYOPHYTE	
		100		□ DECIDUOUS	□ B 06
		LIALUS		CONITEROUS	□ BARREN
		L CKEVICE/CAVE		□ MIXED	MEADOW
		LI ACVAIX			[] PRAIRIE
		□ BEACH/BAR			I SAVANNAL
		I SAND DUNE			CI WOODLAND
		LI BLUFF			□ FOREST
					O PLANTATION
SITE			COVER	COMM. TYPE	OTHER
OPEN WATER			OPEN SHRUB	COMPLEX	☐ HEDGEROW
D SON TUNE DEL.			C REED		

STAND DESCRIPTION:

5	LAYER	3	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY			
ω	SUB-CANOPY			
4	UNDERSTORY			
CVT	GROUND LAYER	7-1	5	PURDUST >> TYPL SP

SIZE CLASS ANALYSIS:
TREES
STANDING SNAGS
PIRM
OPERATION OF THE STANDING SNAGS CVR CODES: $0 = \text{NONE } 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 = > 35 - 60\% \ 5 = > 60\%$

< 10cm

10-24cm

25-50cm 25-50cm

25-50cm 25-50cm

> 50cm > 50cm > 50cm

COMMINITY MATERIAL	WOUNDANCE COL	A STATE OF THE STA	DEADFALL/LOGS	STANDI
NATION OF	JES: A = ABU	DECAYED	FIRM	STANDING SNAGS
*21	NDANT 0 = OCCAS	< 10cm	< 10cm	< 10 cm
	ABONDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	10-24cm	10-24cm	10-24cm
	NONE	2	22	

THE MINISTRAL MATERIAL	RE O P-GBOWT'L
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UTMZ: UTME:	POLYGON SURVEYOR(S):	SITE:
UTM	DATE:	POLYGON:

PLANT LST SPECIES SURVEYOR(S): 10M SITE: 407 Trans DATE: Dug 8/19 Transitivan Tan 19 SP

LAYERS: 1 = CANDPY TREES > 10m 2 = SUB-CANDPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

4 COLL SPECIES CODE 1 2 3			LAYER	7		LAYER		LAYER	"	-
	SPELIES CUDE		2 3		- C	SPECIES CODE	_	2	4	#1 6 F
	TUDONGU			フ					_	-
	CORRACE		70							=
	MAYONA		_	_						
	PURAUST			70					•	
			-						-	
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								-		-

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	СОММИЛТТУ
D TERRESTRIAL METLAND	D ORGANIC	CI LACUSTRINE	D NATURAL	☐ PLANKTON	LAKE
D AQUATIC	O PARENT MATERIAL	☐ BOTTOMLAND		II FLOATING LYD	U RIVER
	☐ ACIDIC BEDROCK	D TERRACE		S GRAMINOID	□ STREAM
	☐ BASIC BEDROCK	II VALLEY SLOPE		FORB	DI. MARSH
	CARB. BEDROCK	D'TABLELAND		□ LICHEN	☐ SWAMP
		TI ROLLING UPLAND		I BRYOPHYTE	型
				D DECEDUOUS	11 BOG
		D TALUS		CONTEROUS	□ BARREN
		CREVICE/CAVE		II MIDGED	□ MEADOW
		ALVAR			□ PRAIRIE
		LROCKLAND			I HICKET
		□ BEACH/BAR			☐ SAVANNAH
					II WOODLAND
		D DECET			C PLANTATION
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER			□ OPEN	I INCLUSION	□ HEDGEROW
D SURFICIAL DEP. D BEDROCK			☐ SHRUB ☐ TREED	COMPLEX	

STAND DESCRIPTION:

LAYER		H	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EM	EMERGENT			
2 CA	CANOPY			
3 SUE	SUB-CANOPY			
4 UNI	UNDERSTORY			
5 GR	GROUND LAYER	15/T	5	TYPDIGNIPOLOGIC

DEADFALL/LOGS DECAYED

< 10cm < 10cm

10-24cm

25-50cm 25-50cm 25-50cm

> 50cm > 50cm

> 50cm

25-50cm

STANDING SNAGS TREES

10-24cm 10-24cm

SIZE CLASS ANALYSIS:

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



SURVEYOR(S): WMF	LIST DATE: AUG 8/19	SPECIES POLYGON: SWD	DI ANT
77	5	2-20 %	28 twas

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

1 2 3 4 PRO PRO 0 2 3 4	SPECIES CODE	SPECIES CODE LAYER COLL SPECIES CODE	SPECIES CODE		LAYER	Ä
RELIEGIU ROO INDESTRUM ROO INTRIPA ROO IN	E	2 3 4	- Cath	_	-	
ENEGU COO PSHALL DARWN DARWN RR RACE RACE RR RR RR RR RR RR RR RR RR RR RR RR RR	FRANCES				-	-
PSYFIL LADRUN TRIPA OCTRIPA POTRIFY RESPECT	RENEGU	0			-	\dashv
TRIPA CONTRIPA REPORTED REPORT	DI PSYFU				4	\dashv
PTRIPA CO.	PHODRUN	Δ			_	\dashv
N. DUBD R. PTRITY RR DRACE 0 RRACE 0 RTINISE 0 R R ESACC R	WITRIPA				-	+
	SN DLSD	70			4	+
	POPTR = M	_			4	+
	LOUTATA	0			4	+
	REDCATE	R			-	+
	CORRPCH	0			-	-
	CORSERI	70			-	-
	PLE DUST	0			-	1
R P P	マアクコンころの	0			+	+
	Spr. Sp				-	\dashv
	RESACC	R			-	+
					+	
				-		
				+	+	
					-	
					-	
				-	1-	

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

* viewed only from fenching polygon DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
RTERRESTRIAL DWETLAND AQUATIC	I ORGANIC I MINERAL SOIL I PAREENT MATERIAL I ACIDIC BEDROCK I BASIC BEDROCK CARB. BEDROCK	D LACUSTRINE D ROTTOMLAND D TERRACE D VALLEY SLOPE SCHAELLAND D CLIFF D TALLS C TREVICE/CAVE D ALVAR D ROCKLAND D SAND DUNIE	I NATURAL	D PLANKTON SUBMERGED D RAATING LYD D GRAMINOD D FORB LICHEN D BYOPHYN E BYOPHYNE SAPECIDIOUS CONJETEROUS MIXED	D LAKE D POND D RIVER D STREAM D STREAM D MARSH D STREAM D MARSH D SALAMP D BAG D BARREN D BAG D BARREN D PRAIRLE D THICKET D SALAMNAH D WOODLAND D FOREST D FOREST
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER O SHALLOW WAT. O SURFICIAL DEP. O BEDROCK			D OPEN D SHRUB TREED	COMPLEX	☐ HEDGEROW

STAND DESCRIPTION:

LAYER	=	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	نر	F	PAGENC>> ACENTRAL
3 SUB-CANOPY	W	در	PRAPERS > ACENICA
4 UNDERSTORY			
5 GROUND LAYER			

>10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

					NOW COUNTY
	25-50cm	10-24cm	< 10cm	DECAYED <	DEC
	25-50an	10-24cm	< 10cm	ERM <	DEADFALL/LOGS
4	25-50cm	10-24cm	< 10cm	7	SUMME SUMME
-	(7) 25-50cm	10-24cm	^ 10cm →		

R VIYOUNG I MID-AGE I MATURE II OLD-GROWTH	□ PIONEE
□ MID-AGE □ N	R YOUNG
☐ MATURE ☐ OLD-GROWTH	□ M
□ OLD-GROWTH	☐ MATURE
-1	□ OLD-GROWTH



☐ PIONEER ☐ YOUNG

□ MID-AGE □ MATURE □ OLD-GROWTH

DECAYED < 10cm 10-24cm 2

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

25-50cm

> 50cm

< 10cm < 10cm < 10cm

10-24cm

25-50cm 25-50cm

> 50cm > 50gm

> 50cm

25-50cm

10-24cm 10-24cm

5 GROUND LAYER 4/5 5 TYPAN 6 V > PHA ARUN HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

1 EMERGENT

푹

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

UNDERSTORY SUB-CANOPY CANOPY

SIZE CLASS ANALYSIS:

TREES
STANDING SNAGS

DEADFALL/LOGS PIRM DECAYED

J. S. GRESS

> PLANT SPECIES POLYGON: MAS 2-1; Q

			17	ć	1						
DATE: July 20	3 4	R(S	7 03	20	N CA						
LAYERS: 1 = CANOPY TR	NAW SES	10m	2=	BUS I	CANOPY	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ARINDANT O = OCCASIONAL B = BASE	= GROUND LAYER	ND	AYER		
SPECIES CODE	П	Ş	LAYER		3	Specific Code		5	LAYER		3
	1	2	3	4	Ē	0.000	щ	2	ω	4	F
PHODRUN				7:>							
SOLD CRD	70										
RIDCOTT			0								
TYPDNGU			1	300							
RUBUIRT				R							
PUPLAQ				C#							
SOLFRAG	70	R	R								
POTNATA				70							
POAPALU			L	70							
NUMODOR				70							
DGRG16D				P							
PODPROT				0							
				\sqcup							
		1_	-	-							
				-							
		-	-	⊢							
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		+	+	╁					_		
		-	-					_	_		
	_	+	+-	+-							
	1	+	+	+			L	1	1	╀	

	3
SYSTEM	POLYGON DES
SUBSTRATE	CRIPTION:
TOPO, FEATURE	
HISTORY	
PLANT FORM	
COMMINMO	

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



	LIST	SPECIES	TINA IQ
SURVEYOR(S): NIME	DATE: NUC 8/19	POLYGON: M	SITE: 407 TOWNSITWOON
			0_

SPECIES CODE LAYER COLL SPECIES CODE LAYER	LAYER	3	SDECTES CODE	_	LAYER	
	2 3	[7) COOL	-	-	4
ODCOMP	<i>b</i>					
DIGSANG	0					
OTCORN	0					
TOPOFFI						
IR REPE	0					
JELOCCI	0					
DCESDY C	0					
SDS	70				, ,	
QUERUBA	0					
CORPSEU	0					
TILCORD	0					
2 NHENC	0					
				-		
				+		
				-		
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POLYGON	I co
URVEYOR(S):	SITE:
DATE:	POLYGON:
	SURVEYOR(S):

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	D ORGANIC MINERAL SOIL PARENT MATERIAL	CI LACUSTRINE CI RIVERINE DI BOTTOMLAND	O CULTURAL	D PLANKTON D SUBMERGED D FLOATING I VD	D LAKE
	ACIDIC BEDROCK BASIC BEDROCK	O VALLEY SLOPE		GRAMINOID	STREAM
	CARB, BEDROCK	☐ TABLELAND		II FORB	☐ MARSH ☐ SWAMP
		D ROLLING UPLAND		☐ BRYOPHYTE	THE N
				□ DECIDUOUS	□ B06
		LI IALUS		CONJEROUS	☐ BARREN
		ALVAR		ני אוואכני	D PRAIRIE
		☐ BEACH/BAR			D SAVANNAH
		- BLUFF			I WOODLAND
					D PLANTATION
SITE			COVER	COMM. TYPE	OTHER
CI SHALLOW WAT.			OPEN SHRUB	O INCLUSION	☐ HEDGEROW
SURFICIAL DEP. BEDROCK			TREED	<u> </u>	
STAND DESCRIPTION:	PTION:				

1 EMERGENT
2 CANOPY
3 SUB-CANOPY
4 UNDERSTORY
5 GROUND LAYER

LAYER

#

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

HT CODES: $1 = 25m^2 \cdot 2 = 20-25m^3 = 2-10m^4 = 1-2m^5 = 0.5-1m^6 = 0.2-0.5m^7 = <0.2m^3 = 0.0000 = 0.0000 = 1 = 1-1006^2 = >10-25\%^3 = >25-35\%^4 = >35-60\%^5 = >60\%$

SIZE CLASS ANALYSIS:

				-	AD NOT CORES
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL /I OGS
> 50cm	25-50cm	10-24cm	< 10cm	STANDING SNAGS	STANDIN
> 50cm	25-50cm	10-24cm	< 10cm	TREES	

	0 P
	IONEER
	□ YOUNG
	□ MID-AGE
	□ MATURE
1 (1)	O D-GROWTH



toh :aus

POLYGON SURVEYOR(S):

UTMZ:

UTME:

DATE:

POLYGON:

	SPECIES CODE	VALUE CODES: D		TST		DIANT
1 7 3 4 55.	LAYER	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	SURVEYOR(S): NIM∓	DATE: DUG 8/19	POLYGON: MAM2-7	15000
ישר בריזריים בריסוב	SDECTES CODE	3 = SAPLINGS & SHRUBS 4 = OCCASIONAL R = RARE			5	500
	LAYER	= GROUND LAYER				
Ę	3				-	C

PASSATI

CORRACE PHA DRUI

DEC	DEADFALL/LOGS	SIAND		CALL CHOO	CVR CODES: 0 = NONE 1 = 1 SIZE CLASS ANALYSIS:	HT CODES: 1 =	5 GROUND LAYER	4 UNDERSTORY	3 SUB-CANOPY	2 CANOPY	1 EMERGENT	LAYER	STAND DESCRIPTION:	SHALLOW WATER SURFICIAL DEP	SITE	
DECAYED	FIRM	STANDING SNAGS	IKEES	JUNAL I STO.	NONE 1 = 1	> 25m 2 = :	第 つ	4				3	RIPTION:	, इस	1_	□ BASIC □ CARB.
< 10cm	< 10cm	< 10cm	< 10cm		-10% 2 = >	×10-25m 3	1	_				CVR				☐ BASIC BEDROCK ☐ CARB. BEDROCK
cm 10-24cm	cm 10-24cm	ian 10-24an	10-24cm		CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60% SIZE CLASS ANALYSIS:	HT CODES: 1 => 25m 2 =>10-25m 3 = 2-10m 4 = 1-2m 5 = 0.51m 6 = 0.25m 2	11110	COR RACE				SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)				O VALLEY SLOPE O TABLE AND CI ROLLING UPLAND CLIFF O TALUS CREVICE/CAVE ALVAR O ROCKLAND D BACH/BAR D SAND DUNE D BLUFF
9	9	18	9		4 = >35-60%	A TA						F DECREASIN		D SHRUB	COVER	
25-50cm	25-50cm	25-50cm	25-50cm		5 = >60%	1						R THAN; = ABOUT E		C COMPLEX	COMM. TYPE	G FORE G FORE G LOVEN G BRYOPHYTE G DECEDOUS G CONTREROUS G MIXED
A LOUI	> 50cm	> 50cm	> 50cm									QUAL TO)		II HEDGEROV	OTHER	A MARSH D SWAMP D BOG D BARREN D MEADOW D PRAIRE D THICKET D SOLVANNAN D WOODLAN D PLANTATIO

COMMUNITY MATURITY:

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

POLYGON DESCRIPTION:

SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
ORGANIC CMINERAL SOIL D PARENT MATERIAL	II LACUSTRINE	CULTURAL	D PLANKTON D SUBMERGED	POND
ACIDIC BEDROCK	D TERRACE		A GRAMINOID	STREAM
I BASIC BEDROCK	☐ VALLEY SLOPE		FORB	MARSH
CARB. BEDROCK	C) TABLELAND		- LICHEN	D SWAMP
	D ROLLING UPLAND		II BRYOPHYTE	E S
	100		☐ DECIDUOUS	10 BOG
	LI TALUS		CONTEROUS	BARREN
	I CKEVICE/CAVE		II MIXED	☐ MEADOW
	ROCKLAND			TODATO
	□ REACH/RAD			
	1000			D SAVANNAH
	SAND DUNE			D WOODLAND
	D SAND DUNE			D THICKET D SAVANNAH D WOODLAND D FOREST D PLANTATION
		COVER	COMM_TYPE	OTHER
	SAND DUNE BLUFF	COVER	COMM_TYPE	D THICKET D SAVANNAH D WOODLANG D FOREST D PLANTATIO OTHER D HEDGEROW
	SUBSTRATE ORGANIC PAMENT MATERIAL ORDIC BEDROCK DASIC BEDROCK CARB, BEDROCK	SOIL SOIL DROCK DR	RATE TOPO. FEATURE O LACUSTRINE SOIL O REVERNE DROCK O TERRACE DROCK O TABLEDAND O ROLLING UPLAND O CLIFF O TALUS O ROCKLAND O ROCKLAND O ROCKLAND O ROCKLAND O ROCKLAND	RATE TOPO, FEATURE HISTORY CLACUSTRINE COLUMN AND COLU

	LST	SPECIES	T.N.A. IQ
SURVEYOR(S): NMF	DATE: AUG 8/19	POLYGON: CUMI-1	SITE: 407 Transituary
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POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

POLYGON:
DATE:
UTMN:

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

SPECIES CODE LAYER COLL SEECTES CODE		LAYER	~	3	CDECTES CODE	\dashv	۶l	LAYER	_
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MELALBD			D		LONTATA			9	_
CKINTY	ne-		0		CRAMONO			0	_
SOL CAN'S			0		SALDISC			10	_
SUMPODY		-	0						_
LOTCORN			7>		CORSER!			O	-
DCENEGO	70	70	70		PRUSERO			0/	
REPLAT	0				SIRVULG			R	-
ELEDNGU		70			DCESASA	^	Ó	0	-
DICGLAU	0	0			SPLIX SO			R	-
PICABIE	0				VICORAC	340		5	
PODPROT			ア		POPTREM	2	10		
BROINER			P		ANGATRO.			70	
REACHE		0			MSHSAIC				
EUTGRAN			10		PICPUNG		0	4	\dashv
VKC RDC			0		DUSTON		0	4	-
YANCES.			0		CON 250 508			-	-
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D5C54R)			0					-	-1
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SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
X TERRESTRIAL D WETLAND D AQUATIC	II ORGANIC RIMIERAL SOIL RIMIERAL SOIL RATERIT MATERIAL RATDIC BEDROCK RASIC BEDROCK CHARB. BEDROCK	D LACUSTRINE D RIVERINE D BOTTOMAND D TERRACE D VALLEY SLOPE SQ TABLELAND D ROLLING UPLAND D CLIFF D TALUS D CREVICE/CAVE	E CULTURAL	□ PLANKTON □ SUBMERGED □ FLOATING LVD □ GRAMINOID □ FORB □ LOCHYTE □ DECIDUOUS □ CONTEROUS	D LAKE D PONID D RIVER O STREAM D MARSH D SWAMP D FEN D BOG D BARREN
		C TALUS C CREVICE/CAVE ALVAR		CONTEROUS	D BARREN
		D ROCKLAND D BEACH/BAR SAND DUNE BLUFF			D THICKET SAVANNAH WOODLAND FOREST PLANTATION
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER O SHALLOW WAT. SURFICIAL DEP. BEDROCK			OPEN O SHRUB O TREED	☐ INCLUSION	☐ HEDGEROW

 1 EMERGENT

CANOPY

3 SUB-CANOPY
4 UNDERSTORY

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

STAND DESCRIPTION:

1		•	-		
75 50	10-24-	į	< 10cm	DECAYED	
25-50cm	10-24cm	10-	< 10cm	FIRM	DEADFALL/LOGS
25-50cm	10-24cm	10-	< 10cm	GSNAGS	STANDING SNAGS
25-50cm	10-24cm	16	< 10cm	TREES	

☐ PIONEER
□ YOUNG
□ MID-AGE
□ MATURE
□ OI D-GROWTH



	LIST	SPECIES	PLANT
SURVEYOR(S): NM F	DATE: Qua 8 19	POLYGON: MAMZ-2d	SITE: 407 Transition
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																	AND PROPERTY.	PLAN STE	LYTSALI	PLEAUST	PHOROUG	SPECIES CODE	VALUE CODES: D =			SPECIES
+	\vdash	+	-	_			_	_	_														DOM!	SURVEYOR(S):	DATE: Qua	POLYGON: MAMZ
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						T			1			1	+	-		+	+	_	70	0	0	₩ 4	ABUNE US ≈ SU	70	SO	J
																		7				COF	ANT AN	3	0	2-2
			1_							1									_			F	O = O	1,7		2
																						SPECIES CODE	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE		1	
																	+	+	\dashv	+	+		GRO			
																		1	1			√ 5	GROUND LAYER			
-	4		Ш		1																-) AYER	AYER			
-	-	+	\vdash	-	-	4	4	\bot	_													4				- 1
		L																				COLF				

2 CANOPY
3 SUB-CANOPY

UNDERSTORY

EMERGENT

LAYER

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CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

STAND DESCRIPTION:

5 GROUND LAYER 5 7 - <0.2m
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%

POLYGON DESCRIPTION:

ORGANIC ORGANIC PMINERAL SOIL PRINERIAL PROTTONLAND COLTURAL OPLANTIFORM COLTURAL OPLANTIFORM COLTURAL OPLANTIFORM OPLANTIFO	SYSTEM	SUBSTRATE	TOPO FEATURE	Valorita		
DORGANIC DORGANIC DORGANIC DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DEPARENT MATERIAL DECUDIOUS DEPARENT MATERIAL DEPARENT M	TEDDECTRIA			1000	PENNI FORM	COMMUNI
D PARENT MATERIAL D PARENT MATERIAL D PARENT MATERIAL D RACIDIC REDROCK D TERRACE D WALLEY SLOPE D ROCLING UPLAND D ROCLING UPLAND D ROCLING UPLAND D ROCLING UPLAND D ROCLING UPLAND D BEACHDOUS CREVICE/CAVE D ROCKJAND D BEACHJBBAR D SAND DUNIE COVER COMPLEX COMPLEX D INCLUSION D SHRUB D INCLUSION D SHRUB D INCLUSION D SHRUB D INCLUSION D SHRUB D INCLUSION D SHRUB D TREEED	WETLAND	ORGANIC ON	I LACUSTRINE	I NATURAL	D PLANKTON	- LAKE
TER. DEP.	ACHIATIC	DADENT MATERIAL	C KINEKINE	CULTURAL	☐ SUBMERGED	D POND
DESCRIPTION DE LA COMPLEX CARB. BEDROCK TABLEJAND TABLEJAND TABLEJAND TABLEJAND TALUS TO CONTEROUS TO CONTEROUS TO CONTEROUS TO CONTEROUS TO CONTEROUS TO COMPLEX TO SHRUB TO SHRUB TO SHRUB TO TREED TREED	The state of the s	T ACTOR BEDBOOK	III BOLLONILAND	7.	II PLOATING LVD	II RIVER
CARB. BEDROCK TABLELAND CLIFE CLIFE CLIFE CLIFE CLIFE CLIFE CLIFE CLIFE CLIFE CREVICE/CAVE CREVICE/CA		D RASTIC BEDROCK	LI IERRACE		GRAMINOID	□ STREAM
L CAKE, DEDKUCK LI ASLELAND LI CLIF CLIF CLIF CLIF CLIF CALING UPLAND CANUTEROUS COMPEROUS COMPEROUS COMPEROUS COVER COMPLEX		CASS SERVICE	LI VALLEY SLOPE		II FORB	MARSH
COVER COMPLEX COMPLE		L CAKE, BEDROCK	LI LABLELAND		I LICHEN	□ SWAMP
COVER COMPLEX COMPLE			LI KUCLING UPLAND		☐ BRYOPHYTE	<u> </u>
COVER COMPLEX COMPLE			127		III DECIDUOUS	□ B0G
COVER COMPLEX COMPLEX COMPLEX COMPLEX COMPLEX COMPLEX COMPLEX COMPLEX			I IALUS		CONTEROUS	□ BARREN
COVER COMPLEX COMPLEX COMPLEX COMPLEX COMPLEX COMPLEX			I CKEVICE/CAVE		D MDXED	MEADOW
COVER COMM. TYPE COVER COMM. TYPE COMPLEX		D POOR AND			PRAIRIE	
COVER COMM.TYPE BYOPEN DINGUSTON DIREBO TREED			T REACH/BAD			D THICKET
COVER COMM. TYPE BYOPEN DINCLUSION DISHRUB DICOMPLEX DIREED			CAND DING			SAVANNA+
COVER COMM. TYPE TO SHRUB COMPLEX TREED						D WOODLAN
TOPEN COMM.TYPE TOPEN DINCLUSION DISHRUB TREED COMPLEX		15.50				- PLANTATIO
BYOPEN II INCLUSION II TREED II INCLUSION	SITE			COVER	COMM. TYPE	GHHIO
D TREED	OPEN WATER			1		CHERON C
	SHALLOW WAT. SURFICIAL DEP. BEDROCK		[9	D SHRUB TREED	COMPLEX INCLUSION	☐ HEDGEROV

	POLIGON	20 000
UTMZ:	SURVEYOR(S):	SITE:
UTME:		
UTMN:	DATE:	POLYGON:

I PIONEER EN		ABONDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	חבר ביייים	DEADFALL/LOGS		STANDING SNAGS		7	CTC CO CO CINTELOTO.
BYNOUNG	MATURITY:	A = ABU	DECAYED	1	Mag	VAGS	200	2330	OLO.
☐ MID-AGE	7.7	NDANT O = OCCASION	< 10cm	/ Iodii		< 10cm	(LDOIT >		
□ MATURE		VAL R = RARE N =	10-24cm	10-24Gm		10-24cm	10-24cm		
□ OLD-GROWTH		NONE	25-50cm	25-50cm		25-50cm	25-50cm		
Ī			> 50cm	> 50cm	, pour	× 500-m	> 50an		

	LIST	SPECIES	PIANT
SURVEYOR(S): NMA	DATE: AUG 8 G	POLYGON: CUMIT	SITE: HOT Trans-value
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SPECIES	((0))		
-,-	AUG.		
NOC	DOKALLOK(A): VIVI	1	
VALUE CODES: D = DON	VEES > 10m 2 = SUB-C/	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE	= GROUND LAYER
SPECIES CODE	1 2 3 4 C	COLL. SPECIES CODE	LAYER COLL.
BCESASA	0		
ACENEGUN	K 00		
QUERURE	0		
FRAPENS	P 0		
RHACATU	D O		
JUBNICK	RRR		
TILAMER	P 0 P		
LONTATA	P		
CIKLUTE	0		
学りると	0		
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O OPEN WATER
O SHALLOW WAT.
EL SURFICIAL DEP.
O BEDROCK

□ OPEN □ SHRUB □ TREED

COMPLEX COMPLEX

☐ HEDGEROW

COVER

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OTHER

SITE

LAYER

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CVR

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SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY EMERGENT

SUB-CANOPY UNDERSTORY

STAND DESCRIPTION:

-acces only from

E TERRESTRIAL

D WETLAND

D AQUATIC

D ORGANIC

JA MINERAL SOIL

D PARENT MATERIAL

ACIDIC BEDROCK

D BASIC BEDROCK

C CARB. BEDROCK

C LACUSTRUNE
C RIVERINE
D BOTTOMIAND
D TERRACE
O TABLELAND
D CLIFF
C TALUS
C CREVICE/CAVE
D ALVAR
D RACCKLAND
D BEACH/BAR
D SAND DUNE
D BLUFF

D PLANKTON

SUBMERGED

ROATING IVD

GRAMINOID

 CAKE
D STREAM
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D MARSH
D SWAMP
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SYSTEM

SUBSTRATE

TOPO, FEATURE

PLANT FORM

COMMUNITY

E CULTURAL HISTORY

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	II PIONEER	COMMUNITY	ARINDANCECON		DEADFALL/LOGS		TUNNIC			
	☐ YOUNG	MATURITY:	DECAYED		TIRM		STANDING SNAGS		I KEES	
	□ MID-AGE	MMUNITY MATURITY:	< 10cm		< 10cm		< 10cm		< 10cm	
-1	□ MATURE	NAL R = RARE N = NONE	10-24cm		10-24cm		10-24cm		10-24cm	
ANONIO CITO CITO CITO	O D-CBOWTL	NONE	25-50am		25-50cm		25-50cm	/	25-50cm	
=			> 50cm	, 00011	> 50m	/ Journ	\ FB	, , ,	× 500m	

SIZE CLASS ANALYSIS:



☐ PIONEER	COMMUNITY
D'YOUNG	MATURITY:
☐ MID-AGE	
□ MATURE	
OLD-GROWTH	

> 50cm	25-50cm	DECAYED < 10cm 10-24cm 2	< 10cm	DECAYED	
> 50cm	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
/ Judil					
1	25-50cm	10-24cm	< 10cm	IG SNAGS	STANDING SNAGS
> 50cm	25-50cm	10-24cm	< TOON	i ke	

1 EMERGENT 2 PURDET T = ULM AMER
2 CANOPY 2-3 3 DEFINE
3 SUB-CANOPY 2 4 DOWNER U
4 UNDERSTORY 4 3 RUNCATH
5 GROUND LAYER 5 4 PHARING
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:

DCE SASA

SYSTEM SUB	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
TERRESTRIAL II ORGANIC	NIC	□ LACUSTRINE	NATURAL	I PLANKTON	DIAKE
iai d	AL SOIL	D RIVERINE	E CULTURAL	□ SUBMERGED	POND
LI AQUATIC D'PAREN	PARENT MATERIAL	BOTTOMLAND		III PLOATING LVD	□ RIVER
O ACIDI	ACIDIC BEDROCK	O TERRACE		☐ GRAMINOID	STREAM
LI BASIC	BASIC BEDROCK	CI VALLEY SLOPE		□ FORB	□ MARSH
CARB,	CARB, BEDROCK	1 TABLELAND			- SWAMP
-		I ROLLING UPLAND		I BRYOPHYTE	밀
				BY DECIDUOUS	□ 90g
		LI COENTCEIC ME		CONJEROUS	II BARREN
		□ ALVAR		1	D PRAIRIE
		☐ ROCKLAND			D HICKET
		D BEACH/BAR			III SAVANNAH
		D VANO DONE			DWOODLAND
		000			I PLANTATION
SITE			COVER	COMM. TYPE	OTHER
			D SHRUB	D INCLUSION	☐ HEDGEROW

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



	LIST	SPECIES	PI ANT
SURVEYOR(S): NIME	DATE: DUG S/A	POLYGON: CUW IN	SITE: 407 Townstood
			20

SPECIES CODE

COLF

SPECIES CODE

COLF.

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

2 P- wappy

☐ PIONEER ☐ YOUNG

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

COMMUNITY MATURITY:

ABUNDANCE CODES: A = ABUNDANT 0 = OCCASIONAL R = RARE N = NONE

< 10cm

10-24cm

25-50cm 25-50cm 25-50cm 25-50cm

> 50cm > 50cm > 50cm > 50cm

DEADFALL/LOGS DECAYED

STANDING SNAGS TREES

< 10an < 10cm

10-24cm

10-24cm

10-24cm

< 10cm

RUDCATH >> LOUTATA

SIZE CLASS ANALYSIS:

BUDLDECT PLACETH POPPROT BROINER RAPENN TRIPA のという方 DU CARO CHREPE RSTOL RO DD

LAYER

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

UNDERSTORY SUB-CANOPY CANOPY STAND DESCRIPTION:

SPECIES PLANT LSI SURVEYOR(S): JULY 13 DATE: NHI SITE: 402 POLYGON: CHTIC Transituay 2018 20

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE

SPECIES CODE

COLF.

SPECIES CODE

2 3 LAYER

4

COF.

ELEANGU

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
E TERRESTRIAL RETJAND AQUATIC	O ORGANIC MINERAL SOIL O PARENT MATERIJAL O ACIDIC BEDROCK O BASIC BEDROCK C CARB. BEDROCK	I LACUSTRINE I REVERTINE SE BOTTOMILAND I TERRACE I VALLEY SLOPE TABLELAND I CLIFF TALLIS I CREVICE/CAVE I ALVAR I ROCKLAND I ROCKLAND I BLUFF SAND DUNE SAND DUNE	ELCOPLINENT ELCOPLINENT	D PLANKTON D SUBMERGED D FLOATING LVD D GRAMINOD D FORB D FORB D LCHEN D BRYOPHTE M DECEDUOUS CONIFEROUS MIXED	LARE DOND TRUER STREAM STREAM SWAMP SWAMP SWAMP SWAMP BOG BARREN BOG BARREN RAIREE MICKET SWANNAH D SWANNAH D FOREST
SITE			COVER	COMM. TYPE	OTHER
O OPEN WATER O SHALLOW WAT. SURFICIAL DEP. O BEDROCK			□ OPEN □ SHRUB □ TREED	COMPLEX	□ HEDGEROW

		יסבופטוע		
	UTMZ:	FOLIGON SURVEYOR(S):	71 E	CHILL
	UTME:			
	UTMN:	DATE:	POLYGON:	3
ı			0 1	1



PLANT SPECIES LIST SURVEYOR(S): NMC POLYGON: MA 525/MAMZL SITE: 407 Townsutuse

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SPECIES CODE LAYER COLL SPECIES CODE	LAYER	뛰	3	SPECIES CODE		LAYER	
	1 2	3 4	F	STECTES CODE	щ	2 3	4
PLREUSTR						_	
PURABULO							
SPUSP	0					-	
RIDGRIL.		70				-	
ドロというと	2	0				-	
LYTSRI		70				+	
FRAPENS		10				1	
JLMOMER	R	9					
						1	
		-					
		-					
		-					
e		+					
1	F	\vdash					
		H					
		\vdash			_		
	F	+					
		t			-	\perp	L
		+			-		
					-		
			L				_
	_						-

POLYGON	
SURVEYOR(S):	зие:
29	
DATE:	POLYGON:
	SURVEYOR(S):

* No access, view only from roadside

POLYGON DESCRIPTION:

STAND DESCRIPTION:

8	=	CVR	PECIES IN ORDER OF DECREASING DOMINANCE >> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO
MERGENT	w		SAL SP
ANOPY			
UB-CANOPY			
NDERSTORY			
GROUND LAYER	7/2	Ŋ	LADRIN > PLPACAT
	LAYER 1 EMERGENT 2 CANOPY 3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER	RGENT	ERGENT 3 STAND LAYER 1/5 5 5 5 5 5 5 5 5 5

CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

249	10-24cm	-24cm 25-50cm
249	10-24gm	-24an 25-50an
l		
Ź	10-24cm	24cm 75-50cm
ĺ	10-Z4GII	-24cm 25-50cm
	•	

☐ PIONEE	
R	
☐ MID-AGE	
□ MATURE	
□ OLD-GROWTH	



> 50gm

> 50cm > 50cm ☐ HEDGEROW

OTHER

	UTMZ:	ИТМЕ:	
A - GROUNT LAYER		UTME:	
4	0177	O I MC	
4			
VALUE CODES: D = DOMINANT A = BANDAMT O = OCCASIONAL R = RARE			
LAYER	DESCRIPTION:		
1 2 3 4 VIII. STECKES CODE 1 2 3 4 VIII.	SUBSTRATE	TOPO, FEATURE	HISTORY
COUCANA DI SUGNIGE & RO DIERRESTRIAL DIERRESTRIAL		☐ LACUSTRINE	O NATURAL
D SPLINGE R		JAL D BOTTOMLAND	
DEUCE ROLL OF THE	☐ BASIC BEDROCK	C C VALLEY SLOPE	
	1	C CLIFF	D BRYOPHYTE
0		D TALUS D CREVICE/CAVE	
POSERI R PROXPENS, R		☐ ALVAR	
MISNEGU OOOO RORPSEU R	_	SAND DUNE	
1 TRUPE 0 0 0	_		
PIC POUCSS R			COVER
ICGLAN OR DOPEN WATE	IAT .	S	D OPEN D INCLUSION
D SURFICIAL DEP.	DEP.		U TREED
RIPERT			
DRC HIVUL	SCRIPTION:		
RUMCRIS	HT CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)	OF DECREASING THAN; > GREATER 1
DI EMERGENT		PICGLALIC	
2	2-3 2	DCENEGU >	PICPUDE
	3-4 2	ST < TURLING	> LOUTATA
5 GROUND LAYER	AYER JI	10 CA	1 0110 0111
TI CODES: 1 => 25m		2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 =	= 0.5-1m 6 = 0.2-
SEL DISC		1 = 1 = 10 / 2 = /10 / 20 / 3 = /20 / 35 / 4 = >35 / 60 / 5 = >60 / 60 / 60 / 60 / 60 / 60 / 60 / 60	% 4 = >35-60% 5
ICCED(TREES	< 10cm	10-24m
CIRARVE			10-24cm 25-50cm
DEADFALL/LOGS	FIRM		
SCSP O	PE	< 10cm 10-2	10-24cm 25-50cm
INNI GR	i i	A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	RARE N = NONE
	MA	1	1
LI PIONEER	2 U YOUNG	O MID-AGE O	☐ MATURE ☐ OLD-GROWTH

UTME: DATE: POLYGON:

POLYGON SURVEYOR(S): UTMZ: SITE UTMN:

COMMUNITY

D LAKE
D POND
D RIVER
D STREAM
D MARSH
D STREAM
D MARSH
D SWAMP
D BOG
D BARREN
D BOG
D BARREN
D MEADOW
D PRAINIE
D THICKET
D SAVANNAN
D FOREST
D PLANTATION

1 2 3 4 COL.	SPECIFIC CODE LAYER COLL		LAYER	몆		3	DECTES CODE		LAYER	⇗	
	FEETEN CODE	1	_	_	- 1	- - -	SPECIES CUDE	_	2		
	A BONG I				\subseteq			-	_	-	-
	PLATI				0				\vdash	\vdash	-
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				\perp	\perp				\vdash		++
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			+	+				-	+	+	+
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									\dashv		\neg
			-	-	-				\dashv		
			-	-	-						
			+	+-	-						
		L	┝	╁	+-				-		

LAYER

즉

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

EMERGENT

CANOPY SUB-CANOPY UNDERSTORY

DEADFAIL/LOGS DECAYED

< 10cm

10-24cm 10-24cm 10-24cm

STANDING SNAGS

TREES

< 10cm

10-24cm

25-50cm

25-50am 25-50am

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

< 10cm

25-50cm

> 50gm

> 50cm

5 GROUND LAYER 4 5 74058 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:

COMMUNITY MATURITY:

☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH

POLYGON SURVEYOR(S): POLYGON: DATE:

UTMZ: UTME: UTMN:

PLANT

SILE: AOH

10

SPECIES

DATE: DUGGING

POLYGON DESCRIPTION:

□ HEDGEROW	COMPLEX DINCTUSION	☐ OPEN ☐ SHRUB ☐ TREED			G SHALLOW WAT. G SURFICIAL DEP. G BEDROCK
OTHER	COMM.TYPE	COVER			SITE
I PLANTATION					
□ FOREST			CI BLUFF		
HAMNAVAS []			CI BEACH/BAR		
			II ROCKLAND		
PRAIRIE			□ ALVAR		
MEADOW	O MDXED		☐ CREVICE/CAVE		
BARREN	CONJERIOUS		☐ TALUS		
□ 806	D DECEDUOUS				
E E	I BRYOPHYTE		LI ROLLING UPLAND		
TI SWAMP			LITABLELAND	LI CARB, BEDROCK	
MARSH	TORB		LI VALLEY SLOPE	LI BASIC BEDROCK	
D STREAM	S GRAMINOID		LITERRACE	LI ALIDIC BEDROCK	
C RIVER	D PLOATING LVD		DAND LONG TOWN	LI PAKENI MATEKIAL	LI AQUATIC
POND	□ SUBMERGED	CULTURAL	□ RIVERINE	ELMINERAL SOIL	X WEI CAND
LAGE	- PLANKTON	NATURAL	☐ LACUSTRINE	C ORGANIC	☐ TERRESTRIAL
COMMUNITY	PLANT FORM	DESIGNA	TOTOL STONE		

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21	1
	Curi.

POD COMP POAPALU PRCHINU HYPPER I BROINER TYP1 PT DIPSYFU

200

0 0

wasdy species concentrated along path edges

LI PIONEER	COMMUNITY	ABONDANCE COD	ABINDANICA	DEADFALL/LOGS		SIANDIN	
BNNOA B	MATURIT	ES: A = A	DECAYED	LINIT.	CTPA	STANDING SNAGS	
۱۵	::	UND,		1		Ŷ	C
☐ MID-AGE		ANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	< 10cm	< Tucm		< 10cm	/ Toril
ľ		DNAL		1		\wedge	10
☐ MATURE		R = RARE N =	10-24cm	10-24cm		10-24cm	10-24cm
		NON			I	不	A
□ OLD-GROWTI		m	25-50cm	25-50cm		25-50cm	25-50cm
∄		Ī			Ī	3	7
			> 50cm	> 50cm		> 500m	> 50cm

LÄYER	н	_	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT FOUND TO)	REATER THAN: = ABOUT
1 EMERGENT	4	-			
2 CANOPY	2	_	+	SACIX SP. >ACEL	NEGU.
3 SUB-CANOPY	OPY 3	- 1		SPLIX.SP.	- 15
4 UNDERSTORY	ORY 3-2	2		REDCATE V HRAPEN	2
5 GROUND LAYER	LAYER 5-7	-	-	variable	
HT CODES:	1 = > 25m 2 = 0 = NONE 1 = :	1-10% >10-2	25m 3	HT CODES: $1 = > 25m$ $2 = > 10-25m$ $3 = 2-10m$ $4 = 1-2m$ $5 = 0.5-1m$ $6 = 0.2-0.5m$ $7 = < 0.2m$ CVR CODES: $0 = NONE$ $1 = 1-10\%$ $2 = > 10-25\%$ $3 = > 25-35\%$ $4 = > 35-60\%$ $5 = > 60\%$	6 = 0.2-0.5m 7 = <0.2r 5-60% 5 = >60%
SIZE CLAS	SIZE CLASS ANALYSIS:	• •			
	TREES	0) <:	< 10an () 10-24an	₹ 25-50am
7IS	STANDING SNAGS	7	٨	< 10an 10-24an	25-50cm
	-			,	

FRAPENN

LAMAJO

0

CHTAID

IERIJAST

CAMER

がせるいろうた

DAUCARO

0

POPTREM

AD STRU

OTCORN

BLFRAG

0

0

QUEMACE

JUNC DND

0

SOLCANA

183580

CENEGU

0

10

0 00 0

> PHRAUST SOLGIG A

PHANEUN YTSAL

THERRESTRIAL CORGANIC COMPLEX OWETLAND	
COVER COMM. TYPE D OPEN D INCLUSION EL SHRUB D COMPLEX R TREED	anasa.
OPEN DINCLUSION STREED COMPLEX	SITE
	OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK

POLYGON I		
GON DESCRIPTION:	7	

PLANT

POLYGON:

150D7 36

NEW HOT Transitual

LST

DATE: JULY 13/18 SURVEYOR(S): NHF

SPECIES CODE

COLL

SPECIES CODE

COLT.

0

LAYER

SPLALBA

HENIER

TRIPD

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER
VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE



SITE: 407 Transityay POLYGON: SWD4-15 DATE: JULY 13/2018 + Aug 8/20 SURVEYOR(S): NME

SAL AUSA OIL SAL AUSA OIL SAL AUSA OIL SAL FRAG OIL SA	CDECTEC CODE	-	LAYER	뗬		3	CDECTES CODE LAYER COLL LAYER		LAYER	뙤		
	טו בשבט כסטב	H	2	ω			SPECIES CODE	ш	2	-		5 5
	SALAUSA	0								-		
P P P O P O	SALFRAG	0	0							4	_	
P P P O P	SBC SP			0						4	_	
	ACENEGU			10						-	_	-
	RUACATU			0						_	_	
	PUDDRUN				0					-		
	CARPORC			-	10							
	CORJULI			80	/~						_	
	TYP\$ SP			40	70					_	-	
P O	VERHOST			-						\dashv	_	
	RA PENS		70	0	\sim					-	_	
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UTMZ:	UTME:
- oscess constraints	out.

UTMN: DATE: POLYGON:

POLYGON SURVEYOR(S):

SITE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	DI ANT EODI	
O TERRESTRIAL SA WETLAND AQUATIC	ORGANIC MINERAL SOIL PARENT MATERIAL	LACUSTRINE CI RIVERINE SI BOTTOMLAND	I NATURAL	D PLANKTON D SUBMERGED	D LAKE
	D ACIDIC BEDROCK	O VALLEY SLOPE		II HOATING LVD	O RIVER
	CARB, BEDROCK	C TABLELAND		II FORB	I MARSH
		D ROLLING UPLAND		D BRYOPHYTE	CJ SWAMP
		CLFF		DECIDUOUS	□ BO6
		LIALUS		□ CONIFEROUS	□ BARREN
		D ALVAR		□ MDXED	MEADOW
		I ROCKLAND			D HIOGET
		O SAND DUNE			☐ SAVANNAH
					II PLANTATION
SITE			COVER	COMM. TYPE	OTHER
D OPEN WATER SHALLOW WAT. SURFICIAL DEP.			☐ OPEN ☐ SHRUB ሺ TREED	☐ COMPLEX	□ HEDGEROW
STAND DESCRIPTION:	PTION:				L

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:

4 UNDERSTORY

FRAPENUS ACENTIGUN

CANOPY SUB-CANOPY

1 EMERGENT

4

CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).

				-	
> 50cm	25-50cm	10-24cm	< 10cm	DECAYED	
- could					
1	25-50cm	10-24cm	< 10cm	FIRM	DEADFALL / LOGS
, ,					
> 500m	25-50gm	10-24cm	< 10cm	GSNAGS	STANDING SNAGS
> 50000	25-50cm	10-24cm	< 100m	LIKEES (

COMMUNITY MATURITY: ☐ MID-AGE ☐ MATURE ☐ OLD-GROWTH



mul trucks Iran

Cracitad

8

COMMUNITY MATURITY: 5 GROUND LAYER | 4-5 | 5 | PUD LARUN >>> TYPANGU 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% DEADFALL/LOGS LAYER ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONESIZE CLASS ANALYSIS: STAND DESCRIPTION: EMERGENT UNDERSTORY SUB-CANOPY CANOPY STANDING SNAGS DECAYED TREES FIRM **=** S < 10an < 10cm < 10cm < 10cm ☐ MID-AGE SPECIES IN ORDER OF DECREASING DOMINANCE
(>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

PLANT 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 DATE: JULY 13/18 SURVEYOR(S):八叶 POLYGON: MAMZ-2m EOH HMH :3115 LAYER TransHway

TRAPE OF

OPEN WATER
SHALLOW WAT.
SURFICIAL DEP.
BEDROCK

D SHRUB COVER

> COMPLEX COMM. TYPE

> > ☐ HEDGEROW

OTHER

SITE

TO REDST

010 A

TUPANGU PHODRY

TRAUS ! MISAC

0

SPECIES CODE

2 3 4

COL

SPECIES CODE

2 LAYER w

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COL

D CALIF CALIF CREVICE/CAVE CREVICE/CAVE CALIF CROCKLAND CROC		
WE G MIXED	000000000	
U DECIDIONIS I DECIDIONIS I CONIFEROUS I MIXED		
AVE DISCRIPTION OF THE PROPERTY OF THE PROPERT		
DECIDIOUS DECEMBEROUS DE CONIFEROUS DE MDCED	100000	
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D DECIDIOUS D CONITEROUS		
	100	
ים מינטיים בי מינטיים וב		
T BOWN TO THE	1	
- LICHEN	LI CAKB, BEDROCK	
LI VALLEY SLOPE D'FORB X MARSH	L BASIC BEDROCK	
I ENVALE I STREAM	BACTC BEDBOOK	
AND	D ACTOR BEDROOK	- Contract
M CULTURAL E	D PADENT MATERIAL L	DAGUATIC
m	ORGANIC COT	U IEKKESIRIAL
COMMUNITY PLANT FORM COMMUNITY		
	SUBSTRATE	SYSTEM

	פר	
SYSTEM	OLYGON DESCRI	
SUBSTRATE	RIPTION:	
TOPO. SEATURE		
۱		
DI ANT FORM		
DI AUTONIA		

UTMN:	UTME:	UTMZ:
DATE:	JR(S):	SURVEYOR(S):
POLYGON:		N NIE

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mpediment 0 wester from thorough the bottomsand area

☐ MATURE

□ OLD-GROWTH

10-24cm 10-24cm

25-50an 25-50cm

25-50cm

10-24cm

25-50cm

> 50cm

> 50cm > 50cm > 50cm

10-24cm



2+

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TAROFF PINSTRO

ISI PLANT SPECIES SURVEYOR(S): NMI DATE: JUILU POLYGON: CUM 1-19 TOT HUN HOT 8 CONSIT Way 21/22

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

POLYGON DESCRIPTION:

SPECIES CODE		LAYER	띳	3	CDECTES CODE		LAYER	æ	3
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CIRARVE				J 7 1	CHELLBU		-	D	
DIPSIFU).		TATRPERT		-	0	
RUMCRIS			0		HYPPE ST		-	D	
BROINER			D		PHLPRAT		-	0	
VICCIROC				D D D	月月からし		-	5	
LOLPERE			3	080	PLATEGO		-	D	
POSPROT			0		POPPELT	abla			
PELDLBA			(5)		PURAUST		-	0	
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TRIPRAT					THOP:		-	70	

LAYER

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CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

FRO AMER = SALALAD (Neep) = ACESACO

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OT CORN

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				PTION:	STAND DESCRIPTION:	
□ HEDGEROW	D COMBIEX	D SHRUB			D OPEN WATER D SHALLOW WAT. SURFICIAL DEP. D BEDROCK	=
OTHER	COMM. TYPE	COVER			SITE	
D LAKE D POND D RIVER D STREAM D STREAM D SWAMP D FEN D BOG D BASKEN D BASKEN D PRAIRIE D THICKET D SAVANNAH D WODLAND D POREST D PLANTATION	□ PLANKTON □ SUBMERGED □ FLOATING LVD □ GRAMINOID □ FORB □ LICHEN □ BRYOPHYTE □ DECIDUOUS □ DECONIFEROUS □ MIXED	II NATURAL M CULTURAL	DIACUSTRINE DITORIAND TERRACE BOTTOMIAND TERRACE TABLEA'S SLOPE TABLEA'S DE TABLEA'S DE TALUS CREYICE/CAVE DALVAR DROCKLAND DEACHBAR D SAND DUNIE BEACHBAR D SAND DUNIE	D ORGANIC PARENT MATERIAL D PARENT MATERIAL D ACIDIC BEDROCK D ASSIC BEDROCK C CARB, BEDROCK	TERRESTRIAL AQUATIC	
COMMUNITY	PLANT FORM	HISTORY	TOPO, FEATURE	SUBSTRATE	SYSTEM	

4 UNDERSTORY

KHACOTHO CROTPUNC

SUB-CANOPY CANOPY

25-50cm	2	10-24cm	< 10cm	FIRM	DEADFALL/LOGS
25-50cm > 50cm	2	10-24cm	< 100m	STANDING SNAGS	TOWNE
				2000	CTANATA
25-50cm	2	10-24cm	< 10cm	TREES	

COMMUNITY MATURITY: □ MID-AGE □ MATURE □ OLD-GROWTH

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

☐ PIONEER ☐ YOUNG

□ MID-AGE □ MATURE □ OLD-GROWTH

COMMUNITY MATURITY:

IZE CLASS ANALYSIS:

STANDING SNAGS TREES

FIRM

< 10cm < 10am < 10cm

10-24cm 10-24cm 10-24cm

25-50cm 25-50cm

25-50cm

25-50cm

> 50cm > 50cm > 50cm > 50cm

o long est 1 CARPENS ACEPI DI TILDYER CAROVAI POPTREM EURTICE TRA PECC CRAMOL GEU CANA DUERMACE MERURA 27BID TRIPD EROSE. LL PET CESASA 25 700 15 0 PIC Sig

> LAYER 1 EMERGENT

> > 퐄

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

CANOPY

UNDERSTORY SUB-CANOPY

()

RHDCGTH VVVCRATPUNC

LSI SPECIES PLANT SURVEYOR(S):NMF DATE: JULY 1311 POLYGON: CUT toh aus Ω TWOU 22

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

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SPECIES CODE

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SPECIES CODE

2 3 LAYER

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DORGANIC DORGANIC CHUPENNE DATURAL DROTTOMAN DESTROY DATURAL DROTTOMAN DESTROY DATURAL DROTTOMAN DESTROY DES	SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
COVER COMM. TYPE	EN TERRESTRIAL DE WETLAND DE AQUATIC DE AQUATIC	D ORGANIC D MINERAL SOIL D PARENT MATTERIAL D CAUDIC BEDROCK D BASIC BEDROCK CARB. BEDROCK	D LACUSTRINE D RIVERINE D BOTTOMILAND D TERRACE D VALLEY SLOPE SETABLELAND C CLIFF D TALUS D CREVICE/CAVE	A CULTURAL	D PLANKTON D SUBMERGED D RAMINOID D GRAMINOID D FORB D LICHEN D BRYDPHYTE ZADECIDUOUS C ONLIFEROUS D MIXED	D LAKE D POND D RIVER STREAM D MARSH D SWAMP D BOG D BARREN D BARREN
D INCI LISTON			D ROCKLAND D BEACH/BAR D SAND DUNE D BLUFF			D PRAIRIE NOTHICKET D SAVANNAH D WOODLAND D FOREST D PLANTATION
0 8	SITE		D ROCKLAND D BEACH/BAR D SAND DUNE D BLUFF	COVER	сомм. түрг	D PRAIRIE N THICKET D SAVANNAH D WOODLANI D FOREST D PLANTATIC

POLYGON DESCRIPTION:



☐ PIONEER	COMMUNITY	ABUNDANCE CO		DEADFALL/LOGS	STAND		SIZE CLASS ANALYSIS:
□ YOUNG	Y MATURITY:	DES: A = ABUN	DECAYED	FIRM	STANDING SNAGS	TREES	NALYSIS:
☐ MID-AGE		ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	< 10cm	< 10cm	< 10an	< 10cm	
☐ MATURE		VAL R = RARE N = N	10-24cm	10-24cm	10-24cm	10-24cm	
□ OLD-GROWTH		ONE	25-50cm	25-50an	25-50cm	25-50am	
코		-	V	v	V	Ţ	

> 50cm

> 50cm > 50cm

> 50cm

4 UNDERSTORY 3 4 4 PAUT TYPH > RHACATH
5 GROUND LAYER 5 7 3 POAPRDT > CIRARVE
HT CODES: 1 = > 25m 2 = > 10.25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

3 SUB-CANOPY

1 EMERGENT LAYER

CANOPY

STAND DESCRIPTION:

=

CVR

SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

PLANT ISI SPECIES SURVEYOR(S): NMF DATE: JULY 13/2018 POLYGON: CUTTIE SITE: 407 Transitival 22

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

SPECIES CODE

COLF.

SPECIES CODE

1 2

ω 4

6 6 8

70

RHUTHA JUGNICK

□ HEDGEROW	COMPLEX COMPLEX	D TREED			D OPEN WATER D SHALLOW WAT. SURFICIAL DEP. BEDROCK
OTHER	COMM. TYPE	COVER			SITE
D LAKE D POULD REN STREAM D STREAM D STREAM D SAKAMP REN D BOG D BARKEN D MEADOW D RAIRIE STRICKET SAVANIMAH WOODLAND D RAITTION D PLANTATION	D PLANKTON D SUMMERGED D H.OATING LVD D GRAMINOID D GRAMINOID D H.OATING LVD D GRAMINOID D	ACCIT.TURAL	D LACUSTRINE D ROTTOMILAND TERRACE D WALLEY SLOPE N TABLELAND C CLIF TAULS D CREVICE/CAVE D ALVAR D RACKLAND D BEACHBAR D SAND DUNIE D BLUFF	ID ORGANIC ID MINERAL SOIL ID PARENT MATERIAL ID ACIDIC BEDROCK ID BASIC BEDROCK ID CARB. BEDROCK	D HERESTRAL
COMMUNITY	PLANT FORM	HISTORY	TOPO, FEATURE	SUBSTRATE	SYSTEM

CIRPANT

C

OTPRUE

LAROFF I PON PRA REACATE

O

PRUVIRG

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PLANT
SITE: 402 Trans Huay

SPECIES
LIST
DATE: JULY 13/18
SURVEYOR(S): NIMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT 0 = OCCASIONAL R = RARE

SPECIES CODE LAYER CO.		LAYER		3	CDECATE CODE		LAYER	뙤	
SPECIES CODE	1	2 3	4	E F	SPECIES CODE	н	2	ω 4	
QUE RUBR	0	\exists	\sim				-		
JUGNIGR	0							\dashv	
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CAROVAT	70	\nearrow	Q					\dashv	
PRU UIRG-		70	70						
RHUTARI		0						-	
2007		D	0				_	-	
CRAMOLL		P					4	-	
VITRIPA	R		0					+	
ACEPLAT	7				50		_		
ROBPSEU	_	70					-	+	
SPLALBO	70						4	+	
LONHORR		0						-	
CARPENS			0				_	+	
TAIRACE			70	PIC			_	-	
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	7						-	+	
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I TIMAI:
DATE:
POLYGON:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
EXTERRESTRIAL CI WETLAND	D ORGANIC D MINERAL SOIL	D LACUSTRINE	D CULTURAL	☐ PLANKTON ☐ SUBMERGED	POND
□ AQUATIC	D PARENT MATERIAL	DEBRACE		II PLOATING LVD	RIVER
	III BASIC BEDROCK	D VALLEY SLOPE		GRAMINOID	STREAM
	CARB. BEDROCK	III TABLELAND		I COMEN	SWAMP
		II ROLLING UPLAND		□ BRYOPHYTE	A A
				TI-DECIDUOUS	908
		I ALUS		CONIFEROUS	BARREN
		□ ALVAR		i de	PRAIRE
		ROCKLAND			
		SAND DUNE			SAVANNAH
		BLOTT			☐ FOREST ☐ PLANTATION
SITE	b		COVER	COMM. TYPE	OTHER
D OPEN WATER SHALLOW WAT. SURFICIAL DEP. BEDROCK			O OPEN O SHRUB O TREED	COMPLEX D INCITIZION	□ HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EOU!
1 EMERGENT			
CANOPY	حو	(i)	SUERUS>> CAROVAT
SUB-CANOPY	درا	LJ.	POPTREM > QUERURA
+ UNDERSTORY	w	Г	ALKATAV REWITERE
GROUND LAYER	419	ىر	TACATA > CALPEN

CVR CODES: $0 = \text{NONE } 1 = 1 - 10\% \ 2 = > 10 - 25\% \ 3 = > 25 - 35\% \ 4 = > 35 - 60\% \ 5 = > 60\%$

SIZE CLASS ANALYSIS:

TREES (< 10cm

10-24cm 10-24cm 10-24cm

> 25-50cm 25-50cm

	ABUNDANCE CODES: A	DEADFALL/LOGS
	DECAYED	FIRM
2010	200	0
- Proposoni o - occorrigio	< 10cm	< 10cm
ORAL		
F K = KAKE N	10-24cm	10-24cm
NON		
п	12	lz l

25-50cm 25-50cm

> 50cm

> 50cm > 50cm

COMMUNITY MAT
URITY:

5

SITE: 407 Transitual 22

PIANT	TOT IS	Cars Tuo	E)		22
<i>й</i> —	POLYGON: MASZ-1	1725	1		
	DATE: JULY 1	8118	4		
		NMI			
LAYERS: 1 = CANO VALUE CODES: D =	PY TREES > 10m 2 : DOMINANT A = AS	= SUB-CANOPY BUNDANT 0 =	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = VALUE CODES: D = DOMINANT A = ASUNDANT 0 = OCCASIONAL R = RARE	= GROUND LAYER	25
SPECIES CODE	LAYER	601	SPECIES CODE	LAYER	
	1 2 3	4		1 2 3	4
LITSALI		0 50			
MYOSCOR		\triangleright			
MANDANGU		D			
HOLFI		5			
PHRAUST		D			
CIRARVE		0			
SONDRUE		2			

UTMZ:	POLYGON SURV	SITE
17	N SURVEYOR(S):	
UTME:		
UTMN:	DATE:	POLYGON:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	D ORGANIC	CI LACUSTRINE	I NATURAL	D PLANKTON	LAKE
D AQUATIC	II PARENT MATERIAL	BOTTOMLAND	A COLORON	I FLOATING LVD	E PONE
	ACIDIC BEDROCK	II TERRACE		X GRAMINOID	STREAM
	LI BASIC BEDROOK	O VALLEY SLOPE		□ FORB	MARSH
	L CAKB, BEDROCK	MARLELAND		O LICHEN	TI SWAMP
		LI ROLLING UPLAND		□ BRYOPHYTE	E E
		12		□ DECIDUOUS	□ 80G
		LIALUS		☐ CONITEROUS	BARREN
		LI CREVICE/CAVE		II MIXED	☐ MEADOW
		L ALVAK			☐ PRAIRIE
		D REACH/BAD			I THIORET
		C SONO DINE			HANNAVAS [
					II WOODLAND
					II PLANTATION
SITE			COVER	COMM. TYPE	OTHER
SHALLOW WAT.			XI OPEN II SHRUB	COMPLEX	☐ HEDGEROW
BEDROCK			II TREED		

STAND DESCRIPTION:

LAYER HT CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUA
EMERGENT
CANOPY
SUB-CANOPY
UNDERSTORY

SIZE CLASS ANALYSIS:

	TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDI	STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 500
					1 700
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	> 500m
					1 25
	DECAYED	< 10cm	10-24-	25-500	\ <u>f</u>

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



ONE TO WELL

DIONEED	COMMUNITY MA	ABUNDANCE CODES: A = ABUNDAN	DEADFALL/LOGS		STANDING SNAGS	
ET YOURS	TURITY	S: A = AB		FIRM	NAGS	TREES
,	••		1	4		P
T NATO ACT		VI O = OCC	- Locali	1000	^ 10cm	< 10cm
		ACIONA	1	1	7	70
1		VI 0 = OCCASIONAL B = BABE N - NOVE	10-27-01	10 24	10-24-	10-24cm
ı	5	5/	17	1	7	7
	ñ	25-50cm	25-50cm	IIDOC-CO	75 50	25-50cm
		7	1	1	1	7
		> 50cm	> 50cm	> SUGM		× 500m

1	EMERGENT	J	_	SAI FRAG
2	CANOPY			
ω	SUB-CANOPY			
4	UNDERSTORY	4/8	-	SALTRAGYLONDOWN
Q.	GROUND LAYER	Sh	5	PHO ARUND DIPSIFIL
오크	IT CODES: 1 = > 25 VR CODES: 0 = NON	m 2=>1 ! 1=1-1	0-25m 0% 2 =	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: $0 = NONE$ $1 = 1.10%$ $2 = 210.25%$ $3 = 225.35%$ $4 = 235.60%$ $5 = 20%$
IS	SIZE CLASS ANALYSIS:			
I	CO 000 700 10	YSIS:		

LAYER HT CVR SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

D SHALLOW WAT.

MICCRAC

RUDCATE POPDELT

DALICARO

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TRAPAT

(NAZACI) KENEGU

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PODREAT

SAUFRAG VITRIPAR PHAARUN

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SPECIES CODE

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LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT 0 = CCASIONAL R = RARE

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THPANGU VERLAST

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SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
E TERRESTRIAL	ORGANIC	CI LACUSTRINE	I NATURAL	□ PLANKTON	DIAKE
D WETLAND	MEMINERAL SOIL	RIVERINE	X CULTURAL	□ SUBMERGED	POND
DAQUATIC	PARENT MATERIAL	□ BOTTOMLAND	,	III FLOATING LVD	LI RIVER
	ACIDIC BEDROCK	I TERRACE		A GRAMINOID	STREAM
	☐ BASIC BEDROCK	III VALLEY SLOPE		FORB	O MARSH
	CARB, BEDROCK	C TABLELAND		- LICHEN	☐ SWAMP
		D ROLLING UPLAND		II BRYOPHYTE	THE I
				□ DECIDUOUS	□ 80G
		LIALUS		CONTITEROUS	BARREN
		II CKEVILE/CAVE		II MDGED	EXMEADOW
		T ALVAN			- PRAJRIE
		L ROCKLAND			I THICKET
		I SAND DING			SAVANNAH
		C BLUFF			- FOREST
					U PLANTATION
SITE			COVER	COMM. TYPE	OTHER
I OPEN WATER			D SHRUB	D INCLUSION	☐ HEDGEROW
CI SURFICIAL DEP.			TREED	{ }	

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

PLANT

POLYGON: MAM 2-20

LST

SURVEYOR(S): MMF DATE: July 13/18



PLANT POLYGON: MASZ-IM

TEO.	1		. 1	1					
INSI DA	SURVEYOR(S):	R(S):	ZZ J	TO			Ì		
LAYERS: 1 = CANOPY T VALUE CODES: D = D(TREES >	10m 2	= SUB-(CANOPY	1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = 10ES; D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	GROUND LAYER	LAYER		
adou saluads		LAYER	~	201	SPECIES CODE	_	LAYER		3
	1	2 3	4	Ę	or Forth Cook	1 2	ω	4	Ę
THPANGU			D						
TO DANCE			0						
PHRAUST			P						
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	1	+	1			-		1	
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								4	

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

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL ST WETLAND ACHIATIC	ORGANIC S MINERAL SOIL ORGANIC	O LACUSTRINE O RIVERINE	D NATURAL S CULTURAL	D PLANKTON SUBMERGED	□ LAKE
2002110	LI ACIDIC BEDROCK	II TERRACE		I FLOATING LVD	II STREAM
	☐ BASIC BEDROCK	E VALLEY SLOPE		D FORB	MARSH
	CARB. BEDROCK	ET TABLELAND		- LICHEN	D'SWAMP
		D ROLLING UPLAND		□ BRYOPHYTE	T A
				□ DECEDUOUS	□ B0G
		III CREVICE/CAVE		LI CONTIFEROUS	BARREN
		D ALVAR			D PRAIRIE
		II ROCKLAND			D THICKET
		SAND DUNE			II WOODLAND
	, i	LI BLUTT			☐ FOREST☐ PLANTATION
SITE			COVER	COMM. TYPE	OTHER
II OPEN WATER SI SHALLOW WAT. II SURFICIAL DEP. II BEDROCK			D SHRUB	□ COMINEX □ INCTRIZION	□ HEDGEROW

LAYER	Ħ	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY		-	
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	R 4/S	Ŋ	TYPANGU >PLEALAT.

SIZE CLASS ANALYSIS:

	1				
	3	10-34	< 10m	DECAYED	
> 50g	25-50cm	10-7-011	> 10711	I With a	DEADFALL/LOGS
		5		Mali	
/ Juga	1 0001				
	75-50	10-24cm	< 10cm	STANDING SNAGS	STANDIN
> 50cm	IIDOC-C7	10.7.01			
	77 1	110.74	^100	7	



APPENDIX C. PHOTOGRAPHIC RECORD

PROJECT #TA8733 2018 and 2019

PHOTO APPENDIX





July 2019. Looking east with CUM1-1a communities north and south of 407ETR.



July 2019. Looking east at the CUM1-1a/CUT1a along the north side of 407ETR.



July 2019. Looking east at the CUM1-1a/CUT1a, north and south of the 407ETR within the right-of-way.



July 2019. Looking east at CUM1-1a along the south side of 407ETR, east of Guelph Line.



July 2019. Looking north at CUW1a located south of Dundas Street.



July 2019. Looking west along CUW1a where the community is bisected by a farm laneway. Portion of woodland remaining in the photo to the right, is very narrow.





July 2019. Looking north across agricultural fields and hedgerow that would be bisected by the runningway.



July 2019. Looking west at MAM2-2b.



August 2019. Looking west at CUM1-1a, with CUW1c in the background of photo



August 2019. Looking northeast at one of the many examples of common reed established along a ditch. within the right-of-way.



August 2019. Looking west at hedgerow, west of 407ETR, associated with agricultural fields. Species include red maple and black walnut.



August 2019. Looking west at hedgerow associated with agricultural fields.

PROJECT #TA8733 2018 and 2019

PHOTO APPENDIX





September 2019. Looking west at hedgerows, cultural meadow, and agricultural fields in the background, areas associated with the Dundas Street Station.



September 2019. Looking northwest at SWT2-2 associated with Tributary of Shoreacres Creek, within Dundas Street Station footprint.





August 2019. Looking northwest at CUM1-1a with common reed along ditch, and agricultural field and hedgerow in the background.



July 2019. Looking southwest at CUM1-1a and a hedgerow within the 407ETR right-of-way, just west of Walkers Line.



July 2019. Looking slightly southwest at CUM1-1a in the foreground, a hedgerow to the left, and MAM2-2b adjacent to the hedgerow, with agricultural fields and hedgerows in the background.



July 2019. Looking northeast at Walkers Line at agricultural fields and associated hedgerows in the background, and CUM1-1a to the right of the photo.



July 2019. Looking northeast at MAM2-2b with a hedgerow to the north of this community.



August 2019. Looking northeast at MAS2a and MAM2-2a north of the CUM1-1a community.





July 2019. Looking east at CUM1-1a between car park and the 407ETR right-of-way, just south of Appleby Line. Area associated with Appleby Line Station.



July 2019. Looking north along Appleby Line at CUM1-1a within the right-of-way and agricultural field to the left. Area associated with Appleby Line Station.



July 2019. Looking west at the CUW1a, just east of the CUT1-1. The CUW1a is associated with a watercourse.



July 2019. Looking slightly south at CUM1-1a and manicured areas associated with the car park, west of Appleby Line. Area associated with Appleby Line Station.



July 2019. Looking southwest from Appleby Line, across an agricultural field with the commuter parking lot in the background. This area is also associated with the Appleby Line Station.



July 2019. Looking west at a small CUT1-1 community.





July 2019. Looking north along FOD5-1a on the east facing slope, west of Bronte Creek.



July 2019. Looking northeast at FOD5-1a.



July 2019. Looking west at FOD6-2 community that is provincially ranked S3.



July 2019. Looking west at FOD6-2 with pale touchme-not abundant to dominant across parts of the community.

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July 2019. Looking southwest at FOD5-3b partially along the eastern valley slope associated with Bronte Creek.



July 2019. Looking east across FOD5-3b, west of the top-of-bank..



July 2019. Looking northeast at FOD5-3b and the BLO1 associated with Bronte Creek.



July 2019. Looking south along very narrow shallow marsh along the western bank of Bronte Creek.



July 2019. Looking west at the southern edge of the narrow FOD5-5.



July 2019. Looking northwest along the eastern edge of the narrow FOD5-5.

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July 2019. Looking west, west of Tremaine Road across CUM1-1a with hedgerow in the background, behind which is the FOD5-5.



July 2019. Looking north across at CUM1-1a, at MAS2b that bisects a portion of the cultural meadow south of the transformer station.



July 2019. Looking west along CUM1-1a north of 407ETR.



July 2019. Looking northwest at MAM2-2d, west of Tremaine Road associated with a Tributary of Fourteen Mile Creek.



June 2019. Looking east across CUM1-1c and associated hedgerow, north of 407ETR.



June 2019. Looking east at the MAM2-2e. The CUM1-1d community and agricultural fields are located east of the wetland community.

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July 2019. Looking east across an agricultural field typical of Segment S3.



July 2019. Looking north within MAM2-2f.



July 2019. Looking west within FOD5-3c community.



July 2019. Looking east across CUM1-1d with MAM2-2e in the background.





July 2019. Looking north at MAM2-2b, area that is associated with both the runningway and the Bronte Road Station.



July 2019. Looking east at CUM1-1e associated with both the runningway and the Bronte Road Maintenance and Storage Facility.



July 2019. Looking northeast at MAS2-1d with hedgerow dominated by common buckthorn immediately east of wetland.



July 2019. Looking east across CUM1-1e with a hedgerow in the background.



July 2019. Looking southeast along very narrow MAS2-1a community between old agricultural fields now identified as cultural meadow or CUM1-1e.



July 2019. Small section of narrow MAS2-1a community.

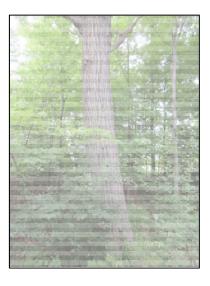
Highway 407 Transitway West of Brant Street to West of Hurontario Segment S4





July 2019. Looking east at FOD5-3d community.

July 2019. Interior of FOD5-3d community.





July 2019. Looking at FOD5-3e west of Sixteen Mile Creek.



July 2019. Western edge of FOD5-3e on tableland, west of Sixteen Mile Creek.



July 2019. Looking north at CUM1-1a west of FOD5-3e community associated with Sixteen Mile Creek.



July 2019. Small, isolated shallow marsh identified periodically within CUM1-1a either associated with road drainage or where creek flows are conveyed below 407ETR.





July 2019. Looking northwest at the edge of FOD5-3e, west of Sixteen Mile Creek.



July 2019. Looking at FOD5-3e community.



July 2019. Looking west at FOC2-2 community with BLO1 below. Cultural meadow (CUM1-1a) in the floodplain and MAM2-10 along the bank of Sixteen Mile Creek in the lower portion of the photo.



July 2019. Looking south with another view of MAM2-10 along the western bank of Sixteen Mile Creek.



July 2019. Looking west at FOD7-3a community in the floodplain west of the creek.



July 2019. Looking east at CUT1b within the floodplain, east of Sixteen Mile Creek.





July 2019. Looking west within FOD5-2 forest community.



July 2019. Looking west, further into FOD5-2 forest community.



July 2019. Looking east along CUM1-1a within and adjacent to the 407ETR right-of-way.



July 2019. Looking west at CUT1-4a.



July 2019. Looking west across CUM1-1f with small meadow marsh inclusion dominated by reed-canary grass.



July 2019. Looking north at CUM1-1a along the east side of Neyagawa Boulevard.

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July 2019. Looking northwest at CUM1-1b, formerly under agriculture.



July 2019. Looking east across agricultural field, east of Neyagawa Boulevard. Associated hedgerow is in the background.



July 2019. Looking south at manicured areas at the Trafalgar Road Go parking lot, at the location of the Trafalgar Road Station.



July 2019. Looking west at CUM1-1a in the foreground, agricultural fields and FOD2-4 in the background. Areas associated with the runningway and the Trafalgar Road Station.



July 2019. Looking north at MAS2-1g along the east side of Trafalgar Road.



September 2019. Looking northeast at CUW1f associated with a residence. Area is located within the runningway and Trafalgar Road Maintenance Storage Facility.





July 2019. Looking east with CUM1-1a on the left, cultivated field or agriculture on the right side of photo. Areas associated with runningway and Trafalgar Road Maintenance Storage Facility.



July 2019. Looking east at CUT1-4c with FOD2-4b in the background of the photo.



July 2019. Looking east at very narrow MAS2-1g that bisects the agricultural field. View of FOD2-4b in the background of photo.



July 2019. Looking south in FOD2-4b community.



July 2019. Looking northeast at hedgerow along the south side of 407ETR, east of FOD2-4b.



July 2019. Looking northeast at CUM1-1a with cattails evident along ditch, east of 407ETR.





July 2019. Looking north at CUM1-1h in the left foreground, MAM2-2i in the background, and MAS2-1h in the right foreground of photo.



July 2019. Looking north at CUM1-1h.



July 2019. Looking west at CUW1g associated with abandoned residence.



July 2019. Looking north at residences and manicured areas along the north side of Eglinton Avenue.



July 2019. Looking north at disturbed area and cultural habitat associated with adjacent residences, north of Eglinton Avenue, just east of 407ETR.



July 2019. Looking north at CUM1-1a, north of Eglinton Avenue, within 407ETR right-of-way.

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July 2019. Looking north at CUM1-1e and agricultural field in the background of photo.



July 2019. Looking south at CUM1-1e with FOD5b in the left background of photo.



July 2019. Looking north at MAM2a just south of SWD2-2a. Numerous dead or dying ash trees within deciduous swamp community.



July 2019. Looking east at CUM1-1a and disturbed area where development is ongoing.





August 2019. Looking west at CUM1-1e/D.



August 2019. Looking northwest at manicured areas associated with residences west of 9th Line.



August 2019. Looking west at manicured areas associated with residences west of 9th Line.



August 2019. Looking west at manicured areas associated with residences west of 9th Line.



August 2019. Looking west at CUM1-1a and adjacent large area of open water (OAO).



August 2019. Looking northwest at storm water ponds with CUM1-1a and planted trees observed around ponds. Limited, narrow areas of shallow marsh with cattails and rarely pickerelweed an aquatic herb were observed intermittently along pond margin. These were too small to delineate.





August 2019. Looking northwest at CUM1-1a, an area associated with the location of the Britannia Road Station.



August 2019. Looking northwest at MAM2-2j just west of 9th Line, an area associated with the location of the Britannia Road Station.



August 2019. Looking west at CUM1-1a with cattails dominating along bottomland, south of Britannia Road.



August 2019. Looking south at MAM2-2j with intermittent inclusions of shallow marsh either dominated by cattails or common reed.



August 2019. Looking east at CUM1-1a and disturbed area associated with commercial, north of Britannia Road.



August 2019. Looking west at MAM2-2j associated with drainage from Osprey Marsh.

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August 2019. Looking south agricultural field adjacent to MAM2-2j community.



August 2019. Looking north across same agricultural field with associated hedgerow.



August 2019. Looking southeast at MAS2-1/SWT2 community.



August 2019. Looking north across agricultural field with CUW1g and CUM1-1g along the right side of the photo.



August 2019. Looking west at MAM2-2j between 407ETR and 9^{th} Line.



August 2019. Looking at agricultural field and associated hedgerow with abundant oaks common buckthorn.





August 2019. Looking north at CUM1-1a.



August 2019. Looking northeast at CUM1-1a within 407ETR right-of-way, near to the Union Gas Parkway Station. The FOD6-4 is seen in the background.



August 2019. Looking south at MAM2-2h, with CUM1-1a to the west and east of the meadow marsh community.



August 2019. Looking northwest at CUM1-1a that surrounds the large storm pond seen in the photo background, located immediately east of 407ETR.



August 2018. Looking south at CUM1-1a and Storm Pond. Rare to occasional cattails and abundant common reed along margin of pond.



August 2018. Looking south across MAM2-2h and CUM1-1a at the hedgerow along the fence associated with the Union Gas Parkway Station.





August 2018. Looking southeast at the northwest corner of FOD6-4, the corner of which is in the runningway.



August 2018. Looking northeast from Derry Road at CUM1-1a and MAM2-2j communities with hedgerows in the background.



August 2018. Looking southwest at the CUM1-1c associated with an old residence at the corner of 9th Line and Derry Road. This area is within the Derry Road Station.



August 2018. Looking west along MAM2-2h in the low lying area between Derry Road and FOD6-4 to the south.



August 2018. Looking northeast, further north than previous photo, at the MAM2-2j with SWD2-2b in the background.



August 2018. Looking west at hedgerow and various planted trees associated with the old residence in the previous photo.

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August 2018. Looking east from Derry Road and 407ETR, at CUM1-1a within right-of-way and areas dominated by common reed.



August 2018. Looking west at CUM1-1a and SWT2-2b communities.



August 2018. Looking south at CUM1-1a, MAM2-21 and SWT2-2b communities.

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August 2018. Looking east at agricultural field just east of the rail line, with MAM2-2l and SWT2-2b in the background.



August 2018. Looking west at CUM1-1a and MAM2-2f, west of 9th Line.



August 2019. Looking south from Argentia Road, at agricultural fields, and MAS2b/MAM2b associated with drainage across the hydro corridor. Area associated with the Lisgar Go Station.



August 2018. Looking east at OAO associated with agricultural fields. Vegetation around pond includes Manitoba maple and buckthorn. A very small MAS2 with cattails, purple loosestrife, and soft-stemmed bulrush located at northwest corner of pond, was too small to delineate on a map.



August 2019. Looking west at CUM1-1a and agricultural fields associated with hydro corridor, east of 9th Line.



August 2019. Looking south at MAS2a/MAM2a and CUM1-1a communities associated with the hydro corridor.





August 2018. Looking west CUM1-1a within the hydro corridor, west of Winston Churchill Boulevard and north of Hwy. 401. In 2019 area was observed as agriculture (see next photo).



August 2019. Looking west toward Winston Churchill Boulevard at field that is now under cultivation.



August 2019. Looking west at CUM1-1a/D, just north of cultivated field. Several areas of gravel and bare earth were observed within this area.



July 2018. Looking east at CUM1-1a community associated with hydro corridor and riding stable.



July 2018. Looking east, just north of hydro corridor. Grazed CUM1-1a (area associated with riding school) with agricultural fields in the background.



July 2018. Looking west at MAS2-1a with both cattails and reed canary grass abundant. Community surrounded by CUM1-1a and agriculture.





August 2019. Looking north at CUM1-1a, planted trees with numerous self-established Russian olive, associated with an abandoned residence.



August 2019. Looking west at CUM1-1a, west of storm pond that is south of 407ETR and east of Meadowvale Boulevard.



August 2019. Looking east at CUM1-1a in the foreground, with storm pond that is associated with MAS2-1k.



August 2019. Looking east at CUM1-1a just south of storm pond.



August 2019. Looking east at MAM2-2b, adjacent and south of 407ETR. This meadow marsh is surround by CUM1-1a and a grouping of shrubs including common buckthorn.



August 2019. Looking east at manicured strip of grasses and planted trees along Hereford Street, and CUM1-1a to the right, just north of 407ETR. Area associated with the Mississauga Road Station.





August 2019. Looking east a CUM1-1a east of Mississauga Road, north of 407ETR. Golf course and associated CUW1j are in the background.



August 2019. Looking north at MAS2b/MAM2b and CUM1-1a, communities surrounded by CUW1j. Area is just south of a golf course.



August 2019. Looking west at CUM1-1a in the foreground, with a view of the eastern edge of the CUW1j.



August 2019. Looking east at CUM1-1a and narrow manicured strip associated with commercial development in the left of photo. Area is east of Financial Drive.



September 2019. Looking west at CUM1-1a and small area of trees/shrubs, east of Credit River.

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July 2018. Looking north at MAM2-2m and eastern edge of FOD7-3b, east of the rail line.



July 2018. Looking west at FOD7-3b community.



July 2018. Looking at FOD7-3b at a low point where drainage bisects the community. Manitoba maple and buckthorn are occasional to abundant.



August 2019. Looking north into FOD7-3b community.





July 2018. Looking west at CUM1-1a/D.



July 2018. Looking northwest at CUM1-1a associated with the 407ETR eastbound on-ramp for Mavis Road southbound lanes.



July 2018. Looking west at CUT1d, east of Mavis Road. The cultural thicket is bisected by hydro infrastructure and is dominated by common buckthorn with young trees along community edges where it was bisected by infrastructure.



July 2018. Looking east across CUM1-1/D towards Mavis Road/407ETR Interchange.



July 2018. Looking at CUW1i associated with the 407ETR eastbound on-ramp for Mavis Road northbound lanes.



July 2018. Looking west within CUT1d community.





July 2018. Looking northwest at agricultural fields and CUM1-1a just west of McLaughlin Road.



July 2018. Looking northwest at MAS2-1a that intervenes agricultural lands.



September 2018. Looking east at CUM1-1a to the left in the photo, and agricultural fields, east of McLaughlin Road.



July 2018. Looking west at MAM2-2n that is associated with a Tributary of Fletcher's Creek.



July 2018. Looking west at CUM1-1a and storm water pond, west of Hurontario Street.



July 2018. Looking further west at CUM1-1a with abundant non-native and invasive plant species tolerant of regular disturbance.

APPENDIX D. VASCULAR PLANT LIST

									App	endix	D. Va	scula	r Plan	t List																							
Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga	Peel - Varga		BL01	CUM1-1a-CUM1-11	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUT1-1 CUT1-4a-CUT1-4c	CUT1a - CUT1e	CUT1a/CUW1a	CUW1a - CUW1j	FOC2-2	FOD2-4a - FOD2-4b	FOD5-1a - FOD5-1b FOD5-2		FOD5-5	FODSa - FODSb		FOD6-4	FOD7-3a - FOD7-3b	25 A	M	MAM2	MAM2-2a - MAM2-2n	MAS2-1/SWT2	MAS2-1a - MAS2-1m	MAS2-9	MAS2a - MAS2b	/MAM2b	SWD2-2a - SWD2-2c	SWD3	SW D4-1a - SW D4-1B SW T2-2
EQUISETACEAE	HORSETAIL FAMILY													Ť																Ī				_			
Equisetum arvense	field horsetail	G5	S5		Х	Х				Х				1																1			\neg †	\dashv	_	+	+
DRYOPTERIDACEAE	WOOD FERN FAMILY		"																											1				1	+	十	
Matteuccia struthiopteris var. pensylvanica	ostrich fern	G5	S 5		х	Х																	х														
Athyrium filix-femina var.	northern lady fern	G5T5	S5		Х	Х				Х									Х						_					-				\dashv	+	+	_
Onoclea sensibilis	sensitive fern	G5	S5		Х	Х								-						X										-				-	+	+	+
PINACEAE	PINE FAMILY				.,									-									-			<u> </u>	ļ.,			-					-	+	-
* Pinus sylvestris	scotch pine	G?	SE5	-	Х	Х	-				\vdash					X				-		\vdash		_	+	X	Х		\vdash	+	Н			#	+	+	+
Pinus sp.	pine				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	L .,	-		.,					+		Х						\vdash			+		1		\vdash	+	Н			4	+	+	+
* Picea abies	Norway spruce	G?	SE3		X-SR	Х			Х	Х	\vdash					<u> </u>						\vdash		_	+	X	Х		\vdash	-	Н			#	+	+	+
Picea sp.	spruce		<u> </u>	-		<u> </u>	-				\vdash					Х				-		\vdash		_	+	-	1		\vdash	-	Н	-		#	+	+	+
Tsuga canadensis	eastern hemlock	G5	S5		Х	Х								-					X X		_		Х							-			}		+	+	_
Pinus strobus	eastern white pine	G5	S5		Х	Х			Х	X			Х	_			Х	Х	X X	X		Х		Х		X	Х			-						Х	
* Pinus nigra	Austrian pine	G?	SE2			<u> </u>			Х	X				-													Х			-					+	+	_
* Picea pungens	Colorado spruce	G5	SE1						Х	Х				_													Х			-				-	+	_	_
Picea glauca	white spruce	G5	S5		U	R3			Х			Х	X			Х						Х			_	Х	Х			_				\dashv		Х	_
CUPRESSACEAE	CEDAR FAMILY																								_					_				\dashv	\dashv	+	\perp
Juniperus communis	common juniper	G5	S5						Х					_													1			-				-	+	+	_
Juniperus horizontalis	creeping juniper	G5	S5																						_		Х			_			-	-	+	+	_
Juniperus virginiana	eastern red cedar	G5	S5				R		Х	Х															_					-				-	+	+	_
Thuja occidentalis	eastern white cedar	G5	S5		Х	Х			Х							Х	Х								_		Х		Х	-			Х	-	+	+	_
TAXACEAE	YEW FAMILY		<u> </u>											-					_								l			-			-		+	+	_
* Taxus cuspidata	Japanese Yew		-											_											-		Х			-					+	+	_
ARISTOLOCHIACEAE	DUCHMAN'S-PIPE FAMILY		-											-											-					-				-	+	+	_
Asarum canadense	wild ginger	G5	S5		Х	Х								-						X					-					-				-	+	+	_
NYMPHAEACEAE	WATER-LILY FAMILY		-											-											-					-				-	+	+	_
Nymphaea odorata	fragrant water-lily	G5	S5		R1	R3	R							-						-			_							-	Х			4	\dashv	+	_
RANUNCULACEAE	BUTTERCUP FAMILY																								_					-				\dashv	+	+	_
Anemone canadensis	Canada anemone	G5	S5		Х	Х			Х									Х	Х	X			Х		_	Х				-				\dashv	\dashv	+	_
Clematis virginiana	virgin's-bower	G5	S5		Х	Х			Х					X																-				-	+	+	_
Ranunculus recurvatus var. recurvatus	hooked buttercup	G5	S5		X	Х			Х																				х					4	\perp	_	
* Ranunculus acris	tall buttercup	G5	SE5		X	X	1					-	X	+					_	+ ,		\vdash			+	-				-				\dashv	+	+	-
Anemone virginiana var.	thimbleweed tall meadow-rue	G5T	\$5 \$5		X	X					1	+		+					+	X		\vdash	-		+		\vdash		 	+	Н			\dashv	+	+	+
Thalictrum pubescens		G5	S5 S5		X	X													+	X		\vdash			+		1		 	+	H		\dashv	\dashv	+	+	+
Actaea pachypoda Thalictrum dioicum	white baneberry early meadow-rue	G5 G5	S5 S5	+	X	X					1 1	+		+					+	 ^	+	 	х		+				\vdash	+	H	\vdash	-	+	+	+	+
BERBERIDACEAE	BARBERRY FAMILY		35	+		+^	 				\vdash			+	+				+	+	+	\vdash	^	_	+	-	+		\vdash	+	H			+	+	+	+
Podophyllum peltatum	may-apple	G5	S5	+	Х	Х					1 1	+		+	+			Х	+	X	+	Х	+	-	+	-	+		 	+	H			+	+	+	+
Caulophyllum thalictroides	blue cohosh	G	S5	 	X	X			-		1 1	+						^	Х	X	_	 ^ 		_	+	+			 	+	Н			\dashv	+	+	+
* Berberis vulgaris	common barberry	G?	SE5		X	X			Х										^	+^					+					+	H			\dashv	+	+	+
PAPAVERACEAE	POPPY FAMILY	<u> </u>	ال ا			 ^			^													1			+				 	+				\dashv	+	+	+
Sanguinaria canadensis	bloodroot	G5	S5		Х	Х								+					+	Х	+		Х		+					1	H		\dashv	\dashv	+	+	+
PLATANACEAE	PLANE-TREE FAMILY	33	55			 ^								+					\dashv	+^	+		^		+		\vdash			\dagger			\blacksquare	\dashv	+	+	+
Platanus occidentalis	sycamore	G5	S4		R4	R3								T _X					\dashv	1	+				T _x		\vdash			\dagger			\blacksquare	\dashv	+	+	+
ULMACEAE	ELM FAMILY	33	 	1	11-7	1,13								+^					+	1	+	1			+^	+	\vdash		 	+			\blacksquare	\dashv	+	+	+
Ulmus rubra	slippery elm	G5	S5		Х	X			Х					+						+		Х			+				 	+	H			\dashv	+	+	+
Celtis occidentalis	common hackberry	G5	S4	1	R3	 ^			X										+	1	+	 ^ 	_		+		Х		 	+			\blacksquare	\dashv	+	+	+
Ulmus americana	white elm	G5?	S5		X	Х			X	Х		Х	Х	X		Х		Х	ХХ	Х	Х	Х		ХХ	,	Х	<u> </u>		X	+	Х		$\frac{1}{x}$	Х	${x}$	+	Х
Simus americana	······································	<u> </u>	, ,,	,	^	. ^			^	^		^	^	^		_ ^	!	^	^ ^	^		_ ^		<u>^ </u>	`	^			^		_ ^_		_^_		<u>^`</u>		^

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Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga			CUM1-1a-CUM1-1I	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUT1-1	CUIT-44-CUIT-4C	CUT1a/CUW1a	CUW1a - CUW1j	FOC2-2	FOD2-4a - FOD2-4b	FODS-1a - FODS-1B FODS-2	FOD5-3a - FOD5-3e	F0D5-5	FOD5a - FOD5b	FOD6-2 FOD6-4	FOD7-2a - FOD7-2b	FOD7-3a - FOD7-3b	н	MAM2 MAM2-10	MAM2-2a - MAM2-2n	MAS2-1/SWT2	MAS2-1a -MAS2-1m MAS2-9	MAS2a - MAS2b MAS2b/MAM2b	SWD2-2a - SWD2-2c	SWD3	SWD4-1a - SWD4-1b SWT2-2
MORACEAE	MULBERRY FAMILY																				_										1		
* Morus alba	white mulberry	G?	SE5		Х	Х			Х						Х																+ -		
URTICACEAE	NETTLE FAMILY		1																												+	一十	
Boehmeria cylindrica	false nettle	G5	S 5		Х	Х			Х													х									+	一十	
* Urtica dioica ssp. dioica	European stinging nettle	G5T?	SE2			XSR									Х		_			t	-	$\stackrel{\sim}{+}$		+							+	一十	
JUGLANDACEAE	WALNUT FAMILY	331.	JLZ			XSIX							+									-									+	\vdash	
Juglans cinerea	butternut	G3G4	233	END	X	Х							+		Х										X						+	\vdash	
Carya cordiformis	bitternut hickory	G5	S5	LIND	X	X							+		 ^		_				Х	-	+	+	^	+ +	+ +				+	\vdash	-
<u> </u>	•	G5	S5		^U	X			Х	Х	Х	+	()	_	Х		X)	хх	Х			хх	+	+	ХХ	+	Х	-			+	$\vdash \vdash$	+
Carya ovata var. ovata	shagbark hickory	G5 G5	\$5 \$4		X	X		Х		X	X		_	(X		_	X	^	X	-	X	^ ^		Х	XX		^			х	Х	$\vdash \vdash$	X
Juglans nigra	black walnut	3	54		٨	X		۸	Х	^	^	+	+	\ 	٨		^	+	X	\vdash	^	+	+ ×	^	^	++	++	- $+$		^	+^-	$\vdash \vdash$	
FAGACEAE	Amarican baach		CF		Х	\ \ <u>\</u>				Х		+	+	-	+		, ,	хх	- V	х	х	+	+	+		++	++	-			$+\!-\!\!\!\!-$	$\vdash \vdash$	+
Fagus grandifolia	American beech	G5	S5			X				X	X				-		X)	_	_	-	_	<u> </u>			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \						╨	\vdash	_
Quercus alba	white oak	G5	S5		X	X					Х		<u> </u>	-	Х			Х	X		Х	-	+	+	X X						┼'	\vdash	
Quercus bicolor	swamp white oak	G5	S4		R1	R5							+	_	-		Х		-			-	+	-	X		++				₩	\vdash	
Quercus macrocarpa	bur oak	G5	S5		X	Х		Х					<u> </u>		Х		Х	Х			Х		: X		ХХ		Х	_	X		<i>'</i>	\vdash	
Quercus rubra	red oak	G5	S5		Х	Х		Х		Х	Х	- >	<u> </u>	<u> Х</u>	Х		X)	x x	Х	Х	Х	X	<u> </u>	-	X X						<i></i>	\vdash	
BETULACEAE	BIRCH FAMILY																														 -'	\sqcup	
* Alnus glutinosa	European black alder	G?	SE4		X																					X					<u> </u> '	\sqcup	
Ostrya virginiana	ironwood	G5	S5		Χ	Х		Х			Х						X X	X X	Х	Х		Х									<u> </u>	ш	
Betula alleghaniensis	yellow birch	G5	S5		Χ	Х					Х										Х		Х								<u> </u>	ш	
Betula papyrifera	white birch	G5	S5		Χ	Х																								Х	'	Ш	
* Betula pendula	European weeping birch	G?	SE4		Χ	Х		Х																							′		
Alnus incana ssp. rugosa	speckled alder	G5T5	S5		U	Х													Х						Х		Х				<u> </u>	Ш	
CHENOPODIACEAE	GOOSEFOOT FAMILY																																
* Chenopodium album var. album	lamb's quarters	G5T5	SE5					Х																							\Box		
CARYOPHYLLACEAE	PINK FAMILY																														\Box		
* Silene vulgaris	catchfly	G?	SE5		Х	Х		Х																							\Box		
* Dianthus armeria	deptford pink	G?	SE5		Х	Х		Х)	(Х												\Box		
POLYGONACEAE	SMARTWEED FAMILY																														\top		
* Rumex crispus	curly-leaf dock	G?	SE5		Х	Х		Х	Х				₹		Х				Х						Х		Х		х		\top		Х
* Polygonum persicaria	lady's-thumb	G?	SE5		Х	Х		Х																							+		
* Polygonum cuspidatum	Japanese knotweed	G?	SE4		Х	Х																			Х						+ -		
GUTTIFERAE	ST. JOHN'S-WORT FAMILY	1											1																		+-		
* Hypericum perforatum	common St. John's-wort	G?	SE5		Х	Х		Х	Х			,	, 											Х			Х				+	\vdash	
TILIACEAE	LINDEN FAMILY		JLJ									+	十								_			 ^			+^+				+	一十	
* Tilia cordata	small leaf linden	G?	SE1							\vdash	\vdash	\dashv	+	+	Х					\vdash	_	-	+	+	X			-			+	一十	$\overline{}$
Tilia americana	basswood	G5	S5		Х	Х		Х		Х	х	\dashv	()	_	X		x >	хх	Х	Х	${v}$	$\frac{1}{\sqrt{1-x}}$	· V	v		 	X				+	$\vdash \vdash$	Х
VIOLACEAE	VIOLET FAMILY	93	33		^		+	^		+^-	 ^ 	+	+	+	^		^ /	^	+^	 ^ 	^ +	^ ^	+^	+^	^	+	+^+				+	$\vdash \vdash$	
Viola conspersa	American dog violet	G5	S5		Х	X					\vdash	+	+		+		+	Х		\vdash		-	+	+		+ +	++	-			+	一十	
		G5	35		٨	X					\vdash	+	+	+	+		+	X	+	\vdash	\dashv	Х	+	+			+	- $+$			+	$\vdash \vdash$	
Viola sp. CUCURBITACEAE	violet GOURD FAMILY		+								\vdash	+	+	+	+		+	+	+	\vdash	\dashv	^ 	+	+		++	++	- $+$			+'	$\vdash \vdash$	
			C.		· · · · · · · · · · · · · · · · · · ·	.,	- V	\ ,		\vdash	$\vdash \vdash$	+	+	-	+	\vdash	+.	_		\vdash		-	+	+		++	++			_	$+\!-\!\!\!\!-\!\!\!\!\!-$	 	-+
Echinocystis lobata	prickly cucumber	G5	S5		Х	X	Х	Х		\vdash	\vdash	-+	+	_	+			X	-	\vdash	-	+	+	1			+ +	_		Х	+	Х	-
SALICACEAE	WILLOW FAMILY	+	0-:								$\vdash \vdash$	_	+	_			_			\vdash	_	-	+	1							+'	\vdash	
* Salix alba	white willow	G5	SE4		Х	Х		Х	Х	\vdash	$\vdash \vdash$	+	+	_	Х		-	_		\vdash	_		+	Х	X X		Х		X	Х	X	Х	Х
Populus balsamifera ssp. balsamifera	balsam poplar	G5T?	S5		Х	Х				\vdash	$\vdash \vdash$		<u> </u>		+					\vdash				1	Х	+	+				<u>+'</u>	\vdash	
Populus deltoides ssp. deltoides	eastern cottonwood	G5T?	SU		U			Х	Х		Х	\perp	<u> </u>	(Х		_	_	X	$\vdash \vdash$	Х	_	\perp	Х	X X	+	Х	_			 -'	Х	X
Populus grandidentata	large-tooth aspen	G5	S5		Х	Х					\sqcup		\perp	_	4		_	\perp	Х	\sqcup				1	X	+	+	_			<u> </u>	\mapsto	'
Salix sp.	willow		?					Χ		Х			\ \	(Х							Х	Х	Х	X X	X	Х	X	X	X	Х	Х	Χ

Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga		BLO1	CUM1-1a-CUM1-1I	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUT1-1	a-CUT1e	CUT1a/CUW1a	CUW1a - CUW1j	2	FOD2-4a - FOD2-4b FOD5-1a - FOD5-1b	-5	FOD5-3a - FOD5-3e	FOD5-5	FODSa - FODSb	FOD6-2 FOD6-4		FOD7-3a-FOD7-3b	τ Σ	MAM2 MAM2-10	MAM2-2a - MAM2-2n MAS2-1/SWT2	MAS2-1a-MAS2-1m	MAS2-9	_	SWD2-2a - SWD2-2c	SWD3 SWD4-1a - SWD4-1b SWT2-2
* Salix X pendulina	hybrid willow	НҮВ	SE1					Х		1			1										+-		x x		 			+-1		
Populus tremuloides	trembling aspen	G5	S5		Х	Х		Х	Х			>	Х		Х	>	(Х	Х			Х	X	Х	хх		Х		X		X 2	Х
Salix petiolaris	slender willow	G4	S5		Х	Х																										Х
* Salix fragilis	crack willow	G?	SE5		Х	Х		Х					Х						Х					Х			Х	Х				Х
Salix exigua	sandbar willow	G5	S5		U	R5		Х																			хх	Χ				хх
Salix eriocephala	Missouri willow	G5	S5		Х	Χ		Х					Х														Х					х х х
Salix discolor	pussy willow	G5	S5		Х	Х		Х																			х х	(X				Х
BRASSICACEAE	MUSTARD FAMILY																									i						
* Thlaspi arvense	field penny-cress	G?	SE5		Х	Х		Х	Χ																Х							
* Barbarea vulgaris	yellow rocket	G?	SE5		Х	Х		Х																								
* Hesperis matronalis	dame's rocket	G4G5	SE5		Х	Х		Х					1											Х							\Box	
Cardamine diphylla	two-leaved toothwort	G5	S5		Х	Χ										>	(
* Alliaria petiolata	garlic mustard	G5	SE5		Х	Χ		Χ				Х	Х		Χ		Х	Х	Х			Х	Х	Χ	Х							Х
PRIMULACEAE	PRIMROSE FAMILY																															
Lysimachia ciliata	fringed loosestrife	G5	S 5		Х	Χ																Х										
* Lysimachia nummularia	moneywort	G?	SE5		Χ	Χ													Х		7	Х										
GROSSULARIACEAE	GOOSEBERRY FAMILY																															
Ribes hirtellum	smooth gooseberry	G5	S5		R2	R2																						Х				
Ribes sp.	currant						Х																									
Ribes americanum	wild black currant	G5	S 5		Χ	Χ												Х	Х			х										
ROSACEAE	ROSE FAMILY																															
Rubus sp.	raspberry															>	(
Amelanchier arborea	downy juneberry	G5	S 5		Х	Χ		Х																	Х							
Fragaria virginiana ssp. virginiana	scarlet strawberry	G5T?	SU		Х	Χ		Χ				>						Х	Х													
Prunus virginiana ssp. virginiana	choke cherry	G5T?	S5		Х	Χ		Χ	Χ				Х		Χ	>	(Х	Х	Х	Х				Х							
* Malus pumila	common apple	G5	SE5		Х	Χ		Χ				>																				
Geum canadense	white avens	G5	S5		Х	Χ					Х		Х										Х			$oldsymbol{\sqcup}$	$\perp \perp \perp$	$\perp \perp \downarrow$		$oldsymbol{oldsymbol{\sqcup}}$	\bot	
Fragaria vesca ssp. americana	woodland strawberry	G5T?	S5		Х	Χ		Χ					Х			>	($oldsymbol{\sqcup}$	$\perp \perp \perp$	$\perp \perp \perp$		\bot		\bot
Geum aleppicum	yellow avens	G5	S5		Х	Χ									Χ		Х	Х	Х			х			Х	$oldsymbol{\sqcup}$	$\perp \perp \perp$	$\perp \perp \perp$		\perp		
Rubus allegheniensis	alleghany blackberry	G5	S5		Х	Χ											Х									$oldsymbol{\sqcup}$	$\perp \perp \perp$	$\perp \perp \perp$		\perp		Х
* Crataegus monogyna	English hawthorn	G5	SE5		Х	Χ		Χ																		$oldsymbol{\sqcup}$	Х	$\perp \perp \perp$		Ш		
Crataegus mollis	downy thorn	G5	S5					Χ					Х		Χ											$\sqcup \!\!\! \perp$	$\perp \perp \perp$	$\perp \perp \perp$	\perp			\perp
Prunus sp.	cherry								Χ											Х						$\sqcup \!\!\! \perp$	$\perp \perp \downarrow$	$\perp \perp \perp$		\perp		\bot
Prunus serotina	black cherry	G5	S5		Х	Χ		Χ				>				>	С Х	Х	Х		_		X			——	$\perp \perp \perp$	$\perp \perp \downarrow$			_	
Physocarpus opulifolius	ninebark	G5	S5		R1	R1		Χ													_					₩.	$\perp \perp \perp$	$\perp \perp \downarrow$			_	
Prunus pensylvanica	pin cherry	G5	S5		U	Χ										>	(_				\vdash	++	+	\bot	\bot	\dashv	+
* Potentilla recta	rough-fruited cinquefoil	G?	SE5		Х	Х						>										_			Х	$\vdash \vdash$	++	Х		\bot		+
Malus sp.	apple							Χ	Х				-									_			ХХ	$\vdash \vdash$	Х	+		\bot		+
Potentilla simplex	old-field cinquefoil	G5	S5		U	U		Х					-									_				$\vdash \vdash$	++	+		\bot		Х
* Rubus idaeus ssp. idaeus	red raspberry	G5T5	SE1		Х			Χ	Х			>	<u> </u>		Х	>	(Х		Х	_	_	-			$\vdash \vdash$	+	+	>	(_	\longrightarrow
Rubus occidentalis	thimble-berry	G5	S5		Х	Х		Х				_	Х						Х	_	_	_	-	Χ		$\vdash \vdash$	++	+	\dashv	+	\dashv	+
Crataegus punctata	large-fruited thorn	G5	S5		Х	Х				-	\sqcup	\dashv	Х		Х	_	\bot	-		_	\bot	+			Х	\vdash	++	+	\dashv	$+\!\!-\!\!\!+$	\dashv	+
* Rosa multiflora	multiflora rose	G?	SE4		Х	Х				1	$\vdash \vdash$	\dashv	Х				_	Х	Х	_	\bot	+	_			\vdash	++	+	\dashv	$+\!\!-\!\!\!+$	\dashv	++
Crataegus sp.	hawthorn		1					Х		-	$\vdash \vdash$	\perp	Х					-		_	Х	+	_	Х	Х	\vdash	Х	++	\dashv	+	\dashv	X
Amelanchier laevis	smooth juneberry	G4G5Q			U	U					$\vdash \vdash$	\perp	_				_		Х		\bot	\perp	_	_		\vdash	+	+	\dashv	+	\dashv	+
Crataegus pedicellata	scarlet hawthorn	G5	S4		Х	Х		Х		1	\sqcup	>	<u> </u>		Х	>	(Х	Х	Х	_	+	_	1	Х	\vdash	Х	+	\dashv	$+\!\!-\!\!\!+$	\dashv	++
FABACEAE	PEA FAMILY									1	\sqcup	\perp	\bot	1		_	_	-			\bot	\perp				\vdash	+	+	\dashv	+	\dashv	+
* Vicia cracca	tufted vetch	G?	SE5		Х	Х		Х			\square		<u> </u>								\perp	\perp				$\vdash \vdash$	Х	$\downarrow \downarrow \downarrow$	\perp	+	\bot	X
* Trifolium repens	white clover	G?	SE5		Х	Х		Χ			\sqcup	>	+								\perp		_			\vdash	+	$\downarrow \downarrow \downarrow$	$\perp \!\!\! \perp$	$oldsymbol{oldsymbol{\sqcup}}$	\dashv	+
* Trifolium pratense	red clover	G?	SE5	1	Χ	Х		Χ		1	ıl	- 1>		1		1		1	1		- 1		1	1	Х	1 I					1	

Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga	Peel - Varga	BLO1	∹	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUT1-1	CUT1a - CUT1e	CUT1a/CUW1a	CUW1a - CUW1j	FOCZ-2 FOD2-4a - FOD2-4b	FODS-1a - FODS-1b	F0D5-2	FOD5-3a - FOD5-3e	FODS-5	FODE.2	FOD6-4	FOD7-2a - FOD7-2b	FOD7-3a - FOD7-3b	ΙΣ	MAM2 MAM2-10	MAM2-2a - MAM2-2n MAS2-1/SWT2	MAS2-1a-MAS2-1m MAS2-9	MAS2a - MAS2b		SWD2-2a - SWD2-2c	SWD4-1a - SWD4-1b SWT2-2
* Trifolium hybridum ssp. elegans	alsike clover		SE5		Х	Х		Х				Х																				
* Coronilla varia	variable crown-vetch	G?	SE5		Х	Х		Х	Χ				Х												Х		Х					
* Melilotus alba	white sweet-clover	G?	SE5		Х	Χ		Х	Χ						Х										Х							Х
* Medicago sativa ssp. sativa	alfalfa	G?T?	SE5		Х	Х		Х																								
* Lotus corniculatus	bird's-foot trefoil	G?	SE5		Х	Х		Х	Х			Х	: x											Х	Х							Х
* Glycine max	soya bean	G?	SE2					Х																								
* Melilotus officinalis	yellow sweet-clover	G?	SE5		Х	Х		Х																								
* Robinia pseudo-acacia	black locust	G5	SE5		X	Х		Х	Х						Х										хх		х					х
Amphicarpaea bracteata	hog peanut	G5	S5		X	X	† †	-`-			\dashv	\dashv		1		+		\dagger		\dashv	X				<u> </u>				+ +	$\neg \dagger$	\dashv	+ " +
ELAEAGNACEAE	OLEASTER FAMILY	 	33				+ +				-+	\dashv	+	1		+		+			+		\exists	-			1 1		++	\dashv	\dashv	++-
* Elaeagnus umbellata	Russian olive	G?	SE3		Х		1	Х	Х		\dashv	X	+	1		+		+ +		+	+	+	\dashv	-	Х		 		+ +	\dashv	\dashv	++-
* Elaeagnus angustifolia	Russian olive	G?	SE3		X	Х	+ +	X	X		\dashv	+^	X	X	Х	+		+		+	+	+		\dashv	^		Х		X	\dashv	+	++-
LYTHRACEAE	LOOSESTRIFE FAMILY	9:	JLJ		^		+	^		\vdash	\dashv	\dashv	+^	+^	^	+-		+		\dashv	+	+	\vdash	\dashv					+^+	\dashv	\dashv	++
* Lythrum salicaria	purple loosestrife	G5	SE5		Х	Х		Х	Х		-+	X	: X	1		+					+	+		Х		Х	хх	Х	Х	х	+	хх
ONAGRACEAE	EVENING-PRIMROSE FAMILY	<u> </u>	3E3		^	^		^	^			- ^	+^								-			^		^		 ^ -	^	^ +	-	+^+^
		- CF	C.E.		D1	.		Х													+							 		-	+	+
Oenothera biennis	common evening-primrose	G5	S5 SEE		R1	U		X													+				Х		Х	 		-	+	+
* Epilobium hirsutum	great hairy willow-herb	G?	SE5		X	X		Х			· ·	_	- V	-	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		- V	- V	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	-	, ,			-			<u> </u>	-	+		-	+
Circaea lutetiana ssp. canadensis	enchanter's nightshade	G5T5	S5		Х	Х					Х		X		Х	Х	Х	Х	Х	- 1	X X		Х		Х						-	+
CORNACEAE	DOGWOOD FAMILY											_	-	+						-	+		-						1			
Cornus stolonifera	red-osier dogwood	G5	S5		Х	Х		Х			Х	_	Х	Х	Х			+		-	X L			Х			X		Х		X X	(X
Cornus sp.	dogwood												-	-				+		-	-				Х		Х	Х				+
Cornus rugosa	round-leaved dogwood	G5	S5		X	Х					-	-	+	-				+			_						.	 _ _ _ _ _ _ _ _ _ _	++			X
Cornus foemina ssp. racemosa	gray dogwood	G5?	S5		Х	Х		Х	Х		_	X	<u> </u>	-	Х	Х	_	Х	Х	X :	X _		Х	-	Х		Х	Х	Х		X	+
CELASTRACEAE	STAFF-TREE FAMILY		-																		_							 		_	_	+
Euonymus obovata	running strawberry-bush	G5	S5		Х	Х										Х			Х		_							 			-	+
EUPHORBIACEAE	SPURGE FAMILY		-									_	-							_	_										_	
* Euphorbia esula	leafy spurge	G5	SE5		Х	Χ		Χ																							_	+
RHAMNACEAE	BUCKTHORN FAMILY																														_	+
* Rhamnus cathartica	common buckthorn	G?	SE5		Х	Х		Χ	Χ	Χ	Х	X	: X	Х	Х	Х				X	X L	Х	Χ	Х	Х		Х	Х	Х	Х	Х	Х
* Rhamnus frangula	glossy buckthorn	G?	SE5		Х	Χ		Χ										Х	Х									Х				
VITACEAE	GRAPE FAMILY																															
Parthenocissus inserta	inserted Virginia-creeper	G5	S5		X	Х		Χ	Χ		Х		Х		Х	Х		Х			X		Χ								Х	
Vitis riparia	riverbank grape	G5	S5		Χ	Х		Χ	Χ	Х	Х	Х	X		Х	Х	Х	Х	Х	X :	X	Х	Х	Χ	ХХ		Х	Х	Х		X 2	2 X X
HIPPOCASTANACEAE	BUCKEYE FAMILY																															
* Aesculus hippocastanum	horse chestnut	G?	SE2		Х	Х		Х																								
ACERACEAE	MAPLE FAMILY																															
Acer saccharum ssp. nigrum	black maple	G5Q	S4?		Χ	Х													Х		Χ											
Acer saccharum ssp. saccharum	sugar maple	G5T?	S 5		Χ	Х	Χ	Χ	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	X	X X	X	Χ		ХХ		Х					Х
Acer saccharinum	silver maple	G5	S5		Х	Х		Х			Х				Х						X			Χ	ХХ			Х			ХХ	К Х
Acer rubrum	red maple	G5	S 5		Х	Χ											Х	Х	Х		χ											
* Acer platanoides	Norway maple	G?	SE5		Х	Χ		Х	Χ	Χ	Х		Х		Х						X				хх						Х	(
Acer negundo	Manitoba maple	G5	S5		Х	Χ	Х	Х	Χ		Х		Х	Х	X	Χ			Х		Х	Х		Х	хх		Х		Х	Х	хх	(X X
Acer X freemanii	freeman's maple				Х	XSR												Х	Х		\neg				Х		х	Х				Х
ANACARDIACEAE	SUMAC FAMILY																															1
Rhus aromatica	fragrant sumac	G5	S5		R3																									\neg	×	$\overline{}$
Rhus typhina	staghorn sumac	G5	S5		X	Х		Х	Х	Х	Х	х	Х		Х	Х	Х		Х	-	x		Х	Х	x						X	
* Cotinus coggygria	smoke-tree	G?	SE1			<u> </u>		Х	X				 			 ``	<u> </u>			<u> </u>	\top								+ +		+ 	+ +
Rhus radicans ssp. negundo	poison-ivy	G5T	S5	1	Х	Х	1 1	X					Х	+		-		Х	Х		+	+	\vdash		Х		 	-			-	+-+-

Scientific Name	Common Name	GRank	SRank MI	NR Halton Varga		BLO1	ᅻᅵ	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUI 1-1 CUT 1-4a - CUT 1-4c		CUT1a/CUW1a	CUW1a- CUW1j	FOC2-2 FOD2-4a - FOD2-4b		F0D5-2	FOD5-3a - FOD5-3e	FOD5-5 FOD5a - FOD5b	FOD6-2	FOD6-4	a - FOD7-	FOD7-3a - FOD7-3b	ıΣ	MAM2	MAM2-10	MAM2-2a - MAM2-2n	MAS2-1/SWT2 MAS2-1a-MAS2-1m	MAS2-9 MAS2a - MAS2b	_	SWD2-2a - SWD2-2c	SWD3	
OXALIDACEAE	WOOD SORREL FAMILY																																
Oxalis stricta	upright yellow wood-sorrel	G5	S5	Х	Х											Х		Х															
GERANIACEAE	GERANIUM FAMILY																																
* Geranium robertianum	herb-robert	G5	SE5	Х	Х							Х			Х	Х	Х	Х															
Geranium maculatum	spotted crane's-bill	G5	S5	U	U										Х		Х																
BALSAMINACEAE	TOUCH-ME-NOT FAMILY																																
Impatiens capensis	spotted touch-me-not	G5	S5	Х	Х		Х									Х		Х		Х						Х	Х		Х			Х	
Impatiens pallida	pale touch-me-not	G5	S5	Х	R8															Х													
* Impatiens glandulifera	glandular touch-me-not	G?	SE4	Х	Х			Χ									Х																
APIACEAE	PARSLEY FAMILY																																
* Pastinaca sativa	wild parsnip	G?	SE5	Х	Х		Х	Χ				Х															Х						
Cicuta maculata	spotted water-hemlock	G5	S5	Х	Х							L														Х					\Box		
Angelica atropurpurea	dark-purple alexanders	G5	S5		R6		Х																					Х					
Heracleum lanatum	cow-parsnip	G5	S5	R5	R4							Х								Х													
* Heracleum mantegazzianum	giant hogweed	G?	SE2				Х					Х														Х	Х						
* Daucus carota	wild carrot	G?	SE5	Х	Х		Х)	х х		Х	Х									Х	Х			Х	Х				Х	
APOCYNACEAE	DOGBANE FAMILY																																
Apocynum cannabinum var. cannabinum	Indian hemp	G5T	S5	U	Х		Х	Х																									
ASCLEPIADACEAE	MILKWEED FAMILY																																
Asclepias syriaca	common milkweed	G5	S5	Х	Х		х	Х			Х	Х																	Х	\Box			
SOLANACEAE	POTATO FAMILY																																
* Solanum dulcamara	bitter nightshade	G?	SE5	Х	Х		Х	Х										х									Х	Х					
CONVOLVULACEAE	MORNING-GLORY FAMILY	1																															
* Convolvulus arvensis	field bindweed	G?	SE5	Х	Х		Х																										
HYDROPHYLLACEAE	WATER-LEAF FAMILY	1																												+	t		+
Hydrophyllum virginianum	Virginia water-leaf	G5	S5	Х	Х															l x									+	\top	t		
BORAGINACEAE	BORAGE FAMILY	1 3																		T									+	\top	H		\top
Hackelia virainiana	Virginia stickweed	G5	S5	U	U		x											х	_										+	+	\vdash		_
* Myosotis scorpioides	mouse-ear scorpion-grass	G5	SE5	 	Х																							Х	Х	\top	t		
PHRYMACEAE	LOPSEED FAMILY	- 65	JLJ		 ^						+								+	+								^	 	+	t		+
Phryma leptostachya	lopseed	G5	S4S5	Х	Х		Х				+								+	+									++	+	t		+
VERBENACEAE	VERVAIN FAMILY	- 65	3433				^				+								+					+					++	+-	t		+
Verbena hastata	blue vervain	G5	S5	Х	Х					+									_			-				Х	Х	Х	++		t	X	+
Verbena urticifolia	white vervain	G5	S5	X	X		Х												\vdash	X							^		 ^	+	\vdash	 	+
LAMIACEAE	MINT FAMILY	1 3	33				^													+^									+	+-	\vdash	\vdash	+
* Glechoma hederacea	creeping Charlie	G?	SE5	Х	Х		Х												_											+-	H		+-
Mentha arvensis ssp. borealis	American wild mint	G5T5	S5	X	X	+ +	X												-							Х		Х	+++		\vdash	\vdash	+-
* Lamium purpureum	purple dead-nettle	G?	SE3				^			+								х	_			-							+ +	+-	t		+
* Leonurus cardiaca ssp. cardiaca	common motherwort	G?T?	SE5	Х	Х		Х									Х		^	-										+++		\vdash	\vdash	+-
Lycopus uniflorus	northern water-horehound	G5 G5	S5 S5	X	X	+ +	^			+	+	1				^		-+	+	-	$\vdash \vdash$	+	+	-		Х			+++	+-	\vdash	\vdash	+
Lycopus americanus	cut-leaved water-horehound	G5	S5	X	X	+ +	+		 	+	+	+						\dashv	+	X	\vdash	+	+	+		^		+	X	+-	\vdash	\vdash	+
PLANTAGINACEAE	PLANTAIN FAMILY	1 3	33	 ^	+^	+ +	+		\vdash	+	+	+	\vdash				\vdash	\dashv	+	+^	$\vdash \vdash$	+	\dashv	+	+			+	+^+	+-	\vdash	\vdash	+
* Plantago major	common plantain	G5	SE5	X	Х	+ +	Х		\vdash	+	X	1		Х				-	+	+	\vdash	\dashv	х	+	+			+	++	+-	\vdash	\vdash	+
* Plantago major * Plantago lanceolata		G5 G5	SE5 SE5	X	X	+	X		\vdash	+	+^	X		^			-		+		\vdash	\dashv	^	-	1			-	++	+-	\vdash	\vdash	+
OLEACEAE	ribgrass OLIVE FAMILY		3E3	^	^	+ +	^		\vdash	+	+	+^							+		$\vdash \vdash$	\dashv	+	-	+			-	++	+-	\vdash	\vdash	+
		63	SE5	- V		+ +	х	~	┥	\dashv	+	+		Х				+	+		\vdash	+	+	-					+++	+-	\vdash	\vdash	+-
* Syringa vulgaris	common lilac	G?		X	X	+ +	^	Х	 	\downarrow	+	+		۸		1	-	$\overline{}$	+	+	$\vdash \vdash$	${\vee}$	+	+	+	1		X	++	+-'	$\vdash \vdash$	\vdash	+
Fraxinus nigra	black ash	G5	S5	X	Х				-	Х	_	_			X			Х	X	_	\vdash	Х			_		Х	X	$+\!-\!+$	——'	\vdash	\vdash	+-
Fraxinus americana	white ash	G5	S5	X	Х		Х	Χ		ΧΙ					l l	1	Х	Х	X					ΧХ	.			l l	1 1				

Scientific Name	Common Name	GRank	SRank MNR	Halton - Varga		BL01	₹	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUT1-1 CUT1-4a-CUT1-4c	UT1e	CUT1a/CUW1a	CUW1a - CUW1j		FODS-1a - FODS-1b	FOD5-2	FOD5-3a - FOD5-3e	FOD5-5	FOD5a - FOD5b	F0D6-2	FOD6-4 FOD7-2a - FOD7-2h			Σ	MAM2		MAM2-2a - MAM2-2n MAS2-1/SWT2	MAS2-1/30012	MAS2-9	MAS2b/MAM2b	SWD2-2a - SWD2-2c	SWD3	SWD4-1a - SWD4-1b SWT2-2
SCROPHULARIACEAE	FIGWORT FAMILY																												!			/		
* Linaria vulgaris	butter-and-eggs	G?	SE5	Х	Х		Х																	Х										
* Verbascum thapsus	common mullein	G?	SE5	Х	Х		Х					Х											Х	Х										
RUBIACEAE	MADDER FAMILY																																	
* Galium verum	yellow bedstraw	G?	SE5		Х		Х	Χ																										
Galium aparine	cleavers	G5	S5	U	R4		Х										Х																	
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY																																	
Viburnum trilobum	high bush cranberry	G5T5	S5	Х	Х		Х																					Х	Χ				Х	
* Viburnum opulus	guelder rose	G5	SE4	Х	Х		Χ										Х	Х							Х							\Box		
* Lonicera morrowii	morrow's honeysuckle	G?	SE3	Х	Х		Х					Х		Х											Х			Х				\Box		
* Lonicera maackii	amur honeysuckle	G?	SE2	Х			Х																									\Box		
Lonicera sp.	honeysuckle														>																	\Box	\Box	
* Lonicera tatarica	tartarian honeysuckle	G?	SE5	Х	Х		Х				Х	Х	Х	Х				Х		Х		Х	X	Х			Х	Х				Х		
DIPSACACEAE	TEASEL FAMILY																															\Box		
* Dipsacus fullonum ssp. sylvestris	wild teasel	G?T?	SE5	Х	Х		Х	Χ			Х	Х		Х									Х	Х				Х	Х			Х	Х	Х
ASTERACEAE	ASTER FAMILY																																	
* Achillea millefolium ssp. millefolium	common yarrow	G5T?	SE?	Х	Х		Х																					Х						
* Cichorium intybus	chicory	G?	SE5	Х	Х		Х	Х				Х		Х																		\top		-
* Chrysanthemum leucanthemum	ox-eye daisy	G?	SE5	Х	Х		Х				х																					\vdash		
* Cirsium arvense	Canada thistle	G?	SE5	Х	Х	Х	Х	Х			T _x	Х		Х										Х				х	Х			+	х	х
Aster lanceolatus ssp. lanceolatus	tall white aster	G5T?	S5	Х	Х		Х																					х	Х			+	Ħ	
Erigeron philadelphicus ssp. philadelphicus	Philadelphia fleabane	G5T?	S5	Х	Х						х																					\Box		
Ambrosia artemisiifolia	common ragweed	G5	S5	X	Х		Х					Х		Х				Х											+		\top	+	t	
* Sonchus oleraceus	common sow-thistle	G?	SE5	Х	Х	+ +	Х																						+		\top	+	t	
Bidens frondosa	devil's beggar-ticks	G5	S5	X	Х	+ +	Х																				\top		+		\top	+	Ħ	
* Centaurea maculosa	spotted knapweed	G?	SE5	X	X	+ +	Х																				$\overline{}$		+		_	\vdash		$\overline{}$
* Arctium lappa	great burdock	G?	SE5	X	X		Х	Х																			\neg		+		+	+	\vdash	\neg
Convza canadensis	horseweed	G5	S5	X	X		X				хх			х						_				1			\top		+		+	+	†	$\overline{}$
Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5	X	X		Х	Х			X	+															X	х	+	Х	_	\vdash		$\overline{}$
Eupatorium maculatum ssp. maculatum	spotted joe-pye-weed	G5T5	S5	X	X		^	X			 ^													+			X	^	+	X	+	+	+	+
* Arctium minus ssp. minus	common burdock	G?T?	SE5	X	X		Х	X	Х	х		Х		Х		Х	Х			Х	Х		Х	Х			$\stackrel{\sim}{+}$		+		+	+	х	Х
Erigeron annuus	daisy fleabane	G5	S5	X	X	+	X	^	 ^ 		хх	_		X		+^	X				^	-	+^	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			+	x	+	+	+	+	 	-
Aster novae-angliae	New England aster	G5	S5	X	X	+ +	X	Х	1		_	Х		X			+^	Х	\vdash	\dashv	+	-	+	+			+	X	+	\vdash	+	+	++	+
Aster macrophyllus	large-leaved aster	G5	S5	X	X	+ +	^		1		_	T _X)	. -		X	\vdash	\dashv	\dashv	\dashv		+			+	^	+	\vdash	+	+	\vdash	+
Aster Inderophyllus Aster lateriflorus var. lateriflorus	calico aster	G5T5	S5	 ^			Х	X	\vdash		T X	-			++'	_	1	^		\dashv	\dashv	-	+	Y			+	x	T	\vdash	+	+	+	+
* Artemisia absinthium	common wormwood	G?	SE3?	1	Х	+ +	X	X	1	-	+^	+					1			\dashv	\dashv	\dashv	+				+	^	+^	\vdash	+	+	+	+
Ambrosia trifida	giant ragweed	G5	S5	Х	X	+ +	X		 		-	Х				+	1		\vdash	\dashv	+	-	+	+			+		+	+	+	+	++	+
Euthamia graminifolia	flat-topped bushy goldenrod	G5	S5	X	X		Х		† †		-	+^	1				1		\vdash	\dashv	+	\dashv	+	+			+	-	+	\vdash	+	+	++	+
* Cirsium vulgare	bull thistle	G5	SE5	X	X		Х		† †		+	+				+	1			\dashv	\dashv	-		X			+		+	+	+	+	$\vdash \vdash$	Х
Solidago altissima var. altissima	tall goldenrod	35	S5	X	X		Х		1		\dashv	+			++	-	Х			\dashv	+	-	+	+^			+	Х	+	\vdash	+	+	+	-
Xanthium strumarium	tumor-curing cocklebur	G?	S5	X	X	+ +	^		1	-	\dashv	+				+	1		\vdash	\dashv	\dashv	\dashv	X	+			+	^	+	\vdash	+	+	\vdash	+
* Sonchus arvensis ssp. arvensis	field sow-thistle	G?T?	SE5	X	X	+ +	Х	Х	\vdash		+	Х				-	Х	Х		\dashv	\dashv	-	+^				+		Х	\vdash	+	+	х	Х
* Tussilago farfara	coltsfoot	G?	SE5	X	X	X	^	X	1	-	\dashv	X	_			Х		^		\dashv	\dashv	\dashv	$\frac{1}{x}$				+	Х	+^	\vdash	+	+	+^+	
* Tragopogon dubius	doubtful goat's-beard	G?	SE5	X	X		Х	^	1	\dashv	+	+^	^			+^			\vdash	\dashv	+	+	$+^{}$				+	^	+	\vdash	+	+	+	+
* Taraxacum officinale	common dandelion	G5	SE5	X	X	+	X	X	\vdash	-+	+	X	Х		++	Х	-		\vdash	+	+	-	+	+-	 		+	-	+	++	+	+	++	Х
* Tanacetum vulgare	common tansy	G?	SE5	X	X		<u>^</u>	^	\vdash	-+	+	+^			++	+^	-		\vdash	+	+	-	+	+			+	-	+-	++	+	+	++	^
* Sonchus asper ssp. asper	spiny-leaved sow-thistle	G?T?	SE5 SE5	X	X		X		\vdash	-+	-	+			+	+	-		\vdash	+	+	+	+	+			+		+'	++	+	+	++	+
Solidago sp.	goldenrod	Gili	SES	 	X	+ +	^		\vdash	\dashv	+	X				+			\vdash	+	+	+	+	+			+	-	+'	\vdash	+	+	++	х
	IVOUDEDITOO		1 1	1		1 1	1		1 1	- 1	- 1	ΙX		I	1 1	- 1	1	i l			- 1	- 1	ιX	1	1			1	1 ,	1 1	1		1 1	^_

Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga	Peel - Varga	BLO1	CUM1-1a-CUM1-1I	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUP1-3	CUT1-1	CUIT-4a-CUIT-4c	CUT1a-CU11e	CUW1a - CUW1j	FOC2-2	FOD2-4a - FOD2-4b	FOD5-1a - FOD5-1b	FUDS-2	FOD5-3a - FOD5-3e FOD5-5	FOD5a - FOD5b	FOD6-2	FOD6-4 FOD7-2a - FOD7-2b	FOD7-3a - FOD7-3b	H	MAM2 MAM2-10	MAM2-2a - MAM2-2n MAS2-1/SWT2	MAS2-1a-MAS2-1m MAS2-9	MAS2a - MAS2b	SWD2-2a - SWD2-2c	SWD3	SWD4-1a - SWD4-1b SWT2-2
Solidago gigantea	giant goldenrod	G5	S5		U	Х							x											Х			Х				Х	
Solidago flexicaulis	zig-zag goldenrod	G5	S5		Х	Х											Х	Х)	x		Х										
* Helianthus annuus ssp. annuus	common sunflower	G5T	SE?			Х		Х																								
Solidago caesia	blue-stem goldenrod	G5	S5		Х	Х											Х	Х)	x		Х										
Rudbeckia hirta	black-eyed Susan	G5	S5		Х	Х		Х	Х																							Х
Lactuca sp.	lettuce)	x												
* Hieracium caespitosum ssp. caespitosum	field hawkweed		SE5		Х	Х		Х					1						Ť	`								+ +				
* Inula helenium	elecampane	G?	SE5		X	X		Х				+	+		+				+		1						Х			+	+	
* Lactuca serriola	prickly lettuce	G?	SE5		X	X		X			\vdash	\dashv	+	+	+	+ +			+	+		$\vdash \vdash$	+	+	х		+^+	+ +	+ +	+		
Solidago canadensis	Canada goldenrod	G5	S5		X	X		X	Х	Х	x	٠,	x >	x	Х	+		Х	١,	x x	Х	x	Х	Х	X		Х	Х	+ +	+	Х	Х
Petasites frigidus	palmate-leaf sweet-coltsfoot	G5	S5		^ R1	R2		^	^	^	 ^ 	+	+		+^	++		^		`\^	+^	-	+^	+^	^	Х	+ +	+^+	+	+	+^	- ^
* Matricaria perforata	scentless chamomile	G?	SE?		Х	X		Χ				٠,	x	+		+ +				+			-	+		^	+ +			-	-	$\vdash \vdash \vdash$
ALISMATACEAE	WATER-PLANTAIN FAMILY	G:	3E!		^	^		^				+	Ή															+ +		+	_	\vdash
		G5	C.F.		Х	Х						+	+															 		+		
Alisma plantago-aquatica	common water-plantain		S5			1							-													X		Х	+ +	-	-	 '
Sagittaria latifolia	broad-leaved arrowhead	G5	S5		Х	Х					\vdash	_	_	+		+			_	+	-		-	+-		X	+	+	-	-	-	 '
POTAMOGETONACEAE	PONDWEED FAMILY		65								\vdash		+			+ +				-							+ +	+,,	+ +		-	 '
Potamogeton natans	common floating pondweed	G5	S5		R2	U					\vdash		_	_		+				_	-		_	-			+ +	Х		_	-	 '
ARACEAE	ARUM FAMILY		_										_														+		-		_	 '
Arisaema triphyllum ssp. triphyllum	small jack-in-the-pulpit	G5T5	S5		Х	Х					Х		_	_			Х	Х		X		Х	Х							_		 '
JUNCACEAE	RUSH FAMILY												_	_						_	-									_	_	 '
Juncus tenuis	path rush	G5	S5		Х	Χ		Χ				_		X		+ +				_	-			-			Х			-	-	Х
Juncus effusus ssp. solutus	soft rush	G5T?	S5		Х	Х		Χ				_	_	_		4				_	-			-						_		
Juncus canadensis	Canada rush	G5	S5			Χ							_											Х								 '
Juncus sp.	rush																											X				 '
CYPERACEAE	SEDGE FAMILY																															 '
Carex pensylvanica	Pennsylvania sedge	G5	S5		Х	Х					Х			Х	Х		Χ)	X >	X			Х									
Scirpus validus	American great bulrush	G?	S5		Х	Х)	Х												X	Х	X X				
Carex plantaginea	plantain-leaved sedge	G5	S5		Χ	Χ		Χ																								
Carex rosea	stellate sedge	G5	S5		Χ	Χ)	X	Х											
Carex stipata	awl-fruited sedge	G5	S5		Χ	Χ		Χ										Х									Х					Х
Scirpus sp.	bulrush							Χ																				Х				
Eleocharis acicularis	needle spike-rush	G5?	S 5		U	R4		Χ																								
Carex intumescens	bladder sedge	G5	S5			Х)	X			Х										
Carex vulpinoidea	fox sedge	G5	S5		Χ	Χ		Χ)	X												Х		Х	Х				Х
Scirpus microcarpus	small-fruited bulrush	G5	S5		R2	Χ																					Х	Х				
Carex scoparia	pointed broom sedge	G5	S5		R1	R5											Х)	x >	Х							Х					
Carex bebbii	Bebb's sedge	G5	S5		U	Х		Х)	x T														Х					
Carex crinita	fringed sedge	G5	S5		U	U)	Х												
POACEAE	GRASS FAMILY																															
* Festuca arundinacea	tall fescue	G?	SE5		Х	Х		Х																								
Poa compressa	Canada blue grass	G?	S5		Х	Х		Х				1	x)	х	Х			Х		x			\top	Х	Х		1 1	1				х
* Poa annua	annual blue grass	G?	SE5		X	Х						\top	T	\top		\dagger			X				\top				1 1	1				
Phragmites australis	common reed	G5	S5		X	Х		Х	Х			\dashv	1	х	Х				1				\top	Х		Х	Х	Х	X >	⟨ x		хх
* Phleum pratense	timothy	G?	SE5		X	Х		Х				١,	x 3		X	\dagger			7	x			\top	Ť			 	X	+ + + +	+		
Phalaris arundinacea	reed canary grass	G5	S5		X	X	Х	X	Х				x >			1 1	Х		 	1			×	х	ХХ	хх	ХХ		X >	<u> (х</u>		х
Panicum capillare	witch grass	G5	S5		X	X	^	Х			\vdash	+	+	' ' ' '	 ^	+			_	+	1		 ^	 ^		· · ^	' '	 	+ + + +	+^	+	
* Lolium perenne	English rye grass	G?	SE4		X	X		X			\vdash		+	1		+				1	1		+	+			+ +	+ +	+ +	+		
Poa palustris	fowl meadow grass	G5	S5	—	X	X	+	^	Х		х	_	+	_	-	+ +				x	+		+	Х	\vdash		Х	Х	+	_	-	+-+

Scientific Name	Common Name	GRank	SRank I	MINIDI		Peel - Varga	BLO1	ᅾᅵ	CUM1-1a/CUT1a - CUM1- 1c/CUT1c	CUP1	CUT1-1	CUT1-4a -CUT1-4c	CUT1a - CUT1e	CUITA/CUWIA	CUW1a - CUW1j FOC2-2	FOD2-4a - FOD2-4b	- FOD5	FOD5-2	FOD5-3a - FOD5-3e	FOD5a - FOD5b	FOD6-2	FOD6-4	FOD7-2a - FOD7-2b	FOD/-3a - FOD/-3b	c 2	MAM2		MAM2-2a - MAM2-2n MAS2-1/SWT2	MAS2-1a-MAS2-1m	MAS2-9	MAS2a - MAS2b	M2b SWD2-	SW D2-2a - SW D2-2C SW D3	SWD4-1a - SWD4-1b
Festuca rubra ssp. rubra	red fescue	G5T4	S5		X	Х		Х	Χ			Х																Х						
Setaria pumila	yellow foxtail	G?	SE5		X	Х		Х																										
Elymus repens	quack grass	G?	SE5		X	Х		Х	Χ																									
Digitaria sanguinalis	large crabgrass	G5	SE5		X	Х		Х																	Х									
Digitaria ischaemum	small crabgrass	G?	SE5		X	Х																			Х									
Dactylis glomerata	orchard grass	G?	SE5		X	Х		Х	Х)	X	Х		X	X				Х				Х					х						
Cinna latifolia	broad-leaved reed grass	G5	S5		J	R4								İ									Х								十			1 1
Bromus tectorum	downy chess	G?	SE5		K	Х	1	Х			\top										1				\top			\neg	1		\top	\top	\top	1
Bromus inermis ssp. inermis	awnless brome	G4G5T?	SE5		X	Х		Х	Х		Х	Х	X >	()	x	1			Х	x	1		,	x ;	х			Х	Х		一	\top	十	+ +
Avena sativa	cultivated oats	G?	SE3		×	Х		Х													1													
Hordeum jubatum ssp. jubatum	squirrel-tail grass	G5T?	SE5		×	Х		Х													1												\top	
Poa sp.	blue grass													×	x						1												_	
Setaria viridis	green foxtail	G?	SE5		×			Х																									_	
Agrostis gigantea	red-top	G4G5	SE5		×	Х		Х																					Х				_	
Poa pratensis ssp. pratensis	Kentucky bluegrass	G5T	S5		×	Х		Х	Х		Х	Х	Х	×	X								Х	,	(2			Х	Х				X	
CYPERACEAE	SEDGE FAMILY																												1				_	
Eleocharis sp.	spike-rush							Х																					1				_	
TYPHACEAE	CATTAIL FAMILY																																_	
Typha sp.	cattail								Х			Х																	\top	х	х	+	+	Х
Typha latifolia	broad-leaved cattail	G5	S5		×	Х		Х				-											,	х				хх	X		Х	+	+	,
Typha X glauca	glaucous cattail	HYB	S5		`	Х																						^ ^				+	+	X
Typha angustifolia	narrow-leaved cattail	G5	S5		`	Х		Х											Х		1						Х	ХХ	X		х	+	+	X
PONTEDERIACEAE	PICKEREL-WEED FAMILY	03	33		`	^		^																				^ ^	+		$\stackrel{\sim}{+}$	+	+	+
Pontederia cordata	heart-leaved pickerel-weed	G5	S5																									-	+-	х	+	+	+	+
LILIACEAE	LILY FAMILY	U 3	33																									-	+-	<u> </u>	+	+	+	+
Asparagus officinalis	garden asparagus	G5?	SE5		× T	Х		х																				-	+-		+	+	+	+
Maianthemum stellatum	star-flowered Solomon's seal	G5:	S5		× I	X		^											х									+	+		+	+	+	+
Maianthemum racemosum ssp. racemosum		G5T	S5		×	X					-			١,	x				X		Х							-	+		-	+	+	+
Streptopus roseus	rose twisted-stalk	G5	S5		×	^					-			+					X		^							-	+		-	+	+	+
Trillium grandiflorum	white trillium	G5	S5		X	Х		\dashv						+		Х	+		X		Х				+			+	+-'		+	+	+	++
Maianthemum canadense	wild lily-of-the-valley	G5	S5		`	X		\dashv						+			Х		^		+^				+			+	+-'		+	+	+	++
Lilium michiganense	Michigan lily	G5	S5		`	Û		\dashv						+		1	1				Х				+			+	+-'		+	+	+	++
Hemerocallis fulva	orange day-lily	G?	SE5		<u>`</u>			Х	Х		+			×	<u>, </u>	1					+^	1	Х		+			+	+-	+	+	+	+	++
Erythronium americanum ssp. americanum	yellow dog's-tooth violet	G5T5	S5		`	Х		^	^					+^		Х	+	Х			+		^		+			+	+-'		+	+	+	++
IRIDACEAE	IRIS FAMILY	0313	33		`	^		\dashv						+		 ^	+	^			+				+			+	+-		+	+	+	++
Iris versicolor	multi-coloured blue-flag	G5	S5		J	Х		\dashv						+		1	+				+				+		Х	+	+-		+	+	+	++
SMILACACEAE	CATBRIER FAMILY	33	33		* 	^	-+	\dashv			+			+		-	+	\vdash			+	1			+		^	+	+-		+	+	+	+++
Smilax herbacea	herbaceous carrion flower	G5	S4		<u> </u>	Х		\dashv			+			+					Х		Х			+	+			+	+-		+	+	+	++
Similax Herbacea	nerbaceous carrion nower	GS	34		`	^		\dashv			_			+			+		^		 ^			+	+			+	+-		+	+	+	++
		<u> </u>								$oxed{oxed}$																1	ш.		— —'	\vdash	$-\!\!\!+$	\dashv	—	+

APPENDIX E. ACRONYMS AND DEFINITIONS USED IN SPECIES LIST

ACRONYMS AND DEFINITIONS USED IN SPECIES LISTS

G-Rank **Global Rank**

Global ranks are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and the Nature Conservatory to designate a rarity rank based on the range-wide status of a species, subspecies or variety.

The most important factors considered in assigning global ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.

G1=	Extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2 =	Very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3 =	Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G4 =	Common; usually more than 100 occurrences; usually not susceptible to immediate threats.
G5 =	Very common; demonstrably secure under present conditions.
GH = GU =	Historic, no records in the past 20 years. 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.
? = G" " =	Denotes inexact numeric rank (i.e. G4?). A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy.
G? =	Unranked, or, if following a ranking, rank tentatively assigned (e.g. G3?). Denotes that the taxonomic status of the species, subspecies, or variety is
Q = T =	questionable. 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.
C4 -	Apparently secure - uncommon but not rare; some cause for long-term concern due
S4 =	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. Unranked - conservation status in Ontario not yet
SNR =	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) Extirpated (XT) Endangered (E) Threatened (T) Special Concern (SC)	A wildlife species that no longer exists. A wildlife species no longer existing in the wild in Canada, but occurring elsewhere. A wildlife species facing imminent extirpation or extinction. A wildlife species likely to become endangered if limiting factors are not reversed. 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- A species facing imminent extinction or extirpation in Ontario which has been

R) regulated under Ontario's Endangered Species Act.

A species facing imminent extinction or extirpation in Ontario which is a candidate for

Endangered (END) regulation under Ontario's Endangered Species Act.

A species that is at risk of becoming endangered in Ontario if limiting factors are not

Threatened (THR) reversed.

Special Concern A species with characteristics that make it sensitive to human activities or natural

(SC) events.

Not at Risk (NAR) A species that has been evaluated and found to be not at risk.

Data Deficient (DD) A species for which there is insufficient information for a provincial status

recommendations.

Local Status Regional Municipality of York, Regional Municipality of Peel (Riley 1989)

Species status within the York and Peel Regions were used to determine local vascular plant status for the study area.

R-# = R- Native species present and rare; # - number of stations at which the species has been identified.

U = Uncommon.

X = Not classified as rare or uncommon within York and Peel Regions.

APPENDIX F. CORRESPONDANCE WITH MNRF, TRCA AND CVC

Sowel Kang

Subject:

RE: MTO 407 Transitway - Brant Street to Hurontario Street - Data Request

From: Kerslake, Holly

Sent: June 14, 2018 2:13 PM

To: 'lmarray@creditvalleyca.ca' <lmarray@creditvalleyca.ca>

Cc: 'James, Eric' <ejames@creditvalleyca.ca>; 'Sowel Kang' <skang@lgl.ca>; Maleki, Roshanak

<Roshanak.Maleki@parsons.com>; Garron, Gus <Gus.Garron@parsons.com>; Graham.DeRose@ontario.ca; Sarris, Larry

(MTO) <Larry.Sarris@ontario.ca>

Subject: MTO 407 Transitway - Brant Street to Hurontario Street - Data Request

Dear Mr. Marray,

The Ontario Ministry of Transportation (MTO) is commencing the Environmental Assessment, and Preliminary Design of the 407 Transitway from west of Brant Street in the City of Burlington to west of Hurontario Street in the City of Mississauga (study area map below). The 407 Transitway will consist of a 43 kilometre, two-lane, fully grade separated road on an exclusive right-of-way, running along the Highway 407 Corridor, and several station sites that will include parking, pick-up/drop-off, bus integration, and active transportation facilities. This 43 kilometre segment forms part of the 150 kilometre long high-speed interregional facility planned to be ultimately constructed on a separate right-of-way that parallels Highway 407 from Burlington to Highway 35/115, with stations, parking and access connections. This transitway is a component within the official plans of the stakeholder municipalities and of the Province's commitment to support transit initiatives in the Greater Golden Horseshoe through the Metrolinx Regional Transportation Plan.

The project is currently in the data collection phase and the purpose of this email is to request from your authority, any available information and data that may be relevant to the project. Your input with respect to constraints, opportunities, specific concerns, etc. will be most valuable to our project team throughout the study phases. The study area is illustrated in the map below. We have prepared the list shown below, of the data that we hope you will be able to provide; however, any other information that you consider relevant to the project will be most appreciated.

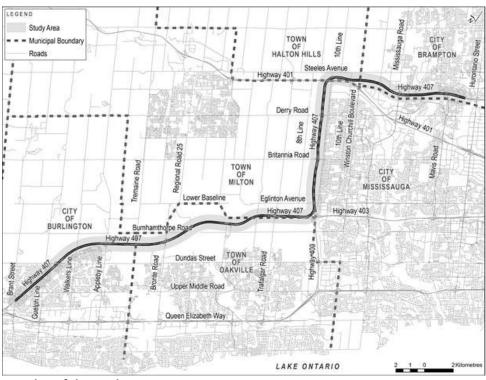
Environmental Requirements

- Fisheries
 - Fish collection records (fish dots) includes mussels
 - Habitat data (usually collected during the Watershed Monitoring Program using OSAP)
 - Thermal regime
 - Barrier locations in general proximity to study area (if available)
 - Flow regime (permanent, intermittent, ephemeral)
 - Significant groundwater discharge areas
- Wildlife
 - SAR
 - Species occurrences (birds, mammals, amphibians)
 - Significant habitat (deer yards, amphibian breeding, interior forest, etc.)
 - Stick nest locations
- Botany
 - ELC communities
 - Flora
 - Fauna
 - Rare plant occurrences
 - Tree inventories (if available)
- Significant Natural Areas

- ESA
- Wetlands
- Forest cover
- ANSIs, PSWs (if available)

• Water Requirements

- Hydrology
 - Drainage Area maps/Catchment boundaries of each watershed (CAD files if available)
 - Hydrologic models for all watersheds within the study boundaries
 - Rainfall files used in the hydrologic models
 - Hydrologic modelling documentation (reports)
- Hydraulics
 - All available HEC-RAS models
 - All available floodplain maps (CAD files is available)
 - CAD file of all watercourses



Key Plan of the Study Area

Please advise if you have any questions. Your support will be greatly appreciated. Thanks! Holly

Holly Kerslake

Rail & Transit, Parsons Transportation Group 625 Cochrane Drive, Suite 500, Markham, ON, Canada L3R 9R9 holly.kerslake@parsons.com

Desk: +1 905.943.0446 Cell: +1 647.467.8379

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Sowel Kang

Subject:	RE: Holly Kerslake has shared the folder 'TW4 - CVC Data' with you.
Hi Holly,	
I uploaded the files. them	It is a zipped folder which contains 4 other folders. Let me know if you can access
Regards,	
905.670.1615 ext 30	Credit Valley Conservation 4 1-800-668-5557 http://cvc.ca[na01.safelinks.protection.outlook.com]
Sent: October 2, 2018 To: Vir, Aanchal	tions.com [mailto:mail@sf-notifications.com] 11:33 AM e has shared the folder 'TW4 - CVC Data' with you.
Holly Kerslake	has shared the folder TW4 - CVC Data with you.
Note From Holly:	
Let me know if yo	ou have any issues!
Holly	

Sowel Kang

Subject:

RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

From: Brad Rennick

Sent: November-16-17 11:49 AM

To: Garron, Gus <Gus.Garron@parsons.com>; Graham.DeRose@ontario.ca; skang@lgl.com

Cc: Matt Howatt <mhowatt@hrca.on.ca>; Kerslake, Holly <Holly.Kerslake@parsons.com>; Brown, Vernon

<<u>Vernon.Brown@parsons.com</u>>; Maleki, Roshanak <<u>Roshanak.Maleki@parsons.com</u>> **Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello all,

Attached is the requested data, and associated metadata for the 407 Transitway project. As discussed previously, the floodplain data will be delivered at a later date due to the scope of the request.

If you have any questions feel free to contact me,

Regards,

Brad Rennick

GIS Analyst

Conservation Halton

2596 Britannia Road West, Burlington, ON L7P 0G3 905.336.1158 ext. 2327 | Fax 905.336.7014 | brennick@hrca.on.ca conservationhalton.ca[conservationhalton.ca]

Thank you for thinking about the environment before printing this e-mail. If you are not an intended recipient, you must not disclose, copy, or distribute its contents or use them in any way. Please advise the sender immediately and delete this e-mail.

From: Garron, Gus [mailto:Gus.Garron@parsons.com]

Sent: November-08-17 9:42 AM

Cc: Matt Howatt <mhowatt@hrca.on.ca>; Kerslake, Holly <Holly.Kerslake@parsons.com>; Brown, Vernon

<<u>Vernon.Brown@parsons.com</u>>; Maleki, Roshanak <<u>Roshanak.Maleki@parsons.com</u>>

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello Brad,

Attached is the signed Licensing Agreement.

Thanks

Gus

From: Brad Rennick [mailto:brennick@hrca.on.ca]
Sent: Tuesday, November 07, 2017 2:11 PM

To: Garron, Gus < Gus. Garron@parsons.com >; Graham. DeRose@ontario.ca

Cc: Matt Howatt <<u>mhowatt@hrca.on.ca</u>>; Kerslake, Holly <<u>Holly.Kerslake@parsons.com</u>> Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello

I have attached our data licensing agreement, please review, sign and return it at your convenience.

Regards,

Brad Rennick

GIS Analyst

Conservation Halton

2596 Britannia Road West, Burlington, ON L7P 0G3 905.336.1158 ext. 2327 | Fax 905.336.7014 | brennick@hrca.on.ca conservationhalton.ca[conservationhalton.ca]

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From: Brown, Vernon [mailto:Vernon.Brown@parsons.com]

Sent: November-07-17 12:50 PM

To: Garron, Gus < Gus.Garron@parsons.com >; Brad Rennick < brennick@hrca.on.ca >

Cc: Matt Howatt <mhowatt@hrca.on.ca>; Kerslake, Holly <Holly.Kerslake@parsons.com>; Maleki, Roshanak

<Roshanak.Maleki@parsons.com>

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Brad.

Yes, we will also need the hydraulic and hydrologic models. As Gus noted below, the study includes a preliminary design, which requires a preliminary assessment of freeboard and clearance requirements at structures (i.e. culverts and bridges) that might be modified/impacted by the implementation of the transitway. In addition, we will need to assess potential hydraulic impacts to adjacent structures and properties along the corridor.

To facilitate the data processing/delivery timeline, if you could provide the floodplain hazard data first and then the engineering models after in a separate package, it would be appreciated.

Regards,

Vernon Brown, M.Sc., P.Eng.
Principal Engineer, Drainage
vernon.brown@parsons.com - P: +1 905.943.0589

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From: Garron, Gus

Sent: Tuesday, November 07, 2017 11:10 AM **To:** Brad Rennick < brennick@hrca.on.ca >

Cc: Matt Howatt <<u>mhowatt@hrca.on.ca</u>>; Kerslake, Holly <<u>Holly.Kerslake@parsons.com</u>>; Brown, Vernon

< <u>Vernon.Brown@parsons.com</u>>; Maleki, Roshanak < <u>Roshanak.Maleki@parsons.com</u>>

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Brad,

It is for an EA and Preliminary Design. I'm verifying with the Drainage team if the level of detail engineering requested is consistent with the scope of work.

Many thanks for the cooperation.

Gus

From: Brad Rennick [mailto:brennick@hrca.on.ca]
Sent: Tuesday, November 07, 2017 10:32 AM
To: Garron, Gus < Gus.Garron@parsons.com >
Cc: Matt Howatt < mhowatt@hrca.on.ca >

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Gus,

I sent this to Holly yesterday but received her "out-of-office" notification, could you please advise on how you would like to proceed?

Regards,

Brad

From: Brad Rennick

Sent: November-06-17 12:39 PM

To: 'Kerslake, Holly' < Holly. Kerslake@parsons.com >

Cc: Matt Howatt < mhowatt@hrca.on.ca >

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Holly,

One last question before I complete your data request: In the data list below, you've included Hydraulic and Hydrologic models; do you require this detailed engineering dataset for an EA? Our regulated floodplain hazard data is included as part of the Regulated Hazard package I will be sending, however the engineering data is more appropriate for a detail-design stage rather an EA. We can provide the data as part of the request but it will increase the data processing/delivery timeframe.

How would you like to proceed?

Brad

From: Kerslake, Holly [mailto:Holly.Kerslake@parsons.com]

Sent: November-02-17 5:02 PM

To: Brad Rennick < brennick@hrca.on.ca>

Cc: Matt Howatt < mhowatt@hrca.on.ca >; Sowel Kang < skang@lgl.ca >; DeRose, Graham (MTO)

<Graham.DeRose@ontario.ca>; Garron, Gus <Gus.Garron@parsons.com>; Leung, Winnie

<Winnie.Leung@parsons.com>

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Ok thanks Brad! The MTO project manager for this assignment is Graham DeRose, his contact information is noted below.

Graham DeRose

Project Manager
Route Planning & Transit Initiatives
Ministry of Transportation, Central Region

Tel: 416.235.5255

Graham.DeRose@ontario.ca

Holly

Holly Kerslake

Desk: +1 905.943.0446 Cell: +1 647.467.8379

From: Brad Rennick [mailto:brennick@hrca.on.ca]
Sent: Thursday, November 02, 2017 10:51 AM
To: Kerslake, Holly < Holly.Kerslake@parsons.com>

Cc: Matt Howatt < mhowatt@hrca.on.ca >

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Holly,

Thank you for providing the table, this will help.

I will start processing your request, however I will require the contact information for the MTO project contact as they will have to sign the data licensing agreement.

For #6 — "North Oakville Subwatershed Study Mapping Files" you will have to contact the Town of Oakville directly to obtain this data set.

Regards

Brad Rennick

GIS Analyst

Conservation Halton

2596 Britannia Road West, Burlington, ON L7P 0G3 905.336.1158 ext. 2327 | Fax 905.336.7014 | <u>brennick@hrca.on.ca</u>

conservationhalton.ca[conservationhalton.ca]

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From: Kerslake, Holly [mailto:Holly.Kerslake@parsons.com]

Sent: November-01-17 9:25 PM

To: Matt Howatt < mhowatt@hrca.on.ca>

Cc: Garron, Gus < Gus.Garron@parsons.com >; Sowel Kang < skang@lgl.ca >; Brad Rennick < brennick@hrca.on.ca >;

Brown, Vernon < Vernon. Brown@parsons.com>

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Matt & Brad,

I have confirmed with our Environmentalists and Drainage staff and if you could provide us with all the items in the scope listed below, would be great. I also have included a table below, provided by our drainage team, outlining the specific information they are looking for to compliment the list you provided.

Item	Data	Preferred Format	Remarks
1	Hydrologic and Hydraulic Models. Required for all sub-watersheds traversed by	HEC-RAS and Visual OTTHYMO	This will be required for all tributaries/creeks located within the project limits, if available.
	the study area: Upper Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Bronte, Fourteen Mile, McCraney, Sixteen Mile, Joshua's Creeks, Morrison Creek.		
2	Conservation Halton's Approximate Regulatory Limit Mapping (includes watercourses, floodplain, top of bank and meander belt erosion hazards, wetlands and associated hazard allowance setbacks)	PDF, DWG <u>and</u> GIS Shapefiles	
3	Subwatershed Boundaries	PDF, DWG <u>and</u> GIS Shapefiles	Required for all sub-watersheds listed in Item#1 , i.e. Upper Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Bronte, Fourteen Mile, McCraney, Sixteen Mile, Joshua's Creeks, Morrison Creek.
4	Topographic Contour Information	DWG <u>and</u> GIS Shapefiles	Maximum contour interval should be 1 m
5	Hydrological Features	DWG or GIS Shapefiles	
6	North Oakville Subwatershed Study Mapping Files	DWG or GIS Shapefiles	

To answer your second question, LGL Consultants has put in data requests to both MNRF and to Fisheries.

Thanks for your help on pulling this data together – it is greatly appreciated.

Holly

Holly Kerslake

Desk: +1 905.943.0446 Cell: +1 647.467.8379

From: Matt Howatt [mailto:mhowatt@hrca.on.ca]
Sent: Wednesday, October 25, 2017 3:20 PM
To: Kerslake, Holly < Holly.Kerslake@parsons.com>

Cc: Garron, Gus < Gus.Garron@parsons.com >; Sowel Kang < skang@lgl.ca >; Brad Rennick < brennick@hrca.on.ca >

Subject: RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Good afternoon Holly,

Thank you for submitting your data request. We've reviewed the request and I've gathered input from our technical staff on the specific information that we believe would be pertinent to provide.

However, prior to processing the data request further, we wanted to confirm the scope of data with you.

Given the size of the study area and the amount of natural hazard and natural heritage lands it traverses, there is a substantial amount of information that could be provided such as:

- Conservation Halton's Approximate Regulatory Limit Mapping (includes watercourses, floodplain, top of bank and meander belt erosion hazards, wetlands and associated hazard allowance setbacks)
- Hydrologic and Hydraulic Modelling (the study area traverses 11 subwatersheds and we would need to determine if modelling is available for every area)
- Subwatershed Boundaries for Upper Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Bronte, Fourteen Mile, McCraney, Sixteen Mile, Joshua's Creeks
- Topographic Contour Information
- Conservation Halton's Long-Term Environmental Monitoring Program Aquatic and Terrestrial station/site locations (and corresponding data, if required)
- Fish Community and Distribution Information
- Stream Temperature Stations
- Benthic Monitoring Stations
- Ontario Stream Assessment Protocol Sites
- Stream Barriers
- Water Quality Stations
- Groundwater Monitoring Wells
- Hydrological Features
- North Oakville Subwatershed Study Mapping Files

We also wanted to confirm if you have data requests in with the Ministry of Natural Resources and Forestry for information regarding Provincially Significant Wetlands, Areas of Natural and Scientific Interest, Species at Risk records and Halton Region for Significant Woodlands. Their environmental information should also be considered in the study and some of this information may be able from Conservation Halton subject to confirmation with our GIS staff.

Please let us know if you wish to include all of the above items in your data request or if you wish to scope them down.

If you have any questions regarding the above, please contact me or Brad Rennick, Senior GIS Analyst, who is copied on this email or at extension 2327.

Thank you, Matt

Matt Howatt

Environmental Planner

Conservation Halton

2596 Britannia Road West, Burlington, ON L7P 0G3 905.336.1158 ext. 2311 | Fax 905.336.6684 | mhowatt@hrca.on.ca

conservationhalton.ca[conservationhalton.ca]

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From: Kerslake, Holly [mailto:Holly.Kerslake@parsons.com]

Sent: October-19-17 1:28 PM

To: Kirby Childerhose < kchilderhose@hrca.on.ca>

Cc: Garron, Gus <Gus.Garron@parsons.com>; Sowel Kang <skang@lgl.ca>; Matt Howatt <mhowatt@hrca.on.ca>

Subject: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello,

Please see attached Parsons's data request and Data License agreement for MTO's 407 Transitway Winston Churchill Blvd. to Brant Street. Please let me know if you have any questions or concerns or need anything else from us – **you can reach me at 905-943-0446**.

Thanks!

Holly

Holly Kerslake

Rail & Transit, Parsons Transportation Group 625 Cochrane Drive, Suite 500, Markham, ON, Canada L3R 9R9 holly.kerslake@parsons.com

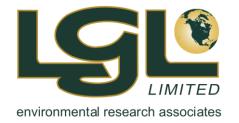
Desk: +1 905.943.0446 Cell: +1 647.467.8379

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Appendix A: Information Request Form

	In	Auror formation I	a MNR Request I	Form			
Name:	Judson Venier						
Company Name:	LGL Limited						
Proponent Name:	Gus Garron, Pars	sons					
Phone Number:	(905) 943-0544						
Email Address:	gus.garron@pars	ons.com					
Project Name:	407 Transitway fi	rom West of	Winston	Churchill Boul	evard to We	st of Brant St	reet
Property Location:							
Township:	Peel Region, Halt	on Region					
Lot & Concession:							
UTM Coordinates:	Easting (X)		N	orthing (Y)			
Brief Description of Undertaking Have you previousl	Boulevard and Br	CONTRACTOR STORES	938 9		X No		
of Undertaking Have you previousl If yes, when and who?		t MNR for infor	mation on t	his site? Yes			
of Undertaking Have you previousl If yes, when and who? Provide a map of acc surrounding landsca	y contacted someone a urate scale to illustrate for pe (e.g. property boundari numan landmarks). Use of	ot MNR for infor	mation on t	his site? Yes osed activity in rela	ation to the transmission		
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LGL Limited

22 Fisher Street, P.O. Box 280 King City, Ontario CANADA L7B 1A6 Tel: (905) 833-1244 Fax: (905) 833-1255 Email: kingcity@lgl.com web: www.lgl.com

July 4, 2017 Sent via e-mail: Ben.Keen@ontario.ca

Ben Keen Management Biologist Ministry of Natural Resources and Forestry - Aurora District 50 Bloomington Rd Aurora, ON L4G 0L8

Re: Request for Background Information, 407 Transitway from West of Winston Churchill Boulevard in Peel Region to West of Brant Street in Halton Region, Planning and Preliminary Design Study. Assignment Number 2016-E-0038.

Dear Mr. Keen,

In accordance with the MTO/DFO/MNRF Protocol for Protecting Fish and Fish Habitat on Provincial Highway Undertakings - Version 3, 2016, this letter is to provide notification to the Ministry of Natural Resources and Forestry (MNRF) that the Ministry of Transportation is commencing the Planning Phase, Environmental Assessment, and Preliminary Design of the 407 Transitway located within the Regional Municipalities of Peel and Halton in addition to requesting background natural heritage data for this area.

The 407 Transitway study extends from west of Winston Churchill Boulevard in Peel Region to west of Brant Street in Halton Region (see attached mapping). The project includes 35 km of runningway and stations. The transitway will be designed to support the initial busway service with provisions for future conversion to light rail transit (LRT). An alignment and station alternatives have not been selected, therefore, for the purposes of this data request, we are requesting information for natural heritage features which occur within 500 m north and south of the 407 ETR centerline. A map is included with this submission which outlines the study area.

In addition to the standard Aurora District data request form, which is included with this request, please see the table below (and attached map) for a list of the watercourses and waterbodies within the 407 Transitway study limits and their locations. Watercourses within the study area include tributaries of Rambo Creek, Roseland Creek, Tuck Creek, Shoreacres Creek, Appleby Creek, Sheldon Creek, Bronte Creek, Fourteen Mile Creek, McCraney Creek, Sixteen Mile Creek, and Joshua's Creek. All watercourses are within the jurisdiction of Conservation Halton. The attached map identifies all watercourses within the study area, which are numbered in sequential order from west to east.

As per Step 2 of the MTO/DFO/MNR Fisheries Protocol, we request that MNRF complete the attached table that includes information on fish community and habitat.

We look forward to MNRF's response to our request within **30 working days**, as specified in the Protocol.

Sincerely,

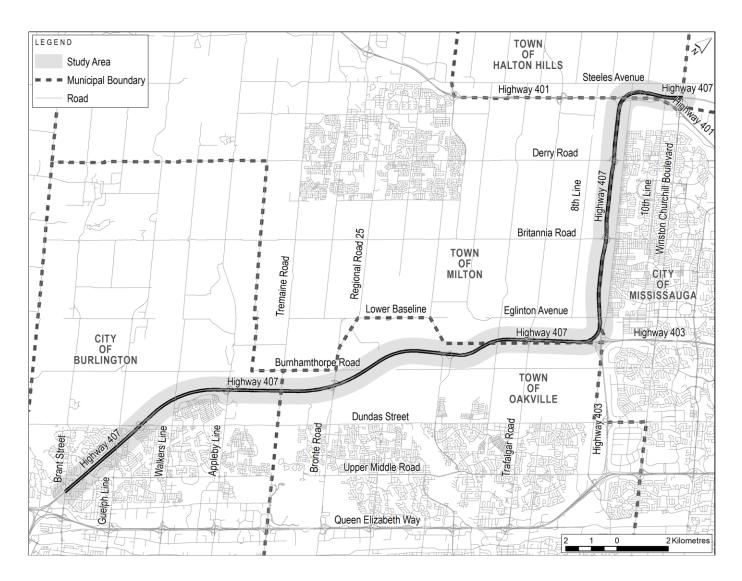
LGL Limited environmental research associates

Judson M. Venier, M.Sc. Fisheries Biologist

pm V:

Attachments: Aurora MNRF information request form, table of watercourses, maps of study area

cc: Holly Kerslake, Parsons Sowel Kang, LGL Limited



MAP OF THE STUDY AREA

407 Transitway from West of Winston Churchill Boulevard to West of Brant Street





Highway 407 500m Buffer

Watercourse Crossing

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

WATERCOURSE CROSSINGS



Project	: TA8733	Figure:	1
Date:	June, 2017	Prepared By:	MWF
Scale:	1:45,000	Checked By:	SLL

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 1: Rambo Creek 17 T 594774 mE 4800120.00 mN						
Site 2: Tributary of Rambo Creek 17T 594468 mE 4801021 mN						
Site 3: Roseland Creek 17T 594842 mE 4802580 mN						
Site 4: Tributary of Tuck Creek 17T 594603 mE 4803103 mN						
Site 5: Tuck Creek						
17T 594537 mE 4803636 mN						
Site 6: Tributary of Shoreacres Creek 17T 594464 mE 4804396 mN						
Site 7: Tributary of Shoreacres Creek 17T 594443 mE 4804734 mN						
Site 8: Tributary of Shoreacres Creek 17T 594433 mE 4805167 mN						
Site 9: Appleby Creek 17T 594485 mE 4805723 mN						
Site 10: Tributary of Appleby Creek 17T 594548 mE 4805971 mN						
Site 11: Tributary of Sheldon Creek 17T 594705 mE 4806407 mN						
Site 12: Tributary of Sheldon Creek 17T 594907 mE 4806806 mN						
Site 13: Tributary of Sheldon Creek 17T 595044 mE 4807017 mN						

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 14: Tributary of Sheldon Creek 17T 595267 mE 4807294 mN						
Site 15:Bronte Creek 17T 595872 mE 4808053 mN						
Site 16: Tributary of Fourteen Mile Creek 17T 596677 mE 4809048 mN						
Site 17: Tributary of Fourteen Mile Creek 17T 596856 mE 4809275 mN						
Site 18: Tributary of Fourteen Mile Creek 17T 597023 mE 4809502 mN						
Site 19: Tributary of Fourteen Mile Creek 17T 597152 mE 4809671 mN						
Site 20: Tributary of Fourteen Mile Creek 17T 597329 mE 4809873 mN						
Site 21: Tributary of Fourteen Mile Creek 17T 597453 mE 4810057 mN						
Site 22: Fourteen Mile Creek 17T 597646 mE 4810373 mN						
Site 23: Tributary of Fourteen Mile Creek 17T 597823 mE 4810750 mN						
Site 24: Tributary of Fourteen Mile Creek 17T 597968 mE 4811087 mN						_
Site 25: Tributary of Fourteen Mile Creek 17T 598059 mE 4811423 mN						
Site 26: Tributary of Fourteen Mile Creek 17T 598127 mE 4811681 mN						

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 27: Tributary of McCraney Creek 17T 598156 mE 4811846 mN						
Site 28: Tributary of Sixteen Mile Creek 17T 598221 mE 4812550 mN						
Site 29: Sixteen Mile Creek 17T 598317 mE 4813322 mN						
Site 30: Tributary of Sixteen Mile Creek 17T 598459 mE 4813745 mN						
Site 31: Tributary of East Sixteen Mile Creek 17T 599612 mE 4815250 mN						
Site 32: Tributary of East Sixteen Mile Creek 17T 599711 mE 4815360 mN						
Site 33: Tributary of East Sixteen Mile Creek 17T 599915 mE 4815508 mN						
Site 34: Tributary of East Sixteen Mile Creek 17T 600082 mE 4815757 mN						
Site 35: Tributary of East Sixteen Mile Creek 17T 600355 mE 4816860 mN						
Site 36: Tributary of Joshua's Creek 17T 601110 mE 4817950 mN						
Site 37: Tributary of Joshua's Creek 17T 601408 mE 4818313 mN						
Site 38: Tributary of Joshua's Creek 17T 601518 mE 4818446 mN						
Site 39: Tributary of Joshua's Creek 17T 601840 mE 4818832 mN						

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 40: Tributary of Joshua's Creek 17T 602021 mE 4819053 mN						
Site 41: Tributary of Joshua's Creek 17T 602432 mE 4819528 mN						
Site 42: Tributary of East Sixteen Mile Creek 17T 600961 mE 4821785 mN						
Site 43: Tributary of East Sixteen Mile Creek 17T 599490 mE 4823263 mN						
Site 44: Tributary of East Sixteen Mile Creek 17T 597084 mE 4825561 mN						
Site 45: Tributary of East Sixteen Mile Creek 17T 595911 mE 4826650 mN						
Site 46: Tributary of East Sixteen Mile Creek 17T 596064 mE 4827097 mN						
Site 47: Tributary of East Sixteen Mile Creek 17T 596334 mE 4827475 mN						

NOTE:

- The applicant shall complete the waterbody name and location (column 1) and attach a Google Earth map or MTO project map identifying each waterbody and submit to MNRF.
- MNRF is required as per Step 2 of the Fisheries Protocol to provide the applicant with the information outlined in the table above (columns 2-7) within **30 working days**.

Ministry of Natural Resources and Forestry Aurora District Office 50 Bloomington Road Aurora, Ontario L4G 0L8

Ministère des Richesses naturelles et des Forets

Telephone: (905) 713-7400 Facsimile: (905) 713-7361



September 6, 2017

Stephanie Lillie LGL Limited 22 Fisher Street King City, ON L7B 1A6 (905) 833-1244 stephanielillie@lgl.com

Re: 407 Transitway from West of Winston Churchill Blvd. to West of Brant St.

Dear Stephanie Lillie,

In your email dated July 4, 2017 you submitted an information request regarding the above location.

Species at risk recorded in this vicinity include Silver Shiner (threatened), American Eel (endangered), Bank Swallow (threatened), Jefferson Salamander (endagered), and Redside Dace (endangered). There is potential for Monarch (special concern), Butternut (endangered), Barn Swallow (threatened), Canada Warbler (special concern), Chimney Swift (threatened), Bobolink (threatened), Eastern Meadowlarke (threatened), and Snapping Turtle (special concern). There is also potential for bats (i.e., Eastern Smallfooted Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat) in cavities or leaf clusters.

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

We require more detailed information on the proposed project in order to assess the impacts of the works on Species at Risk. When project details have been determined, please fill out an Information Gathering Form (IGF) for any threatened or endangered species listed in the provided letter and submit it to our office (to ESA.Aurora@ontario.ca). The IGF can be found here (along with its associated guide). Please include detailed descriptions of the undertakings such as proposed timing and phasing of the project and details on what is required at each phase.

All sections and tables should be filled out in their entirety – incomplete forms will be returned and may delay the review process. Any applicable supplemental information that will assist with the review process should also be submitted with the IGF (e.g. field survey results, site plan/drawings, ELC mapping, etc.). Please note that forms are reviewed in the order in which they are received by MNRF and we will contact you with our response once the review is complete.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. Approval from MNRF may be required if work you are proposing could cause harm to any species that receive protection under the *Endangered Species Act 2007*.

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

Additional natural heritage information including information on wetlands and Areas of Natural and Scientific Interest (ANSIs) can be obtained through Land Information Ontario (LIO).

If you have any questions or comments, please do not hesitate to contact ESA.aurora@ontario.ca or ben.keen@ontario.ca.

Sincerely,

Ben Keen, Management Biologist, Ontario Ministry of Natural Resources and Forestry, Aurora District

407 Transitway from West of Winston Churchill Boulevard to West of Brant Street

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 1: Rambo Creek 17 T 594774 mE 4800120.00 mN	Warm	Unknown			Low	July 1 – March 31
Site 2: Tributary of Rambo Creek 17T 594468 mE 4801021 mN	Warm	Unknown			Low	July 1 – March 31
Site 3: Roseland Creek 17T 594842 mE 4802580 mN	Warm	Unknown			Low	July 1 – March 31
Site 4: Tributary of Tuck Creek 17T 594603 mE 4803103 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow, goldfish, white sucker		Low	July 1 – March 31
Site 5: Tuck Creek 17T 594537 mE 4803636 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow, goldfish, white sucker		Low	July 1 – March 31
Site 6: Tributary of Shoreacres Creek 17T 594464 mE 4804396 mN	Warm	Unknown			Low	July 1 – March 31
Site 7: Tributary of Shoreacres Creek 17T 594443 mE 4804734 mN	Warm	Unknown			Low	July 1 – March 31
Site 8: Tributary of Shoreacres Creek 17T 594433 mE 4805167 mN	Warm	Unknown			Low	July 1 – March 31
Site 9: Appleby Creek 17T 594485 mE 4805723 mN	Warm	Unknown	Creek chub, blacknose dace, fathead minnow, goldfish, green sunfish, largemouth bass, pumpkinseed, white sucker		Low	July 1 – March 31

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 10: Tributary of Appleby Creek 17T 594548 mE 4805971 mN	Warm	Unknown	Creek chub, blacknose dace, fathead minnow, goldfish, green sunfish, largemouth bass, pumpkinseed, white sucker		Low	July 1 – March 31
Site 11: Tributary of Sheldon Creek 17T 594705 mE 4806407 mN	Unknown	Unknown				
Site 12: Tributary of Sheldon Creek 17T 594907 mE 4806806 mN	Unknown	Unknown				
Site 13: Tributary of Sheldon Creek 17T 595044 mE 4807017 mN	Unknown	Unknown				
Site 14: Tributary of Sheldon Creek 17T 595267 mE 4807294 mN	Unknown	Unknown				
Site 15:Bronte Creek 17T 595872 mE 4808053 mN	Warm	Unknown	Common Shiner, hornyhead chub, river chub, spotfin shiner, fantail darter, johnny darter, tadpole madtom, eastern blacknose dace, brown trout, fatheadminnow, white perch, pumpkinseed, mimic shiner, white sucker, rock bass, rainbow smelt, rosyface shiner, green sunfish, sea lamprey, common carp, black crappie, largemouth bass, smallmouth bass, cisco, pearl dace, troutperch, threespine stickleback, striped shiner, emerald		High (Silver Shiner and American Eel habitat and at a minimum it's at least a seasonal migratory corridor for L. Ontario salmonids)	July 1 – September 15 (Given presence of Silver Shiner and Chinook Salmon)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
			shiner, river redhorse, American Eel, logperch, yellow perch, spottail shiner, bluntnose minnow, slimy sculpin, chinook salmon, golden shiner, brook trout, rainbow darter, central mudminnow, northern pike, longnose dace, silver shiner, rainbow trout, bluegill, alewife, stonecat, round goby, creek chub, brook strickleback, brown bullhead, northern redbelly dace, northern hog sucker, striped bass			
Site 16: Tributary of Fourteen Mile Creek 17T 596677 mE 4809048 mN	Cold	Unknown	Goldfish, creek chub, brook stickleback, eastern blacknose dace, rainbow darter, brown bullhead, redside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 17: Tributary of Fourteen Mile Creek 17T 596856 mE 4809275 mN	Cold	Unknown	Eastern blacknose dace, rainbow darter, brown bullhead, redside dace,		Moderate (Upstream of RSD	July 1 – September 15 (Flexible on this

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
			pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, creek chub, goldfish, brook stickleback		occupied habitat)	window depending on type of works proposed around this crossing)
Site 18: Tributary of Fourteen Mile Creek 17T 597023 mE 4809502 mN	Cold	Unknown	Rainbow darter, brown bullhead, reside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, eastern blacknose dace, brook stickleback, creek chub, goldfish		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 19: Tributary of Fourteen Mile Creek 17T 597152 mE 4809671 mN	Unknown	Unknown	, v		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 20: Tributary of Fourteen Mile Creek 17T 597329 mE 4809873 mN	Cold	Unknown	Rainbow darter, brown bullhead, reside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, eastern blacknose dace, brook stickleback, creek chub, goldfish		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 21: Tributary of Fourteen Mile Creek 17T 597453 mE 4810057 mN	Unknown	Unknown			Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 22: Fourteen Mile Creek 17T 597646 mE 4810373 mN	Cold	Unknown	Rainbow darter, brown bullhead, reside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, eastern blacknose		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
			dace, brook stickleback, creek chub, goldfish			
Site 23: Tributary of Fourteen Mile Creek 17T 597823 mE 4810750 mN	Cold	Unknown			Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 24: Tributary of Fourteen Mile Creek 17T 597968 mE 4811087 mN	Cold	Unknown	Brook stickleback, common shiner, creek chub, eastern blacknose dace, fantail darter, fathead minnow, goldfish		Moderate (Upstream of RSD recovery habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 25: Tributary of Fourteen Mile Creek 17T 598059 mE 4811423 mN	Cold	Unknown			Moderate (Upstream of RSD recovery habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 26: Tributary of Fourteen Mile Creek 17T 598127 mE 4811681 mN	Unknown	Unknown			Moderate (Upstream of RSD recovery habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 27: Tributary of McCraney Creek 17T 598156 mE 4811846 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow		Low	July 1 – March 31
Site 28: Tributary of Sixteen Mile Creek 17T 598221 mE 4812550 mN	Cool	Unknown			Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 29: Sixteen Mile Creek 17T 598317 mE 4813322 mN	Cool	Unknown	Longnose dace, brown bullhead, rock bass, johnny darter, largemouth bass, brook trout, brown trout, stonecat, rainbow darter, eastern blacknose dace, common shiner, redside dace?, pumpkinseed, common carp, white sucker, smallmouth bass, johnny		High (Silver Shiner occupied)	July 1 – September 15

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
			darter, brassy minnow, emerald shiner, northern hog sucker, spottail shiner, bluntnose minnow, fathead minnow, northern redbelly dace, sea lamprey, river chub, fantail darter, golden redhorse, alewife, brook stickleback, rosyface shiner, golden shiner, creek chubFor other species, see Conservation Halton 2011 Sixteen Mile Creek Supplemental Monitoring Report, 2011.			
Site 30: Tributary of Sixteen Mile Creek 17T 598459 mE 4813745 mN	Cool	Unknown	Same as 29		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 31: Tributary of East Sixteen Mile Creek 17T 599612 mE 4815250 mN	Cool	Unknown	Same as 29		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 32: Tributary of East Sixteen Mile Creek 17T 599711 mE 4815360 mN	Cool	Unknown	Same as 29		Low- Moderate (upstream of occupied	July 1 – September 15

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
					Silver Shiner habitat)	
Site 33: Tributary of East Sixteen Mile Creek 17T 599915 mE 4815508 mN	Cool	Unknown	Same as 29		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 34: Tributary of East Sixteen Mile Creek 17T 600082 mE 4815757 mN	Cool	Unknown	Same as 29		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 35: Tributary of East Sixteen Mile Creek 17T 600355 mE 4816860 mN	Cool	Unknown	Same as 29		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 36: Tributary of Joshua's Creek 17T 601110 mE 4817950 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow, white sucker		Low	July 1 – March 31
Site 37: Tributary of Joshua's Creek 17T 601408 mE 4818313 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 38: Tributary of Joshua's Creek 17T 601518 mE 4818446 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 39: Tributary of Joshua's Creek 17T 601840 mE 4818832 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 40: Tributary of Joshua's Creek 17T 602021 mE 4819053 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 41: Tributary of Joshua's Creek 17T 602432 mE 4819528 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 42: Tributary of East Sixteen Mile Creek 17T 600961 mE 4821785 mN	Warm	Unknown	Fathead minnow, bluntnose minnow, river chub, northern hog sucker common carp, creek chub, smallmouth bass, mimic shiner, common shiner, brown bullhead, yellow bullhead, rock bass, goldfish, emerald shiner, northern pike, fantail darter, brook stickleback, largemouth bass, eastern blacknose dace, johnny darter, golden shiner, rosyface shiner, bluegill, pumpkinseed, black crappie, white sucker		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 43: Tributary of East Sixteen Mile Creek 17T 599490 mE 4823263 mN	Warm	Unknown	Same as 42		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 44: Tributary of East Sixteen Mile Creek 17T 597084 mE 4825561 mN	Warm	Unknown	Same as 42		Low- Moderate (upstream of occupied Silver Shiner	July 1 – March 31

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisherie s manage ment objectiv es, if applica ble	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
					habitat)	
Site 45: Tributary of East Sixteen Mile Creek 17T 595911 mE 4826650 mN	Warm	Unknown	Same as 42		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 46: Tributary of East Sixteen Mile Creek 17T 596064 mE 4827097 mN	Warm	Unknown	Same as 42		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 47: Tributary of East Sixteen Mile Creek 17T 596334 mE 4827475 mN	Warm	Unknown	Same as 42		Low- Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31

NOTE:

- The applicant shall complete the waterbody name and location (column 1) and attach a Google Earth map or MTO project map identifying each waterbody and submit to MNRF.
- MNRF is required as per Step 2 of the Fisheries Protocol to provide the applicant with the information outlined in the table above (columns 2-7) within **30 working days**.

Sowel Kang

From: Heaton, Mark (MNRF) <mark.heaton@ontario.ca>

Sent: August 19, 2019 3:05 PM

To: Judson Venier

Cc: Keen, Ben (MNRF); Sowel Kang

Subject: RE: MNRF Information Request- 407 Transitway Brant Street to Winston Churchill

Boulevard

Attachments: 407 Transitway Hurontario to WC.docx

Hello Judson.

Here you go....fish community table attached.

Natural heritage information is available to NHIC portal. Levi Creek Wetland Complex is in vicinity of 407

Regards

Mark Heaton OMNRF Aurora

From: Judson Venier < jvenier@lgl.ca>
Sent: August 19, 2019 2:17 PM

To: Heaton, Mark (MNRF) < mark.heaton@ontario.ca>

Cc: Keen, Ben (MNRF) <Ben.Keen@ontario.ca>; Sowel Kang <skang@lgl.ca>

Subject: FW: MNRF Information Request- 407 Transitway Brant Street to Winston Churchill Boulevard

Hi Mark,

Please find attached a MNRF Data Request (part of the MTO/DFO/MNRF Fisheries Protocol), the Aurora District Info Request Form and a watercourse/site map for an additional section of the 407 Transitway project from Brant Street to Hurontario Street. As you can see from below, the original project did not include the section east of Winston Churchill to Hurontario, which was added later. For this additional area, a data request was never sent. Hence this request now. It's all in the Credit River watershed, so hopefully it's easy. We need the information you can provide for the fisheries reporting, as per the protocol. The watercourse sensitivity is particularly important.

If you have any questions, please let me know.

Thank, Mark. I hope all is well.

Judson

Judson Venier Senior Fisheries Biologist LGL Limited 22 Fisher Street, P.O. Box 280 King City, ON L7B 1A6 905-833-1244 jvenier@lgl.ca From: stephanie Lillie < StephanieLillie@lgl.ca>

Sent: July-04-17 10:26 AM **To:** esa.aurora@ontario.ca

Cc: Ben.Keen@ontario.ca; Judson Venier < <u>ivenier@lgl.ca</u>>; Sowel Kang < <u>skang@lgl.ca</u>>; <u>holly.kerslake@parsons.com</u>

Subject: MNRF Information Request- 407 Transitway Brant Street to Winston Churchill Boulevard

Hi Ben,

Please see attached, an MNRF Data request (in accordance with the MTO fisheries Protocol), the standard Aurora Distract information request form, and a labelled watercourse figure for the 407 Transitway from Brant Street to Winston Churchill Boulevard located within the Regional Municipalities of Peel and Halton.

Please let myself or Judson Venier (cc'd) know if you have any questions regarding this request.

Thanks, Stephanie

Stephanie Lillie B.Sc.

Fisheries Biologist, LGL Limited 22 Fisher Street, P.O. Box 280 King City, ON L7B 1A6 Tel: (905) 833-1244 E-mail: stephanielillie@lgl.com

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 49: Mullet Creek 17 T 598909 mE 4828150 mN	Warmwater		Warmwater baitfish	See Credit River Fisheries Management Plan for management designations	low	July 1- March 31
Site 50: Levi Creek 17T 600215 mE 4830441 mN	Coolwater		Rainbow and brown trout present	See Credit River Fisheries Management Plan for management designations	moderate	July 1- March 31
Site 51: Credit River 17T 601074 mE 4831651 mN	Coolwater	Spawning habitat present, migratory salmonid corridor	See Credit River Fisheries Management Plan for fish community information	See Credit River Fisheries Management Plan for management designations	high	July 1 to Sept 15
Sites 52-54: Tributary of Credit River 17T 601340 mE 4832061 mN	Warmwater		NA	, and the second	low	July 1- March 31
Site 55: Tributary of Credit River 17T 602127 mE 4832657 mN	Warmwater		NA		low	July 1- March 31
Site 56: Tributary of Fletcher's Creek 17T 602329 mE 4833109 mN	Warmwater		NA		low	July 1- March 31
Site 57: Tributary of Fletcher's Creek 17T 602952 mE 4833539 mN	Warmwater		NA		low	July 1- March 31
Site 58: Fletcher's Creek 17T 603066 mE 4833695 mN	Warmwater	SAR Redside Dace present	See Credit River Fisheries Management Plan for fish community information	See Credit River Fisheries Management Plan for management designations	high	July 1 to Sept 15

Waterbody Name and location (UTM)	and location (UTM) (I.e., passage barriers, known coldwater) spawning habitats etc.)		Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework	In-water timing windows for construction
Site 59: Tributary of Fletcher's Creek 17T 603378 mE 4833736 mN	Warmwater		Large colony of chimney crayfish located downstream (SWH)		moderate	July 1- March 31

Sowel Kang

Subject:

RE: Feedback - MTO 407 Transitway (Brant St. to Hurontario St.) Technical Resource Group Meeting #1

From: Kowalyk, Bohdan (MNRF) < bohdan.kowalyk@ontario.ca >

Sent: November 8, 2018 4:47 PM

To: Kerslake, Holly < Holly. Kerslake@parsons.com>

Cc: DeRose, Graham (MTO) < <u>Graham.DeRose@ontario.ca</u>>; Sarris, Larry (MTO) < <u>Larry.Sarris@ontario.ca</u>>; Bishop, Chris < <u>Chris.Bishop@parsons.com</u>>; Leung, Winnie < <u>Winnie.Leung@parsons.com</u>>; Garron, Gus < <u>Gus.Garron@parsons.com</u>>;

Sowel Kang < skang@lgl.ca >

Subject: RE: Feedback - MTO 407 Transitway (Brant St. to Hurontario St.) Technical Resource Group Meeting #1

Hello Holly,

Here are some initial comments:

- 1. There is habitat of Silver Shiner (threatened) at the proposed crossings of Bronte Creek and Sixteen Mile Creek.
- 2. There is occupied habitat of Redside Dace (endangered) in Fourteen Mile Creek downstream from Tremaine Road. Therefore, in the Tremaine Road vicinity there is some preference for the northwestern alignment option 1 as it may minimize potential impacts on Redside Dace habitat compared to the southeastern alignment option 2.
- 3. There is occupied habitat of Redside Dace in the proposed crossing of Fletcher's Creek and recovery habitat of Redside Dace in the proposed crossing of Levi's Creek, both being tributaries of the Credit River.
- 4. Habitat of American Eel (endangered) may occur in the watercourses mentioned above.
- 5. The proposed route may affect the provincially significant Churchville-Norval Wetland Complex to the northeast of the Credit River.
- 6. There are significant woodlands along the main (Bronte Creek, Sixteen Mile Creek and Credit River) valleys as well as: northwest of Highway 407 between the CNR track and Tremaine Road; southeast of Highway 407 east of Bronte Road (Regional Road 25) at the site of a potential maintenance storage yard; between Bronte Creek and Neyagawa Boulevard; between Sixth Line and Trafalgar Road; east of Trafalgar Road; possibly between Highway 407 and Ninth Line; at the site of the Derry Road Station Option B; and east of Mavis Road.
- 7. All treed areas should be investigated for potential habitat of endangered bats and for the presence of endangered Butternut trees of all sizes, including seedlings.

Endangered and threatened species and their habitats are protected by the *Endangered Species Act*. Appropriate approvals may be required if the work you will be proposing could cause harm to these species and their habitats.

Absence of information provided by MNRF does not categorically mean the absence of sensitive species or features. As you complete fieldwork, please report all information related to natural heritage to our office. This will facilitate consultation regarding your project.

If there are any questions, please let me know.

Regards,

Bohdan Kowalyk, R.P.F.

District Planner, Aurora District, Ontario Ministry of Natural Resources and Forestry 50 Bloomington Road, Aurora, Ontario L4G 0L8

Phone: 905-713-7387; Email: Bohdan.Kowalyk@Ontario.ca

From: Kerslake, Holly [mailto:Holly.Kerslake@parsons.com]

Sent: November-08-18 12:04 PM

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Cc: DeRose, Graham (MTO); Sarris, Larry (MTO); Bishop, Chris; Leung, Winnie; Garron, Gus; Sowel Kang **Subject:** Feedback - MTO 407 Transitway (Brant St. to Hurontario St.) Technical Resource Group Meeting #1

Hello Everyone,

Below is a link to the alignment alternatives shown in the TRG #1 presentation back on September 25th. Please let me know if you have any issues accessing the files.

https://www.dropbox.com/sh/t7qjzd5ljrm9mwf/AAAS4X2PFit8HkWxcfnVCiSOa?dl=0[dropbox.com]

We would appreciate any **comments you have to the TRG presentation by November 14**th. This will allow us to consider your comments for the upcoming PIC's on November 28th and 29th. The type of feedback we are looking for includes any known conflicts with existing municipal infrastructure and planned land use activities that could be impacted by the alternatives presented, municipal benefits of the project as well as any other useful land use/utility information, and any major environmental impact concerns.

Thank-you in advance. Please give myself or anyone from the project team a call if you have any questions or concerns.

APPENDIX G. BREEDING BIRD ATLAS DATA

				Breedi		lence		Point	Counts	
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Canada Goose	FY	CONF	1	3 atlassers	3	5.45	0.1455	1
12	17PJ03	Wood Duck	FY	CONF	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	Gadwall	P	PROB	1	Glenn Coady				
12	17PJ03	Mallard	FY	CONF	1	4 atlassers	3	5.45	0.1273	1
12	17PJ03	Hooded Merganser	Н	POSS	1	Glenn Coady				
12	17PJ03	Common Merganser	Н	POSS	1	Ray Blower				
12	17PJ03	Ring-necked Pheasant	S	POSS	1	Glenn Coady				
12	17PJ03	Green Heron	Т	PROB	1	Jean Iron				
12	17PJ03	Turkey Vulture	Н	POSS	1	Alfred L. Adamo	1	1.82	0.0182	1
12	17PJ03	Northern Harrier	Н	POSS	1	Glenn Coady				
12	17PJ03	Sharp- shinned Hawk	Н	POSS	1	2 atlassers	1	1.82	0.0182	1
12	17PJ03	Cooper's Hawk	FY	CONF	1	Glenn Coady				
12	17PJ03	Red-tailed Hawk	NY	CONF	1	Anthony L Lang	7	12.73	0.1455	1
12	17PJ03	American Kestrel	NY	CONF	1	Roy Smith	5	9.09	0.0909	1
12	17PJ03	Sora	Н	POSS	1	Glenn Coady				
12	17PJ03	Killdeer	DD	CONF	1	2 atlassers	12	21.82	0.2727	1

				Breedi		dence		Point	Counts	
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Rock Pigeon	NY	CONF	1	2 atlassers	18	32.73	0.5636	1
12	17PJ03	Spotted Sandpiper	FY	CONF	1	4 atlassers				
12	17PJ03	American Woodcock	Т	PROB	1	Anthony L Lang				
12	17PJ03	Mourning Dove	AE	CONF	1	Glenn Coady	21	38.18	0.6182	1
12	17PJ03	Yellow-billed Cuckoo	S	POSS	1	2 atlassers				
12	17PJ03	Black-billed Cuckoo	CF	CONF	1	Glenn Coady				
12	17PJ03	Eastern Screech-Owl	Т	PROB	1	Glenn Coady				
12	17РЈ03	Great Horned Owl	AE	CONF	1	Anthony L Lang	1	1.82	0.0182	1
12	17РЈ03	Common Nighthawk	Н	POSS	1	Alfred L. Adamo				
12	17PJ03	Chimney Swift	AE	CONF	1	Glenn Coady	1	1.82	0.1455	1
12	17PJ03	Ruby- throated Hummingbird	Н	POSS	1	Glenn Coady				
12	17PJ03	Belted Kingfisher	FY	CONF	1	Anthony L Lang				
12	17PJ03	Yellow- bellied Sapsucker	Н	POSS	1	Glenn Coady				

				Breedi		lence		Point	Counts	Point Counts			
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq			
12	17PJ03	Downy Woodpecker	NY	CONF	1	Howard Shapiro	3	5.45	0.0727	1			
12	17РЈ03	Hairy Woodpecker	AE	CONF	1	Glenn Coady							
12	17PJ03	Northern Flicker	AE	CONF	1	Glenn Coady	5	9.09	0.0909	1			
12	17PJ03	Pileated Woodpecker	FY	CONF	1	Glenn Coady	1	1.82	0.0182	1			
12	17PJ03	Eastern Wood-Pewee	CF	CONF	1	Glenn Coady	5	9.09	0.0909	1			
12	17PJ03	Alder Flycatcher	S	POSS	1	Glenn Coady							
12	17PJ03	Willow Flycatcher	AE	CONF	1	Howard Shapiro	1	1.82	0.0182	1			
12	17PJ03	Least Flycatcher	S	POSS	1	Glenn Coady	1	1.82	0.0182	1			
12	17РЈ03	Eastern Phoebe	NY	CONF	1	2 atlassers							
12	17PJ03	Great Crested Flycatcher	CF	CONF	1	Glenn Coady	4	7.27	0.0727	1			
12	17PJ03	Eastern Kingbird	CF	CONF	1	3 atlassers	12	21.82	0.2545	1			
12	17PJ03	Warbling Vireo	CF	CONF	1	Howard Shapiro	6	10.91	0.1091	1			
12	17PJ03	Red-eyed Vireo	CF	CONF	1	Glenn Coady	7	12.73	0.1636	1			

				Breedi		dence		Point	Counts	Point Counts				
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq				
12	17PJ03	Blue Jay	CF	CONF	1	Howard Shapiro	8	14.55	0.2909	1				
12	17PJ03	American Crow	CF	CONF	1	Glenn Coady	13	23.64	0.4182	1				
12	17PJ03	Horned Lark	FY	CONF	1	2 atlassers								
12	17PJ03	Purple Martin	P	PROB	1	Luke Fazio								
12	17PJ03	Tree Swallow	FY	CONF	1	Luke Fazio								
12	17PJ03	Northern Rough- winged Swallow	FY	CONF	1	2 atlassers								
12	17PJ03	Bank Swallow	Н	POSS	1	Jean Iron								
12	17PJ03	Cliff Swallow	NY	CONF	1	3 atlassers	3	5.45	0.0727	1				
12	17PJ03	Barn Swallow	CF	CONF	1	Howard Shapiro	2	3.64	0.0545	1				
12	17PJ03	Black-capped Chickadee	CF	CONF	1	Howard Shapiro	7	12.73	0.1273	1				
12	17PJ03	Red-breasted Nuthatch	FY	CONF	1	Glenn Coady								
12	17PJ03	White- breasted Nuthatch	FY	CONF	1	Anthony L Lang	2	3.64	0.0364	1				
12	17PJ03	House Wren	AE	CONF	1	Glenn Coady	6	10.91	0.1091	1				
12	17PJ03	Winter Wren	Т	PROB	1	Alfred L. Adamo								

APPENDIX G.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12

				Breedi	ng Evic	lence		Point	Counts	
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Blue-gray Gnatcatcher	FY	CONF	1	Glenn Coady				
12	17PJ03	Veery	S	POSS	1	Glenn Coady				
12	17PJ03	Wood Thrush	CF	CONF	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	American Robin	NY	CONF	1	Howard Shapiro	37	67.27	1.1818	1
12	17PJ03	Gray Catbird	CF	CONF	1	Glenn Coady	4	7.27	0.0727	1
12	17PJ03	Northern Mockingbird	NY	CONF	1	2 atlassers	3	5.45	0.0545	1
12	17PJ03	Brown Thrasher	FY	CONF	1	Jean Iron				
12	17PJ03	European Starling	NY	CONF	1	Howard Shapiro	42	76.36	3.0909	1
12	17PJ03	Cedar Waxwing	FY	CONF	1	Glenn Coady	2	3.64	0.1455	1
12	17PJ03	Yellow Warbler	CF	CONF	1	Howard Shapiro	5	9.09	0.0909	1
12	17РЈ03	Chestnut- sided Warbler	S	POSS	1	Glenn Coady				
12	17PJ03	American Redstart	S	POSS	1	Glenn Coady				
12	17PJ03	Mourning Warbler	Т	PROB	1	2 atlassers	1	1.82	0.0182	1
12	17PJ03	Common Yellowthroat	Т	PROB	1	2 atlassers				
12	17PJ03	Chipping Sparrow	FY	CONF	1	Glenn Coady	14	25.45	0.2909	1

APPENDIX G.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12

			<u> </u>	Breedi		dence		Point	Counts	
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Field Sparrow	FY	CONF	1	Luke Fazio				
12	17PJ03	Vesper Sparrow	Т	PROB	1	Jean Iron				
12	17PJ03	Savannah Sparrow	CF	CONF	1	2 atlassers	5	9.09	0.1091	1
12	17PJ03	Song Sparrow	CF	CONF	1	3 atlassers	29	52.73	0.6364	1
12	17PJ03	Swamp Sparrow	Т	PROB	1	Jean Iron				
12	17PJ03	White- throated Sparrow	S	POSS	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	Northern Cardinal	CF	CONF	1	2 atlassers	19	34.55	0.4182	1
12	17PJ03	Rose-breasted Grosbeak	CF	CONF	1	Glenn Coady	2	3.64	0.0364	1
12	17PJ03	Indigo Bunting	CF	CONF	1	Glenn Coady	3	5.45	0.0545	1
12	17PJ03	Bobolink	CF	CONF	1	Anthony L Lang				
12	17PJ03	Red-winged Blackbird	NE	CONF	1	Glenn Coady	28	50.91	1	1
12	17PJ03	Eastern Meadowlark	CF	CONF	1	2 atlassers	2	3.64	0.0364	1
12	17PJ03	Common Grackle	CF	CONF	1	2 atlassers	32	58.18	0.9636	1
12	17PJ03	Brown- headed Cowbird	NE	CONF	1	Winnie Poon	11	20	0.3273	1
12	17PJ03	Orchard Oriole	CF	CONF	1	Anthony L Lang	1	1.82	0.0182	1

APPENDIX G.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12

				Breedi	ng Evid	Point Counts				
Region	Square	Species	Max BE	Category	#Sq	Atlasser Name	#PC %PC		Abun	#Sq
12	17PJ03	Baltimore Oriole	CF	CONF	1	2 atlassers	12	21.82	0.2727	1
12	17PJ03	House Finch	NE	CONF	1	Roy Smith	11	20	0.2545	1
12	17PJ03	American Goldfinch	NE	CONF	1	Howard Shapiro	20	36.36	0.4727	1
12	17PJ03	House Sparrow	CF	CONF	1	Howard Shapiro	33	60	2.2182	1

APPENDIX H.

Breeding Bird Species Documented in the Study Area by LGL

Scientific Name	Common Name	SARA ¹	ESA ¹	Legal Status¹	Other ¹	BBE	Station # ³
Buteo jamaicensis	Red-tailed Hawk			FWCA(P)		Н	4-2018, 8-2018, 17-2018, 13-2019
Maleagris gallopavo	Wild Turkey			FWCA(G)		T	1-2019, 2-2019
Ardea herodias	Great Blue Heron			MBCA		T	11-2018, 12-2018, 14-2018, 17-2018, 18-2018, 9-2019
Charadrius vociferus	Killdeer			MBCA		A	4-2018, 5-2018, 7-2018, 15-2018, 19-2018, 1- 2019
Anas platyrhynchos	Mallard			MBCA		FY	20-2019, 31-2019, 34-2019, 40-2019
Aix sponsa	Wood Duck			MBCA		FY	25-2019
Actitis macularius	Spotted Sandpiper			MBCA		T, A	8-2018, 11-2018, 1-2019
Columba livia	Rock Dove			-		NE	1-2018, 4-2018, 7-2018
Picoides pubescens	Downy Woodpecker			MBCA		S	18-2018
Colaptes auratus	Northern Flicker			MBCA		Н	1-2019
Dryocopus pileatus	Pileated Woodpecker			MBCA		Н	9-2019
Contopus virens	Eastern Wood Pewee	-	SC	MBCA		Т	9-2019, 5-2019, 8-2019, 10-2019, 17-2019, 19-2019, 21-2019, 36-2019
Empidonax traillii	Willow Flycatcher			MBCA		Т	3-2019, 4-2019, 25-2019, 35-2019, 36-2019, 35-2019. 37-2019, 40-2019
Empidonax minimus	Least Flycatcher			MBCA		S	15-2018, 16-2018
Sayornis phoebe	Eastern Phoebe			MBCA		T	10-2019, 40-2019
Myiarchus crinitus	Great-crested Flycatcher			MBCA		T	2-2019, 5-2019, 9-2019, 10-2019, 13-2019, 19-2019, 26-2019, 36-2019
Tyrannus tyrannus	Eastern Kingbird			MBCA		CF	15-2018, 3-2019, 12-2019, 27-2019, 40-2019,
Vireo gilvus	Warbling Vireo			MBCA		T	4-2018, 1-2019, 2-2019, 5-2019, 10-2019, 18- 2019, 36-2019
Cyanocitta cristata	Blue Jay			FWCA (P)		Т	1-2018, 2-2018, 1-2019, 2-2019, 5-2019,9- 2019, 18-2019, 36-2019
Eremophila alpestris	Horned Lark			MBCA		S	25-2019
Tachycineta bicolor	Tree Swallow			MBCA		T	1-2019, 2-2019, 7-2019, 8-2019, 18-2019, 40- 2019
Petrochelidon pyrrhonota	Cliff Swallow			MBCA		NE	5-2018, 8-2018, 12-2018, 13-2018, 13-2018, 14-2018, 15-2018, 16-2018, 17-2018, 20-2018, 10-2019, 30-2019, 31-2019, 32-2019, 33-2019, 35-2019, 40-2019

Scientific Name	Common Name	SARA ¹	ESA ¹	Legal Status¹	Other ¹	BBE	Station # ³
Stelgidoptery x serripennis	Northern Rough-winged Swallow			MBCA		T	5-2018, 8-2018, 10-2019, 12-2019, 30-2019, 31-2019, 33-2019, 35-2019
Hirundo rustica	Barn Swallow	-	THR	MBCA		NY	5-2018, 6-2018, 7-2018, 10-2018, 11-2018, 13-2018, 16-2018, 17-2018, 18-2018, 19-2018, 1-2019, 2-2019, 8-2019, 14-2019, 15-2019, 23-2019, 25-2019, 30-2019, 30-2019, 31-2019, 33-2019, 34-2019, 35-2019, 40-2019
Poecile atricapillus	Black-capped Chickadee			MBCA		Т	1-2018, 2-2018, 10-2018, 1-2019, 2-2019, 5- 2019, 9-2019, 10-2019, 11-2019, 18-2019, 20- 2019, 23-2019, 36-2019
Turdus migratorius	American Robin			MBCA		CF	1-2018, 2-2018, 3-2018, 4-2018, 10-2018, 12- 2018, 1-2019
Dumetella carolinensis	Gray Catbird			MBCA		T, A	2-2018, 1-2019, 3-2019, 13-2019, 21-2019, 22-2019, 27-2019, 33-2019, 35-2019, 37-2019, 40-2019
Sturnus vulgaris	European Starling			-		NY	1-2018, 3-2018, 4-2018, 5-2018, 7-2018, 9- 2018, 10-2018, 12-2018, 14-2018, 15-2018, 16-2018, 19-2018, 1-2019, 2-2019, 8-2019, 14-2019, 15-2019, 23-2019, 25-2019, 30-2019, 30-2019, 31-2019, 33-2019, 34-2019, 35-2019, 40-2019
Troglodytes aedon	House Wren			MBCA		CF	2-2018, 1-2019, 8-2019, 10-2019, 34-2019, 35-2019, 36-2019, 40-2019
Bombycilla garrulus	Cedar Waxwing			MBCA		Т	10-2018, 12-2018, 13-2018, 15-2018, 18-2018, 1-2019, 2-2019, 5-2019, 9-2019, 10-2019, 11-2019, 18-2019, 20-2019, 23-2019, 36-2019
Dendroica petechia	Yellow Warbler			MBCA		CF	5-2018, 1-2019, 3-2019, 4-2019, 13-2019, 15- 2019, 20-2019, 29-2019, 31-2019, 33-2019, 34-2019, 35-2019, 36-2019, 40-2019, 41-2019, 44-2019
Geothlypis philadelphia	Mourning Warbler			MBCA		S	8-2019
Geothlypis trichas	Common Yellowthroat			MBCA		T, A	5-2018, 1-2019, 4-2019, 13-2019, 15-2019, 20-2019, 29-2019, 31-2019, 33-2019, 34-2019, 35-2019, 36-2019, 40-2019, 41-2019, 42-2019, 44-2019
Pipilo erythrophthalmus	Eastern Towhee			MBCA		S	2-2019
Melospica melodia	Song Sparrow			MBCA		T, A	2-2018, 3-2018, 4-2018, 8-2018, 9-2018, 10-

Scientific Name	Common Name	SARA ¹	ESA ¹	Legal Status¹	Other ¹	BBE	Station # ³
							2018, 11-2018, 12-2018, 14-2018, 15-2018, 16-2018, 17-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 6-2019, 7-2019, 8, 2019, 11-2019, 12-2019, 13-2019, 14-2019, 15-2019, 16-2019, 20-2019, 22-2019, 23-2019, 24-2019, 25-2019, 27-2019, 28-2019, 30-2019, 32-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 40-2019, 41-2019, 43-2019
Passerculus sanwichensis	Savannah Sparrow			MBCA		T, A	2-2018, 9-2018, 10-2018, 11-2018, 12-2018, 14-2018, 15-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 8, 2019, 11-2019, 12-2019, 13-2019, 14-2019, 15-2019, 122-2019, 23-2019, 24-2019, 27-2019, 28-2019, 30-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 41-2019, 43-2019
Passer domesticus	House Sparrow			-		T	1-2018, 7-2019, 23-2019, 27-2019
Spizella passerina	Chipping Sparrow			MBCA		T	7-2018, 9-2018, 10-2018, 13-2018, 15-2018, 1-2019, 23-2019, 27-2019, 34-2019, 35-2019
Melospiza georgiana	Swamp Sparrow			MBCA		S	10-2018
Cardinalis cardinalis	Northern Cardinal			MBCA		T	1-2018, 1-2019, 2-2019, 23-2019, 34-2019
Passerina cyanea	Indigo Bunting			MBCA		T	5-2019, 8-2019, 10-2019, 17-2019, 36-2019
Dolichonyx oryzivorus	Bobolink	-	THR	MBCA		S	5-2018, 34-2019
Agelaius phoeniceus	Red-winged Blackbird			-		T, A	1-2018, 2-2018, 3-2018, 4-2018, 8-2018, 9-2018, 10-2018, 11-2018, 12-2018, 14-2018, 15-2018, 16-2018, 17-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 6-2019, 7-2019, 8-2019, 11-2019, 12-2019, 13-2019, 14-2019, 15-2019, 16-2019, 20-2019, 22-2019, 23-2019, 24-2019, 25-2019, 27-2019, 28-2019, 30-2019, 32-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 40-2019, 41-2019, 43-2019
Sturnella magna	Eastern Meadowlark	-	THR	MBCA		T	5-2018, 2019-7, 33-2019
Quiscalus quiscula	Common Grackle			-		T	2-2018, 4-2018, 8-2018, 11-2018, 12-2018, 14-2018, 15-2018, 17-2018, 10-2019, 14-2019, 25-2019, 30-2019, 32-2019, 36-2019, 41-2019

Scientific Name	Common Name	SARA ¹	ESA ¹	Legal Status¹	Other ¹	BBE	Station # ³
Molothrus ater	Brown-headed Cowbird			-		Т	2-2018, 8-2018, 11-2018, 12-2018, 14-2018, 10-2019, 30-2019, 32-2019, 41-2019
Icterus galbula	Baltimore Oriole			MBCA		S	2-2019, 8-2019, 23-2019
Carduelis tristis	American Goldfinch			MBCA		CF	2-2018, 3-2018, 9-2018, 10-2018, 11-2018, 12-2018, 14-2018, 15-2018, 16-2018, 17-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 6-2019, 7-2019, 11-2019, 12-2019, 13-2019, 14-2019, 20-2019, 22-2019, 23-2019, 24-2019, 25-2019, 27-2019, 28-2019, 30-2019, 32-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 40-2019, 41-2019, 43-2019

¹For definitions of species ranks, refer to **Appendix C**.

²BBE - Breeding Bird Evidence (according to Bird Studies Canada):

Possible Breeding: H - Species observed in its breeding season in suitable nesting habitat.

S - Singing male present in its breeding season in suitable nesting habitat.

Probable Breeding:

T - Permanent territory presumed through registration of territorial song on at least two days, a week or so apart, at the same place.

A - Agitated behaviour or anxiety calls of an adult.

Confirmed Breeding:

NU - Used nest or egg shell found (occupied or laid within the period of study).

FY - Recently fledged young or downy young, including young incapable of sustained flight.

CF - Adult carrying food for young.

NE - Nest containing eggs. NY - Nest with young seen or heard.

³Bredding Bird Point Count Station.