The Corporation of the City of Mississauga

Natural Environment Assessment

Burnhamthorpe Road West Improvements

Municipal Class Environmental Assessment

Project No. B000856

16, July, 2018

SUBMITTED BY CIMA CANADA INC.
55 King Street East
Bowmanville, ON L1C 1N4
T 905 697 4464 **F** 905 697 0443
cima.ca

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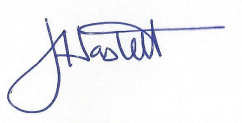
PREPARED BY:

Lauren Cymbaly, M.E.S.
Environmental Professional

VERIFIED BY:



Jennifer Haslett
Senior Project Manager, Environment

CIMA+
55 King Street East
Bowmanville, Ontario L1C 1N4

16, July, 2018

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Abbreviations

ANSI	Area of Natural and Scientific Interest
CVC	Credit Valley Conservation
DA	Designated Area
DFO	Department of Fisheries and Oceans / Fisheries and Oceans Canada
EA	Environmental Assessment
EA Act	Environmental Assessment Act, R.S.O. 1998, c. EAST 18
ELC	Ecological Land Classification (Lee et al., 1998, as amended)
ESA	Endangered Species Act, 2007, S.O. 2007, c. 6
ESCP	Erosion and Sediment Control Plan
GIS	Geographic Information System
LIO	Land Information Ontario
mamsl	Metres above mean sea level
mbgs	Metres below ground surface
MCEA	Municipal Class Environmental Assessment
MEGM3	ELC Ecosite Code : Dry-Fresh Graminoid Meadow Ecosite
MEGM4-1	ELC Ecosite Code : Fresh-Moist Graminoid Ecosite
MEMM4	ELC Ecosite Code : Fresh-Moist Mixed Meadow Ecosite
MNRF	Ministry of Natural Resources and Forestry
MOECP	Ministry of Environment, Conservation and Parks
OBBA	Ontario Breeding Bird Atlas
OP	Official Plan
PPS	Provincial Policy Statement, 2014
PSW	Provincially Significant Wetland
ROW	Right of Way
SAR	Species at Risk
SARA	Species at Risk Act, S.C. 2002, c. 29
SWH	Significant Wildlife Habitat (as defined by MNRF criteria)

1. Introduction and Study Area

CIMA Canada Inc. (CIMA+) has been retained by the City of Mississauga (the City) to undertake a Schedule 'C' Municipal Class Environmental Assessment (MCEA) to review the existing and future transportation needs of the Burnhamthorpe Road West corridor, assess alternatives and identify the preferred corridor improvements (the "Project"). The Project is focused on improvement options to Burnhamthorpe Road West from the west city limit at Ninth Line to Loyalist Drive, including intersections and approaches (Study Area). Refer to Figure 1 Study Area Map for details.

A Natural Environment Assessment is required to document existing conditions, assess potential impacts to any natural heritage features present within the Study Area and provide recommendations and supporting documentation for the MCEA.

Available existing natural heritage data relevant to the Study Area was reviewed and included in the assessment. These data sets include:

- Aerial imagery (current and historic)
- Surficial geology mapping (Ontario Geological Survey)
- Prior site investigations and reports conducted in relation to the proposed project
- Data published through wildlife atlases
- Environment mapping in the Official Plans of the City of Mississauga and Region of Peel
- Fish and wildlife data records from the Land Information Ontario (LIO) Natural Heritage Areas database
- Natural heritage features identified through LIO
- Data sets provided by Credit Valley Conservation (CVC), Conservation Halton, and the Ministry of Natural Resources and Forestry (MNRF)

LEGEND

- WATERCOURSE
- WOODED AREA
- WETLAND
- STUDY AREA

DATA SOURCES:

WOODED AREA, WATERBODY, WATERCOURSE, RAILWAY & ROAD NETWORK INFORMATION OBTAINED FROM LAND INFORMATION ONTARIO AND LICENSED UNDER THE OPEN GOVERNMENT LICENSE - ONTARIO

CIMA+

CLIENT

MISSISSAUGA

PROJECT NAME:

NATURAL ENVIRONMENT ASSESSMENT
BURNHAMTHORPE ROAD EA

SHEET TITLE:

STUDY AREA MAP

SCALE:

50 25 0 50 100 150 200

meters

1:6,000

PROJECT No: B000856		CLIENT FILE No: ---
DRAFTER: S. ELLIOTT	DESIGNER ---	DRAWING No: **FIG. 1**
APPROVER L. CYMBALY	APPROVER ---	
DATE: 6/6/2018		SHEET No: 1 of 1

2. Previous Site Documentation

CIMA+ reviewed relevant and available technical studies completed within or directly adjacent to the Study Area. Table 1 summarizes the documents reviewed:

Table 1. Summary of Relevant Studies Reviewed

Document Title	Document Type	Date
Tree Inventory and Assessment Drawings (CIMA+)	Technical Letter Report	June, 2018
Draft Phase I Environmental Site Assessment (Thurber Engineering Ltd.)	Technical Report	April, 2018

Pertinent information from the studies listed in Table 1 was included in the assessment.

3. Landscape Features and Designations

Available background information was reviewed to evaluate the landscape context for the Study Area and identify natural heritage features that require further site-specific assessment. The findings are summarized in the following sections.

3.1 Ecoregion

The Study Area is located within Ecoregion 7E (Lake Erie-Lake Ontario) and is part of the Deciduous Forest Region characterized by diverse vegetation. Approximately 78% of the ecoregion has been converted for agricultural purposes (cropland and pasture), and more than 7% of the remaining lands have been developed for urban settlement and road networks. Of the remaining forest remnants, dense deciduous forest covers 10.3%, sparse deciduous forest covers 1.0%, and mixed deciduous forest covers 0.8% of the ecoregion (Crins et al., 2009).

3.2 Soils and Physiography

Ecoregion 7E is underlain by Silurian and Devonian limestone bedrock. The Study Area is located on till moraine landforms (Halton Till) whereby surficial deposits mainly consist of silt to silty clay till derived from glaciolacustrine deposits. According to the soil stratigraphy presented in well records (MOECP public records), the overburden mainly consists of clay, silt and boulders.

3.3 Topography

Local topography of lands within the Study Area are characterized by a general slope in an easterly direction with an approximate 11 m change in elevation along the road; ranging from 187 masl to 176 masl (Land Information Ontario, 2018). Local site topography includes shallow drainage swales on both the north and south sides of Burnhamthorpe Road east of Ridgeway

Drive and steeper gradients adjacent to the commercial industrial complex on the south side of Burnhamthorpe Road West and leading to the bridge crossing Highway 403.

3.4 Watershed and Watercourses

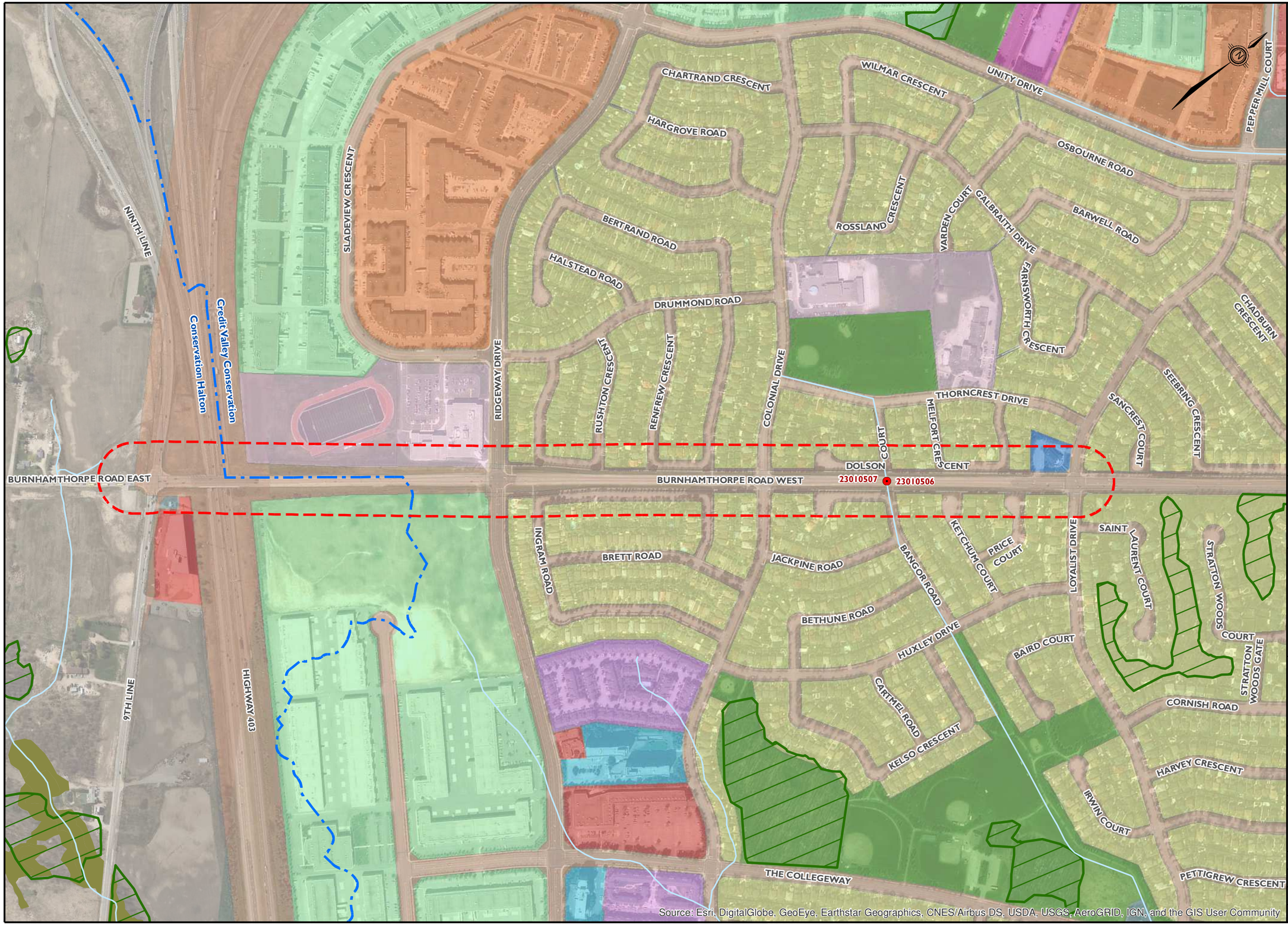
The Study Area is located within the Loyalist Creek subwatershed under the administrative jurisdiction of Credit Valley Conservation (CVC). CIMA+ reviewed provincial, and municipal GIS databases and maps (LIO, OP schedules, etc.), and consulted with the CVC to obtain GIS data records for any tributaries crossing the Study Area.

CVC records indicated the presence of a historic tributary crossing Burnhamthorpe Road West located approximately 202 m east of Colonial Drive (at Dolson Court/Bangor Road) which was dry in both 1954 and 1965 (see records of correspondence located in Appendix A for details). No other records of watercourses were identified in the Study Area.

3.5 Surrounding Land Cover

The Study Area is located in an urban environment predominantly developed with low density residential subdivisions and associated cultural landscape features and streetscaping features present both north and south of Burnhamthorpe Road West east of Ridgeway Drive and institutional, commercial/industrial developments to the west.

Specifically, the City of Mississauga has designated lands between Ridgeway Drive and Loyalist Drive as Residential Low Density II. Lands between Ridgeway Drive and Ninth Line are designated as Business Employment. Newly developed commercial/industrial plazas and facilities are present on lands south of Burnhamthorpe Road West, while a secondary school and associated sports fields are present on the north side, followed by additional instustrial and commercial developments between Ridgeway Drive and Highway 403. Undeveloped lands are present on the north side of Burnhamthorpe Road West between Ninth Line and Highway 403. Lands west of Ninth Line include active agricultural croplands north of Burnhamthorpe Road East and predominantly undeveloped lands to the south. See Figure 2. Existing Land Use Map for details.



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

LEGEND

EXISTING LAND USE (2018)

- COMMUNITY/CULTURAL
- GENERAL RETAIL COMMERCIAL
- INDUSTRIAL GENERAL
- INDUSTRIAL AND COMMERCIAL MULTIPLES
- OPEN SPACE/GREENLANDS
- PLACE OF RELIGIOUS
- RESIDENTIAL
- RESIDENTIAL DETACHED
- RESIDENTIAL TOWNHOUSES
- SCHOOL
- TRANSPORTATION RIGHT-OF-WAY
- UTILITY/PUBLIC WORK
- VACANT

OTHER FEATURES

- CREDIT VALLEY CONSERVATION FISH SAMPLING LOCATION
- WATERCOURSE (CREDIT VALLEY CONSERVATION DATA)
- CREDIT VALLEY CONSERVATION / HALTON CONSERVATION AUTHORITY JURISDICTION BOUNDARY
- WOODED AREA
- WETLAND
- STUDY AREA

DATA SOURCES:

WOODED AREA, WATERBODY, WATERCOURSE, RAILWAY & ROAD NETWORK INFORMATION OBTAINED FROM LAND INFORMATION ONTARIO AND LICENSED UNDER THE OPEN GOVERNMENT LICENSE - ONTARIO

CIMA+

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MISSISSAUGA

PROJECT NAME:

NATURAL ENVIRONMENT ASSESSMENT BURNHAMTHORPE ROAD EA

SHEET TITLE:

EXISTING LAND USE MAP

SCALE:

50 25 0 50 100 150 200

meters

1:6,000

PROJECT No: B000856		CLIENT FILE No: ---	
DRAFTER: S. ELLIOTT	DESIGNER ---	DRAWING No:	**FIG. 2**
APPROVER L. CYMBALY	APPROVER ---		
DATE: 6/6/2018		SHEET No: 1 of 1	

3.6 Provincially Designated Areas

Reviews of the MNRF natural heritage / resources maps obtained through the LIO database were completed to identify the presence or absence of any provincially Designated Areas (DAs). Provincial DAs include significant natural heritage features covered under the Provincial Policy Statement (2014).

CIMA+ also sent out a formal information request to the MNRF to confirm the presence or absence of provincial DAs in the Study Area and obtain additional information on restricted Species at Risk (SAR) records, fisheries records, or other data on file concerning lands and watercourses within the Study Area (see Appendix A - Records of Correspondence for details). Pertinent information has been incorporated throughout the report.

AREAS OF NATURAL AND SCIENTIFIC INTEREST (ANSI)

No ANSIs are present within or directly adjacent to the Study Area. The nearest ANSI is the Trafalgar Moraine Earth Science ANSI located greater than 8 km southwest of the Study Area.

SIGNIFICANT WILDLIFE HABITAT (SWH)

Records of a Wildlife Concentration Area is present within the Study Area (NHIC Data Grid ID 1007273). This record noted the last observation date to be April 2, 1963 and was identified as a Mixed Wader Nesting Colony observation.

No other SWH records were identified through agency correspondence or the background review. See Section 6.1 for further discussion regarding SWH based on the results of the field assessment.

PROVINCIALLY SIGNIFICANT WETLANDS (PSW)

No PSWs are present within the Study Area. The nearest PSW is the North Oakville-Milton East Wetland Complex located on the west side of Highway 403 and greater than 220 m south of the Study Area.

SPECIES AT RISK (SAR)

The MNRF identified that SAR are known to be present in the general vicinity of the Study Area. Further investigation was included in the assessment.

3.7 Locally Designated Areas

Local DAs include additional natural heritage features or areas identified for conservation or recreational value such as Environmental Sensitive Landscapes or Areas (ESAs, ESLs), significant woodlands, or locally significant wetlands as outlined and described in regional official plans and municipal official plans.

Reviews the Region of Peel's OP Schedule A – Core Areas of the Greenlands System in Peel (last updated, November 2013) did not identify the presence of any designated areas within the Study Area.

Reviews of Mississauga's OP schedules including Schedule 1a – Urban System – Green System (V – 17,004), Schedule 3 – Natural System (V – 13.002) and Schedule 4 – Parks and Open Spaces has identified the presence of a greenspace associated with the *Educational Facilities* designation. No other elements of the Green System or Natural Heritage System are present within the Study Area.

3.8 Conservation Authority Designated Areas

The Study Area crosses two conservation authority districts; Credit Valley Conservation (CVC) and Conservation Halton. The district boundaries are depicted in Figures 2 and 3. A portion of a tributary regulated by Conservation Halton is hydraulically connected to the North Oakville-Milton East Wetland Complex west of Ninth Line. These features are generally outside of the Study Area limits. Road improvements are not proposed west of the Ninth Line. No CVC regulated features are present within the Study Area.

4. Legislative and Policy Context

The type of work proposed combined with the results of the background review determines the legislation and policy context for the Natural Environment Assessment. Accordingly, the following sections outline the regulatory framework that applies to the Study Area.

4.1 Federal Legislation

4.1.1 Fisheries Act

The Fisheries Act (R.S.C. 1985, CF-14 as amended April 5, 2016) is administered by Fisheries and Oceans Canada (previously, the Department of Fisheries and Oceans – DFO), and is intended to manage threats to the sustainability and ongoing productivity of Canada's fisheries. Section 35 of the Act prohibits the carrying on of a work, undertaking or activity that results in serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Serious harm to fish is defined as the death of fish or the permanent alteration to, or destruction of, fish habitat.

Fish habitat is defined as spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly to carry out their life processes.

+ CVC records indicated the presence of a tributary crossing Burnhamthorpe Road West located approximately 202m east of Colonial Drive. Furthermore, Conservation Halton mapping identified two connecting tributaries just west of the Study Area, which drain to the North Oakville-Milton East Provincially Significant Wetland Complex located approximately 220 m south of the Study Area.
+ The provisions of this Act, including authorization from Fisheries and Oceans Canada, would only apply if the results of the field investigations identify features meeting the definition of fish habitat.

4.1.2 Migratory Birds Convention Act

The Migratory Birds Convention Act (S.C. 1994, c.22) regulates the protection and conservation of migratory birds as populations and individuals, and also protects their nests. The Act applies to any areas that provide potential for nesting habitat of migratory birds.

Section 6 of the Migratory Bird Regulations made under the Act states that no person shall disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird except under authority of a permit.

+ Portions of the Study Area may provide nesting opportunities for migratory birds; therefore, the provisions of this Act apply.

4.2 Provincial Legislation

4.2.1 Environmental Assessment Act

The Environmental Assessment Act (R.S.O. 1990, c.E-18) provides a mechanism for review and assessment of potential environmental impacts of public sector projects. The Act applies to any plan, project or activity carried out by, or on behalf of, a public body.

Under the Act, “environment” is comprised of natural, social, cultural, and economic components.

+ A Natural Environment Assessment is required to define and assess impact on the natural component of the environment.

4.2.2 Endangered Species Act

The Endangered Species Act (S.O. 2007, c.6) prohibits any person from killing or damaging the habitat of species that are listed on the Species at Risk in Ontario list. Under O.Reg. 242/08 of the Act, there are a number of exemptions related to particular species and activities. If a

proposed undertaking is covered under one of the exemptions, a streamlined notification process applies. If none of the exemptions apply, a permit under section 17(1) of the Act is required.

+ The MNRF identified potential for SAR in the Study Area; therefore, the provisions of this Act apply.

4.2.3 Conservation Authorities Act

The Conservation Authorities Act (R.S.O. 1990, c. C.27) was enacted to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario. Under the Section 21 of the Act, Conservation Authorities have the power to study and investigate the watersheds of their jurisdictions and to determine programs whereby the natural resources of the watershed may be conserved, restored, developed and managed.

+ The Study Area is within the jurisdictions of Credit Valley Conservation (CVC) and Conservation Halton; therefore, Section 21 of the Act applies.

The Act also states that Conservation Authorities have the power to develop watershed management plans, work with private landowners for conservation projects, implement flood control measures, own and operate Conservation Areas, and create regulations pertaining to water bodies and flooding.

+ Based on regulation mapping and direct correspondence with CVC and Conservation Halton, the Project is not located within areas currently regulated by either conservation authority. As such, the provisions set out by Ontario Regulation (O. Reg.) 160/06 and O. Reg. 162/06 do not apply to the Project.

4.2.4 Provincial Policy Statement

The Provincial Policy Statement (PPS) 2014 was issued under Section 3 of the Planning Act (R.S.O. 1990, as amended May 30, 2017). The PPS is applicable province-wide to all planning decisions made on or after April 30th, 2014, and replaces the PPS 2005.

The Study Area is located in Ecoregion 7E, and there is potential for presence of features of provincial significance. The following policies are relevant to the Study Area:

2.1.5 Development and site alteration shall not be permitted in:

a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E

b) significant woodlands in Ecoregions 6E and 7E
c) significant valley lands in Ecoregions 6E and 7E
d) significant wildlife habitat
e) significant areas of natural and scientific interest
f) coastal wetlands in Ecoregions 5E, 6E and 7E that are not subject to policy 2.1.4 (b)

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species except in accordance with provincial and federal requirements

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, 2.1.6 and 2.1.7, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on the ecological functions

The Ontario Natural Heritage Reference Manual for the Provincial Policy Statement defines adjacent lands as:

- 120 m from provincially significant wetlands
- 50 m from significant woodlands, significant valley lands, significant wildlife habitat, significant portions of habitat for threatened or endangered species, significant ANSIs
- 30 m from fish habitat

+ The results of the background review did not identify the presence of any previously recognized provincial DAs within the Study Area.
+ A Natural Environment Assessment is required to assess the presence and potential impact to any features within the Study Area, which are covered under the PPS but have not been previously identified (E.g. significant wildlife habitat, habitats of endangered or threatened species, fish habitat, etc.).

4.3 Local Policies

4.3.1 Region of Peel Official Plan

There are no elements of the Region's Greenlands System in th Study Area, however, a review of area municipal OPs and associated schedules, is required to address the natural heritage policies set out in the Region of Peel's OP.

4.3.2 City of Mississauga Official Plan

The City of Mississauga's Green System is composed of: (1) the Natural Heritage System, (2) The Urban Forest, (3) Natural Hazard Lands, and (4) Parks and Open Spaces.

The City's Natural Heritage System is composed of: Significant Natural Areas; Natural Green Spaces; Special Management Areas; Residential Woodlands; and Linkages. The policies set out in Section 6.3 aim to protect and enhance the City's Green System.

Under Section 6.3.7, buffer and enhancement opportunities are to be identified through the completion of an Environmental Impact Study to protect the City's Natural Heritage System and Significant Natural Areas.

+ The Natural Environment Assessment will identify and address the policies set out in Section 6.3 as applicable based on the results of the field investigations.

5. Site Specific Assessment

5.1 Field Investigations

CIMA+ conducted field investigations on May 17, 2018 between the hours of 7:20 am and 10:30 am to evaluate existing ecological conditions within the Study Area. The field program included the following surveys:

- Full vascular plant inventories;
- Existing habitat assessments, including ecological community characterization completed in general accordance with MNRF Ecological Land Classification (ELC) for Southern Ontario standard procedures and protocols;
- Breeding bird survey in general accordance with Ontario Breeding Bird Atlas standard procedures and protocols;
- Incidental wildlife and wildlife habitat observations (auditory, visual, tracks, scat, burrows, nests, etc.) throughout the Study Area; and
- Technical evaluation of ecological features within the Study Area for meeting provincial, regional and/or municipal natural heritage criteria as outline in Section 4, within the Study Area which may be impacted by the Project.

A photographic record of the field investigations is located in Appendix C.

5.2 Watercourses and Surface Drainage Features

The Study Area predominantly resides within the Loyalist Subwatershed, with portions to the north-east situated in the Sawmill Subwatershed within the greater Credit River Watershed under the administrative jurisdiction of the CVC. A small portion at the west end of the Study Area is situated within the Oakville East Urban Creeks watershed under the jurisdiction of Conservation Halton.

At the time of the site investigation, surface waters were observed within a drainage feature located west of Ninth Line within the recently plowed agricultural lands north of the Burnhamthorpe Road (see Photographic Log located in Appendix C for details). Further north of Burnhamthorpe Road, this feature meanders along Ninth Line before vearing west and cutting cross the field draining into the road side ditch present along the north side of Burnhamthorpe Road. This feature is hydraulically connected to another branch of the unammed tributary on the north side of Burnhamthorpe Road located further west (approximatly 150 m from Ninth Line and outside of the Study Area). Both of these features have been previously identified and mapped by Conservation Halton. A culvert connects these features to a tributary south of Burnhamthorpe Road which drains in a southerly direction and connecting to the North Oakville-Milton East Provincially Significant Wetland Complex located approximately 220 m south of the Study Area. See Figure 2 for details.

CIMA+ consulted with the CVC to obtain GIS data records for any tributaries crossing the Study Area. CVC records indicated the presence of a historic tributary crossing Burnhamthorpe Road West located approximately 202 m east of Colonial Drive East. Specifically, this tributary was identified to be present along Dolson Court, north of Burnhamthorpe Road West and connecting underneath the road and continuing southbound along Bangor Road; see Figure 2 for details. CVC records (23010506 and 23010507) indicated dry conditions in both the early summer of 1954 and spring of 1965. The results of CIMA+'s field investigations have determined that this highly urbanized drainage path is intermittent and flow is considered either historical or extremely limited; conditions were dry (including the eastwest ditches along both the north and south sides of Burnhamthorpe Road West in this area), very little erosion scarring or changes in soil moisture were observed, and limited changes in species composition to hydrotolerant or hydrophilic vegetation species were observed in these areas at the time of the field investigation.

Drainage ditches are present on both the north and south sides of Burnhamthorpe Road West along the length of the Study Area, however, standing water was only observed in the naturalized ditches west of Highway 403. These ditches were predominantly occupied by Common Reed (*Phragmites australis*) with associates of Common Cattail (*Typha latifolia*). East of Highway 403, the manicured grass swales were dry and catch basins were observed to be present along their lengths.

5.3 Aquatic Habitat

CIMA+ evaluated existing conditions at all drainage feature and tributary locations (present or historically mapped) throughout the Study Area. The features observed were evaluated based on data obtained from the background review, and observations during field investigations which included an assessment of substrate conditions, water presence and water quality, stream width, top of bank and water depth (if applicable), and aquatic and riparian vegetation community composition.

Standing waters and low flow conditions were observed in the drainage ditches and tributary features west of Highway 403. The previously mapped tributary features north and south of Burnhamthorpe Road East in this area were either recently plowed and barren drainage pathways (across the agricultural field to the north) or were densely established with invasive tall narrow leaved emergents (*P. australis*). Features east of Highway 403, are urban drainage swales established with actively maintained manicured grass, which are not connected to any natural tributaries, nor exhibited hydrologic or ecological conditions capable of supporting any aquatic species.

None of the features evaluated within or adjacent to the Study Area meet the criteria of fish habitat based on the results of the site investigation. None of the features observed east of Highway 403 are considered suitable for supporting fish populations at any time throughout the year.

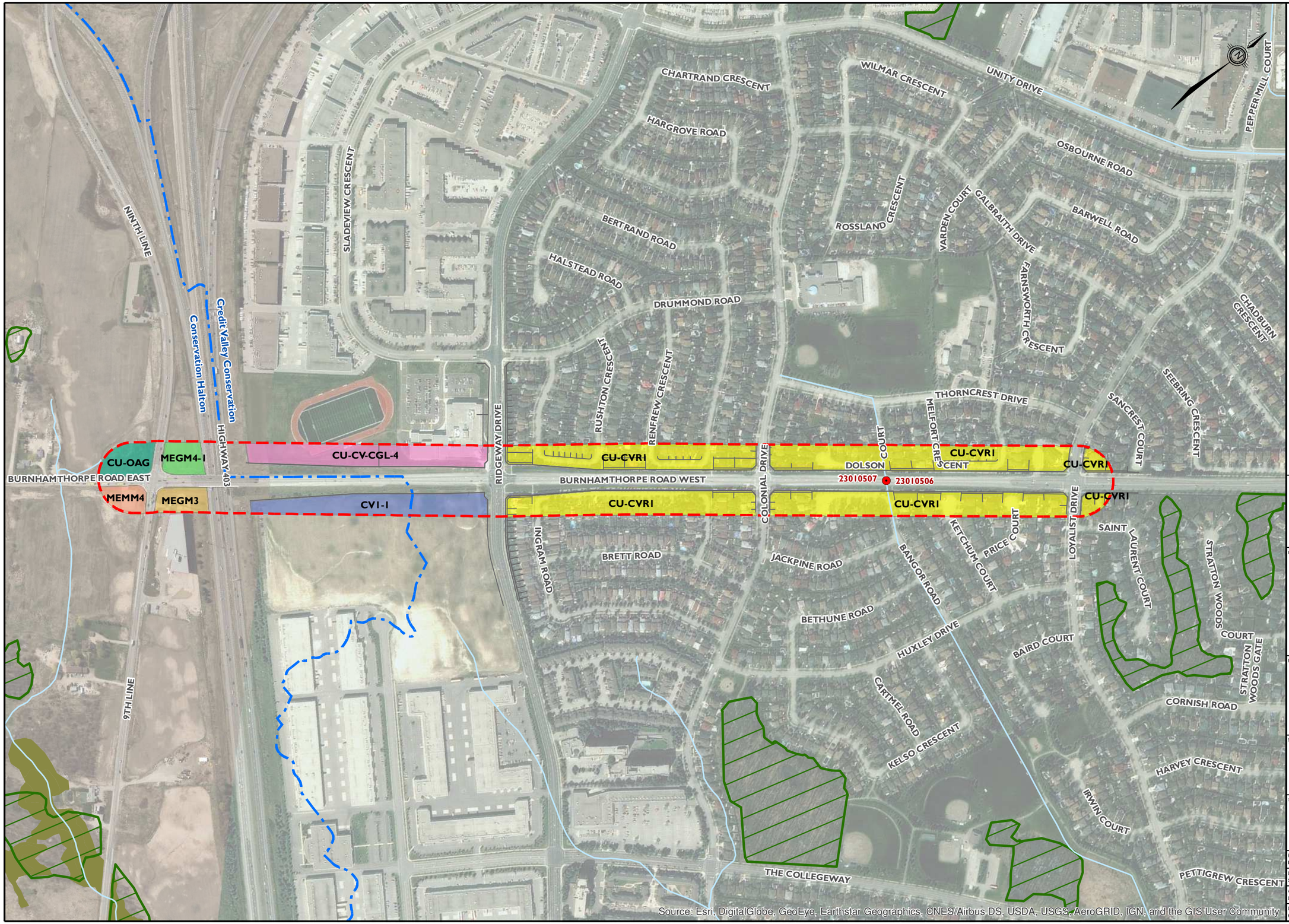
5.4 Terrestrial Habitat

Lands within the Study Area were assessed to determine the presence or absence of any vegetation species of conservation concern and evaluate habitat conditions. The assessment included detailed biological inventories and vegetation community characterization.

Six community classes were identified across the Study Area. A summary of community class findings is outlined in Table 2, and full vascular plant inventory is presented in Appendix B. The locations of the various vegetation communities present within the Study Area are outlined in Figure 3 – Ecological Land Classification Map.

Table 2. Vegetation Community Classes

ELC Code	ELC Ecosite Description	Dominant Species	Notes
CU-OAG	Open Agriculture (undefined)	Between the road and the edge of the recently plowed (barren) crop field: Smooth Brome, Orchard Grass, Kentucky Blue Grass, with forb associates in the astereceae family and roadside adapated old field species. Scattered shrubs and trees present within the ROW include: Crabapple, Common Buckthorn, Prickly Rose, Wild Red Raspberry, honeysuckles.	The field was recently plowed at the time of the site investigation. Crop cover is unknown.
MEMM4	Fresh-Moist Mixed Meadow	Meadow dominated by: asters, goldenrods, Tufted Vetch, clovers, Common Teasel, Common Reed, Reed Canarygrass, Narrow-leaved Cattail, Wild Carrot, Ragweed, with scattered associates of Common Milkweed, thistles, Curly Dock, Dame's Rocket, Yellow Rocket and yarrows.	In the larger landscape, a change in topography was noted where some areas were lower lying and occupied by monocultures of Common Reed; portions of this greenspace may reach wetland moisture regimes. A previously mapped tributary is known to transect this ecosite, eventually draining into the PSW to the south.
MEGM4-1	Fresh-Moist Graminoid Ecosite	Orchard Grass, Common Teasel, Garlic Mustard dominate the system. Associates of Common Dandelion, and Bird's Foot Trefoil.	Common Reed patch observed at the north end at the intersection of Ninth Line and HWY 403.
MEGM3	Dry-Fresh Graminoid Meadow	Orchard Grass, Reed Canarygrass, and Common Teasel, dominated the system. Goldenrods and Wild Carrot scattered in un-mowed areas.	Drainage path was observed to have little standing water, however soil moisture conditions suggest the water table was just below the soil surface.
CU-CV-CGL-4	Constructed Greenlands - Recreational	Ornamental cultivar grass throughout sports field.	Loyola Catholic Secondary School recreational/sports fields.
CV1-1	Cultural Transporta-tion and Utilities Row	Kentucky Blue Grass, Common Dandelion, Common Teasel, goldenrods and asters. Scattered Dame's Rocket and Wild Carrot near un-mowed areas.	Steep slope leading to bottom of bank/drainage ditch.
CU-CVR1	Cultural Low Density Residential	Kentucky Blue Grass, Crabgrass, Common Dandelion, Red Clover, Bird's Foot Trefoil, Common YarroWest	Drainage swales were actively managed (mowed).



LEGEND

ECOLOGICAL LAND CLASSIFICATION

- CONSTRUCTED GREEN LANDS - RECREATIONAL (CU-CV-CGL-4)
- CULTURAL LOW DENSITY RESIDENTIAL (CU-CVR1)
- CULTURAL TRANSPORTATION & UTILITIES ROW (CV1-1)
- DRY-FRESH GRAMINOID MEADOW ECOSITE (MEGM3)
- FRESH-MOIST MIXED MEADOW ECOSITE (MEMM4)
- FRESH-MOIST GRAMINOID ECOSITE (MEGM4-1)
- OPEN AGRICULTURE (UNDEFINED) (CU-OAG)

OTHER FEATURES

- CREDIT VALLEY CONSERVATION FISH SAMPLING LOCATION
- WATERCOURSE (CREDIT VALLEY CONSERVATION DATA)
- CREDIT VALLEY CONSERVATION / HALTON CONSERVATION AUTHORITY JURISDICTION BOUNDARY
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PROJECT NAME:

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SHEET TITLE:

ECOLOGICAL LAND CLASSIFICATION MAP

SCALE:

50 25 0 50 100 150 200

meters

1:6,000

PROJECT No: B000856		CLIENT FILE No: ---
DRAFTER: S. ELLIOTT	DESIGNER ---	DRAWING No: **FIG. 3**
APPROVER L. CYMBALY	APPROVER ---	
DATE: 6/6/2018		SHEET No: 1 of 1

Vegetation communities classified via standard ELC procedures and protocols are grouped to represent lands 0.5 hectares or greater, however, given anticipated Project impacts, the following provides a summary of the main findings within the Study Area's Rights-of-Way (ROW).

The greenspaces within the ROW associated with the Study Area east of Ridgeway Drive are characteristic of cultural urban features and are established with manicured grass intermixed with disturbance adapted graminoids and forbs. Streetscaping and naturalized trees were also inventoried as part of the assessment. No listed vegetation species covered under the Endangered Species Act (2007) were observed within the Study Area limits in this location. No vegetation species of conservation concern were observed within the Study Area limits in this location.

The greenspaces within the ROW associated with the Study Area west of Ridgeway Drive between Ridgeway Drive and Ninth Line, included predominantly cultural features; manicured grass and establishment of invasive and disturbance adapted graminoids, forbs. Landscaping associated with adjacent developments (commercial/industrial to the south and institutional school sports field north of Burnhamthorpe Road West) as well as naturalized trees/shrubs were inventoried as part of the assessment. No listed vegetation species covered under the Endangered Species Act (2007) were observed within the Study Area limits in this location. No vegetation species of conservation concern were observed within the Study Area limits in this location.

The greenspaces within the ROW west of Ninth Line included naturalized ditches occupied by Reed Canarygrass (*Phalaris arundinacea*), and Common Reed (*P. australis*) and the establishment of a mixture of native and disturbance adapted or invasive graminoids, forbs (predominantly members of the *Asterecea*e family and monocultures of Common Teasel; *Dipsacus fullonum*). Disturbance adapted shrubs and trees have established along the north side of Burhamthorpe Road East in this area between the road and the recently plowed agricultural field to the north (E.g. Common Buckthorn; *Rhamnus cathartica*, honeysuckles; *Lonicera* sp., Crabapple; *Malus* sp., Wild Rose; *Rosa acicularis*, Common Lilac; *Syringa vulgaris*). Lands to the south included a vacant gravel parking lot with associated access road, followed by undeveloped lands characterized as a mixed graminoid-forb meadow dominated by asters (*Aster* sp.), goldenrods (*Solidago* sp.), Tufted Vetch (*Vicia cracca*), clovers (*Trifolium* sp.), Common Teasel (*Dipsacus fullonum*), Reed Canarygrass (*Phalaris arundinacea*), Wild Carrot (*Daucus carota*), and Common Milkweed (*Asclepias syriaca*). Portions of these lands (inclusions) were occupied by monocultures of tall narrow leaved emergents (Common Reed and cattails), however, a defined drainage path was not accutely visible and a full inventory and assessment of these lands was not completed as they lay outside of the Study Area. No listed vegetation species covered under the Endangered Species Act (2007) were observed within the Study Area limits in this location. No vegetation species of conservation concern were observed within the Study Area limits in this location.

5.5 Wildlife

5.5.1 Mammals

The Study Area falls within Ecoregion 7E (Lake Simcoe-Rideau). Representative mammalian fauna in this region include White-tailed Deer (*Odocoileus virginianus*), Northern Raccoon (*Procyon lotor*), Striped Skunk (*Mephitis mephitis*), Virginia Opossum (*Didelphis virginiana*), and Woodchuck (*Marmota monax*). Eastern Cottontail (*Sylvilagus floridanus*), and Grey Squirrel (*Sciurus carolinensis*) was observed in the Study Area, east of Highway 403.

No other mammals were observated at the time of the site investigation, however, potions of the undeveloped meadows may be utilized by deer populations should they occur in the area.

5.5.2 Birds

A review of available bird observation data from the Ebirds Canada and Ontario Breeding Bird Atlas (OBBA) databases was completed as part of the assessment. Records for 30 species have been observed within 10 km of the Study Area (see Appendix B – Biological Inventory Lists for details). A review of MNRF records indicated the historical presence of Henslow's Sparrow (*Ammodramus henslowii*) within a 1 km radius of the Study Area (last observation record dated 1932). This observation was taken into consideration as part of the assessment.

CIMA+ observed 17 bird species throughout the duration of the field investigations which included point counts taken from the ROW across the length of the Study Area, as outlined in Figure 1 – Study Area Map. Point counts were taken in late May 2018 in the morning hours (between 7:20 am and 9:00 am). Visual and auditory observations outside of the point count stations were also noted. The dominant species observed through visual confirmation and/or auditory calls included American Robin (*Turdus migratorius)*, Rock Pigeon (*Columba livia livia*), Mourning Dove (*Zenaida macroura*), Cedar Waxwing (*Bombycilla cedrorum)*, American Goldfinch (*Spinus tristis)*, Northern Cardinal (*Cardinalis cardinalis*), House Finch (*Haemorhous mexicanus*), European Starling (*Sturnus vulgaris)*, American Crow (*Corvus brachyrhynchos)*, Red-winged Blackbird (*Agelaius phoeniceus*), and Ring-billed Gull (*Larus delawarensis*).

One American Robin nest was observed in a Manitoba Maple tree adjacent to the recreational sports field on the north side of Burnhamthorpe Road West at the west end of the Study Area. No other wildlife nests were observed in the Study Area at the time of the site investigations.

Barn Swallows (*Hirundo rustica*) were listed in the Ebirds Canada database, however, no Barn Swallows were observed (visual or auditory) in the Study Area at the time of the site investigation. Barn Swallows are known to occasionally nest in culverts. All culverts were inspected during the site investigation; no Barn Swallows or other wildlife nesting structures were observed within any of the culverts present within the Study Area.

No SAR species were observed (visual or auditory) within or adjacent to the Study Area at the time of the investigations. See Appendix B – Biological Inventory Lists for full species list. SAR species which have been historically recorded for the area, have been included in the SAR

Screening Assessment to determine whether local habitat features may support populations at any given time of year.

5.5.3 Amphibians and Reptiles

CIMA+ biologists accessed the Ontario Reptile and Amphibians Atlas to perform a search of reptile and amphibian observations recorded within the 10 km^2 grid which covers the Study Area. 537 herpetofauna observation records were found, totalling 25 species,16 species of which have been observed within the last 15 years (see full list located in Appendix B – for details). Six species of conservation concern were among the list. Table 3 summarizes pertinent information from the data review.

Table 3. Herpetofauna Records Summary

Species	Provincial Status	COSEWIC Status	Date of Most Recent Observations	# of Observation Records in the last 15 years
Jefferson Salamander (*Ambystoma jeffersonianum*)	Endangered	Endangered	April, 2004	1
Eastern Milksnake (*Lampropeltis triangulum*)	Not at Risk	Special Concern	May, 2018	8
Eastern Ribbonsnake (*Thamnophis sauritus*)	Special Concern	Special Concern	July, 1952	0
Snapping Turtle (*Chelydra serpentina*)	Special Concern	Special Concern	June, 2018	39
Blanding's Turtle (*Emydoidea blandingii*)	Threatened	Endangered	July, 2015	2
Northern Map Turtle (*Graptemys geographica*)	Special Concern	Special Concern	July, 2015	1

One Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) was observed in the field edge adjacent to the agricultural development located at the north-west corner of Burnhamthorpe Road East and Ninth Line. No other herpetofauna species were observed during the field investigation. No roadkill, carapaces, snakeskins, egg shells, tracks, nests or other evidence of turtles or snakes were observed at the time of the field investigations.

Where records of listed species at risk or species of conservation concern were observed by others (conservation authority, MNRF, wildlife atlasses, etc.), they were included in the Species at Risk (SAR) Screening Assessment.

5.6 Species at Risk

A SAR Screening Assessment was completed to evaluate known SAR occurrences in the area against specific local habitat features identified during field investigations to determine the likelihood of SAR utilizing lands within or near the Study Area. Table 4 outlines the results of the assessment.

Table 4. SAR Screening Assessment Table

Species	Provincial Status	COSEWIC Status	Habitat Requirements	Likelihood of Occurrence	Site Area Suitability/ Observations
Barn Swallow (*Hirundo rustica*)	THR	THR	Terrestrial open and man-made structures. Barn Swallow nesting sites include the use of a variety of artificial structures (E.g. beams, posts, light fixtures, ledges over windows and doors) that provide either a horizontal nesting surface or a vertical face, often with some sort of overhang that provides shelter. Often nesting sites are associated with open barns, sheds, garages, and docks.	Low	No Barn Swallows were observed (visual or auditory) during field investigations. All culvert locations and posts within the ROW were inspected – no Barn Swallow nests were observed.
Henslow's Sparrow (*Ammodramus henslowii*)	END	END	The Henslow's Sparrow is a grassland-obligate bird; in Ontario, Henslow's Sparrow colonies have been located in abandoned fields, ungrazed and lightly grazed pasture, fallow hayfields with high clover and alfalfa content, grassy swales in open farmland, wet meadows, infrequently mowed fields, and recent reports of colonies located in tallgrass prairie systems in southwestern Ontario.	Low	The last known occurrence of Henslow's Sparrow within a 1km radius of the Study Area was recorded in July of 1932 (MNRF, 2018). No Henslow's Sparrows were observed (visual or auditory) during field investigations, however undisturbed lands associated with MEMM4 exhibit general habitat characteristics conducive for Henslow's Sparrow affinity to this area. The Project does extend into undisturbed portions of these lands (outside the ROW).
Jefferson Salamander (*Ambystoma jeffersonianum*)	END	END	Adult Jefferson Salamander throughout their range are found near or within deciduous or mixed upland forests containing suitable breeding ponds. These sites include limestone sinkhold ponds, kettle ponds and other natural basins.	Low/ Negligible	The last known occurrence of Jefferson Salamander within a 10 km radius of the Study Area was recorded in April of 2004 (MNRF, 2018). Habitat requirements not present within the Study Area. The presence of Jefferson Salamander within the Study Area is considered highly unlikely.

Species	Provincial Status	COSEWIC Status	Habitat Requirements	Likelihood of Occurrence	Site Area Suitability/ Observations
Eastern Milksnake (*Lampropeltis triangulum*)	NAR	SC	The Eastern Milksnake is quite often found in prairies, meadows, pastures, hayfields, rock outcrops, and rocky hillsides. The Eastern Milksnake can also be found in a variety of forest types such as deciduous forests, pine plantations, bog forests, pine forests, and mixed pine-hardwoods.	Medium - Low	Recent records of Eastern Milksnake indicate observations within a 10 km radius of the Study Area in May, 2018. Habitat requirements are present though limited to areas west of Ninth Line. The presence of Milksnake east of Highway 403 is considered highly unlikely.
Eastern Ribbonsnake (*Thamnophis sauritus*)	SC	SC	Eastern Ribbonsnakes are semi-aquatic and found in a variety of wetland habitats with both flowing and standing water including marshes, bogs, fens, ponds, lake shorelines and wet meadows. They are sometimes found in vernal pools and moist woods.	Low	The last known occurrence of Eastern Ribbonsnake within a 10 km radius of the Study Area was recorded in July, 1952. Some of the habitat requirements are present though limited and restricted to areas west of Ninth Line. The presence of Eastern Ribbonsnake east of Highway 403 is considered highly unlikely.
Snapping Turtle (*Chelydra serpentina*)	SC	SC	Slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several types of wetland habitat.	Low	Recent records of Snapping Turtle indicate observations within a 10 km radius of the Study Area in June, 2018. Habitat requirements are present though limited to areas west of Ninth Line. If populations are present in the area, they would concentrate around the PSW near open waters as aquatic habitat conditions conducive to Snapping Turtle presence in the Study Area is limited. The presence of Snapping Turtle east of Highway 403 is considered highly unlikely.

Species	Provincial Status	COSEWIC Status	Habitat Requirements	Likelihood of Occurrence	Site Area Suitability/ Observations
Blanding's Turtle (*Emydoidea blandingii*)	THR	END	The Blanding's Turtle is a largely aquatic turtle that occurs in a variety of wetland habitats including lakes, permanent ponds, temporary ponds, slow flowing brooks, creeks, marshes, river sloughs, marshy meadows, man-made channels, farm fields, coastal areas and the bays of Lake Erie. In general, the preferred wetlands occupied by the Blanding's Turtle are eutrophic and are characterized by shallow water with an organic substrate and high density of aquatic vegetation. Terrestrial habitat is also important, as these turtles will travel overland more than 2.5 km to nest and will nest up to 410m from the nearest water source. Terrestrial habitat is generally upland wooded areas, consisting of mixed deciduous or coniferous forest.	Low	Recent records of Blanding's Turtle indicate observations within a 10 km radius of the Study Area in July, 2015. Habitat requirements are present though limited in extent and limited to areas west of Ninth Line. If populations are present in the area, they would concentrate around the PSW near open waters as aquatic habitat conditions conducive to Blanding's Turtle presence in the Study Area is limited. The presence of Blanding's Turtle east of Highway 403 is considered highly unlikely.
Northern Map Turtle (*Graptemys geographica*)	SC	SC	The Northern Map Turtle inhabits both lakes and rivers, preferring slow moving currents, muddy bottoms, and abundant aquatic vegetation. The habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled.	Low/ Negligible	Recent records of Northern Map Turtle indicate observations within a 10 km radius of the Study Area in July, 2015. Habitat requirements are not present within the Study Area.

6. Elements of the Natural Heritage System

6.1 Designated Areas

An element of the City of Mississauga's Urban Green System associated with an educational facility (secondary school sports field) is located at the north-east corner of Highway 403 and Burnhamthorpe Road West. No other designated areas of natural heritage or recreational value are currently associated with lands situated within the Study Area, at the provincial, regional or municipal level.

In accordance with the Provincial Policy Statement (2014) and the MNRF's Significant Wildlife Habitat Technical Guide (2000), Significant Wildlife Habitat (SWH) is generally defined as areas where animals and other organisms live, and find adequate amounts of food, water, shelter, and space needed to sustain their populations. SWH can be considered ecologically important in terms of features, functions, representation or amount, or contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable time; areas of rare or specialized habitat; habitats of species of conservation concern, or animal movement corridors.

Based on the results of the site investigations, natural lands within the Study Area do not meet the criteria for provincial significance or local significance (in accordance with the criteria outlined in the City's OP – Chapter 6), noting that detailed investigations of lands west of Ninth Line were not completed, as the preferred alternative for the Project is focused on lands east of Highway 403.

6.2 Fish Habitat

No tributaries or other drainage features within the Study Area meet the definition of fish habitat.

6.3 Species at Risk Habitat

No SAR species covered under the ESA or other species of conservation concern were observed in the Study Area at the time of the site investigations. Based on the results of the SAR Screening Assessment, there is potential for a SAR bird and a SAR reptile which may occur in the greater Study Area. Specifically, the results of the assessment have identified potential Henslow's Sparrow (*Ammodramus henslowii*), and Eastern Milksnake (*Lampropeltis triangulum*) habitat associate with the adjacent undeveloped lands west of Ninth Line.

Mitigation measures have been recommended to account for the potential occurrence of Henslow's Sparrow adjacent to the Project ROW. See Section 8.2 for details.

6.4 Locally Important Features

Lands at the south-west end and adjacent to the Project Study Area have been characterized as a Fresh-Moist Mixed graminoid-forb meadow. It was noted during field investigations that low lying areas and monocultures of water-tolerant and tall narrow-leaved emergents suggests that wetland habitat may be present. A previously mapped tributary path is known to cross these lands which drain into the North Oakville-Milton PSW, though a clear stream or drainage path was not visible at the time of the site investigations.

A cleared area where fill has been deposited and an access road has been developed at the north-east corner of this ecosite (south-west corner of Ninth Line and Burnhamthorpe Road East). Lands south of this area may include wetland features, particularly surrounding the natural drainage path where waters eventually drain into the PSW. This feature may meet local significance in accordance with the criteria outlined in the City of Mississauga's Official Plan, however, detailed investigations within these lands was outside of ths scope of this project.

7. Impact Assessment

The preferred solution identified in the MCEA includes the development of a pedestrian and cycling path and improved landscaping features as outlined in Figure 4. Potential impacts natural heritage features were evaluated, see Sections 7.1 and 7.2. Where potential adverse impacts were identified, mitigation measures have been proposed (Section 8).

Road development and associated construction phases (site preparation, road construction, and post-construction maintenance) and activities have the potential to negatively impact an area's natural heritage features. Specifically, impacts include: direct habitat loss within the area where the natural cover is replaced by newly developed roads, loss of connection between habitats (fragmentation), disturbance and stress to adjacent vegetation communities decreasing habitat quality on adjacent lands, and disturbance and stress to local wildlife population via increased human presence and traffic as well as noise and release of air pollutants.

Vegetation removal and grading activities associated with road construction works can also potentially impact watercourses and/or receiving water bodies via the displacement and subsequent unwanted deposition of soil and sediment particles into such features. Soil and sediment particle transport media may include gravity (steep slopes), air or water (E.g. rainfall events). Deposition of particulate matter into water bodies can decrease water quality and, if applicable, associated aquatic habitat quality via increases in turbidity (Total Suspended Solids; TSS) and subsequent increases in water temperature, associated decreases in dissolved oxygen, and inability of solar radiation to reach submergent aquatic macrophytes which can lead to die off.

In addition, construction activities increase risk of soil and groundwater contamination resultant from potential leaks from industrial construction equipment present on undeveloped lands in the Study Area throughout the duration of the construction period. Specifically, common effluents

and leaked products include petroleum products (PHCs and BTEX), however polycyclic aromatic hydrocarbons (PAHs), volatile organic hydrocarbons (VOCs) and heavy metals, can also be released into the environment and subsequently leach into the receiving water bodies which can have adverse toxicological impacts on ecological receptors.

Additional long-term impacts, may include altered local site hydrology resultant from changes in drainage features or the introduction - or alteration - of culverts and / or subsurface sewer infrastructure. Impacts could include altered water table depth and hydrogeologic conditions which could result in the conversion of terrestrial and wetland features to different community structures and associated habitat. This effect could have profound impacts on local wildlife populations, should these alteration affect the landscape to a significant level.

Burnhamthorpe Road West Improvements (Option 3)

June 19, 2018 scale 1:500

7.1 Potential Impacts to Designated Areas

After large rainfall events, site drainage along Burnhamthorpe Road West, particularly at the west end of the Study Area, at the south-east corner of Burnhamthorpe Road West and Highway 403 may move south along the drainage path to the PSW located approximately 220 m south of the road.

7.2 Potential Impacts to Species at Risk

The results of the Natural Environment Assessment have determined there are potential SAR birds and herpetofauna which may occur in the greater Study Area. Specifically, the results of the assessment have identified potential Henslow's Sparrow (*Ammodramus henslowii*), and Eastern Milksnake (*Lampropeltis triangulum*) habitat associated with the adjacent undeveloped lands west of Ninth Line.

Project undertakings are not planned on lands west of Ninth Line, however, increased disturbance/stress caused by construction noise and increased human presence, traffic, and release of air pollutants could reduce bird breeding success if occuring during the peak breeding season.

8. Environmental Protection / Mitigation Recommendations

To address potential impacts to the PSW and connecting hydrologic pathways noted in the previous section, the following mitigation measures are recommended. Periodic site inspections are recommended to ensure the environmental component of the work is being undertaken effectively and to address any environmental concerns that may develop during the construction period.

8.1 Designated Areas

+ An Erosion and Sediment Control Plan (ESCP) should be developed and implemented to minimize the risk of soil deposition into the ditches located at the west end of the Study Area (between Ridgeway Drive and Highway 403) during all phases of the Project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized and runoff water is clear.
+ The ESCP should include:
    - Installation of erosion and sediment control measures before construction activities commence to prevent soil deposition into nearby receiving waterbodies
    - Any construction activities and staging areas will be isolated from watercourses or wetland areas and conducted "in the dry".

- Waste material should be contained and stabilized above the high-water mark. Alternatively, waste materials should be removed off-site
- Inspection and maintenance of erosion and sediment control measures and structures should take place during the course of construction.
- Erosion and sediment control measures and structures should be repaired, if damage occurs.
- Non-biodegradable erosion and sediment control materials should be removed once the site is stabilized.
- Site isolation measures for containing stockpiled material should be implemented.

+ All equipment operating near the watercourses shall be properly maintained in order to avoid contaminant leakage.
+ A response plan should be developed that will be implemented immediately in the event of a sediment release or spill of a deleterious substance.
+ An emergency spill response kit, including the appropriate absorbency materials, will be on site at all times and in the event that a spill occurs. Proper containment, clean up and reporting, in accordance with provincial requirements, is required.
+ All necessary precautions must be taken to prevent the accumulation of litter and construction debris within any natural areas outside of the construction limits.
+ Upon project completion, all construction materials must be removed off-site.

8.2 Species at Risk

+ It is recommended that construction activities near Ninth Line occur outside of the breeding bird season, if possible, to reduce potential impacts to SAR that could occur near the proposed Project construction areas.
+ Should construction activities be planned during the breeding bird season and several years from the date of this report, it is recommended that follow up breeding bird surveys be conducted at such a time.
+ The MNRF must be contacted in the case that any rare species are identified during pre-construction or throughout the construction phases.

8.3 Permitting

+ Provided the preferred improvement option does not change, permitting is not anticipated to be required to move forward with this project at this time, however it is recommended that permitting requirements be revisited at the detailed design phase to ensure the Project has remained within the regulatory framework, as applicable at such a time.

9. References

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A

Appendix A

Records of Correspondence

Lauren Cymbaly

From: Lauren Cymbaly
Sent: Tuesday, February 13, 2018 1:28 PM
To: 'Paudel, Elizabeth'
Subject: RE: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.
Attachments: NHIC Map.pdf

Hi Elizabeth,

As requested:

We are requesting

1. Any fisheries data and any associated fisheries survey, or fish habitat maps/reporting for Subwatersheds 1 and 3.
2. Any relevant hydrology or watershed studies. It is our understanding based on CVC mapping that the following documents are most relevant to the study area, however, I was not able to find a link to the actual documents from the CVC website or internet:

Subwatershed 1 – Loyalist Creek

Watershed Study	Author
Erin Mills West Loyalist Creek Drainage Report	Proctor & Redfern Group, 1985
Loyalist Creek Watershed Study	CBCL Limited, 1980
Map of Subwatershed 1,2,3,4	

Subwatershed 3 – Sawmill Creek

Watershed Study	Author
Sawmill Creek Subwatershed Study Update	Earth Tech Canada Inc., 2000
Sawmill Creek Subwatershed Study	Proctor & Redfern Limited, 1993
Map of Subwatershed 1,2,3,4	

- Please see attached for a general map of the Study Area
- Project Name: Burhamthorpe Road West EA Study

- Proponent Name: City of Mississauga
- Intended use of publications: For use to evaluate and incorporate relevant data into the EA report and effectively determine environmental impacts, mitigation measures, and preferred alternatives.

Thank you and if you have any other questions, don't hesitate to contact us anytime,

Regards,

Lauren Cymbaly
Environmental Professional

CIMA+
Partners in Excellence

55 King Street East
Bowmanville Ontario L1C 1N4
CANADA
Tel: 905 697-4464 ext. 6931

From: Paudel, Elizabeth [mailto:Elizabeth.Paudel@cvc.ca]
Sent: Tuesday, February 13, 2018 11:47 AM
To: Lauren Cymbaly <Lauren.Cymbaly@cima.ca>
Subject: RE: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.

Hi Lauren,

Thank you for the email. In order to process the data request, I will require the following information:

- Detailed list of data
- Map of study area
- Project name
- Proponent name
- Intended use and publications.

Please note that a Date Sharing Agreement will be required and the process can take up to 3-4 weeks from the date of receipt of the above information.

Regards,

Elizabeth Paudel, MES
Technician, Planning | Credit Valley Conservation

905.670.1615 ext 304 | 1-800-668-5557
elizabeth.paudel@cvc.ca | http://cvc.ca

From: Lauren Cymbaly [mailto:Lauren.Cymbaly@cima.ca]
Sent: February 12, 2018 6:03 PM
To: ZZG-CVC-Planning
Cc: Jennifer Haslett; Martin Scott
Subject: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.

Good afternoon,

We have been retained by the City of Mississauga to complete a Class Environmental Assessment and Preliminary Design for the improvements of Burnhamthorpe Road West from Loyalist Drive to the West City Limit (Ninth Line). As such we are requesting any relevant natural heritage data or documentation which you may have in your files for inclusion into the EA.

If you have any comments, questions or concerns regarding the proposed undertakings, please don't hesitate to contact us anytime.

Regards,
Lauren

Lauren Cymbaly
Environmental Professional

CIMA+
Partners in Excellence

55 King Street East
Bowmanville Ontario L1C 1N4
CANADA
Tel: 905 697-4464 ext. 6931

The information contained in this Credit Valley Conservation electronic message is directed in confidence solely to the person(s) named above and may not be otherwise distributed, copied or disclosed including attachments. The message may contain information that is privileged, confidential and exempt from disclosure under the Municipal Freedom of Information and Protection and Privacy Act and by the Personal Information Protection Electronic Documents Act. The use of such personal information except in

compliance with the Acts, is strictly prohibited. If you have received this message in error, please notify the sender immediately advising of the error and delete the message without making a copy. Thank you.

Lauren Cymbaly

Subject: DR 18/006 - RE: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.

From: Paudel, Elizabeth <Elizabeth.Paudel@cvc.ca>
Sent: Tuesday, March 6, 2018 9:10 AM
To: Lauren Cymbaly <Lauren.Cymbaly@cima.ca>
Subject: RE: DR 18/006 - RE: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.

Hi Lauren,

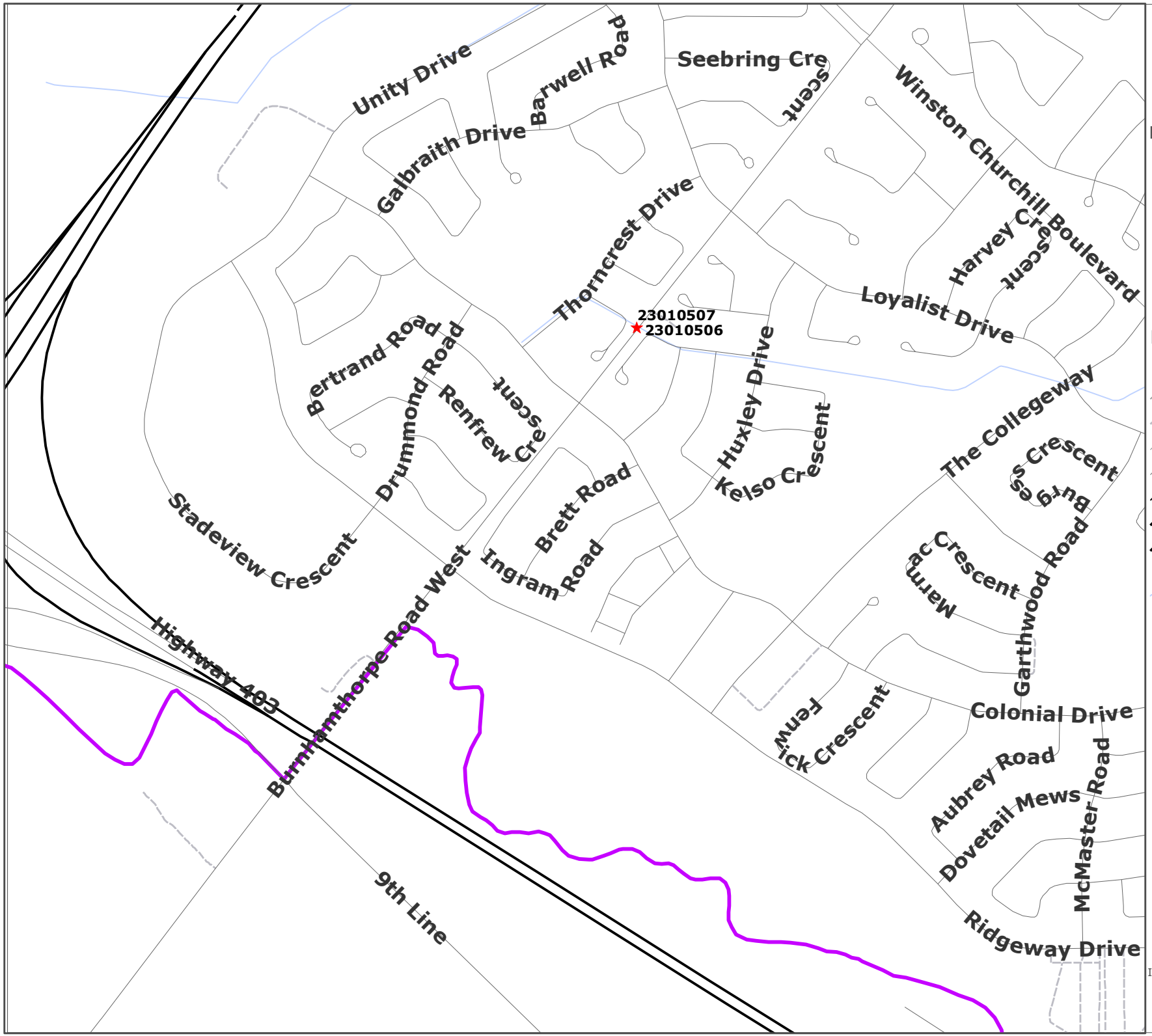
Thank you for the signed Data Sharing Agreement. Please see the link below for the required data. Please note that this link will expire in 7 days.

https://we.tl/2LWwuT38vQ

Should you have any questions, please contact me.

Regards,

Elizabeth Paudel, MES
Technician, Planning | Credit Valley Conservation
905.670.1615 ext 304 | 1-800-668-5557
elizabeth.paudel@cvc.ca | http://cvc.ca



Fish Catch Locations

RQ0352 - DR18/006

N

Legend

- Fish Collection Records
- Abandoned railroad
- Accessway
- Concession road
- Street
- Existing railroad
- Regional road
- Highway
- CVC property
- Rivers and streams
- Lakes and ponds
- CVC boundary

0 95 190 380
Meters

Feb 26, 2018

Fish Species by FCR Identification Number

FCR Id Number	*Waterbody Name*	*Station Location*	*Sampling Date*	*MNR Code*	*Common Name**	*Number Caught*
23010506	Loyalist Creek	Located on burhamthorpe Road, ~202m East of Colonial Drive East of Burhamthorpe and Colonial Drive	04-Jun-65	☐	Suspicious Data	Dry
				001	Dry	
23010507	Loyalist Creek	Located on Burhamthorpe Road, ~202m from Colonial Drive Just East of Burhamthrope and Colonial Drive	06-Jul-54	☐	Suspicious Data	Dry
				001	Dry	

** - no catch in "Common Name" column may also mean site was dry when visited*

From:	Matt Howatt
To:	Lauren Cymbaly
Cc:	Martin Scott; Brad Rennick
Subject:	RE: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.
Date:	Friday, March 2, 2018 4:51:36 PM

Hi Lauren,

Thank you for your reply.

Since my email of February 21, Brad Rennick has checked into our records and confirmed that we do not have any natural hazard or natural heritage information to provide for the portion of your study area within our watershed jurisdiction. Therefore, a data request from CH will not be necessary.

I can also confirm that CH's regulated area does not extend into your Study Area.

For future reference, you may continue to send NOCs to our general server or directly to the following CH planners based on their areas of responsibility:

- Matt Howatt, mhowatt@hrca.on.ca – Halton Hills, Mississauga
- Leah Chishimba, lchishimba@hrca.on.ca – Milton existing urban and rural areas, Oakville south of Dundas Street
- Jonathan Pounder, jpounder@hrca.on.ca – Milton urban expansion areas
- Jessica Bester, jbester@hrca.on.ca – Oakville north of Dundas Street
- Heather Dearlove, hdearlove@hrca.on.ca – Burlington, Hamilton

I hope this is of assistance. Please contact me with any follow up questions.

Regards,
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

From: Lauren Cymbaly [mailto:Lauren.Cymbaly@cima.ca]
Sent: March-02-18 2:22 PM
To: Matt Howatt <mhowatt@hrca.on.ca>
Cc: Martin Scott <Martin.Scott@cima.ca>
Subject: RE: Request for information – MCEA for road improvements to Burnhamthorp Road West

from Ninth Line to Loyalist Dr., Mississauga, ON.

Hi Matt,

Thank you for the information and apologies to you as well for my late reply.

We will be sending out the data request to Brad shortly. I have also confirmed with Martin, the PM on the project (cc'd), that our project limits are to Ninth Line whereby works on Ninth Line and to the west of Ninth Line are outside of the scope of work for this EA.

We just wanted to touch base and ensure that you are aware of the project and confirm that Conservation Halton's regulatory boundaries don't extend into our Study Area.

Also for future reference regarding the circulation of the Notice of Study Commencement (NOC) under Conservation Halton jurisdiction, should we send the NOCs to you or another individual at HRCA directly, or does it suffice to send this to envserve.hrca.on.ca?

Thanks again,

Regards,

Lauren Cymbaly, M.E.S.
Environmental Professional

CIMA+
Partners in Excellence

55 King Street East
Bowmanville Ontario L1C 1N4
CANADA
Tel: 905 697-4464 ext. 6931

From: Matt Howatt [mailto:mhowatt@hrca.on.ca]
Sent: Wednesday, February 21, 2018 11:43 AM
To: Lauren Cymbaly <Lauren.Cymbaly@cima.ca>
Cc: Brad Rennick <brennick@hrca.on.ca>

Subject: RE: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.

Hi Lauren,

Thank you for your email inquiry and my apologies for the delay in following up.

A small portion of the study area, from just west of Ridgeway Drive to Ninth Line, falls within our watershed jurisdiction as identified on our Approximate Regulation Limit mapping. However, this area does not appear to contain any regulated features (e.g. watercourses, floodplain, wetlands etc.) based on the mapping.

If you complete the attached digital information request form and return it to Brad Rennick in our GIS department, we can determine if we have any natural heritage data or information related to drainage features/tributaries in or adjacent to the study area and follow up with you.

If you have any additional questions, please contact me.

Regards,
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

From: Lauren Cymbaly <Lauren.Cymbaly@cima.ca>
Sent: February 13, 2018 9:52 AM
To: Envserv
Cc: Jennifer Haslett; Martin Scott
Subject: Request for information – MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON.

Good afternoon,

We have been retained by the City of Mississauga to complete a Class Environmental Assessment and Preliminary Design for the improvements of Burnhamthorpe Road West from Loyalist Drive to the instersection at Ninth Line. As such we are requesting any relevant natural heritage data or otherwise documentation relating to nearby tributaries which you may have in your files for inclusion into the EA.

If you have any comments, questions or concerns regarding the proposed undertakings, please don't hesitate to contact us anytime.

Regards,
Lauren

Lauren Cymbaly
Environmental Professional

CIMA+
Partners in Excellence

55 King Street East
Bowmanville Ontario L1C 1N4
CANADA
Tel: 905 697-4464 ext. 6931

Lauren Cymbaly

From: Lauren Cymbaly
Sent: Thursday, February 8, 2018 5:16 PM
To: 'ESA.Aurora@Ontario.ca'
Subject: Request for Information - MCEA for road improvements to Burnhamthorp Road West from Ninth Line to Loyalist Dr., Mississauga, ON
Attachments: NHIC Map.pdf

Good afternoon,

We have been retained by the City of Mississauga to complete a Class Environmental Assessment and Preliminary Design for the improvements of Burnhamthorpe Road West from Loyalist Drive to the West City Limit (Ninth Line). As such, we are requesting Species at Risk information and any other relevant natural heritage data you may have on file for consideration into the EA.

If you have any questions regarding this request, please don't hesitate to contact me anytime at the undersigned.

Regards,

Lauren Cymbaly
Environmental Professional

CIMA+
Partners in Excellence

55 King Street East
Bowmanville Ontario L1C 1N4
CANADA
Tel: 905 697-4464 ext. 6931

B

Appendix B

Biological Inventory Lists

FAMILY	SCIENTIFIC NAME	COMMON NAME	E STATUS	S RANK	G RANK	N RANK	PROVINCIAL STATUS	COSEWIC STATUS	FEDERAL STATUS	DATA SOURCE EBIRDS	DATA SOURCE - CIMA+
Accipitridae - Hawks, Kites & Eagles	*Accipiter cooperii*	Cooper's Hawk	-	S4	N5B,N4N	G5	NAR	NAR	-	x	-
	Buteo jamaicensis	Red-tailed Hawk	-	S5	N5B	G5	NAR	NAR	-	x	-
	Buteo lagopus	Rough-legged Hawk	-	S1B,S4N	N5B,N5N	G5	NAR	NAR	-	x	-
	Circus hudsonius	Northern Harrier	-	S4B	N5B,N4N	G5	NAR	NAR	-	x	-
Alaudidae - Larks	*Eremophila alpestris*	Horned Lark	-	S5B	N5B,N5N	G5	-	-	-	x	-
Anatidae - Ducks, Geese & Swans	*Branta canadensis*	Canada Goose	-	S5	N5B,N5N	G5	-	-	-	x	x
Ardeidae - Herons & Bitterns	*Ardea herodias*	Great Blue Heron	-	S4	N5B	G5	-	-	-	x	-
Bombycillidae - Waxings	*Bombycilla cedrorum*	Cedar Waxwing	-	S5B	N5	G5	-	-	-	x	x
Cardinalidae - Cardinals and Allies	*Cardinalis cardinalis*	Northern Cardinal	-	S5	N5	G5	-	-	-	x	x
Cathartidae - New World Vultures	*Cathartes aura*	Turkey Vulture	-	S5B	N5B	G5	-	-	-	x	-
Charadriidae - Plovers	*Charadrius vociferus*	Killdeer	-	S5B,S5N	N5B	G5	-	-	-	x	-
Columbidae - Pigeons and Doves	*Columba livia*	Rock Pigeon	SE	SNA	NNA	G5	-	-	-	x	x
	Zenaida macroura	Mourning Dove	-	S5	N5	G5	-	-	-	x	x
Corvidae - Crows and Jays	*Corvus corax*	Common Raven	-	S5	N5	G5	-	-	-	x	x
	Cyanocitta cristata	Blue Jay	-	S5	N5	G5	-	-	-	-	x
	Corvus brachyrhynchos	American Crow	-	S5B	N5B,N5N	G5	-	-	-	-	x
Falconidae - Caracaras & Falcons	*Falco sparverius*	American Kestrel	-	S4	N5B	G5	-	-	-	x	-
Fringillidae - Finches	*Haemorhous mexicanus*	House Finch	SE	SNA	N5	G5	-	-	-	x	x
	Spinus tristis	American Goldfinch	-	S5B	N5B,N5N	G5	-	-	-	x	x
Hirundinidae - Swallows	*Hirundo rustica*	Barn Swallow	-	S4B	N4N5B	G5	THR	THR	THR	x	-
Icteridae - Blackbirds	*Agelaius phoeniceus*	Red-winged Blackbird	-	S4	N5B,N5N	G5	-	-	-	x	x
	Molothrus ater	Brown-headed Cowbird	-	S4B	N5B	G5	-	-	-	x	x
	Quiscalus quiscula	Common Grackle	-	S5B	N5B	G5	-	-	-	x	-
Laridae - Gulls, Terns & Skimmers	*Larus delawarensis*	Ring-billed Gull	-	S5B,S4N	N5B,N5N	G5	-	-	-	x	x
Paridae - Chickadees & Titmice	*Poecile atricapillus*	Black-capped Chickadee	-	S5	N5	G5	-	-	-	x	-
Passerellidae - Sparrows	*Junco hyemalis*	Dark-eyed Junco	-	S5B	N5B,N5N	G5	-	-	-	x	-
	Melospiza melodia	Song Sparrow	-	S5B	N5B,N5N	G5	-	-	-	x	-
	Spizella passerina	Chipping Sparrow	-	S5B	N5B	G5	-	-	-	-	x
Passeridae - Old World Sparrows	*Passer domesticus*	House Sparrow	SE	SNA	NNA	G5	-	-	-	-	x
Scolopacidae - Sandpipers & Phalarope	*Actitis macularius*	Spotted Sandpiper	-	S5	N5B	G5	-	-	-	x	-
	Scolopax minor	American Woodcock	-	S4B	N5B	G5	-	-	-	x	-
Strigidae - Typical Owls	*Bubo scandiacus*	Snowy Owl	-	SNA	N5B,N5N	G5	NAR	-	-	x	-
Sturnidae - Starlings	*Sturnus vulgaris*	European Starling	SE	SNA	NNA	G5	-	-	-	x	x
Turdidae - Thrushes	*Turdus migratorius*	American Robin	-	S5B	N5B,N5N	G5	-	-	-	x	x

SPECIES GROUP	FAMILY	SCIENTIFIC NAME	COMMON NAME	S RANK	N RANK	G RANK	PROVINCIAL STATUS	COSEWIC STATUS	FEDERAL STATUS	Date of most recent observations*	# of observation records from the last 15 years*
Salamanders	*Ambystomatidae*	*Ambystoma jeffersonianum*	Jefferson Salamander	S2	N2	G4	END	END	END	4/24/2004	1
	Ambystomatidae	*Ambystoma laterale*	Blue-spotted Salamander	S4	N5	G5	-	-	-	8/11/2017	2
	Ambystomatidae	*Ambystoma hybrid*	Jefferson X Blue-spotted Salamander	S2	NNA	GNA	-	-		3/13/1989	0
	Ambystomatidae	*Ambystoma maculatum*	Spotted Salamander	S4	N5	G5	-	-	-	7/11/1990	0
	Plethodontidae	*Plethodon cinereus*	Eastern Red-backed Salamander	S5	N5	G5	-	-	-	4/30/2018	17
	Proteidae	*Necturus maculosus*	Mudpuppy	S4	N4N5	G5	NAR	NAR	-	5/27/1951	0
Newts	*Salamandridae*	*Notophthalmus viridescens*	Eastern Newt	S5	N5	G5	-	-	-	5/31/1990	0
Frogs	*Bufonidae*	*Anaxyrus americanus*	American Toad	S5	N5	G5	-	-	-	8/7/2015	11
	Hylidae	*Hyla versicolor*	Gray Treefrog	S5	N5	G5	-	-	-	6/1/1990	0
	Hylidae	*Pseudacris triseriata*	Western Chorus Frog	S4	N4	G5	-	-	-	3/21/2012	1
	Hylidae	*Pseudacris crucifer*	Spring Peeper	S5	N5	G5	-	-	-	5/22/2010	2
	Ranidae	*Lithobates catesbeianus*	American Bullfrog	S4	N5	G5	-	-	-	9/15/2012	1
	Ranidae	*Lithobates clamitans*	Green Frog	S5	N5	G5	-	-	-	4/28/2017	20
	Ranidae	*Lithobates pipiens*	Northern Leopard Frog	S5	N5	G5	NAR	NAR	-	3/31/2016	1
	Ranidae	*Lithobates sylvaticus*	Wood Frog	S5	N5	G5	-	-	-	7/11/1990	0
Snakes	*Colubridae*	*Lampropeltis triangulum*	Eastern Milksnake	S4	N3N4	G5	NAR	SC	SC	5/27/2018	8
	Colubridae	*Nerodia sipedon sipedon*	Northern Watersnake	S5	N5	G5T5	NAR	NAR	-	6/1/1990	0
	Colubridae	*Storeria dekayi*	DeKay's Brownsnake	S5	N5	G5	NAR	NAR	-	12/16/2013	2
	Colubridae	*Storeria occipitomaculata*	Red-bellied Snake	S5	N5	G5	-	-	-	5/31/1990	0
	Colubridae	*Thamnophis sirtalis sirtalis*	Eastern Gartersnake	S5	N5	G5T5	-	-	-	6/17/2018	12
	Colubridae	*Thamnophis sauritus*	Eastern Ribbonsnake	S4	N3	G5	SC	SC	SC	7/1/1952	0
Turtles	*Chelydridae*	*Chelydra serpentina*	Snapping Turtle	S3	N5	G5	SC	SC	SC	6/4/2018	39
	Emydidae	*Chrysemys picta marginata*	Midland Painted Turtle	S4	N4	G5T5	-		-	5/14/2018	3
	Emydidae	*Emydoidea blandingii*	Blanding's Turtle	S3	N3	G4	THR	END	THR	7/21/2015	2
	Emydidae	*Graptemys geographica*	Northern Map Turtle	S3	N3	G5	SC	SC	SC	7/27/2015	1

***Data Source:** Ontario Nature Herpetofauna Atlas Data (obtained May 20, 2018)

FUNCTIONAL GROUP	FAMILY	SCIENTIFIC NAME	COMMON NAME	E STATUS	S RANK	N RANK	G RANK	PROVINCIAL STATUS	COSEWIC STATUS	FEDERAL STATUS
Trees/Shrubs	*Aceraceae*	*Acer negundo*	Manitoba Maple	-	S5	N5	G5	-	-	-
	Aceraceae	*Acer platanoides*	Norway Maple	SE5	SNA	NNA	GNR	-	-	-
	Aceraceae	*Acer saccharinum*	Silver Maple	-	S5	N5	G5	-	-	-
	Anacardiaceae	*Rhus typhina*	Staghorn Sumac	-	S5	N5	G5	-	-	-
	Caprifoliaceae	*Lonicera morrowii*	Morrow's Honeysuckle	SE3	SNA	NNA	GNR	-	-	-
	Caprifoliaceae	*Lonicera tatarica*	Tartarian Honeysuckle	SE5	SNA	NNA	GNR	-	-	-
	Caprifoliaceae	*Lonicera x bella*	(Lonicera morrowii X Lonicera tatarica)	-	SNA	NNA	GNA	-	-	-
	Elaeagnaceae	*Elaeagnus angustifolia*	Russian Olive	SE3	SNA	NNA	GNR	-	-	-
	Oleaceae	*Syringa vulgaris*	Common Lilac	SE5	SNA	NNA	GNR	-	-	-
	Pinaceae	*Picea abies*	Norway Spruce	SE3	SNA	NNA	G5	-	-	-
	Pinaceae	*Picea pungens*	Colorado Spruce	-	-	-	-	-	-	-
	Pinaceae	*Pinus nigra*	Black Pine/Austrian Pine	SE3	SNA	NNA	GNR	-	-	-
	Pinaceae	*Pinus sylvestris*	Scots Pine	SE5	SNA	NNA	GNR	-	-	-
	Pinaceae	*Pseudotsuga menziesii*	Douglas Fir	-	-	-	-	-	-	-
	Rhamnaceae	*Rhamnus cathartica*	Common Buckthorn	SE5	SNA	NNA	GNR	-	-	-
	Rosaceae	*Crataegus spp.*	Hawthorn	-	-	-	-	-	-	-
	Rosaceae	*Malus baccata*	Siberian Crabapple	SE1	SNA	NNA	GNR	-	-	-
	Rosaceae	*Malus pumila*	Common Apple	SE4	SNA	NNA	G5	-	-	-
	Rosaceae	*Rosa acicularis*	Prickly Rose	-	S5	N5	G5	-	-	-
	Ulmaceae	*Ulmus americana*	American Elm	-	S5	N5	G5	-	-	-
Vines	*Vitaceae*	*Vitis aestivalis*	Summer Grape	-	S4	NNR	G5	-	-	-
	Vitaceae	*Vitis riparia*	Riverbank Grape	-	S5	N5	G5	-	-	-
Graminoids	*Poaceae*	*Bromus inermis*	Smooth Brome	SE5	SNA	NNA	G5	-	-	-
	Poaceae	*Dactylis glomerata*	Orchard Grass	SE5	SNA	NNA	GNR	-	-	-
	Poaceae	*Phalaris arundinacea var. arundinacea*	Reed Canary Grass	-	S5	NNR	G5TNR	-	-	-
	Poaceae	*Phleum pratense*	Common Timothy	SE5	SNA	NNA	GNR	-	-	-
	Poaceae	*Phragmites australis ssp. australis*	European Reed	SE5	SNA	NNA	G5T5	-	-	-
	Poaceae	*Poa pratensis*	Kentucky Bluegrass	-	S5	N5	G5	-	-	-
	Typhaceae	*Typha angustifolia*	Narrow-leaved Cattail	SE5	SNA	N5	G5	-	-	-
Forbs	*Apiaceae*	*Daucus carota*	Wild Carrot	SE5	SNA	NNA	GNR	-	-	-
	Asteraceae	*Achillea millefolium*	Common Yarrow	SE	SNA	N5	G5	-	-	-
	Asteraceae	*Ambrosia artemisiifolia*	Common Ragweed	-	S5	N5	G5	-	-	-
	Asteraceae	*Anthemis cotula*	Stinking Chamomile	SE5	SNA	NNA	G5	-	-	-
	Asteraceae	*Arctium lappa*	Great Burdock	SE5	SNA	NNA	GNR	-	-	-
	Asteraceae	*Artemisia biennis*	Biennial Wormwood	SE5	SNA	N5	G5	-	-	-
	Asteraceae	*Artemisia vulgaris*	Common Wormwood	SE5	SNA	NNA	GU	-	-	-
	Asteraceae	*Aster sp.*	Aster	-	-	-	-	-	-	-
	Asteraceae	*Bidens bipinnata*	Spanish Needles	-	-	-	-	-	-	-
	Asteraceae	*Onopordum acanthium ssp. acanthium*	Scotch Thistle	SE4	SNA	NNA	GNRTNR	-	-	-
	Asteraceae	*Senecio vulgaris*	Common Ragwort	SE5	SNA	NNA	GNR	-	-	-
	Asteraceae	*Solidago canadensis var. canadensis*	Canada Goldenrod	-	S5	N5	G5T5	-	-	-
	Asteraceae	*Solidago nemoralis ssp. nemoralis*	Gray-stemmed Goldenrod	-	S5	N5	G5T5	-	-	-
	Asteraceae	*Sonchus palustris ssp. palustris*	Marsh Sow-thistle	SE1	SNA	NNA	GNRTNR	-	-	-
	Asteraceae	*Tanacetum parthenium*	Common Feverfew	SE3	SNA	NNA	GNR	-	-	-
	Asteraceae	*Taraxacum officinale*	Common Dandelion	SE5	SNA	N5	G5	-	-	-
	Brassicaceae	*Alliaria petiolata*	Garlic Mustard	SE5	SNA	NNA	GNR	-	-	-
	Brassicaceae	*Barbarea vulgaris*	Bitter Wintercress	SE5	SNA	NNA	GNR	-	-	-
	Brassicaceae	*Hesperis matronalis*	Dame's Rocket	SE5	SNA	NNA	G4G5	-	-	-
	Dipsacaceae	*Dipsacus fullonum*	Common Teasel	SE5	SNA	NNA	GNR	-	-	-
	Fabaceae	*Lotus corniculatus*	Garden Bird's-foot Trefoil	SE5	SNA	NNA	GNR	-	-	-
	Fabaceae	*Medicago lupulina*	Black Medic	SE5	SNA	NNA	GNR	-	-	-
	Fabaceae	*Securigera varia*	Common Crown-vetch	SE5	SNA	NNA	GNR	-	-	-
	Fabaceae	*Trifolium pratense*	Red Clover	SE5	SNA	NNA	GNR	-	-	-
	Fabaceae	*Vicia cracca*	Tufted Vetch	SE5	SNA	NNA	GNR	-	-	-
	Polygonaceae	*Rumex crispus*	Curly Dock	SE5	SNA	NNA	GNR	-	-	-
Ferns	*Equisetaceae*	*Equisetum arvense*	Field Horsetail	-	S5	N5	G5	-	-	-

TABLE LEGEND

PROVINCIAL STATUS: Species at Risk Ontario - current status as defined by the Endangered Species Act (ESA, S.O. 2007)
COSEWIC STATUS: Current status defined by the Committee on the Status of Endangered Wildlife in Canada
FEDERAL STATUS: Current status as defined by the Species at Risk Act (R.S.O., 2002)

E STATUS: EXOTIC STATUS RANK (ON)
S RANK: SUBNATIONAL STATUS RANK
G RANK: GLOBAL STATUS RANK
N RANK: NATIONAL STATUS RANK

END = Endangered
THR = Threatened
SC = Special Concern
NAR = Not at Risk
SE = Status Exotic (ON)

Ranking System

SX, NX, or GX/TX: Presumed Extinct
SH, NH, or GH/TH: Possibly Extinct
S1, N1 or G1/T1: Critically Imperiled
S2, N2, or G2/T2: Imperiled
S3, N3, or G3/T3: Vulnerable
S4, N4 or G4/T4: Apparently Secure
S5, N5, or G5/T5: Secure
SU, NU or GU/TU: Unrankable
SNR, NNR, or GNR/TNR: Unranked
S#S#, N#N#, or G#G#: Range Rank

N RANK and G RANK Definitions

Presumed Extirpated: Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

Possibly Extirpated (Historical): Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.

Critically Imperiled: Critically imperiled in the nation or state/province 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 from the state/province.

Imperiled: Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

Vulnerable: Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors.

Secure: Common, widespread, and abundant in the nation or state/province.

Unranked: Nation or state/province conservation status not yet assessed.

Unrankable: Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

Range Rank: A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

C

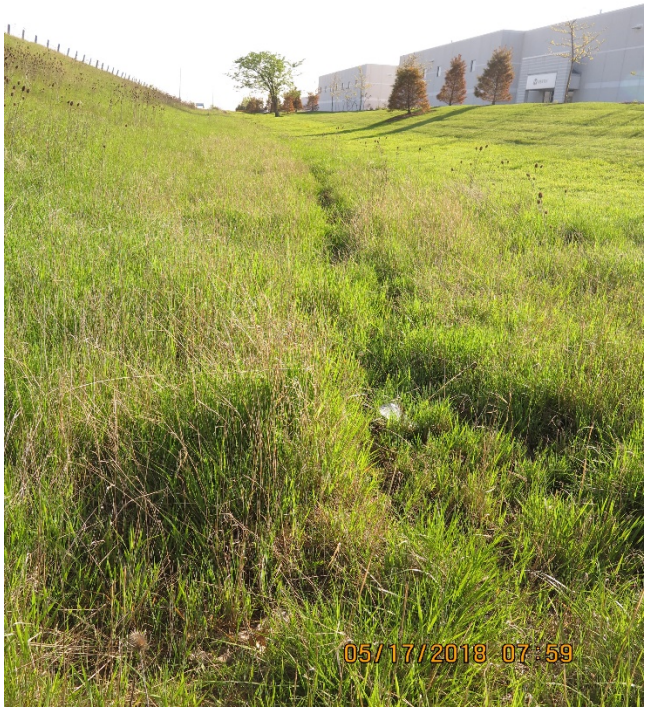
Appendix C

Photographic Log

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
1	5/17/2018	W
Description		
View of the ROW and adjacent lands south side of Burnhamthorpe Road West, just west of the intersection at Ridgeway Drive.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
2	5/17/2018	SW
Description		
View of lands and site drainage associated with lands located at the south-east corner of Highway 403 and Burnhamthorpe Rd. W.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
3	5/17/2018	E
Description		
View of lands and site drainage associated with lands located south of Burnhamthorpe Rd. W. and east of Highway 403.		



Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
4	5/17/2018	SW
Description		
View of lands and site drainage associated with lands located south of Burnhamthorpe Rd. W. and west of Highway 403.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
5	5/17/2018	E
Description		
View of ROW and adjacent landscape features located on the south side of Burnhamthorpe Rd W. between Ninth Line and Highway 403.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
6	5/17/2018	S
Description		
View of ROW and adjacent drainage features located on the south side of Burnhamthorpe Rd W. adjacent to Ninth Line (East side).		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
7	5/17/2018	E
Description		
View of ROW and associated landscape features located on the north side of Burnhamthorpe Rd. W. between Ninth Line and Highway 403.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
8	5/17/2018	N
Description		
View of MEGM4-1 (Fresh-moist Graminoid Meadow Ecosite) located on the north side of Burnhamthorpe Rd. W. between Ninth Line and Highway 403.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
9	5/17/2018	N
Description		
View of agricultural lands and ROW associated with the west side of Ninth Line, just north of Burnhamthorpe Rd. W.		

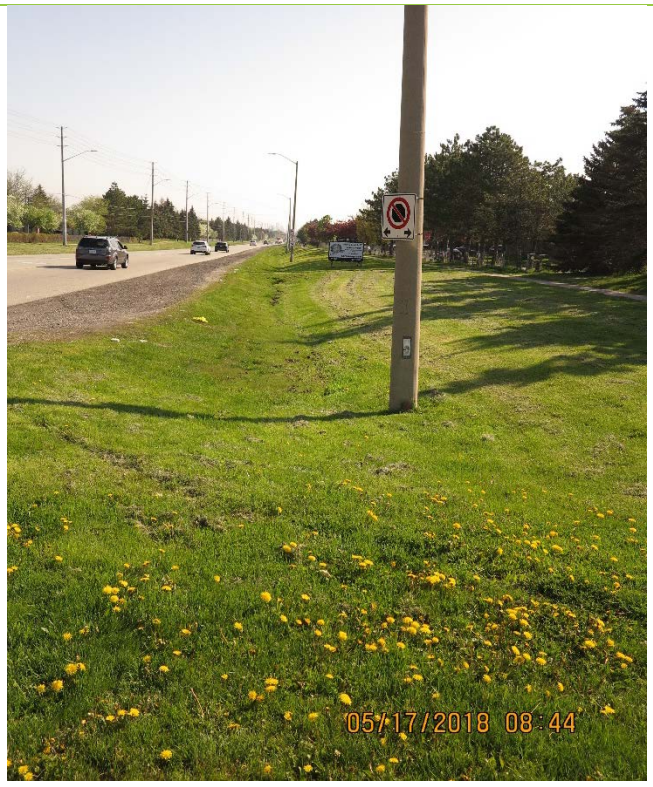
Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
10	5/17/2018	NW
Description		
View of agricultural lands and associated site drainage on lands west side of Ninth Line, just north of Burnhamthorpe Rd. W. This drainage feature generally aligns with conservation authority watercourse mapping.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
11	5/17/2018	S
Description		
View of mixed graminoid forb meadow (MEMM4) located on the west side of Ninth Line and south of Burnhamthorpe Road East.		

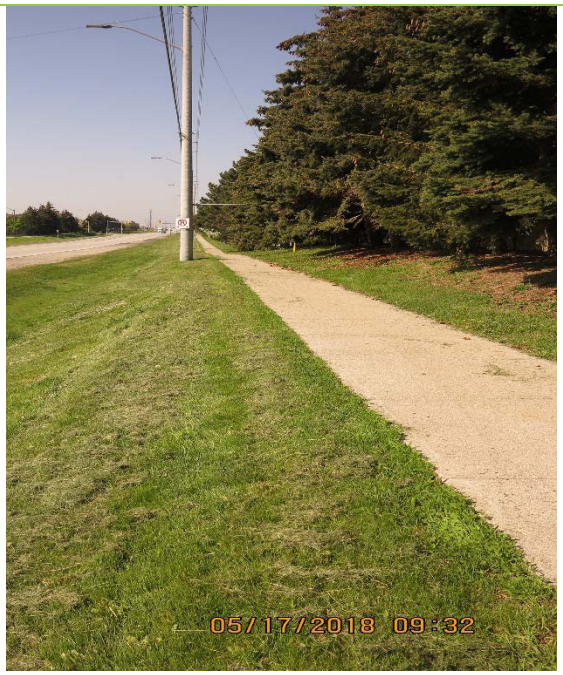
Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
12	5/17/2018	E
Description		
View of Common Reed establishment surrounding the culvert outlet and drainage path associated with the tributary that eventually drain to the North Oakville-Milton East Wetland Complex.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
13	5/17/2018	N/A
Description		
View of the Common Reed establishment surrounding the culvert outlet on the south side of Burnhamthorpe Rd. E. (west of Ninth Line) associated with the tributary that eventually drains to the North Oakville-Milton East Wetland Complex.		

Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
14	5/17/2018	E
Description		
View of the man-made drainage swale adjacent to the Burnhamthorpe Road W, west of Ridgeway Drive.		



Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
15	5/17/2018	W
Description		
View of representative ROW community structure and drainage swale. This photograph is taken from the north side of Burnhamthorpe Rd. W., just west of Loyalist Dr.		



Site Location		
Burnhamthorpe Road from Ninth Line to Loyalist Dr., Mississauga, ON.		
Photo #	**Date**	**Cardinal Direction**
16	5/17/2018	W
Description		
View of ROW and associated vegetation located on the north side of Burnhamthorpe Rd. W., east of Highway 403. The recreational sports field associated with a Secondary School, can be seen on right side of the image (local Green System DA).		

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