



**BURNSIDE**

**Environmental Assessment Study for New  
Sanitary Sewer on Fair Birch Drive,  
Birchview Drive, Queen Victoria Avenue  
and Lorne Park Road**

**Project File Report**

**Regional Municipality of Peel**

**R.J. Burnside & Associates Limited  
6990 Creditview Road, Unit 2  
Mississauga ON L5N 8R9 CANADA**

**July 2019  
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July 2019

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## Record of Revisions

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1	May 2, 2019	Draft Submission to MECP for review
2	July 11, 2019	Final Report for 30-Day Public Review Period

## R.J. Burnside & Associates Limited

Report Prepared By:



Avid Banihashemi, M.Sc., Ph.D.  
EA Coordinator



Tricia Radburn, M.Sc.(PI), MCIP, RPP  
Senior Environmental Planner

Report Reviewed By:



Jennifer Vandermeer, P.Eng.  
EA Lead



Jordan Phillips, P.Eng.  
Project Manager  
AB/TR/JV/JP:sgd

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## Executive Summary

The Region of Peel (Region) has undertaken a Municipal Class Environmental Assessment (EA) to investigate opportunities for improvements to the sanitary sewer system in the area of Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road in the southwest area of the City of Mississauga (City). R.J. Burnside & Associates Limited (Burnside) has facilitated the EA on behalf of the Region. The Study has followed a comprehensive planning and design process to explore the opportunity to improve the sanitary sewer system and in so doing ensure that this infrastructure can reliably accommodate the planned and future growth within the City. The Study has been completed in accordance with the requirements of a Schedule B Undertaking as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment Document (October 2000, as amended 2007, 2011 and 2015), which is an approved process under the *Ontario Environmental Assessment (EA) Act, 1990*.

## Description of Study Area

The Study Area is located within the southwest area of the City within the neighbourhood of Lorne Park and includes Fair Birch Drive, and portions of Birchview Drive, Queen Victoria Avenue and Lorne Park Road, north of the Metrolinx Lakeshore West railway corridor. Land use within the Study Area is primarily residential; however, there are some businesses at the south end of Birchview Drive and a commercial plaza on the south side of Lorne Park Drive.

## Need / Justification

The sanitary sewerage from private residential areas including Queen Victoria Avenue, Aldo Drive, South Aldo Drive, Birchview Drive, Springhill Drive, Mobridge Court, Wildfield Crescent, Fair Birch Drive, and Lorne Park Road is currently discharging into a system of local sewers. The collected sewerage is conveyed into a local sub-trunk collector sewer through a shallow sewer, constructed in 1971 within an existing Region of Peel easement that runs along a tributary of Lornewood Creek. In a few locations the sewer pipe crosses the tributary in a few locations and runs extremely close to the watercourse.

The recent inspection of the sewer revealed that the sewer is in poor condition due to internal stress from deposition, pipe movement, and root action and external stress from erosion of the creek that reduces the cover depth over the pipe. The Region of Peel Wastewater Operation Section expressed concern regarding limited and challenging access to the sewer constructed within easements.

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## **Project Opportunity Statement**

The Problem/Opportunity Statement for the New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class EA is defined as follows:

*The existing sanitary sewer running parallel to the Lornewood Creek tributary that collects sewerage from private residential properties in the Study Area in the City of Mississauga is over 40 years old and is in poor condition. Furthermore, the Region has limited access to this sewer for maintenance. The Region has a long-term sustainable plan to provide a viable, safe, structurally and hydraulically sound sanitary sewerage system. Therefore, the Region requires a solution for the replacement of the existing sanitary sewer including improvements to other contributing sanitary sewers in the area and improved access through placing new infrastructure within existing rights-of-way or proposed easements.*

## **Description of Natural Environment**

### ***Vegetation Communities and Significant Natural Areas***

Based on the City of Mississauga Natural Areas Survey (NAS), there are two vegetation community types present in the Study Area, which fall within the Clarkson-Lorne Park Natural Area 22 (CL22) (see Figure 3 of this Report): Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3), which covers the majority of CL22; and two areas of Mineral Meadow Marsh (MAM2) including the MAM2 area at the east end of Fair Birch Drive. Of the 181 floral species recorded in the NAS across the wooded areas along the existing sanitary sewer route and natural areas adjacent to Lornewood Creek to the east and north of the Study Area, only one is provincially rare: Butternut, an Endangered tree species. Several locally and regionally rare species were also identified in the area as well as several invasive species. Non-native species represent approximately 38% of the flora present.

There are no Provincially Significant Wetlands in the Study Area. The valleylands associated with Lornewood Creek and tributary and the woodlands that comprise the Deciduous Forested area (FOD5 3) within CL22 are considered significant. No provincially significant life science or earth science ANSIs were identified through the background information review for the Study Area.

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

According to the NAS, 26 faunal species have been recorded in CL22, which includes a portion of the Study Area. These include 19 birds, one mammal, three amphibians and three reptiles. To determine whether Significant Wildlife Habitat (SWH) is present, or

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may be present in the Study Area, a screening was conducted using the broad habitat descriptions from the Significant Wildlife Habitat Technical Guide (SWHTG) and the SWHTG Ecoregion 7E Criterion Schedule (MNRF, 2015) as well as professional judgement, background records and air photos. Two habitat types were confirmed present in the Study Area: Landbird Migratory Stopover Areas, and, Seeps and Spring. Seven candidate habitat types were assumed to be present in the Study Area: Bat Maternity Colonies; Turtle Wintering Areas; Reptile Hibernacula; Amphibian Woodland Breeding Habitat; Marsh Breeding Bird Habitat; Terrestrial Crayfish Habitat; and, Habitat for Special Concern and Rare Wildlife Species.

A review of the Ontario Breeding Bird Atlas, Ontario Reptile and Amphibian Atlas and Natural Heritage Information Centre databases as well as Credit Valley Conservation (CVC) data was used to identify records of provincially rare species and Species at Risk (SAR) in the vicinity of the Study Area. Based on the conducted screening, nine provincially rare species and five SAR have habitat requirements that could be met by the features present in the Study Area. These species and their habitats are described in Table 1 of this Report.

Mitigation measures have been developed (see Section 6.0 of this Report) to ensure impacts to SWH and habitats for provincially rare or SAR are avoided during the implementation of the Project.

### ***Fish and Aquatic Habitat***

Based on review of the Fisheries and Oceans Canada (DFO) SAR Distribution and Critical Habitat mapping there are no aquatic SAR or critical habitat for aquatic SAR species present within the Study Area. The Ministry of Natural Resources and Forestry (MNRF) has mapped the tributary to Lornewood Creek in the Study Area, which flows primarily from southwest to northeast as a warm-water watercourse. The watercourse is a second-order stream. Species historically observed downstream of the Study Area within Lornewood Creek are presented in Table 2 of this Report.

### **Cultural Environment**

The Stage 1 Archaeological Assessment completed for the Project determined that approximately 0.15 ha adjacent to Lorne Park Road and Queen Victoria Avenue exhibits archaeological potential and requires a Stage 2 survey, if impacted, prior to any construction activities. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or low and wet conditions.

The Cultural Heritage Resource Assessment confirmed that there are three cultural heritage resources consisting of three built heritage resources (BHR) adjacent to the Study Area. These include two properties designated under Part IV of the Ontario

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Heritage Act and one property listed in the City of Mississauga's Municipal Register of Property of Cultural Heritage Value or Interest. Construction activities and staging will be suitably planned and undertaken to avoid impacts to identified cultural heritage resources and therefore no significant cultural heritage impacts to these resources will result from the proposed sanitary system improvements.

### **Assessment of Alternative Solutions**

The following alternative solutions were identified to address the Project Opportunity Statement:

- Alternative 1 – Do Nothing;
- Alternative 2 – Rehabilitate Existing Sanitary Sewer; and
- Alternative 3 – Construct New Sanitary Sewer.

The alternatives were evaluated based on the following evaluation criteria:

- Natural Environment;
- Socio-Economic/Cultural Environment;
- Technical/Operational Environment; and
- Financial Environment.

Alternative 1 (Do Nothing) is unable to address the Project Opportunity Statement.

Alternative 2 (Rehabilitate Existing Sanitary Sewer) can only partially address the Project Opportunity Statement, because:

- It will result in degradation of the system over time and increased risk of failure;
- Due to limited access, the rehabilitated sanitary sewer will not be easy to maintain; and
- Potential risk of system failure (over time) would increase potential impacts aquatic and terrestrial habitat as well as surface and groundwater quality.

Alternative 3 (Construct New Sanitary Sewer) can fully address the Project Opportunity Statement, because it:

- Substantially improves access to the sanitary sewer system for maintenance purposes; and
- Provides a viable, safe, structurally and hydraulically sound sanitary sewerage system through abandonment of the 40-year-old sanitary system and placement of new infrastructure (within the existing right-of-way).

Therefore, based on this evaluation, Alternative 3 was identified as the preferred solution. A detailed evaluation matrix is provided in Appendix C.

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## Study Consultation

A wide range of stakeholders were identified and contacted at the onset of the study and during the EA process including relevant review agencies and organizations, Indigenous communities and local residents who may be affected or have interest in the study. These stakeholders were contacted through direct distribution of notices as well as publications within local newspapers and on the City of Mississauga website. The table below details the consultation program:

Date	Correspondence	Recipients / Distribution
November 15, 2018	Information Letter, Project Response Form and Notice of Commencement	Property Owners, Resident Ratepayers, Potentially Interested Organizations, Review agencies and Indigenous communities. In addition to 41 review agencies, organizations, and Indigenous Communities, notices were mailed to approximately 142 property owners and resident ratepayers in the vicinity of the Study Area.
November 15, 2018 and November 22, 2018	Notice of Study Commencement and Public Information Centre (PIC)	Mississauga News.

A Public Information Centre (PIC) was held on November 27, 2018 from 6:00 PM to 8:00 PM. Participants were requested to provide input by completing the available comment sheets. A total of 18 people attended the PIC including Councillor Karen Ras excluding the Study Team members. A total of 10 written comments / inquiries from local residents were received during the Study. In general, residents agreed with the preliminary preferred solution. Some residents had specific questions about the proposed infrastructure changes in close proximity to their properties, which were answered directly by the Project Team.

Mississauga of the Credit First Nation expressed interest in the project and reviewed the Stage 1 Archaeological Assessment Report. No other Indigenous communities expressed interest in the project.

The Project Team received comments from several agencies during the course of the Study including: Ministry of the Environment, Conservation and Parks (MECP), City of Mississauga, and the office of Councillor Karen Ras. A meeting was held with representatives from Ministry of Natural Resources and Forestry (MNR) and Credit Valley Conservation (CVC).

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The Project Team contacted all potential utility companies located within the Study Area and received responses from Zayo, Hydro One, and Enbridge who indicated they have no facilities in the Study Area and Rogers who provided information about their facilities in the Study Area.

### **Environmental Impacts, Mitigation Measures and Monitoring**

Several mitigation measures are proposed in order to mitigate potential impacts associated with the Project on the environmental features of the Study Area (see Table 5 of this Report). All mitigation measures and monitoring activities shall be reviewed (and updated if necessary) during the detailed design phase of the project.

In general, mitigation measures have been proposed for the following aspects of the environment:

- Built Environments
  - Human Health and the Environment
  - Transportation Infrastructure
- Physical Environment
  - Surface Water
  - Groundwater
- Natural Environment
  - Trees within Forested Natural Area
  - Street Trees
  - Migratory Birds
  - Candidate and Confirmed Wildlife and SAR Habitats
  - Seeps and Springs
  - Fish Habitat
- Cultural Environment
  - Archaeology
  - Cultural and Built Heritage
- Noise and Air Quality

### **Project Implementation**

Phase 5 or 'Project Implementation' of the Municipal Class EA process involves the completion of detailed design drawings, specifications and tender documents to be provided to a successful contractor for the construction of the proposed project. During the implementation phase, the City will need to adhere to several mitigation measures and monitoring plans as documented in this Project File Report, some of which will need to be in place prior to and during construction. Permits will need to be applied for from various regulatory agencies.

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## 1.0 Introduction

The Region of Peel (Region) has undertaken a Municipal Class Environmental Assessment (EA) to investigate opportunities for improvements the sanitary sewer system in the area of Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road in the southwest area of the City of Mississauga (City). R.J. Burnside & Associates Limited (Burnside) has facilitated the EA on behalf of the Region.

The Study has followed a comprehensive planning and design process to explore the opportunity to improve the sanitary sewer system and in so doing ensuring this infrastructure can reliably accommodate the planned and future growth within the City. The Study has been completed in accordance with the requirements of a Schedule B Undertaking as outlined in the Municipal Engineers Association Municipal Class Environmental Assessment Document (October 2000, as amended 2007, 2011, and 2015), which is an approved process under the *Ontario Environmental Assessment (EA) Act, 1990*.

### 1.1 Description of Study Area

The Study Area is located within the southwest area of the City within the neighbourhood of Lorne Park and includes Fair Birch Drive, and portions of Birchview Drive, Queen Victoria Avenue and Lorne Park Road, north of the Metrolinx Lakeshore West railway corridor (see Figure 1). Land use within the Study Area is primarily residential; however, there some businesses at the south end of Birchview Drive and a commercial plaza on the south side of Lorne Park Drive.

Fair Birch Drive is approximately 600 m long and is oriented in a northeast-southwest alignment. This local road features two travel lanes with sidewalks and grass boulevards along both sides. A portion of Fair Birch Drive runs parallel to the Metrolinx Lakeshore West railway corridor and is separated from the railway by a tree-lined embankment. Two short (approximately 80 m) residential cul-de-sacs branch off from Fair Birch Drive, Cayente Place and Mirada Place. Both cul-de-sacs, carry two lanes of traffic, and feature grass boulevards and curbs.

Birchview Drive within the Study Area is approximately 270 m long and is oriented in a northwest-southeast alignment. This local road features two travel lanes with a sidewalk along the east side, small paved shoulders lacking curbs north of Fair Birch Drive and with curbs to the south of Fair Birch Drive.

Queen Victoria Avenue within the Study Area is approximately 200 m long and is oriented in a northwest-southeast alignment. This local road features two travel lanes with no shoulders or curbs and moderate ditches along the west side.

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Lorne Park Road within the Study Area is approximately 200 m long and is oriented in an east-west alignment. This minor collector road features two lanes of east and westbound traffic with a sidewalk and boulevard on the south side, and curbs on both sides. Lorne Park Avenue travels through an urban mixed residential and commercial context with residences and shopping plazas within the Study Area.

A small portion of Wildfield Crescent and Cloverbrae Crescent also fall within the Study Area. Both are crescents connect to Springhill Drive outside (northwest) of the Study Area. Both crescents feature two lanes of northeast and southwest bound traffic.



 Watercourse  
 Study Area

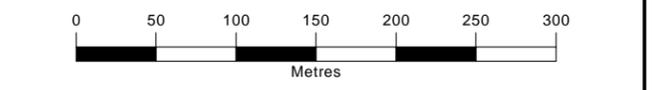
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4. Region of Peel.

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Datum: North American 1983		 Grid North
Coord. System: NAD 1983 UTM Zone 17N		
Projection: Transverse Mercator		
Central Meridian: 81°0'0.00"W		
False Easting: 500,000m	False Northing: 0m	
Page Orientation: 312.35°		Scale Factor: 0.99960



Client

**REGION OF PEEL**

Figure Title

**ENVIRONMENTAL ASSESSMENT STUDY FOR NEW SANITARY SEWER ON FAIR BIRCH DRIVE, BIRCHVIEW DRIVE, QUEEN VICTORIA AVENUE AND LORNE PARK ROAD**

STUDY AREA

Drawn	Checked	Date	Figure No. <b>1</b>
HN	JV	2019/02/22	
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## 1.2 Municipal Class EA Process

The planning of major municipal infrastructure projects or activities is subject to the *EA Act, 1990* and requires the proponent to complete an EA. The Municipal Class EA process was developed by the Municipal Engineers Association, in consultation with the Ministry of the Environment, Conservation and Parks (MECP). The Municipal Class EA solicits input and approval from regulatory agencies, the municipality and the public at the local level. This process leads to an evaluation of the alternatives in view of the significance of environmental impacts and the choice of effective mitigation measures.

### 1.2.1 Municipal Class EA Process

There are three categories of assessment within the Municipal Class EA process that are dependent on the complexity and potential for environmental impact.

- **Schedule A** - Projects are limited in scale, have minimal adverse environmental impacts and require no public notification or documentation.
- **Schedule A+** - Projects are limited in scale, have minimal adverse environmental impacts and require no documentation. The public is to be advised prior to implementation.
- **Schedule B** - Projects have the potential for some adverse environmental impacts. The proponent is required to undertake a screening process, involving mandatory contact with the directly affected public and regulatory agencies, to ensure that they are aware of the Project and that their concerns are addressed. Schedule B Projects require that a Project File be prepared and made available for public review. Proponents undertaking Schedule B Projects are required to complete Phase 1, 2, and 5 of the Municipal Class EA Process.
- **Schedule C** - Projects have the potential for significant environmental impacts and must proceed under the full planning and documentation procedures of the Municipal Class EA document. Schedule C projects require that an Environmental Study Report (ESR) be prepared and filed on the public record for review by the public and regulatory agencies. Proponents undertaking Schedule C Projects are required to complete Phase 1 through 5 of the Municipal Class EA Process.

The phases of the Municipal Class EA are summarized in the Municipal Class EA document as follows:

- **Phase 1** - Identify the problem (deficiency) or opportunity.
- **Phase 2** - Identify alternative solutions to address the problem or opportunity by taking into consideration the existing environment, and establish the preferred solution taking into account public and review agency input. At this point, determine the appropriate schedule for the undertaking and document decisions in a Project File for Schedule B projects, or proceed through the following phases for Schedule C projects.

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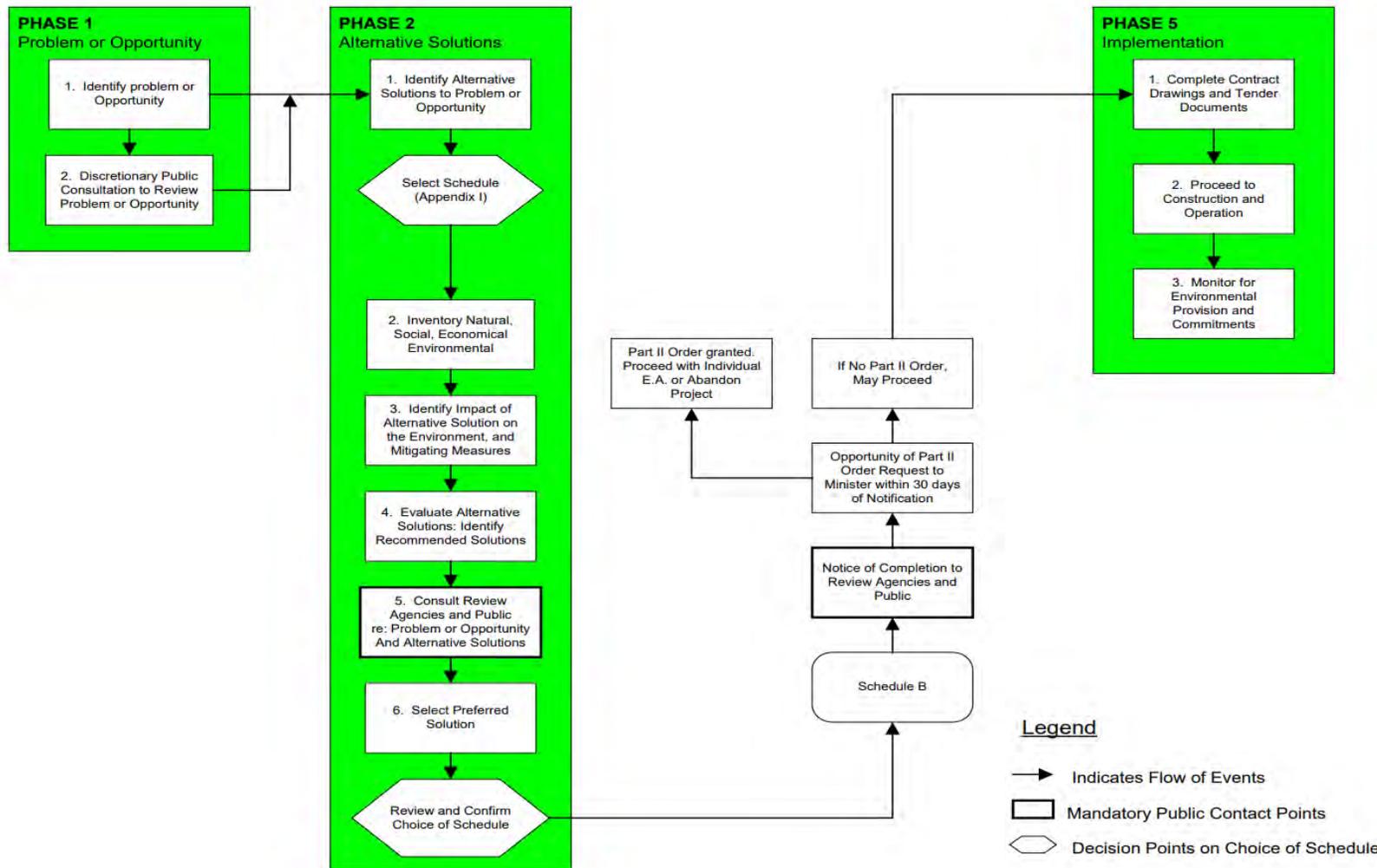
- **Phase 3** - Examine alternative methods of implementing the preferred solution, based upon the existing environment, public and review agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects.
- **Phase 4** - Document, in an ESR, a summary of the rationale, and the planning, design and consultation process of the project as established through the above phases and make such documentation available for scrutiny by review agencies and the public.
- **Phase 5** - Complete contract drawings and documents and proceed to construction and operation; monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the completed facilities.

### 1.2.2 Class EA Schedule Confirmation

The proposed alternatives include a potential connection to the existing Lornewood Creek sub-trunk sanitary sewer at the end of Fair Birch Drive, which would need to be established out of the existing right-of-way and would require temporary easements for construction activities and some property acquisitions for permanent sanitary sewer easements. As such, this Study has followed the Schedule B Municipal Class EA Process that is illustrated in Figure 2.

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Figure 2: Municipal Class EA Process for Schedule B Undertakings



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## 2.0 Need / Justification

The Region of Peel is responsible for the operation and maintenance of the watermain and sanitary sewer networks, water and wastewater pumping station, and treatment plants within its boundaries. The Region of Peel is responsible for the expansion and upgrades of this infrastructure to accommodate the planned and future growth within the Municipality and ensure the system's reliability. Upgrades to improve the reliability of these systems are completed as part of the Region's State of Good Repair Program.

The sanitary sewerage from private residential areas including Queen Victoria Avenue, Aldo Drive, South Aldo Drive, Birchview Drive, Springhill Drive, Moberidge Court, Wildfield Crescent, Fair Birch Drive, and Lorne Park Road in the City of Mississauga is currently discharging into a system of local sewers that convey the collected sewerage into a local sub-trunk collector sewer. The sewer directing the collected sanitary sewer discharge into the local sub-trunk collector sewer is a shallow sewer constructed within the existing Region of Peel easements in 1971. The easement runs along a tributary of Lornewood Creek with the sewer pipe crossing the creek in a few locations and running extremely close to the watercourse.

The recent inspection of the sewer revealed that the sewer is in poor condition due to internal stress from deposition, pipe movement, and root action and external stress from erosion of the creek that reduces the cover depth over the pipe. Erosion and scour of the creek are anticipated to continue over time.

The results of a 2015 inspection of the sewer identified that the existing asbestos cement pipes are deteriorating, thereby increasing the risk of failure. Erosion of the creek banks has affected the integrity of the pipe bedding and surrounds and contributed to gradual pipe movement. Furthermore, the Region of Peel Wastewater Operation Section expressed concern regarding limited and challenging access to the sewer constructed within easements.

### 2.1 Project Opportunity Statement

In Phase 1 of the Municipal Class EA process, the objective is to identify the challenge or opportunity that the process is meant to address. This statement assists in defining the scope of the project and serves as its central theme and integrating element.

The Problem/Opportunity Statement for the New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class EA is defined as follows:

*The existing sanitary sewer running parallel to the Lornewood Creek tributary that collects sewerage from private residential properties in the*

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*Study Area in the City of Mississauga is over 40 years old and is in poor condition. Furthermore, the Region has limited access to this sewer for maintenance. The Region has a long-term sustainable plan to provide a viable, safe, structurally and hydraulically sound sanitary sewerage system. Therefore, the Region requires a solution for the replacement of the existing sanitary sewer including improvements to other contributing sanitary sewers in the area and improved access through placing new infrastructure within existing rights-of-way or proposed easements.*

In accordance with the requirements of the Municipal Class EA planning process for Schedule B projects, the Region of Peel initiated this Municipal Class EA to identify and evaluate alternative solutions to address this Problem/Opportunity Statement.

## **2.2 Planning Overview**

### **2.2.1 Provincial Planning Policies**

#### **2.2.1.1 Provincial Policy Statement**

The 2014 Provincial Policy Statement (PPS) is the complimentary policy document to the *Planning Act, 1990*, issued under Section 3 of the Act.

The PPS states that municipal projects should be directed to existing settlement areas, create stronger and improved communities, and have little to no impact on the natural features of the area. In general projects should have consideration for future needs to ensure the benefits of the project are far-reaching. Section 1.6 of the PPS contains specific guidance on Infrastructure and Public Service Facilities:

*“1.6.1 Infrastructure and public services facilities shall be provided in a coordinated, efficient and cost-effective manner that considers impacts from climate changes while accommodating projected needs.*

*Planning for infrastructure and public service facilities shall be coordinated and integrated with land use planning so that they are:*

- a) financially viable over their life cycle, which may be demonstrated through asset management planning; and*
- b) available to meet current and projected needs.*

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1.6.3 *Before consideration is given to developing new infrastructure and public service facilities:*

- a) *the use of existing infrastructure and public service facilities should be optimized; and*
- b) *opportunities for adaptive re-use should be considered, wherever feasible.*

1.6.5 *Public service facilities should be co-located in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration, access to transit and active transportation.”*

As such, improvements made to public infrastructure, including the potential improvements to the sanitary sewer in the Study Area are consistent with the PPS.

#### **2.2.1.2 Growth Plan for the Greater Golden Horseshoe**

The Growth Plan for the Greater Golden Horseshoe (2017) is a Provincial Plan that directs how regional growth in the Greater Golden Horseshoe (GGH) is to be managed up to 2041. The plan carries policies forward from the Provincial Policy Statement (PPS), working to reduce development sprawl and providing direction in where intensification should take place. There are several provisions within the policy that are relevant to the proposed improvements to the sanitary sewer in the Study Area.

Section 3.1 of the Plan directs municipalities to ensure *“that existing infrastructure is optimized before new infrastructure is built.”*

Furthermore, Section 3.2.1, part 4 indicates that,

*“Municipalities will assess infrastructure risks and vulnerabilities, including those caused by the impacts of a changing climate, and identify actions and investments to address these challenges, which could be identified as part of municipal asset management planning.”*

#### **2.2.1.3 Region of Peel Official Plan**

With the major theme of sustainability and smart growth, the Region of Peel Official Plan (ROP) reinforces the policies of the PPS and the Growth Plan, allocating growth targets to municipalities. While providing direction for local Official Plans (OPs), the ROP focuses on policies affecting regional systems and services.

The Region of Peel Official Plan (ROP), adopted in 1996 and consolidated December 2016, defines and guides the implementation of land use policies for all communities within the Region of Peel (Region of Peel, 2016). It reinforces the policies of the PPS

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and the Growth Plan, allocating growth targets to municipalities. While providing direction for local Official Plans (OPs), the ROP focuses on policies affecting regional systems and services. It incorporates the Greater Golden Horseshoe, the Oak Ridges Moraine, and the Niagara Escarpment into its Greenlands System; the system's overarching philosophy is to protect natural areas through maintaining linkages, where ecologically appropriate, into a network of natural core areas and corridors.

The Greenlands System is divided into Core Areas, Natural Areas and Corridors, and Potential Natural Areas and Corridors. Core Areas are identified landscapes that contain ecological features, forms and/or functions that represent uninterrupted natural system and the highest potential for biodiversity (Region of Peel, 2016). Natural Areas and Corridors are lands identified as containing important ecological features, forms and/or functions that can also support the integrity of the Greenlands System within the Region. Potential Natural Areas and Corridors are similar to Natural Areas and Corridors though their status and significance within the Greenlands System may require additional study and evaluation. Portions of the Study Area are considered Core Areas of the Greenlands System as per Schedule A of the ROP.

#### **2.2.1.4 City of Mississauga Official Plan**

The City of Mississauga Official Plan (MOP) consolidation of March 2018 is the guiding document for development and growth within the City (City of Mississauga, 2018). It reflects Mississauga's strategic goals:

- Lead and encourage environmentally responsible approaches;
- Conserve, enhance and connect natural environments; and
- Promote a green culture.

The MOP incorporates aspects of the PPS, the Greenbelt Plan, and the RPOP into its policies. From an environmental perspective, the plan incorporates significant natural and hazard areas into its Greenland system. Development is restricted in Greenland space to protect people and property from damage, as well as to provide protection, enhancement, and restoration of the Natural Heritage System (City of Mississauga, 2018).

Under Schedule 10, land use designations within the Study Area include Residential Low Density I and II, Mixed Use, Public Open Space, and Greenlands. The Greenlands within the Study Area are also considered Natural Hazard area.

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### **3.0 Description of the Environment**

#### **3.1 Built Environments**

##### **3.1.1 Sanitary Services**

All sanitary sewer segments within the Study Area are part of the Credit Valley South sewershed and outlet to the existing Lornewood Creek sanitary sub-trunk system east of the Study Area. The Lornewood Creek sanitary sub-trunk system is in turn received at the Richard Memorial Pumping Station and then conveyed westerly via a 400 mm diameter forcemain to the Lorne Park Wastewater Treatment Plant.

The following provides a description of the sanitary sewer segments within the Study Area:

- 250 mm diameter concrete sewer runs underneath Fair Birch Drive connecting to the Lornewood Creek sanitary sub-trunk system at MH 1784789 east of the Study Area.
- 300 mm diameter asbestos-cement sewer runs parallel to Fair Birch Drive through a Region of Peel easement between MH 1784634 and MH 1784776 along a tributary of Lornewood Creek. The sewer crosses the tributary in a few locations and runs extremely close to the watercourse.
- 250 mm diameter vitrified clay sewer runs through a Region of Peel easement between Queen Victoria Avenue (MH 1784415) and Birchview Drive (MH 1784635).
- 250 mm diameter concrete sewer runs underneath Queen Victoria Avenue from 1194 Queen Victoria Avenue southward to Lorne Park Road and a 250 mm vitrified clay pipe sewer on Queen Victoria Avenue runs from 1201 Queen Victoria Avenue northward to MH 1784415.
- 250 mm diameter concrete sewer runs underneath Lorne Park Road.
- 250 mm diameter asbestos-cement sewer runs underneath Birchview Drive to MH 1784634.

##### **3.1.1.1 Present Condition of the Sanitary Sewer**

The CCTV condition assessments previously performed (latest on February 2015), reported various issues on sewers that are the subject of this Study, including general and internal conditions. These range from minor, manageable issues such as debris/attached grease, roots mass at joints, obstruction, deposits encrustation, and settled deposits, to major ones including line deflection, ponding in line, and water infiltration through joints/lines.

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### **3.1.2 Water Services**

Water supply infrastructure within the Study Area generally includes:

- 150 mm PVC watermain on Fair Birch Drive, and a 50 mm Copper Type 'K' watermain at the dead end of Fair Birch Drive;
- 150 mm PVC watermain on Birchview Drive;
- 150 mm PVC watermain on Queen Victoria Avenue; and
- 300 mm PVC watermain on Lorne Park Road.

### **3.1.3 Stormwater Management and Drainage**

Stormwater infrastructure within the rights of way (ROW) of the Study Area generally includes:

- 600-675 mm diameter storm sewer on Queen Victoria Avenue;
- 250-600 mm diameter storm sewer on Fair Birch Drive;
- 450-600 mm diameter storm sewer on Lorne Park Road; and
- 375-525 mm diameter storm sewer on Birchview Drive.

### **3.1.4 Utilities**

There are some existing aerial and buried utilities on and in the immediate vicinity of the Study Area, including overhead hydro and communications wires and gas mains.

## **3.2 Physical Environment**

### **3.2.1 Physiography, Geology and Topography**

The Study Area is situated within the Iroquois Plain physiographic region of southern Ontario (Chapman and Putnam, 1984). The Iroquois Plain physiographic region of Southern Ontario is a lowland region bordering Lake Ontario. This region is characteristically flat and formed by lacustrine deposits laid down by the inundation of Lake Iroquois, a body of water that existed during the late Pleistocene. This region extends from the Trent River, around the western part of Lake Ontario, to the Niagara River, spanning a distance of 300 km (Chapman and Putnam, 1984:190). The old shorelines of Lake Iroquois include cliffs, bars, beaches and boulder pavements. The old sandbars in this region are good aquifers that supply water to farms and villages. The gravel bars are quarried for road and building material, while the clays of the old lake bed have been used for the manufacture of bricks (Chapman and Putnam, 1984:196).

The surficial geology mapping demonstrates that the Study Area is underlain by modern alluvial deposits, and coarse-textured glaciolacustrine deposits of sand and gravel, clay to silt-textured till (Ontario Geological Survey, 2010). Natural soils in the Study Area

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consist of Fox sandy loam and Caledon loam, both grey-brown podzolic, stone free, well sorted outwash soils with good drainage; and Bottom Land, alluvial deposits of variable drainage that are subject to flooding and show little horizontal differentiation (Experimental Farms Service, 1953).

The Study Area includes Lornewood Creek and is within the Credit River watershed, which drains an area of approximately 860 square kilometres from its headwaters in Orangeville, Erin, and Mono, passing through part of the Niagara Escarpment and the Oak Ridges Moraine, and draining into Lake Ontario at the town of Port Credit (Credit Valley Conservation, 2009). The Study Area is within the Lake Ontario Shoreline West Sub-watershed (Sub-watershed 21), which is a collection of distinct watersheds that drains an area of 3,305 ha directly into Lake Ontario.

### 3.2.2 Source Water Protection

As a result of the *Clean Water Act*, (*Ontario Regulation 287/07*) communities in Ontario are required to develop source protection plans in order to protect their municipal sources of drinking water. These plans identify risks to local drinking water sources and develop strategies to reduce or eliminate these risks (<http://conservationontario.ca/conservation-authorities/source-water-protection/>, accessed January 2019).

A review of the Ministry of Environment Conservation and Parks (MECP formerly MOECC) Source Water Protection Information Atlas indicates that the Study Area is located within the Credit Valley-Toronto and Region-Central Lake Ontario (CTC) Source Protection Region and Credit Valley Source Protection Area. To protect drinking water sources, areas are identified where activities can affect the drinking water sources. The *Clean Water Act* refers to these areas as Vulnerable Areas, which are broken down into four (4) types:

- Intake Protection Zones (IPZ);
- Wellhead Protection Area (WHPA);
- Highly Vulnerable Aquifers (HVA); and
- Significant Groundwater Recharge Areas (SGRA).

#### 3.2.2.1 Intake Protection Zones (IPZ)

An Intake Protection Zone represents an area around a surface water body intake. The Study Area falls within an IPZ-2 (low vulnerability score of 4.5) related to the Lorne Park Intake.

Project activities are not anticipated to pose any significant drinking water threat to the Lorne Park Intake System.

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### 3.2.2.2 Wellhead Protection Area (WHPA)

Wellhead Protection Areas are vulnerable areas, which are depicted around groundwater sources for drinking water. The Study Area does not fall under a WHPA.

### 3.2.2.3 Highly Vulnerable Aquifers (HVA)

Areas that are beneath WHPAs are assessed on a much larger scale and are identified as Highly Vulnerable Aquifers (HVA). A Highly Vulnerable Aquifer is one that is particularly susceptible to contamination because of its location near the ground's surface or where the types of materials in the ground around it are highly permeable. The Study Area falls under an HVA area (moderate vulnerability score of 6.0).

A geotechnical investigation will be conducted at the detailed design phase of the Project to determine the potential of impact, if any.

### 3.2.2.4 Significant Groundwater Recharge Areas (SGRA)

Significant Groundwater Recharge Areas are areas on the landscape that are characterized by porous soils, such as sand or gravel, which allow water to seep easily into the ground and flow to an aquifer. A recharge area is considered significant when it helps maintain the water level in an aquifer that supplies a community or private residence with drinking water. The Study Area does not fall under an SGRA.

### 3.2.2.5 Vulnerability Assessment Summary

The *Clean Water Act* defines a "prescribed threat" as "an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water and includes an activity or condition that is prescribed by source protection regulation as a drinking water threat." The Province has identified 21 activities that could pose a threat if they are present in vulnerable areas, (listed in Section 1.1 of the *Clean Water Act*). At this time, Project activities are not anticipated to be prescribed drinking water threats; however, this will be confirmed at the detailed design and through consultation with the Region's Source Water Protection.

## 3.3 Natural Environment

The natural environment in the Study Area was characterized using a variety of background data sources. A reconnaissance-level field investigation was also conducted on August 29, 2018. Information was reviewed from the following sources:

- Aerial photographic imaging;
- Ontario Hydro Network (OHN) mapping;

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- Ministry of Natural Resources and Forestry (MNR) Natural Heritage Information Centre (NHIC) database for significant species and designated natural features within 120 metres of the subject lands;
- MNR Land Information Ontario (LIO) database;
- Natural heritage data, terrestrial and aquatic species records, Ecological Land Classification (ELC) mapping from the Credit Valley Conservation (CVC);
- CVC regulated features, mapping and formation;
- Region of Peel and City of Mississauga Official Plan mapping for presence of Environmentally Significant Areas (ESAs) and other protected features;
- Fisheries and Oceans Canada (DFO) and Conservation Ontario Aquatic Species at Risk (SAR) mapping;
- Atlas of Breeding Birds of Ontario (2001-2005);
- Committee on the Status of Species at Risk in Ontario (COSSARO) species lists;
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) species lists;
- City of Mississauga Natural Areas System Update, Natural Area 22 (CL22) (City of Mississauga, 2017a); and,
- Peel-Caledon Significant Woodlands and Significant Wildlife Habitat Study (2009).

### 3.3.1 Vegetation Communities and Significant Natural Areas

#### 3.3.1.1 Flora

According to the City of Mississauga Natural Areas Survey (NAS), 181 flora species have been documented across Natural Area 22 (CL22), which includes the wooded areas along the existing sanitary sewer and natural areas adjacent to Lornewood Creek to the east and north of the Study Area. Of the species recorded, only one is provincially rare: Butternut, an Endangered tree species. Several locally and regionally rare species were also identified. A full list of species records provided by CVC can be found in Appendix A1. Several of the records are from areas along the Metrolinx Lakeshore West Rail Corridor at Lorne Park Road while others were located along Lornewood Creek.

The NAS Factsheet, provided in Appendix A1, indicates that invasive species are found in the area, including the following:

- Garlic Mustard, *Alliaria petiolata*;
- European Buckthorn, *Rhamnus cathartica*;
- Purple Loosestrife, *Lythrum salicaria*;
- Tartarian Honeysuckle, *Lonicera tatarica*; and,
- Multiflora Rose, *Rosa multiflora*.

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Overall, introduced, non-native species represent approximately 38% of the flora present.

### 3.3.1.2 Vegetation Communities

The vegetation communities within the Study Area have been well documented by the NAS. Due to the urban nature of the Study Area, natural vegetation communities are contained within CL22 and are not present within residential areas. The Natural Areas Fact Sheet notes that City staff were not able to access the site and the vegetation communities were documented based on existing reports and aerial photo interpretation. The CVC also provided vegetation community mapping that was also prepared using existing data rather than on-site field studies. CVC's mapping was similar to that in the NAS with minor differences, including a larger swamp community in place of the smaller MAM2 community in the central portion of the Study Area. For the purposes of this study, the City's NAS was used to characterize the vegetation communities in the Study Area, as shown on Figure 3.

According to the NAS, two vegetation community types are present within CL22, as follows:

#### **Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3)**

The majority of CL22 is classified as FOD5-3. Canopy and sub-canopy trees include Red Oak (*Quercus rubra*), White Oak (*Q. alba*), Norway Maple (*Acer platanoides*), White Pine (*Pinus strobus*), White Birch (*Betula papyrifera*) and White Ash (*Fraxinus americana*). Understory is identified as Witch Hazel (*Hamamelis virginiana*), Choke Cherry (*Prunus virginiana*), False Solomon's-Seal (*Maianthemum racemosum*), White Trillium (*Trillium grandiflorum*) and Wild Crane's-Bill (*Geranium maculatum*).

Creek banks are dominated by Crack Willow (*Salix fragilis*), Riverbank Grape (*Vitis riparia*), Manitoba Maple (*Acer negundo*), Multiflora Rose (*Rosa multiflora*) and Red-Osier Dogwood (*Cornus stolonifera*). Cattails (*Typha* spp.), Purple Loosestrife (*Lythrum salicaria*) and Joe-Pye-Weed (*Eupatorium maculatum*) are commonly found in openings.

Remnant tall prairie species are limited to the railway corridor adjacent to (south of) the Study Area, including Big Bluestem (*Andropogon gerardii*) and Little Blue-Eyed Grass (*Sisyrinchium montanum*).

The reconnaissance investigation undertaken on August 29, 2018 generally confirmed this classification.

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### **Mineral Meadow Marsh (MAM2)**

According to the CL22 NAS Fact Sheet, there are two areas within CL22 considered broadly to be MAM2. The vegetation composition for these two areas is unknown due to limited access. The Fact Sheet reports that CVC has suggested the MAM2 area at the east end of Fair Birch Drive to be Reed-Canary Grass Organic Meadow Marsh (MAM3-2).



-  Watercourse
-  Lorne Park Prairie ANSI
- City of Mississauga Natural Areas Survey (2017)**
-  CL22
-  CL30
-  CL31
-  Study Area

Sources:  
 1. Ministry of Natural Resources and Forestry, © Queen's Printer for Ontario.  
 2. Natural Resources Canada © Her Majesty the Queen in Right of Canada.

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This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

Datum: North American 1983  
 Coord. System: NAD 1983 UTM Zone 17N  
 Projection: Transverse Mercator  
 Central Meridian: 81°00.00"W  
 False Easting: 500,000m | False Northing: 0m  
 Page Orientation: 312.35° | Scale Factor: 0.99960



Grid North



Client  
**REGION OF PEEL**

Figure Title  
**ENVIRONMENTAL ASSESSMENT STUDY FOR  
 NEW SANITARY SEWER ON FAIR BIRCH DRIVE,  
 BIRCHVIEW DRIVE, QUEEN VICTORIA AVENUE  
 AND LORNE PARK ROAD  
 NATURAL FEATURES**

Drawn	Checked	Date	Figure No. <b>3</b>
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### 3.3.1.3 Provincially Significant Wetlands

There are no Provincially Significant Wetlands in the Study Area. The wetlands present have not been evaluated according to provincial criteria.

### 3.3.1.4 Significant Valleylands

Significant Valleylands are not specifically identified in the City's Official Plan. The MOP indicates that valleylands are protected in conjunction with hazard lands under the Greenlands system. The valleylands associated with Lornewood Creek and the tributary that traverses the Study Area are considered significant for the purposes of this Study.

### 3.3.1.5 Significant Woodlands

Criteria for Significant Woodlands are determined by the local municipality. The PPS (MMAH, 2014) guides municipalities on the development of these criteria. According to the PPS, Significant Woodland is defined as:

*“an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history.”*

The MOP defines Significant Woodlands as any woodlands (City of Mississauga, 2018), as follows:

**“Significant woodlands** are those that meet one or more of the following criteria:

- Woodlands, excluding cultural savannahs, greater than or equal to four hectares;
- Woodlands, excluding cultural woodlands and cultural savannahs, greater than or equal to two hectares and less than four hectares;
- Any woodland greater than 0.5 hectares that:
  - Supports old growth trees (greater than or equal to 100 years old);
  - Supports a significant linkage function as determined through an Environmental Impact Study approved by the City in consultation with the appropriate conservation authority;
  - Is located within 100 m of another Significant Natural Area supporting a significant ecological relationship between the two features;
  - Is located within 30 m of a watercourse or significant wetland; or
  - Supports significant species or communities.”

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The Region of Peel incorporates a number of significant woodland criteria into their OP, including the Oak Ridges Moraine Conservation Plan, the Niagara Escarpment Plan, the Greenbelt Plan and The Peel-Caledon Significant Woodlands and Significant Wildlife Habitat Study (North-South Environmental, Dougan and Associates and Sorensen Gravely Lowes, June 2009). The guidance documents indicate that a number of criteria are recommended to determine the significance of a woodland feature, including:

- Size;
- Location (above or below the Niagara Escarpment);
- Linkages;
- Proximity to other significant features;
- Proximity to watercourse, surface water feature or wetland; and
- Support of SAR, rare species or specified forest communities.

Significant Woodland was identified within the Study Area based on the size criteria defined in the MOP and confirmed during field studies. The Significant Woodland comprises the Deciduous Forested area (FOD5-3) within CL22.

#### **3.3.1.6 Significant Areas of Natural and Scientific Interest (ANSI)**

No provincially significant life science or earth science ANSIs were identified through the background information review for the Study Area.

Land Information Ontario data layers show a regionally significant life science ANSI identified as Lorne Park Prairie exists south of the Study Area (see Figure 3) along the railway, from just northeast of the intersection with Clarkson Road North and extending towards the intersection with Mississauga Road. This ANSI also includes a small area south of the railway identified by the NAS as Natural Area 30 (CL30) (City of Mississauga, 2017b). According to the 2016 NAS Fact Sheet for CL30, the site contains a remnant Dry Tallgrass Prairie (TPO1-1), considered to be rare in Ontario. The site is described as being in fair condition, but too small to support a significant number of wildlife species.

#### **3.3.2 Wildlife and Wildlife Habitat**

According to the NAS, 26 faunal species have been recorded in Natural Area CL22, which includes a portion of the Study Area. These include 19 birds, one mammal, three amphibians and three reptiles.

CVC also provided records of wildlife recorded in the vicinity, including areas along Lornewood Creek and the Lorne Park Prairie. A full list of species records provided by CVC can be found in Appendix A1.

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### 3.3.2.1 Significant Wildlife Habitat

According to the Natural Heritage Reference Manual (MNRF, 2010) and Significant Wildlife Habitat Technical Guide (MNRF, 2000), there are four types of Significant Wildlife Habitat (“SWH”), as follows:

- Habitats of Seasonal Concentrations of Animals;
- Rare Vegetation Communities/Specialized Habitats;
- Habitats of Species of Conservation Concern; and
- Animal Movement Corridors.

To determine whether SWH is present, or may be present, a screening was conducted using the broad habitat descriptions from the Significant Wildlife Habitat Technical Guide (SWHTG) and the SWHTG Ecoregion 7E Criterion Schedule (MNRF, 2015) as well as professional judgement, background records and air photos.

The screening is presented in Appendix A2.

The only confirmed Significant Wildlife Habitat is:

- Landbird Migratory Stopover Areas; and
- Seeps and Spring.

The two habitat types were confirmed present by the CVC.

Detailed species inventories were not completed. As such, some additional SWH may be present but cannot be confirmed. For the purposes of this study, it is assumed that all candidate habitats are significant. These include:

- Candidate Bat Maternity Colonies;
- Candidate Turtle Wintering Areas;
- Candidate Reptile Hibernacula;
- Candidate Amphibian Woodland Breeding Habitat;
- Candidate Marsh Breeding Bird Habitat;
- Candidate Terrestrial Crayfish Habitat; and
- Candidate Habitat for Special Concern and Rare Wildlife Species.

All confirmed habitats and candidate habitats are located within the natural area along the tributary to Lornewood Creek.

Special Concern and rare wildlife includes species that are rare in the province but are not protected as Endangered or Threatened under the *Endangered Species Act (ESA)*, 2007.

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A review of the Ontario Breeding Bird Atlas (OBBA), Ontario Reptile and Amphibian Atlas (ORAA) and the NHIC databases as well as CVC data was used to identify records of provincially rare species in the vicinity of the Study Area. All background records can be found in Appendix A1. A species screening was conducted to determine whether habitat is present for species that have been recorded in the broader vicinity. The screening is presented in Appendix A3. Based on the screening, nine species have habitat requirements that could be met by the features present in the Study Area. These species and their habitats are described in Table 1.

**Table 1: Special Concern and Rare Wildlife Potentially Present in the Study Area**

Common Name	Scientific Name	SARO Status	Location of Candidate Habitat in the Study Area
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	CN rail corridor
Eastern Wood-pewee	<i>Contopus virens</i>	Special Concern	FOD forested community
Wood Thrush	<i>Hylocichla mustelina</i>	Special Concern	FOD forested community
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	Special Concern	MAM2 wetland communities; watercourse
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	Special Concern	MAM2 wetland communities; watercourse
Snapping Turtle	<i>Chelydra serpentina</i>	Special Concern	MAM2 wetland communities; watercourse
Cleland's Evening Primrose	<i>Oenothera clelandii</i>	S1	CN rail corridor
Fall Crabgrass	<i>Digitaria cognata</i>	S1?	CN rail corridor
Virginia Bluebells	<i>Mertensia virginica</i>	S3	FOD forested community

In addition to the provincially rare species, CVC records indicate a number of locally rare species that may be present. The following species, which have been observed in and around Lornewood Creek, have been identified as being rare or uncommon in Ecoregion 7E4 – a region that covers the area around Mississauga and much of Toronto:

- Interrupted Fern, *Osmunda claytoniana*;
- Three-parted Beggarticks, *Bidens tripartite*;
- Pale-leaved Sunflower, *Helianthus strumosus*;
- Skunk Cabbage, *Symplocarpus foetidus*;

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- Big Bluestem, *Andropogon gerardii*;
- Old Switch Panicgrass, *Panicum virgatum*;
- Yellow Indiangrass, *Sorghastrum nutans*;
- River Bulrush, *Bolboschoenus fluviatilis*;
- Pale Dogwood, *Cornus obliqua*;
- Red Pine, *Pinus resinosa*;
- Sycamore, *Platanus occidentalis*;
- Black Oak, *Quercus velutina*;
- Sassafras, *Sassafras albidum*;
- Purple-stemmed Angelica, *Angelica atropurpurea*;
- Flat-top White Aster, *Doellingeria umbellata var. umbellate*;
- Purple-veined Willowherb, *Epilobium coloratum*;
- Cleavers, *Galium aparine*;
- Rough Bedstraw, *Galium asprellum*;
- Black Ash, *Fraxinus nigra*; and
- Peach-leaved Willow, *Salix amygdaloides*.

Many of these species require dry, open habitats and are noted to have been observed within the rail corridor adjacent to the Study Area.

### 3.3.3 Fish and Aquatic Habitat

Through a review of the DFO SAR Distribution and Critical Habitat mapping, it was determined that aquatic SAR and critical habitat for aquatic SAR species are not present within the Study Area.

The watercourse running through the Study Area is mapped as a warm-water watercourse (MNRF, ARA Mapping) and flows primarily from southwest to northeast, eventually flowing into the main branch of Lornewood Creek. Lornewood Creek is a warm-water watercourse that flows into Lake Ontario approximately 960 m downstream from the Study Area. The watercourse through the Study Area is a second-order stream. Species historically observed downstream of the Study Area within Lornewood Creek are presented below in Table 2.

The watercourse running through the Study Area is mapped as an intermittent stream based on Ontario Hydro Network mapping. The downstream reach of Lornewood Creek is a permanent stream (OHN, 2015).

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**Table 2: Species Historically Observed Downstream of the Study Area**

Species Name	Scientific Name	Thermal Regime Preference
Bluntnose Minnow	<i>Pimephales notatus</i>	Warm
Brook Stickleback	<i>Culaea inconstans</i>	Cool
Common Shiner	<i>Luxilus cornutus</i>	Cool
Creek Chub	<i>Semotilus atromaculatus</i>	Cool
Eastern Blacknose Dace	<i>Rhinichthys atratulus</i>	Cool
Fathead Minnow	<i>Pimephales promelas</i>	Warm
Mimic Shiner	<i>Notropis volucellus</i>	Warm
Northern Pike	<i>Esox Lucius</i>	Cool
Pumpkinseed	<i>Lepomis gibbosus</i>	Warm
Sand Shiner	<i>Notropis stramineus</i>	Warm
Slimy Sculpin	<i>Cottus cognatus</i>	Cold
Spotfin Shiner	<i>Cyprinella spiloptera</i>	Warm
White Sucker	<i>Catostomus commersonii</i>	Cool
Source: MNRF ARA Summary Data, MNRF 2015		

### 3.3.3.1 Endangered and Threatened Species

A review of the OBBA, ORAA and the NHIC databases as well as CVC data identified records of several Species at Risk (SAR) in the vicinity of the Study Area. All background records can be found in Appendix A1. A SAR screening was conducted to determine whether habitat is present for species that have been recorded in the broader vicinity. The screening is presented in Appendix A3. Based on the screening, five species have habitat requirements that could be met by the features present in the Study Area. These species and their habitats are described in Table 3.

**Table 3: Species at Risk Potentially Present in the Study Area**

Common Name	Scientific Name	SARO Status	Location of Candidate Habitat in the Study Area
Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened	MAM2 wetland communities; watercourse
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	FOD forested community
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	FOD forested community
Tri-colored Bat	<i>Pipistrellus subflavus</i>	Endangered	FOD forested community
Butternut	<i>Juglans cinerea</i>	Endangered	FOD forested community

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### **3.4 Cultural Environment**

#### **3.4.1 Archaeology**

Archaeological Services Inc. (ASI) was retained to conduct a Stage 1 Archaeological Assessment for the Study Area. The Stage 1 Archaeological Assessment Report (November 2018) is provided in Appendix B1. The Stage 1 background study determined that four previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection completed on October 10, 2018, determined that approximately 0.15 ha adjacent to Lorne Park Road and Queen Victoria Avenue (see Figure 11 of the Stage 1 Archaeological Assessment Report provided in Appendix B1) exhibits archaeological potential and requires a Stage 2 survey, if impacted, prior to any construction activities. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or low and wet conditions. These lands do not require further archaeological assessment.

#### **3.4.2 Built Heritage**

ASI was retained to conduct a Cultural Heritage Resource Assessment for the Study Area. The Cultural Heritage Resource Assessment Report (November 2018) provided in Appendix B2 confirmed that there are three cultural heritage resources consisting of three built heritage resources (BHR) adjacent to the Study Area. Two of these properties are designated under Part IV of the *Ontario Heritage Act* and one is listed in the City of Mississauga's Municipal Register of Property of Cultural Heritage Value or Interest. The identified cultural heritage resources are historically and contextually associated with late-nineteenth century and early-twentieth century land use patterns in the former Township of Toronto. Construction activities and staging will be suitably planned and undertaken to avoid impacts to identified cultural heritage resources and therefore no significant cultural heritage impacts to these resources will result from the proposed sanitary system improvements.

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## **4.0 Assessment of Alternative Solutions**

### **4.1 Identification of Alternative Solutions**

#### **4.1.1 Alternative 1 – Do Nothing**

This alternative would involve the continued operation of the existing sanitary sewer without any improvements or changes to the existing infrastructure.

#### **4.1.2 Alternative 2 – Rehabilitate Existing Sanitary Sewer**

This alternative would involve upgrades to the existing sanitary sewer, such as relining the sewer to improve its condition for ongoing use in the current location.

#### **4.1.3 Alternative 3- Construct New Sanitary Sewer**

This alternative would involve the construction of a new sanitary sewer within existing rights-of-way to replace the existing sanitary sewer running parallel to the Lornewood Creek tributary. The construction of a new sanitary sewer may require the establishment of temporary easements for construction or permanent easements for maintenance. This alternative would also involve the abandonment of the existing sanitary sewer.

### **4.2 Evaluation of Alternative Solutions**

The overall objective of the evaluation was to identify a Preferred Solution among the four alternatives identified that provides the most favourable solution to the Project Opportunity Statement.

To this end, a set of Evaluation Criteria were grouped under four key areas established as part of the Class EA process to comparatively evaluate the Alternative solutions identified above. The Evaluation Criteria included:

- Natural Environment;
- Socio-Economic/Cultural Environment;
- Technical/Operational Environment; and
- Financial Environment.

#### **4.2.1 Evaluation of Alternative Solutions**

The evaluation of the Alternative solutions was based on an assessment of potential impacts and a review of input received from the public and regulatory agencies during the study process. Table 4 provides a summary of the evaluation of alternative solutions. A detailed evaluation matrix is provided in Appendix C.

Alternative 1 (Do Nothing) is unable to address the Project Opportunity Statement.

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Alternative 2 (Rehabilitate Existing Sanitary Sewer) can only partially address the Project Opportunity Statement, because:

- It will result in degradation of the system over time and increased risk of failure; and
- Due to limited access, the rehabilitated sanitary sewer will not be easy to maintain. Potential risk of system failure (over time) would increase potential impacts on aquatic and terrestrial habitat as well as surface and groundwater quality.

Alternative 3 (Construct New Sanitary Sewer) can fully address the Project Opportunity Statement, because it:

- Substantially improves access to the sanitary sewer system for maintenance purposes; and
- Provides a viable, safe, structurally and hydraulically sound sanitary sewerage system through abandonment of the 40-year-old sanitary system and placement of new infrastructure (within the existing right-of-way).

Therefore, based on this evaluation, Alternative 3 was identified as the preferred solution.

**Table 4: Summary of Evaluation of Alternative Solutions**

Evaluation Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
Natural Environment	<p>● No tree or vegetation removal. Potential long-term impacts to aquatic and terrestrial habitat as well as surface and groundwater quality due to higher risk of system failure.</p>	<p>● Rehabilitation will require some tree and vegetation removal to provide clearance for equipment. May result in temporary disruption to terrestrial habitat during rehabilitation. Potential risk of system failure (over time) would increase potential impacts aquatic and terrestrial habitat as well as surface and groundwater quality.</p>	<p>● Abandonment of existing sewer will require some tree and vegetation removal to provide clearance for equipment. May result in temporary disruption to terrestrial habitat during the procedure. No/minimal impacts to the aquatic habitat or surface/groundwater quality are anticipated.</p>
Socio-Economic / Cultural Environment	<p>● Difficult access to maintenance holes poses health and safety risk to operations staff. The existing sanitary sewer will not be able to meet the long-term servicing needs for local residents and community if left unmitigated.</p>	<p>● Difficult access to maintenance holes poses health and safety risk to operations staff. More reliable sanitary servicing for local residents and community; however, over time, risk of system failure will increase and may require replacement with a new system in long term.</p>	<p>● Safer access to the system for operations and maintenance. Meets the long-term servicing needs of the local residents. Will require some temporary construction easements. Will result in some temporary disruption to roads during construction; however, access to properties will be maintained.</p>
Technical / Operational Environment	<p>● The existing sanitary sewer is degraded, and risk of failure will continue to increase if left unmitigated. Does not meet Peel Region's latest sanitary sewer design criteria. Due to limited access, the existing sanitary sewer is not easy to maintain.</p>	<p>● Will result in degradation of the system over time and increased risk of failure. Due to limited access, the rehabilitated sanitary sewer will not be easy to maintain.</p>	<p>● Construction of new sanitary sewer requires more complex and longer construction period. Will substantially reduce risk of system failure. Safe access to the system for operation and maintenance.</p>
Financial Environment	<p>● No construction costs. Cost to adequately maintain the existing system would be significantly greater than the other alternatives.</p>	<p>● Cost will be significantly less than cost of building new infrastructure in a public right-of-way. Reduced operation and maintenance costs in the short-term only.</p>	<p>● Cost of construction is significantly higher. Operation and maintenance costs would be relatively low.</p>
<b>Adherence to Problem / Opportunity Statement</b>	<b>x</b>	<b>Partially</b>	<b>✓</b>
<b>Overall Summary</b>	<b>Not Carried Forward</b>	<b>Not Carried Forward</b>	<b>Carried Forward</b>

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#### **4.2.2 Preferred Solution and Completion of Phase 2**

Based on the results of the evaluation, Alternative 3 (Construct New Sanitary Sewer) was identified as the preliminary preferred solution. The Study Team presented Alternative 3 as the preliminary preferred solution at the Public Information Centre (PIC) held on November 27, 2018. The feedback received from members of the public at the PIC was generally in favour of Alternative 3. Therefore, the study team was able to confirm that Alternative 3 was the preferred solution to the problem / opportunity statement identified in Phase 1 of the Municipal Class EA process. This decision marks the completion of Phase 2 of the process. The proposed sewer improvements for the preferred solution are illustrated on Figure 4.

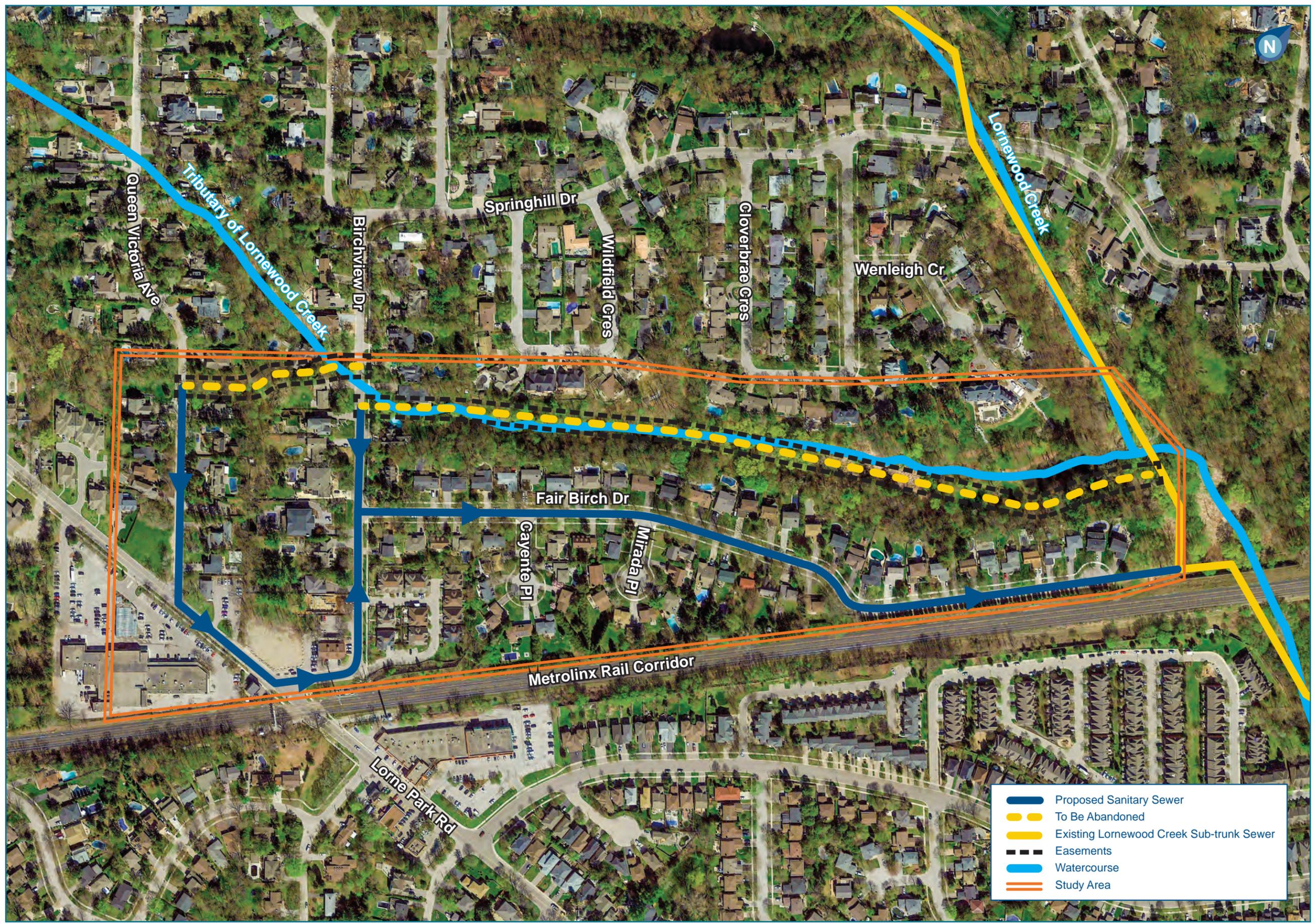


Figure 4: Proposed Sewer Improvements

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## **5.0 Study Consultation**

### **5.1 Introduction**

A key component of the study includes consultation with members of the public, review agencies, organizations, Indigenous communities, and key stakeholders. In order to ensure public, agency and stakeholder consultation, a consultation plan was initiated from the onset of the study and continued throughout. The objectives of the consultation plan were to:

- Identify potentially affected stakeholders;
- Inform stakeholders of project status and components;
- Obtain input from stakeholders during all phases of the study; and
- Integrate information received into the planning and decision-making processes.

A wide range of stakeholders were identified and contacted at the onset of the study and during the EA process including relevant review agencies and organizations, Indigenous communities and local residents and businesses who may be affected or have interest in the study. These stakeholders were contacted through direct distribution of notices and publications within local newspapers and on the City of Mississauga website. A number of consultation activities were undertaken to achieve the above objectives:

- Placement of Notice of Study Commencement and PIC within the Mississauga News;
- Scheduling of a PIC during Phase 2 of the study;
- Hand-delivery of notices to all property owners or occupants within the Study Area;
- Distribution of notices to review agencies, organizations and Indigenous communities;
- Receiving and responding to written comment submissions from members of the general public;
- Receiving and responding to written submissions from review agencies;
- Placement of Notice of Study Completion within the Mississauga News; and
- Placement of this PFR on the Public Record and distribution of a Notice of Study Completion to the Project Contact List during Phase 2 of the study.

### **5.2 Notice of Study Commencement**

A Notice of Study Commencement (NOCm) and PIC was advertised in the Mississauga News on November 15, 2018 and November 22, 2018. The NOCm was delivered to 142 property owners or occupants within the vicinity of the Study Area. A copy of the NOCm is provided in Appendix D1.

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A total of 41 agencies, organizations, and Indigenous communities who may have been interested in the project, received a NOCm along with an accompanying letter. With the inclusion of a Project Response Form, recipients were asked to comment on:

- Policies, positions or guidelines implemented or administered by their agency / organization that may affect implementation of improvements to the Study Area;
- Background information that is pertinent to the compilation of an environmental inventory of the general Study Area;
- Any preliminary comments or concerns that their agency / organization has on the proposed projects; and
- Other projects within or near the general area of study.

Copies of the letters sent to agencies, organizations and Indigenous communities are provided in Appendix D1. The Project Contact List which identifies all the agencies and Indigenous communities contacted during the Study is provided in Appendix D2.

### **5.3 Public Information Centre**

The PIC was held on November 27, 2018 from 6:00 PM to 8:00 PM. The PIC was arranged as an open house style session where participants were given the opportunity to review the display boards and representatives from the Study Team were available to answer questions and discuss the project with interested members of the public on a one-on-one basis or in small groups. A copy of the display boards is provided in Appendix D3.

Participants were requested to provide input by completing the available comment sheets. A total of 18 people attended the PIC including Councillor Karen Ras excluding the Study Team members. A total of 10 written comments / inquiries from local residents were received during the Study. Comments were provided through paper comment sheets supplied at the PIC or via email. In general, residents agreed with the preliminary preferred solution. Some residents had specific questions about the age of the existing sanitary sewers and the proposed changes to sanitary sewers at their property locations, which were addressed directly by Region staff. One resident wanted to ensure there were no new property restrictions or damage to trees beyond what was proposed for the abandonment of the existing sanitary sewer. Another resident wanted to ensure that trees and natural habitat are preserved / replaced when the project is implemented. Residents also wanted to ensure that all affected residents are notified of future meetings and project milestones.

Copies of all correspondence with members of the public are provided in Appendix D4.

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## **5.4 Indigenous Engagement**

Mississaugas of the Credit First Nation expressed interest in the project and requested a copy of the Stage 1 Archaeological Assessment Report for review, which was provided on February 12, 2019.

Follow up calls were completed to all Indigenous communities on November 12, 2019 to confirm receipt of the Notice of Commencement and level of interest in the Project. Six Nations of the Grand River and Haudenosaunee Development Institute confirmed receipt of the Notice of Commencement and advised that they would circulate to their consultation teams and advise if there was any interest in the Project. At the time of filing the Project File, these communities have not indicated an interest in the Project.

A summary of the correspondence with Indigenous communities is provided in the Project Contact List in Appendix D2. Copies of all correspondence with Indigenous communities is provided in Appendix D5.

## **5.5 Agency Consultation**

The Project Team contacted all relevant provincial and municipal agencies regarding the Project. The MECP Central Region EA Coordinator was contacted early in the Study to confirm the list of Indigenous communities to be consulted for the Project. MECP provided a letter in response to the Notice of Commencement outlining documentation that should be provided in the Project File. The City of Mississauga Supervisor - Heritage Planning and Stormwater Drainage Coordinator asked to be kept informed of the Project. The office of Councillor Karen Ras was contacted and confirmed their interest in the Project. Information was shared between Councillor Ras' office and the Project Team regarding the notifications to residents in the Study Area. A meeting was held with MNRF and CVC staff on September 11, 2018 to provide an overview of the project, the EA process and overall discussion on how the project can successfully minimize disruption to the natural environment and SAR. The minutes of meeting are provided in Appendix D6.

A summary of the correspondence with agencies is provided in the Project Contact List in Appendix D2. Copies of all correspondence with agencies is provided in Appendix D6.

## **5.6 Utility Consultation**

The Project Team contacted all potential utility companies located within the Study Area and received responses from Zayo, Hydro One, and Enbridge. Enbridge does not have any assets in the Study Area. Hydro One does not own or operate underground high

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voltage transmission facilities in the Study Area and Zayo has no existing plant in the Study Area.

Rogers indicated that it has aerial plant and Fiber Optic Cable in the Study Area. Their standard depth in this municipality is 1 m and it is required that clearances of 0.3 m vertically and 0.6 m horizontally be maintained. Hand dig is required when crossing, or within 1.0 m of existing Rogers plant.

A summary of the correspondence with utilities is provided in the Project Contact List in Appendix D2. Copies of all correspondence with utilities is provided in Appendix D7.

## **5.7 Notice of Study Completion**

A Notice of Study Completion of this Municipal Class EA has been prepared and published in the Mississauga News. The Notice was also be mailed to all agencies, Indigenous Community and stakeholders on the Project Contact List.

If concerns arise regarding this project which cannot be resolved in discussion with the Region of Peel, a person or party may request that the Minister of the Environment, Conservation and Parks make an Order for the project to comply with Part II of the *Environmental Assessment Act, 1990* (referred to as a Part II Order), which addresses Individual Environmental Assessments. Part II Order Requests must be submitted using a standard form available on the Provincial Forms Repository website (<http://www.forms.ssb.gov.on.ca/>). The form can be found by searching either “Part II Order” or “012 2206E” (the form ID number) on the Repository’s main page. Requests must be received by the Minister of the Environment, Conservation and Parks within 30 calendar days of the first publication of the Notice of Completion. A copy of the completed form should also be sent to the Director of the Environmental Approvals Branch and to the Region of Peel Project Manager.

If the Minister does not receive a request for a Part II Order within the 30 calendar days, then the project will move forward to detailed design, approvals process and subsequent implementation of the preferred solution.

## **6.0 Environmental Impacts, Mitigation Measures and Monitoring**

The potential environmental impacts associated with construction of the new sanitary sewer and abandonment of the existing sanitary sewer within the Lornewood Creek tributary corridor have been identified and are summarized in Table 5 below. Proposed measures to mitigate these impacts and monitoring activities to ensure that the mitigation measures are implemented effectively are also provided in the table. All mitigation measures and monitoring activities shall be reviewed (and updated if necessary) during the detailed design phase of the project.

**Table 5: Potential Environmental Effects, Mitigation Measures and Monitoring Activities**

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
Built Environments	Human Health and Safety	Potential safety hazard from construction activities, heavy equipment and increased construction traffic.	<p><b>Construction Mitigation</b></p> <p>The contractor shall develop a Health and Safety Plan (HASP) and have it reviewed and approved by the Region prior to implementing. The HASP shall follow the <i>Occupational Health and Safety Act, 1990</i> and regulatory requirements.</p>	N/A.	No net effects anticipated.
Built Environments	Transportation Infrastructure	Potential safety hazard from construction activities, heavy equipment and increased construction traffic.	<p><b>General Mitigation</b></p> <p>Operation of construction related vehicles shall be done in accordance with all appropriate safety policies and procedures, and based on Canadian Standards (Transport Canada, etc.).</p> <p><b>Construction Mitigation</b></p> <p>All contractors shall be required to complete and follow appropriate construction site training and adhere to appropriate road safety regulations during construction.</p> <p>Work shall be done in such a manner as to minimize disruption to the adjacent residential and commercial neighbourhood. Noise and dust emissions shall be controlled. Contract specifications shall ensure that all equipment and vehicles are compliant with noise and air emission standards for applicable equipment.</p>	A Construction Inspector or Environmental Monitor shall regularly inspect construction work areas to ensure that noise control measures and dust suppression measures are being adequately applied. If noise control measures and dust suppression measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.	No net effects anticipated.
		Temporary traffic flow / access disruptions (temporary lane closures and possible temporary road closures)	<p><b>General Mitigation</b></p> <p>Traffic management shall be considered during detailed design and the design should be planned to minimize traffic impacts where possible. Trenchless construction techniques should be considered and employed where practical.</p> <p>Additional easement requirements beyond the existing road ROW shall be determined during the detailed design phase of the project.</p> <p>The Region shall consult with public agencies and/or adjacent land owners / tenants regarding temporary access routes, if required.</p> <p><b>Construction Mitigation</b></p> <p>The contractor shall be required to develop and implement a Traffic Management Plan (TMP) in coordination with the Region and City of Mississauga. Adequate signage to give advance notice of disruptions and detours is to be provided by the contractor.</p>	N/A.	No net effects anticipated.

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
Physical Environment	Surface Water	Potential for erosion and sedimentation impacts.	<p><b>General Mitigation</b></p> <p>A Soil Management Plan (SMP) shall be prepared by a Qualified Professional (QP) as defined in Ontario Regulation 160/06 for managing soil materials on-site (includes excavation, location of stockpiles, reuse and off-site disposal).</p> <p>An erosion and sediment control plan shall be developed during the detailed design phase of the project in consultation with CVC. Implementation of the erosion and sediment control measures shall conform to recognized standard specifications such as Ontario Provincial Standards Specification (OPSS) and the requirements of the CVC. The erosion and sediment control plan shall also take into account the Greater Golden Horseshoe Area Conservation Authorities (GGHACA) Erosion and Sediment Control Guidelines for Urban Construction.</p> <p>Any construction works within CVC regulated areas will require a permit under Ontario Regulation 160/06.</p> <p><b>Construction Mitigation</b></p> <p>Any in-water work (if necessary) shall be conducted in isolation of flowing water. All work zones shall be clearly marked on detailed design drawings and the ESC Plan to indicate that no work should occur outside the work zone.</p> <p>ESC measures shall be installed and maintained during the construction phase and until all areas of the construction site have been stabilized. ESC measures shall be inspected daily to confirm they are functioning and maintained as required. If ESC measures are not functioning properly, no further work in the affected areas shall occur until the sediment and/or erosion problem is resolved.</p> <p>All disturbed areas of the construction site shall be stabilized and re-vegetated as soon as conditions allow.</p> <p>Wet weather restrictions shall be applied during site preparation and excavation.</p>	<p>An Environmental Monitor shall regularly monitor construction activities to confirm the requirements outlined in the SMP and ESC are being followed.</p> <p>An Environmental Monitor shall inspect, suggest and confirm the repair of ESC measures as needed.</p>	No net effects anticipated.
Physical Environment	Surface and Ground Water	Potential for localized surface water or groundwater impacts as a result of spills, discharge or dumping of materials, fluids and other wastes during construction of proposed new sanitary	<p><b>Construction Mitigation</b></p> <p>Refueling and maintenance of construction equipment shall occur within designated areas only. Any hazardous materials used for construction shall be handled in accordance to appropriate regulations.</p> <p>A Construction Emergency Response and Communications Plan shall be developed and followed throughout the construction phase (including spill response plans). The Contractor</p>	An Environmental Monitor shall regularly monitor construction activities to confirm the requirements outlined in the SMP and ESC are followed. Workers shall report any instances of spills to their supervisors.	No net effects anticipated.

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
		sewers and abandonment of existing sanitary sewer.	shall develop spill prevention and contingency plans for the construction and general site preparation for the proposed new sanitary sewer and abandonment of the existing sanitary sewer. Personnel shall be trained in how to apply the plans and the plans shall be reviewed to strengthen their effectiveness and continuous improvement. Spills or depositions into watercourses shall be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit shall be on-site at all times during the work. Spills shall be reported to the Ontario Spills Action Centre at 1-800-268-6060.		
Natural Environment	Trees within Forested Natural Area	Direct effects of construction activities will include the limited clearing and loss of both herbaceous and woody vegetation (mainly at the end of Fair Birch Drive and along the existing sanitary sewer alignment within the Lornewood Creek tributary corridor). Indirect effects include a number of potential effects, such as introduction of invasive plant and wildlife species which may outcompete or predate native species, soil compaction, equipment and pedestrian "traffic", equipment laydown and spills.	<p><b>General Mitigation</b></p> <p>Access and construction areas, as well as shaft access areas to be reviewed for presence of provincially rare or locally rare or uncommon flora that could be impacted. Vegetation removal will be minimized. All trees and shrubs to be limbed or removed should be documented in a scoped Tree Inventory and Preservation Plan completed during the detailed design phase of the Project. Trees to be removed shall be confirmed to the species level to avoid the incidental impacts to or removal of Butternut. All cleared areas should be replanted with native trees, shrubs and groundcover, suitable to understory conditions, referencing CVC's Plant Selection Guidelines for the existing soil and vegetation communities. A Vegetation Compensation Plan shall be developed during the detailed design phase of the Project in consultation with the City and CVC. If all compensation cannot be accommodated within cleared areas, additional areas within the Study Area will be identified to receive offset plantings.</p> <p><b>Construction Mitigation</b></p> <p>Decommissioning of the existing sanitary sewer shall be undertaken using small to medium sized equipment and hand tools to the extent possible. Any vegetation removal shall be limited to a narrow equipment path along the sewer route and a small equipment laydown area around each manhole. Cleared areas shall be minimized and shall be delineated with a biologist/arborist to limit tree removal and avoid any Butternut trees, if present. Consideration should be made for the placement of temporary work mats to minimize soil compaction and vegetation disturbance.</p> <p>Equipment laydown areas around the manholes shall be identified and delineated with sediment and erosion control fencing and/or tree hoarding to ensure decommissioning activities do not encroach beyond the work area.</p> <p>Tree removal and pruning is anticipated to be minimal and shall be carried out by a qualified arborist. Removal and pruning will be done in ways that limit impacts to adjacent trees. Roots and stumps should be left in the ground where possible. If roots of adjacent trees are</p>	An Environmental Monitor shall regularly monitor construction activities to confirm that access, stockpile and dumping is not occurring in the areas protected by fencing.	No net effects anticipated.

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
			<p>encountered, they shall be cut and repacked into soil to limit disturbance by or under the direction of a qualified arborist.</p> <p>All work within the Forested Natural Area should be conducted during the period when the ground is frozen, where possible to avoid impacts to ground vegetation and wildlife. If work must be done outside of this window, an Environmental Monitor shall conduct regular inspections to ensure no locally, regionally or provincially rare plants or wildlife are affected. Should any of these species be found within the work area, work shall be halted until further direction is received from the City and/or MNRF.</p> <p>All cleared areas shall be re-vegetated in the soonest appropriate season once construction has been completed to limit intrusion of invasive species.</p>		
Natural Environment	Street Trees	Potential impacts to trees adjacent to sewer alignment along the road ROW and the construction area.	<p><b>General Mitigation</b></p> <p>A qualified arborist must complete a street tree inventory where work will be adjacent to right-of-way or private trees to determine existing condition of trees and their setback requirements and inform the design process to promote street tree preservation. The arborist shall provide mitigation recommendations in areas where encroachment into tree critical rootzones is anticipated (e.g. curb reconstruction, open cut trenches).</p> <p><b>Construction Mitigation</b></p> <p>Tree protection fence to be installed around trees at locations identified within the Tree Inventory and Protection Plan prior to site disturbance.</p>	Inspection of tree protection measures by the Environmental Monitor to be coordinated with review of ESC measures throughout the construction period. All damaged, sagging or deficient measures must be fixed immediately.	
Natural Environment	Migratory Birds	Potential for disturbance or destruction of migratory breeding birds and their habitat (prohibitions under the <i>Migratory Bird Convention Act, 1994</i> ).	<p><b>General Mitigation</b></p> <p>To reduce the risk of contravening the <i>Migratory Bird Convention Act, 1994</i>, timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) and/or construction works during the breeding bird period – broadly from April 1 to August 31 for most species (regardless of the calendar year).</p> <p>Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the <i>Endangered Species Act (ESA), 2007</i>, cannot be destroyed at any time of the year. The destruction of inactive nests for some species may also be prohibited.</p> <p><b>Construction Mitigation</b></p> <p>If a nesting migratory bird (or SAR protected under <i>ESA, 2007</i>) is identified within or adjacent to the construction site and the activities are such that continuing works in that area would result in a contravention of the <i>Migratory Birds Convention Act, 1994</i> or <i>ESA, 2007</i>, all activities shall</p>	<p>A Qualified Terrestrial Ecologist may be required on-site as needed should a nesting migratory bird (or SAR protected under <i>ESA, 2007</i>) be identified within or adjacent to the construction site.</p> <p>The Qualified Terrestrial Ecologist may be required to confirm the presence and identification of an active nest and/or breeding bird prior to contacting MECP for further advice.</p>	No net effects anticipated.

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
			stop and the Contract Administrator (with assistance from a Qualified Terrestrial Ecologist) shall discuss mitigation measures with the Region. Should SAR be identified, all activities shall stop and MECP shall be contacted immediately to ensure compliance with the ESA. The Contract Administrator shall instruct the Contractor on how to proceed based on the mitigation measures established through discussions with the Region, the MECP and/or Environment Canada.		
Natural Environment	Candidate and Confirmed Wildlife and SAR Habitats	Temporary displacement of, and disturbance to, wildlife and wildlife habitat during the decommissioning of the existing sanitary sewer (i.e., vegetation removals, noise, light trespass), including SAR. Decommissioning activities in these habitats may limit wildlife movement and reduce useable habitat. Small areas of wildlife habitat may be removed (i.e., small number of trees cleared) within the decommissioning area.	<p><b>General Mitigation</b></p> <p>Surveys shall be undertaken during the detailed design phase of the Project to determine the presence of bat maternity habitat in the Study Area. If maternal roosting habitat for bats is present, the MECP shall be contacted and all requirements for mitigation, including installation of bat boxes and compensation plantings shall be undertaken.</p> <p><b>Construction Mitigation</b></p> <p>In the event that an animal is encountered during construction and does not move from the construction zone, the Contract Administrator shall be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location shall temporarily stop and the MNRF shall be contacted for direction. If temporary sediment and erosion control fencing or construction hoarding is used at a location, it shall be installed to allow wildlife to leave the fenced area prior to vegetation clearing. Once the work area has been cleared, it shall be securely fenced to prevent wildlife from returning.</p> <p>The excluded area shall be searched immediately following fencing installation for any wildlife (including SAR) that may have become trapped. Any wildlife shall be safely relocated, or permitted to escape, to a suitable habitat. All works shall stop immediately and MECP contacted should a SAR be encountered within a construction or operational area to ensure compliance with the ESA.</p> <p>All work within the Forested Natural Area should be conducted during the period when the ground is frozen, where possible to avoid impacts to ground vegetation and wildlife. If work must be done outside of this window, an Environmental Monitor shall conduct regular inspections to ensure no locally, regionally or provincially rare plants or wildlife are affected. Should any of these species be found within the work area, work shall be halted until further direction is received from the City and/or MNRF.</p>	Fencing shall be inspected regularly to ensure damage is repaired in a timely manner and that additional risk to wildlife is minimized.	No net effects anticipated.
Natural Environment	Seeps and Springs	Decommissioning activities have the potential to physically disturb seeps and springs.	The location of seeps or spring shall be identified and avoided to the extent possible when delineating the work zone associated with decommissioning activities. If the area cannot be avoided, an Environmental Monitor shall be on-site during work in, and around, a seep or spring. Hand tools and small equipment shall be used as much as possible in these areas.	An Environmental Monitor will ensure dewatering activities area conducted in accordance with all requirements under the <i>Ontario Water Resources Act</i> .	No anticipated net effects.

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
		Dewatering in construction areas could cause temporary hydrologic changes.	<p>All dewatering should be undertaken in accordance with the <i>Ontario Water Resources Act, 1990</i>, c. O.40 with respect to the quality of water discharging into natural receivers will be met, including the following mitigation measures and best practices: Any discharge from dewatering should outlet to a vegetated area at least 30 m from the watercourse utilizing a sediment filter bag where possible.</p> <p>In the event of sediment discharge, all operations will stop immediately until the problem can be resolved.</p>		
Natural Environment	Fish Habitat	Potential indirect impacts to downstream fish habitat from water quality and quantity impairments (sediment loading; fuels and lubricants from machinery) as a result of decommissioning of the existing sanitary sewer and construction works (earthworks-based activities) associated with the new sewer installation.	<p><b>General Mitigation</b></p> <p>Compliance with the <i>Ontario Water Resources Act, 1990</i> shall be maintained with respect to the quality of water discharging into natural receivers.</p> <p>SMP and ESC Plans shall be developed.</p> <p>ESC plans and a spill response plan shall be developed and shall include, but not be limited to, the details described below.</p> <p>CVC shall be consulted during detailed design phase of the project regarding potential works within or in close proximity to regulated areas, as appropriate.</p> <p><b>Construction Mitigation</b></p> <p>Wet weather restrictions shall be applied during site preparation and excavation. Work shall be avoided near watercourses during periods of excessive precipitation and/or excessive snow melt.</p> <p>Sediment and erosion control measures (such as silt fence barriers, etc.) shall be installed and maintained during the work phase and until the site has been stabilized. Control measures shall be inspected daily to ensure they are functioning and are maintained as required. If control measures are not functioning properly, no further work shall occur until the problem is resolved. All temporary ESC measures shall be installed in accordance with recognized provincial and/or local standards. Extra silt fence / turbidity curtain shall be stored on-site, should additional sediment control be required.</p> <p>Any stockpiled material shall be stored and stabilized away from the surface water features. With regard to decommissioning works, stockpiles of materials may be temporarily placed in work areas adjacent to manholes. Stockpiles should be secured or moved at the end of each workday to avoid spills into the watercourse or ponds.</p>	An Environmental Monitor shall regularly monitor construction activities to confirm the requirements outlined in the SMP and ESC plans are followed. Workers shall report any instances of spills or impacts to surface water features.	No net effects anticipated

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
			All materials and equipment used for site preparation, new sanitary sewer construction and existing sanitary sewer abandonment shall be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum products, silt, etc.) from entering the water.		
Cultural Environment	Archaeology	Based on the results of the Stage 1 Archaeological Assessment, approximately 0.15 hectares adjacent to Lorne Park Road and Queen Victoria Avenue within the Study Area exhibits archaeological potential and require Stage 2 survey, if impacted, prior to any construction activities. No archaeological assessment, no matter how thorough or carefully completed, can not necessarily predict, account for, or identify every form of isolated or deep buried archaeological deposit. Therefore, it is possible that archaeological remains may be found during construction in other areas of the Study Area.	<p><b>General Mitigation</b></p> <p>If the 0.15 ha adjacent to Lorne Park Road and Queen Victoria Avenue will be impacted by the construction of the new sanitary sewer (e.g., used for construction staging) then a Stage 2 Archaeological Assessment shall be completed by a Licenced Archaeologist prior to any construction activities.</p> <p><b>Construction Mitigation</b></p> <p>In the event that archeological remains are found by the Contractor during subsequent construction activities, the consultant archaeologist, approval authority and the Cultural Program Unit of the Ministry of Tourism Culture and Sport the shall immediately notified by the Contractor.</p>	N/A	No net effects anticipated.
Cultural Environment	Cultural and Built Heritage	Potential impacts to three built heritage resources located within (2) and adjacent (1) to the Study Area.	<p><b>General Mitigation</b></p> <p>An impact assessment shall be completed by a qualified Cultural Heritage Specialist during the detailed design phase of the Project, once the extent of the construction impact area is known and mitigation measures prepared to address any identified impacts.</p> <p>A pre-construction survey of physical property shall be conducted prior to construction to document pre-construction conditions of the built heritage resources.</p>	Vibration and settlement monitoring shall be conducted during construction to assess potential impacts to built heritage resources. Contingency measures shall be established if necessary.	No net effects anticipated.

Environmental Component	Environmental Sub-Component	Potential Environmental Effects	Recommended Mitigation Measures	Recommended Monitoring Activities	Net Effects
Noise and Air Quality	Noise	Potential for noise through the use of large equipment for construction of the proposed new sanitary sewer.	<p><b>General Mitigation</b></p> <p>A complaint response protocol for nuisance impacts including construction noise shall be prepared during the detailed design phase of the project and implemented prior to construction.</p> <p><b>Construction Mitigation</b></p> <p>Noise control measures shall be implemented where required during the construction phase, such as restricted hours of operation and the use of appropriate machinery and mufflers. The noise produced by the equipment can be limited through proper equipment maintenance. All construction activities shall conform to the criteria set out in NPC-115 of 83 dB.</p> <p>The construction contractor will be required to develop a Construction Management Plan (CMP) that specifically addresses noise controls, mitigation to be implemented and frequency of equipment inspection.</p>	A Construction Inspector or Environmental Monitor shall regularly monitor construction noise to ensure that noise control measures are being adequately applied and confirm the requirements outlined in the CMP are being followed. If noise control measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.	No net effects anticipated.
	Air Quality	Potential air quality impacts during construction.	<p><b>General Mitigation</b></p> <p>A complaint response protocol for nuisance impacts including dust emissions will be prepared during the detailed design phase of the project and implemented prior to construction.</p> <p><b>Construction Mitigation</b></p> <p>During construction, the following mitigation measures shall be used:</p> <ul style="list-style-type: none"> <li>• The construction contractor shall be required to develop a Construction Management Plan (CMP) that specifically addresses dust controls, and contingency plans to mitigate dust when it occurs.</li> <li>• Vehicles / machinery and equipment shall be in good repair, equipped with emission controls, as applicable, and operated within regulatory requirements. The contractor shall also be required to implement dust suppression measures to reduce the potential for airborne particulate matter resulting from construction activities. This should be in the form of non-chloride dust suppressants on exposed soils according to Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc.[Prepared for Environment Canada], 2005).</li> </ul>	A Construction Inspector or Environmental Monitor shall regularly inspect construction work areas to ensure that dust suppression measures are being adequately applied and confirm the requirements outlined in the CMP are being followed. If dust suppression measures are not functioning properly, alternative measures shall be implemented immediately and prioritized above other construction activities.	No net effects anticipated.

## 7.0 Climate Change Considerations

Climate change is defined as any significant change in long-term weather patterns. The term can apply to any major variation in temperature, wind patterns or precipitation that occurs over time. Global warming describes the recent rise in the average global temperature caused by increased concentrations of GHGs trapped in the atmosphere. Scientists have concluded that human activity is largely responsible for recently observed changes to our climate since GHGs are mainly caused by burning fossil fuels to produce energy.

The MECP finalized a document entitled “Considering Climate Change in the Environmental Assessment Process” in 2017 that provides guidance relating to the ministry’s expectations for considering climate change during the environmental assessment process. It is suggested that this guide be consulted if an approved class environmental assessment has no climate consideration method.

There are two types of climate change effects that can be considered. The first is the effect that a project can have on climate change. In this case, the degree to which the project can provide some climate change mitigation measures is to be assessed. The second is the effect climate change has on the project. In this case, the degree to which the project can demonstrate adaptation to climate change impacts is assessed. Climate Change was considered during this Class EA and is discussed in this Section.

### 7.1 Effects of the Project on Climate Change

As this is a sewer system improvement project there is a low potential for the works proposed to impact the atmosphere through the emission of greenhouse gases. Carbon sources associated with this project would relate to heavy vehicle emissions during the construction period. The proposed employment of trenchless technologies (where feasible) versus open cut excavations for the construction of the new sewer will reduce greenhouse gas emissions. Trenchless technologies require significantly less soil movement, which reduces the length of time that heavy machinery would otherwise be operating onsite (for open cut excavation) as well as the need to haul large quantities of soil off-site.

Landscape changes associated with a project can also impact climate change. A carbon sink is described as a land or ocean mass that can take in carbon, in particular carbon dioxide, from the atmosphere. As such, it would be important to maintain these features. Vegetation can assist in removing carbon dioxide from the atmosphere and as such, it will be important to minimize vegetation removals associated with the project. The proposed undertaking will result in minor vegetation removals to accommodate construction. However, vegetation loss (and related carbon sink removal) will be offset

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through compensation plantings undertaken during site restoration and landscaping post construction.

## 7.2 Effects on the Project from Climate Change

Regional Official Plan Review is considering climate change as a focus area because it is a matter of provincial interest as outlined in the *Provincial Policy Statement (PPS)*. The *PPS* states that planning authorities are required to consider potential impacts of climate change adaptation and mitigation when planning for infrastructure and public service facilities.

According to the Peel Climate Change Strategy (2011) it is recognized that climate change is already underway and that Peel can expect the following projected changes in climate change:

- Warmer and slightly wetter weather on average in the coming decades, with more warming during the winter than during the summer, and precipitation increases confined largely to the winter with up to 10% reduction in summer and fall precipitation;
- The number of days exceeding 30°C to more than double by the 2050's;
- Overall drier conditions and reductions in available moisture because although the growing season will get longer, the warmer weather will more than offset the slight increase in precipitation;
- Extreme daily precipitation events (such as thunderstorms) to become more frequent and severe due to increased precipitation variability although the magnitude of the potential changes in not yet understood;
- Lake effect snow to increase as a result of warmer lake temperatures but fewer frost days by the end of the century, resulting in less snow overall;
- Water levels in the Great Lakes to decline due to increases in evaporation associated with increased temperatures and less ice cover; and
- Potential increases in destructive event such as rainstorms, freeing rains and freeze-thaw cycle.

These predicted changes may affect the proposed improvement to the sanitary sewer through the following:

- Increase in temperature and extreme weather events may increase the risk to the integrity and longevity of the sanitary sewer; and
- Damage from extreme weather events (i.e., flooding) may disrupt sewer system operation.

The implementation of a new sanitary sewer outside the existing Lornewood Creek tributary corridor will make the system less vulnerable to climate change. The proposed location of the new sewer within the ROW provides improved protection from the effects

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of extreme weather events and flooding. As such, the preferred solution and the placement of the new sewer within the ROW is the primary mitigation that is recommended.

## **8.0 Project Implementation**

Phase 5 of the Municipal Class EA process involves the completion of detailed design drawings, specifications and tender documents to be provided to a successful contractor for the construction of the proposed project. During the implementation phase, the Region will need to adhere to several mitigation measures and monitoring plans as documented in this project, some of which will need to be in place prior to and during construction. Permits will need to be applied for from various regulatory agencies.

### **8.1 Follow-up Commitments**

The following list provides a preliminary list of commitments to be undertaken during the detailed design phase of the Project. These commitments shall be revisited during the detailed design phase of the Project at which time any additional commitments shall be identified.

#### **8.1.1 Detailed Design Commitments**

##### **Traffic**

- Traffic management shall be considered and the design should be planned to minimize traffic impacts where possible. Trenchless construction techniques should be considered and employed where practical.
- Additional easement requirements beyond the existing road ROW shall be determined.
- The Region shall consult with public agencies and/or adjacent land owners / tenants regarding temporary access routes, if required.

##### **Natural Heritage**

- CVC shall be consulted regarding potential works within or in close proximity flood regulated areas, as appropriate.
- A Soil Management Plan (SMP) shall be prepared by a Qualified Professional (QP) as defined in Ontario Regulation 160/06 for managing soil materials on-site (includes excavation, location of stockpiles, reuse and off-site disposal).
- An erosion and sediment control plan shall be developed in consultation with CVC. Implementation of the erosion and sediment control measures shall conform to recognized standard specifications such as Ontario Provincial Standards Specification (OPSS) and the requirements of the CVC. The erosion and sediment control plan shall also take into account the Greater Golden Horseshoe Area

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Conservation Authorities (GGHACA) Erosion and Sediment Control Guidelines for Urban Construction.

- A scoped Tree Inventory and Preservation Plan shall be undertaken by a qualified Arborist to determine impacts to trees within the forested area. Trees to be removed shall be confirmed to the species level to avoid the incidental impacts to or removal of Butternut.
- A qualified arborist must complete a street tree inventory where work will be adjacent to right-of-way or private trees to determine existing condition of trees and their setback requirements and inform the design process to promote street tree preservation. The arborist shall provide mitigation recommendations in areas where encroachment into tree critical rootzones is anticipated (e.g., curb reconstruction, open cut trenches).
- A qualified ecologist should review the proposed impact areas within the forested natural area during the growing season (generally June to early September) to determine the presence of provincially rare or locally rare or uncommon plant species.
- A Vegetation Compensation Plan will be developed in consultation with the City and CVC.
- Surveys shall be undertaken to determine the presence of bat maternity habitat in the Study Area. If maternal roosting habitat for bats is present, the MNRF shall be contacted and all requirements for mitigation, including installation of bat boxes and compensation plantings shall be undertaken.

### **Source Water**

- Consultation with the Region's Source Water Protection will be undertaken to ensure that the proposed works pose no threat to the Lorne Park Intake system or the HVA in the Study Area.

### **Groundwater**

- The Region will review the need for hydrogeological study (to assess groundwater quality and the potential need for groundwater dewatering during construction) in the Study Area.

### **Archaeological Resources and Cultural Heritage**

- If the 0.15 ha adjacent to Lorne Park Road and Queen Victoria Avenue will be impacted by the construction of the new sanitary sewer (e.g., used for construction staging) then a Stage 2 Archaeological Assessment shall be completed by a Licenced Archaeologist prior to any construction activities.
- An impact assessment shall be completed by a qualified Cultural Heritage Specialist, once the extent of the construction impact area is known and mitigation measures prepared to address any identified impacts.

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- A pre-construction survey of physical property shall be conducted prior to construction to document pre-construction conditions of the built heritage resources.

### **Noise and Air Quality**

- A complaint response protocol for nuisance impacts including construction noise and dust emissions shall be prepared and implemented prior to construction.

## **8.2 Permit and Approval Requirements**

The following list provides a preliminary set of permits and Approval requirements that will need to be undertaken by the contractor. A final list of permits shall be determined during the detailed design phase of the Project.

### **8.2.1 General Permitting Requirements**

- Contractor will need to obtain an Occupancy Permit from the Region.
- An Environmental Sector Activity Registry (EASR) or Permit to Take Water (PTTW) may be required should dewatering be necessary. Requirements for dewatering will be determined during the detailed design phase of the Project.
- The Region is required to comply with the *Ontario Water Resources Act, 1990* with respect to the quality of water discharging into natural receivers. The footprint of disturbed area will be minimized as much as possible. For example, minimizing distribution of excavated soil to minimize sedimentation to storm sewers.
- An erosion and sediment control plan will be developed in consultation with CVC. Implementation of the erosion and sediment control measures will conform to recognized standard specifications such as Ontario Provincial Standards Specification (OPSS) and the requirements of the CVC. The erosion and sediment control plan will also take into account the Greater Golden Horseshoe Area Conservation Authorities (GGHACA) Erosion and Sediment Control Guidelines for Urban Construction.
- A permit approval will be required from CVC in accordance with *O.Reg 160/06 Credit Valley Conservation Authority: Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses* for construction works in CVC regulated areas.

### **8.2.2 Utility Permitting Requirements**

On-going consultation with utilities shall continue during the detailed design phase of the Project to ensure that all existing utilities in the Study Area that may be impacted by the Project are addressed. Discussions with potentially affected utilities will confirm the location of existing utility infrastructure and ensure that service can be maintained during the construction period.

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### **8.2.3 Construction Plans**

The Following plans will need to be prepared by the contractor and implemented prior to construction:

- Soil Management Plan;
- Erosion and Sediment Control Plan;
- Emergency Response and Communication Plan;
- Complaint Response Protocol;
- Construction Management Plan;
- Health and Safety Plans; and
- Traffic Management Plan.

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## Appendix A

### Natural Environment

Natural Heritage Records	A1
Significant Wildlife Habitat Screening	A2
Species at Risk Screening	A3



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## Appendix A1

### Natural Heritage Records

CVC Species List

TAXA_TYPE	SCIENTIFIC_NAME	COMMON_NAME	visit_date	notes	site_name	NATIVE_STATUS_ONTARIO	SARO_STATUS	PROVINCIAL_RANK	SCC_TIER	LOCAL_RANK_KAISER_2001	REGIONAL_RANK_KAISER_2001	RARE_6E7_VARGA_2000	RARE_7E4_VARGA_2000
Bird	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	6/23/2014	Many present	Lornewood Creek	native		S4	4				
Bird	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	6/23/2014		Lornewood Creek	native		S4	4				
Bird	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	6/23/2014		Lornewood Creek	native		S4	4				
Bird	<i>Bombycilla cedrorum</i>	Cedar Waxwing	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		SSB	3				
Bird	<i>Cardinalis cardinalis</i>	Northern Cardinal	6/23/2014		Lornewood Creek	native		S5	4				
Bird	<i>Cardinalis cardinalis</i>	Northern Cardinal	12/18/2012		Tecumseh Creek Park	native		SS	4				
Bird	<i>Cortopus virens</i>	Eastern Wood-pewee	6/23/2014		Lornewood Creek	native	SC	S4B	1				
Bird	<i>Cygnus olor</i>	Mute Swan	4/16/2009		Mississauga Rd and Indian Rd -	non-native		SNA	5				
Bird	<i>Icterus galbula</i>	Baltimore Oriole	6/23/2014		Lornewood Creek	native		S4B	3				
Bird	<i>Junco hyemalis</i>	Dark-eyed Junco	12/18/2012		Tecumseh Creek Park	native		SSB	2				
Bird	<i>Melospiza melodia</i>	Song Sparrow	6/23/2014		Lornewood Creek	native		SSB	4				
Bird	<i>Passer domesticus</i>	House Sparrow	12/18/2012		Tecumseh Creek Park	non-native		SNA	5				
Bird	<i>Picoides pubescens</i>	Downy Woodpecker	6/23/2014		Lornewood Creek	native		SS	4				
Bird	<i>Picoides pubescens</i>	Downy Woodpecker	12/18/2012		Tecumseh Creek Park	native		SS	4				
Bird	<i>Poecile atricapillus</i>	Black-capped Chickadee	12/18/2012		Tecumseh Creek Park	native		SS	4				
Bird	<i>Sitta carolinensis</i>	White-breasted Nuthatch	6/23/2014		Lornewood Creek	native		SS	3				
Bird	<i>Sitta carolinensis</i>	White-breasted Nuthatch	12/18/2012		Tecumseh Creek Park	native		SS	3				
Bird	<i>Spinus tristis</i>	American Goldfinch	6/23/2014		Lornewood Creek	native		SSB	4				
Bird	<i>Sturnus vulgaris</i>	European Starling	12/18/2012		Tecumseh Creek Park	non-native		SNA	5				
Bird	<i>Thryothorus ludovicianus</i>	Carolina Wren	12/18/2012		Tecumseh Creek Park	native		S4					
Bird	<i>Troglodytes hiemalis</i>	Winter Wren	12/18/2012		Tecumseh Creek Park	native		SSB	3				
Bird	<i>Turdus migratorius</i>	American Robin	6/23/2014		Lornewood Creek	native		SSB	4				
Bird	<i>Turdus migratorius</i>	American Robin	12/18/2012		Tecumseh Creek Park	native		SSB	4				
Bird	<i>Vireo gilvus</i>	Warbling Vireo	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		SSB	4				
Bird	<i>Zenaidura macroura</i>	Mourning Dove	6/23/2014		Lornewood Creek	native		SS	4				
Bird	<i>Zenaidura macroura</i>	Mourning Dove	12/18/2012		Tecumseh Creek Park	native		SS	4				
Bird	<i>Zonotrichia albicollis</i>	White-throated Sparrow	12/18/2012		Tecumseh Creek Park	native		SSB	3				
Butterflies, Moths	<i>Papilio canadensis/glaucus</i>	Tiger Swallowtail species	6/23/2014		Lornewood Creek	native		SS					
Butterflies, Moths	<i>Vanessa atalanta</i>	Red Admiral	6/23/2014		Lornewood Creek	native		SS					
Damselflies	<i>Colopteryx maculata</i>	Ebony Jewelwing	6/23/2014		Lornewood Creek	native		SS					
Dragonflies	<i>Plathemis lydia</i>	Common Whitetail	6/23/2014		Lornewood Creek	native		SS					
Herpetofauna	<i>Anaxyrus americanus</i>	American Toad	6/8/2011		Mississauga Rd and Indian Rd -	native		SS	3				
Herpetofauna	<i>Lithobates clamitans</i>	Green Frog	6/23/2014		Amphibian Survey Lornewood Creek	native		SS	3				
Herpetofauna	<i>Lithobates clamitans</i>	Green Frog	6/8/2011		Watercolours Swim Pond, Mississauga Rd and Indian Rd -	native		SS	3				
Herpetofauna	<i>Unknown Frog species</i>	Unknown Frog species	6/23/2014		Amphibian Survey Lornewood Creek	unknown							
Mammal	<i>Odocoileus virginianus</i>	White-tailed Deer	6/23/2014		Lornewood Creek	native		SS	3				
Mammal	<i>Procyon lotor</i>	Northern Raccoon	6/23/2014		Lornewood Creek	native		SS	4				
Mammal	<i>Tamias striatus</i>	Eastern Chipmunk	6/23/2014		Lornewood Creek	native		SS	3				
Fern	<i>thyrium filix-femina var. angustum</i>	Northeastern Lady Fern	6/23/2014		Lornewood Creek	native		SS	4				
Fern	<i>Equisetum arvense</i>	Field Horsetail	6/23/2014		Lornewood Creek	native		SS	4				
Fern	<i>Equisetum arvense</i>	Field Horsetail	6/23/2014		Lornewood Creek	native		SS	4				
Fern	<i>Equisetum arvense</i>	Field Horsetail	6/23/2014		Lornewood Creek	native		SS	4				
Fern	<i>Matteuccia struthiopteris</i>	Ostrich Fern	6/23/2014		Lornewood Creek	native		SS	4				
Fern	<i>Matteuccia struthiopteris</i>	Ostrich Fern	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	native		SS	4				
Fern	<i>Onoclea sensibilis</i>	Sensitive Fern	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		SS	4				
Fern	<i>Onoclea sensibilis</i>	Sensitive Fern	6/23/2014		Lornewood Creek	native		SS	4				
Fern	<i>Osmunda claytoniana</i>	Interrupted Fern	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		SS	2	rare	rare	rare	rare
Fern	<i>Osmunda claytoniana</i>	Interrupted Fern	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		SS	2	rare	rare	rare	rare
Fern	<i>Osmunda claytoniana</i>	Interrupted Fern	6/23/2014		Lornewood Creek	native		SS	2	rare	rare	rare	rare
Fern	<i>Osmunda claytoniana</i>	Interrupted Fern	6/23/2014		Lornewood Creek	native		SS	2	rare	rare	rare	rare
Fern	<i>Polystichum acrostichoides</i>	Christmas Fern	6/23/2014		Lornewood Creek	native		SS	3				
Forb	<i>Actaea pachypoda</i>	White Baneberry	6/23/2014		Lornewood Creek	native		SS	4				
Forb	<i>Agrimonia gryposepala</i>	Hooked Agrimony	6/23/2014		Lornewood Creek	native		SS	4				
Forb	<i>Allisma sp. (triviale/subcordatum)</i>	Water-plantain species	6/23/2014		Lornewood Creek	non-native		SS	4				
Forb	<i>Alliaria petiolata</i>	Garlic Mustard	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Anemone quinquefolia</i>	Wood Anemone	6/23/2014		Lornewood Creek	native		SS	2			rare	
Forb	<i>Anemone virginiana var. virginiana</i>	Tall Anemone	6/23/2014		Lornewood Creek	native		SS?	3				
Forb	<i>Angelica atropurpurea</i>	Purple-stemmed Angelica	6/23/2014		Lornewood Creek	native		SS	2	rare	rare	rare	uncommon
Forb	<i>Angelica atropurpurea</i>	Purple-stemmed Angelica	6/23/2014		Lornewood Creek	native		SS	2	rare	rare	rare	uncommon
Forb	<i>Arabis sp.</i>	Rock-cress species	8/19/2008	Salvaged	CN Line, Lorne Park Rd	native							
Forb	<i>Aralia nudicaulis</i>	Wild Sarsaparilla	6/23/2014		Lornewood Creek	native		SS	4				
Forb	<i>Arctium minus</i>	Common Burdock	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	6/23/2014		Lornewood Creek	native		SS	4				
Forb	<i>Asarum canadense</i>	Canada Wild-ginger	6/23/2014		Lornewood Creek	native		SS	4				
Forb	<i>Asparagus officinalis</i>	Garden Asparagus	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	non-native		SNA	5				
Forb	<i>Barbarea vulgaris</i>	Bitter Wintercress	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Barbarea vulgaris</i>	Bitter Wintercress	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Bidens frondosa</i>	Devil's Beggarticks	6/23/2014		Lornewood Creek	native		SS	4				
Forb	<i>Bidens tripartita</i>	Three-parted Beggarticks	6/23/2014		Lornewood Creek	native		SS?	3	rare			rare
Forb	<i>Coltha palustris</i>	Yellow Marsh Marigold	5/3/2011	GPS approximated from Google earth based on JE's map. Small patch around 50-75 cm in diameter at the water's edge (north bank). Picture with raw data.	1186 Cloverbrae Cres, Mississauga	native		SS	3				
Forb	<i>Coltha palustris</i>	Yellow Marsh Marigold	6/23/2014		Lornewood Creek	native		SS	3				
Forb	<i>Coltha palustris</i>	Yellow Marsh Marigold	6/23/2014		Lornewood Creek	native		SS	3				

CVC Species List

TAXA_TYPE	SCIENTIFIC_NAME	COMMON_NAME	visit_date	notes	site_name	NATIVE_STATUS_ONTARIO	SARO_STATUS	PROVINCIAL_RANK	SCC_TIER	LOCAL_RANK_KAISER_2001	REGIONAL_RANK_KAISER_2001	RARE_6E7_VARGA_2000	RARE_7E4_VARGA_2000
Forb	<i>Caltha palustris</i>	Yellow Marsh Marigold	6/23/2014		Lornewood Creek	native		S5	3				
Forb	<i>Caltha palustris</i>	Yellow Marsh Marigold	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	native		S5	3				
Forb	<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Caulophyllum sp.</i>	Cohosh species	6/23/2014		Lornewood Creek	native							
Forb	<i>Chelidonium majus</i>	Greater Celandine	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Chelone glabra</i>	White Turtlehead	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	3			uncommon	
Forb	<i>Circaea canadensis</i>	id-leaved Enchanter's Nightst	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Circaea canadensis</i>	id-leaved Enchanter's Nightst	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Cirsium vulgare</i>	Bull Thistle	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Convallaria majalis</i>	European Lily-of-the-valley	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Cryptotaenia canadensis</i>	Canada Honewort	6/23/2014		Lornewood Creek	native		S5	3				
Forb	<i>Cryptotaenia canadensis</i>	Canada Honewort	6/23/2014		Lornewood Creek	native		S5	3				
Forb	<i>Cynoglossum officinale</i>	Common Hound's-tongue	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Daucus carota</i>	Wild Carrot	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Desmodium canadense</i>	Showy Tick-trefoil	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare		uncommon	
Forb	<i>Desmodium canadense</i>	Showy Tick-trefoil	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		S4	2	rare		uncommon	
Forb	<i>Yellingeria umbellata var. umbellat</i>	Flat-top White Aster	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2	rare		rare	uncommon
Forb	<i>Yellingeria umbellata var. umbellat</i>	Flat-top White Aster	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2	rare		rare	uncommon
Forb	<i>Yellingeria umbellata var. umbellat</i>	Flat-top White Aster	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2	rare		rare	uncommon
Forb	<i>Yellingeria umbellata var. umbellat</i>	Flat-top White Aster	6/23/2014		Lornewood Creek	native		S5	2	rare		rare	uncommon
Forb	<i>Epilobium coloratum</i>	Purple-veined Willowherb	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	2	rare	rare	rare	uncommon
Forb	<i>Epilobium coloratum</i>	Purple-veined Willowherb	6/23/2014		Lornewood Creek	native		S5	2	rare	rare	rare	uncommon
Forb	<i>Epipactis helleborine</i>	Eastern Helleborine	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Eupatium perfoliatum</i>	Common Boneset	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Euphorbia sp.</i>	Spurge species	8/19/2008	Euphorbia species. Old Abundance Code: 3=21-100	CN Line, Lorne Park Rd	unknown							
Forb	<i>rochium maculatum var. maculatu</i>	Spotted Joe Pye Weed	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>rochium maculatum var. maculatu</i>	Spotted Joe Pye Weed	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Galium aparine</i>	Cleavers	6/23/2014		Lornewood Creek	native		S5	2	rare			
Forb	<i>Galium asprellum</i>	Rough Bedstraw	6/23/2014		Lornewood Creek	native		S5	4			uncommon	uncommon
Forb	<i>Galium palustre</i>	Marsh Bedstraw	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	3				
Forb	<i>Geranium maculatum</i>	Spotted Geranium	6/23/2014		Lornewood Creek	native		S5	3			rare	
Forb	<i>Geum aleppicum</i>	Yellow Avens	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Geum aleppicum</i>	Yellow Avens	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Geum aleppicum</i>	Yellow Avens	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Geum canadense</i>	White Avens	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Helianthus divaricatus</i>	Woodland Sunflower	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2			rare	uncommon
Forb	<i>Helianthus strumosus</i>	Pale-leaved Sunflower	8/19/2008	Salvaged. Old Abundance Code: 1=1-5	CN Line, Lorne Park Rd	native		S5	2	rare	rare	rare	rare
Forb	<i>Helianthus tuberosus</i>	Jerusalem Artichoke	8/19/2008	Old Abundance Code: 1=1-5. South side of tracks.	CN Line, Lorne Park Rd	unknown		SU	5				
Forb	<i>Helianthus tuberosus</i>	Jerusalem Artichoke	8/19/2008	Old Abundance Code: 1=1-5. South side of tracks.	CN Line, Lorne Park Rd	unknown		SU	5				
Forb	<i>Hemerocallis fulva</i>	Orange Daylily	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Heracleum maximum</i>	Cow-parsnip	6/23/2014		Lornewood Creek	native		S5	2	rare	rare	rare	
Forb	<i>Hesperis matronalis</i>	Dame's Rocket	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Hypericum perforatum</i>	Common St. John's-wort	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Impatiens capensis</i>	Spotted Jewelweed	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Impatiens capensis</i>	Spotted Jewelweed	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Impatiens capensis</i>	Spotted Jewelweed	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Impatiens capensis</i>	Spotted Jewelweed	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Iris pseudacorus</i>	Yellow Iris	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Iris pseudacorus</i>	Yellow Iris	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Laportea canadensis</i>	Wood Nettle	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Lemna minor</i>	Lesser Duckweed	6/23/2014		Lornewood Creek	native		S5?	4				
Forb	<i>Lycopus americanus</i>	American Water-horehound	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	3				
Forb	<i>Lycopus europaeus</i>	European Water-horehound	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	non-native		SNA	5				
Forb	<i>Lycopus europaeus</i>	European Water-horehound	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Lysimachia ciliata</i>	Fringed Loosestripe	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Lythrum salicaria</i>	Purple Loosestripe	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Lythrum salicaria</i>	Purple Loosestripe	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Lythrum salicaria</i>	Purple Loosestripe	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	6/23/2014		Lornewood Creek	native		S5	3				
Forb	<i>Maianthemum racemosum</i>	Large False Solomon's Seal	6/23/2014		Lornewood Creek	native		S5	3				
Forb	<i>Maianthemum stellatum</i>	r-flowered False Solomon's S	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Maianthemum stellatum</i>	r-flowered False Solomon's S	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Mentha canadensis</i>	Canada Mint	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Myosotis scorpioides</i>	True Forget-me-not	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Myosotis scorpioides</i>	True Forget-me-not	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Myosotis scorpioides</i>	True Forget-me-not	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Nabalus sp.</i>	Rattlesnake-root species	6/23/2014		Lornewood Creek	native			3				
Forb	<i>Oenothera sp.</i>	Evening-primrose species	8/19/2008	may be O. biennis	CN Line, Lorne Park Rd	native							
Forb	<i>Oxalis sp.</i>	Woodsorrel species	6/23/2014		Lornewood Creek	unknown							

## CVC Species List

TAXA_TYPE	SCIENTIFIC_NAME	COMMON_NAME	visit_date	notes	site_name	NATIVE_STATUS_ONTARIO	SARO_STATUS	PROVINCIAL_RANK	SCC_TIER	LOCAL_RANK_KAISER_2001	REGIONAL_RANK_KAISER_2001	RARE_6E7_VARGA_2000	RARE_7E4_VARGA_2000
Forb	<i>Persicaria maculosa</i>	Spotted Lady's-thumb	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Potentilla recta</i>	Sulphur Cinquefoil	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Ranunculus acris</i>	Tall Buttercup	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Ranunculus sceleratus</i> var. <i>sceleratus</i>	Cursed Buttercup	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Ranunculus sceleratus</i> var. <i>sceleratus</i>	Cursed Buttercup	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Reynoutria japonica</i>	Japanese Knotweed	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Rumex crispus</i>	Curly Dock	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	non-native		SNA	5				
Forb	<i>Rumex crispus</i>	Curly Dock	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Rumex obtusifolius</i>	Bitter Dock	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Sanguinaria canadensis</i>	Bloodroot	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Solidago altissima</i> var. <i>altissima</i>	Eastern Tall Goldenrod	6/23/2014	Solidago altissima.	Lornewood Creek	native		S5	4				
Forb	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Solidago gigantea</i>	Giant Goldenrod	6/23/2014		Lornewood Creek	native		S5	4			uncommon	
Forb	<i>Solidago gigantea</i>	Giant Goldenrod	6/23/2014		Lornewood Creek	native		S5	4			uncommon	
Forb	<i>Solidago juncea</i>	Early Goldenrod	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2			uncommon	uncommon
Forb	<i>Symphotrichum ciliatum</i>	Alkali Aster	9/23/2010	1 to 5 individuals;	Lorne Park Prairie, Significant Wildlife Habitat	native		S3?	1				
Forb	<i>Yatricium lanceolatum</i> ssp. <i>lanceo</i>	Panicked Aster	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Yatricium lanceolatum</i> ssp. <i>lanceo</i>	Panicked Aster	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Yatricium lanceolatum</i> ssp. <i>lanceo</i>	Panicked Aster	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Symphotrichum lateriflorum</i>	Calico Aster	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				
Forb	<i>Symphotrichum lateriflorum</i>	Calico Aster	6/23/2014		Lornewood Creek	native		S5	3				
Forb	<i>Symphotrichum lateriflorum</i>	Calico Aster	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	3				
Forb	<i>Symphotrichum pilosum</i> var. <i>pilosum</i>	Old Field Aster	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2	rare	rare	rare	rare
Forb	<i>Symphotrichum puniceum</i>	Swamp Aster	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Symphotrichum puniceum</i>	Swamp Aster	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Symplocarpus foetidus</i>	Skunk Cabbage	5/3/2011	GPS approximated from Google earth based on JE's map. On slope at or outside the borders of the Mississauga NAS. Picture with raw data.	1186 Cloverbrae Cres, Mississauga	native		S5	2	rare	rare	rare	rare
Forb	<i>Thalictrum pubescens</i>	Tall Meadow-rue	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Torilis japonica</i>	Erect Hedge-parsley	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Trillium grandiflorum</i>	White Trillium	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Typha latifolia</i>	Broad-leaved Cattail	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Typha latifolia</i>	Broad-leaved Cattail	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Typha latifolia</i>	Broad-leaved Cattail	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Urtica dioica</i> ssp. <i>dioica</i>	European Stinging Nettle	6/23/2014		Lornewood Creek	non-native		SNA	5				
Forb	<i>Urtica dioica</i> ssp. <i>gracilis</i>	Slender Stinging Nettle	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Forb	<i>Urtica dioica</i> ssp. <i>gracilis</i>	Slender Stinging Nettle	6/23/2014		Lornewood Creek	native		S5	4				
Forb	<i>Vinca minor</i>	Periwinkle	6/23/2014		Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	8/19/2008	1 clump, Old Abundance Code: 2=5-20	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	8/19/2008	North and South sides of track, Old Abundance Code: 4=>100. GPS is a centroid for the range of the plants.	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	8/19/2008	1 clump, 50m long, Old Abundance Code: 4=>100	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	8/19/2008	1 clump, 6 - 20 plants. Old Abundance Code: 2=5-20	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Glyceria grandis</i>	Tall Mannagrass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>Glyceria grandis</i>	Tall Mannagrass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>Glyceria striata</i>	Fowl Mannagrass	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Graminoid	<i>Glyceria striata</i>	Fowl Mannagrass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>Glyceria striata</i>	Fowl Mannagrass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>Leersia oryzoides</i>	Rice Cutgrass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>Lolium arundinaceum</i>	Tall Fescue	6/23/2014	Found in MAM 2-9 inclusion. Arundinaceae or Pratensis?	Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Muhlenbergia frondosa</i>	Wirestem Muhly	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Muhlenbergia mexicana</i> var. <i>mexicar</i>	Mexican Muhly	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				
Graminoid	<i>Muhlenbergia mexicana</i> var. <i>mexicar</i>	Mexican Muhly	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				

## CVC Species List

TAXA_TYPE	SCIENTIFIC_NAME	COMMON_NAME	visit_date	notes	site_name	NATIVE_STATUS_ONTARIO	SARO_STATUS	PROVINCIAL_RANK	SCC_TIER	LOCAL_RANK_KAISER_2001	REGIONAL_RANK_KAISER_2001	RARE_6E7_VARGA_2000	RARE_7E4_VARGA_2000
Graminoid	<i>xhlenbergia mexicana</i> var. <i>mexica</i>	Mexican Muhly	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				
Graminoid	<i>Panicum virgatum</i>	Old Switch Panicgrass	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		S4	2				rare
Graminoid	<i>alaris arundinacea</i> var. <i>arundinace</i>	Reed Canary Grass	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Graminoid	<i>alaris arundinacea</i> var. <i>arundinace</i>	Reed Canary Grass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>alaris arundinacea</i> var. <i>arundinace</i>	Reed Canary Grass	6/23/2014		Lornewood Creek	native		S5	4				
Graminoid	<i>Phragmites australis</i> ssp. <i>australis</i>	European Reed	6/23/2014	Dominant.	Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Phragmites australis</i> ssp. <i>australis</i>	European Reed	6/23/2014		Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Poa nemoralis</i>	Woods Bluegrass	6/23/2014		Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Poa palustris</i>	Fowl Bluegrass	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	3				
Graminoid	<i>Poa palustris</i>	Fowl Bluegrass	6/23/2014		Lornewood Creek	native		S5	3				
Graminoid	<i>Poa palustris</i>	Fowl Bluegrass	6/23/2014		Lornewood Creek	native		S5	3				
Graminoid	<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Bluegrass	6/23/2014		Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Bluegrass	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	non-native		SNA	5				
Graminoid	<i>Schizachyrium scoparium</i>	Little Bluestem	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Sorghastrum nutans</i>	Yellow Indiangrass	8/19/2008	1 large clump, Old Abundance Code: 3=21-100 abundance not recorded.	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Graminoid	<i>Sorghastrum nutans</i>	Yellow Indiangrass	8/19/2008	South side of tracks.	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Rush	<i>Juncus effusus</i> ssp. <i>solutus</i>	Soft Rush	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5?	4				
Sedge	<i>Bolboschoenus fluviatilis</i>	River Bulrush	6/23/2014		Lornewood Creek	native		S4S5	2	rare	rare	rare	rare
Sedge	<i>Carex bebbii</i>	Bebb's Sedge	6/23/2014		Lornewood Creek	native		S5	4				
Sedge	<i>Carex bebbii</i>	Bebb's Sedge	6/23/2014		Lornewood Creek	native		S5	4				
Sedge	<i>Carex blanda</i>	Woodland Sedge	6/23/2014		Lornewood Creek	native		S5	4				
Sedge	<i>Carex granularis</i>	Limestone Meadow Sedge	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		S5	4				
Sedge	<i>Carex radiata</i>	Eastern Star Sedge	6/23/2014		Lornewood Creek	native		S5	3				
Sedge	<i>Carex sp.</i>	Sedge species	6/23/2014		Lornewood Creek	unknown							
Sedge	<i>Carex sp.</i>	Sedge species	6/23/2014		Lornewood Creek	unknown							
Sedge	<i>Carex sp.</i>	Sedge species	6/23/2014	Found in MAM 2-9 inclusion. Car_Sp #2 Collected by TK.	Lornewood Creek	unknown							
Sedge	<i>Carex stipata</i>	Awl-fruited Sedge	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Sedge	<i>Carex stipata</i>	Awl-fruited Sedge	6/23/2014		Lornewood Creek	native		S5	4				
Sedge	<i>Carex tenera</i>	Tender Sedge	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		S5	3				
Sedge	<i>Carex tenera</i>	Tender Sedge	6/23/2014		Lornewood Creek	native		S5	3				
Sedge	<i>Carex vulpinoidea</i>	Fox Sedge	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Sedge	<i>Carex vulpinoidea</i>	Fox Sedge	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		S5	4				
Sedge	<i>Eleocharis sp.</i>	Spike-rush species	6/23/2014		Lornewood Creek	native							
Sedge	<i>Scirpus atrovirens</i>	Dark-green Bulrush	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Sedge	<i>Scirpus atrovirens</i>	Dark-green Bulrush	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Acer spicatum</i>	Mountain Maple	6/23/2014		Lornewood Creek	native		S5	3				
Shrub	<i>Acer tataricum</i> ssp. <i>ginnala</i>	Amur Maple	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Alnus glutinosa</i>	European Black Alder	6/23/2014	Tree-like; leaves similar to A. rugosa but likely A. glutinosa.	Lornewood Creek	non-native		SNA	5				
Shrub	<i>Alnus glutinosa</i>	European Black Alder	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Amelanchier arborea</i>	Downy Serviceberry	6/23/2014		Lornewood Creek	native		S5	3				
Shrub	<i>Berberis thunbergii</i>	Japanese Barberry	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Berberis thunbergii</i>	Japanese Barberry	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Cornus obliqua</i>	Pale Dogwood	6/23/2014		Lornewood Creek	native		S5	2	rare		rare	rare
Shrub	<i>Cornus rugosa</i>	Round-leaved Dogwood	6/23/2014		Lornewood Creek	native		S5	3				
Shrub	<i>Cornus sericea</i>	Red-osier Dogwood	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Shrub	<i>Cornus sericea</i>	Red-osier Dogwood	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Cornus sericea</i>	Red-osier Dogwood	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Corylus cornuta</i>	Beaked Hazelnut	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Euonymus europaeus</i>	European Euonymus	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Euonymus fortunei</i>	Climbing Euonymus	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Euonymus obovatus</i>	Running Strawberry Bush	6/23/2014		Lornewood Creek	native		S4	3			rare	
Shrub	<i>Euonymus obovatus</i>	Running Strawberry Bush	6/23/2014		Lornewood Creek	native		S4	3			rare	
Shrub	<i>Frangula alnus</i>	Glossy Buckthorn	8/19/2008	Old Abundance Code: 1=1-5. South side of tracks.	CN Line, Lorne Park Rd	non-native		SNA	5				
Shrub	<i>Hamamelis virginiana</i>	American Witch-hazel	6/23/2014		Lornewood Creek	native		S4S5	2			rare	
Shrub	<i>Hamamelis virginiana</i>	American Witch-hazel	6/23/2014		Lornewood Creek	native		S4S5	2			rare	
Shrub	<i>Kerria sp.</i>	Japanese Rose	8/19/2008	Kerria Sp., Natalie Iwanyki collected, Old Abundance Code: 1=1-5	CN Line, Lorne Park Rd	non-native			5				
Shrub	<i>Ligustrum vulgare</i>	European Privet	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Lonicera sp. (Exotic)</i>	Exotic Honeysuckle species	6/23/2014	May be <i>Lonicera morrowii</i> .	Lornewood Creek	non-native			5				
Shrub	<i>Lonicera sp. (Exotic)</i>	Exotic Honeysuckle species	6/23/2014		Lornewood Creek	non-native			5				
Shrub	<i>Prunus virginiana</i>	Choke Cherry	6/23/2014	<i>Prunus virginiana</i> 'Schubert' variety also present.	Lornewood Creek	native		S5	4				
Shrub	<i>Prunus virginiana</i>	Choke Cherry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Rhamnus cathartica</i>	Common Buckthorn	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Rhamnus cathartica</i>	Common Buckthorn	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Rhus typhina</i>	Staghorn Sumac	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Ribes americanum</i>	Wild Black Currant	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Ribes americanum</i>	Wild Black Currant	6/23/2014		Lornewood Creek	native		S5	4				

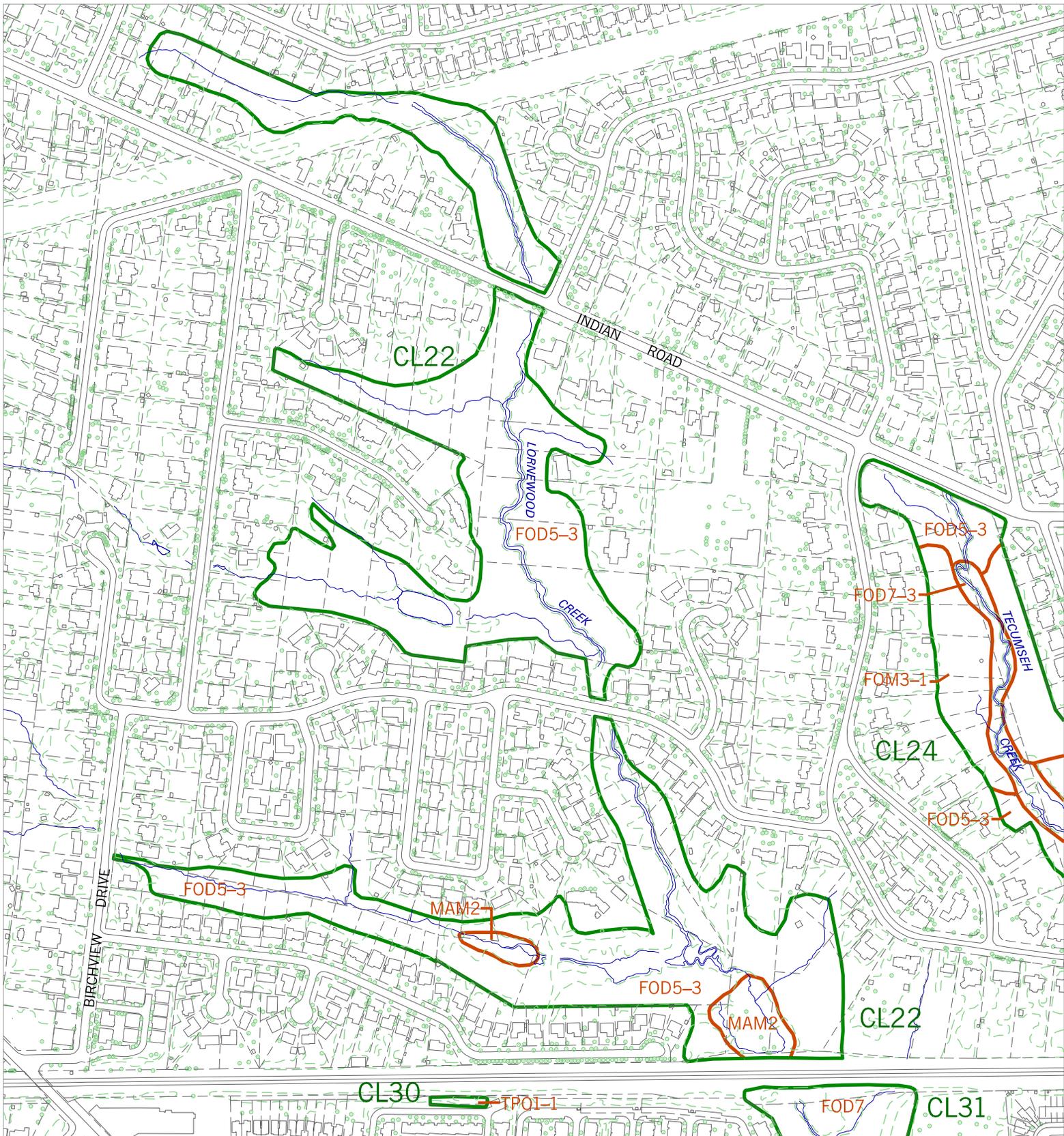
CVC Species List

TAXA_TYPE	SCIENTIFIC_NAME	COMMON_NAME	visit_date	notes	site_name	NATIVE_STATUS_ONTARIO	SARO_STATUS	PROVINCIAL_RANK	SCC_TIER	LOCAL_RANK_KAISER_2001	REGIONAL_RANK_KAISER_2001	RARE_6E7_VARGA_2000	RARE_7E4_VARGA_2000
Shrub	<i>Ribes americanum</i>	Wild Black Currant	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	native		S5	4				
Shrub	<i>Ribes americanum</i>	Wild Black Currant	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Ribes cynosbati</i>	Prickly Gooseberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Ribes rubrum</i>	Northern Red Currant	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Ribes rubrum</i>	Northern Red Currant	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Rosa multiflora</i>	Multiflora Rose	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>Rosa multiflora</i>	Multiflora Rose	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	non-native		SNA	5				
Shrub	<i>Rubus allegheniensis</i>	Allegheny Blackberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Rubus flagellaris</i>	Northern Dewberry	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Shrub	<i>Rubus idaeus ssp. strigosus</i>	Wild Red Raspberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Rubus occidentalis</i>	Black Raspberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Rubus odoratus</i>	Purple-flowering Raspberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Salix discolor</i>	Pussy Willow	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Sambucus canadensis</i>	Common Elderberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Sorbus aucuparia</i>	European Mountain-ash	6/23/2014		Lornewood Creek	non-native		SNA	5				
Shrub	<i>xicodendron radicans var. rydberg</i>	Western Poison Ivy	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Vaccinium pallidum</i>	Early Lowbush Blueberry	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Shrub	<i>Viburnum acerifolium</i>	Maple-leaved Viburnum	6/23/2014		Lornewood Creek	native		S5	3				
Shrub	<i>Viburnum lentago</i>	Nannyberry	6/23/2014		Lornewood Creek	native		S5	4				
Shrub	<i>Viburnum opulus ssp. opulus</i>	Cranberry Viburnum	6/23/2014		Lornewood Creek	non-native		SNA	5				
Tree	<i>Acer negundo</i>	Manitoba Maple	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Acer rubrum</i>	Red Maple	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Acer rubrum</i>	Red Maple	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Acer rubrum</i>	Red Maple	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Aesculus hippocastanum</i>	Horse Chestnut	6/23/2014		Lornewood Creek	non-native		SNA	5				
Tree	<i>Betula alleghaniensis</i>	Yellow Birch	6/23/2014		Lornewood Creek	native		S5	3				
Tree	<i>Betula papyrifera</i>	Paper Birch	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Betula pendula</i>	Weeping Birch	6/23/2014		Lornewood Creek	non-native		SNA	5				
Tree	<i>Carpinus caroliniana</i>	Blue-beech	6/23/2014		Lornewood Creek	native		S5	3				
Tree	<i>Fraxinus americana</i>	White Ash	6/23/2014		Lornewood Creek	native		S4	4				
Tree	<i>Fraxinus nigra</i>	Black Ash	6/23/2014		Lornewood Creek	native		S4	3				
Tree	<i>Fraxinus pennsylvanica</i>	Green Ash	6/23/2014		Lornewood Creek	native		S4	4				uncommon
Tree	<i>Fraxinus pennsylvanica</i>	Green Ash	6/23/2014	Entered as Fraxinus pennsylvanica var. pennsylvanica. Entered as Fraxinus pennsylvanica var. pennsylvanica, Signs of decline and Emerald Ash Borer present.	Lornewood Creek	native		S4	4				
Tree	<i>Fraxinus pennsylvanica</i>	Green Ash	6/23/2014		Lornewood Creek	native		S4	4				
Tree	<i>Fraxinus pennsylvanica</i>	Green Ash	6/23/2014		Lornewood Creek	native		S4	4				
Tree	<i>Juglans cinerea</i>	Butternut	6/23/2014		Lornewood Creek	native	END	S2?	1				
Tree	<i>Juglans cinerea</i>	Butternut	8/19/2008	One tree with 3 stems, no canker. South side of tracks.	CN Line, Lorne Park Rd	native	END	S2?	1				
Tree	<i>Juglans cinerea</i>	Butternut	8/19/2008	Young tree, South side of tracks.	CN Line, Lorne Park Rd	native	END	S2?	1				
Tree	<i>Juglans nigra</i>	Black Walnut	6/23/2014		Lornewood Creek	native		S4?	4			rare	
Tree	<i>Picea glauca</i>	White Spruce	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	2	rare			
Tree	<i>Picea glauca</i>	White Spruce	6/23/2014	Found in TPO2-1 inclusion.	Lornewood Creek	native		S5	2	rare			
Tree	<i>Picea glauca</i>	White Spruce	6/23/2014	At plantation edge only.	Lornewood Creek	native		S5	2	rare			
Tree	<i>Pinus resinosa</i>	Red Pine	6/23/2014		Lornewood Creek	native		S5	2	rare	rare	rare	rare
Tree	<i>Pinus strobus</i>	Eastern White Pine	6/23/2014	At plantation edge only.	Lornewood Creek	native		S5	4				
Tree	<i>Platanus occidentalis</i>	Sycamore	6/23/2014	At community/polygon edge.	Lornewood Creek	native		S4	2	rare	rare	rare	rare
Tree	<i>Populus balsamifera</i>	Balsam Poplar	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Populus balsamifera</i>	Balsam Poplar	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	6/23/2014	1 specimen present at 174cm DBH. Photo #90.	Lornewood Creek	native		S5	2				
Tree	<i>Populus grandidentata</i>	Large-toothed Aspen	6/23/2014		Lornewood Creek	native		S5	3				
Tree	<i>Populus tremuloides</i>	Trembling Aspen	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	native		S5	4				
Tree	<i>Populus tremuloides</i>	Trembling Aspen	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Prunus serotina</i>	Black Cherry	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Quercus alba</i>	White Oak	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				uncommon
Tree	<i>Quercus alba</i>	White Oak	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				uncommon
Tree	<i>Quercus alba</i>	White Oak	6/23/2014		Lornewood Creek	native		S5	3				uncommon
Tree	<i>Quercus alba</i>	White Oak	6/23/2014		Lornewood Creek	native		S5	3				uncommon
Tree	<i>Quercus rubra</i>	Northern Red Oak	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Quercus rubra</i>	Northern Red Oak	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Quercus velutina</i>	Black Oak	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Tree	<i>Quercus velutina</i>	Black Oak	9/23/2010	1 to 5 individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Tree	<i>Quercus velutina</i>	Black Oak	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare	rare	rare
Tree	<i>Quercus velutina</i>	Black Oak	6/23/2014	Large trees at community's edge.	Lornewood Creek	native		S4	2	rare	rare	rare	rare
Tree	<i>Quercus velutina</i>	Black Oak	8/19/2008	Salvaged, possible hybrid with Q. rubra	CN Line, Lorne Park Rd	native		S4	2	rare	rare	rare	rare
Tree	<i>Robinia pseudoacacia</i>	Black Locust	6/23/2014		Lornewood Creek	non-native		SNA	5				
Tree	<i>Salix alba</i>	White Willow	6/23/2014		Lornewood Creek	non-native		SNA	5				

## CVC Species List

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Tree	<i>Salix alba</i>	White Willow	6/23/2014		Lornewood Creek	non-native		SNA	5				
Tree	<i>Salix amygdaloides</i>	Peach-leaved Willow	6/23/2014		Lornewood Creek	native		S5	2	rare			uncommon
Tree	<i>Salix x fragilis</i>	Hybrid Crack Willow	6/23/2014	Hybrid, possibly <i>Salix euixina</i> .	Lornewood Creek	non-native		SNA	5				
Tree	<i>Sassafras albidum</i>	Sassafras	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	Old Abundance Code: 2=5-20. Approx 6-20 individuals noted. GPS is a centroid for the range of the plants.	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	Small and large. 6-20 individuals. Old Abundance Code: 2=5-20	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	Salvaged	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	Old Abundance Code: 2=5-20. 6 - 20 plants.	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	1m high	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	Small saplings, Old Abundance Code: 3=21-100. South side of tracks.	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Sassafras albidum</i>	Sassafras	8/19/2008	Young tree, Old Abundance Code: 3=21-100. South side of tracks.	CN Line, Lorne Park Rd	native		S4	2	rare	rare		rare
Tree	<i>Thuja occidentalis</i>	Eastern White Cedar	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Thuja occidentalis</i>	Eastern White Cedar	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Tilia americana</i>	American Basswood	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Tilia cordata</i>	Little-leaf Linden	6/23/2014		Lornewood Creek	non-native		SNA	5				
Tree	<i>Tsuga canadensis</i>	Eastern Hemlock	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Tsuga canadensis</i>	Eastern Hemlock	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Ulmus americana</i>	American Elm	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Ulmus americana</i>	American Elm	6/23/2014		Lornewood Creek	native		S5	4				
Tree	<i>Ulmus pumila</i>	Siberian Elm	6/23/2014		Lornewood Creek	non-native		SNA	5				
Vine	<i>Amphicarpaea bracteata</i>	American Hog-peanut	9/23/2010	10+ individuals	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	3				
Vine	<i>Amphicarpaea bracteata</i>	American Hog-peanut	6/23/2014		Lornewood Creek	native		S5	3				
Vine	<i>Aplos americana</i>	American Groundnut	9/23/2010	abundant	Lorne Park Prairie, Significant Wildlife Habitat	native		S5	2	rare	rare	rare	uncommon
Vine	<i>Clematis virginiana</i>	Virginia Virgin's-bower	6/23/2014		Lornewood Creek	native		S5	4				
Vine	<i>Echinocystis lobata</i>	Wild Mock-cucumber	6/23/2014		Lornewood Creek	native		S5	4				
Vine	<i>Smilax herbacea</i>	Herbaceous Carrionflower	6/23/2014		Lornewood Creek	native		S4?	3				
Vine	<i>Vicia cracca</i>	Tufted Vetch	6/23/2014		Lornewood Creek	non-native		SNA	5				
Vine	<i>Vincetoxicum nigrum</i>	Black Swallow-wort	6/23/2014		Lornewood Creek	non-native		SNA	5				
Vine	<i>Vincetoxicum rossicum</i>	European Swallow-wort	8/19/2008	By fence, Old Abundance Code: 3=21-100	CN Line, Lorne Park Rd	non-native		SNA	5				
Vine	<i>Vincetoxicum rossicum</i>	European Swallow-wort	8/19/2008	5mx10m clump, Old Abundance Code: 3=21-100	CN Line, Lorne Park Rd	non-native		SNA	5				
Vine	<i>Vincetoxicum rossicum</i>	European Swallow-wort	8/19/2008	5mx10m clump, Old Abundance Code: 4=>100	CN Line, Lorne Park Rd	non-native		SNA	5				
Vine	<i>Vincetoxicum rossicum</i>	European Swallow-wort	8/19/2008	Old Abundance Code: 4=>100. South side of tracks.	CN Line, Lorne Park Rd	non-native		SNA	5				
Woody Vine	<i>Celastrus orbiculatus</i>	Oriental Bittersweet	6/23/2014		Lornewood Creek	non-native		SNA	5				
Woody Vine	<i>Celastrus scandens</i>	Climbing Bittersweet	8/19/2008	2 large clumps, Old Abundance Code: 1=1-5	CN Line, Lorne Park Rd	native		S5	4				
Woody Vine	<i>Parthenocissus vitacea</i>	Thicket Creeper	6/23/2014		Lornewood Creek	native		S5	4				
Woody Vine	<i>Solanum dulcamara</i>	Bittersweet Nightshade	6/23/2014	Found in MAM 2-9 seepage inclusion.	Lornewood Creek	non-native		SNA	5				
Woody Vine	<i>Solanum dulcamara</i>	Bittersweet Nightshade	6/23/2014	Found in MAM 2-9 inclusion.	Lornewood Creek	non-native		SNA	5				
Woody Vine	<i>Vitis riparia</i>	Riverbank Grape	6/23/2014		Lornewood Creek	native		S5	4				
Woody Vine	<i>Vitis riparia</i>	Riverbank Grape	6/23/2014		Lornewood Creek	native		S5	4				
Woody Vine	<i>Vitis riparia</i>	Riverbank Grape	6/23/2014		Lornewood Creek	native		S5	4				

ColumnName	Definition
SCIENTIFIC_NAME	latin complete name of the wildlife species
COMMON_NAME	common name of the wildlife species
ELC_CODE	NHIC)
primary_surveyor	name of the main surveyor
additional_surveyor	name(s) of any addition surveyors
visit_date	date of the survey
ABUNDANCE	abundance of the species observed. the default in the database is 0, so if no abundance was actually recorded, the species would have 0 as an abundance. Note that there could be more than 1 bird observed.
UTME	UTM easting of the observation, NAD 83
UTMN	UTM northing of the observation, NAD 83
UTM_DETAILS	origin of the UTM's
ACCURACY	accuracy of the GPS unit
evidence_faunal	wildlife evidence: AE = Nest Entry, CF = Carrying Food (ON Breeding Bird Atlas), DD = Distraction Display, FS = Feacal Sac, FY = Fledged Young (of birds only), NY = Young (of birds only), A = Anxiety Behavior, B = Brood patch female/cloacal protuberance male ONBBA, D = Display, NB = Nest Building, P = Pair, T = Territory, V = Visiting Nest, SH = Suitable Habitat, SM = Singing Male, L1 = Frogs: Calls not simultaneous, number of individuals can be counted, L2 = Frogs: Some calls simultaneous, number of individuals may still be counted, L3 = Frogs: Full chorus, calls continuous and overlapping, numbers not distinguishable or can not be counted, CA = Carcass, DP = Distinctive Parts, EG = Eggs, FC = Food Cache , FE = Feeding/Foraging Evidence, FL = Flyover, HO = House, MO = Movement or migration activities (e.g. herpetofauna), NN = Nest , OB = Animal Observed, OD = Odour , SC = Scat or pellet, SI = Other Signs (specify), TK = Tracks, VO = Vocalization, Y = Young (of non-birds)
notes	any notes on the species observed
TEEM_number	teem number
NAI_number	natural areas inventory number.
polygon_number	elc polygon number. Corresponds to polygons in shapefile provided.
NATIVE_STATUS_ONTARIO	Is this species Native to Ontario?
COSEWIC_STATUS	Status assigned by the Committee on the Status of Endangered Wildlife in Canada
SARA_STATUS	Status according to the Species at Risk Act (Federal)
SARO_STATUS	Status according to the Species at Risk in Ontario list
GLOBAL_RANK	species global rank (GRank)
PROVINCIAL_RANK	and natural communities.
SCC_TIER	CVC Species of Conservation Concern Tier (1 = Species of Conservation Concern, 2 = Species of Interest, 3 = Species of Urban Interest, 4 = Secure Species, 5 = Non-Native & Non-Native Hybrid Species)
Regional Rank (Kaiser01)	Kaiser 2001. The Vascular Plant Flora of the Region of Peel and the Credit River Watershed.
Local Rank (Kaiser01)	Kaiser 2001. The Vascular Plant Flora of the Region of Peel and the Credit River Watershed.
Rare_6E7_Varga_2000	Varga et al., 2000. Distribution and Status of the Vascular Plants of the Greater Toronto Area *Draft*
Rare_7E4_Varga_2000	Varga et al., 2000. Distribution and Status of the Vascular Plants of the Greater Toronto Area *Draft*
site_name	name of the site
source	CVC source of the data



# Natural Areas System

2017 NATURAL AREAS UPDATE

**SITE CL22**

## NATURAL AREAS SYSTEM CLASSIFICATION

- NATURAL AREAS
- VEGETATION COMMUNITIES
- SPECIAL MANAGEMENT AREAS
- - - LINKAGES



# City of Mississauga Natural Areas Survey (2016)

## Natural Areas Fact Sheet

NATURAL AREA NAME	PLANNING DISTRICT	AREA (HA)	UTM GRID REFERENCE
CL22	Clarkson-Lorne Park	17.91	6118 48213

### 1. LOCATION

Along Lornewood Creek from just north of Indian Road south to the Canadian National Railway Line and west to Birchview Drive. The natural areas CL30 and CL24 are located within approximately 500 m to the west and east respectively. The natural area CL31 that occurs south of the Canadian National Railway Line is linked to this site by Lornewood Creek.

### 2. CLASSIFICATION

Significant Natural Area

### 3. DESCRIPTION

#### A. Physical Features

This site is composed of the Lornewood Creek valley and associated tablelands. Bedrock geology of the site consists of grey shales of the Georgian Bay Formation. These are buried by up to 7.5 m of soils and glacial deposits consisting of well-drained Fox sand developed within the Iroquois Sand Plain. An unconfined shallow sand aquifer is associated with the Iroquois Sand Plain. On the northeastern edge there is a section of organic soil. Portions of Lornewood Creek near Springhill Road and Indian Road have been engineered. Two water quantity control facilities are present on Lornewood Creek. Seepage areas are widespread along the valley walls north of the railway tracks.

#### B. Biota

There are 181 floral species and 26 faunal species documented for this site. This site was not accessible for field work, thus, the vegetation community description is based on existing reports and aerial photograph interpretation. Two vegetation communities are present at this site (see accompanying figure): dry-fresh sugar maple - oak deciduous forest type (FOD5-3) and mineral meadow marsh ecosite (MAM2).

#### Dry-fresh Sugar Maple - Oak Deciduous Forest Type (FOD5-3)

The forest community is surrounded on all sides by residences. Canopy and sub-canopy tree species include Red Oak (*Quercus rubra*), White Oak (*Q. alba*), Norway Maple (*Acer platanoides*), White Pine (*Pinus strobus*), White Birch (*Betula papyrifera*), and White Ash (*Fraxinus americana*). The canopy and sub-canopy are 10-25 m and 2-10 m in height, respectively. Each canopy layer covers greater than 60% of the community. The amount of understory present depends on the landscaping of individual yards. Where the understory and ground layer have remained undisturbed, species include Witch-hazel (*Hamamelis virginiana*), Choke Cherry (*Prunus virginiana*), False Solomon's-seal (*Maianthemum racemosum*), White Trillium (*Trillium grandiflorum*), and Wild Crane's-bill (*Geranium maculatum*). Understory vegetation is 1-2 m in height and ground layer vegetation is 0.2-0.5 m in height. The understory and ground layer are both densely vegetated with greater than 60% cover in each layer. Along creek banks the dense vegetation is dominated by Crack Willow (*Salix fragilis*), Riverbank Grape (*Vitis riparia*), Manitoba Maple (*Acer negundo*), Multiflora Rose (*Rosa multiflora*) and Red-osier Dogwood (*Cornus stolonifera*). In openings, Cattails (*Typha* spp.), Purple Loosestrife (*Lythrum salicaria*), and Spotted Joe-pye-weed (*Eupatorium maculatum*) are common. Along the Canadian National Railway Line some remnant tallgrass prairie species such as Big Bluestem (*Andropogon gerardii*) and Little Blue-eyed grass (*Sisyrinchium montanum*) are present.

**B. Biota** continued...

Mineral Meadow Marsh Ecosite (MAM2)

The meadow marsh was identified using aerial photograph interpretation and Credit Valley Conservation (CVC) suggests that the MAM2 at the end of Fair Birch Drive is a Reed-canary Grass Organic Meadow Marsh Type (MAM3-2). However this site has not been investigated in the field, due to limited access, and as such the vegetation composition is unknown.

There are 19 birds, 1 mammal, 3 amphibians and 3 reptiles documented at this site. This area species of successional and forest edge habitats including Northern Cardinal and Black-capped Chickadee. Wetland-dependent bird species associated with patches of cattail marsh, such as Red-winged Blackbird, are present at the site. Great Horned Owl was heard calling from this site in the early spring of 2012. During the spring and fall migration periods, the diversity of birds is expected to increase as species utilize remnant natural areas as stopovers *en route* to breeding or wintering habitat. Lornewood Creek contains Type 2 fisheries habitat at this site.

**4. CONDITION**

The good condition of this site should be considered with respect for its location in a residential community. Disturbances present include the dumping of brush, noise from the Canadian National Railway, and extensive residential encroachment. Invasive species present include Garlic Mustard (*Alliaria petiolata*), European Buckthorn (*Rhamnus cathartica*), Purple Loosestrife, Tartarian Honeysuckle (*Lonicera tatarica*), and Multiflora Rose. Sixty-nine introduced plant species are present (representing 38.12% of the total number of species present). The native FQI is 42.24, a high value, and the native mean coefficient is medium-high at 3.99<sup>1</sup>. Both the native FQI and native mean coefficient have stayed the same from the 2012 values. Surrounding land use is residential.

**5. SIGNIFICANCE**

- 1 provincially significant flora species has been documented from this site.
- 2 plant species considered rare within the City (known from 3 or fewer locations): both are historical records.
- 4 plant species considered uncommon within the City (known from 4 to 10 locations): all are historical records.
- 36 Credit Valley Conservation flora Species of Conservation Concern (Tier 1-3).
- 1 provincially significant fauna species has been documented from this site, a historical record.
- 8 Credit Valley Conservation fauna Species of Conservation Concern (Tier 1-3), including 3 birds, 3 amphibians (2 are historical), and 2 reptiles (both are historical).
- Southern edge of the site from the Canadian National Rail Line to Springhill Road contains a portion of the Environmentally Significant Area and a regional life science Area of Natural and Scientific Interest (Lorne Park Prairie-in part)
- Large size (17.91 ha)
- Close proximity to natural areas CL24 and CL30
- Linkage to natural areas CL17 and CL31 along Lornewood Creek
- Floodplain provides floodwater storage for Lornewood Creek

**6. MANAGEMENT NEEDS**

- Large size, valued species and reasonably high FQI and native mean coefficient suggest management for natural values is warranted where publicly owned.
- Initiate a landowner contact programme to encourage management for natural values by landowners.
- The management of the area should be directed to maintenance of continuous canopy and, wherever possible, naturalization of residential landscapes, with respect for the private ownership of the site.
- Additional research is recommended to thoroughly document the flora and fauna species present.
- The City parks, Fairbirch and unnamed public land, is included within this natural area.

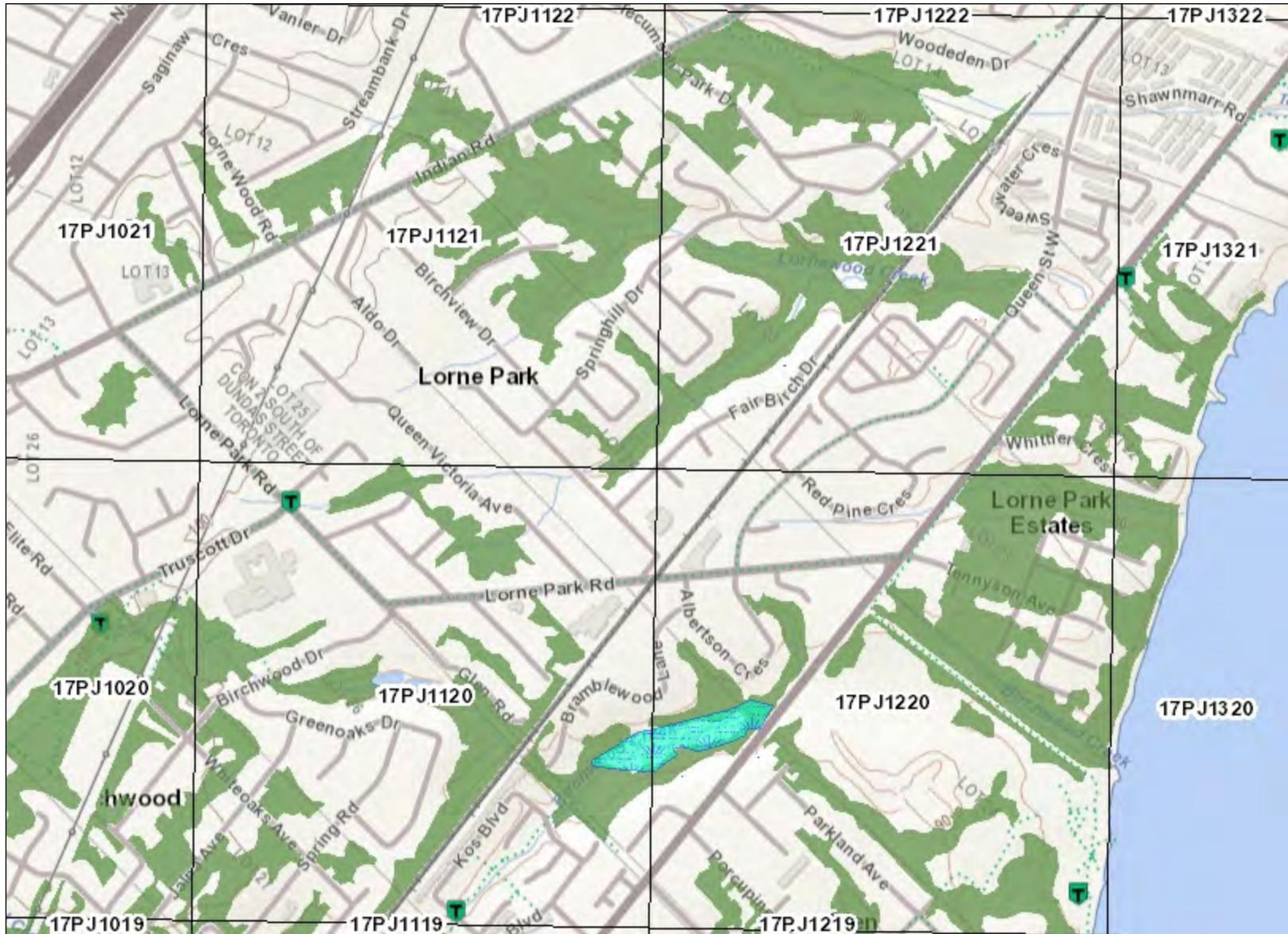
**7. PRINCIPLE REFERENCES**

City of Mississauga (1978)

Ecologistics Limited (1979)

Credit Valley Conservation (2015)

- 
1. Floristic quality is explained in the introduction.



## Legend

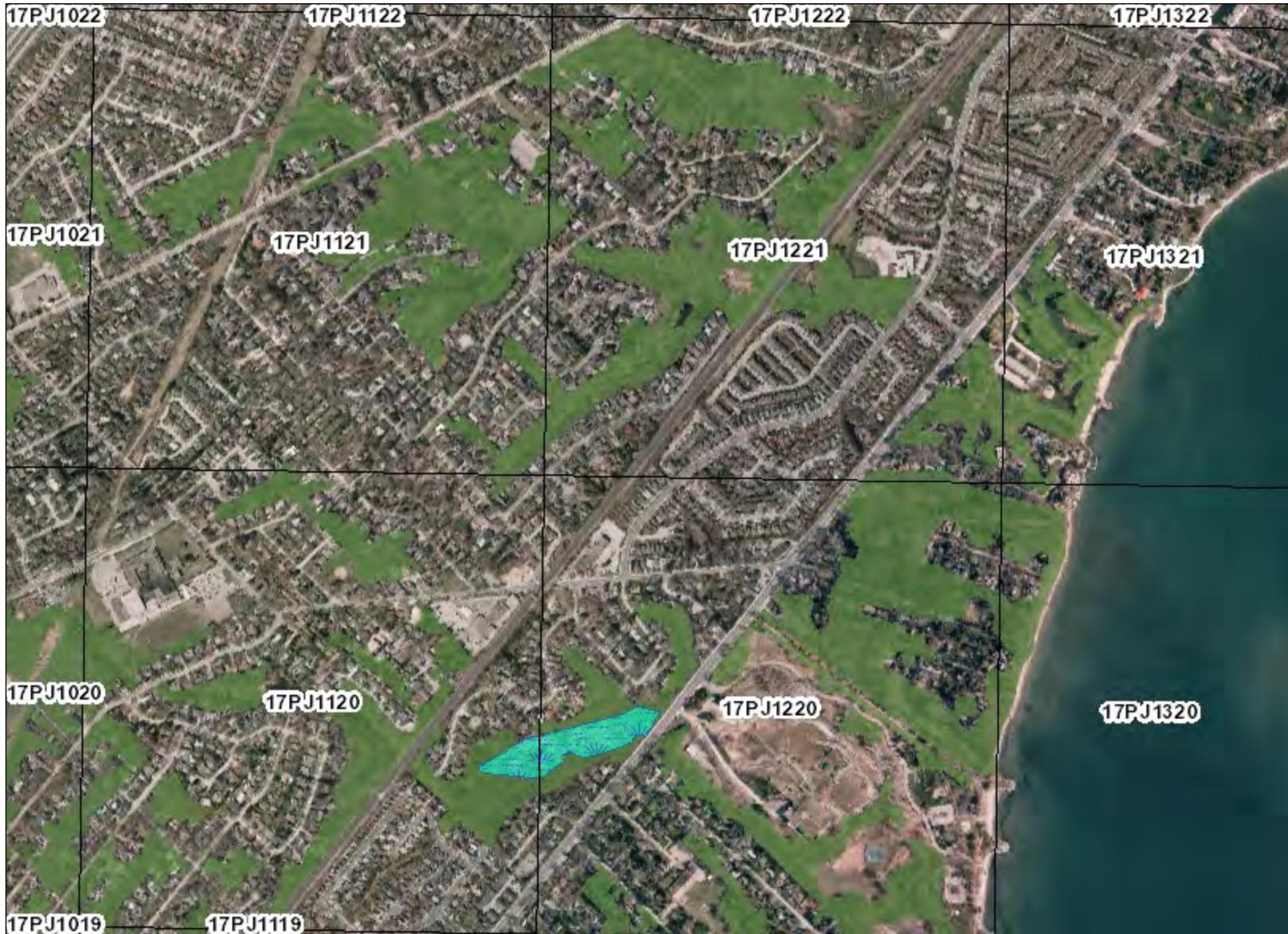
- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion
- Wetland**
  - Provincially Significant Wetland Evaluated
  - Non - Provincially Significant Wetland Evaluated
  - Unevaluated Wetland
- Area of Natural Heritage & Scientific Interest (ANSI)**
  - Provincially Significant Life Science ANSI
  - Provincially Significant Earth Science ANSI
- Greenbelt Plan**
  - Boundary
  - River Valley Connections
- Land Use Designations**
  - Protected Countryside
  - Towns and Villages
  - Hamlets
  - Urban River Valley
  - Specialty Crop Area
- Niagara Escarpment Plan (NEP)**
  - Boundary
  - Parks and Open Space System
- Land Use Designations**
  - Escarpment Natural Area
  - Escarpment Protection Area
  - Escarpment Rural Area
  - Mineral Resource Extraction Area
  - Escarpment Recreation Area
  - Urban Area
  - Minor Urban Centre
- Oak Ridges Moraine Conservation Plan (ORM)**
  - Boundary
  - Natural Core Area
  - Natural Linkage Area
  - Countryside Area
  - Rural Settlement
  - Palgrave Estates Residential Community
  - Settlement Area



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- Land Use Designations**
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0.7 0 0.33 0.7 Kilometers



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**OBBA Results**

Species list for square 17PJ12 (number of entries returned: 102)

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ12	Alder Flycatcher	S	POSS	1	Andrew Keaveney				
12	17PJ12	American Black Duck	FY	CONF	1	Luke Fazio				
12	17PJ12	American Crow	FY	CONF	1	3 atlassers	10	15.63	0.2031	1
12	17PJ12	American Goldfinch	FY	CONF	1	Glenn Coady	10	15.63	0.2656	1
12	17PJ12	American Kestrel	CF	CONF	1	Luke Fazio				
12	17PJ12	American Redstart	P	PROB	1	Luke Fazio	1	1.56	0.0156	1
12	17PJ12	American Robin	NY	CONF	1	Winnie Poon	57	89.06	1.7813	1
12	17PJ12	American Woodcock	S	POSS	1	Glenn Coady				
12	17PJ12	Baltimore Oriole	CF	CONF	1	Glenn Coady	19	29.69	0.3281	1
12	17PJ12	Bank Swallow	CF	CONF	1	Luke Fazio	4	6.25	0.1406	1
12	17PJ12	Barn Swallow	AE	CONF	1	3 atlassers	3	4.69	0.0625	1
12	17PJ12	Belted Kingfisher	CF	CONF	1	Luke Fazio				
12	17PJ12	Black-billed Cuckoo	S	POSS	1	Glenn Coady				
12	17PJ12	Black-capped Chickadee	CF	CONF	1	Luke Fazio	15	23.44	0.3125	1
12	17PJ12	Blue Jay	CF	CONF	1	Luke Fazio	10	15.63	0.1875	1
12	17PJ12	Blue-gray Gnatcatcher	FY	CONF	1	Glenn Coady				
12	17PJ12	Blue-winged Teal	H	POSS	1	Glenn Coady				
12	17PJ12	Bobolink	S	POSS	1	2 atlassers				
12	17PJ12	Brown Thrasher	CF	CONF	1	2 atlassers				
12	17PJ12	Brown-headed Cowbird	FY	CONF	1	3 atlassers	8	12.5	0.1563	1
12	17PJ12	Canada Goose	AE	CONF	1	Glenn Coady	10	15.63	1.3594	1
12	17PJ12	Carolina Wren	NY	CONF	1	Glenn Coady	2	3.13	0.0313	1
12	17PJ12	Cedar Waxwing	FY	CONF	1	2 atlassers	10	15.63	0.25	1
12	17PJ12	Chestnut-sided Warbler	T	PROB	1		1	1.56	0.0156	1
12	17PJ12	Chimney Swift	AE	CONF	1	Glenn Coady	8	12.5	0.3125	1
12	17PJ12	Chipping Sparrow	CF	CONF	1	Glenn Coady	14	21.88	0.2969	1
12	17PJ12	Cliff Swallow	NY	CONF	1	Luke Fazio	2	3.13	0.0313	1
12	17PJ12	Common Grackle	NY	CONF	1	Donald A Sutherland	53	82.81	1.6719	1
12	17PJ12	Common Nighthawk	P	PROB	1	Luke Fazio				
12	17PJ12	Common Yellowthroat	CF	CONF	1	Glenn Coady	1	1.56	0.0156	1
12	17PJ12	Cooper's Hawk	H	POSS	1	Roy Smith				
12	17PJ12	Downy Woodpecker	AE	CONF	1	Luke Fazio	10	15.63	0.1719	1
12	17PJ12	Eastern Kingbird	NY	CONF	1	Glenn Coady	2	3.13	0.0313	1
12	17PJ12	Eastern Meadowlark	CF	CONF	1	Luke Fazio				
12	17PJ12	Eastern Phoebe	CF	CONF	1	Glenn Coady				
12	17PJ12	Eastern Screech-Owl	FY	CONF	1	Glenn Coady				
12	17PJ12	Eastern Towhee	H	POSS	1	Luke Fazio				
12	17PJ12	Eastern Wood-Pewee	CF	CONF	1	Luke Fazio	3	4.69	0.0469	1
12	17PJ12	European Starling	CF	CONF	1	2 atlassers	47	73.44	2.375	1
12	17PJ12	Field Sparrow	S	POSS	1	Andrew Keaveney				
12	17PJ12	Gadwall	FY	CONF	1	Glenn Coady	2	3.13	0.0625	1
12	17PJ12	Gray Catbird	CF	CONF	1	Glenn Coady	8	12.5	0.1406	1
12	17PJ12	Great Crested Flycatcher	CF	CONF	1	Glenn Coady	8	12.5	0.125	1
12	17PJ12	Great Horned Owl	AE	CONF	1	Luke Fazio				
12	17PJ12	Green Heron	H	POSS	1	2 atlassers				
12	17PJ12	Hairy Woodpecker	FY	CONF	1	2 atlassers	1	1.56	0.0156	1
12	17PJ12	Hooded Merganser	P	PROB	1	Glenn Coady				
12	17PJ12	Horned Lark	H	POSS	1	Luke Fazio				
12	17PJ12	House Finch	CF	CONF	1	Glenn Coady	18	28.13	0.5313	1
12	17PJ12	House Sparrow	NY	CONF	1	Andrew Keaveney	41	64.06	2	1
12	17PJ12	House Wren	AE	CONF	1	Luke Fazio	12	18.75	0.1875	1
12	17PJ12	Indigo Bunting	A	PROB	1	Luke Fazio	2	3.13	0.0313	1
12	17PJ12	Killdeer	NE	CONF	1	2 atlassers	5	7.81	0.0781	1
12	17PJ12	Least Flycatcher	S	POSS	1	Andrew Keaveney	1	1.56	0.0156	1
12	17PJ12	Mallard	NE	CONF	1	Luke Fazio	9	14.06	0.4063	1
12	17PJ12	Mourning Dove	NE	CONF	1	3 atlassers	43	67.19	1.0469	1
12	17PJ12	Mourning Warbler	T	PROB	1	Glenn Coady				
12	17PJ12	Mute Swan	NE	CONF	1	2 atlassers				
12	17PJ12	Nashville Warbler	S	POSS	1	Glenn Coady				
12	17PJ12	Northern Cardinal	CF	CONF	1	Glenn Coady	38	59.38	1.125	1
12	17PJ12	Northern Flicker	CF	CONF	1	Roy Smith	10	15.63	0.1563	1
12	17PJ12	Northern Harrier	H	POSS	1	Glenn Coady				
12	17PJ12	Northern Mockingbird	NY	CONF	1	4 atlassers	1	1.56	0.0156	1
12	17PJ12	Northern Rough-winged Swallow	AE	CONF	1	2 atlassers				
12	17PJ12	Northern Waterthrush	H	POSS	1	Luke Fazio				

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ12	Orchard Oriole	FY	CONF	1	Glenn Coady	1	1.56	0.0313	1
12	17PJ12	Peregrine Falcon	NY	CONF	1	3 atlassers	1	1.56	0.0156	1
12	17PJ12	Pileated Woodpecker	FY	CONF	1	Luke Fazio				
12	17PJ12	Pine Warbler	CF	CONF	1	Luke Fazio	1	1.56	0.0156	1
12	17PJ12	Purple Martin	NY	CONF	1	Glenn Coady				
12	17PJ12	Red-bellied Woodpecker	H	POSS	1	Glenn Coady				
12	17PJ12	Red-breasted Nuthatch	AE	CONF	1	Glenn Coady	2	3.13	0.0469	1
12	17PJ12	Red-eyed Vireo	CF	CONF	1	2 atlassers	11	17.19	0.1875	1
12	17PJ12	Red-necked Grebe	NU	CONF	1	Glenn Coady	2	3.13	0.125	1
12	17PJ12	Red-tailed Hawk	CF	CONF	1	Luke Fazio	1	1.56	0.0156	1
12	17PJ12	Red-winged Blackbird	NE	CONF	1	Luke Fazio	18	28.13	0.4531	1
12	17PJ12	Ring-billed Gull	H	POSS	1	Roy Smith	30	46.88	3.8594	1
12	17PJ12	Ring-necked Pheasant	H	POSS	1	Glenn Coady				
12	17PJ12	Rock Pigeon	NY	CONF	1	Glenn Coady	24	37.5	1.4063	1
12	17PJ12	Rose-breasted Grosbeak	FY	CONF	1	Luke Fazio				
12	17PJ12	Ruby-throated Hummingbird	T	PROB	1	Glenn Coady	1	1.56	0.0156	1
12	17PJ12	Savannah Sparrow	CF	CONF	1	3 atlassers				
12	17PJ12	Scarlet Tanager	H	POSS	1	Andrew Keaveney				
12	17PJ12	Sharp-shinned Hawk	NY	CONF	1	Glenn Coady				
12	17PJ12	Song Sparrow	CF	CONF	1	2 atlassers	12	18.75	0.2031	1
12	17PJ12	Sora	A	PROB	1	Luke Fazio				
12	17PJ12	Spotted Sandpiper	FY	CONF	1	Luke Fazio	2	3.13	0.0469	1
12	17PJ12	Swamp Sparrow	A	PROB	1	Luke Fazio				
12	17PJ12	Tree Swallow	NY	CONF	1	Glenn Coady	7	10.94	0.2344	1
12	17PJ12	Tufted Titmouse	T	PROB	1	Donald A Sutherland				
12	17PJ12	Turkey Vulture	H	POSS	1	Glenn Coady				
12	17PJ12	Veery	P	PROB	1	Luke Fazio				
12	17PJ12	Virginia Rail	P	PROB	1	Luke Fazio				
12	17PJ12	Warbling Vireo	CF	CONF	1	Luke Fazio	13	20.31	0.2031	1
12	17PJ12	White-breasted Nuthatch	T	PROB	1	2 atlassers	7	10.94	0.1563	1
12	17PJ12	White-throated Sparrow	S	POSS	1	Glenn Coady				
12	17PJ12	Willow Flycatcher	CF	CONF	1	3 atlassers				
12	17PJ12	Wood Duck	FY	CONF	1	Luke Fazio				
12	17PJ12	Wood Thrush	CF	CONF	1	Glenn Coady	2	3.13	0.0313	1
12	17PJ12	Yellow Warbler	NE	CONF	1	Glenn Coady	7	10.94	0.125	1
12	17PJ12	Yellow-bellied Sapsucker	P	PROB	1	Luke Fazio				
12	17PJ12	Yellow-billed Cuckoo	H	POSS	1	Glenn Coady				

**ORAA Results**

17PJ12: 220 Records

Common Name	Number of Individuals	Year of Observation	Month of Observation	Calendar Day of Observation	Observation Id
American Bullfrog	1	1995	June	9	108535
American Toad	26	2011	April	10	105336
Blanding's Turtle	1	1982			105526
Dekay's Brownsnake	1	2018	June	19	474377
Eastern Gartersnake	1	2016	May	12	358658
Eastern Musk Turtle	1	1952	July		407109
Eastern Newt	1	1969			105504
Eastern Red-backed Salamander	20	2012	July	6	108850
Gray Treefrog	1	2012	June	2	103472
Green Frog	1	2011	June	22	108518
Jefferson Salamander	1	2000	April	21	419862
Jefferson/Blue-spotted Salamander Complex	1	2000	April	21	108441
Midland Painted Turtle	1	2018	June	13	474500
Milksnake	1	2017	September	17	457264
Mudpuppy	1	2000			104162
Mudpuppy	1	1969			105497
Northern Leopard Frog	1	2012	June	2	103471
Northern Map Turtle	15	2013	August	8	104433
Northern Watersnake	1	2012	July	15	108963
Pickereel Frog	1	1969			105507
Red-bellied Snake	1	1969			105535
Red-eared Slider	1	2017	July	23	455547
Ring-necked Snake	1	1987	June	23	110401
Smooth Greensnake	1	1969			105511
Snapping Turtle	2	2018	June	19	475587
Spotted Salamander	1	1990	May	29	102723
Spring Peeper	1	1969	April	22	105548
Western Chorus Frog	3	1989	May	5	107294
Wood Frog	1	1997	April	30	110409

Species List	SARO Status
American Bullfrog	
Dekay's Brownsnake	

CLOSE

NHIC Results

17PJ1120, 17PJ1121, 17PJ1220, 17PJ1221

Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	Last Obs Date	EO ID	Details URL
SPECIES	Cleland's Evening Primrose	Oenothera clelandii	S1			9/21/1985	2466	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=2466">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=2466</a>
SPECIES	Eastern Ribbonsnake	Thamnophis sauritus	S4	SC	SC	1969-?	90747	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=90747">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=90747</a>
SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC		180294	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=180294.1">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=180294.1</a>
SPECIES	Fall Crabgrass	Digitaria cognata	S1?			9/22/1971	7663	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=7663">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=7663</a>
NATURAL AREA	Fudger's Marsh						19782	<a href="http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&amp;feature=NA&amp;areaid=19782">http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&amp;feature=NA&amp;areaid=19782</a>
SPECIES	Henslow's Sparrow	Ammodramus henslowii	SHB	END	END	7/11/1932	13074	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=13074">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=13074</a>
NATURAL AREA	Lorne Park Prairie						1378	<a href="http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&amp;feature=NA&amp;areaid=1378">http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&amp;feature=NA&amp;areaid=1378</a>
RESTRICTED SPECIES	RESTRICTED SPECIES	RESTRICTED SPECIES				1924-00-00	116355	
SPECIES	Snapping Turtle	Chelydra serpentina	S3	SC	SC	1996-00-00	96102	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=96102">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=96102</a>
SPECIES	Sundial Lupine	Lupinus perennis	S2S3			5/29/1980	66370	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=66370">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=66370</a>
SPECIES	Virginia Bluebells	Mertensia virginica	S3			5/6/1993	34622	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=34622">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=34622</a>
NATURAL AREA	West End of Lake Ontario						19321	<a href="http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&amp;feature=NA&amp;areaid=19321">http://nhic.mnr.gov.on.ca/natural_areas/areas.php?source=MaMNHA&amp;feature=NA&amp;areaid=19321</a>
SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR		180359	<a href="http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=180359.1">http://nhic.mnr.gov.on.ca/reports/public_details.php?source=1kmgriddetail&amp;nhic_eo_id=180359.1</a>

WILDLIFE MASTER SPECIES LIST FOR ONTARIO																				
Wildlife Survey Conducted by:																				
Species Code	COMMON NAME	ALTERNATIVE COMMON NAME	SCIENTIFIC NAME	ALTERNATIVE SCIENTIFIC NAME	LOCATION	SRANK	Endangered Species Act	Fish & Wildlife Conservation Act	F&WCA Schedule	COSEWIC	Species at Risk Act	SARA Schedule	MBCA	Area Sensitive Species	Area Requirements	Colonial Nesting Species	General Breeding Habitat	Habitat Descriptions	COMMENTS	Confidence
10	BANS	Bank Swallow	<i>Riparia riparia</i>			S4B	THR			THR						Yes	Open Country	sand, clay or gravel river banks or steep riverbank cliffs; lakeshore bluffs or easily crumbled sand or gravel; gravel pits, roat-cuts, grassland or cultivated fields that are close to water, nesting sites are limiting factor for species presence		CONF
11	BARS	Barn Swallow	<i>Hirundo rustica</i>		YT, NT, BC, AB, SK, MB, ON, QC, NB, PE, NS, NL	S4B	THR			THR	No Status	No Schedule	Yes			Yes	Open Country	farmlands or rural areas; cliffs, caves, rock niches; building or other man-made structures for nesting; open country near body of water		CONF
18	BOBO	Bobolink	<i>Dolichonyx oryzivorus</i>		BC, AB, SK, MB, ON, QC, NB, PE, NS, NL	S4B	THR			THR	No Status	No Schedule	Yes	Yes	> 50 ha		Open Country	large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields, marshes; requires tracts of grassland >50 ha		POSS
25	CHSW	Chimney Swift	<i>Chaetura pelagica</i>		SK, MB, ON, QC, NB, NS, NL	S4B,S4N	THR			THR	THR		1	Yes		Yes	Forest	commonly found in urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water		CONF
29	CONI	Common Nighthawk	<i>Chordeiles minor</i>		YT, NT, BC, AB, SK, MB, ON, QC, NB, PE, NS, NL	S4B	SC			THR	THR		1	Yes			Open Country	open ground; clearings in dense forests; ploughed fields; gravel beaches or barren ares with rocky soils; open woodlands; flat gravel roofs		PROB
34	EAME	Eastern Meadowlark	<i>Sturnella magna</i>		ON, QC, NB, NS	S4B	THR			THR	No Status	No Schedule	Yes	Yes	> 10 ha		Open Country	open, grassy meadows, farmland, pastures, hayfields or grassland with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent, open grassy areas >10 ha in size		CONF
38	EAWP	Eastern Wood-pewee	<i>Contopus virens</i>		SK, MB, ON, QC, NB, PE, NS	S4B	SC			SC										CONF
67	PEFA	Peregrine Falcon	<i>Falco peregrinus anatum/tundrius</i>			S3B	SC	Yes	7	SC	SC		1							CONF
99	WOTH	Wood Thrush	<i>Hylocichla mustelina</i>		ON,QC, NB, NS	S4B	SC			THR	No Status	No Schedule	Yes				Forest	Carolinian and Great Lakes- St. Lawrence forest zones: undisturbed moist mature deciduous or mixed forest with deciduous ampling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12 m		CONF

**Rank Definitions**

**SRANK**

- SX
- SH
- S1
- S2
- S3
- S4
- S5
- SNR
- SU
- SNA
- S#S#
- C
- S?
- SA
- SAB
- SAN
- SE
- SR
- SRF
- SX
- SZ
- SZB
- SZN

**Presumed Extirpated**—Species or community is believed to be extirpated from the nation or state/province.  
**Possibly Extirpated (Historical)**—The NH or SH rank is reserved for species for which some effort has been made to relocate occurrences.  
**Critically Imperiled**—Extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.  
**Imperiled**—Due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation.  
**Vulnerable**—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.  
**Not Applicable**—A conservation status rank is not applicable because the species is not a suitable target for conservation activities.  
**Range Rank**—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).  
**Captive/Cultivated**; existing in the province only in a cultivated state; introduced population not yet fully established and self-sustaining.  
**Not Ranked Yet**; or if following a ranking, Rank Uncertain (e.g. S3?). S? species have not had a rank assigned.  
**Accidental**; of accidental or casual occurrence in the province; far outside its normal range; some species may occasionally breed in the province.  
**Breeding accidental**.  
**Non-breeding accidental**.  
**Exotic**; not believed to be a native component of Ontario's flora.  
**Reported for Ontario**, but without persuasive documentation which would provide a basis for either accepting or rejecting the report.  
**Reported falsely from Ontario**.  
**Apparently extirpated from Ontario**, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.  
**Applies to long distance migrants, winter vagrants, and eruptive species, too transitory in their occurrence(s) to be reliably mapped; most are non-breeders, however, some may occasionally breed.**  
**Breeding migrants/vagrants**.  
**Non-breeding migrants/vagrants**.

**F&WCA Schedules**

- Schedule 1 Furbearing Mammals
- Schedule 2 Game Mammals
- Schedule 3 Game Birds
- Schedule 4 Game Reptiles
- Schedule 5 Game Amphibians
- Schedule 6 Specially Protected Mammals
- Schedule 7 Specially Protected birds (Raptors)
- Schedule 8 Specially Protected Birds (Other Than Raptors)
- Schedule 9 Specially Protected Reptiles
- Schedule 10 Specially Protected Amphibians
- Schedule 11 Specially Protected Invertebrates

**OESA Status**

- END
- EXP
- EXT
- IND
- NIAC
- THR
- VUL

**Endangered**. Any native species that is at risk of extinction or extirpation throughout all or a significant portion of its Ontario range if the limiting factors are not reversed. Protected under the Endangered Species Act.  
**Extirpated**. Any native species no longer existing in the wild in Ontario, but existing elsewhere in the wild.  
**Extinct**. Any species formerly native to Ontario that no longer exists.  
**Indeterminate**. Any native species for which there is insufficient scientific information on which to base a status recommendation.  
**Not in Any COSSARO Category**. Any native species evaluated by COSSARO which does not currently meet criteria for assignment to a provincial risk category.  
**Threatened**. Any native species that is at risk of becoming endangered throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.  
**Vulnerable**. Any native species that, on the basis of the best available scientific evidence, is a species of special concern in Ontario, but is not a threatened or endangered species.

**SARA Status**

- END
- EXP
- EXT
- IND
- NAR
- SC
- THR

**Endangered**. A species facing imminent extirpation or extinction throughout its range.  
**Extirpated**. A species no longer existing in the wild in Canada, but occurring elsewhere in the wild.  
**Extinct**. A species that no longer exists.  
**Indeterminate**. A species for which there is insufficient information to support a status designation.  
**Not At Risk**. A species that has been evaluated and found to be not at risk.  
**Special Concern**. A species of special concern particularly sensitive to human activities or natural events. Does not include an extirpated, endangered or threatened species.  
**Threatened**. A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix A2

### Significant Wildlife Habitat Screening

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

300042560.1000

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
<b>Table 1.1: Seasonal Concentration Areas of Animals</b>						
<b>Waterfowl Stopover &amp; Staging Areas (Terrestrial)</b>  <u>Rationale:</u> Habitat important to migrating waterfowl.	CUM1 CUT1 - Plus evidence of annual spring flooding from melt water or run-off within these ecosites.  Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lake St. Clair, Grand Bend and Point Pelee areas may be important to Tundra Swans.	Fields with sheet water during Spring (mid-March to May). <ul style="list-style-type: none"> <li>Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</li> <li>Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.</li> </ul>	No potential.  The ecosites listed are not found in the Study Area and the habitat criteria listed is not present within the Study Area.	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects." <ul style="list-style-type: none"> <li>Any mixed species aggregations of 100 or more individuals required.</li> <li>The flooded field ecosite habitat plus a 100-300 m radius area, dependent on local site conditions and adjacent land use is the SWH.</li> <li>Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates).</li> <li><b>SWHMIST Index #7</b> provides development effects and mitigation measures.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.
<b>Waterfowl Stopover &amp; Staging Areas (Aquatic)</b>  <u>Rationale:</u> Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> <li>Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and SWM ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.</li> <li>These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water).</li> </ul>	No potential.  The ecosites listed are not found in the Study Area and the habitat criteria listed is not present within the Study Area.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal	<b>Studies carried out &amp; verified presence of:</b> <ul style="list-style-type: none"> <li>Aggregations of 100 or more of listed species for 7 days, results in &gt;700 waterfowl use days.</li> <li>Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH.</li> <li>The combined area of the Ecological Land Classification (ELC) ecosites and a 100 m radius area is the SWH.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
				Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	<ul style="list-style-type: none"> <li>Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are SWH.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).</li> <li><b>SWHMIST Index #7</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Shorebird Migratory Stopover Area</b></p> <p><u>Rationale:</u> High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	<ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</li> <li>Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October.</li> <li>Sewage treatment ponds and storm water ponds do not qualify as a SWH.</li> </ul>	No potential.  The MAM2 ecosite is present within the Study Area in the Natural Heritage System (NHS) however there is no shoreline habitat in the Study Area. The Study Area is within the city of Mississauga and is disturbed with residential developments adjacent to the NHS.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper	<p><b>Studies confirming:</b></p> <ul style="list-style-type: none"> <li>Presence of 3 or more of listed species and &gt;1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period).</li> <li>Whimbrel stop briefly (&lt;24 hrs.) during spring migration, any site with &gt;100 Whimbrel used for 3 years or more is significant.</li> <li>The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100 m radius area.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
				Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	<ul style="list-style-type: none"> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li><b>SWHMiST Index #8</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Raptor Wintering Area</b></p> <p><u>Rationale:</u> Sites used by multiple species, a high number of individuals and used annually are most significant.</p>	<p><u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class;</p> <p><u>Forest:</u> FOD, FOM, FOC.</p> <p><u>Upland:</u> CUM; CUT; CUS; CUW.</p> <p><u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD,</p>	<ul style="list-style-type: none"> <li>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</li> <li>Raptor wintering sites (hawk/owl) need to be &gt; 20 ha, with a combination of forest and upland.</li> <li>Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15ha) with adjacent woodlands.</li> <li>Field area of the habitat is to be wind swept with limited snow depth or accumulation.</li> <li>Eagle sites have open water, large trees and snags available for roosting.</li> </ul>	<p>No potential.</p> <p>Although the Study Area has a FOD ecosite present throughout, this ecosite is small (less than 20 ha) and there is no adjacent field of sufficient size (15ha). There is no open water present for Bald Eagle habitat.</p>	<p>Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl</p> <p><b>Special Concern:</b> Short-eared Owl Bald Eagle</p>	<p><b>Studies confirm the use of these habitats by:</b></p> <ul style="list-style-type: none"> <li>One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species.</li> <li>To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds.</li> <li>The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects."</li> <li><b>SWHMiST Index #10 and #11</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
	SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).					
<p><b>Bat Hibernacula</b></p> <p><u>Rationale:</u> Bat hibernacula are rare habitats in all Ontario landscapes.</p>	<p><b>Bat Hibernacula may be found in these ecosites:</b></p> <p>CCR1 CCR2 CCA1 CCA2</p> <p>(Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> <li>Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.</li> <li>Active mine sites should not be considered as SWH.</li> <li>The locations of bat hibernacula are relatively poorly known.</li> </ul>	<p>No potential.</p> <p>The ecosites listed are not found in the Study Area and the hibernacula habitat listed is not present within the Study Area.</p>	<p>Big Brown Bat Tri-coloured Bat</p>	<ul style="list-style-type: none"> <li>All sites with confirmed hibernating bats are SWH.</li> <li>The habitat area includes a 200 m radius around the entrance of the hibernaculum for most development types and 1000 m for wind farms.</li> <li>Studies are to be conducted during the peak swarming period (August to September). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.</li> <li><b>SWHMIST Index #1</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<p><b>Bat Maternity Colonies</b></p> <p><u>Rationale:</u> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>	<p>Maternity colonies considered SWH are found in forested ecosites.</p> <p><b>All ELC ecosites in ELC Community Series:</b></p> <p>FOD FOM SWD SWM</p>	<ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario.</li> <li>Maternity colonies located in Mature deciduous or mixed forest stands with &gt;10/ha large diameter (&gt;25 cm dbh) wildlife trees.</li> <li>Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.</li> <li>Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in</li> </ul>	<p>Candidate habitat is present within the FOD community.</p>	<p>Big Brown Bat Silver-haired Bat</p>	<ul style="list-style-type: none"> <li>Maternity Colonies with confirmed use by:                             <ul style="list-style-type: none"> <li>&gt;10 Big Brown Bats</li> <li>&gt;5 Adult Female Silver-haired Bats</li> </ul> </li> <li>The area of the habitat includes the entire woodland, or a forest stand ELC ecosite or an ecoelement containing the maternity colonies.</li> <li>Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.</li> <li><b>SWHMIST Index #12</b> provides development effects and mitigation measures.</li> </ul>	<p>Assumed Significant.</p> <p>Field studies will be carried out during the detailed design phase of the Project to verify the presence of bats. Habitat is assumed significant for the purposes of this study.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
		tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.				
<p><b>Turtle Wintering Areas</b></p> <p><u>Rationale:</u> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Snapping and Midland Painted Turtles.</p> <p><b>ELC Community Classes:</b> SW, MA, OA and SA</p> <p><b>ELC Community Series:</b> FEO and BOO</p> <p>For Northern Map Turtle: Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<ul style="list-style-type: none"> <li>For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.</li> <li>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen.</li> <li>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</li> </ul>	<p>Candidate habitat present.</p> <p>MA ELC Community Classes present in Study Area. In particular, two ponds are present that likely have a depth of 1 m and a soft substrate that could provide turtle wintering habitat.</p>	<p>Midland Painted Turtle</p> <p><b>Special Concern:</b> Northern Map Turtle Snapping Turtle</p>	<ul style="list-style-type: none"> <li>Presence of 5 over-wintering Midland Painted Turtles is significant.</li> <li>One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant.</li> <li>The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.</li> <li>Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (September–October) or spring (March–May).</li> <li>Congregation of turtles is more common where wintering areas are limited and therefore significant.</li> <li><b>SWHMiST Index #28</b> provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>	<p>Assumed Significant.</p> <p>Field studies were not carried out to verify the presence of overwintering turtles. Turtles have been recorded in the vicinity. Habitat is assumed significant for the purposes of this study.</p>
<p><b>Reptile Hibernaculum</b></p> <p><u>Rationale:</u> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p>	<ul style="list-style-type: none"> <li>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.</li> <li>Areas of broken and fissured rock are particularly valuable</li> </ul>	<p>Candidate habitat present within the FOD community.</p> <p>Some rock piles exist within the Study Area. Only new occupied homes exist within the Study Area; therefore, no abandoned crumbling</p>	<p><b>Snakes:</b> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake</p>	<p><b>Studies confirming:</b></p> <ul style="list-style-type: none"> <li>Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp.</li> <li>Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g., foundation or rocky slope) on sunny warm days in Spring</li> </ul>	<p>Assumed Significant.</p> <p>Field studies were not carried out to verify the presence of reptile hibernacula. Habitat is assumed significant for the purposes of this study.</p>

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
		<p>since they provide access to subterranean sites below the frost line.</p> <ul style="list-style-type: none"> <li>Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock groundcover.</li> </ul>	foundations are present.	<p><b>Special Concern:</b> Milksnake Eastern Ribbonsnake</p>	<p>(April/May) and Fall (September/October).</p> <ul style="list-style-type: none"> <li><b>Note:</b> If there are Special Concern Species present, then site is SWH.</li> <li><b>Note:</b> Sites for hibernation possess specific habitat parameters (e.g., temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e., strong hibernation site fidelity). Other critical life processes (e.g., mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH.</li> <li><b>SWHMiST Index #13</b> provides development effects and mitigation measures for snake hibernacula.</li> </ul>	
<p><b>Colonially - Nesting Bird Breeding Habitat (Bank &amp; Cliff)</b></p> <p><b>Rationale:</b> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p><b>Habitat found in the following ecosites:</b></p> <p>CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> <li>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul>	<p>No potential.</p> <p>Natural features providing exposed bank or cliff habitat are not present in the Study Area.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p><b>Studies confirming:</b></p> <ul style="list-style-type: none"> <li>Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.</li> <li>A colony identified as SWH will include a 50 m radius habitat area from the peripheral nests.</li> <li>Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li><b>SWHMiST Index #4</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>Targeted surveys have not been carried out yet to verify the defining criteria.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<p><b>Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)</b></p>	<p>SWM2 SWM3 SWM5 SWM6</p>	<ul style="list-style-type: none"> <li>Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally</li> </ul>	<p>No potential.</p> <p>Natural features providing standing</p>	<p>Great Blue Heron Black-crowned Night-Heron Great Egret</p>	<p><b>Studies confirming:</b></p>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
<p><b>Rationale:</b> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<p>emergent vegetation may also be used.</p> <ul style="list-style-type: none"> <li>• Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> </ul>	<p>trees in wetlands, lakes, islands and peninsulas are not present in the Study Area.</p>	<p>Green Heron</p>	<ul style="list-style-type: none"> <li>• Presence of 2 or more active nests of Great Blue Heron or other listed species.</li> <li>• The habitat extends from the edge of the colony and a minimum 300 m radius or extent of the Forest ecosite containing the colony or any island &lt;15.0 ha with a colony is the SWH.</li> <li>• Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells.</li> <li>• <b>SWHMIST Index #5</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Colonially - Nesting Bird Breeding Habitat (Ground)</b></p> <p><b>Rationale:</b> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer’s Blackbird).</p> <p>MAM1 – 6 MAS1 – 3 CUM CUT CUS</p>	<ul style="list-style-type: none"> <li>• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</li> <li>• Brewer’s Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.</li> </ul>	<p>No potential.</p> <p>No islands or peninsulas associated with open water or marshy areas is present in the Study Area.</p> <p>Breeding records for Brewer’s Blackbird are mainly restricted to the north shore of Lake Huron and Georgian Bay, as well as Sudbury/Manitoulin Island and NW Ontario; no breeding records currently exist for Southern</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer’s Blackbird</p>	<p><b>Studies confirming:</b></p> <ul style="list-style-type: none"> <li>• Presence of &gt; 25 active nests for Herring Gulls or Ring-billed Gulls, &gt;5 active nests for Common Tern or &gt;2 active nests for Caspian Tern.</li> <li>• Presence of 5 or more pairs for Brewer’s Blackbird.</li> <li>• Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant.</li> <li>• The edge of the colony and a minimum 150 m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island &lt;3.0 ha with a colony is the SWH.</li> <li>• Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
			and Eastern Ontario.		<ul style="list-style-type: none"> <li>• <b>SWHMIST Index #6</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Migratory Butterfly Stopover Areas</b></p> <p><u>Rationale:</u> Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each land class.</p> <p><u>Field:</u> CUM CUT CUS</p> <p><u>Forest:</u> FOC FOD FOM CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<ul style="list-style-type: none"> <li>• A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Erie or Ontario.</li> <li>• The habitat is typically a combination of field and forest and provides the butterflies with a location to rest prior to their long migration south.</li> <li>• The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat.</li> <li>• Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes.</li> </ul>	<p>No potential.</p> <p>Although the Study Area is less than 5 km from Lake Ontario, the FOD ecosite is smaller than 10 ha in size and there is no field habitat within the Study Area.</p>	<p>Painted Lady Red Admiral</p> <p><u>Special Concern</u> Monarch</p>	<p><b>Studies confirm:</b></p> <ul style="list-style-type: none"> <li>• The presence of Monarch Use Days (MUD) during fall migration (August/October). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur.</li> <li>• Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD.</li> <li>• MUD of &gt;5000 or &gt;3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.</li> <li>• <b>SWHMIST Index #16</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<p><b>Landbird Migratory Stopover Areas</b></p> <p><u>Rationale:</u> Sites with a high diversity of species as well as high numbers are most significant.</p>	<p><b>All ecosites associated with these ELC Community Series:</b></p> <p>FOC FOM FOD SWC SWM SWD</p>	<ul style="list-style-type: none"> <li>• Woodlots &gt;5 ha in size and within 5 km of Lake Erie and Ontario.</li> <li>• If woodlands are rare in an area of shoreline, woodland fragments 2-5 ha can be considered for this habitat.</li> <li>• If multiple woodlands are located along the shoreline those Woodlands &lt;2 km from Lake Ontario are more significant.</li> <li>• Sites have a variety of habitats; forest, grassland and wetland complexes.</li> </ul>	<p>Confirmed.</p> <p>The FOD ecosite present within the Study Area is greater than 5 ha in size and is located within 5 km of Lake Ontario.</p>	<p>All migratory songbirds.</p> <p>Canadian Wildlife Service Ontario website: <a href="http://www.ec.gc.ca/nature/default.asp?lang=En&amp;n=421B7A9D-1">http://www.ec.gc.ca/nature/default.asp?lang=En&amp;n=421B7A9D-1</a></p> <p>All migrant raptors species:</p>	<p><b>Studies confirm:</b></p> <ul style="list-style-type: none"> <li>• Use of the habitat by &gt;200 birds/day and with &gt;35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant.</li> <li>• Studies should be completed during spring (April/May) and fall (August/October) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats:</li> </ul>	<p>Confirmed.</p> <p>The Study Area has confirmed SWH. This has been confirmed by the local Conservation Authority.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
		<ul style="list-style-type: none"> <li>The largest sites are more significant.</li> <li>Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5 km of Lake Erie and Ontario are Candidate SWH.</li> </ul>		Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	Guidelines for Wind Power Projects”. <ul style="list-style-type: none"> <li><b>SWHMIST Index #9</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Deer Winter Congregation Areas</b></p> <p><u>Rationale:</u> Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.</p>	<p><b>All Forested ecosites with these ELC Community Series:</b></p> <p>FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> <li>Woodlots &gt;100 ha in size or if large woodlots are rare in planning area woodlots &gt;50 ha.</li> <li>Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands.</li> <li>Large woodlots &gt; 100 ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha.</li> <li>Woodlots with high densities of deer due to artificial feeding are not significant.</li> </ul>	<p>No potential.</p> <p>No deer winter congregation areas identified by the MNRF.</p>	White-tailed Deer	<p><b>Studies confirm:</b></p> <ul style="list-style-type: none"> <li>Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF.</li> <li>Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF.</li> <li>Studies should be completed during winter (January/February) when &gt;20 cm of snow is on the ground using aerial survey techniques, ground or road surveys, or a pellet count deer density survey.</li> <li><b>SWHMIST Index #2</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<b>Table 1.2.1: Rare Vegetation Communities</b>						
<p><b>Cliffs and Talus Slopes</b></p> <p><u>Rationale:</u> Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p><b>Any ELC ecosite within Community Series:</b></p> <p>TAO CLO TAS CLS</p>	<ul style="list-style-type: none"> <li>Most cliff and talus slopes occur along the Niagara Escarpment.</li> <li>A Cliff is vertical to near vertical bedrock &gt;3 m in height.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area. The</p>		<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Cliffs or Talus Slopes.</li> <li><b>SWHMIST Index #21</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
	TAT CLT	<ul style="list-style-type: none"> <li>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.</li> </ul>	Niagara Escarpment is not present in the Study Area.			
<p><b>Sand Barren</b></p> <p><u>Rationale:</u> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.</p>	<p><b>ELC ecosites:</b></p> <p>SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p>	<p>A sand barren area &gt;0.5 ha in size.</p> <ul style="list-style-type: none"> <li>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.</li> </ul>	No potential.		<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Sand Barrens</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li><b>SWHMiST Index #20</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<p><b>Alvar</b></p> <p><u>Rationale:</u> Alvars are extremely rare habitats in Ecoregion 7E.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p> <p><b>Five Alvar Indicator Species:</b></p> <p><i>Carex crawei</i> <i>Panicum philadelphicum</i> <i>Eleocharis compressa</i> <i>Scutellaria parvula</i> <i>Trichostema brachiatum</i></p> <p>These indicator species are very specific to Alvars within Ecoregion 7E.</p>	<ul style="list-style-type: none"> <li>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.</li> <li>An Alvar site &gt; 0.5 ha in size.</li> </ul>	No potential.		<p><b>Field studies that identify:</b></p> <ul style="list-style-type: none"> <li>Four of the five Alvar Indicator Species at a Candidate Alvar site is Significant.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.</li> <li><b>SWHMiST Index #17</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
		<ul style="list-style-type: none"> <li>Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie.</li> </ul>				
<p><b>Old Growth Forest</b></p> <p><u>Rationale:</u> Due to historic logging practices and land clearance for agriculture, old growth forest is rare in the Ecoregion 7E.</p>	<p><b>Forest Community Series:</b></p> <p>FOD FOC FOM SWD SWC SWM</p>	<ul style="list-style-type: none"> <li>Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.</li> </ul>	Candidate habitat is present within the FOD community.		<p><b>Field Studies will determine:</b></p> <ul style="list-style-type: none"> <li>If dominant trees species of the area &gt;140 years old, then the area containing these trees is SWH.</li> <li>The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present).</li> <li>The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH.</li> <li>Determine ELC vegetation types for the forest area containing the old growth characteristics.</li> <li><b>SWHMiST Index #23</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The FOD ecosite is present within the Study Area however the trees are not of sufficient age to meet the criteria.</p>
<p><b>Savannah</b></p> <p><u>Rationale:</u> Savannahs are extremely rare habitats in Ontario.</p>	<p>TPS1 TPS2 TPW1 TPW2 CUS2</p>	<ul style="list-style-type: none"> <li>No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.</li> <li>A Savannah is a tallgrass prairie habitat that has tree cover between 25–60%.</li> <li>In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in Toronto area (north of Lake Ontario).</li> </ul>	No potential.		<p><b>Field studies confirm:</b></p> <ul style="list-style-type: none"> <li>one or more of the Savannah indicator species listed in Appendix N should be present. <b>Note:</b> Savannah plant spp. list from Ecoregion 7E should be used.</li> <li>Area of the ELC ecosite is the SWH.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover is exotic sp.).</li> <li><b>SWHMiST Index #18</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
<p><b>Tallgrass Prairie</b></p> <p><u>Rationale:</u> Tallgrass Prairies are extremely rare habitats in Ontario.</p>	TPO1 TPO2	<ul style="list-style-type: none"> <li>No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway Right of Ways (ROW) are not considered to be SWH.</li> <li>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has &lt; 25% tree cover.</li> <li>In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in Toronto area (north of Lake Ontario).</li> </ul>	No potential. The Lorne Park Prairie is present to the south of the CN rail line. However, prairie habitat is not present in the Study Area.		<p><b>Field studies confirm:</b></p> <ul style="list-style-type: none"> <li>One or more of the Prairie indicator species listed in Appendix N should be present. <b>Note:</b> Prairie plant spp. list from Ecoregion 7E should be used.</li> <li>Area of the ELC ecosite is the SWH.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover is exotic sp.).</li> <li><b>SWHMiST Index #19</b> provides development effects and mitigation measures.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.
<p><b>Other Rare Vegetation Communities</b></p> <p><u>Rationale:</u> Plant communities that often contain rare species which depend on the habitat for survival.</p>	<ul style="list-style-type: none"> <li>Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.</li> <li>Any ELC ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.</li> </ul>	<ul style="list-style-type: none"> <li>ELC ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M.</li> <li>The MNR/Natural Heritage Information Centre (NHIC) will have up to date listing for rare vegetation communities.</li> <li>Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.</li> </ul>	No potential.  Provincially rare vegetation communities were not identified during desktop assessment, background review and previous ELC studies.		<p><b>Field studies should confirm:</b></p> <ul style="list-style-type: none"> <li>If an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG.</li> <li>Area of the ELC Vegetation Type polygon is the SWH.</li> <li><b>SWHMiST Index #37</b> provides development effects and mitigation measures.</li> </ul>	No potential.  No rare vegetation communities were identified during previous ELC field surveys.
<b>Table 1.2.2: Specialized Habitat for Wildlife considered Significant Wildlife Habitat</b>						
<p><b>Waterfowl Nesting Area</b></p> <p><u>Rationale:</u> Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	<p><b>All upland habitats located adjacent to these wetland ELC ecosites are Candidate SWH:</b></p> <p>MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2</p>	<ul style="list-style-type: none"> <li>A waterfowl nesting area extends 120 m from a wetland (&gt; 0.5 ha) or a wetland (&gt;0.5ha) and any small wetlands (0.5ha) within 120 m or a cluster of 3 or more small (&lt;0.5 ha) wetlands within 120 m of</li> </ul>	Not present.  While MAM2 ecosites are present within the Study Area, they are not of sufficient size and only two wetlands	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal	<p><b>Studies confirmed:</b></p> <ul style="list-style-type: none"> <li>Presence of 3 or more nesting pairs for listed species excluding Mallards, or;</li> <li>Presence of 10 or more nesting pairs for listed species including Mallards.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
	<p>MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4</p> <p>Note: includes adjacency to Provincially Significant Wetlands (PSW).</p>	<p>each individual wetland where waterfowl nesting is known to occur.</p> <ul style="list-style-type: none"> <li>Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.</li> <li>Wood Ducks and Hooded Mergansers utilize large diameter trees (&gt;40 cm dbh) in woodlands for cavity nest sites.</li> </ul>	<p>are present rather than a cluster of three or more.</p>	<p>Green-winged Teal Wood Duck Hooded Merganser Mallard</p>	<ul style="list-style-type: none"> <li>Any active nesting site of an American Black Duck is considered significant.</li> <li>Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li>A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.</li> <li><b>SWHMiST Index #25</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Bald Eagle &amp; Osprey Nesting, Foraging &amp; Perching Habitat</b></p> <p><b>Rationale:</b> Nest sites are fairly uncommon in Eco-region 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	<p><b>ELC Forest Community Series:</b> FOD FOM FOC SWD SWM and SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands).</p>	<ul style="list-style-type: none"> <li>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</li> <li>Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy.</li> <li>Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).</li> </ul>	<p>No potential.</p> <p>While FOD ecosites are present within the Study Area, it is located in a highly urbanized area with residential developments adjacent to the NHS. The Study Area lacks large bodies of water such as lakes, ponds, rivers or wetlands.</p>	<p>Osprey</p> <p><b>Special Concern</b> Bald Eagle</p>	<p><b>Studies confirm the use of these nests by:</b></p> <ul style="list-style-type: none"> <li>One or more active Osprey or Bald Eagle nests in an area.</li> <li>Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH.</li> <li>For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important.</li> <li>For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800 m is dependent on-site lines from the nest to the development and</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area. Bald Eagle or Osprey have not been recorded in the vicinity.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
					inclusion of perching and foraging habitat. <ul style="list-style-type: none"> <li>To be significant a site must be used annually. When found inactive, the site must be known to be inactive for &gt;3 years or suspected of not being used for &gt;5 years before being considered not significant.</li> <li>Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid-March to mid-August.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li><b>SWHMiST Index #26</b> provides development effects and mitigation measures.</li> </ul>	
<b>Woodland Raptor Nesting Habitat</b>  <b>Rationale:</b> Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	May be found in all forested ELC ecosites.  <b>May also be found in:</b> SWC SWM SWD and CUP3	<ul style="list-style-type: none"> <li>All natural or conifer plantation woodland/forest stands &gt;30 ha with &gt;4ha of interior habitat. Interior habitat determined with a 200 m buffer.</li> <li>Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.</li> <li>In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</li> </ul>	No potential.  While the forested ecosite present within the NHS may be suitable nesting sites for raptors, the habitat size criteria for candidate Significant Wildlife Habitat is not present in the Study Area.	Northern Goshawk Cooper’s Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	<b>Studies confirm:</b> <ul style="list-style-type: none"> <li>Presence of 1 or more active nests from species list is considered significant.</li> <li>Red-shouldered Hawk and Northern Goshawk – A 400 m radius around the nest or 28 ha area of habitat is the SWH (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest).</li> <li>Barred Owl – A 200 m radius around the nest is the SWH.</li> <li>Broad-winged Hawk and Coopers Hawk– A 100 m radius around the nest is the SWH.</li> <li>Sharp-Shinned Hawk – A 50 m radius around the nest is the SWH.</li> <li>Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting)</li> </ul>	No potential.  The habitat size criteria for Significant Wildlife Habitat is not present in the Study Area.

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
					raptors and facilitate the discovery of nests by narrowing down the search area. <ul style="list-style-type: none"> <li>• <b>SWHMiST Index #27</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Turtle Nesting Areas</b></p> <p><u>Rationale:</u> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p><b>Exposed mineral soil (sand or gravel) areas adjacent (&lt;100 m) or within the following ELC ecosites:</b></p> <p>MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1</p>	<ul style="list-style-type: none"> <li>• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.</li> <li>• For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.</li> <li>• Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> </ul>	<p>No potential.</p> <p>The ecosites listed are not found in the Study Area and the habitat criteria listed are not found in the Study Area.</p>	<p>Midland Painted Turtle</p> <p><u>Special Concern Species:</u> Northern Map Turtle Snapping Turtle</p>	<p><b>Studies confirm:</b></p> <ul style="list-style-type: none"> <li>• Presence of 5 or more nesting Midland Painted Turtles.</li> <li>• One or more Northern Map Turtle or Snapping Turtle nesting is a SWH.</li> <li>• The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH.</li> <li>• Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100 m area of habitat.</li> <li>• Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.</li> <li>• <b>SWHMiST Index #28</b> provides development effects and mitigation measures for turtle nesting habitat.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<p><b>Seeps and Springs</b></p> <p><u>Rationale:</u> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested ecosite within the headwater areas of a stream could have seeps/springs.</p>	<ul style="list-style-type: none"> <li>• Any forested area (with &lt;25% meadow/field/ pasture) within the headwaters of a stream or river system.</li> <li>• Seeps and springs are important feeding and drinking areas especially in the winter will typically</li> </ul>	<p>Candidate habitat present.</p> <p>The Study Area is mainly forested with no meadow/field/pasture and contains a stream system.</p>	<p>Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.</p>	<p><b>Field Studies confirm:</b></p> <ul style="list-style-type: none"> <li>• Presence of a site with 2 or more seeps/springs should be considered SWH.</li> <li>• The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the</li> </ul>	<p>Confirmed.</p> <p>The Study Area has confirmed SWH. This has been confirmed by the local Conservation Authority.</p>

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
		support a variety of plant and animal species.			recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. <ul style="list-style-type: none"> <li>• <b>SWHMIST Index #30</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Amphibian Breeding Habitat (Woodland)</b></p> <p><u>Rationale:</u> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.</p>	<p>All ecosites associated with these ELC Community Series:</p> <p>FOC FOM FOD SWC SWM SWD</p> <p>Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.</p>	<ul style="list-style-type: none"> <li>• Presence of a wetland, pond or woodland pool (including vernal pools) &gt;500 m<sup>2</sup> (about 25 m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians.</li> <li>• Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.</li> </ul>	<p>Candidate habitat present.</p> <p>The FOD ecosite is present in the Study Area and ponds greater than 500 m<sup>2</sup> are present within the woodland habitat.</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p>	<p><b>Studies confirm:</b></p> <ul style="list-style-type: none"> <li>• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3.</li> <li>• A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands.</li> <li>• The habitat is the wetland area plus a 230 m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.</li> <li>• <b>SWHMIST Index #14</b> provides development effects and mitigation measures.</li> </ul>	<p>Assumed significant.</p> <p>Targeted surveys have not been carried out yet to verify the defining criteria. A few amphibian species have been recorded in the vicinity of the Study Area. Habitat is assumed significant for the purposes of this study.</p>
<p><b>Amphibian Breeding Habitat (Wetlands)</b></p> <p><u>Rationale:</u> Wetlands supporting breeding for these amphibian species are extremely important and</p>	<p>ELC Community Classes:</p> <p>SW MA FE BO OA and</p>	<ul style="list-style-type: none"> <li>• Wetlands &gt;500 m<sup>2</sup> (about 25 m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be</li> </ul>	<p>No potential.</p> <p>While the MA ELC community class is present in the Study Area, it is not isolated from the</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander</p>	<p><b>Studies confirm:</b></p> <ul style="list-style-type: none"> <li>• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
fairly rare within Central Ontario landscapes.	SA.  Typically, these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g., Bull Frog) may be adjacent to woodlands.	important amphibian breeding habitats. <ul style="list-style-type: none"> <li>• Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators.</li> <li>• Bullfrogs require permanent water bodies with abundant emergent vegetation.</li> </ul>	woodland ecosite and is therefore considered to be woodland breeding habitat.	Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3 or; Wetland with confirmed breeding Bullfrogs are significant. <ul style="list-style-type: none"> <li>• The ELC ecosite wetland area and the shoreline are the SWH.</li> <li>• A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.</li> <li>• If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</li> <li>• <b>SWHMIST Index #15</b> provides development effects and mitigation measures.</li> </ul>	
<b>Woodland Area-Sensitive Bird Breeding Habitat</b>  <b>Rationale:</b> Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	<b>All ecosites associated with these ELC Community Series:</b>  FOC FOM FOD SWC SWM SWD	<ul style="list-style-type: none"> <li>• Habitats where interior forest breeding birds are breeding, typically large mature (&gt;60 yrs. old) forest stands or woodlots &gt;30 ha.</li> <li>• Interior forest habitat is at least 200 m from forest edge habitat.</li> </ul>	No potential.  No forests present in the Study Area meet the age and size criteria for significant.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Pileated Woodpecker	<b>Studies confirm:</b> <ul style="list-style-type: none"> <li>• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.</li> <li>• <b>Note:</b> any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.</li> <li>• Conduct field investigations in spring and early summer when birds are singing and defending their territories.</li> <li>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li>• <b>SWHMIST Index #34</b> provides development effects and mitigation measures.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
				<b>Special Concern:</b> Cerulean Warbler Canada Warbler		

Table 1.3: Habitat for Species of Conservation Concern considered Significant Wildlife Habitat

<b>Marsh Breeding Bird Habitat</b>  <b>Rationale:</b> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1  <b>For Green Heron:</b>  All SW, MA and CUM1 sites	<ul style="list-style-type: none"> <li>Nesting occurs in wetlands.</li> <li>All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present.</li> <li>For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.</li> </ul>	Candidate habitat present.  The MAM2 ecosite is present within the Study Area in the NHS.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan  <b>Special Concern:</b> Black Tern Yellow Rail	<b>Studies confirm:</b> <ul style="list-style-type: none"> <li>Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species.</li> <li><b>Note:</b> any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH.</li> <li>Area of the ELC ecosite is the SWH.</li> <li>Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li><b>SWHMIST Index #35</b> provides development effects and mitigation measures.</li> </ul>	Assumed significant.  Targeted surveys have not been carried out yet to verify the defining criteria. The habitat is assumed significant for the purposes of this study.
<b>Open Country Bird Breeding Habitat</b>  <b>Rationale:</b> This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	CUM1 CUM2	<ul style="list-style-type: none"> <li>Large grassland areas (includes natural and cultural fields and meadows) &gt;30 ha.</li> <li>Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years).</li> </ul>	No potential.  The ecosites listed are not found in the Study Area and the habitat criteria listed are not found in the Study Area.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow  <b>Special Concern</b>	<b>Field Studies confirm:</b> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 2 or more of the listed species.</li> <li>A field with 1 or more breeding Short-eared Owls is to be considered SWH.</li> <li>The area of SWH is the contiguous ELC ecosite field areas.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
		<ul style="list-style-type: none"> <li>Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.</li> <li>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</li> </ul>		Short-eared Owl	<ul style="list-style-type: none"> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li><b>SWHMiST Index #32</b> provides development effects and mitigation measures.</li> </ul>	
<p><b>Shrub/Early Successional Bird Breeding Habitat</b></p> <p><b>Rationale:</b> This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species.</p>	<ul style="list-style-type: none"> <li>Large field areas succeeding to shrub and thicket habitats &gt;10 ha in size.</li> <li>Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or live-stock pasturing in the last 5 years).</li> <li>Shrub thicket habitats (&gt;10 ha) are most likely to support and sustain a diversity of these species.</li> <li>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</li> </ul>	<p>No potential.</p> <p>The ecosites listed are not found in the Study Area and the habitat criteria listed are not found in the Study Area.</p>	<p><b>Indicator Spp:</b> Brown Thrasher Clay-coloured Sparrow</p> <p><b>Common Spp.</b> Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p><b>Special Concern:</b> Yellow-breasted Chat Golden-winged Warbler</p>	<p><b>Field Studies confirm:</b></p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species.</li> <li>A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as SWH.</li> <li>The area of the SWH is the contiguous ELC ecosite field/thicket area.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.</li> <li><b>SWHMiST cxlix Index #33</b> provides development effects and mitigation measures.</li> </ul>	<p>No potential.</p> <p>The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.</p>
<p><b>Terrestrial Crayfish</b></p> <p><b>Rationale:</b> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2</p>	<ul style="list-style-type: none"> <li>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for Terrestrial Crayfish.</li> <li>Constructs burrows in marshes, mudflats, meadows,</li> </ul>	<p>Candidate habitat present.</p> <p>While MAM2 ecosites are present in the Study Area in the NHS, there are no CUM1 ecosites</p>	<p>Chimney or Digger Crayfish (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crayfish or Meadow Crayfish</p>	<p><b>Studies Confirm:</b></p> <ul style="list-style-type: none"> <li>Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites.</li> </ul>	<p>Assumed significant.</p> <p>Targeted surveys have not been carried out yet to verify the defining criteria. Habitat is assumed significant for the purposes of this study.</p>

Appendix A2: Significant Wildlife Habitat Screening in the Study Area– Ecoregion 7E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
	MAS3 SWD SWT SWM  CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	the ground can't be too moist. Can often be found far from water. <ul style="list-style-type: none"><li>Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.</li></ul>	present in the Study Area.	( <i>Cambarus Diogenes</i> )	<ul style="list-style-type: none"> <li>Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.</li> <li>Surveys should be done April to August in temporary or permanent water. <b>Note</b> the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult.</li> <li><b>SWHMIST Index #36</b> provides development effects and mitigation measures.</li> </ul>	
<b>Special Concern and Rare Wildlife Species</b>  <b>Rationale:</b> These species are quite rare or have experienced significant population declines in Ontario.	All plant and animal Element Occurrences (EO) within a 1 or 10 km grid.  Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC ecosites.	Candidate habitat present.  Cleland's Evening Primrose (S1), Eastern Ribbonsnake (S4), Eastern Wood-pewee (S4B), Fall Crabgrass (S1?), Henslow's Sparrow (SHB), Snapping Turtle (S3), Sundial Lupine (S2S3), Virginia Bluebells (S3) and Wood Thrush (S4B) were identified within a 10 km radius of the Study Area when an NHIC search was conducted for the area.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the NHIC.	<b>Studies Confirm:</b> <ul style="list-style-type: none"> <li>Assessment/inventory of the site for the identified Special Concern or rare species needs to be completed during the time of year when the species is present or easily identifiable.</li> <li>The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g., specific nesting habitat or foraging habitat.</li> <li><b>SWHMIST Index #37</b> provides development effects and mitigation measures.</li> </ul>	Assumed significant.  Targeted surveys have not been carried out yet to verify the defining criteria. Habitat is assumed significant for the purposes of this study.
<b>Table 1.4.1: Animal Movement Corridors</b>						
<b>Amphibian Movement Corridors</b>	Corridors may be found in all ecosites associated with water.	<ul style="list-style-type: none"> <li>Movement corridors between breeding habitat and summer habitat.</li> </ul>	No potential.	Eastern Newt American Toad	<ul style="list-style-type: none"> <li>Field Studies must be conducted at the time of year when species are</li> </ul>	No potential.

Habitat	CANDIDATE - Significant Wildlife Habitat			CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Presence of Candidate Habitat in the Study Area (within 120 m of the Project)	Wildlife Species	Defining Criteria	Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)
<p><b>Rationale:</b> Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1.	<ul style="list-style-type: none"> <li>• Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat–Wetland) of this Schedule.</li> </ul>	This habitat is only associated with wetland breeding habitat. This type of habitat is not present.	Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	expected to be migrating or entering breeding sites. <ul style="list-style-type: none"> <li>• Corridors should consist of native vegetation, with several layers of vegetation.</li> <li>• Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant.</li> <li>• Corridors should have at least 15 m of vegetation on both sides of waterway or be up to 200 m wide of woodland habitat and with gaps &lt;20 m.</li> <li>• Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.</li> <li>• <b>SWHMiST Index #40</b> provides development effects and mitigation measures.</li> </ul>	The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.
<p><b>Table 1.5.1: Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E</b></p>						
<p><b>7E-2 - Bat Migratory Stopover Area</b></p> <p><b>Rationale:</b> Stopover areas for long distance migrant bats are important during fall migration.</p>	No specific ELC types	<ul style="list-style-type: none"> <li>• Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas.</li> <li>• This is the only known bat migratory stopover habitats based on current information.</li> </ul>	No potential.  Site is not in the vicinity of the known habitat.	Hoary Bat Eastern Red Bat Silver-haired Bat	<ul style="list-style-type: none"> <li>• Long Point (42°35'N, 80° 30'E, to 42°33'N, 80°03'E) has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration.</li> <li>• The confirmation criteria and habitat areas for this SWH are still being determined.</li> <li>• <b>SWH MIST Index #38</b> provides development effects and mitigation measures.</li> </ul>	No potential.  The habitat criteria for Significant Wildlife Habitat is not present in the Study Area.



**BURNSIDE**

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## Appendix A3

### Species at Risk Screening

### Appendix A3: Screening Table – Background Review of Species at Risk and Species of Conservation Concern Potentially Present in the Study Area

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
<b>BIRDS</b>									
Bank Swallow (Source: OBBA)	<i>Riparia riparia</i>	S4B	THR	THR	THR	1	In Ontario, Bank Swallows typically nest in exposed earthen banks created by erosion along watercourses and lakeshores. It has also adapted to nesting in sand and gravel pits, along roadsides, and in stockpiles of soil and other materials. The largest populations are supported by the shorelines of the lower Great Lakes, and they can be found throughout southern Ontario in the Carolinian and Lake Simcoe-Rideau regions. <sup>5</sup>	No nesting habitat confirmed present in the Study Area.	No.
Barn Swallow (Source: OBBA)	<i>Hirundo rustica</i>	S4B	THR	THR	THR	1	Barn Swallows usually build mud nests on ledges of walls in or outside of a barn or other man-made structures, including building and bridges. Natural nesting locations include caves and cliffs, but they are now rarely used. They often nest in small colonies in areas often associated with other insectivores. They are most abundant south of the Canadian Shield, within agricultural lands in the Carolinian and Lake Simcoe-Rideau regions. <sup>5</sup>	No nesting habitat confirmed present in the Study Area.	No.
Bobolink (Source: OBBA)	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR	THR	1	Bobolinks generally prefer open grasslands and hay fields for nesting, typically featuring relatively tall vegetation. Sometimes uses large fields of winter wheat and rye in southwestern Ontario. Sensitive to vegetation structure and composition. They are positively associated with high grass-to-forb ratios, and moderate litter depth. They tolerate wetter portions of fields compared to Eastern Meadowlark and are more likely to nest closer to field centers rather than field margins. They have a lower tolerance to presence of patches of bare ground and appear to prefer larger fields than Eastern Meadowlark. <sup>5, 6</sup>	No nesting habitat confirmed present in the Study Area.  Grassland habitat may be present adjacent to the Study Area to the south within the rail corridor and/or the Natural Areas Surveys (NAS) Site CL22.	No.
Chimney Swift (Source: OBBA)	<i>Chaetura pelagica</i>	S4B,S4N	THR	THR	THR	1	Chimney Swifts have historically nested / roosted in deciduous and coniferous, typically wet, forest types, with a well-developed, dense shrub layer. Currently, most are found in anthropogenic structures, most commonly in uncapped chimneys. <sup>5</sup>	No nesting habitat confirmed in the Study Area.  Residences are all occupied and unlikely to have uncapped chimneys which could support this species.	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
Common Nighthawk	<i>Chordeiles minor</i>	S4B	SC	THR	THR	1	Nests in open habitats, forests and urban areas. They prefer rock outcrops, alvars, sand barrens, bogs, fens, and openings created by clear-cuts and burns. In southern Ontario, they can be found in grasslands, agricultural fields, gravel pits, prairies, alvars and at airports. In urban areas, they nest mostly on flat, graveled roofs but occasionally on railways or railway ROWs and pedestrian pathways. <sup>5</sup>	Potential nesting habitat present in the Study Area, as well as adjacent to the Study Area to the south within the rail corridor and/or the Natural Areas Surveys (NAS) Site CL22.	No.
Eastern Meadowlark (Source: OBBA)	<i>Sturnella magna</i>	S4B	THR	THR	THR	1	Generally prefers grassy pastures, meadows and hay fields. Prefers moderately tall grass with abundant litter cover, a high proportion of grass cover, moderate forb density, low proportions of shrub and woody vegetation cover, and low percent of bare ground. Prefers to nest in drier sites and frequently nests around field margins. <sup>5,6</sup>	No nesting habitat confirmed present in the Study Area.	No.
Eastern Wood-pewee (Source: OBBA, NHIC and CVC)	<i>Contopus virens</i>	S4B	SC	SC	SC	1	Prefers open space near the nest in the form of forest edges, clearings, roadways, and water. They do not require large areas of woods, but occur less frequently in woodlots surrounded by development than in those without. <sup>5</sup>	Potential nesting habitat present in the Study Area, however the area is surrounded by development. CVC records indicate that this species has been observed within the Lornewood Creek area.	No.
Henslow's Sparrow (Source: NHIC)	<i>Ammodramus henslowii</i>	S1B	END	END	END	1	Occupy open fields during breeding season. In Ontario, breeding habitat is mainly recorded as being pastureland and uncut and abandoned hayfields. Studies have reported preference for areas with tall, dense grass cover (abandoned fields, ungrazed or lightly grazed pasture, wet meadows, etc.) or a thick thatch layer (dead plant material from previous year). Mowed fields have been reported infrequently. Henslow's Sparrows will avoid sites with hills, trees, and posts /fence lines. A number of historical breeding locations in Ontario contained or were adjacent to low-lying areas that were seasonally flooded during the spring. <sup>7</sup>	No nesting habitat confirmed present in the Study Area.	No.
Peregrine Falcon (Source: OBBA)	<i>Falco peregrinus anatum / tundrius</i>	S3B	SC	NAR	SC	1	Generally nests on cliff ledges or in crevices but is highly adaptable in nest site selection (on escarpments, in quarries, in trees, on various human-made structures, etc.) and will breed in a wide range of habitats. Feeds primarily on birds captured in the air and breeds in habitats with access to sufficient prey, therefore prefers	No nesting habitat confirmed present in the Study Area.	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
							sites located near seabird colonies, shorebird and waterfowl staging or nesting areas, or sites with large numbers of pigeons or songbirds. <sup>8</sup>		
Wood Thrush (Source: OBBA and NHIC)	<i>Hylocichla mustelina</i>	S4B	SC	THR	THR	1	The Wood Thrush occurs throughout the Great Lakes-St. Lawrence Forest. In Ontario, it inhabits woodlands ranging from small (3 ha) and isolated to large and contiguous. The presence of tall trees and a thick understory are usually prerequisites for site occupancy. Most abundant in the Lake Simcoe-Rideau and Carolinian regions. <sup>5</sup>	Potential nesting habitat present within Study Area. Wooded area within and adjacent to Study Area is greater than 3 ha.	No.
<b>REPTILES &amp; AMPHIBIANS</b>									
Blanding's Turtle (Source: ORRA)	<i>Emydonidea blandingii</i>	S3	THR	END	THR	1	The Blanding's Turtle is a semi-aquatic species. Although it spends most of its time in aquatic habitats, it has seasonal movement patterns which allow it to meet different biological or behavioural needs, including use of terrestrial habitats during the active season. Habitat use varies as a function of the different activities undertaken by individuals to complete their life cycle. Blanding's Turtles use aquatic habitats for overwintering, mating, foraging, thermoregulation, summer inactivity, and movement. They often favour relatively eutrophic environments, with shallow water (less than 2 m deep), soft organic substrate, and abundant submergent, floating, and emergent vegetation. They can occur in a variety of wetland habitats (e.g., marshes, ponds, swamps, bogs, fens, coastal wetlands), slow flowing rivers and creeks, pools, lakes, bays, sloughs, marshy meadows, and artificial channels. Blanding's Turtles have been shown to select all wetland types over lotic environments and have also shown a preference for ponds and marshes when available. <sup>9</sup>	Potential habitat present within the aquatic features of the Study Area.	No.
Eastern Musk Turtle (Source: ORAA)	<i>Sternotherus odoratus</i>	S3	SC	SC	THR	1	The Eastern Musk Turtle is a highly aquatic species that undertakes only limited overland travel because it moves slowly on land and is prone to rapid dehydration. Eastern Musk Turtles commonly inhabit stagnant or slow-moving shallow wetlands that are connected to larger permanent waterbodies or shallow bays of lakes and rivers. In Canada, Eastern Musk Turtles have been found in different types of water bodies, such as lakes, ponds, marshes, rivers, and streams. Nevertheless, the species has been described as a habitat specialist since	Potential habitat present within the aquatic features of the Study Area.	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
							it seems to require water with abundant emergent, floating, and submerged aquatic vegetation that provides surface cover, which may be important for foraging, adult and juvenile refuge, and thermoregulation. They are often found in areas with a soft substrate such as sand or organic mud where they can readily bury themselves, and also areas with gravel bottoms. <sup>10</sup>		
Eastern Ribbonsnake (Source: NHIC)	<i>Thamnophis sauritus</i>	S3	SC	SC	SC	1	The Eastern Ribbonsnake is semi-aquatic and often found in areas with permanent water and adjacent terrestrial habitat. During the active season (April through October), these aquatic habitats most commonly have shallow water and low, dense shoreline vegetation. They include open water habitats such as ponds or lakes, wetlands (e.g., marshes, fens, swamps, or bogs), or the flowing water of streams or rivers. The adjacent terrestrial habitat generally includes open, sunny areas, especially where there are clumps of grasses or sedges and some low shrubbery. Adjacent habitat can also include rocky hillsides and deciduous forests. <sup>11</sup>	Potential habitat present within the aquatic features of the Study Area.	No.
Jefferson Salamander (Source: ORAA)	<i>Ambystoma jeffersonianum</i>	S2	END	END	END	1	<p>During March and April, a range of wetland types are used as breeding ponds. Breeding ponds are generally vernal pools fed by either groundwater (e.g., springs), snowmelt or surface water. These ponds are normally dry in mid to late summer, although other types of wetlands used for breeding may have permanent or semi-permanent water (e.g., located within or close to a woodland). Breeding ponds require vegetation (e.g. low shrubs, fallen branches, submerged riparian vegetation, etc.) to which to attach egg masses.</p> <p>A number of terrestrial habitats are used, including for migration, foraging and overwintering. They are most often associated with deciduous or mixed woodlands. Terrestrial habitat must contain microhabitat, such as rodent burrows, rock fissures, downed woody debris, tree stumps and buttresses, leaf litter, logs, etc.<sup>12</sup></p>	Low potential for habitat presence. This species typically prefers smaller ponds than those present. No vernal pools have been reported in the FOD communities.	No.
Northern Map Turtle (Source: ORAA)	<i>Graptemys geographica</i>	S3	SC	SC	SC	1	The Northern Map Turtle relies primarily on aquatic habitat and makes limited use of terrestrial habitat for nesting and basking. In the northern portion of their	Low potential for habitat presence. Aquatic features within the Study	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
							range, Northern Map Turtles typically inhabit well oxygenated bodies of water such as small to major rivers with slow to moderate flows, and lakes. Within lake habitats, the species tends to utilize areas with undeveloped shorelines or marshy habitats. In lakes occurring on the Canadian Shield, Northern Map Turtle utilizes rocky open shorelines and shoals, rock islands and substrates as well as muck substrate. Within river habitats, the species tends to inhabit areas where moderate flow and turbidity are maintained. In most rivers, Northern Map Turtles tend to avoid areas where the water is less transparent. During the active season (April to October), individuals prefer shallow waters and generally avoid waters greater than 2.5 m deep. The Northern Map Turtle requires suitable basking sites, such as partially submerged rocks and logs and exposed banks that are adjacent to deep water. They favour natural shoreline environments and have home ranges primarily in shallow waters near shore. <sup>13</sup>	Area are small and do not appear to be well oxygenated.	
Snapping Turtle (Source: ORAA and NHIC)	<i>Chelydra serpentina</i>	S3	SC	SC	SC	1	Although Snapping Turtles occupy a wide variety of habitats, the preferred habitat for this species is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often found in ponds, marshes, swamps, peat bogs, shallow bays, river and lake edges, and slow-moving streams. Although individual turtles may persist in developed areas (e.g., golf course ponds, irrigation canals) and environments with heavily polluted water (e.g., some port areas), it is unlikely that local populations will persist in such habitats, since environmental contamination is known to severely compromise reproductive success. <sup>14</sup>	Potential habitat present within the aquatic features of the Study Area.	No.
<b>MAMMALS</b>									
Little Brown Myotis (Source: MNR)	<i>Myotis lucifugus</i>	S4	END	END	END	1	Overwintering habitat: Generally underground openings, including caves, abandoned mines, wells, and tunnels, but at some sites only specific sections of the site will be used for hibernation.  Roosting habitat: Uses buildings and other anthropogenic structures (e.g., bat boxes, bridges, and barns) to roost (particularly for maternity roosting), but	Potential Bat Maternity Habitat (BMH) trees within the forested areas of the Study Area.	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
							will also use cavities of canopy trees, foliage, tree bark, crevices on cliffs, and other structures. Females show a strong tendency to roost in large-diameter trees, although roost properties may vary significantly throughout the summer. Roosting areas are generally used annually and individual natural roost sites can be used for upwards of 10 years. Little Brown Myotis are particularly loyal to anthropogenic structures and sites may be used for 50 years or more. They also exhibit strong within-year site fidelity to anthropogenic structures. Males roost individually or in small groups and periodically switch roosts. <sup>15</sup>		
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	END	END	END	1	Overwintering habitat: Caves and abandoned mines.  Primarily roosts in open, sunny rocky habitats, and, occasionally, in buildings. Summer roosts for this species are believed to be in close proximity to their hibernacula (i.e., less than 100 m). The species' preference for rocky habitats in summer may limit an individual's home range to those rocky areas which also contain hibernacula (i.e., karst areas and Canadian Shield areas containing abandoned mines with adits).	Hibernacula not present.  Roosting / maternity habitat not present	No.
Northern Myotis (Source: MNRF)	<i>Myotis septentrionalis</i>	S3	END	END	END	1	Overwintering habitat: Generally underground openings, including caves, abandoned mines, wells, and tunnels, but at some sites only specific sections of the site will be used for hibernation.  Roosting habitat: Roost singly or in small groups and favour tree roosts (under raised bark and in tree cavities and crevices), but they can also be found in anthropogenic structures (e.g., under shingles). maternity roosts are strongly associated with forest cover, streams, and tree characteristics (e.g., species, height, diameter, age, and decay). Females prefer to roost in tall, large diameter trees in early- to mid-stages of decay. Males generally roost alone under raised bark or within cavities of trees in mid-stages of decay. <sup>15</sup>	Potential Bat Maternity Habitat (BMH) trees within the forested areas of the Study Area.	No.
Tri-colored Bat (Source: MNRF)	<i>Pipistrellus subflavus</i>	S3?	END	END	END	1	Overwintering habitat: Generally underground openings, including caves, abandoned mines, wells, and tunnels, but at some sites only specific sections of the site will be used for hibernation. They often select the deepest part	Potential Bat Maternity Habitat (BMH) trees within the forested areas of the Study Area.	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
							<p>of caves or mines where temperature is the least variable, have strong humidity level preferences, and use warmer walls than other species.</p> <p>Roosting habitat: Most roost sites are found within forested habitats, where this species also forages. Tri-colored Bats may roost in clumps of dead foliage and lichens. Females roost alone or in small colonies. In more anthropogenically modified landscapes, maternity roosts may be barns or similar human-made structures. Males roost individually.<sup>15</sup></p>		
<b>FISH</b>									
None identified									
<b>PLANTS</b>									
Butternut (Source: CVC)	<i>Juglans cinerea</i>	S2?	END	END	END	1	Usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges.	Potential habitat present in the Study Area. CVC records indicate that this species has been recorded in the Lornewood Creek valley.	No.
Cleland's Evening Primrose (Source: NHIC)	<i>Oenothera clelandii</i>	S1	N/A	N/A	N/A	N/A	Evening primrose grows in meadows, on beaches, in dunes, roadsides, and in waste places. This plant is native to Canada and the US and grows in all provinces (not the territories).	Potential habitat present in the Study Area along the rail corridor.	No.
Fall Crabgrass (Source: NHIC)	<i>Digitaria cognata</i>	S1?	N/A	N/A	N/A	N/A	Sandy fields, roadsides, railroads, grasslands, and other open, dry, sandy areas. This species is capable of using human-disturbed habitats.	Habitat potentially present along the rail corridor.	No.
Sundial Lupine (Source: NHIC)	<i>Lupinus perennis</i>	S2S3	N/A	N/A	N/A	N/A	Habitats include sand prairies, openings in sandy woodlands, sandy savannas, edges of sandy woodlands, stabilized sand dunes, and powerline clearances in sandy areas. Dominant canopy trees in some of these habitats are either oaks or pines.	No habitat confirmed present in the Study Area.	No.
Virginia Bluebells (Source: NHIC)	<i>Mertensia virginica</i>	S3	N/A	N/A	N/A	N/A	Habitats include floodplain woodlands, bottomland woodlands, mesic woodlands, and wooded bluffs. Sometimes this wildflower forms sizable colonies in semi-shaded floodplain areas along rivers or streams, where it often competes with Wood Nettle ( <i>Laportea canadensis</i> ). It is also cultivated in flower gardens.	Potential habitat present in the Study Area.	No.

Common Name **(Source)	Scientific Name	Provincial S-RANK <sup>1</sup>	Provincial SARO Status <sup>2</sup>	COSEWIC <sup>3</sup>	Federal SARA Status <sup>3</sup>	Federal SARA Schedule <sup>4</sup>	Habitat Description	Habitat Present in Study Area?	Species Observed in Study Area During Field Surveys?
<b>INSECTS</b>									
None identified									

**\*\*Sources:**

- Ontario Breeding Bird Atlas (OBBA) 2001-2005 database for Square 17PJ12 searched online on August 20, 2018.
- Ontario Reptile and Amphibian Atlas (ORAA) for Square 17PJ12, searched online on August 20, 2018.
- Natural Heritage Information Centre (NHIC) database for Squares 17PJ1120, 17PJ1121, 17PJ1220, 17PJ1221 searched online on August 20, 2018.
- Records provided by the CVC.
- MNRF PE. Included based on previous experiences with the Ministry of Natural Resources and Forestry (MNRF).

**<sup>1</sup>S-Ranks (provincial)**

Provincial (or Subnational) ranks are used by the 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 global ranks, but consider only those factors within the political boundaries of Ontario (Please refer to: <http://explorer.natureserve.org/nsranks.htm>)

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

**SH — Possibly Extirpated (Historical)** - Species or community occurred historically in the 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 SH without such a 20-40 year delay if the only known occurrences in a province were destroyed or if it had been extensively and unsuccessfully looked for. The 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.

**S1 — Critically Imperiled** - Critically imperiled in the province or state 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 province.

**S2 — Imperiled** - Imperiled in the 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 province.

**S3 — Vulnerable** - Vulnerable in the 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.

**S4 — Apparently Secure** - Uncommon but not rare; some cause for long-term concern due to declines or other factors.

**S5 — Secure** - Common, widespread, and abundant in the province.

**SNR — Unranked** - Province conservation status not yet assessed.

**SU — Unrankable** - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

**SNA — Not Applicable** - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

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

**S#? — Inexact or Uncertain** - Denotes inexact or uncertain numeric rank.

**Breeding Status Qualifiers**

**B** – Breeding Conservation status refers to the breeding population of the species in the nation or state/province.

**N** – Nonbreeding Conservation status refers to the non-breeding population of the species in the province.

**M** – Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the province.

**<sup>2</sup>SARO Endangered Species Act, 2007**

(provincial status from <http://www.ontario.ca/environment-and-energy/how-species-risk-are-listed#section-3>)

The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).

**Extinct** - A species that no longer exists anywhere.

**Extirpated (EXT)** - Lives somewhere in the world, and at one time lived in the wild in Ontario, but no longer lives in the wild in Ontario.

**Endangered (END)** - Lives in the wild in Ontario but is facing imminent extinction or extirpation.

**Threatened (THR)** - Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.

**Special concern (SC)** - Lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.

**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 recommendation.

**<sup>3</sup>SARA (Federal Species at Risk Act) Status and Schedule (includes COSEWIC Status)**

The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

**Extinct** - A wildlife species that no longer exists.

**Extirpated (EXT)** - A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.

**Endangered (END)** - A wildlife species facing imminent extirpation or extinction.

**Threatened (THR)** - A wildlife species that is likely to become an endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

**Special Concern (SC)** - A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

**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.

**Not At Risk (NAR)** - A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

**<sup>4</sup>SARA Schedule**

**Schedule 1:** is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.

**Schedule 2:** species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.  
**Schedule 3:** species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of SARA. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Wildlife Species at Risk.

#### Sources:

- <sup>5</sup> Cadman, M.D., et al. (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.
- <sup>6</sup> McCracken, J.D. et al. 2013. Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario, viii + 88 pp.
- <sup>7</sup> Kraus, Talena. 2015. Recovery Strategy for the Henslow's Sparrow (*Ammodramus henslowii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. iv + 7 pp + Appendix vi + 23 pp.
- <sup>8</sup> Environment and Climate Change Canada. 2017. Management Plan for the Peregrine Falcon *anatum/tundrius* (*Falco peregrinus anatum/tundrius*) in Canada. Species at Risk Act Management Plan Series. Environment and Climate Change Canada, Ottawa. iv + 28 pp.
- <sup>9</sup> Environment Canada. 2016. Recovery Strategy for the Blanding's Turtle (*Emydoidea blandingii*), Great Lakes / St. Lawrence population, in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. vii + 49 pp.
- <sup>10</sup> Environment Canada. 2016. Recovery Strategy for the Eastern Musk Turtle (*Sternotherus odoratus*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. viii + 58 pp.
- <sup>11</sup> Environment Canada. 2015. Management Plan for the Eastern Ribbonsnake (*Thamnophis sauritus*), Great Lakes population, in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iv + 23 pp.
- <sup>12</sup> Environment Canada. 2016. Recovery Strategy for the Jefferson Salamander (*Ambystoma jeffersonianum*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. 26 pp. + Annexes.
- <sup>13</sup> Environment Canada. 2016. Management Plan for the Northern Map Turtle (*Graptemys geographica*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iv + 45 pp.
- <sup>14</sup> Environment and Climate Change Canada. 2016. Management Plan for the Snapping Turtle (*Chelydra serpentina*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment and Climate Change Canada, Ottawa. iv + 39 p.
- <sup>15</sup> Environment Canada. 2015. Recovery Strategy for Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. ix + 110 pp.



**BURNSIDE**

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## Appendix B

### Cultural Environment

Stage 1 Archeological Assessment Report	B1
Cultural Heritage Resource Assessment Report	B2



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## Appendix B1

### Stage 1 Archeological Assessment Report

**STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
NEW SANITARY SEWER ON FAIR BIRCH DRIVE,  
BIRCHVIEW DRIVE, QUEEN VICTORIA AVENUE AND LORNE PARK ROAD  
PART OF LOTS 23-25, CONCESSION 2 SDS  
(FORMER TOWNSHIP OF TORONTO, COUNTY OF PEEL)  
CITY OF MISSISSAUGA  
REGIONAL MUNICIPALITY OF PEEL, ONTARIO**

**ORIGINAL REPORT**

Prepared for:

**R. J. Burnside & Associates Ltd.**  
292 Speedvale Avenue West, Unit 20  
Guelph, ON N1H 1C4

Archaeological Licence #P450 (Parks)  
Ministry of Tourism, Culture and Sport PIF# P450-0037-2018  
ASI File: 18EA-060

17 December 2018



**Stage 1 Archaeological Assessment  
New Sanitary Sewer on Fair Birch Drive,  
Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Part of Lots 23-25, Concession 2 SDS  
(Former Township of Toronto, County of Peel)  
City of Mississauga  
Regional Municipality of Peel, Ontario**

**EXECUTIVE SUMMARY**

ASI was contracted by was contracted by R. J. Burnside & Associates Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road project. This project involves approximately 1200 meters of 300mm diameter of a new sanitary sewer and rehabilitation or, if found necessary, replacement of approximately 500 meters of 250mm diameter of local sanitary sewers, and rehabilitation of approximately 700 meters of 250mm of the existing sanitary sewer, on proposed replacement or rehabilitation of sanitary sewers on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road in the City of Mississauga, Regional Municipality of Peel.

The Stage 1 background study determined that four previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection determined that approximately 0.15 hectares adjacent to Lorne Park Road and Queen Victoria Avenue exhibit archaeological potential and require Stage 2 survey, if impacted, prior to any construction activities

In light of these results, the following recommendations are made:

1. Part of the Study Area exhibits archaeological potential. These lands require Stage 2 archaeological assessment by test pit survey at five metre intervals, if impacted, prior to any proposed construction activities;
2. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or low and wet conditions. These lands do not require further archaeological assessment;
3. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.



## PROJECT PERSONNEL

<i>Senior Project Manager:</i>	Lisa Merritt, MSc. (P094) <i>Partner / Director</i> <i>Environmental Assessment Division</i>
<i>Project Coordinator:</i>	Sarah Jagelewski, Hon. BA (R405) <i>Lead Archaeologist / Manager</i> <i>Environmental Assessment Division</i>
<i>Project Director (Licensee):</i>	Amanda Parks, MA (P450) <i>Associate Archaeologist / Project Manager</i> <i>Environmental Assessment Division</i>
<i>Project Manager:</i>	Eliza Brandy, MA (R1109) <i>Associate Archaeologist / Project Manager</i> <i>Environmental Assessment Division</i>
<i>Field Director:</i>	Peter Carruthers, MA (P163) <i>Senior Associate</i>
<i>Report Preparation:</i>	Eliza Brandy
<i>Graphics:</i>	Robin Latour MPhil, PDip <i>Associate Archaeologist, Geomatics Specialist</i> <i>Operations Division</i>
<i>Report Reviewer:</i>	Lisa Merritt



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## 1.0 PROJECT CONTEXT

Archaeological Services Inc. (ASI) was contracted by R. J. Burnside & Associates Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road project. This project involves approximately 1200 meters of 300mm diameter of a new sanitary sewer and rehabilitation or, if found necessary, replacement of approximately 500 meters of 250mm diameter of local sanitary sewers, and rehabilitation of approximately 700 meters of 250mm of the existing sanitary sewer, on proposed replacement or rehabilitation of sanitary sewers on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road in the City of Mississauga, Regional Municipality of Peel (Figure 1).

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (1990, as amended in 2018) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Tourism, Culture and Sport (MTCS 2011).

### 1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act*, RSO (Ministry of the Environment 1990 as amended 2010) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (2000 as amended in 2007, 2011 and 2015).

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted by R. J. Burnside & Associates Ltd. on September 10, 2018.

### 1.2 Historical Context

The purpose of this section, according to the S & G, Section 7.5.7, Standard 1, is to describe the past and present land use and the settlement history and any other relevant historical information pertaining to the Study Area. A summary is first presented of the current understanding of the Indigenous land use of the Study Area. This is then followed by a review of the historical Euro-Canadian settlement history.

#### 1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (Ferris 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal



residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990, 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2500 BP and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2300 BP - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13-15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP, lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By 1300-1450 CE, this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). From 1450-1649 CE this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. By 1600 CE, the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee<sup>1</sup> and the Huron-Wendat (and their Algonkian allies such as the Nipissing and Odawa) led to the dispersal of the Huron-Wendat.

Shortly after dispersal of the Wendat and their Algonquian allies, Ojibwa began to expand into southern Ontario and Michigan from a "homeland" along the east shore of Georgian Bay, west along the north shore of Lake Huron, and along the northeast shore of Lake Superior and onto the Upper Peninsula of Michigan (Rogers 1978:760-762). This history was constructed by Rogers using both Anishinaabek oral tradition and the European documentary record, and notes that it included Chippewa, Ojibwa, Mississauga, and Saulteaux or "Southeastern Ojibwa" groups. Ojibwa, likely Odawa, were first encountered by Samuel de Champlain in 1615 along the eastern shores of Georgian Bay. Etienne Brule later encountered other groups and by 1641, Jesuits had journeyed to Sault Sainte Marie (Thwaites 1896:11:279) and opened the Mission of Saint Peter in 1648 for the occupants of Manitoulin Island and the northeast shore of Lake Huron. The Jesuits reported that these Algonquian peoples lived "solely by hunting and fishing and roam as far as the "Northern sea" to trade for "Furs and Beavers, which are found there in abundance" (Thwaites 1896-1901, 33:67), and "all of these Tribes are nomads, and have no

<sup>1</sup> The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian-speaking groups – the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.



fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot” (Thwaites 1896-1901, 33:153). Algonquian-speaking groups were historically documented wintering with the Huron-Wendat, some who abandoned their country on the shores of the St. Lawrence because of attacks from the Haudenosaunee (Thwaites 1896-1901, 27:37).

Other Algonquian groups were recorded along the northern and eastern shores and islands of Lake Huron and Georgian Bay - the “Ouasouarini” [Chippewa], the “Outchougai” [Outchougai], the “Atchiligouan” [Achiligouan] near the mouth of the French River and north of Manitoulin Island the “Amikouai, or the nation of the Beaver” [Amikwa; Algonquian] and the “Oumisagai” [Mississauga; Chippewa] (Thwaites 1896-1901, 18:229, 231). At the end of the summer 1670, Father Louys André began his mission work among the Mississagué, who were located on the banks of a river that empties into Lake Huron approximately 30 leagues from the Sault (Thwaites 1896-1901, 55:133-155).

After the Huron had been dispersed, the Haudenosaunee began to exert pressure on Ojibwa within their homeland to the north. While their numbers had been reduced through warfare, starvation, and European diseases, the coalescence of various Anishinaabek groups led to enhanced social and political strength (Thwaites 1896-1901, 52:133) and Sault Sainte Marie was a focal point for people who inhabited adjacent areas both to the east and to the northwest as well as for the Saulteaux, who considered it their home (Thwaites 1896-1901, 54:129-131). The Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. From east to west, these villages consisted of Ganneious, on Napanee Bay, an arm of the Bay of Quinte; Quinte, near the isthmus of the Quinte Peninsula; Ganaraske, at the mouth of the Ganaraska River; Quintio, at the mouth of the Trent River on the north shore of Rice Lake; Ganatsekwyagon (or Ganestiquiagon), near the mouth of the Rouge River; Teyaiagon, near the mouth of the Humber River; and Quinaouatoua, on the portage between the western end of Lake Ontario and the Grand River (Konrad 1981:135). Their locations near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place, strategically linked these settlements with the upper Great Lakes through Lake Simcoe. The inhabitants of these villages were agriculturalists, growing maize, pumpkins and squash, but their central roles were that of portage starting points and trading centres for Iroquois travel to the upper Great Lakes for the annual beaver hunt (Konrad 1974; Williamson et al. 2008:50–52). Ganatsekwyagon, Teyaiagon, and Quinaouatoua were primarily Seneca; Ganaraske, Quinte and Quintio were likely Cayuga, and Ganneious was Oneida, but judging from accounts of Teyaiagon, all of the villages might have contained peoples from a number of the Iroquois constituencies (ASI 2013).

During the 1690s, some Ojibwa began moving south into extreme southern Ontario and soon replaced, the Haudenosaunee by force. By the first decade of the eighteenth century, the Michi Saagiig Nishnaabeg (Mississauga Nishnaabeg) had settled at the mouth of the Humber, near Fort Frontenac at the east end of Lake Ontario and the Niagara region and within decades were well established throughout southern Ontario. In 1736, the French estimated there were 60 men at Lake Saint Clair and 150 among small settlements at Quinte, the head of Lake Ontario, the Humber River, and Matchedash (Rogers 1978:761). This history is based almost entirely on oral tradition provided by Anishinaabek elders such as George Copway (Kahgegagahbowh), a Mississauga born in 1818 near Rice Lake who followed a traditional lifestyle until his family converted to Christianity (MacLeod 1992:197; Smith 2000). According to Copway, the objectives of campaigns against the Haudenosaunee were to create a safe trade route between the French and the Ojibwa, to regain the land abandoned by the Huron-Wendat. While various editions of Copway’s book have these battles occurring in the mid-seventeenth century, common to all is a statement that the battles occurred around 40 years after the dispersal of the Huron-Wendat (Copway 1850:88, 1851:91, 1858:91). Various scholars agree with this timeline ranging from 1687, in conjunction with Denonville’s attack on Seneca villages (Johnson 1986:48; Schmalz 1991:21–22) to around the mid-



to late-1690s leading up to the Great Peace of 1701 (Schmalz 1977:7; Bowman 1975:20; Smith 1975:215; Tanner 1987:33; Von Gernet 2002:7–8).

Robert Paudash's 1904 account of Mississauga origins also relies on oral history, in this case from his father, who died at the age of 75 in 1893 and was the last hereditary chief of the Mississauga at Rice Lake. His account in turn came from his father Cheneebeesh, who died in 1869 at the age of 104 and was the last sachem or Head Chief of all the Mississaugas. He also relates a story of origin on the north shore of Lake Huron (Paudash 1905:7-8) and later, after the dispersal of the Huron-Wendat, carrying out coordinated attacks against the Haudenosaunee. Francis Assikinack, an Ojibwa of Manitoulin Island born in 1824, provides similar details on battles with the Haudenosaunee (Assikinack 1858:308–309).

Peace was achieved between the Haudenosaunee and the Anishinaabek Nations in August of 1701 when representatives of more than twenty Anishinaabek Nations assembled in Montreal to participate in peace negotiations (Johnston 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishinaabek agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishinaabek Nations. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there is no interruption to Anishinaabek control and use of southern Ontario. While hunting in the territory was shared, and subject to the permission of the various nations for access to their lands, its occupation was by Anishinaabek until the assertion of British sovereignty, the British thereafter negotiating treaties with them. Eventually, with British sovereignty, tribal designations changed (Smith 1975:221–222; Surtees 1985:20–21). According to Rogers (1978), by the twentieth century, the Department of Indian Affairs had divided the “Anishinaubag” into three different tribes, despite the fact that by the early eighteenth century, this large Algonquian-speaking group, who shared the same cultural background, “stretched over a thousand miles from the St. Lawrence River to the Lake of the Woods.” With British land purchases and treaties, the bands at Beausoleil Island, Cape Croker, Christian Island, Georgina and Snake Islands, Rama, Sarnia, Saugeen, the Thames, and Walpole, became known as “Chippewa” while the bands at Alderville, New Credit, Mud Lake, Rice Lake, and Scugog, became known as “Mississauga.” The northern groups on Lakes Huron and Superior, who signed the Robinson Treaty in 1850, appeared and remained as “Ojibbawas” in historical documents.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases throughout Ontario in the early nineteenth century, and entered into negotiations with various Nations for additional tracts of land as the need arose to facilitate European settlement.

The eighteenth century saw the ethnogenesis in Ontario of the Métis, when Métis people began to identify as a separate group, rather than as extensions of their typically maternal First Nations and paternal European ancestry (Métis National Council n.d.). Métis populations were predominantly located north and west of Lake Superior, however, communities were located throughout Ontario (MNC n.d.; Stone and Chaput 1978:607,608). During the early nineteenth century, many Métis families moved towards locales around southern Lake Huron and Georgian Bay, including Kincardine, Owen Sound, Penetanguishene, and Parry Sound (MNC n.d.). Recent decisions by the Supreme Court of Canada (Supreme Court of Canada 2003, 2016) have reaffirmed that Métis people have full rights as one of the Indigenous people of Canada under subsection 91(24) of the Constitution Act, 1867.

In 1805, the Mississaugas were granted one mile (approximately 1.6 km) on either side of the Credit River, Twelve Mile Creek and Sixteen Mile Creek. In 1818, the majority of the Mississauga Tract was acquired by the Crown excluding the lands tracts flanking the Credit River, Twelve Mile Creek and



Sixteen Mile Creek. In 1820, the remainder of Mississauga land was surrendered except approximately 81 hectares (ha) along the Credit River (Heritage Mississauga 2012:18). In 1825-26 the Credit Indian Village was established as an agricultural community and Methodist mission near present day Port Credit (Heritage Mississauga 2009a; Mississaugas of the New Credit First Nation 2014). By 1840 the village was under significant pressure from Euro-Canadian settlement that plans begun to relocate the settlement. In 1847 the Credit Mississaugas were made a land offer by the Six Nations Council to relocate at the Grand River. In 1847, 266 Mississaugas settled at New Credit, approximately 23 km southwest of Brantford. In 1848 a mission of the Methodist Church was established there by Rev. William Ryerson (Woodland Indian Cultural Education Centre 1985). Although the majority of the former Mississague Tract had been surrendered from the Mississauga by 1856 (Gould 1981), this does not exclude the likelihood that the Mississauga continued to utilise the landscape at large during travel (Ambrose 1982) and for resource extraction.

The Study Area is within Treaty 13a, or the Toronto Purchase, signed on August 2, 1805 by the Mississaugas and the British Crown in Port Credit at the Government Inn. A provisional agreement was reached with the Crown on August 2, 1805, in which the Mississaugas ceded 70,784 acres of land bounded by the Toronto Purchase of 1787 in the east, the Brant Tract in the west, and a northern boundary that ran six miles back from the shoreline of Lake Ontario. The Mississaugas also reserved the sole right of fishing at the Credit River and were to retain a 1 mile strip of land on each of its banks, which became the Credit Indian Reserve. On September 5, 1806, the signing of Treaty 14 confirmed the Head of the Lake Purchase between the Mississaugas of the Credit and the Crown (Mississauga of the New Credit First Nation 2017, 2001).

### **1.2.2 Euro-Canadian Land Use: Township Survey and Settlement**

Historically, the Study Area is located in part of Lots 23-25, Concession 2 South of Dundas Street, former Township of Toronto, County of Peel.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 m of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).



### *Toronto Township*

The Township of Toronto was originally surveyed in 1806 by Mr. Wilmot, Deputy Surveyor. The first settler in this Township, and also the County of Peel, was Colonel Thomas Ingersoll. The whole population of the Township in 1808 consisted of seven families, scattered along Dundas Street. The number of inhabitants gradually increased until the war broke out in 1812, which gave considerable check to its progress. When the war was over, the Township's growth revived and the rear part of the Township was surveyed and called the "New Survey". The greater part of the New Survey was granted to a colony of Irish settlers from New York City, who suffered persecution during the war.

The Hamilton and Toronto Railway (H&TR) was formed in 1852, and in 1855, completed its lake shore route across the south end of Lot 11. In 1871, the railway was amalgamated with the Great Western Railway (GWR), which in turn, was amalgamated in 1882, with the Grand Trunk Railway. The Grand Trunk Railway was amalgamated in 1923, with Canadian National Railway (Andreae 1997:126–127).

### *Port Credit*

Around 1804, Col. Ingersoll built a trading store, and a Government Inn was established on the east bank of the Credit River to accommodate and direct new settlers. Port Credit was officially surveyed and established as a village in 1834. The land on the west side of the Credit River was the first to be surveyed and developed. In 1856, a survey of the land on the east side of the river was undertaken, and surveyed lots between the lakefront and the railway were quickly occupied. Port Credit attained status as a police village by 1909, and in 1961, it was incorporated as a town. In 1974, Port Credit amalgamated with the City of Mississauga (Heritage Mississauga 2009a).

### *Village of Clarkson*

Settlement first began in this rural village in 1807 after the first survey and among the first settlers were the Bradley, Clarkson, Gable, Greeniaus, Hammond, Hendershott, Jarvis, Marlatt, Merigold, Monger, Oliphant, Shook and Thompson families. The area was first referred to as "Merigold's Point", and later became known as "Clarkson's Corners" after early settler Warren Clarkson, who also operated the post office and general store. By 1850, the road bordering Warren Clarkson's property was known as Clarkson Road and a train station for the Great Western Railway was built in 1855 on part of Warren Clarkson's property (Heritage Mississauga 2009b).

## **1.2.3 Historical Map Review**

The 1859 Map of the County of Peel (Tremaine 1859) and the south half of Toronto Township in the 1877 Illustrated Historical Atlas of the County of Peel (Walker and Miles 1877) were examined to determine the presence of historic features within or adjacent to the Study Area during the nineteenth century (Figures 2 and 3).

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases.



In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.

Table 1: Nineteenth-century property owner(s) and historical features(s) within or adjacent to the Study Area

1859			1877		
Con #	Lot #	Property Owner(s)	Historical Feature(s)	Property Owner(s)	Historical Feature(s)
2 SDS	23	Jas. Oliphant	H&TR	Jas. Oliphant	GWR
	24	T. Gall (Laywer) Toronto	H&TR	Hugh Cotter N.R.	GWR
	25	George McGill	H&TR	J&H. McGill	GWR

The maps illustrate that the railway had been built adjacent to the Study Area with a station at Clarkson and Port Credit on either side of the Study Area. The maps also illustrate that Lorne Park Road was a historically surveyed roadway through the southwestern portion of the Study Area. No structures are illustrated in the Study Area, however structures and their associated orchards are shown on the south side of the railway. The Study Area is generally depicted in a rural agricultural context throughout the nineteenth-century.

#### 1.2.4 Twentieth-Century Mapping Review

The 1909 National Topographic System Brampton Sheet and the 1960 and 1992 aerial photography of Mississauga (City of Toronto 2018:1960, 50; 1992, 41G, 41H, 42G, 42H) were examined to determine the extent and nature of development and land uses within the Study Area (Figures 5-7).

The 1909 map illustrates structures along Lorne Park Road within and adjacent to the Study Area. The 1954 photograph shows that Queen Victoria Avenue and Birchview Drive were surveyed by the mid-twentieth century and that the Study Area included residential development and active agricultural fields. The wooded creek ravine is also shown. By 1974 and 1994, the residential subdivision along Fair Birch Drive had been constructed as well as the shopping plaza on Lorne Park Road.

### 1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MTCS through “Ontario’s Past Portal”; published and unpublished documentary sources; and the files of ASI.



### **1.3.1 Current Land Use and Field Conditions**

A review of available Google satellite imagery shows that the Study Area has remained relatively unchanged since 2004.

A Stage 1 property inspection was conducted on October 10, 2018 that noted the Study Area is located along the north side of the railway corridor, and includes modern residential development along Fair Birch Drive, Cayente Place, Mirada Place, Birchview Drive, Queen Victoria Avenue, Windfield Crescent, and Cloverbrae Crescent. Both residential and commercial development are located on Lorne Park Road. The Lornewood Creek ravine with sloping banks runs through the centre of the Study Area.

### **1.3.2 Geography**

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow and Warner 1990:Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include: elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is on sand plains within the Iroquois Plain physiographic region of southern Ontario (Figure 8). This is a lowland region bordering Lake Ontario. This region is characteristically flat, and formed by lacustrine deposits laid down by the inundation of Lake Iroquois, a body of water that existed during the late Pleistocene. This region extends from the Trent River, around the western part of Lake Ontario, to the Niagara River, spanning a distance of 300 km (Chapman and Putnam 1984:190). The old shorelines of Lake Iroquois include cliffs, bars, beaches and boulder pavements. The old sandbars in this region are good aquifers that supply water to farms and villages. The gravel bars are quarried for road and



building material, while the clays of the old lake bed have been used for the manufacture of bricks (Chapman and Putnam 1984:196).

Figure 9 depicts surficial geology for the Study Area. The surficial geology mapping demonstrates that the Study Area is underlain by modern alluvial deposits, and coarse-textured glaciolacustrine deposits of sand and gravel, clay to silt-textured till (Ontario Geological Survey 2010). Figure 10 illustrates soil drainage within the Study Area (Hoffman and Richards 1953). Natural soils in the Study Area consist of Fox sandy loam and Caledon loam, both grey-brown podzolic, stonefree, well sorted outwash soils with good drainage; and Bottom Land, alluvial deposits of variable drainage that are subject to flooding and show little horizontal differentiation (Experimental Farms Service 1953).

The Study Area includes Lornewood Creek and is within the Credit River watershed, which drains an area of approximately 860 square kilometres from its headwaters in Orangeville, Erin, and Mono, passing through part of the Niagara Escarpment and the Oak Ridges Moraine, and draining into Lake Ontario at the town of Port Credit (Credit Valley Conservation 2009). Parts of the study area is within the Sheridan Creek sub-watershed, including Kenollie Creek. This sub-watershed is a long, narrow, urbanized watershed located on the west side of the City of Mississauga, which drains an area of approximately 1,035 hectares into Rattray Marsh on Lake Ontario (Aquafor Beech Ltd. 2011). Increased development of the Sheridan Creek watershed in the twentieth century led to major modifications to the Sheridan Creek watercourse. The Rattray Marsh Conservation Area is one of the last remaining baymouth bar coastal wetlands on the western end of Lake Ontario, and supports a wide variety of plant and animal life (Harrington and Hoyle Ltd. 2009).

### 1.3.3 Previous Archaeological Research

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block *AjGv*.

According to the OASD, four previously registered archaeological sites are located within one kilometre of the Study Area (Ministry of Tourism, Culture and Sport 2018). A summary of the sites is provided below.

Table 2: List of previously registered sites within one kilometre of the Study Area

Borden #	Site Name	Cultural Affiliation	Site Type	Researcher
AjGv-47	n/a	Pre-Contact Indigenous	findspot	ASI 1999
AjGv-48	n/a	Pre-Contact Indigenous	findspot	ASI 1999
AjGv-49	Klinker	Late Archaic	scatter	ASI 1999
AjGv-50	Atoka	Early-Middle Woodland	scatter	ASI 1999

According to the background research, no previous reports detail fieldwork within 50 m of the Study Area.



## 2.0 FIELD METHODS: PROPERTY INSPECTION

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under the field direction of Peter Carruthers (P163) of ASI, on October 10, 2018, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. It was a visual inspection only and did not include excavation or collection of archaeological resources. Fieldwork was only conducted when weather conditions were deemed suitable, per S & G Section 2. Previously identified features of archaeological potential were examined; additional features of archaeological potential not visible on mapping were identified and documented as well as any features that will affect assessment strategies. Field observations are compiled onto the existing conditions of the Study Area in Section 7.0 (Figure 11) and associated photographic plates are presented in Section 8.0 (Plates 1-16).

## 3.0 ANALYSIS AND CONCLUSIONS

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. These data are presented below in Section 3.1. Results of the analysis of the Study Area property inspection are presented in Section 3.2.

### 3.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Water sources: primary, secondary, or past water source (Lornewood Creek);
- Early historic transportation routes (Lorne Park Rd., H&TR);
- Well-drained soils (Fox sandy loam)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The City of Mississauga's Municipal Heritage Register was consulted and no properties within the Study Area are Listed or Designated under the Ontario Heritage Act.



These criteria are indicative of potential for the identification of Indigenous and Euro-Canadian archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

### **3.2 Analysis of Property Inspection Results**

The property inspection determined that approximately 0.15 hectares of the Study Area adjacent to Lorne Park Road and Queen Victoria Avenue exhibit archaeological potential and require Stage 2 survey, if impacted, prior to any construction activities (Plate 3; Figure 11: areas highlighted in green). According to the S & G Section 2.1.2, test pit survey is required on terrain where ploughing is not viable, such as wooded areas, properties where existing landscaping or infrastructure would be damaged, overgrown farmland with heavy brush or rocky pasture, and narrow linear corridors up to 10 metres wide.

Some of lands within the Study Area are sloped in excess of 20 degrees within the creek valley, and according to the S & G Section 2.1 do not retain potential (Plate 16; Figure 11: areas highlighted in pink). A part of the Study Area in the floodplain at the bottom of the creek valley is located in low and wet conditions, and according to the S & G Section 2.1 does not retain potential (Figure 11: areas highlighted in blue). The remainder of the Study Area has been subjected to deep soil disturbance events, associated with the construction of the ROWs, installation of existing utilities, cutting of the access road, and twentieth and twenty-first-century residential construction. According to the S & G Section 1.3.2 these areas do not retain archaeological potential (Plates 1-16; Figure 11: areas highlighted in yellow). These areas do not require further survey.

### **3.3 Conclusions**

The Stage 1 background study determined that four previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection determined that approximately 0.15 hectares adjacent to Lorne Park Road and Queen Victoria Avenue (see Figure 11) exhibit archaeological potential and require Stage 2 survey, if impacted, prior to any construction activities.



#### 4.0 RECOMMENDATIONS

In light of these results, the following recommendations are made:

1. Part of the Study Area exhibits archaeological potential. These lands require Stage 2 archaeological assessment by test pit survey at five metre intervals, if impacted, prior to any proposed construction activities;
2. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance, slopes in excess of 20 degrees, or low and wet conditions. These lands do not require further archaeological assessment;
3. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the MTCS should be immediately notified.



## 5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

ASI also advises compliance with the following legislation:

- This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the *Ontario Heritage Act*.
- The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.



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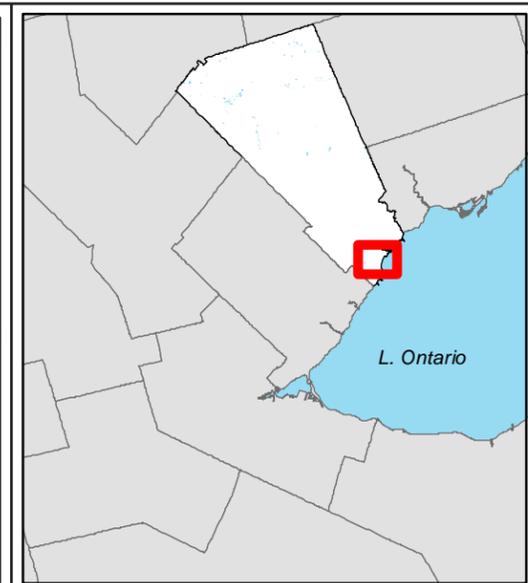
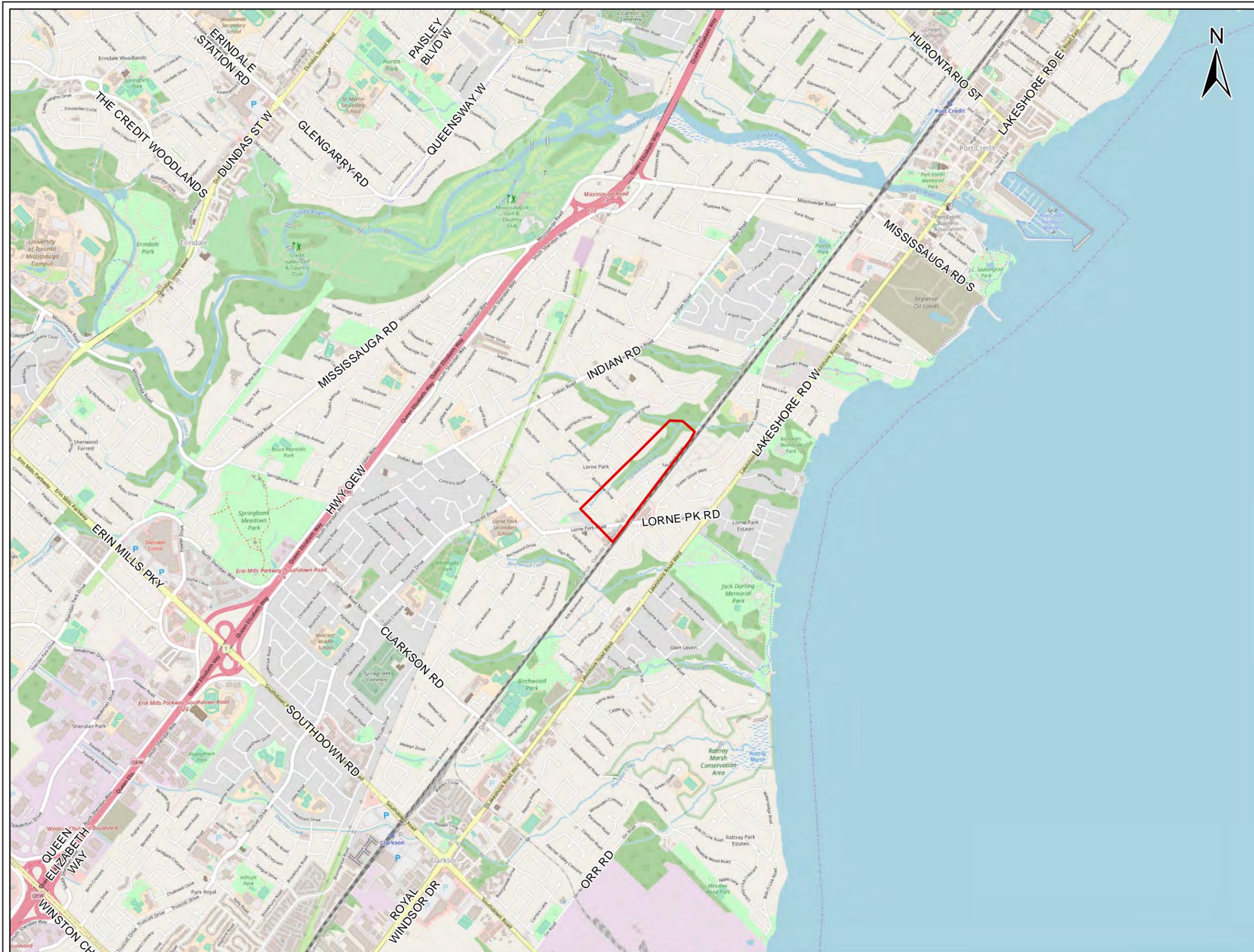
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## 7.0 MAPS





 Study Area

BASE:  
Esri, OpenStreetMap (and) contributors, CC-BY-SA



ASI PROJECT NO.: 18EA-060      DRAWN BY: RL  
DATE: 10/10/2018      FILE: 18EA060\_Fig1



Figure 1: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Location of the Study Area



Figure 2: Fair Birch Drive Sanitary Sewer Study Area (Approximate Location) Overlaid on the 1859 Map of the County of Peel



Figure 3: Fair Birch Drive Sanitary Sewer Study Area (Approximate Location) Overlaid on the 1877 Illustrated Historical Atlas of the County of Peel, Toronto Township

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 Providing Archaeological & Cultural Heritage Services  
 523 Bathurst Street Toronto, ONTARIO M5S 2P9  
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**Legend**

Study Area

Base:  
 Tremaine's Map of the County of Peel (1859)  
 Illustrated Historical Atlas of the County of Peel, Toronto Township (1877)

0 500

Metres

ASI PROJECT NO.: 18EA-060  
 DATE: 12/18/2018

DRAWN BY: RL  
 FILE: 18EA060\_Fig2-3



Figure 4: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area (Approximate Location) Overlaid on the 1909 National Topographic System Brampton Sheet

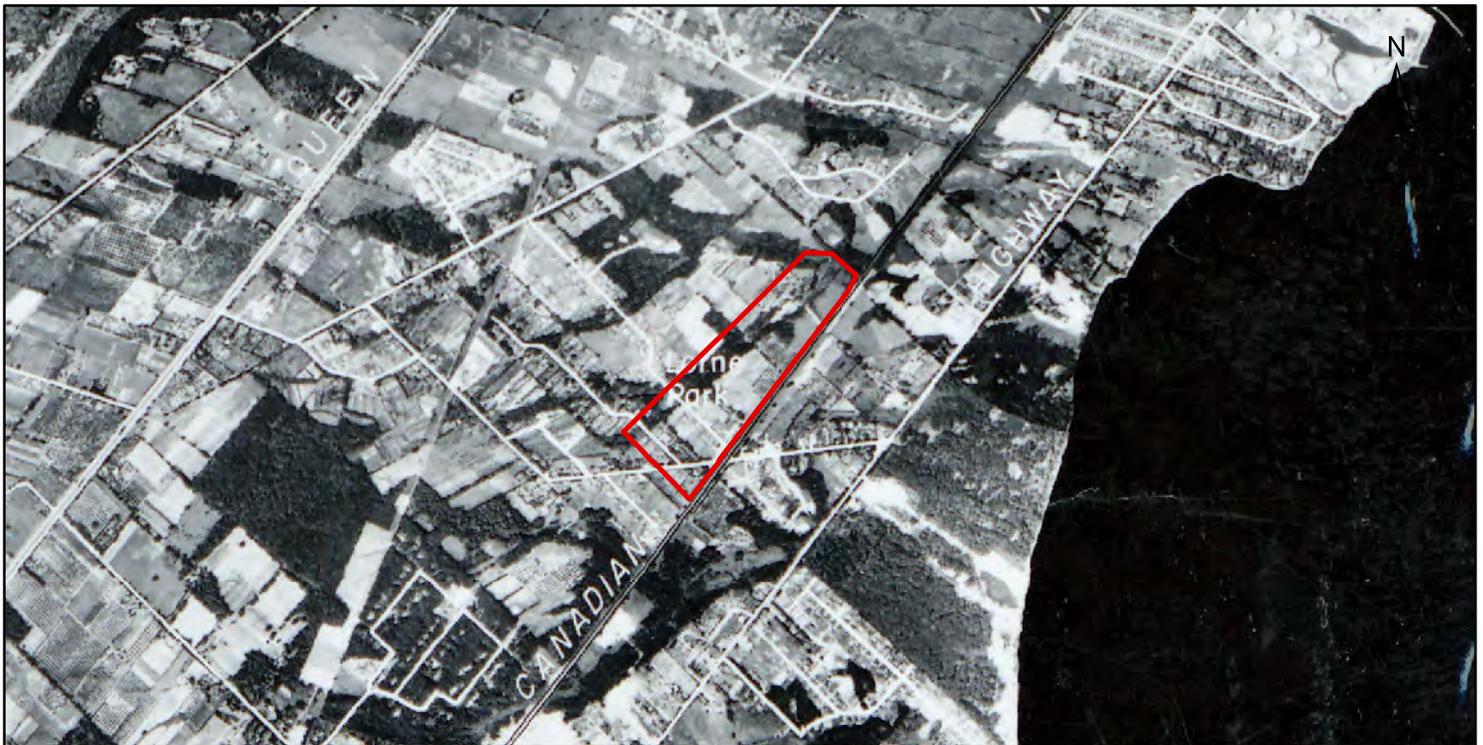


Figure 5: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area (Approximate Location) Overlaid on the 1954 Aerial Photograph of Mississauga

 <p>Providing Archaeological &amp; Cultural Heritage Services 523 Bathurst Street Toronto, ONTARIO M5S 2P9 T 416-966-1069 F 416-966-9723 asheritage.ca</p>	<p><b>Legend</b></p> <p><span style="border: 2px solid red; display: inline-block; width: 20px; height: 10px; vertical-align: middle;"></span> Study Area</p>	<p>Base: National Topographic System, Brampton Sheet (1909) Map &amp; Data Library, U. of Toronto (1954)</p>	<p style="text-align: center;">0 <span style="margin-left: 100px;">500</span></p> <p style="text-align: center;"></p> <p style="text-align: center;">Metres</p> <hr/> <p>ASI PROJECT NO.: 18EA-060 DATE: 10/11/2018</p> <p style="text-align: right;">DRAWN BY: RL FILE: 18EA060_Fig4-5</p>
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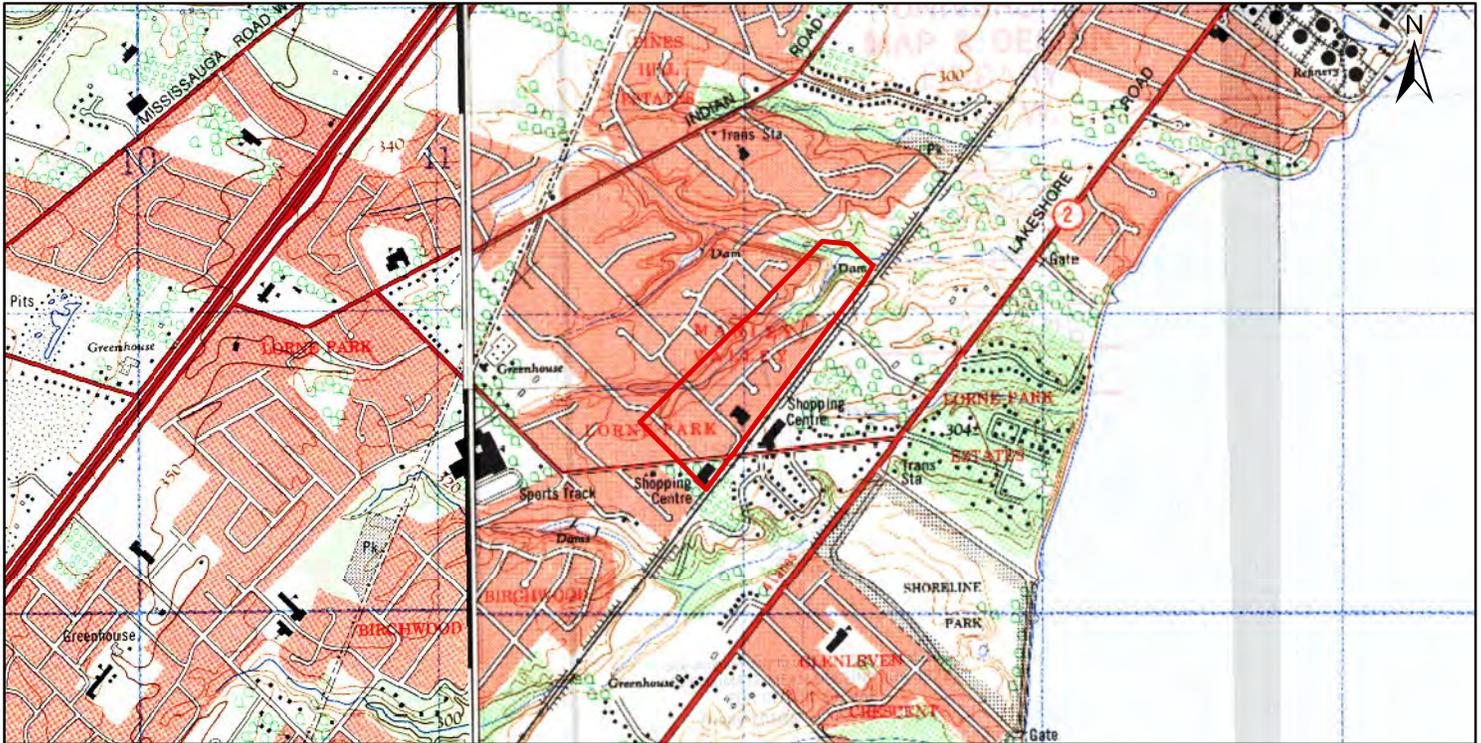


Figure 6: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area (Approximate Location) Overlaid on the 1974 National Topographic System Brampton Sheet

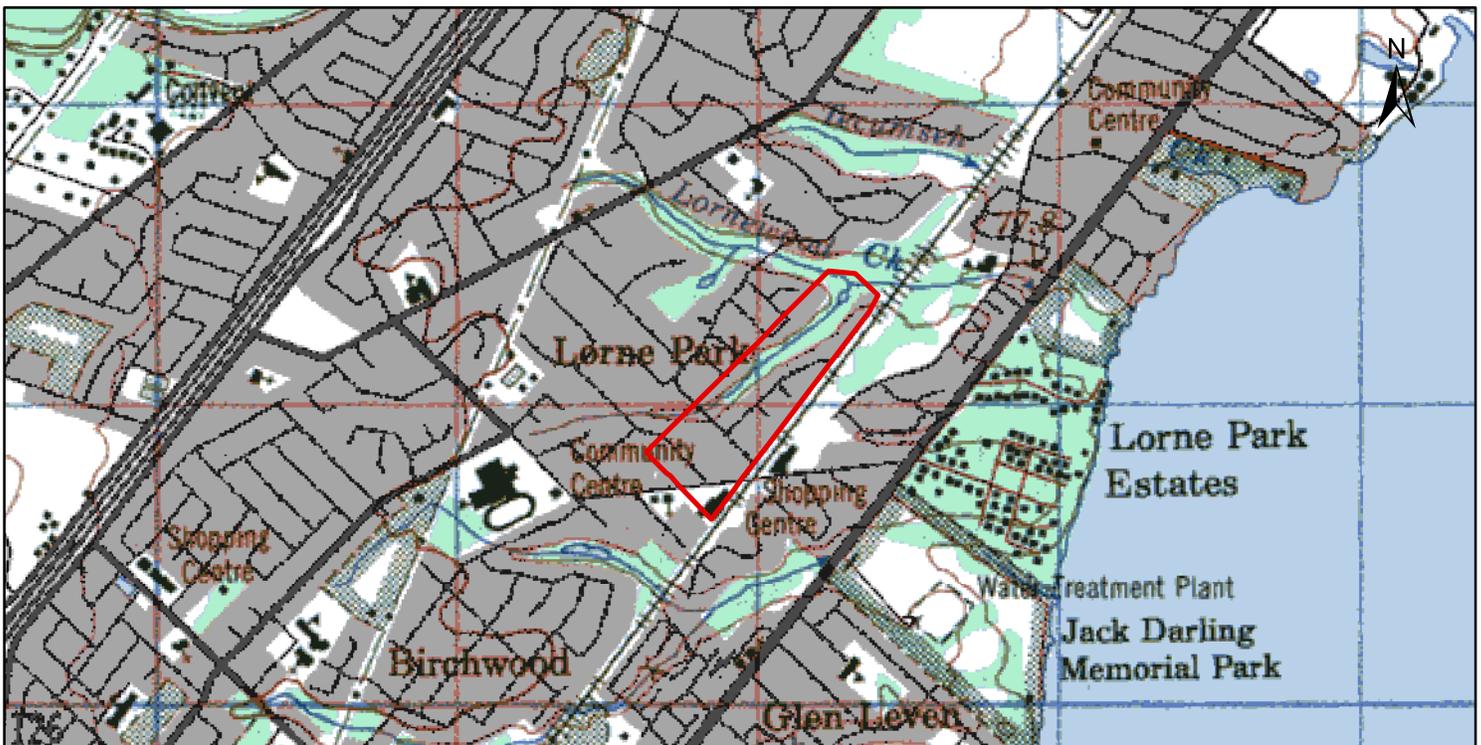


Figure 7: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area (Approximate Location) Overlaid on the 1994 National Topographic System Brampton Sheet

 Providing Archaeological & Cultural Heritage Services 523 Bathurst Street Toronto, ONTARIO M5S 2P9 T 416-966-1069 F 416-966-9723 asheritage.ca	<b>Legend</b>  Study Area	Base: National Topographic System, Brampton Sheet (1973-4) National Topographic System, Brampton Sheet (1994)	0 <span style="margin-left: 100px;">500</span>  Metres
			ASI PROJECT NO.: 18EA-060 DATE: 10/11/2018




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LEGEND	
	Study Area
	14: Beaches
	11: Sand Plains
	10: Shale Plains
	8: Bevelled Till Plains

BASE:  
 ESRI  
 LIO

0  2  
 Kilometres

ASI PROJECT NO.: 18EA-060  
 DATE: 10/11/2018

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Figure 8: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area - Physiographic Landforms

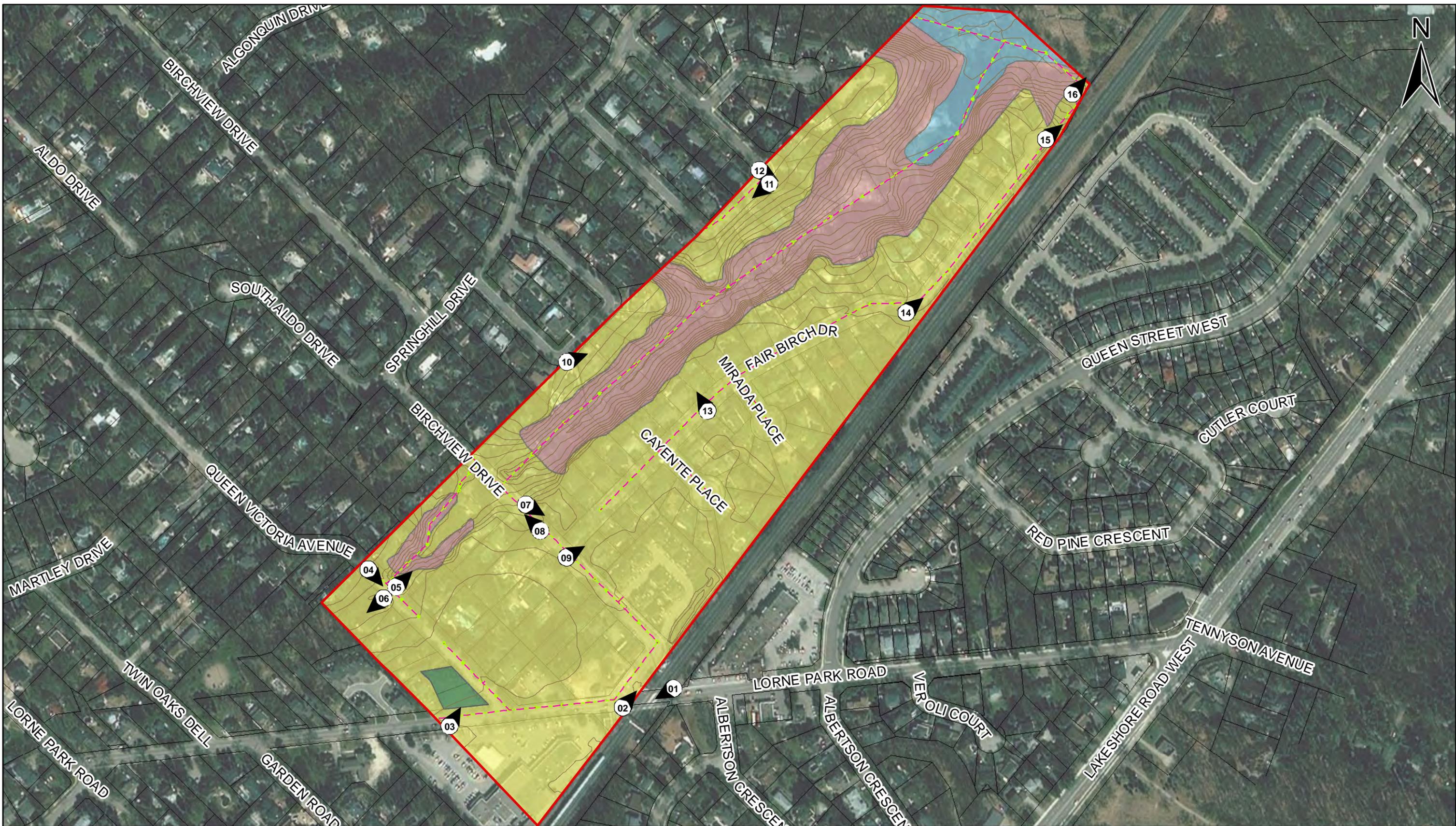


Figure 9: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area - Surficial Geology



Figure 10: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area - Soil Drainage

 Providing Archaeological & Cultural Heritage Services 523 Bathurst Street Toronto, ONTARIO M5S 2P9 T 416-966-1069 F 416-966-9723 asheritage.ca	<b>Legend</b>  Study Area	Base: ESRI LIO	0 500  Metres
			ASI PROJECT NO.: 18EA-060 DATE: 10/11/2018




**Archaeological & Cultural Heritage Services**  
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**LEGEND**

Study Area	Photo Location and Direction	Storm Drain	Recommended for Stage 2	Sloped - No Potential
Property Parcels	Sanitary Network	1m Contours	Disturbed - No Potential	Low and Wet

BASE:  
 ESRI  
 ASI  
 Region of Peel

0  150  
**Metres**  
 ASI PROJECT NO.: 18EA-060  
 DATE: 10/30/2018  
 DRAWN BY: RL  
 FILE: 18EA060\_Fig11

Figure 11: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area - Results of the Property Inspection

## 8.0 IMAGES



Plate 1: Southwest view of Lorne Park Dr railway crossing; Area is disturbed, no potential



Plate 2: Northeast view of Birchview Dr. at Lorne Park Dr; Area is disturbed, no potential



Plate 3: Northeast view of Lorne Park Dr; Area north of disturbed ROW exhibits potential, requires Stage 2 survey.



Plate 4: Southeast view of Queen Victoria Ave.; Area is disturbed, no potential



Plate 5: Northeast view of Queen Victoria Ave. creek crossing; Area is disturbed, no potential



Plate 6: Southwest view of Queen Victoria Ave. creek crossing; Area is disturbed, no potential



Plate 7: Southeast view of Birchview Dr.; Area is disturbed, no potential



Plate 8: Northwest view of Birchview Dr.; Area is disturbed, no potential



Plate 9: Northeast view of Fair Birch Dr. at Birchview Dr.; Area is disturbed, no potential



Plate 10: Northeast view of Wildfield Cres.; Area is disturbed, no potential



Plate 11: Southwest view of Cloverbrae Cres.; Area is disturbed, no potential



Plate 12: Southeast view of Cloverbrae Cres.; Area is disturbed, no potential



Plate 13: Northwest view of Fair Birch Dr.; Area is disturbed, no potential



Plate 14: Northeast view of Fair Birch Dr.; Area is disturbed, no potential



Plate 15: Northeast view from Fair Birch Dr. terminus;  
Area is disturbed, no potential



Plate 16: Northeast view of river valley and railway  
corridor; Area is disturbed and sloped, no  
potential



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix B2

# Cultural Heritage Resource Assessment Report

**CULTURAL HERITAGE RESOURCE ASSESSMENT:  
BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES**

**EXISTING CONDITIONS**

**NEW SANITARY SEWER ON FAIR BIRCH DRIVE, BIRCHVIEW DRIVE, QUEEN VICTORIA AVENUE  
AND LORNE PARK ROAD  
PART OF LOTS 23-25, CONCESSION 2 SDS (FORMER TOWNSHIP OF TORONTO, COUNTY OF PEEL)**

**CITY OF MISSISSAUGA  
REGIONAL MUNICIPALITY OF PEEL, ONTARIO**

**FINAL REPORT**

Prepared for:

**R.J. Burnside & Associates Limited**  
292 Speedvale Avenue West, Unit 20  
Guelph, ON N1H 1C4

ASI File: 18CH-052

October 2018 (Revised November and December 2018 and February 2019)



**CULTURAL HERITAGE RESOURCE ASSESSMENT:  
BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES**

**EXISTING CONDITIONS**

**NEW SANITARY SEWER ON FAIR BIRCH DRIVE, BIRCHVIEW DRIVE, QUEEN VICTORIA AVENUE  
AND LORNE PARK ROAD  
PART OF LOTS 23-25, CONCESSION 2 SDS (FORMER TOWNSHIP OF TORONTO, COUNTY OF PEEL)**

**CITY OF MISSISSAUGA  
REGIONAL MUNICIPALITY OF PEEL, ONTARIO**

**EXECUTIVE SUMMARY**

ASI was contracted by R.J. Burnside & Associates Limited to conduct a Cultural Heritage Resource Assessment for the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Class Environmental Assessment (EA). The study area is in the City of Mississauga, and focuses on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road. The study area is generally located in an urban residential context within the City of Mississauga.

The results of background historical research and a review of secondary source material revealed a study area with a rural land use history dating back to the early nineteenth century. A field review was conducted for the entire study area to document any additional potential cultural heritage resources.

Background research, data collection, and field review were conducted for the study area and it was determined that three cultural heritage resources are located within or adjacent to the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area. Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to the identified cultural heritage resource.
2. Once a preferred alternative or detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on the cultural heritage resource identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.
3. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted to confirm the impacts of the proposed work on potential heritage resources.



## PROJECT PERSONNEL

*Senior Project Manager:*

Annie Veilleux, MA, CAHP  
*Senior Heritage Specialist / Manager*  
*Cultural Heritage Division*

*Project Manager:*

John Sleath, MA  
*Associate Archaeologist / Project Manager*  
*Cultural Heritage Division*

*Project Coordinator:*

Sarah Jagelewski, BA (Hon)  
*Lead Archaeologist / Manager*  
*Environmental Assessment Division*

*Report Preparation:*

Kirstyn Allam, BA (Hon)  
*Cultural Heritage Assistant*  
*Cultural Heritage Division*

John Sleath

*Graphics Preparation:*

Robin Latour, MPhil, PDip  
*Associate Archaeologist / Geomatics Specialist*  
*Operations Division*

*Field Review:*

Peter Carruthers, MA  
*Senior Archaeologist*

*Report Reviewers:*

Katherine Hull, PhD  
*Partner / Director, Cultural Heritage Division*

John Sleath



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## 1.0 INTRODUCTION

ASI was contracted by R.J. Burnside & Associates Limited to conduct a Cultural Heritage Resource Assessment for the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment (EA). The study area is in the City of Mississauga, and focuses on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road. The study area is generally located in an urban residential context within the City of Mississauga (Figure 1).

The purpose of this report is to identify existing conditions of the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area, present an inventory of cultural heritage resources located within or adjacent to the study areas, identify impacts to cultural heritage resources, and propose appropriate mitigation measures. This research was conducted by John Sleath, Project Manager, under the senior project management of Annie Veilleux, Manager of the Cultural Heritage Division, both of ASI.

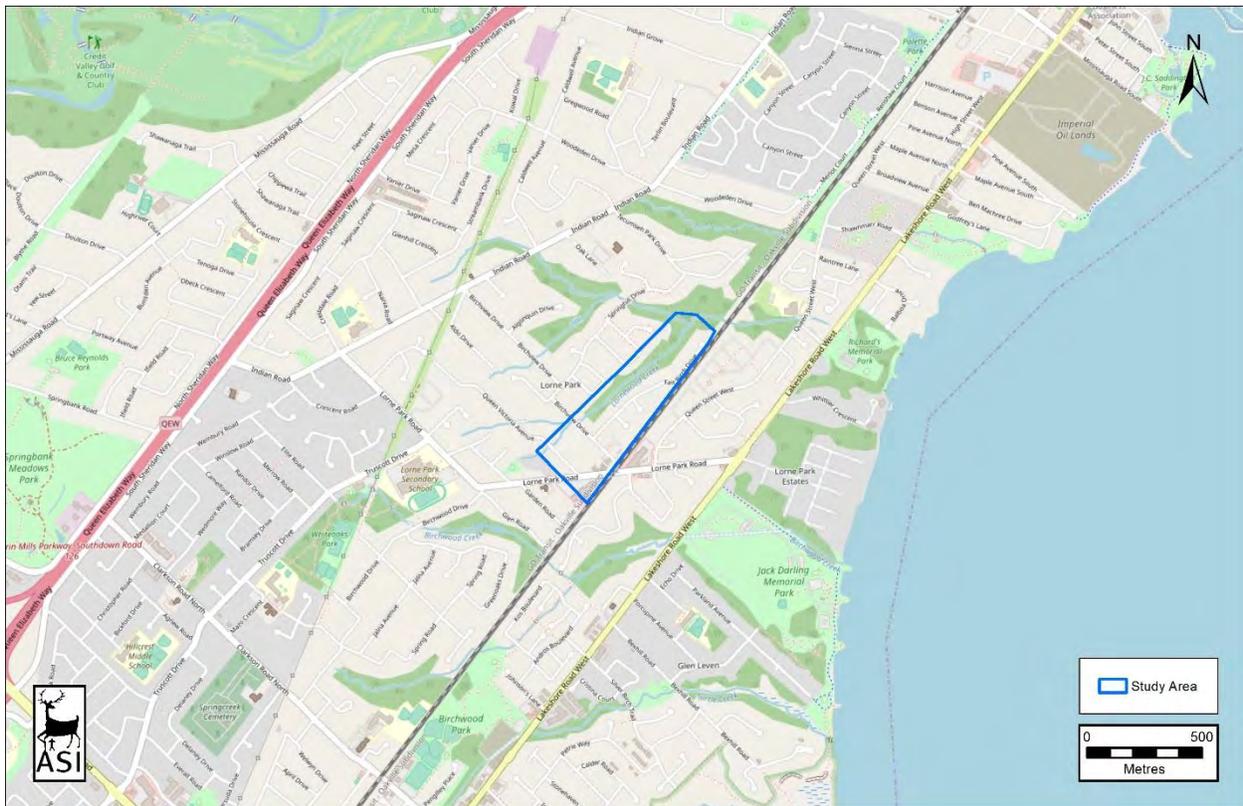


Figure 1: Location of the study area

Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)



## 2.0 BUILT HERITAGE RESOURCE AND CULTURAL HERITAGE LANDSCAPE ASSESSMENT CONTEXT

### 2.1 Legislation and Policy Context

This cultural heritage assessment considers cultural heritage resources in the context of improvements to specified areas, pursuant to the *Environmental Assessment Act*. This assessment addresses above ground cultural heritage resources over 40 years old. Use of a 40-year-old threshold is a guiding principle when conducting a preliminary identification of cultural heritage resources (Ministry of Tourism, Culture and Sport 2016). While identification of a resource that is 40 years old or older does not confer outright heritage significance, this threshold provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from retaining heritage value.

For the purposes of this assessment, the term cultural heritage resources is used to describe both cultural heritage landscapes and built heritage resources. A cultural landscape is perceived as a collection of individual built heritage resources and other related features that together form farm complexes, roadsides and nucleated settlements. Built heritage resources are typically individual buildings or structures that may be associated with a variety of human activities, such as historical settlement and patterns of architectural development.

The analysis throughout the study process addresses cultural heritage resources under various pieces of legislation and their supporting guidelines. Under the *Environmental Assessment Act* (1990) environment is defined in Subsection 1(c) to include:

- cultural conditions that influence the life of man or a community, and;
- any building, structure, machine, or other device or thing made by man.

The Ministry of Tourism, Culture and Sport is charged under Section 2 of the *Ontario Heritage Act* with the responsibility to determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario and has published two guidelines to assist in assessing cultural heritage resources as part of an environmental assessment: *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (1992), and *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (1980). Accordingly, both guidelines have been utilized in this assessment process.

The *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (Section 1.0) states the following:

When speaking of man-made heritage we are concerned with the works of man and the effects of his activities in the environment rather than with movable human artifacts or those environments that are natural and completely undisturbed by man.

In addition, environment may be interpreted to include the combination and interrelationships of human artifacts with all other aspects of the physical environment, as well as with the social, economic and cultural conditions that influence the life of the people and communities in Ontario. The *Guidelines on the Man-Made Heritage Component of Environmental Assessments* distinguish between two basic ways of visually experiencing this heritage in the environment, namely as cultural heritage landscapes and as cultural features.



Within this document, cultural heritage landscapes are defined as the following (Section 1.0):

The use and physical appearance of the land as we see it now is a result of man's activities over time in modifying pristine landscapes for his own purposes. A cultural landscape is perceived as a collection of individual man-made features into a whole. Urban cultural landscapes are sometimes given special names such as townscapes or streetscapes that describe various scales of perception from the general scene to the particular view. Cultural landscapes in the countryside are viewed in or adjacent to natural undisturbed landscapes, or waterscapes, and include such land uses as agriculture, mining, forestry, recreation, and transportation. Like urban cultural landscapes, they too may be perceived at various scales: as a large area of homogeneous character; or as an intermediate sized area of homogeneous character or a collection of settings such as a group of farms; or as a discrete example of specific landscape character such as a single farm, or an individual village or hamlet.

A cultural feature is defined as the following (Section 1.0):

...an individual part of a cultural landscape that may be focused upon as part of a broader scene, or viewed independently. The term refers to any man-made or modified object in or on the land or underwater, such as buildings of various types, street furniture, engineering works, plantings and landscaping, archaeological sites, or a collection of such objects seen as a group because of close physical or social relationships.

The Minister of Tourism, Culture, and Sport has also published *Standards and Guidelines for Conservation of Provincial Heritage Properties* (2014; *Standards and Guidelines* hereafter). These *Standards and Guidelines* apply to properties the Government of Ontario owns or controls that have cultural heritage value or interest. They are mandatory for Ministries and prescribed public bodies and have the authority of a Management Board or Cabinet directive. Prescribed public bodies include:

- Agricultural Research Institute of Ontario
- Hydro One Inc.
- Liquor Control Board of Ontario
- McMichael Canadian Art Collection
- Metrolinx
- The Niagara Parks Commission
- Ontario Heritage Trust
- Ontario Infrastructure and Lands Corporation
- Ontario Lottery and Gaming Corporation
- Ontario Power Generation Inc.
- Royal Botanical Gardens
- Toronto Area Transit Operating Authority
- St. Lawrence Parks Commission

The *Standards and Guidelines* provide a series of definitions considered during the course of the assessment:

A provincial heritage property is defined as the following (14):



Provincial heritage property means real property, including buildings and structures on the property, that has cultural heritage value or interest and that is owned by the Crown in right of Ontario or by a prescribed public body; or that is occupied by a ministry or a prescribed public body if the terms of the occupancy agreement are such that the ministry or public body is entitled to make the alterations to the property that may be required under these heritage standards and guidelines.

A provincial heritage property of provincial significance is defined as the following (14):

Provincial heritage property that has been evaluated using the criteria found in *Ontario Heritage Act* O. Reg. 10/06 and has been found to have cultural heritage value or interest of provincial significance.

A built heritage resource is defined as the following (13):

...one or more significant buildings (including fixtures or equipment located in or forming part of a building), structures, earthworks, monuments, installations, or remains associated with architectural, cultural, social, political, economic, or military history and identified as being important to a community. For the purposes of these Standards and Guidelines, “structures” does not include roadways in the provincial highway network and in-use electrical or telecommunications transmission towers.

A cultural heritage landscape is defined as the following (13):

...a defined geographical area that human activity has modified and that has cultural heritage value. Such an area involves one or more groupings of individual heritage features, such as structures, spaces, archaeological sites, and natural elements, which together form a significant type of heritage form distinct from that of its constituent elements or parts. Heritage conservation districts designated under the *Ontario Heritage Act*, villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trails, and industrial complexes of cultural heritage value are some examples.

Additionally, the *Planning Act* (1990) and related *Provincial Policy Statement (PPS)*, which was updated in 2014, make several provisions relating to heritage conservation. One of the general purposes of the *Planning Act* is to integrate matters of provincial interest in provincial and municipal planning decisions. To inform all those involved in planning activities of the scope of these matters of provincial interest, Section 2 of the *Planning Act* provides an extensive listing. These matters of provincial interest shall be regarded when certain authorities, including the council of a municipality, carry out their responsibilities under the *Act*. One of these provincial interests is directly concerned with:

2.(d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest

Part 4.7 of the *PPS* states that:

The official plan is the most important vehicle for implementation of this Provincial Policy Statement. Comprehensive, integrated and long-term planning is best achieved through official plans.



Official plans shall identify provincial interests and set out appropriate land use designations and policies. To determine the significance of some natural heritage features and other resources, evaluation may be required.

Official plans should also coordinate cross-boundary matters to complement the actions of other planning authorities and promote mutually beneficial solutions. Official plans shall provide clear, reasonable and attainable policies to protect provincial interests and direct development to suitable areas.

In order to protect provincial interests, planning authorities shall keep their official plans up-to-date with this Provincial Policy Statement. The policies of this Provincial Policy Statement continue to apply after adoption and approval of an official plan.

Those policies of relevance for the conservation of heritage features are contained in Section 2- Wise Use and Management of Resources, wherein Subsection 2.6 - Cultural Heritage and Archaeological Resources, makes the following provisions:

- 2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

Several definitions that have specific meanings for use in a policy context accompany the policy statement. These definitions include built heritage resources and cultural heritage landscapes.

*A built heritage resource* is defined as: “a building, structure, monument, installation or any manufactured remnant that contributes to a property’s cultural heritage value or interest as identified by a community, including an Aboriginal community” (Ministry of Municipal Affairs and Housing 2014).

*A cultural heritage landscape* is defined as “a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Aboriginal community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association” (Ministry of Municipal Affairs and Housing 2014). Examples may include, but are not limited to farmscapes, historical settlements, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways, and industrial complexes of cultural heritage value.

In addition, significance is also more generally defined. It is assigned a specific meaning according to the subject matter or policy context, such as wetlands or ecologically important areas. With regard to cultural heritage and archaeology resources, resources of significance are those that are valued for the important contribution they make to our understanding of the history of a place, an event, or a people (Ministry of Municipal Affairs and Housing 2014).

Criteria for determining significance for the resources are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used. While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation (Ministry of Municipal Affairs and Housing 2014).

Accordingly, the foregoing guidelines and relevant policy statement were used to guide the scope and methodology of the cultural heritage assessment.



## 2.2 Region of Peel

The Region of Peel provides cultural heritage policies in its Official Plan (2016). Cultural heritage policies within the Region of Peel’s Official Plan relevant to this assessment include:

- 3.6.2.1 Direct the area municipalities to include in their official plans policies for the definition, identification, conservation and protection of cultural heritage resources in Peel, in cooperation with the Region, the conservation authorities, other agencies and aboriginal groups, and to provide direction for their conservation and preservation, as required.
- 3.6.2.2 Support the designation of Heritage Conservation Districts in area municipal official plans.
- 3.6.2.3 Ensure that there is adequate assessment, preservation, interpretation and/or rescue excavation of cultural heritage resources in Peel, as prescribed by the Ministry of Citizenship, Culture and Recreation’s archaeological assessment and mitigation guidelines, in cooperation with the area municipalities.
- 3.6.2.4 Require and support cultural heritage resource impact assessments, where appropriate, for infrastructure projects, including Region of Peel projects.
- 3.6.2.5 Direct the area municipalities to require, in their official plans, that the proponents of development proposals affecting heritage resources provide for sufficient documentation to meet Provincial requirements and address the Region's objectives with respect to cultural heritage resources.
- 3.6.2.6 Encourage and support the area municipalities in preparing, as part of any area municipal official plan, an inventory of cultural heritage resources and provision of guidelines for identification, evaluation and impact mitigation activities.
- 3.6.2.7 Direct the area municipalities to only permit development and site alteration on lands containing archaeological resources or areas of archaeological potential if the significant archaeological resources have been conserved by removal and documentation, or by preservation on site. Where significant archaeological resources must be preserved on site, only development and site alteration which maintain the heritage integrity of the site may be permitted.
- 3.6.2.8 Direct the area municipalities to only permit development and site alteration on adjacent lands to protected heritage property where the proposed property has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

## 2.3 City of Mississauga

The City of Mississauga’s Official Plan (2018b) sets out several policies with regard to cultural heritage resources. Policies that are relevant to this assessment are provided below:



- 7.4.1.1 The heritage policies are based on two principles:
- a. heritage planning will be an integral part of the planning process; and
  - b. cultural heritage resources of significant value will be identified, protected, and preserved.
- 7.4.1.2 Mississauga will discourage the demolition, destruction or inappropriate alteration or reuse of cultural heritage resources.
- 7.4.1.3 Mississauga will require development to maintain locations and settings for cultural heritage resources that are compatible with and enhance the character of the cultural heritage resource.
- 7.4.1.4 Mississauga will encourage other levels of government to enact legislation and develop programs that promote the preservation and rehabilitation of cultural heritage resources.
- 7.4.1.5 Mississauga will encourage private and public support and the allocation of financial resources for the preservation and rehabilitation of cultural heritage resources.
- 7.4.1.6 Mississauga will foster public awareness of and commitment to, the protection and enhancement of cultural heritage resources.
- 7.4.1.7 Mississauga will maintain a Heritage Register of property, including structures and cultural landscapes that should be preserved as cultural heritage resources. The cultural heritage resources in the Heritage Register will be assessed based on their design or physical value, historical or associative value, contextual value and archaeological significance including the aggregation of both natural and cultural heritage resources.
- 7.4.1.8 The Heritage Register will contain a legal description of the property, the name and address of the owner, a statement explaining the cultural heritage value or interest of the property and a description of the heritage attributes of the property.
- 7.4.1.9 Character Area policies may identify means of protecting cultural heritage resources of major significance by prohibiting uses or development that would have a deleterious effect on the cultural heritage resource, and encouraging uses and development that preserve, maintain and enhance the cultural heritage resource.
- 7.4.1.10 Applications for development involving cultural heritage resources will be required to include a Heritage Impact Assessment prepared to the satisfaction of the City and other appropriate authorities having jurisdiction.
- 7.4.1.11 Cultural heritage resources designated under the Ontario Heritage Act, will be required to preserve the heritage attributes and not detract or destroy any of the heritage attributes in keeping with the Ontario Heritage Tool Kit, the Ontario Ministry of Culture, and the Standards and Guidelines for the Conservation of Historic Places in Canada, Parks Canada.
- 7.4.1.12 The proponent of any construction, development, or property alteration that might adversely affect a listed or designated cultural heritage resource or which is proposed adjacent to a cultural heritage resource will be required to submit a Heritage Impact Assessment, prepared to the satisfaction of the City and other appropriate authorities having jurisdiction.



7.4.1.13 Cultural heritage resources must be maintained in situ and in a manner that prevents deterioration and protects the heritage qualities of the resource.

7.4.1.14 Cultural heritage resources will be integrated with development proposals.

7.4.1.15 Mississauga will regulate use and other matters, as appropriate, for heritage preservation through zoning by-laws.

7.4.1.16 Mississauga will acquire heritage easements, apply restrictive covenants, and enter into development agreements, as appropriate, for the preservation of cultural heritage resources.

7.4.1.17 Public works will be undertaken in a way that minimizes detrimental impacts on cultural heritage resources.

7.4.1.18 Mississauga recognizes the Credit River and Etobicoke Creek valleys as heritage corridors with both prehistoric and historical significance.

7.4.1.19 Mississauga will consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources.

7.4.1.20 Mississauga will consider the interests of Aboriginal communities in conserving cultural heritage and archaeological resources.

7.4.2.2 Prior to the demolition or alteration of a cultural heritage resource, documentation will be required of the property to the satisfaction of the City, and any appropriate advisory committee. This documentation may be in the form of a Heritage Impact Assessment.

7.4.2.3 Development adjacent to a cultural heritage property will be encouraged to be compatible with the cultural heritage property.

7.4.3.1 Heritage Conservation Districts will be designated by the City in accordance with the Ontario Heritage Act and the following criteria:

- a. most of the structures or heritage elements, in a grouping, that have a unique character and reflect some aspect of the heritage of the community or are of historic, architectural, natural, or cultural significance; or
- b. an environment that should be preserved because of its cultural heritage, cultural landscape, or scenic significance.

7.4.3.3 Applications for development within a Heritage Conservation District will be required to include a Heritage Impact Assessment and Heritage Permit, prepared to the satisfaction of the City and the appropriate authorities having jurisdiction.

## 2.4 Data Collection and Methodology

During the cultural heritage assessment, all potentially affected cultural heritage resources are subject to inventory. Short form names are usually applied to each resource type, (e.g. barn, residence). Generally, when conducting a preliminary identification of cultural heritage resources, three stages of research and



data collection are undertaken to appropriately establish the potential for and existence of cultural heritage resources in a particular geographic area.

Background historical research, which includes consultation of primary and secondary source research and historical mapping, is undertaken to identify early settlement patterns and broad agents or themes of change in a study area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth and twentieth-century settlement and development patterns. To augment data collected during this stage of the research process, federal, provincial, and municipal databases and/or agencies are consulted to obtain information about specific properties that have been previously identified and/or designated as retaining cultural heritage value. Typically, resources identified during these stages of the research process are reflective of particular architectural styles, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

A field review is then undertaken to confirm the location and condition of previously identified cultural heritage resources. The field review is also used to identify cultural heritage resources that have not been previously identified on federal, provincial, or municipal databases.

Several investigative criteria are utilised during the field review to appropriately identify new cultural heritage resources. These investigative criteria are derived from provincial guidelines, definitions, and past experience. During the environmental assessment, a built structure or landscape is identified as a cultural heritage resource if it is considered to be 40 years or older, and if the resource satisfies at least one of the following criteria:

#### Design/Physical Value:

- It is a rare, unique, representative or early example of a style, type, expression, material or construction method.
- It displays a high degree of craftsmanship or artistic merit.
- It demonstrates a high degree of technical or scientific achievement.
- The site and/or structure retains original stylistic features and has not been irreversibly altered so as to destroy its integrity.
- It demonstrates a high degree of excellence or creative, technical or scientific achievement at a provincial level in each period.

#### Historical/Associative Value:

- It has a direct association with a theme, event, belief, person, activity, organization, or institution that is significant to: The City of Mississauga; the Province of Ontario; or Canada.
- It yields, or has the potential to yield, information that contributes to an understanding of the history of: The City of Mississauga; the Province of Ontario; or Canada.
- It demonstrates or reflects the work or ideas of an architect, artist builder, designer, or theorist who is significant to: The City of Mississauga; the Province of Ontario; or Canada.
- It represents or demonstrates a theme or pattern in Ontario's history.
- It demonstrates an uncommon, rare or unique aspect of Ontario's cultural heritage.
- It has a strong or special association with the entire province or with a community that is found in more than one part of the province. The association exists for historical, social, or cultural reasons or because of traditional use.
- It has a strong or special association with the life or work of a person, group or organization of importance to the province or with an event of importance to the province.



Contextual Value:

- It is important in defining, maintaining, or supporting the character of an area.
- It is physically, functionally, visually, or historically linked to its surroundings.
- It is a landmark.
- It illustrates a significant phase in the development of the community or a major change or turning point in the community's history.
- The landscape contains a structure other than a building (fencing, culvert, public art, statue, etc.) that is associated with the history or daily life of that area or region.
- There is evidence of previous historical and/or existing agricultural practices (e.g. terracing, deforestation, complex water canalization, apple orchards, vineyards, etc.)
- It is of aesthetic, visual or contextual important to the province.

If a resource meets one of these criteria it will be identified as a cultural heritage resource and is subject to further research where appropriate and when feasible. Typically, detailed archival research, permission to enter lands containing heritage resources, and consultation is required to determine the specific heritage significance of the identified cultural heritage resource.

When identifying cultural heritage landscapes, the following categories are typically utilized for the purposes of the classification during the field review:

Farm complexes:	comprise two or more buildings, one of which must be a farmhouse or barn, and may include a tree-lined drive, tree windbreaks, fences, domestic gardens and small orchards.
Roadscapes:	generally two-lanes in width with absence of shoulders or narrow shoulders only, ditches, tree lines, bridges, culverts and other associated features.
Waterscapes:	waterway features that contribute to the overall character of the cultural heritage landscape, usually in relation to their influence on historical development and settlement patterns.
Railscapes:	active or inactive railway lines or railway rights of way and associated features.
Historical settlements:	groupings of two or more structures with a commonly applied name.
Streetscapes:	generally consists of a paved road found in a more urban setting, and may include a series of houses that would have been built in the same time period.
Historical agricultural landscapes:	generally comprises a historically rooted settlement and farming pattern that reflects a recognizable arrangement of fields within a lot and may have associated agricultural outbuildings, structures, and vegetative elements such as tree rows.



Cemeteries: land used for the burial of human remains.

Results of the desktop data collection and field review are contained in Section 3.0, while Sections 4.0 and 5.0 contain conclusions and recommendations with respect to potential impacts of the undertaking on the identified cultural heritage resource. A cultural heritage resource inventory is provided in Section 7.0, while location mapping is in Section 8.0.

### **3.0 BUILT HERITAGE RESOURCE AND CULTURAL HERITAGE LANDSCAPE ASSESSMENT**

This section provides a summary of historical research and a description of identified above ground cultural heritage resources that may be affected by the proposed undertaking.

#### **3.1 Background Historical Summary**

A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of physiography, as well as Indigenous and Euro-Canadian land use and settlement.

This section provides a brief summary of historical research and a description of identified above ground cultural heritage resources that may be affected by the proposed undertaking. A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of Euro-Canadian settlement and land use. Historically, the study area is located in the former Township of Toronto, County of Peel in part of Lots 23-25, Concession 2 South of Dundas Street (SDS).

##### ***3.1.1 Physiography***

The study area is situated within the Iroquois Plain physiographic region of southern Ontario (Chapman and Putnam 1984).

The Iroquois Plain physiographic region of Southern Ontario is a lowland region bordering Lake Ontario. This region is characteristically flat, and formed by lacustrine deposits laid down by the inundation of Lake Iroquois, a body of water that existed during the late Pleistocene. This region extends from the Trent River, around the western part of Lake Ontario, to the Niagara River, spanning a distance of 300 km (Chapman and Putnam 1984:190). The old shorelines of Lake Iroquois include cliffs, bars, beaches and boulder pavements. The old sandbars in this region are good aquifers that supply water to farms and villages. The gravel bars are quarried for road and building material, while the clays of the old lake bed have been used for the manufacture of bricks (Chapman and Putnam 1984:196).

##### ***3.1.2 Indigenous Land Use and Settlement***

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (Ferris 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000



BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990; Ellis et al. 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 BP and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1,500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 BP; it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13–15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP, lifeways became more like that described in early historical documents. Between approximately 1000-1300 Common Era (CE), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By 1300-1450 CE, this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). From 1450-1649 CE this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. By 1600 CE, the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee<sup>1</sup> and the Huron-Wendat (and their Algonkian allies such as the Nipissing and Odawa) led to the dispersal of the Huron-Wendat.

Shortly after dispersal of the Wendat and their Algonquian allies, Ojibwa began to expand into southern Ontario and Michigan from a “homeland” along the east shore of Georgian Bay, west along the north shore of Lake Huron, and along the northeast shore of Lake Superior and onto the Upper Peninsula of Michigan (Rogers 1978:760–762). This history was constructed by Rogers using both Anishinaabek oral tradition and the European documentary record, and notes that it included Chippewa, Ojibwa,

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<sup>1</sup> The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian-speaking groups – the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.



Mississauga, and Saulteaux or “Southeastern Ojibwa” groups. Ojibwa, likely Odawa, were first encountered by Samuel de Champlain in 1615 along the eastern shores of Georgian Bay. Etienne Brule later encountered other groups and by 1641, Jesuits had journeyed to Sault Sainte Marie (Thwaites 1896:11:279) and opened the Mission of Saint Peter in 1648 for the occupants of Manitoulin Island and the northeast shore of Lake Huron. The Jesuits reported that these Algonquian peoples lived “solely by hunting and fishing and roam as far as the “Northern sea” to trade for “ Furs and Beavers, which are found there in abundance” (Thwaites 1896-1901, 33:67), and “all of these Tribes are nomads, and have no fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot” (Thwaites 1896-1901, 33:153). Algonquian-speaking groups were historically documented wintering with the Huron-Wendat, some who abandoned their country on the shores of the St. Lawrence because of attacks from the Haudenosaunee (Thwaites 1896-1901, 27:37).

Other Algonquian groups were recorded along the northern and eastern shores and islands of Lake Huron and Georgian Bay - the “Ouasouarini” [Chippewa], the “Outchougai” [Outchougai], the “Atchiligouan” [Achiligouan] near the mouth of the French River and north of Manitoulin Island the “Amikouai, or the nation of the Beaver” [Amikwa; Algonquian] and the “Oumisagai” [Mississauga; Chippewa] (Thwaites 1896-1901, 18:229, 231). At the end of the summer 1670, Father Louys André began his mission work among the Mississagué, who were located on the banks of a river that empties into Lake Huron approximately 30 leagues from the Sault (Thwaites 1896-1901, 55:133-155).

After the Huron had been dispersed, the Haudenosaunee began to exert pressure on Ojibwa within their homeland to the north. While their numbers had been reduced through warfare, starvation, and European diseases, the coalescence of various Anishinaabek groups led to enhanced social and political strength (Thwaites 1896-1901, 52:133) and Sault Sainte Marie was a focal point for people who inhabited adjacent areas both to the east and to the northwest as well as for the Saulteaux, who considered it their home (Thwaites 1896-1901, 54:129-131). The Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. From east to west, these villages consisted of Ganneious, on Napanee Bay, an arm of the Bay of Quinte; Quinte, near the isthmus of the Quinte Peninsula; Ganaraske, at the mouth of the Ganaraska River; Quintio, at the mouth of the Trent River on the north shore of Rice Lake; Ganatsekwyagon (or Ganestiquiagon), near the mouth of the Rouge River; Teyaiagon, near the mouth of the Humber River; and Quinaouatoua, on the portage between the western end of Lake Ontario and the Grand River (Konrad 1981:135). Their locations near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place, strategically linked these settlements with the upper Great Lakes through Lake Simcoe. The inhabitants of these villages were agriculturalists, growing maize, pumpkins and squash, but their central roles were that of portage starting points and trading centres for Iroquois travel to the upper Great Lakes for the annual beaver hunt (Konrad 1974; Williamson et al. 2008:50–52).

During the 1690s, some Ojibwa began moving south into extreme southern Ontario and soon replaced, the Haudenosaunee by force. By the first decade of the eighteenth century, the Michi Saagiig Nishnaabeg (Mississauga Nishnaabeg) had settled at the mouth of the Humber, near Fort Frontenac at the east end of Lake Ontario and the Niagara region and within decades were well established throughout southern Ontario. In 1736, the French estimated there were 60 men at Lake Saint Clair and 150 among small settlements at Quinte, the head of Lake Ontario, the Humber River, and Matchedash (Rogers 1978:761). This history is based almost entirely on oral tradition provided by Anishinaabek elders such as George Copway (Kahgegagahbowh), a Mississauga born in 1818 near Rice Lake who followed a traditional lifestyle until his family converted to Christianity (MacLeod 1992:197; Smith 2000). According to Copway, the objectives of campaigns against the Haudenosaunee were to create a safe trade route between the French and the Ojibwa, to regain the land abandoned by the Huron-Wendat. While various



editions of Copway's book have these battles occurring in the mid-seventeenth century, common to all is a statement that the battles occurred around 40 years after the dispersal of the Huron-Wendat (Copway 1850:88; Copway 1851:91; Copway 1858:91). Various scholars agree with this timeline ranging from 1687, in conjunction with Denonville's attack on Seneca villages (Johnson 1986:48; Schmalz 1991:21–22) to around the mid- to late-1690s leading up to the Great Peace of 1701 (Schmalz 1977:7; Bowman 1975:20; Smith 1975:215; Tanner 1987:33; Von Gernet 2002:7–8).

Robert Paudash's 1904 account of Mississauga origins also relies on oral history, in this case from his father, who died at the age of 75 in 1893 and was the last hereditary chief of the Mississauga at Rice Lake. His account in turn came from his father Cheneebesh, who died in 1869 at the age of 104 and was the last sachem or Head Chief of all the Mississaugas. He also relates a story of origin on the north shore of Lake Huron (Paudash 1905:7-8) and later, after the dispersal of the Huron-Wendat, carrying out coordinated attacks against the Haudenosaunee. Francis Assikinack, an Ojibwa of Manitoulin Island born in 1824, provides similar details on battles with the Haudenosaunee (Assikinack 1858:308–309).

Peace was achieved between the Haudenosaunee and the Anishinaabek Nations in August of 1701 when representatives of more than twenty Anishinaabek Nations assembled in Montreal to participate in peace negotiations (Johnston 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishinaabek agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishinaabek Nations. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there is no interruption to Anishinaabek control and use of southern Ontario. While hunting in the territory was shared, and subject to the permission of the various nations for access to their lands, its occupation was by Anishinaabek until the assertion of British sovereignty, the British thereafter negotiating treaties with them. Eventually, with British sovereignty, tribal designations changed (Smith 1975:221–222; Surtees 1985:20–21). According to Rogers (1978), by the twentieth century, the Department of Indian Affairs had divided the "Anishinaubag" into three different tribes, despite the fact that by the early eighteenth century, this large Algonquian-speaking group, who shared the same cultural background, "stretched over a thousand miles from the St. Lawrence River to the Lake of the Woods." With British land purchases and treaties, the bands at Beausoleil Island, Cape Croker, Christian Island, Georgina and Snake Islands, Rama, Sarnia, Saugeen, the Thames, and Walpole, became known as "Chippewa" while the bands at Alderville, New Credit, Mud Lake, Rice Lake, and Scugog, became known as "Mississauga." The northern groups on Lakes Huron and Superior, who signed the Robinson Treaty in 1850, appeared and remained as "Ojibbewas" in historical documents.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases throughout Ontario in the early nineteenth century and entered into negotiations with various Nations for additional tracts of land as the need arose to facilitate European settlement.

The eighteenth century saw the ethnogenesis in Ontario of the Métis, when Métis people began to identify as a separate group, rather than as extensions of their typically maternal First Nations and paternal European ancestry (Métis National Council n.d.). Métis populations were predominantly located north and west of Lake Superior, however, communities were located throughout Ontario (MNC n.d.; Stone and Chaput 1978:607,608). During the early nineteenth century, many Métis families moved towards locales around southern Lake Huron and Georgian Bay, including Kincardine, Owen Sound, Penetanguishene, and Parry Sound (MNC n.d.). Recent decisions by the Supreme Court of Canada (Supreme Court of Canada 2003; Supreme Court of Canada 2016) have reaffirmed that Métis people have full rights as one of the Indigenous people of Canada under subsection 91(24) of the Constitution Act, 1867.



In 1805, the Mississaugas were granted one mile (approximately 1.6 km) on either side of the Credit River, Twelve Mile Creek and Sixteen Mile Creek. In 1818, the majority of the Mississauga Tract was acquired by the Crown excluding the lands tracts flanking the Credit River, Twelve Mile Creek and Sixteen Mile Creek. In 1820, the remainder of Mississauga land was surrendered except approximately 81 hectares (ha) along the Credit River (Heritage Mississauga 2012:18). In 1825-26 the Credit Indian Village was established as an agricultural community and Methodist mission near present day Port Credit (Heritage Mississauga 2009; Mississaugas of the New Credit First Nation 2014). By 1840 the village was under significant pressure from Euro-Canadian settlement that plans begun to relocate the settlement. In 1847 the Credit Mississaugas were made a land offer by the Six Nations Council to relocate at the Grand River. In 1847, 266 Mississaugas settled at New Credit, approximately 23 km southwest of Brantford. In 1848 a mission of the Methodist Church was established there by Rev. William Ryerson (Woodland Indian Cultural Education Centre 1985). Although the majority of the former Mississague Tract had been surrendered from the Mississauga by 1856 (Gould 1981), this does not exclude the likelihood that the Mississauga continued to utilise the landscape at large during travel (Ambrose 1982) and for resource extraction.

The study area is within Treaty 13a, or the Toronto Purchase, signed on August 2, 1805 by the Mississaugas and the British Crown in Port Credit at the Government Inn. A provisional agreement was reached with the Crown on August 2, 1805, in which the Mississaugas ceded 70,784 acres of land bounded by the Toronto Purchase of 1787 in the east, the Brant Tract in the west, and a northern boundary that ran six miles back from the shoreline of Lake Ontario. The Mississaugas also reserved the sole right of fishing at the Credit River and were to retain a one mile strip of land on each of its banks, which became the Credit Indian Reserve. On September 5, 1806, the signing of Treaty 14 confirmed the Head of the Lake Purchase between the Mississaugas of the Credit and the Crown (Mississauga of the New Credit First Nation 2017; Mississauga of the New Credit First Nation 2001).

### ***3.1.3 Historical Euro-Canadian Land Use: Township Survey and Settlement***

Historically, the study area is located in part of Lots 23-25, Concession 2 South of Dundas Street, former Township of Toronto, County of Peel.

### ***3.1.4 Toronto Township***

At the end of the American War of Independence (1774-1783), the British were forced to recognize the emergence of a new political frontier, one that had to be maintained by a strong military presence. In addition, several British loyalists travelled north and crossed the border to remain in British territory. Many of them were given land grants by the Crown in exchange for loyal service. These new developments ultimately led to the purchase of Mississauga land by the Crown in 1787 (although boundary disputes were not resolved until the signing of a treaty in 1805). The subject property is located within these “New Survey” lands which were surveyed in 1806.

In 1788, the County of Peel was part of the extensive district known as the “Nassau District.” After the province of Quebec was divided into Upper and Lower Canada in 1792, the Nassau District became known as the Home District. The same year, Upper Canada was subdivided into nineteen counties by its first Lieutenant Governor, Colonel John Graves Simcoe, and by 1852, the Home District was replaced by the Counties of York, Ontario and Peel. Shortly after, the County of Ontario became a separate county,



and the question of separation became popular in Peel. A vote for independence was taken in 1866, and in 1867, the village of Brampton was chosen as the capital of the new county.

The Township of Toronto was originally surveyed in 1806 by Mr. Wilmot, Deputy Surveyor. The first settler in this Township and the County of Peel was Colonel Thomas Ingersoll. The population of the Township in 1808 consisted of seven families scattered along Dundas Street. The number of inhabitants gradually increased until war erupted in 1812, which gave considerable check to its progress. When the war was over, the Township's growth revived and the rear part of the Township was surveyed and called the "New Survey." The greater part of the New Survey was granted to a colony of Irish settlers from New York City who suffered persecution during the war.

The Credit River runs through the western portion of the Township and proved to be a great source of wealth to its inhabitants, as it was not only a good watering stream, but there were endless mill privileges along the entire length of the river.

The first transportation routes to be established followed early Aboriginal trails, both along the lakeshore and adjacent to various creeks and rivers. Local roads were initially cleared by the grantees of adjacent land as part of their settlement duties although the many rivers and creeks posed a challenge to the gridded road system, and nineteenth-century maps detail the many detours necessary to avoid unsuitable crossing points.

After Simcoe established York as the capital of Upper Canada, he commissioned the Queen's Rangers to build the Dundas Highway (also known as the Governor's Road) running west to Ancaster and east toward Kingston, linking with Kingston Road. This important transportation corridor was intended to provide an overland military route between Lake Ontario, Lake St. Clair, and Lake Huron. The road (later known as Dundas Street, now Highway 5) was intended to serve a dual purpose: to support settlement in Upper Canada, and act as a deterrent to expansionist American interests. Work on the Governor's Road began in 1793, but the rocky and heavily treed landscape made progress slow and the route was still barely passable when Simcoe returned to England in 1796. Eventually, Dundas Street served the purpose of supporting settlement in southern Ontario once the colonial government had purchased new adjacent lands.

Along the lakeshore, the pre-existing trail was widened and improved as a public road by 1798, but there was no bridge across the Humber River at that time (a ferry operated between 1802 and 1815). Lakeshore Road opened through Etobicoke in 1804, was planked in 1820, and by 1826, a regular stagecoach service ran between York and Niagara. The Toronto Road Company purchased the Lakeshore Road in 1850, turning it into a toll road.

Within the Township of Toronto, several villages of varying sizes had developed by the end of the nineteenth century including Streetsville, Meadowvale, Churchville, and Malton. A number of crossroad communities also began to grow by the end of the nineteenth century. These included Britannia, Derry, Frasers Corners, Palestine, Mt Charles, and Grahamsville.

The Hamilton and Toronto Railway was formed in 1852, and in 1855, completed its lake shore route across the south end of Lot 11. In 1871, the railway was amalgamated with the Great Western Railway, which in turn, was amalgamated in 1882, with the Grand Trunk Railway. The Grand Trunk Railway was amalgamated, in 1923, with Canadian National Railway (Andreae 1997:126–127).



### *Credit River*

The study area is within the Credit River Watershed, which drains an area of approximately 860 square kilometres from its headwaters in Orangeville, Erin, and Mono, passing through part of the Niagara Escarpment and the Oak Ridges Moraine, and draining into Lake Ontario at the town of Port Credit (Credit Valley Conservation 2009). The river was named “*Mis.sin.ni.he*” or “*Mazinigae-zeebi*” by the Mississaugas, and surveyor Augustus Jones believed this signified “the trusting creek,” or could also be translated as “to write or give and make credit,” while the French name used when the river was first mapped in 1757 was “*Riviere au Credit*.” These names refer to the fur trading period, when French, British, and Indigenous traders would meet along this river (Smith 1987:255–257; Rayburn 1997:84; Scott 1997:182; Gibson 2002:177; Robb et al. 2003:6). The Credit River was historically considered to be one of the best potential power sources for milling in all of southern Ontario, which led to the development of early of saw and grist mill industries, and later textile mills, distilleries, bottling plants, and hydro-electric plants spawned communities throughout the river valley, typically close to the Niagara Escarpment (Town of Caledon 2009:7.1).

### *Great Western Railway*

The Great Western Railway was originally incorporated in 1834 as the London and Gore Railroad Co. and changed its name to the Great Western Railway in 1853. It received considerable promotion by Allan Napier MacNab, Isaac and Peter Buchanan, R.W. Harris, and John Young. Aided by government guarantees and supported by foreign American and British investment, the Great Western Railway opened its mainline (Windsor-London-Hamilton-Niagara Falls) in 1854. By 1882, it was operating throughout southwestern Ontario and even into Michigan. In 1882 it merged with the Grand Trunk Railway in an attempt to successfully compete with rival American railroads for American through-traffic between Michigan and New York states (Baskerville 2015).

### **3.1.5 Review of Historical Mapping**

The 1859 *Map of the County of Peel* (Tremaine 1859) and the 1877 *Illustrated Historical Atlas of the County of Peel* (Walker and Miles 1877) were examined to determine the presence of historic features within or adjacent to the study area during the nineteenth century (Figure 2 and Figure 3).

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases.

In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.



**Table 1: Nineteenth-century property owner(s) and historical features(s) within or adjacent to the study area**

		<i>1859</i>		<i>1877</i>	
Con #	Lot #	Property Owner(s)	Historical Feature(s)	Property Owner(s)	Historical Feature(s)
2 SDS	23	Jas. Oliphant	Hamilton & Toronto Railway	Jas. Oliphant	Great Western Railway Orchards Farmstead
	24	T. Galt (Lawyer) Toronto	Hamilton & Toronto Railway Lorne Park Road	Hugh Cotter	Great Western Railway Lorne Park Road Structure
	25	George McGill	Hamilton & Toronto Railway Lorne Park Road	J. & H. McGill	Great Western Railway Lorne Park Road Orchard Farmstead

The nineteenth-century maps illustrate that Lorne Park Road was historically surveyed roadway in the southwestern portion of the study area. No structures are illustrated in the study area in either the 1859 map or the 1877 map, however, the Hamilton & Toronto Railway is depicted through Lots 23-25 along the eastern border of the study area in both maps. The study area is generally depicted in a rural agricultural context throughout the nineteenth-century.

In addition to nineteenth-century mapping, historical topographic mapping and aerial photographs from the twentieth century were examined. This report presents maps and aerial photographs from 1909, 1954, 1974, and 1994. These do not represent the full range of maps consulted for this study but were judged to cover the full range of land uses that occurred in the areas during this period.

The twentieth-century mapping reveals that the study areas retained a rural agricultural character throughout the twentieth century. The 1909 topographical map (Figure 4) indicates that Lorne Park Road was a metalled roadway and in the same alignment as earlier mapping. There are several structures depicted in the southwest portion of the study area near the intersection of Lorne Park Road and the Grand Trunk Railway (formerly the Hamilton & Toronto Railway). The Hamilton & Toronto Railway is depicted in the same alignment as previous mapping. A saw mill is depicted just outside of the northwest corner of the study area, and a wooden bridge is depicted outside of the southwest corner. Lornewood Creek is depicted immediately northeast of the study area.

The 1954 aerial photograph (Figure 5) illustrates that much of the study area is still in an agricultural context into the mid-twentieth-century. Limited development is depicted near the intersection of Lorne Park Road and the Hamilton & Toronto Railway. Birchview Drive and Queen Victoria Avenue are visible in their present alignments. A roadway or laneway can be seen in the northern portion of the study area in the photograph, however, it does not align with any present roadways. Lornewood Creek can be seen within the study area in its present alignment.

The 1974 topographical map (Figure 6) demonstrates a large amount of residential subdivision development throughout the entire study area in the latter-half of the twentieth century. Fair Birch Drive is now depicted on the map. A shopping centre is illustrated within the southwest corner of the study area to the south of Lorne Park Road, and a second shopping centre is just outside the study area to the south of the Canadian National Railway. A large structure is depicted between the railway and Fair Birch Drive. The 1994 topographical map (Figure 7) indicates that the study area retained an urban residential context



at the end of the twentieth century, and featured residences and commercial structures as described in the 1974 mapping.



Figure 2: The study area overlaid on the 1859 *Tremain's Map of the County of Peel*

Base Map: Tremain 1859



Figure 3: The study area overlaid on the 1877 *Illustrated Historical Atlas*

Base Map: Walker and Miles 1877





Figure 4: The study area overlaid on the 1909 Brampton NTS map  
Base Map: NTS Sheet No. 35 (Department of Militia and Defense 1909)



Figure 5: The study area overlaid on the 1954 aerial photograph  
Reference: Plate 435.793 (Hunting Survey Corporation 1954)



Figure 6: The study area overlaid on the 1974 Port Credit NTS map  
Base Map: NTS Sheet 30/M-412A (Department of Energy, Mines and Resources 1974)

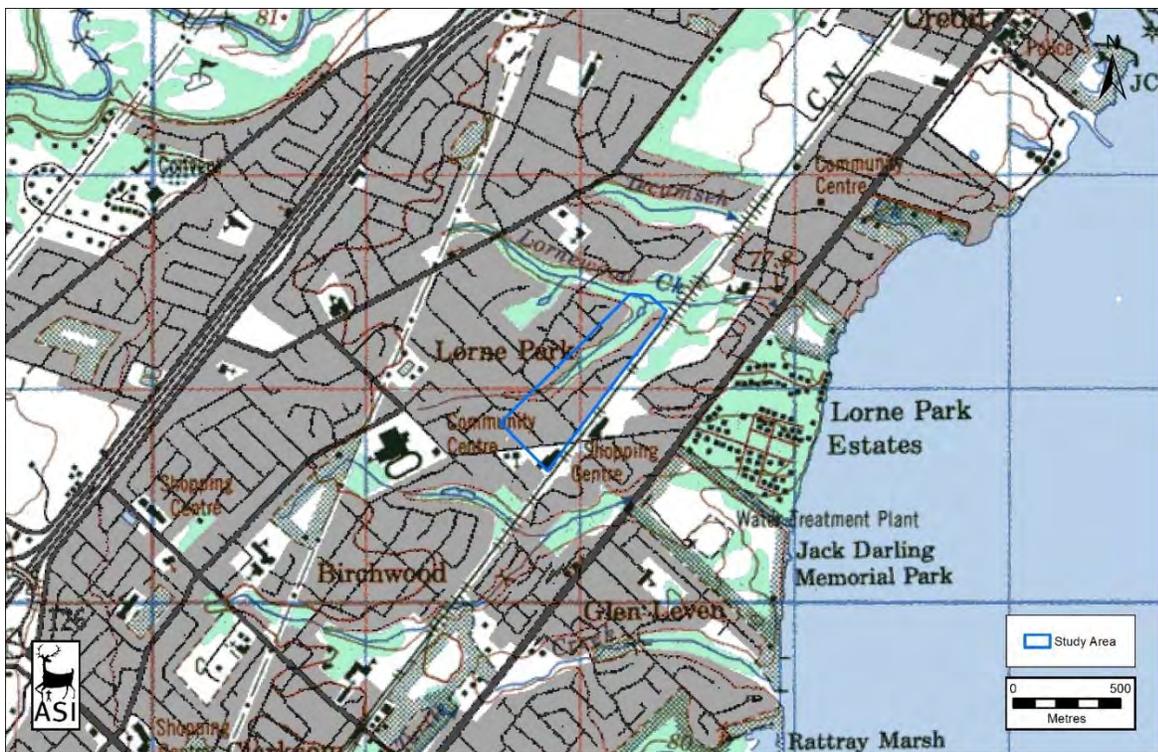


Figure 7: The study area overlaid on the 1994 Brampton NTS map  
Base Map: NTS Sheet 30/M-12 (Department of Energy, Mines and Resources 1994)

## 3.2 Existing Conditions

### 3.2.1 Review of Existing Heritage Inventories

To make an identification of existing cultural heritage resources within the study area, a number of resources were consulted (MTCS 2016). They include:

- The City of Mississauga’s *Municipal Register of Property of Cultural Heritage Value or Interest* provides a list of cultural heritage resources that are designated under Part IV and V of the *Ontario Heritage Act* and undesignated properties<sup>2</sup>;
- *Mississauga Maps – Interactive Online Mapping Service*<sup>3</sup>;
- The inventory of Ontario Heritage Trust easements<sup>4</sup>;
- The Ontario Heritage Trust’s *Ontario Heritage Plaque Guide*, an online, searchable database of Ontario Heritage Plaques<sup>5</sup>;
- *Ontario’s Historical Plaques* website<sup>6</sup>;
- Inventory of known cemeteries/burial sites in the Ontario Genealogical Society’s online databases<sup>7</sup>;
- Parks Canada’s, *Canada’s Historic Places* website: available online, the searchable register provides information on historic places recognized for their heritage value at the local, provincial, territorial, and national levels<sup>8</sup>;
- Parks Canada’s *Directory of Federal Heritage Designations*, a searchable online database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses<sup>9</sup>;
- Canadian Heritage River System. The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada’s river heritage,<sup>10</sup> and,
- United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites.<sup>11</sup>

In addition, the following stakeholders were contacted to gather information on potential cultural heritage resources, active and inactive cemeteries, and areas of identified Indigenous interest within and/or adjacent to the study area:

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<sup>2</sup> Reviewed 18 October 2018 ([https://www7.mississauga.ca/documents/culture/heritage/2018-07-01\\_Mississauga\\_Heritage\\_Register\\_Web.pdf](https://www7.mississauga.ca/documents/culture/heritage/2018-07-01_Mississauga_Heritage_Register_Web.pdf))

<sup>3</sup> Reviewed 19 October 2018 (<https://www.mississauga.ca/portal/services/maps>)

<sup>4</sup> Reviewed 18 October 2018 (<https://www.heritagetrust.on.ca/en/index.php/property-types/easement-properties>)

<sup>5</sup> Reviewed 18 October 2018 (<https://www.heritagetrust.on.ca/en/index.php/online-plaque-guide>)

<sup>6</sup> Reviewed 18 October 2018 ([www.ontarioplaques.com](http://www.ontarioplaques.com))

<sup>7</sup> Reviewed 18 October 2018 (<http://vitacollections.ca/ogscollections/2818487/data?grd=3186>)

<sup>8</sup> Reviewed 18 October 2018 (<http://www.historicplaces.ca/en/pages/about-apropos.aspx>)

<sup>9</sup> Reviewed 18 October 2018 ([http://www.pc.gc.ca/apps/dfhd/search-recherche\\_eng.aspx](http://www.pc.gc.ca/apps/dfhd/search-recherche_eng.aspx))

<sup>10</sup> Reviewed 18 October 2018 (<http://chrs.ca/the-rivers/>)

<sup>11</sup> Reviewed 18 October 2018 (<http://whc.unesco.org/en/list/>)



- Brooke Herczeg; Heritage Analyst, Heritage Planning, City of Mississauga was contacted to gather any information on potential cultural heritage resources or concerns within and/or adjacent to the study area (email communication 18 October 2018). A response confirmed that there are two designated properties and one listed property within or adjacent to the study area.
- Karla Barboza; (A) Team Lead, Heritage, Ministry of Tourism, Culture and Sport, was also contacted to gather any information on potential cultural heritage resources or concerns within and/or adjacent to the study area (email communication 18 and 19 October 2018)<sup>12</sup>. A response confirmed that there were no Provincial Heritage Properties within or adjacent to the study area.

Based on the review of available provincial and federal data, there are three previously identified cultural heritage resources within and/or adjacent to the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area.

### ***3.2.2 New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area– Field Review***

A field review of the study area was undertaken by Peter Carruthers of ASI on 10 October 2018 to document the existing conditions of the study area. The field review was preceded by a review of available, current and historical, aerial photographs and maps (including online sources such as Bing and Google maps). These large-scale maps were reviewed for any potential cultural heritage resources which may be extant in the study area. The existing conditions of the study area are described below. Identified cultural heritage resources are discussed in Section 3.2.3 and are mapped in Section 8.0 of this report.

The study area centres on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road, north of the CN Railway in the City of Mississauga.

The portion of the study area that centres on Fair Birch Drive is approximately 600 meters in length. Fair Birch Drive is generally oriented in a northeast-southwest alignment and features two lanes of northeast and southwest bound vehicular traffic with sidewalks and grass boulevards along both sides. Fair Birch Drive travels through an urban residential context with residences within and/or adjacent the study area. A portion of Fair Birch Drive travels parallel to the Canadian National Railway line and is separated from the railway by a tree-lined embankment. Two small residential streets branch off from Fair Birch Drive, Cayente Place and Mirada Place. Both are on the southern side of Fair Birch Drive and travel approximately 80 meters from Fair Birch Drive. Both streets are cul-de-sacs, carry two lanes of traffic, and feature grass boulevards and curbs.

The portion of the study area that travels along Birchview Drive is approximately 270 meters in length. Birchview Drive is oriented in a northwest-southeast alignment and features two lanes of vehicular traffic with a sidewalk along the east side small paved shoulders lacking curbs north of Fair Birch Drive and with curbs to the south of Fair Birch Drive. Birchview Drive travels through an urban residential context with residences within and adjacent to the study area.

The portion of the study area that travels along Queen Victoria Avenue is approximately 200 meters in length. Queen Victoria Avenue is oriented in a northwest-southeast alignment. Queen Victoria Avenue features two lanes of northwest and southeast bound traffic with no shoulders or curbs and moderate

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<sup>12</sup> Contacted 18 October 2018 at [registrar@ontario.ca](mailto:registrar@ontario.ca).



ditches along the west side. Queen Victoria Avenue travels through an urban residential context with residences within and adjacent to the study area.

The portion of the study area that travels along Lorne Park Road is approximately 200 meters in length. Lorne Park Road is oriented in an east-west alignment and features two lanes of east and westbound traffic with a sidewalk and boulevard on the south side, and curbs on both sides. Lorne Park Avenue travels through an urban mixed residential and commercial context with residences and shopping plazas within the study area.

A portion of the study area also travels along Wildfield Crescent for 90 meters and Cloverbrae Crescent for 70 meters. Both are crescents that connect to Springhill Drive outside of the study area. For both crescents, the portion within the study area travels in a northeast-southwest alignment and features two lanes of northeast and southwest bound traffic.



Plate 1: View to northeast along main Canadian National Railway.



Plate 2: View into plazas and along Lorne Park Road, looking northwest from Birchview Drive.



Plate 3: View along Birchview Drive, looking northeast.



Plate 4: View along Lorne Park Road, looking northeast.



Plate 5: View along Lorne Park Road, looking northwest.



Plate 6: View along Queen Victoria Avenue, looking southeast.



Plate 7: View along Queen Victoria Avenue, looking northwest.



Plate 8: View along Birchview Drive, looking northwest.



Plate 9: Along Birchview Drive at the intersection of Fair Birch Drive, looking north.



Plate 10: View along Wildfied Crescent, looking northeast.



Plate 11: View along Cloverbrae Crescent, looking south-southwest.



Plate 12: View along Fair Birch Drive with railway right-of-way on right, looking north-northeast.



Plate 13: View down slope into main valley of Lornewood Creek, looking northeast.



Plate 14: Culvert under embankment, looking northeast.

### 3.2.3 New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Study Area– Identified Cultural Heritage Resources

Based on the results of the background research and field review, three cultural heritage resources were identified within and/or adjacent to New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area (see Figure 8). The cultural heritage resources include three built heritage resources (Table 2). A detailed description of these built heritage resources is presented in Section 7.0 and mapping of the resources along with photographic plate locations is provided in Section 8.0 of this report.

**Table 2: Summary of built heritage resources (BHR) within and adjacent to the study area**

Feature ID	Location/Address	Resource Type	Heritage Recognition
BHR 1	1197 Birchview Drive	Residence	Listed on the City of Mississauga's <i>Municipal Register of Property of Cultural Heritage Value or Interest</i>
BHR 2	1207 Lorne Park Road	Residence	Designated <i>Ontario Heritage Act</i> Part IV By-law 281-83
BHR 3	1173 Queen Victoria Avenue	Residence	Designated <i>Ontario Heritage Act</i> Part IV By-law 002-2002

### 3.3 Screening for Potential Impacts

To assess the potential impacts of the undertaking identified cultural heritage resources are considered against a range of possible impacts as outlined in the document entitled *Ontario Heritage Tool Kit* (MCL 2006) which include:

- Destruction of any, or part of any, significant heritage attributes or features;
- Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance;
- Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship;
- Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features;
- A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces;
- Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.

Several additional factors are also considered when evaluating potential impacts on identified cultural heritage resources. These are outlined in a document set out by the Ministry of Culture and Communications (now Ministry of Tourism, Culture and Sport) and the Ministry of the Environment entitled *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (October 1992) and include:

- Magnitude: the amount of physical alteration or destruction which can be expected;
- Severity: the irreversibility or reversibility of an impact;
- Duration: the length of time an adverse impact persists;
- Frequency: the number of times an impact can be expected;
- Range: the spatial distribution, widespread or site specific, of an adverse impact; and
- Diversity: the number of different kinds of activities to affect a heritage resource.

Once a technically preferred preliminary design for the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area has been identified, the cultural heritage resources identified within the study area will be evaluated against the above criteria and a summary of impact screening results will be provided. Various works associated with infrastructure improvements have the potential to affect cultural heritage resources in a variety of ways, and as such, appropriate mitigation measures for the undertaking need to be considered.

Where any above-ground cultural heritage resources which may be affected by direct or indirect impacts are identified, appropriate mitigation measures should be developed. This may include completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.



## 4.0 CONCLUSIONS

The results of background historical research and a review of secondary source material, including historical mapping, revealed study areas with rural land use histories dating to the early nineteenth century. A review of federal registers and municipal and provincial inventories revealed that there are three previously identified features of cultural heritage value within the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area. A field review conducted 10 October 2018 identified no additional cultural heritage resources.

### *Key Findings*

- A field review of the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area confirmed that there are three cultural heritage resources consisting of three built heritage resources (BHR) adjacent to the study area;
- The identified cultural heritage resources in the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area include: three residences (BHRs 1-3);
- The identified cultural heritage resources in the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area include two properties designated under Part IV of the *Ontario Heritage Act* (BHR 2-3) and one listed property in the City of Mississauga's *Municipal Register of Property of Cultural Heritage Value or Interest* (BHR 1); and,
- The identified cultural heritage resources are historically and contextually associated with late-nineteenth century and early-twentieth century land use patterns in the former Township of Toronto.

## 5.0 RECOMMENDATIONS

The background research, data collection, and field review conducted for the study area determined that three cultural heritage resources are located within or adjacent to the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area. Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.
2. Once a preferred alternative or detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on the cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.



3. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.



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**7.0 CULTURAL HERITAGE RESOURCE INVENTORY**

**Table 3: Inventory of built heritage resources (BHR) in the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road study area**

Feature ID	Address/Location	Resource Type	Heritage Recognition	Description	Photos
BHR 1	1197 Birchview Drive	Residence	Listed on the City of Mississauga's <i>Municipal Register of Property of Cultural Heritage Value or Interest</i>	<p><b>Historical:</b></p> <ul style="list-style-type: none"> <li>-Lot occupied by T. Galt and Hugh Cotter in nineteenth-century mapping</li> <li>-In the vicinity of houses in the 1954 aerial photograph</li> </ul> <p><b>Design:</b></p> <ul style="list-style-type: none"> <li>-One-and-a-half storey house</li> <li>-Dormer window at the front façade</li> <li>-Steeply gabled roof with two gables along the front façade</li> </ul> <p><b>Context:</b></p> <ul style="list-style-type: none"> <li>-Located on the north side of Birchview Drive in an urban area within the City of Mississauga</li> <li>-Reflects early twentieth-century settlement in the Township of Toronto</li> </ul>	 <p>(Google Streetview)</p>
BHR 2	1207 Lorne Park Road	Residence	Designated, Part IV <i>Ontario Heritage Act</i> By-law 281-83	<p><b>Historical:</b></p> <ul style="list-style-type: none"> <li>-House known as the Herbert Denison House, built by Herbert Denison circa 1890</li> <li>-Tower was moved to the site</li> </ul> <p><b>Design:</b></p> <ul style="list-style-type: none"> <li>-One-and-a-half storey vernacular design that had been added to over time</li> <li>-Wrap-around verandah with bellcast mansard roof</li> <li>-Steeply pitched gable roof with a dormer window at the front</li> <li>-Gingerbread in all the gables and along the eaves</li> <li>-Two-and-a-half storey projecting octagonal tower</li> <li>-Gothic window in front gable</li> <li>-Aluminum siding is a later addition</li> </ul> <p><b>Context:</b></p> <ul style="list-style-type: none"> <li>-Located on the east side of Lorne Park Road in an urban area within the City of Mississauga</li> <li>-Reflects nineteenth-century settlement in the Township of Toronto</li> </ul>	 <p>(<a href="http://www.mississauga.ca/portal/discover/heritagedesignatedproperties">http://www.mississauga.ca/portal/discover/heritagedesignatedproperties</a>)</p>

Feature ID	Address/Location	Resource Type	Heritage Recognition	Description	Photos
BHR 3	1173 Queen Victoria Avenue	Residence	Designated, Part IV, <i>Ontario Heritage Act</i> By-law 002-2002	<p><b>Historical:</b></p> <ul style="list-style-type: none"> <li>-Known as the Canavan House, it was built for the Canavan family</li> <li>-Constructed <i>circa</i> 1914</li> </ul> <p><b>Design:</b></p> <ul style="list-style-type: none"> <li>-One-and-a-half storey rough cast stucco residence, with half-timbered second-storey and five-bay front façade</li> <li>-Steeply pitched side gable roof</li> <li>-Large dormer with three bays and casement windows in each</li> <li>-35 paned windows on the south and west elevations</li> <li>-21 paned door on the centre of the west elevation flanked by sidelights of 21 panes each</li> </ul> <p><b>Context:</b></p> <ul style="list-style-type: none"> <li>-Located on the north side of Queen Victoria Avenue in an urban area in the City of Mississauga</li> <li>-Reflects early twentieth-century settlement in the Township of Toronto</li> </ul>	 <p>(<a href="http://www.mississauga.ca/portal/discover/heritagedesignatedproperties">http://www.mississauga.ca/portal/discover/heritagedesignatedproperties</a>)</p>





**BURNSIDE**

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## Appendix C

### Evaluation of Alternative Solutions

## Appendix C: Evaluation of Alternative Solutions

CRITERIA FOR EVALUATING ALTERNATIVES		Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
ALTERNATIVE DESCRIPTIONS		Continue to maintain the existing sanitary sewer in the Lornewood Creek tributary corridor in current state.	Rehabilitate the existing sanitary sewer in the Lornewood Creek tributary corridor by lining the existing pipe and repairing maintenance holes.	Construct a new sanitary sewer within an existing public right-of-way or proposed easements. Abandon the existing sanitary sewer in the Lornewood Creek tributary corridor.
<b>A NATURAL ENVIRONMENT</b>				
<b>1</b>	<b>Impacts to trees and vegetation communities</b>	No tree or vegetation removal.	Rehabilitation of the existing sanitary sewer will require some tree and vegetation removal within the Lornewood Creek tributary corridor to provide clearance for construction equipment and access to maintenance hole areas.	Abandonment of the existing sanitary sewer will require some tree and vegetation removal within the Lornewood Creek tributary corridor to provide clearance for construction equipment and access to maintenance hole areas.
	<i>Rating</i>			
<b>2</b>	<b>Impacts to terrestrial habitat</b>	No impacts from construction, but could be more long-term impacts due to higher risk of system failure.	Rehabilitation of the existing sanitary sewer will require some tree and vegetation removal within the Lornewood Creek tributary corridor to provide clearance for construction equipment and access to maintenance hole areas, which will result in some terrestrial habitat loss and may result in temporary disruption to terrestrial habitat during construction. Potential for long-term impacts due to higher risk of system failure.	Abandonment of the existing sanitary sewer will require some tree and vegetation removal within the Lornewood Creek tributary corridor to provide clearance for construction equipment and access to maintenance hole areas, which will result in some terrestrial habitat loss and may result in temporary disruption to terrestrial habitat during construction.
	<i>Rating</i>			
<b>3</b>	<b>Impacts to aquatic habitat</b>	No impacts to aquatic habitat as a result of construction activities. Making no improvements to the existing sanitary sewer and continuing to operate the sewer in the Lornewood Creek tributary corridor (hazard lands which are susceptible to settlement and erosion) will increase risk of system failure. In the event of a system failure, surface water quality would be impacted which would in turn adversely impact the aquatic habitat of the tributary and downstream watercourses.	Rehabilitation of the existing sanitary sewer is not anticipated to impact aquatic habitat.	No impact to aquatic habitat as a result of construction of new sanitary sewer. Some soil disturbance during abandonment works around maintenance hole areas. Potential impacts to surface water as a result of these activities which can be readily mitigated, and therefore no/minimal impacts to the aquatic habitat are anticipated.
	<i>Rating</i>			
<b>4</b>	<b>Disturbance to Soil/Subsurface</b>	No impacts over existing conditions.	Some soil disturbance during rehabilitation works around maintenance hole areas. With appropriate Erosion and Settlement Control (ES&C) Plan, impacts can be mitigated.	Some soil disturbance during abandonment works around maintenance hole areas. Some soil disturbance during preparation of entry and exit shafts for directional drilling and open cut areas. With appropriate Erosion and Settlement Control (ES&C) Plan, impacts can be mitigated.
	<i>Rating</i>			
<b>5</b>	<b>Impacts to surface water quality</b>	No impact to surface water as a result of construction activities. Potential risk of system failure would increase potential impacts to surface water quality.	Potential impacts to surface water as a result of construction activities. However, with appropriate ESC Plan, impacts can be mitigated. Potential risk of system failure (over time) would increase potential impacts to surface water quality.	Potential impacts to surface water as a result of abandonment activities. However, with appropriate ESC Plan, impacts can be mitigated.
	<i>Rating</i>			
<b>6</b>	<b>Impacts to groundwater quality</b>	No impact to groundwater as a result of construction activities. Making no improvements to the existing sanitary sewer and continuing to operate the sewer in the Lornewood Creek tributary corridor (hazard lands which are susceptible to settlement and erosion) will increase risk of system failure, which would cause impacts to groundwater quality. The study area is in a HVA (highly vulnerable aquifer) area [Ontario Clean Water Act, 2006].	Rehabilitation of existing sanitary sewer will improve conditions of system; however, in the long-term, continuing to operate the sewer in a Lornewood Creek tributary corridor (hazard lands which are susceptible to settlement and erosion) will increase risk of system failure, which would cause impacts to groundwater quality. The study area is in a HVA (highly vulnerable aquifer) area [Ontario Clean Water Act, 2006].	Potential requirement for dewatering for the construction of the new sanitary sewer (for any open cut works). Impacts from dewatering can be readily mitigated. The study area is in a HVA (highly vulnerable aquifer) area [Ontario Clean Water Act, 2006].
	<i>Rating</i>			
<b>SUMMARY NATURAL ENVIRONMENT</b>				

## Appendix C: Evaluation of Alternative Solutions

CRITERIA FOR EVALUATING ALTERNATIVES		Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
<b>B</b>	<b>SOCIO-ECONOMIC/CULTURAL ENVIRONMENT</b>			
1	<b>Compatibility with surrounding land uses</b>	Continued operation of the sanitary sewer within private property is permitted; however, not as compatible as operation of a sewer in a public right-of-way.	Continued operation of the sanitary sewer within private property is permitted; however, not as compatible as operation of a sewer in a public right-of-way.	Operation of a sanitary sewer within a public right-of-way provides the most compatibility with surrounding land uses.
	<i>Rating</i>			
2	<b>Temporary disruption to local residents and community during construction</b>	No impacts over existing conditions.	Rehabilitation of the existing sanitary sewer will require some tree and vegetation removal within the Lornewood Creek tributary corridor to provide clearance for construction equipment and access to maintenance hole areas, which will result in some temporary disruption to the rear lots of residential properties backing onto the tributary corridor.	Abandonment of the existing sanitary sewer will require some tree and vegetation removal within the Lornewood Creek tributary corridor to provide clearance for construction equipment and access to maintenance hole areas, which will result in some temporary disruption to the rear lots of residential properties backing onto the tributary corridor. Construction of the new sanitary sewer can be undertaken predominantly through directional drilling, which will minimize temporary disruptions at ground level; however, there will be some temporary disruption to residents and the community during the setup and operation of drilling shaft areas. Some areas will require open cut, which will result in slightly more temporary disruptions at ground level; however, access to residences will be maintained during construction.
	<i>Rating</i>			
3	<b>Health and safety of operations and maintenance staff</b>	Current access to existing sanitary sewer is through side and rear lot easements. Easements are heavily covered with vegetation, which makes access to maintenance holes difficult and can pose a health and safety risk to Regional Operations and Maintenance staff.	Current access to existing sanitary sewer is through side and rear lot easements. Easements are heavily covered with vegetation, which makes access to maintenance holes difficult and can pose a health and safety risk to Regional Operations and Maintenance staff.	Construction of a new sanitary sewer in a public right-of-way will provide safer access to the system for Regional Operations and Maintenance staff.
	<i>Rating</i>			
4	<b>Ability to meet the long-term sanitary servicing needs of the local residents and community</b>	The existing sanitary sewer is degraded and will not be able to meet the long-term sanitary servicing needs if left unmitigated.	Rehabilitation of the existing sanitary sewer will provide more reliable sanitary servicing for local residents and community. However, in the long-term, continuing to operate the sewer in a Lornewood Creek tributary corridor (hazard lands which are susceptible to settlement and erosion) will increase risk of system failure and may require replacement with a new system in long term.	Establishing a new sanitary sewer outside of the Lornewood Creek tributary will provide the most reliable system to meet the long-term sanitary servicing needs of the local residents and community.
	<i>Rating</i>			
5	<b>Impacts to archaeological resources</b>	No impacts over existing conditions.	No impacts to archaeological resources as the proposed work is on already disturbed area.	No impacts to archaeological resources as the proposed work is on already disturbed area.
	<i>Rating</i>			
6	<b>Impacts to built heritage resources and cultural heritage landscapes</b>	No impacts over existing conditions.	Construction activities and staging will be suitably planned and undertaken to avoid impacts to the identified cultural heritage resources. Minimal impacts are anticipated. A pre-construction surveys of physical property and potential vibration and settlement monitoring can be conducted during construction to mitigate potential impacts.	Construction activities and staging will be suitably planned and undertaken to avoid impacts to the identified cultural heritage resources. Minimal impacts are anticipated. A pre-construction surveys of physical property and potential vibration and settlement monitoring can be conducted during construction to mitigate potential impacts.
	<i>Rating</i>			
7	<b>Land acquisition/easement requirements</b>	Existing access for maintenance is limited.	Existing access for maintenance is limited.	Will require some temporary construction easements for the direction drilling operations.
	<i>Rating</i>			
8	<b>Impact on nearby businesses during construction</b>	No impacts over existing conditions.	No impacts over existing conditions.	Construction of a new sanitary sewer will require implementation of entry and exit shafts for directional drilling and some open cut areas. Access to existing businesses will be maintained during construction.
	<i>Rating</i>			
<b>SUMMARY SOCIO-ECONOMIC/CULTURAL ENVIRONMENT</b>				

## Appendix C: Evaluation of Alternative Solutions

CRITERIA FOR EVALUATING ALTERNATIVES		Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
<b>C</b>	<b>TECHNICAL/OPERATIONAL ENVIRONMENT</b>			
3	<b>Ease/complexity of construction</b>	No impacts over existing conditions.	Rehabilitation of the existing sanitary sewer may involve pipe re-lining and repairing maintenance holes. The complexity of the work would mostly be related to accessing the work/repair areas through the tributary corridor. Generally, this effort is less complicated than construction of a new sanitary sewer (Alternative 3).	Construction of the new sanitary sewer will be undertaken through directional drilling, which involves a more complex process in comparison to both other alternatives, including but not limited to setup of drilling shaft areas at various locations along the new sanitary sewer, and existing sanitary sewer abandonment activities.
	<i>Rating</i>	●	◐	◑
5	<b>Reliability of system design/risk of failure</b>	The existing sanitary sewer is degraded and risk of failure is increased if left unmitigated.	Rehabilitating the existing sanitary sewer will provide for a more reliable system than Alternative 1; however, continue operation of a sanitary sewer within a Lornewood Creek tributary corridor will result in degradation of the system over time and increased risk of failure.	Bringing the sanitary sewer service into the public right-of-way will eliminate the potential for degradation of the system due to erosion or settlement within the Lornewood Creek tributary corridor and thereby substantially reducing the risk of failure.
	<i>Rating</i>	○	◐	●
6	<b>Ability to meet Peel Region's latest sanitary sewer design criteria (Design, Specification, and Procedures Manual)</b>	Does not meet Peel Region's latest sanitary sewer design criteria; which requires appropriate depth of the sewer system in the valley, easement with appropriate offset and easy access of the maintenance vehicles in the easement.	Does not meet Peel Region's latest sanitary sewer design criteria; which requires easy access of the maintenance vehicles in the easement.	Meets Peel Region's latest sanitary sewer design criteria.
	<i>Rating</i>	○	◐	●
7	<b>Ease/complexity of operation and maintenance</b>	Due to limited access, the existing sanitary sewer is not easy to maintain.	No changes will be made to the existing access with rehabilitation; therefore, due to limited access, the rehabilitated sanitary sewer will not be easy to maintain.	Bringing the sanitary sewer service into the public right-of-way will enable easy and safe access to the system for ongoing operation and maintenance activities.
	<i>Rating</i>	○	○	●
	<b>SUMMARY TECHNICAL/OPERATIONAL ENVIRONMENT</b>	◐	◐	◐

CRITERIA FOR EVALUATING ALTERNATIVES		Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
<b>D</b>	<b>FINANCIAL ENVIRONMENT</b>			
1	<b>Capital construction cost (including cost of land acquisition)</b>	No impacts over existing conditions.	Cost of rehabilitation will be significantly less than cost of building new infrastructure in a public right-of-way.	Cost of construction is significantly higher than rehabilitation of existing sewer.
	<i>Rating</i>	●	◐	○
2	<b>Operation and Maintenance cost</b>	Cost to adequately maintain the existing system would be significantly greater than the other alternatives and this cost would continue to increase over time as the system degrades further.	Operation and maintenance costs would be reduced in the short-term once the system was rehabilitated; however, over time the costs to maintain the system will increase as ongoing erosion and settlement of soils in the Lornewood Creek tributary corridor continues to impact the system.	Operation and maintenance costs would be relatively low since the access to the system would be greatly improved from existing conditions.
	<i>Rating</i>	○	◐	●
	<b>SUMMARY FINANCIAL ENVIRONMENT</b>	◐	◐	◐

## Appendix C: Evaluation of Alternative Solutions

CRITERIA FOR EVALUATING ALTERNATIVES		Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
<b>E</b>	<b>Adherence to Problem and Opportunity Statement</b>			
<b>1</b>	<b>Provides a viable, safe, structurally and hydraulically sound sanitary sewerage system</b>	No.	Partially.	Yes.
<b>2</b>	<b>Provides improved access to the sewerage system for maintenance purposes</b>	No.	No.	Yes.
<b>SUMMARY Adherence to Problem and Opportunity Statement</b>		<b>Not Preferred</b>	<b>Partially Preferred</b>	<b>Preferred</b>

CRITERIA FOR EVALUATING ALTERNATIVES	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
<b>OVERALL SUMMARY</b>	<b>Not Preferred</b>	<b>Less Preferred</b>	<b>Most Preferred</b>

### ORDER OF PREFERENCE

- Least Preferred
- Less Preferred
- Somewhat Preferred
- More Preferred
- Most Preferred



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## Appendix D

### Consultation

Notice of Commencement and Public Information Centre, Letters, and Response Forms	D1
Project Contact list	D2
Public Information Centre Display Boards	D3
Public Correspondence	D4
Indigenous Community Correspondence	D5
Agency Correspondence	D6
Utility Correspondence	D7



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**Appendix D1**

**Notice of Commencement and Public  
Information Centre, Letters and Response Forms**

## Environmental Assessment Study

### NOTICE OF STUDY COMMENCEMENT AND PUBLIC INFORMATION CENTRE

#### New Sanitary Sewer

#### Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

#### The Study

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. These improvements are required to maintain the system connection to the existing sanitary sewer. The study area is shown on the map.

Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

#### The Process

The Study will evaluate alternative solutions with consideration for the natural, cultural, economic and technical environments. A preferred solution will be recommended in consultation with the public, Indigenous communities and regulatory agencies. It will have the least long-term impact to the environment and public, the optimum cost and the maximum number of avoidable impacts to the community. A project file will be prepared for public review at the end of the Study.

#### Your Input Is Important – We Want to Hear from You

A key element of the EA planning process is consultation with the community. Early and active discussions will be critical to identify ways to reduce the impacts of this project to residents, businesses, traffic and pedestrians, while evaluating and selecting the preferred solution.

A Public Information Centre (PIC) will be held to present the findings of the Study and to provide an opportunity for feedback. The PIC will be held:

**Date:** November 27, 2018

**Time:** 6 to 8 p.m.

**Location:** Lorne Park Hall

For more information on the project visit [peelregion.ca](http://peelregion.ca), click on Public Works, Water & Wastewater, Environmental Assessments, Current Water & Wastewater Projects EAs, Mississauga, New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road.

#### Comments

If you are unable to attend the PIC and would like to provide comments or have questions, or if you would like to be added to the Project Contact List, please contact the Project Manager listed below.

Olena Gordiyenko, P.Eng.

Project Manager, Wastewater Capital

[Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)

905-791-7800, ext.7843



This notice was first issued on November 15, 2018

With the exception of personal information, all comments will become part of the public record of the study. The study is being conducted according to the requirements of the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act*.

## Public Works

10 Peel Centre Dr.  
Suite B  
Brampton, ON  
L6T 4B9  
tel: 905-791-7800

peelregion.ca

November 19, 2018

Via: Email

«Title» «First\_Name» «Last\_Name»

«Position»

«AgencyOrganization»

«Address\_1»

«Address\_2»

«City», «Province» «Postal\_Code»

Email

Dear «Title» «First\_Name» «Last\_Name»

**Re: Notice of Study Commencement and Public Information Centre  
New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria  
Avenue and Lorne Park Road  
Municipal Class Environmental Assessment Study  
Project No.: 300042560.1000**

The Region of Peel has initiated a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road.

The existing sanitary sewer running parallel to the Lornewood Creek tributary that collects sewerage from private residential properties in the Study Area in the City of Mississauga is over 40 years old and is in poor condition and the Region has limited access for maintenance. Therefore, the Region requires a solution for the replacement of the existing sanitary sewer including improvements to other contributing sanitary sewers in the area and improved access through placing new infrastructure within existing rights-of-way or proposed easements.

The Study will evaluate a number of alternative improvement options with consideration for the natural, cultural, economic and technical environments. A preferred solution will be recommended in consultation with the public, Indigenous communities and regulatory agencies. It will have the least long-term impact to the environment and public, the optimum cost and the maximum number of avoidable impacts to the community. At the end of the Study, a project file will be prepared for public review. The environment will be assessed through a review of existing databases and information sources as well as field reconnaissance, including a Stage I Archaeological Assessment. The approximate extent of the Study Area for this project are shown on the Map provided in the attached Notice of Commencement.

The EA will be conducted as a Schedule B in accordance with the "Municipal Class Environmental Assessment" (Municipal Engineers Association, October 2000, as amended in 2007, 2011 and 2015) which is an approved process under the *Ontario Environmental Assessment Act*. A key element of the EA planning process is

## Public Works

10 Peel Centre Dr.  
Suite B  
Brampton, ON  
L6T 4B9  
tel: 905-791-7800

[peelregion.ca](http://peelregion.ca)

consultation with the community. Early and active discussions will be critical to identify ways to reduce the impacts of this project to local residents, businesses, traffic and pedestrians, while evaluating and selecting the preferred solution.

At this stage of the process, the Region of Peel requests that your community leaders complete the enclosed Response Form (to be returned via email by December 13, 2018) and provide any comments and / or concerns with the proposed project. Specifically, we are seeking input on:

- Any preliminary comments or concerns that your community has on the proposed project.
- The level of interest in the project from the community for further engagement.
- The best methods to communicate with your community.

Input and comments received from Indigenous communities, the public and agencies will be incorporated into the planning and design of this project.

Your input and questions are encouraged. To provide the study team with your comments, please email [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca), or for further project information please contact Olena Gordiyenko at 905-791-7800 ext.7843.

Your participation in this EA study is much appreciated.

Yours truly,

Olena Gordiyenko, P.Eng.  
Project Manager, Wastewater Capital

Enclosure(s) Notice of Commencement and Public Information Centre  
Response Form

cc: Jennifer Vandermeer, Burnside (enc.) (Via: Email)

042560 NOCm Indigenous Community Letter  
16/11/2018 3:23 PM

## Project Response Form

**Notice of Study Commencement and Public Information Centre  
New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue  
and Lorne Park Road  
Class Environmental Assessment Study**

Name: \_\_\_\_\_  
(Please Print)

Phone No.: \_\_\_\_\_

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

<b>If there is a different contact for your organization that we should follow-up with, please let us know:</b>	
<b>Name:</b>	
<b>Address:</b>	
<b>Phone:</b>	
<b>Email:</b>	

**The study is in its initial stages and information can be provided as it progresses.**

**Please assist us in identifying your interests:**

		YES	NO
1.	Do you wish to participate in this project?		
2.	If the answer to Question 1 is "no," would you like to be removed from contact list?		
3.	Are there areas of cultural significance to your community in close proximity to the study area that the Region should be aware of? (If yes, please provide details below)		
4.	Is the project within an area subject to a land claim?		
5.	Would your community like to meet with the Region to discuss this study?		

*Continued on back*





November 15, 2018

**Via: Email «Email»**

«First\_Name» «Last\_Name»  
«Position»  
«Agency\_Organization»  
«Address\_1»  
«Address\_2»  
«City», «Prov» «Postal\_Code»

Dear «First\_Name»:

**Re: Notice of Study Commencement  
New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue  
and Lorne Park Road  
Municipal Class Environmental Assessment Study  
Project No.: 300042560.1000**

The Region of Peel has initiated a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. R.J. Burnside & Associates Limited (Burnside) has been retained by the Region of Peel.

The existing sanitary sewer running parallel to the Lornewood Creek tributary that collects sewerage from private residential properties in the Study Area in the City of Mississauga is over 40 years old and is in poor condition and the Region has limited access for maintenance. Therefore, the Region requires a solution for the replacement of the existing sanitary sewer including improvements to other contributing sanitary sewers in the area and improved access through placing new infrastructure within existing rights-of-way or proposed easements.

The Study will evaluate a number of alternative improvement options with consideration for the natural, cultural, economic and technical environments. A preferred solution will be recommended in consultation with the public, Indigenous communities and regulatory agencies. It will have the least long-term impact to the environment and public, the optimum cost and the maximum number of avoidable impacts to the community. At the end of the Study, a project file will be prepared for public review. The environment will be assessed through a review of existing databases and information sources as well as field reconnaissance. The approximate extent of the Study Area for this project are shown on the Map provided in the attached Notice of Commencement.

The EA will be conducted as a Schedule B in accordance with the "Municipal Class Environmental Assessment" (Municipal Engineers Association, October 2000, as amended in 2007, 2011 and 2015) which is an approved process under the *Ontario Environmental*



## Project Response Form

**Notice of Study Commencement**  
**New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road**  
**Class Environmental Assessment Study**

**We are interested in knowing your thoughts about this project. Please check the most appropriate statement:**

- We wish to be kept informed about the project’s progress and would like to remain on the study contact list. We have comments to provide. They are:
  - Attached
  - Will be provided by the date specified below
- We wish to be kept informed about the project’s progress and would like to remain on the study contact list. At the present time, we have no significant concerns and/or comments to provide.
- We have no concerns about the project and wish to be removed from the study contact list.

**Please identify any comments or concerns your agency may have at this time.**

a) What do you perceive to be the positive and/or negative effects of this project?

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b) Do you perceive any “critical” issues that must be addressed as part of this project?

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General Comments:

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Name: \_\_\_\_\_  
(Please Print)

Phone No.: \_\_\_\_\_

Agency: \_\_\_\_\_

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Please return this completed form by December 13, 2018 to one of the project team members below:

**Olena Gordiyenko, P.Eng.**  
**Project Manager, Wastewater Capital**  
**Region of Peel**  
**10 Peel Center Dr., 4th Floor Suite B**  
**Brampton, ON L6T 4B9**  
**Tel: 905-791-7800 x 7843**  
**E-Mail: [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)**



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## Appendix D2

### Project Contact List

Environmental Assessment Study for New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Region of Peel

Agency/ Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Prov.	Postal Code	Email	Telephone	Fax	NOCm/PIC Delivery Date	NOCp Delivery Date	Comments Received	Response Given
Ministry of Infrastructure - Ontario Growth Secretariat, Growth Policy, Planning and Analysis Branch	Ms.	Andrea	Roberts	Manager Growth Policy	777 Bay Street	4th Floor, Suite 425	Toronto	ON	M5G 2E5	andrea.roberts@ontario.ca	647-283-0208	(416) 325-7403	16-Nov-18	11-Jul-19		
Infrastructure Ontario	Mr.	Alex	Lye	Environmental Specialist	1 Dundas Street, West, Suite 2000		Toronto	ON	M5G 1Z3	alex.lye@cisl.ca	413-327-2755		16-Nov-18	11-Jul-19		
Metrolinx	Mr.	Jason	Ryan	Manager, Environmental Programs	20 Bay Street	Suite 600	Toronto	ON	M5J 2W3	Jason.Ryan@gotransit.com	416-869-3600 ext. 5478	416-869- 9342	16-Nov-18	11-Jul-19		
Ministry of the Environment, Conservation and Parks - Central Region Technical Support Section										eanotification.cregion@ontario.ca			16-Nov-18	11-Jul-19		181116_Email A.Banihashemi. Provided Notice of Commencement and Project Information Form to EA Central Region.
Ministry of the Environment, Conservation and Parks Environmental Approvals Branch										MEA.NOTICES.EAAB@ontario.ca				11-Jul-19		
Ministry of the Environment, Conservation and Parks - Central Region	Mr.	Trevor	Bell	Environmental Resource Planner & EA Coordinator	Place Nouveau 5775 Yonge Street	8th Floor	Toronto	ON	M2M 4J1	trevor.bell@ontario.ca	416-326-3577		16-Nov-18	11-Jul-19	181113_Email T.Bell. Advised J.Vandermeer to proceed with list of Indigenous communities provided on 181012.  181123_Email T.Bell. Letter response sent to Region in response to Notice of Commencement advising of items to cover in Project File and Indigenous consultation.  190607_Email T.Bell. Letter Response sent to the Region in response to request for review of Draft PFR, informing that MECF is satisfied with the draft Report and that good planning and level of detail is included in the project document, with a minor comment with respect to mitigation of dust generation during construction phase.	181012_Email J.Vandermeer. Email to T.Bell to confirm list of Indigenous communities to be consulted for project.  181113_Email J. Vandermeer. Email to T.Bell to acknowledge moving forward with list of Indigenous communities.  190607_Email J. Vandermeer. Response sent to T.Bell thanking MECF for completing draft PFR review and that the Project Team would incorporate MECF's comments into the final PFR.
Ministry of Health and Long Term Care	Mr.	Tony	Amalfa	Manager, Environmental Health Policy and Programs	393 University Avenue	21st Floor	Toronto	ON	M7A 2S1	tony.amalfa@ontario.ca	416-327-7624	416-327-0984	16-Nov-18	11-Jul-19		
Ministry of Health and Long Term Care	Ms.	Carrie	Warring	Acting Manager, Environmental Health Policy and Programs	393 University Avenue	21st Floor	Toronto	ON	M7A 2S1	<a href="mailto:Carrie.Warring@ontario.ca">Carrie.Warring@ontario.ca</a>	416-212-6394	416-327-0984	16-Nov-18	11-Jul-19		
Ministry of Municipal Affairs and Housing - Central Municipal Services Office	Mr.	Ross	Lashbrook	Manager, Community Planning and Development (East)	College Park 777 Bay Street	13th Floor	Toronto	ON	M5G 2E5	ross.lashbrook@ontario.ca	416-585-6063	416-585-6882	16-Nov-18	11-Jul-19		
Ministry of Municipal Affairs and Housing	Mr.	Charles	O'Hara	Director, Growth Policy	College Park 777 Bay Street	23rd Floor Suite 2304	Toronto	ON	M5G 2E5	charles.o'hara@ontario.ca	416-325-5794	416-325-7403	16-Nov-18	11-Jul-19		
Ontario Growth Secretariat Ministry of Natural Resources and Forestry	Mr.	Bohden	Kowalyk	District Planner	50 Bloomington Road		Aurora	ON	L4G 0L8	bohden.kowalyk@ontario.ca	905-713-7387	905-713-7429	16-Nov-18	11-Jul-19	180911_Meeting M.Heaton. MNRF attended a meeting with Project Staff and CVC to discuss the project.	
District Office Ministry of Tourism, Culture and Sport	Ms.	Laura	Hatcher	Team Lead, Heritage Land Use Planning (Acting), Culture Services Unit	401 Bay Street	Suite 1700	Toronto	ON	M7A 0A7	laura.e.hatcher@ontario.ca	416-314-3108	416-314-7175	16-Nov-18	11-Jul-19		
City of Mississauga				City Clerk	300 City Centre Drive		Mississauga	ON	L5B 3C1		905-615-4311		15-Nov-18	11-Jul-19	181128_Email A.Soaes. Requested that the City staff be circulated on project correspondence.	
Councillor Ward 2	Ms.	Karen	Ras	Councillor Ward 2	300 City Centre Drive		Mississauga	ON	L5B 3C1	karen.ras@mississauga.ca	905-896-5200		16-Nov-18	11-Jul-19	181024_Emails G.Gill. Advised that Councillor Ras approves PIC date and will attend. Asked for Notice to be sent to Councillor Ras.  181126_Email G.Gill. Asked on behalf of Councillor Ras to clarify the process of who receives project notification.  181128_Email G.Gill. Asked on behalf of Councillor Ras to request a copy of the PIC presentation.  Councillor attended the PIC.	180829_Email O.Gordiyenko. Provided advance notification of project to Councillor.  181017_Email O.Gordiyenko. Advised Councillor of potential PIC date.  181116_Email O.Gordiyenko. Provided copy of Notice of PIC to Councillor and asked if briefing is desired prior to PIC.  181126_Email O.Gordiyenko. Clarified the requirements for public notification under MCEA process and confirmed that all interested individuals will be added to the project contact list.  181129_Email O.Gordiyenko. Provided copy of PIC presentation as requested, PIC sign-in list and the two comment forms received from attendees.

Environmental Assessment Study for New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Region of Peel

Agency/ Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Prov.	Postal Code	Email	Telephone	Fax	NOCm/PIC Delivery Date	NOCp Delivery Date	Comments Received	Response Given
Mississaugas of the Credit First Nation	Ms.	Fawn	Sault	Consultation Manager	2789 Mississauga Road	RR #6	Hagersville	ON	N0A 1H0	fawn.sault@mncfn.ca	905-768-4260		19-Nov-18	11-Jul-19	181116_Email M.DeVries. Received by Jordan (through info@rjburnside.com), providing a letter outlining rights of community, standards and guidelines with respect to archaeology work and request from community to have FLRs involved in archaeology and ecology field assessments.  190225_Email M.DeVries. Advised that MCFN has not additional comments on the draft Stage 1 AA Report. Noted request for participation in Stage 2 fieldwork.	181121_Phone J.Vandermeer. Phone call with F.Sault to provide update on project following circulation of NOCm.  181130_Email J.Vandermeer. Response to 181116 email from M.DeVries. Documented phone discussion with F.Sault and advised that a copy of the draft Stage 1 AA Report would be provided in early 2019.  190212_Email J.Vandermeer. Provided draft Stage 1 AA Report to MCFN for review.  190225_Email J.Vandermeer. Thanked M.DeVries for review of the draft Stage 1 AA Report.
Haudenosaunee Confederacy	Mr.	Leroy	Hill	Secretary to Haudenosaunee Confederacy	2634 6th Line	RR#2	Ohsweken	ON	N0A 1H0	jocko@sixnationsns.com	Cell: 519-717-7326		19-Nov-18	11-Jul-19		
Haudenosaunee Development Institute	Ms.	Hazel	Hill	Interim Director	Six Nations of the Grand River Territory, 16 Sunrise Court	Suite 407, P.O. Box 714	Ohsweken	ON	N0A 1M0	hdi2@bellnet.ca	(519) 755-2769	(519) 445-2389	19-Nov-18	11-Jul-19	190213_Phone T.General. Follow-up call with J.Vandermeer to confirm that HDI had received the NOCm and that she would be recirculating to the team at HDI to confirm if they had any interest in the project.	190212_Phone J.Vandermeer. Follow-up call left message in general inbox to inquire on receipt of NOCm and interest in project.
Six Nations of the Grand River	Ms.	Dawn	LaForme	Consultation Admin Assistant	2498 Chiefwood Road	P.O. Box 5000	Ohsweken	ON	N0A 1M0	diaforme@sixnations.ca	519-445-2201 x5431		19-Nov-18	11-Jul-19		190212_Phone J.Vandermeer. Follow-up call with D.LaForme to inquire on receipt of NOCm and interest in project.  190212_Email J.Vandermeer. Follow-up email to provide copy of NOCm and request response to confirm level of interest in project.
Six Nations of the Grand River	Ms.	Joanne	Thomas	Consultation Supervisor	2498 Chiefwood Road	P.O. Box 5000	Ohsweken	ON	N0A 1M0	jthomas@sixnations.ca	519-445-2201		19-Nov-18	11-Jul-19		
Métis Nation of Ontario				Métis Nation of Ontario - Lands, Resources and Consultations						consultations@metisnation.org			19-Nov-18	11-Jul-19		190212_Phone J.Vandermeer. Follow-up call left message for Linda Norheim (x 102) to inquire on receipt of NOCm and interest in project.
Bell c/o Telecon	Ms.	Elaine	Oakley		100 Borough Drive	Floor F5	Toronto	ON	M1P 4W2	bell.moc@telecon.ca, MOC.bell@bell.ca	416-296-6587		16-Nov-18	11-Jul-19		
GT Fiber c/o Telecon	Mr.	Saad	Qayume		7777 Weston Rd.	Floor 5 (Attn: GT Team)	Vaughan	ON	L4L 0G9	gt.moc@telecon.ca	905-470-2112 ext. 40265	905-212-0664	16-Nov-18	11-Jul-19		
Telus c/o Telecon	Ms.	Indira	Sharma		7777 Weston Rd.	Floor 6 (Attn: Telus Team)	Vaughan	ON	L4L 0G9	telus.utilitymarkups@telecon.ca	905-470-2112 ext. 40235	905-470-8956	16-Nov-18	11-Jul-19		
Enbridge Gas Distribution Inc.	Mr.	Vince	Cina	Supervisor, Planning and Design	500 Consumers Road		North York	ON	M2J 1P8	vince.cina@enbridge.com			16-Nov-18	11-Jul-19		
Enbridge Gas Distribution Inc.	Mr.	Ben	Lucki	Construction Supervisor, Planning and Design	501 Consumers Road		North York	ON	M2J 1P9	benjamin.lucki@enbridge.com	416-278-2950 (cell)		16-Nov-18	11-Jul-19		
Enbridge Pipelines Inc.	Ms.	Ann	Newman	Crossing Co-ordinator	1086 Modeland Road.	Building 1050, 1st Floor	Sarnia	ON	N7S 6L2	<a href="mailto:ann.newman@enbridge.com">ann.newman@enbridge.com</a> <a href="mailto:est.reg.crossing@enbridge.com">est.reg.crossing@enbridge.com</a>			16-Nov-18	11-Jul-19	181116_Email A.Robinson. Enbridge Pipelines stated there were no assets in the project area.	
Enbridge Pipelines Inc.	Mr.	Arnel	Mangalino	Network Analyst	500 Consumers Rd.	4th Floor	North York	ON	M2J 1P8	markups@enbridge.com	416-758-7949	416-758-4373	16-Nov-18	11-Jul-19		
Enbridge Pipelines Inc.				Lands & ROW Administrator - Crossings, Eastern Region	Western Research Park	1086 Modeland Road, Bldg. 1050 1st Floor	Sarnia	ON	N7S 6L2	est.reg.crossing@enbridge.com	519-333-6753	519-339-0510	16-Nov-18	11-Jul-19		
Alectra Utilities	Mr.	Chris	Kafel	Manager, Design and Support Services	3240 Mavis Road		Mississauga	ON	L5C 3K1	chris.kafel@alecrautilities.com	905-283-4036	905-566-2737	16-Nov-18	11-Jul-19		
Alectra Utilities	Mr.	Kevin	Louis	Underground Rebuild Supervisor	3240 Mavis Road		Mississauga	ON	L5C 3K1	kevin.lewis@alecrautilities.com	905-283-4264	905-566-2737	16-Nov-18	11-Jul-19		
Hydro One Networks Inc., OP&CS Department - OGCC	Mr.	Mark	Hamilton		230 Bayview Dr.		Barrie	ON	L4N 4Y8	tpumarkup@hydroone.com	705-797-4142	705-797-4199	16-Nov-18	11-Jul-19		
Hydro One Telecom	Mr.	Ian	Mitchell		65 Kelfield St.		Toronto	ON	M9W 5A3	hotosp@hydroone.com	416-240-6701	416-240-6790	16-Nov-18	11-Jul-19	181205_Email L.McClevis. Indicated that Hydro One does not own or operate underground high voltage transmission facilities in the area.	
Rogers	Ms.	Monica	Lapointe	Markup Coordinator	3574 Wolfedale Road		Mississauga	ON	L5C 3T7	GTAW.markups@rci.rogers.com	905-361-4953	905-273-5233	16-Nov-18	11-Jul-19	181228_Email P.Chen. Provided Rogers markups to the Project Team.	
Trans Canada Corporation MHBC Planning, Urban Design & Landscape Architecture	Ms.	Darlene	Presley	Planning Co-ordinator, EA contact	442 Brant Street, Suite 204		Burlington	ON	L7R 2G4	dpresley@mhbcplan.com	905-639-8686 ext. 229 Cell: 705-627-2302	905-761-5589	16-Nov-18	11-Jul-19		
Trans-Northern Pipelines Inc.	Mr.	Satish	Korpai	Coordinator, Crossings and Facilities	45 Vogell Road	Suite 310	Richmond Hill	ON	L4B 3P6	skorpai@tnpi.ca	905-770-3353 ext. 211	905-770-8675	16-Nov-18	11-Jul-19		
Zayo	Mr.	Ian	Fleming							Utility.Circulations@zayo.com	416-345-3406	416-649-7500	16-Nov-18	11-Jul-19	181205_Email P.Arbeau. Indicated that Zayo has no existing plant in the project area, no comments or objections.	
Cogeco Peer 1	Ms.	Julie	Pryce		413 Horner Avenue		Etobicoke	ON		julie.pryce@cogecopeer1.com	416-847-0867	416-626-7774	16-Nov-18	11-Jul-19		

Environmental Assessment Study for New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Region of Peel

Agency/ Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Prov.	Postal Code	Email	Telephone	Fax	NOCm/PIC Delivery Date	NOCp Delivery Date	Comments Received	Response Given
PUCC	Ms.	Wendy	Jawdek				Etobicoke	ON		PUCC.applications@peelregion.ca	905-791-7800 ext.5076	905-791-1442	16-Nov-18	11-Jul-19	181120_Email W.Jawdek. Asked if Region PUC should be contacted for project.	181120_Email O.Gordiyenko. Clarified that Region PUC was contacted as part of notification process. Indicated that Region PUC does not need to respond.
CN Rail	Mr.	Stefan	Linder	Manager, Public Works Design and Construction	4 Welding Way		Vaughan	ON	L4K 1B9	stefan.linder@cn.ca	905-669-3264	905-760-3406	16-Nov-18	11-Jul-19		
CN Rail	Mr.	Michael	Vallins	Manager Public Works						michael.vallins@cn.ca	905-669-3133		16-Nov-18	11-Jul-19		
Credit Valley Conservation	Mr.	Jakub	Kilis	EA Planner	1255 Old Derry Road		Mississauga	ON	L5N 6R4	jkilis@creditvalleyca.ca	Toll Free: 800-668-5557 905-670-1615 ext 287	905-670-2210	16-Nov-18	11-Jul-19	180911_Meeting J.Kilis. CVC attended a meeting with project staff and MNRF to discuss the project. 181109_A.Vir emailed to provide the DSA (data sharing agreement) to the Project team. 191120_A.Vir provided the Data as requested though the DSA.	181022_Letter J.Vandermeer. Data request letter sent to CVC.
Mississauga Heritage Advisory Committee	Mr.	Joe	Muller	Supervisor Heritage Planning	201 City Centre Drive	Suite 202	Mississauga	ON	L5B 2T4	joe.muller@mississauga.ca	905-615-3200, ext. 5366	905-615-3828	16-Nov-18	11-Jul-19		
Mississauga Heritage Advisory Committee	Mr.	John	Dunlop	Supervisor - Heritage Planning						john.dunlop@mississauga.ca	905-615-3200, ext. 5366		16-Nov-18	11-Jul-19	181123_Email J.Dunlop. Response Form provided to Region indicating City of Mississauga Supervisor Heritage Planning to be kept informed of project.	
Peel Regional Paramedic Services	Ms.	Dana	Ralph Banke	Supervisor, Risk and Audit	10 Peel Centre Drive	Suite A and B	Brampton	ON	L6T 4B9	dana.banke@peelregion.ca	905-615-3200, ext. 5471	905-206-9738	16-Nov-18	11-Jul-19		
Peel Regional Paramedic Services										brian.parkes@peelregion.ca			16-Nov-18	11-Jul-19		
Peel Regional Paramedic Services										garry.coram@peelregion.ca			16-Nov-18	11-Jul-19		
Peel Regional Paramedic Services										brian.gibson@peelregion.ca			16-Nov-18	11-Jul-19		
Peel Regional Police - Division 11	Ms.	Heather	Ramore	Superintendent	3030 Erin Mills Parkway		Mississauga	ON	L5L 1A1	11div.superintendent@peelpolice.on.ca	905-453-2121 Ext. 1110		16-Nov-18	11-Jul-19		
Peel Regional Police							Mississauga	ON		CommSupv@peelpolice.ca			16-Nov-18	11-Jul-19		
City of Mississauga, Fire and Emergency Services	Mr.	Tim	Beckett	Fire Chief	Headquarters 15 Fairview Road West		Mississauga	ON	L5B 1 K7	tim.beckett@mississauga.ca	905-615-3750		16-Nov-18	11-Jul-19		
Peel District School Board	Mr.	Randy	Wright	Controller of Planning & Accommodation Support Services	5650 Hurontario Street		Mississauga	ON	L5R 1C6		905-890-1010 ext. 2203		15-Nov-18	11-Jul-19		
Peel District School Board	Ms.	Suzanne	Blakeman	Senior Planner	5650 Hurontario Street		Mississauga	ON	L5R 1C6		905-890-1010 ext. 2216		15-Nov-18	11-Jul-19		
Dufferin-Peel Catholic District School Board				Planner	40 Matheson Boulevard West		Mississauga	ON	L5R 1C5		905-890-0708 ext. 24440		15-Nov-18	11-Jul-19		
Whiteoaks Lorne Park Community Association (WLPCA)	Ms.	Elaine	Moroney	Association Rep.	P.O. Bo 52524 Turtle Creek P.O. 1801 Lakeshore Road West		Mississauga	ON	L5J 4S5	ermoroney@bell.net				11-Jul-19		Representatives were present at the PIC, it was agreed that they be added to the Contact List for future notices and updates on the Project.
Whiteoaks Lorne Park Community Association (WLPCA)	Ms.	Cathy	Easton	President	P.O. Bo 52524 Turtle Creek P.O. 1801 Lakeshore Road West		Mississauga	ON	L5J 4S6	president@wlpca.ca info@wlpca.ca				11-Jul-19		Representatives were present at the PIC, it was agreed that they be added to the Contact List for future notices and updates on the Project.



**BURNSIDE**

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## Appendix D3

### Public Information Centre Display Boards

# **Environmental Assessment Study New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road**



## **Public Information Centre**

**November 27, 2018**

**6 p.m. to 8 p.m.**

**Lorne Park Hall**

# *Welcome*

## **Public Information Centre for the Environmental Assessment Study New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road**

- Please Sign In
  - Meet with Study Team Members
- Review the display materials and discuss your questions and ideas with the Study Team
- Please fill out a comment sheet and return it to the Study Team in person, by email or fax by  
**December 18, 2018**

# Purpose of the Public Information Centre

**The purpose of this Public Information Centre is:**

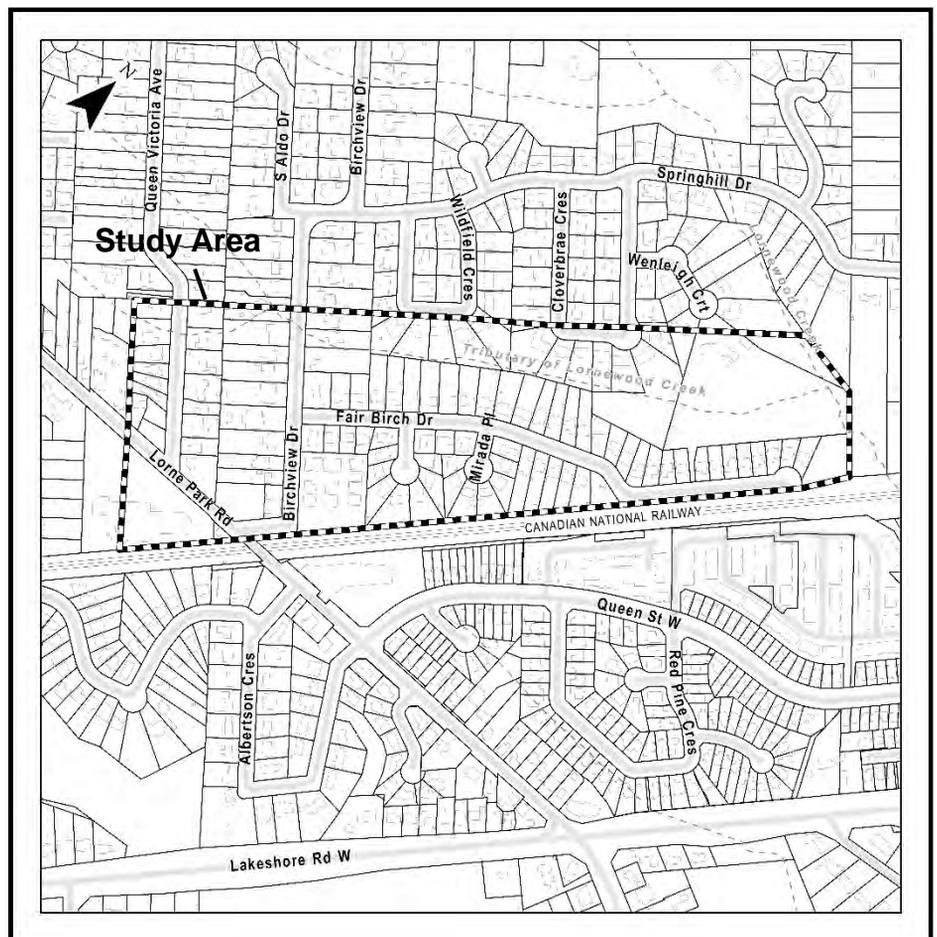
- To introduce the study to the public and provide interested and/or potentially affected stakeholders with an opportunity to participate and provide input in the planning and decision making process;
- To provide an opportunity for the public and other stakeholders to meet Study Team members and discuss issues and any concerns they may have; and,
- To identify next steps in the process.

**We will present information and request input on the following:**

- Problem / Opportunity Statement
- Alternative Solutions
- Evaluation Criteria
- Evaluation of Alternative Solutions

# Project Description

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. These improvements are required to address aging and deteriorating sanitary sewer infrastructure.



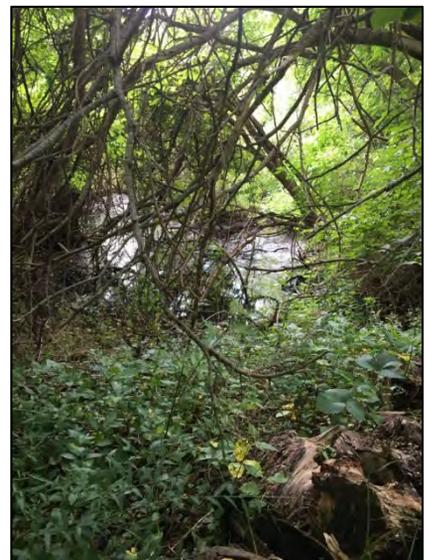
The Study will follow Schedule B of the Municipal Class Environmental Assessment process.

**Study Area Map**

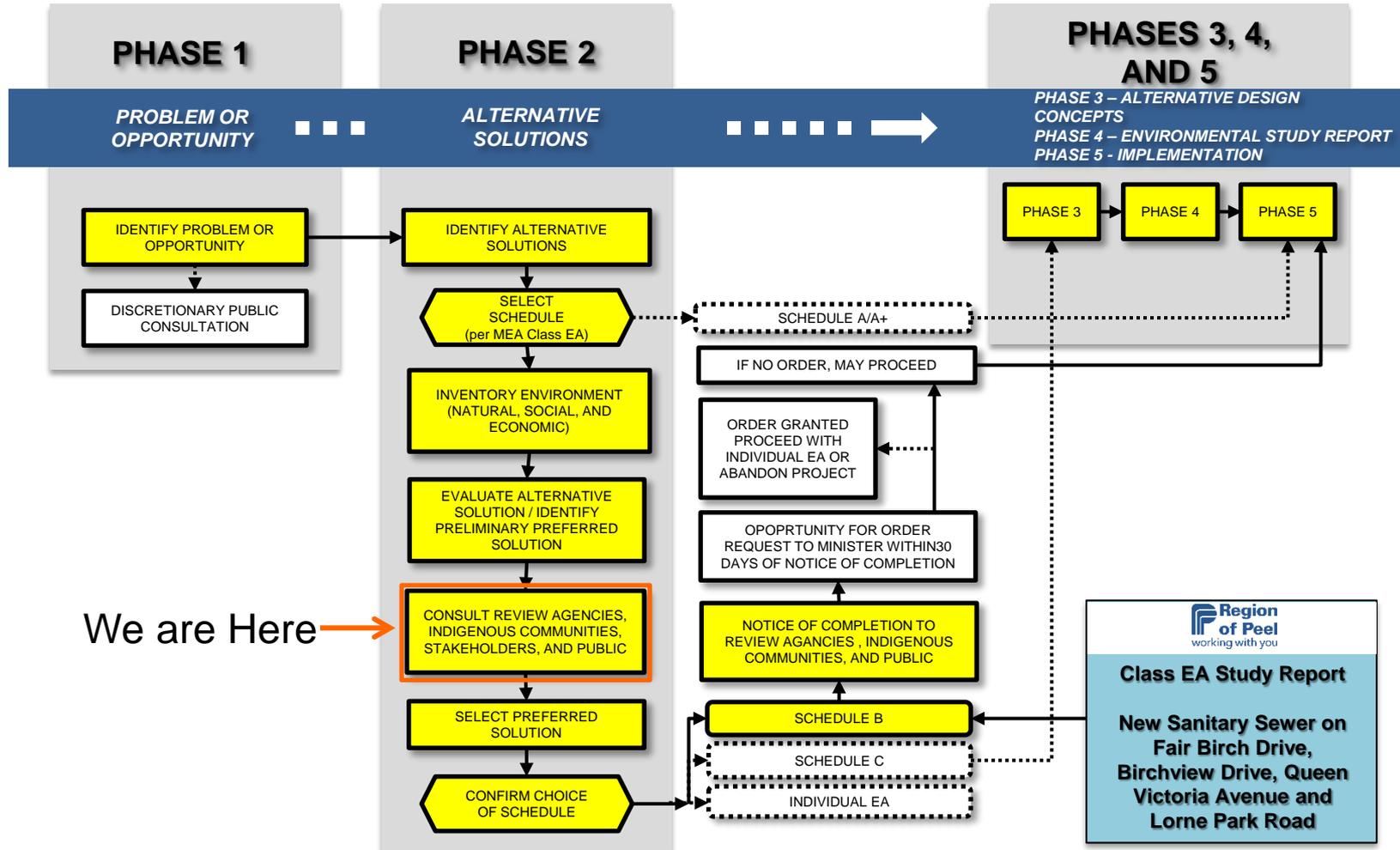
## Problem/Opportunity Statement

*The existing sanitary sewer running parallel to the Lornewood Creek tributary that collects sewerage from private residential properties in the Study Area in the City of Mississauga is over 40 years old and is in poor condition. Furthermore, the Region has limited access to this sewer for maintenance.*

*The Region has a long-term sustainable plan to provide a viable, safe, structurally and hydraulically sound sanitary sewerage system. Therefore, the Region requires a solution for the replacement of the existing sanitary sewer including improvements to other contributing sanitary sewers in the area and improved access through placing new infrastructure within existing rights-of-way or proposed easements.*



# The EA Process



## Study Background

- The sanitary sewerage from private residential areas including Queen Victoria Avenue, Aldo Drive, South Aldo Drive, Birchview Drive, Springhill Drive, Mobridge Court, Wildfield Crescent, Fair Birch Drive and Lorne Park Road in the City of Mississauga is currently discharging into a system of local sewers that convey the collected sewerage into a local trunk collector sewer.
- The sewer directing the collected sanitary sewer discharge into the local trunk collector sewer is a shallow sewer constructed within the existing Region of Peel easements in 1971.
- The easement runs along a tributary of Lornewood Creek with the sewer pipe crossing the creek in a few locations and running extremely close to the watercourse.



## Study Background

- The sewer is in poor condition due to internal stress from deposition, pipe movement, and root action and external stress from erosion of the creek that reduces the cover depth over the pipe (anticipated to continue over time).
- Erosion of the creek banks has affected the integrity of the pipe bedding and surrounds and contributes to continuous pipe movement.



- The existing asbestos cement pipes are deteriorating, thereby increasing the risk of failure.
- The Region of Peel Wastewater Operation Section expressed concern regarding limited and challenging access to the sewer constructed within easements.



# Alternative Solutions

## **Alternative 1: Do Nothing**

Involves the continued operation of the existing sanitary sewer without any improvements or changes to the existing infrastructure.

## **Alternative 2: Rehabilitate Existing Sanitary Sewer**

Involves upgrades to the existing sanitary sewer, e.g. lining the sewer to improve the condition of the sewer pipe for ongoing use in the current location.

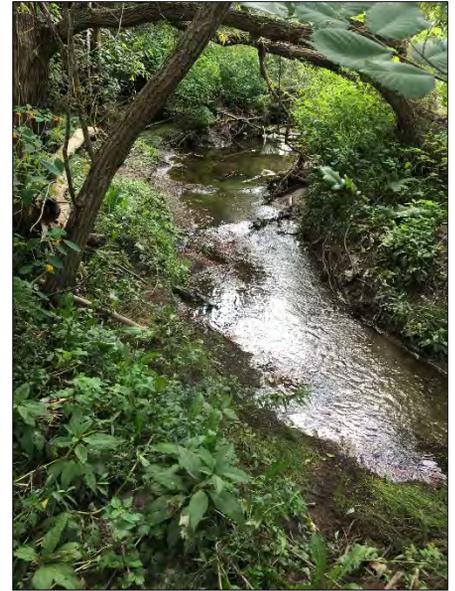
## **Alternative 3: Construct New Sanitary Sewer**

Involves the construction of a new sanitary sewer within existing public rights-of-way to replace the existing sanitary sewer running parallel to the Lornewood Creek tributary. The construction of a new sanitary sewer may require the establishment of temporary easements for construction or permanent easements for maintenance. This alternative would also involve the decommissioning of the existing sanitary sewer.

## Existing Conditions

### Natural Environment

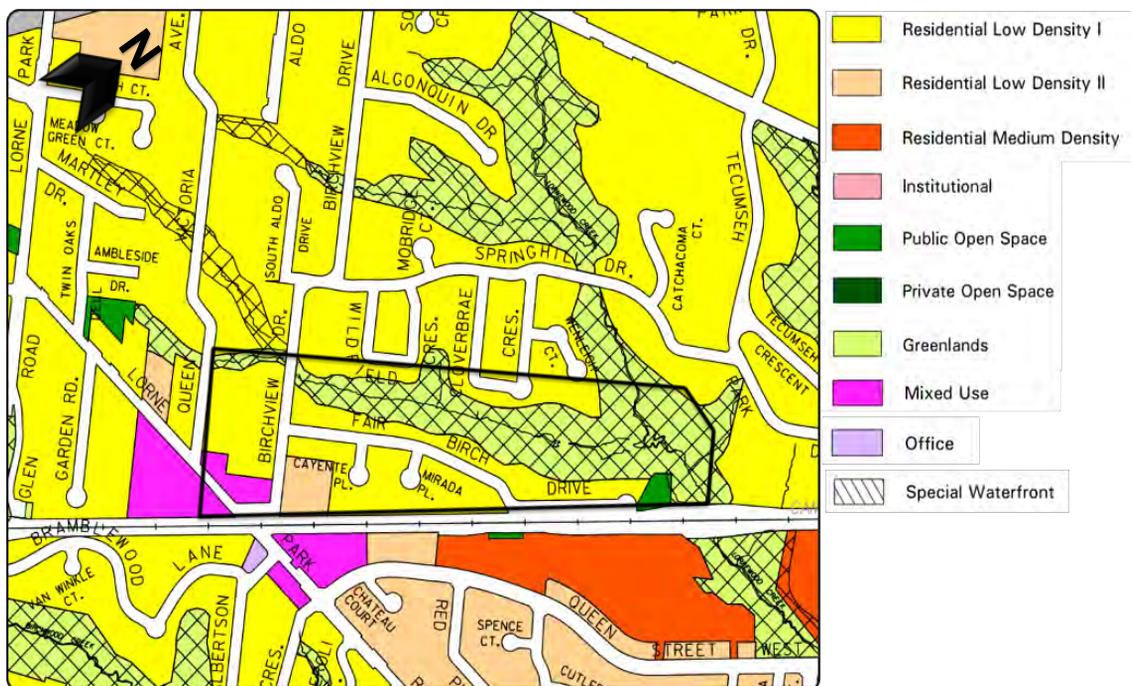
- No Provincially Significant Wetlands, Areas of Natural and Scientific Interest or Environmental Significant Areas in the Study Area.
- Vegetation communities in Study Area are well documented by the City of Mississauga Natural Areas Surveys (NAS). Communities predominantly classified as Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3) with two pockets of Mineral Meadow Marsh (MAM2) communities.
- Potential for bat habitat within the wooded area. If tree removals will remove potential bat maternity habitat, impacts can be readily mitigation through the installation of bat habitat boxes within Study Area where appropriate.
- Natural heritage databases identified records for 5 bird Species at Risk (SAR) and 5 reptile and amphibian SAR that have breeding potential within vicinity of the Study Area. Species specific breeding surveys will be planned to confirm breeding presence in the impacted and appropriate mitigation measures prepared to minimize impact to these species.
- An intermittent stream traverses the Study Area north of Fair Birch Drive. This warm-water watercourse flows into the main branch of Lornewood Creek. Aquatic Species at Risk (SAR) and critical habitat for aquatic SAR species are not present within the Study Area.



# Existing Conditions

## Socio-Economic Environment

- The predominant land use within the Study Area is relatively low density residential development. Single detached dwellings dominate the residential landscape.
- There are several existing businesses operating within the southwest corner of the Study Area.
- Local roads are lined with mature vegetation and sidewalks in most areas.
- Lornewood Creek is the primary aesthetic amenity within the Study Area.



Source: City of Mississauga Official Plan (2018); Schedule 10

# Existing Conditions

## Cultural Environment

**Cultural Heritage Resources Assessment:** Three cultural heritage resources are located within or adjacent to the Study Area.

- 1197 Birchview Dr.
- 1207 Lorne Park Rd.
- 1173 Queen Victoria Ave.

If the preferred alternative involves construction, activities and staging will be suitably planned and undertaken to avoid impacts to the identified cultural heritage resources.

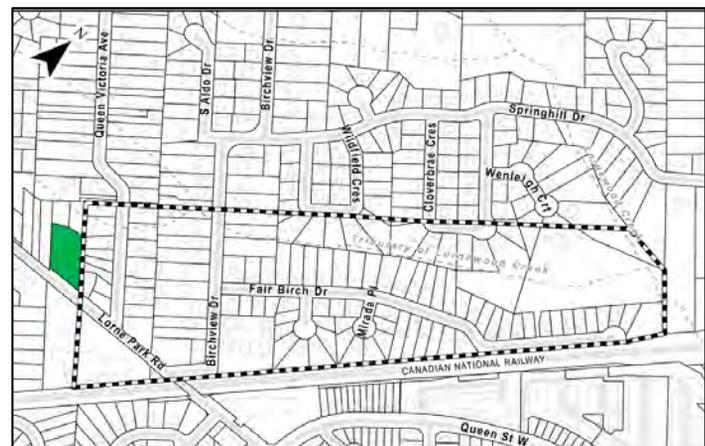


Yellow: Listed Cultural Heritage Properties  
Blue: Designated Cultural Heritage Properties

A pre-construction surveys of physical property and potential vibration and settlement monitoring can be conducted during construction to mitigate potential impacts.

### Stage 1 Archaeological Assessment:

No archaeological potential within Study Area. One area adjacent to Study Area has archaeological potential and may require Stage 2 Archaeological Assessment if impacted by construction.



Green: potential archaeological resources

# Evaluation Criteria

## NATURAL ENVIRONMENT

- Impacts to trees and vegetation communities
- Impacts to terrestrial habitat
- Impacts to aquatic habitat
- Disturbance to Soil/Subsurface
- Impacts to surface water quality and drainage
- Impacts to groundwater quality

## SOCIO-ECONOMIC/CULTURAL ENVIRONMENT

- Compatibility with surrounding land uses
- Temporary disruption to local residents and community during construction
- Health and safety of operations and maintenance staff
- Ability to meet the long-term sanitary servicing needs of the local residents and community
- Impacts to archaeological resources
- Impacts to built heritage resources and cultural heritage landscapes
- Land acquisition/easement requirements
- Impact on nearby businesses during construction

## TECHNICAL/OPERATIONAL ENVIRONMENT

- Ease/complexity of construction
- Reliability of system design/risk of failure
- Ability to meet Peel Region's current sanitary sewer design criteria (Design, Specification, and Procedures Manual)
- Ease/complexity of operation and maintenance

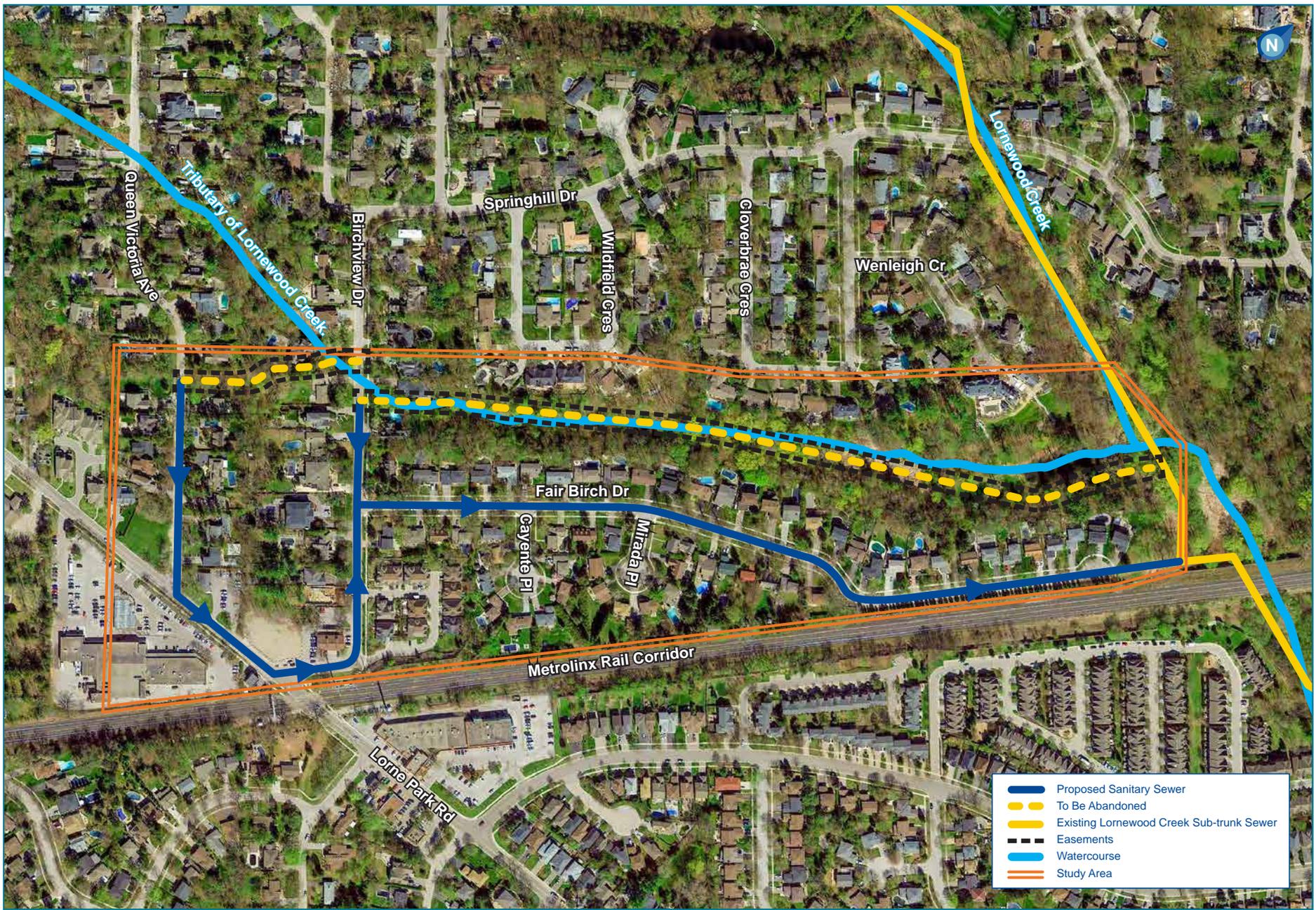
## FINANCIAL ENVIRONMENT

- Capital construction cost (including cost of land acquisition)
- Operation and Maintenance cost

# Evaluation of Alternative Solutions

Evaluation Criteria	Alternative 1: Do Nothing	Alternative 2: Rehabilitate Existing Sanitary Sewer	Alternative 3: Construct New Sanitary Sewer
Natural Environment	 No tree or vegetation removal. Potential long-term impacts to aquatic and terrestrial habitat as well as surface and groundwater quality due to higher risk of system failure.	 Rehabilitation will require some tree and vegetation removal to provide clearance for equipment. May result in temporary disruption to terrestrial habitat during rehabilitation. Potential risk of system failure (over time) would increase potential impacts aquatic and terrestrial habitat as well as surface and groundwater quality.	 Abandonment of existing sewer will require some tree and vegetation removal to provide clearance for equipment. May result in temporary disruption to terrestrial habitat during the procedure. No/minimal impacts to the aquatic habitat or surface/groundwater quality are anticipated.
Socio-Economic / Cultural Environment	 Difficult access to maintenance holes poses health and safety risk to operations staff. The existing sanitary sewer will not be able to meet the long-term sanitary servicing needs for local residents and community if left unmitigated.	 Difficult access to maintenance holes poses health and safety risk to operations staff. More reliable sanitary servicing for local residents and community; however, over time, risk of system failure will increase and may require replacement with a new system in long term.	 Safer access to the system for operations and maintenance. Meets the long-term servicing needs of the local residents. Will require some temporary construction easements. Will result in some temporary disruption to roads during construction; however, access to properties will be maintained.
Technical / Operational Environment	 The existing sanitary sewer is degraded and risk of failure will continue to increase if left unmitigated. Does not meet Peel Region's latest sanitary sewer design criteria. Due to limited access, the existing sanitary sewer is not easy to maintain.	 Will result in degradation of the system over time and increased risk of failure. Due to limited access, the rehabilitated sanitary sewer will not be easy to maintain.	 Construction of new sanitary sewer requires more complex and longer construction period. Will substantially reduce risk of system failure. Safe access to the system for operation and maintenance.
Financial Environment	 No construction costs. Cost to adequately maintain the existing system would be significantly greater than the other alternatives.	 Cost will be significantly less than cost of building new infrastructure in a public right-of-way. Reduced operation and maintenance costs in the short-term only.	 Cost of construction is significantly higher. Operation and maintenance costs would be relatively low.
Adherence to Problem / Opportunity Statement	<b>x</b>	<b>Partially</b>	
<b>Overall Summary</b>	<b>Not Carried Forward</b>	<b>Not Carried Forward</b>	<b>Carried Forward</b>

Ranking Order of Reference: Least Preferred  Less Preferred  Somewhat Preferred  More Preferred  Most Preferred 



## Next Steps

After this PIC, the following will be carried out:

- Review and respond to comments received
- Filing of the Project File Report for public review in Winter 2019
- Design of sewer improvements in Spring-Fall 2019
- Public Information Centre to present sewer improvement design in Fall 2019
- Tentative schedule for Start of Construction in 2020

Visit the study website at:

<https://www.peelregion.ca/pw/water/environ-assess/fair-birch-dr-birchview-dr-queen-vic-ave-lorne-park-rd.htm>

## Invitation for Participation

- A key element of the EA planning process is consultation with the community. Early and active discussions will be critical to identify ways to reduce the impacts of this project to local residents, businesses, traffic and pedestrians, while evaluating and selecting the preferred solution.
- You are invited to provide comments by completing the forms provided and submitting forms to the Study Team members below on or before **December 18, 2018**.

**Olena Gordiyenko, P.Eng.**

Project Manager, Wastewater Capital  
Regional Municipality of Peel  
10 Peel Centre Drive  
Brampton, ON L6T 4B9  
Phone: 905-791-7800, ext. 7843  
Email:  
Olena.Gordiyenko@peelregion.ca

**Jennifer Vandermeer, P.Eng.**

Environmental Assessment Lead  
R.J. Burnside & Associates Limited  
292 Speedvale Ave. W, Unit 20  
Guelph, ON N1H 1C4  
Phone: (226) 486-1562  
Email:  
Jennifer.Vandermeer@rjburnside.com

## THANK-YOU FOR ATTENDING



**BURNSIDE**

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## Appendix D4

### Public Correspondence

## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:39 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Fair Birch, Birchview Drive new sanitary sewer

For EA File

-----Original Message-----

**From:** Jennifer Vandermeer  
**Sent:** Tuesday, November 27, 2018 12:19 PM  
**To:** 300042560 Fair Birch Sani Sewer <300042560fairbirchsanisewer@rjburnside.com>  
**Subject:** FW: Fair Birch, Birchview Drive new sanitary sewer

-----Original Message-----

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Friday, November 16, 2018 11:25 AM  
**To:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Subject:** FW: Fair Birch, Birchview Drive new sanitary sewer

FYI  
THANKS

-----Original Message-----

**From:** Gordiyenko, Olena  
**Sent:** November 16, 2018 8:55 AM  
**To:** [REDACTED]  
**Subject:** RE: Fair Birch, Birchview Drive new sanitary sewer

Dear [REDACTED]

Sorry you could not find the information about the project. Please follow direct link:

[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_www.peelregion.ca\\_pw\\_water\\_environ-2Dassess\\_fair-2Dbirch-2Ddr-2Dbirchview-2Ddr-2Dqueen-2Dvic-2Dave-2Dlorne-2Dpark-2Drd.htm&d=DwIFAg&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A\\_CdpgnVfiiMM&r=1uFNJfZcQXRlbdDRMI1HPbGzL4C6FV4Js0qamtdViDCymIJR5srQAtzCHJ-jwGug&m=WnxQhle8qQRVUFXI7Z8UfuRelIxAyAH8njiA6ltmqu4&s=nP8YMxf8cBgf23msvLnIkYUrh4A1vuoSQ4qV2G4XXs4&e=](https://urldefense.proofpoint.com/v2/url?u=http-3A__www.peelregion.ca_pw_water_environ-2Dassess_fair-2Dbirch-2Ddr-2Dbirchview-2Ddr-2Dqueen-2Dvic-2Dave-2Dlorne-2Dpark-2Drd.htm&d=DwIFAg&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpgnVfiiMM&r=1uFNJfZcQXRlbdDRMI1HPbGzL4C6FV4Js0qamtdViDCymIJR5srQAtzCHJ-jwGug&m=WnxQhle8qQRVUFXI7Z8UfuRelIxAyAH8njiA6ltmqu4&s=nP8YMxf8cBgf23msvLnIkYUrh4A1vuoSQ4qV2G4XXs4&e=)

Regards,

Olena Gordiyenko, P.Eng.  
Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

-----Original Message-----

From: [REDACTED]  
Sent: November 15, 2018 8:16 PM  
To: Gordiyenko, Olena  
Subject: Fair Birch, Birchview Drive new sanitary sewer

Web Form Title :: Project Manager - Wastewater Division

This email was sent by the following person. Please reply to them:

Sender's Name: [REDACTED]  
Sender's Email: [REDACTED]

The message was submitted through an Automated Email Service on Peel's Website Thu Nov 15 20:16:54 2018:

-----

Hi Olena

I received an environmental assessment study notice for the subject project. It has referred me to this web-site for more information on this project, However there appears to be none? Seems strange to send a note to direct inquiries for additional information only to find the original note as the only information? Can you confirm if there is additional information? Thanks...

-----

It is the Region of Peel's policy to reply to e-mails within two working days.

For assistance, please contact the webmaster@peelregion.ca

:: NOTE ABOUT CONTACT INFORMATION ::

Contact information can be forged. There is no way to accurately verify a person's name and email address on the Internet.

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:40 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: 18-2300-C Project Contact List

For EA File

---

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Wednesday, November 21, 2018 8:38 AM  
**To:** [REDACTED]  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Subject:** 18-2300-C Project Contact List

Dear [REDACTED]

Thank you very much for your interest in the project. We will include your name and email address in the project contact list.

Meanwhile if you have any questions related to the project do not hesitate to contact me.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

**From:** [REDACTED]  
**Sent:** November 20, 2018 8:32 PM  
**To:** Gordiyenko, Olena  
**Subject:** Fwd: Project Contact List

----- Forwarded message -----

From [REDACTED]  
Date: Tue, Nov 20, 2018 at 8:28 PM  
Subject: Project Contact List  
To: <[Olena.Gordlyenko@peelregion.ca](mailto:Olena.Gordlyenko@peelregion.ca)>

Hello ....

I will not be able to attend the PIC at Lorne Park Hall on Nov.27th re: New Sanitary Sewer for the Fair Birch Drive area. I would like to be added to the Project Contact List.

It is unfortunate that this work was not done at the same time as the upgrade to the water lines. There would have been cost savings and less disruption overall.

Regards, [REDACTED]

## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:40 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Brichview Drive - new sanitary sewer assessment study

For EA File

---

**From:** Jennifer Vandermeer  
**Sent:** Friday, November 23, 2018 11:52 AM  
**To:** 300042560 Fair Birch Sani Sewer <300042560fairbirchsani sewer@rjburnside.com>  
**Subject:** FW: Brichview Drive - new sanitary sewer assessment study

---

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Friday, November 23, 2018 11:03 AM  
**To:** [REDACTED]  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Subject:** RE: Brichview Drive - new sanitary sewer assessment study

Dear [REDACTED]

Thank you very much for your interest in the project. We will include your name and email address in the project contact list.

Please note that we have just initiated the Class EA study and in the stage of evaluating alternatives for the local sanitary sewer upgrades in your neighbourhood and I cannot add any more details to the information provided so far. It would be great if you can visit the PIC on November 27 so we can inform you on our up to day findings.

Meanwhile the direct link to the project information is

<http://www.peelregion.ca/pw/water/envIRON-assess/fair-birch-dr-birchview-dr-queen-vic-ave-lorne-park-rd.htm>

Regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** [REDACTED]  
**Sent:** November 22, 2018 7:39 PM  
**To:** Gordiyenko, Olena  
**Subject:** Brichview Drive - new sanitary sewer assesment study

Hello Olena,

I live at [REDACTED] and received your notice about the Environmental Assessment Study for sewer improvements on our street. I tried to look up more information on peelregion.ca as directed by the public notice received but found none at this time. If you have anything you can share with me prior to the meeting on November 27th, 2018 I would greatly appreciate it.

Also please kindly add my contacts to the Project Contact List for any future updates.

thank you for your help,

[REDACTED]

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:42 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: [REDACTED]  
**Attachments:** 00206B827969181128121837.pdf

For EA File

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**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Wednesday, November 28, 2018 10:53 AM  
**To:** [REDACTED]  
**Cc:** [REDACTED] Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Jordan Phillips <Jordan.Phillips@rjburnside.com>; Hopton, Simon <simon.hopton@peelregion.ca>  
**Subject:** RE: [REDACTED]

[REDACTED]

At this time we do not consider that this stretch of sewer is required any modification: as you could see it is almost outside of the study area.

However I will be able to confirm with 100% certainty only at the design stage.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** [REDACTED]  
**Sent:** November 28, 2018 10:41 AM  
**To:** Gordiyenko, Olena  
**Cc:** [REDACTED] Jennifer Vandermeer; Jordan Phillips; Hopton, Simon  
**Subject:** Re: [REDACTED]

Hi Olena - Perhaps my question(s) aren't clear. I'm not suggesting that the manhole is on private property vs. the municipal right-of-way.

We would like to confirm that this study (and subsequent repairs) isn't considering the section of sanitary sewer you have marked up on the survey I forwarded? From what was presented last night it appears this section is not under review. Can you confirm?

Thanks,

[REDACTED]

Sent from my iPhone

On Nov 28, 2018, at 10:31 AM, Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)> wrote:

[REDACTED]

We would consider relocation of the MH from your front lawn if it would be confirmed that it was constructed on your property.

The survey you provided proved otherwise: the MH is located not on your property but on a boulevard within municipal right-of-way (highlighted with magenta).

Therefore it will not be relocated.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

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**From:** [REDACTED]  
**Sent:** November 28, 2018 10:02 AM  
**To:** Gordiyenko, Olena  
**Cc:** [REDACTED] Jennifer Vandermeer; Jordan Phillips  
**Subject:** Re: [REDACTED]

Hi Olena - We appreciate the timely follow-up.

My understanding from the meeting last night is this area of the sanitary sewer (what you have marked up) isn't part of the proposed repair?

The gentlemen we spoke to last night, Simon I believe was his first name, said he could tell us the condition rating for the rest of the sanitary sewer going down Queen Victoria Street, so we could understand if it's going to require repairs soon after this initial phase. Is this something you can help us with or direct us to Simon?

Thanks,

[REDACTED]

Sent from my iPhone

On Nov 28, 2018, at 9:45 AM, Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)> wrote:

[REDACTED]

Please find the attached the marked up site plan you sent to me earlier along with a schematic of the sanitary sewer adjacent to [REDACTED]

Please note that the MH on your front lawn was constructed outside of private properties of [REDACTED], but within the municipal right-of-way to compensate for the road turning . We do not plan to change the sanitary sewer schematic at this particular location .

After completion the Class Environmental Assessment , we will work on detailed design of the new sewer. When detailed design complete we will have another PIC to the residents in close proximity of the future construction works . At this PIC we will provide you with detailed explanation of what works involved in the area of [REDACTED].

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

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**From:** [REDACTED]  
**Sent:** November 27, 2018 7:53 PM  
**To:** Gordiyenko, Olena  
**Cc:** [REDACTED]  
**Subject:** Re: [REDACTED]

Hi Olena - I sent the email below at the consultation. My neighbours [REDACTED] and I are concerned over the repairs given the location of the sanitary sewer which runs under the front lawn and driveways of our house. We hope this section can be relined or relocated to the middle of the road like the rest of the sanitary sewer on the street.

We are also interested in understanding the condition of the rest of the sanitary sewer running down Queen Victoria (ie. is this the start of a long term repair of the rest of the sewer down the street as well?

Here is a photo of the manhole cover on our front lawn beside a ~80' tree.

<image001.jpg>

Thanks,

[REDACTED]

Sent from my iPhone

On Nov 27, 2018, at 6:25 PM, [REDACTED] wrote:

Manhole on front lawn

Sent from my iPhone

<CML 44-17-1 [REDACTED].pdf>

<00206B827969181128105549.pdf>

<00206B827969181128105549.pdf>

**New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study**

**COMMENT SHEET**

Name:

Public Information Centre:

Address:

Date: November 27, 2018

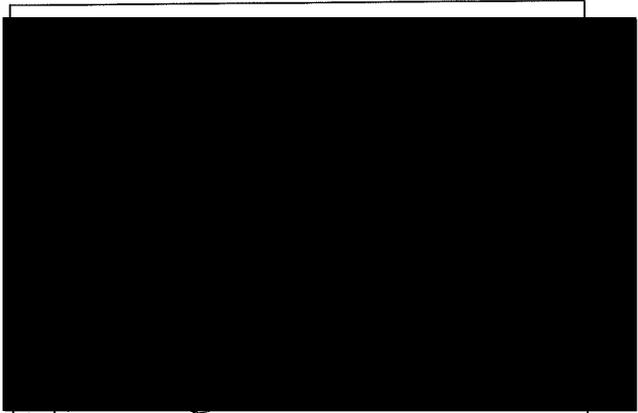
Time: 6:00 p.m. – 08:00 p.m.

Postal Code:

Location: Lorne Park Hall

Phone:

Email:



**The Study**

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. These improvements are required to maintain the system connection to the existing sanitary sewer.

Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Responses to comments received from this PIC will be provided in the Project File Report, which will be made available for 30-day public review period in Winter 2019.

**Comments/Questions/Suggestions (additional space on back of page):**

Pleased to see the upgrades to infrastructure. Obviously, trees & nature must be diligently preserved/replaced if cut to complete the project.



**New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study**

**COMMENT SHEET**

**Name:**

**Public Information Centre:**

**Address:**

Date: November 27, 2018

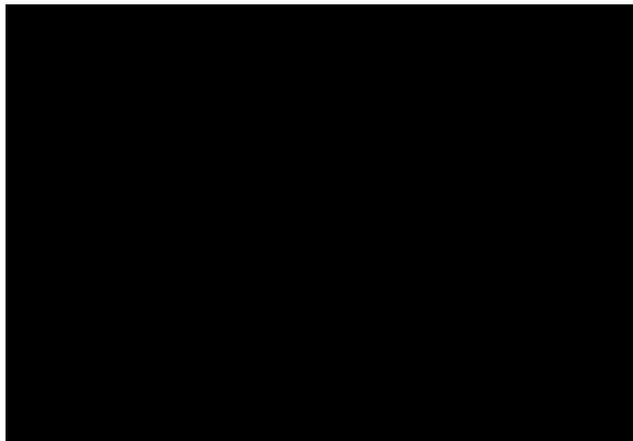
Time: 6:00 p.m. – 08:00 p.m.

**Postal Code:**

Location: Lorne Park Hall

**Phone:**

**Email:**



**The Study**

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. These improvements are required to maintain the system connection to the existing sanitary sewer.

Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Responses to comments received from this PIC will be provided in the Project File Report, which will be made available for 30-day public review period in Winter 2019.

**Comments/Questions/Suggestions (additional space on back of page):**

Please ensure that residents are notified of future meetings!  
Thanks!

The Region of Peel and R.J. Burnside & Associates Limited thank you for your involvement in New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study. Information will be collected and maintained to meet the requirements of the *Environmental Assessment Act* and for the purpose of creating a record that will be available to the general public as described in Section 37 of the *Freedom of Information and Protection of Privacy Act*. Except for personal information, all information collected on this form will become part of public record of the study. The study is being conducted according to the requirements of the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act*.



## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:43 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: Public Information Centre Nov. 27, 2018

For EA File

---

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Thursday, November 29, 2018 8:46 AM  
**To:** [REDACTED]  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Subject:** RE: Public Information Centre Nov. 27, 2018

Dear [REDACTED]

Thank you for your kind email.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

**From:** [REDACTED]  
**Sent:** November 28, 2018 8:45 PM  
**To:** Gordiyenko, Olena; [jennifer.vandermeer@burnside.caom](mailto:jennifer.vandermeer@burnside.caom)  
**Subject:** Public Information Centre Nov. 27, 2018

Regarding the new sanitary sewer for Fair Birch Drive etc., thank you for holding the public information centre so that local residents can get a better understanding of what is planned. I was very pleased to see you are planning to take the sewage out of the natural area before disaster strikes. I do not live in the area and will not be personally impacted so I have no further comment.

[REDACTED]

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:43 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road. [REDACTED]

For EA File

---

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Thursday, November 29, 2018 10:07 AM  
**To:** [REDACTED]  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Jordan Phillips <Jordan.Phillips@rjburnside.com>  
**Subject:** New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road. [REDACTED]  
[REDACTED]

Dear [REDACTED],

Thank you for your interest in our project and thank you for taking time to visit the PIC on November 27, 2018.

I understand that you wanted to know how old is the sanitary sewer constructed on Queen Victoria Avenue and in what condition the sewer is.

Please note that the sewer was constructed in January of 1973. Inspection conducted by the Region of Peel in February 2015 shown that the sewer is in a good condition.

As requested we will provide you with the project updates.

Note that the latest information on the project can be found on the Region of Peel website at

<http://www.peelregion.ca/pw/water/enviro-assess/fair-birch-dr-birchview-dr-queen-vic-ave-lorne-park-rd.htm>

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Friday, December 21, 2018 10:41 AM  
**To:** [REDACTED]  
**Cc:** Gordiyenko, Olena; simon.hopton@peelregion.ca; Jordan Phillips; 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Comments to new sanitary sewer from the owners of [REDACTED]

Good morning [REDACTED],

Thank-you for providing your comments on the Environmental Assessment Study. As Olena is presently away on vacation, I am taking this opportunity to respond on her behalf. We acknowledge your general support for the proposed Alternative 3 (New Sanitary Sewer with abandonment of the existing sewer through the tributary corridor). We acknowledge that your support for this alternative is on the basis that no new property restrictions or impacts to your property. As you are included on the Project Contact List, you will receive all future notifications for this project. A Public Information Centre will be held sometime in the fall of 2019 to provide more information about the design plans for the new sanitary sewer and abandonment of the existing sewer and an opportunity for residents to provide feedback. Should you have any additional questions, we would be happy to answer them as soon as possible in the new year. Thank-you again for your comments and interest in this Study.

Happy Holidays,  
Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
Office: +1 800-265-9662 Direct: +1 226-486-1559

---

**From:** [REDACTED]  
**Sent:** Monday, December 17, 2018 7:41 PM  
**To:** olena.gordiyenko@peelregion.ca; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Cc:** [REDACTED]  
**Subject:** Comments to new sanitary sewer from the owners [REDACTED]

Hello Olena and Jennifer,  
it was lovely meeting you both at the November 27th overview on the environmental assessment study for new sanitary sewer affecting our street ([REDACTED])

Attached please find our comment sheet. Do not hesitate to let us know if you have any questions. We are looking forward to receiving more updates from you as they become available.

Wishing you both a very Merry Christmas and a happy and healthy New Year!

[REDACTED]

**New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study**

**COMMENT SHEET**

**Public Information Centre:**

Date: November 27, 2018

Time: 6:00 p.m. – 08:00 p.m.

Location: Lorne Park Hall

**Name:**

**Address:**

**Postal Code:**

**Phone:**

**Email:**

[REDACTED]

**The Study**

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. These improvements are required to maintain the system connection to the existing sanitary sewer.

Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Responses to comments received from this PIC will be provided in the Project File Report, which will be made available for 30-day public review period in Winter 2019.

**Comments/Questions/Suggestions (additional space on back of page):**

We ([REDACTED]) generally support your (Region of Peel) proposed Alternative 3 where the Existing sanitary sewer running parallel to the Lornewood Creek tributary to be Abandoned and a New Sanitary Sewer is constructed within Existing Public Roads rights-of-way, providing:

- The design and execution of the new construction takes place as it was presented to us during your November 27th information session and does not create new property restrictions/rights-of-way/easements or damage to trees, greenery or structures and quality of life (including property value) on our property [REDACTED]
- The decommissioning of the existing sewer will be done without disruptions on our property and will be limited to removal and filling of existing manholes at surface. The abandoned sanitary sewer will not be replaced by any new services and the associated easement will be terminated.

(continue on the next page)

The Region of Peel and R.J. Burnside & Associates Limited thank you for your involvement in New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study. Information will be collected and maintained to meet the requirements of the *Environmental Assessment Act* and for the purpose of creating a record that will be available to the general public as described in Section 37 of the *Freedom of Information and Protection of Privacy Act*. Except for personal information, all information collected on this form will become part of public record of the study. The study is being conducted according to the requirements of the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act*.

**New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study**

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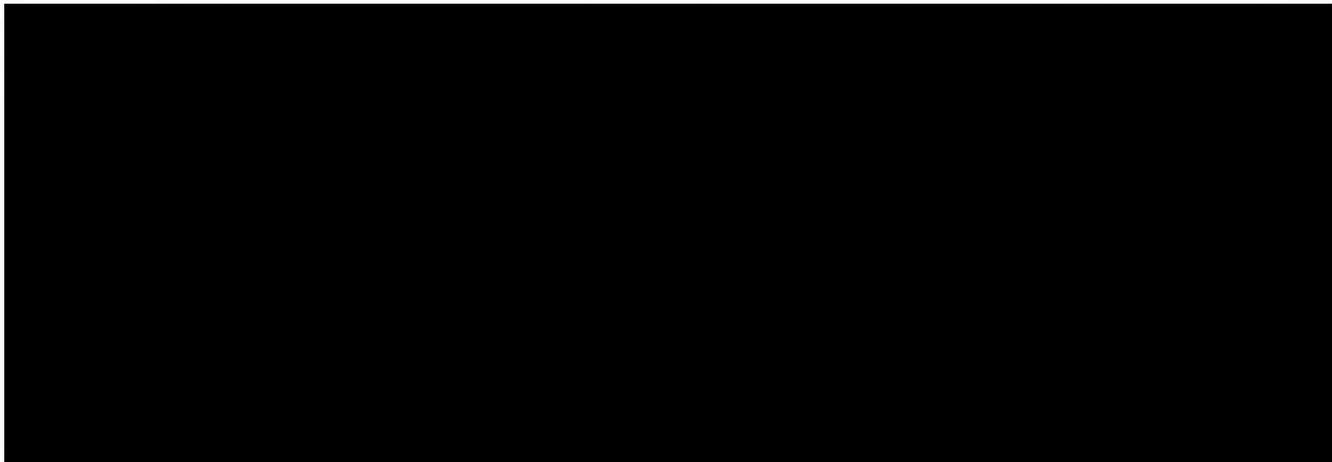
(continue from page 1)

- We will get informed by you and relevant parties regarding the development of the project and we will have an opportunities to provide comments and input on items that could affect our property or our quality of life during and after the construction; we ask to have an input on critical decisions including but not limited to access and work to decommission the existing sewer and the construction of the new sewer within the existing road in the proximity of our property.

We cannot support Alternative 2 and would raise objections to rehabilitation of existing sewer running parallel to the Lornewood Creek tributary. We appreciate that the Do Nothing is not a long-term solution and Alternative 1 is not a solution.

The above comments are preliminary in anticipation of receiving more detailed information from you in due course.

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Please complete this Comment Sheet and submit to either of the Study Team members below on or before **December 18, 2018**. Your input and comments are appreciated.

**Ms. Olena Gordiyenko, P.Eng.**  
Project Manager  
Wastewater Capital, Region of Peel  
10 Peel Centre Dr.  
Brampton, ON L6T 4B9

*Olena.Gordiyenko@peelregion.ca*

**Ms. Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead  
R.J. Burnside & Associates Limited  
292 Speedvale Ave. W, Unit 20  
Guelph, Ontario, N1H 1C4

*Jennifer.Vandermeer@rjburnside.com*

The Region of Peel and R.J. Burnside & Associates Limited thank you for your involvement in New Sanitary Sewer Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road Municipal Class Environmental Assessment Study. Information will be collected and maintained to meet the requirements of the *Environmental Assessment Act* and for the purpose of creating a record that will be available to the general public as described in Section 37 of the *Freedom of Information and Protection of Privacy Act*. Except for personal information, all information collected on this form will become part of public record of the study. The study is being conducted according to the requirements of the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act*.

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, January 07, 2019 3:43 PM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: New Sanitary Sewer " Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road

For EA File

-----Original Message-----

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Friday, January 04, 2019 1:53 PM  
**To:** [REDACTED]  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Subject:** RE: New Sanitary Sewer " Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road

[REDACTED]

Thank you for your interest in our project.

WE will include your name and email address in the distribution list

Best regards,

Olena Gordiyenko, P.Eng.  
Project Manager, Capital Works  
Wastewater Division, Public Works  
Office: 905-791-7800 x.7843  
E-mail: olena.gordiyenko@peelregion.ca

-----Original Message-----

**From:** [REDACTED]  
**Sent:** January 4, 2019 1:36 PM  
**To:** Gordiyenko, Olena  
**Subject:** New Sanitary Sewer " Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road

Web Form Title :: Project Manager - Wastewater Division

This email was sent by the following person. Please reply to them:

Sender's Name: [REDACTED]  
Sender's Email: [REDACTED]

The message was submitted through an Automated Email Service on Peel's Website Fri Jan 4 13:36:15 2019:

---

Hello Olena,

Could you please add me to the information distribution list associate with the proposed New Sanitary Sewer " Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road?

Many thanks,



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It is the Region of Peel's policy to reply to e-mails within two working days.

For assistance, please contact the webmaster@peelregion.ca

:: NOTE ABOUT CONTACT INFORMATION ::

Contact information can be forged. There is no way to accurately verify a person's name and email address on the Internet.



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix D5

### Indigenous Community Correspondence

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Friday, November 30, 2018 2:06 PM  
**To:** Megan.DeVries@mncfn.ca  
**Cc:** Fawn Sault; Gordiyenko, Olena; Jordan Phillips; Avid Banihashemi; 300042560 Fair Birch Sani Sewer; Eliza Brandy  
**Subject:** FW: PIF Inquiry - Fair Birch Drive Sanitary Sewer  
**Attachments:** S1 RJ Burnside [Parks].pdf

Good afternoon Megan,

Thank-you for your letter and on behalf of the Region of Peel, we acknowledge Mississaugas of the New Credit First Nation (MNCFN) interest in this project. We understand that our archaeological sub-consultant, ASI also received a similar letter from you, so I have copied Eliza Brandy, the associate archaeologist on this file so she is aware of this communication.

I spoke to Fawn on Wednesday November 21, in response to the Notice of Study Commencement / Public Information Centre that was emailed to her attention on Monday November 19 and provided her with an update on the status of the EA, including the preliminary preferred solution, the status of archaeological and ecological field work. In relation to archaeology, I noted that ASI has completed the draft Stage 1 Archaeological Assessment Report and has passed it onto us and the Region for review. I also noted that ASI has identified one parcel of land that has archaeological potential that is recommended for a Stage 2 Archaeological Assessment. Although this parcel falls within the study area, at this time, we are not certain if this parcel of land would be impacted in any way by the preferred solution and so cannot at this time say if the Stage 2 Archaeological Assessment would be necessary. With regard to ecological field work, I noted to Fawn that we have not yet completed ecological field work for this project as the scope of this work cannot be defined until we have more details of the areas of impact, which will be determined during the detailed design phase of the project. We understand that MNCFN would like to have their Field Liaison Representatives (FLRs) present during any archaeological (i.e. Stage 2-4) and ecological field work for this project and I have advised the Region of Peel of this request as they are the Proponent of this project. Regarding the draft Stage 1 Archaeological Assessment Report, I have received some comments from the Region that will need to be addressed by ASI and then the Region has indicated that they would be pleased to provide a revised draft copy of the Stage 1 AA Report to MNCFN for review and comment prior to it being finalized and submitted to MTCS. In terms of timing, the Project Manager at the Region of Peel, Olena Gordiyenko is currently on vacation and so I anticipate that the draft Stage 1 Archaeological Assessment Report could be provided to you sometime in early to mid-January 2019.

Should you have any questions, please do not hesitate to contact me.

Best regards,  
Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
Office: +1 800-265-9662 Direct: +1 226-486-1559

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**From:** Megan DeVries <[Megan.DeVries@mncfn.ca](mailto:Megan.DeVries@mncfn.ca)>  
**Sent:** Friday, November 16, 2018 1:14 PM  
**To:** Info <[Info@rjburnside.com](mailto:Info@rjburnside.com)>  
**Cc:** Amanda Parks <[AParks@asiheritage.ca](mailto:AParks@asiheritage.ca)>  
**Subject:** PIF Inquiry

Good afternoon,

Please see the attached letter from the Mississaugas of the New Credit First Nation regarding notification by the Ministry of Tourism, Culture, and Sport of a Project Information Form [PIF] listing your organization as the proponent.

We thank you in advance for your prompt reply to our inquiry.

Sincerely,  
Megan.

**Megan DeVries, M.A.**  
**Archaeological Operations Supervisor**  
**Department of Consultation and Accommodation (DOCA)**  
**Mississaugas of the New Credit First Nation (MNCFN)**  
4065 Highway 6 North, Hagersville, ON N0A 1H0  
P: 905-768-4260 | M: 289-527-2763  
<http://www.mncfn.ca>

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited. Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of the Mississaugas of the New Credit First Nation.



Department of  
Consultation & Accommodation

November 7, 2018

Dear Sir/Madam,

I am writing on behalf of the Department of Consultation and Accommodation [DOCA], requesting information on a project within the Mississaugas of the New Credit First Nation's [MNCFN] treaty territory.

MNCFN are an Aboriginal people within the meaning of section 35 of the *Constitution Act, 1982*. We have signed numerous treaties with the Crown, reaffirming our rights as the original owners of the lands in our territory and establishing Treaty rights over the same. Furthermore, we have un-surrendered Aboriginal title to the waters, beds of water, and foreshore within our territory. Our constitutionally protected rights give rise to specific legal obligations and duties which supersede policies and guidelines.

We are an Indigenous community as understood by the United Nations and our rights include those referenced in the United Nations Declaration on the Rights of Indigenous Peoples ("UNDRIP"). Article 11 of UNDRIP states that Indigenous peoples have "the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts..." In May, 2016, the Federal Government committed to adopting and implementing UNDRIP; therefore, the rights of Indigenous peoples outlined in it deserve renewed consideration and respect.

These lands have been the territory and home of MNCFN and our ancestors for many generations. As such, there is significant potential for archaeological and other cultural resources of our people to be located during the archaeological fieldwork required for projects or development. Such resources are of critical importance to MNCFN given the increasing urbanization and development of our territory that effectively whitewashes our past. Without our active participation and monitoring during archaeological fieldwork, our history stands to be lost forever. As the original stewards of these lands – and continuing owners of the waters – we have ongoing obligations to ensure the protection of our cultural and natural resources for future



generations. This is our responsibility and our right.

DOCA has been notified that in a project information file was submitted to the Ministry of Tourism, Culture, and Sport for the following project:

Project Name	Fair Birch Drive Sanitary Sewer
Proponent Identified	R.J. Burnside & Associates Ltd
Municipal Address	n/a
Stage of Assessment	Stage 1
Licensee Name and Number	Amanda Parks (P450)

Please provide a summary of the history of this project and the current state of its associated environmental and archaeological fieldwork. If it is complete, please provide a summary of the preliminary results, followed by the draft report when available. If it is not yet complete, please provide the anticipated start date of fieldwork.

Please be aware that your development may have impacts on MNCFN's treaty and aboriginal rights and you have not properly consulted with our Nation on this project. Until a reasonable understanding has been reached between MNCFN and your company regarding the project and our participation in it to ensure that the fieldwork is conducted in a respectful manner that protects our rights, we are of the opinion that any duty to consult over the project has not been met and all subsequent approvals relating to the project are subject to challenge on this basis.

Finally, we would like to take this opportunity to remind you that MNCFN has its own *Standards and Guidelines for Archaeology*, which we expect that your consultant will follow. Additionally, DOCA requires that our Field Liaison Representatives participate in all environmental and archaeological fieldwork within the MNCFN treaty territory, including Stages 2 through 4.

It is my hope that in light of the above considerations and with a renewed focus on reconciliation, we can navigate through these issues towards a relationship of respect, partnership, and mutual benefit. **Please provide the requested information by 4pm on November 30, 2018.**



Thank you.



Megan DeVries,  
Archaeological Operations Supervisor



## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Tuesday, February 12, 2019 8:49 AM  
**To:** Fawn Sault; Megan.DeVries@mncfn.ca  
**Cc:** Gordiyenko, Olena; Jordan Phillips; 300042560 Fair Birch Sani Sewer; Eliza Brandy  
**Subject:** RE: PIF Inquiry - Fair Birch Drive Sanitary Sewer  
**Attachments:** 18EA-060 Stage 1 report.pdf

Good morning Fawn and Megan,  
I hope this message finds you both well and that you are staying safe in this winter weather. Further to my email below, on behalf of the Region of Peel, please find attached a draft copy of the Stage 1 Archaeological Assessment Report for your review. I would be grateful if you could please copy both the Region of Peel Project Manager (Olena Gordiyenko) and myself on any comments you may circulate to Archaeological Services Inc. with respect to this report so we can be apprised of your comments for the purposes of the project file. Please do not hesitate to contact me if you have any questions about the project.

Best regards,  
Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
**Office:** +1 800-265-9662 **Direct:** +1 226-486-1559

---

**From:** Jennifer Vandermeer  
**Sent:** Friday, November 30, 2018 2:06 PM  
**To:** 'Megan.DeVries@mncfn.ca' <Megan.DeVries@mncfn.ca>  
**Cc:** 'Fawn Sault' <Fawn.Sault@mncfn.ca>; Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>; Jordan Phillips <Jordan.Phillips@rjburnside.com>; Avid Banihashemi <Avid.Banihashemi@rjburnside.com>; 300042560 Fair Birch Sani Sewer <300042560fairbirchsanisewer@rjburnside.com>; 'Eliza Brandy' <EBrandy@asiheritage.ca>  
**Subject:** FW: PIF Inquiry - Fair Birch Drive Sanitary Sewer

Good afternoon Megan,

Thank-you for your letter and on behalf of the Region of Peel, we acknowledge Mississaugas of the New Credit First Nation (MNCFN) interest in this project. We understand that our archaeological sub-consultant, ASI also received a similar letter from you, so I have copied Eliza Brandy, the associate archaeologist on this file so she is aware of this communication.

I spoke to Fawn on Wednesday November 21, in response to the Notice of Study Commencement / Public Information Centre that was emailed to her attention on Monday November 19 and provided her with an update on the status of the EA, including the preliminary preferred solution, the status of archaeological and ecological field work. In relation to archaeology, I noted that ASI has completed the draft Stage 1 Archaeological Assessment Report and has passed it onto us and the Region for review. I also noted that ASI has identified one parcel of land that has archaeological potential that is recommended for a Stage 2 Archaeological Assessment. Although this parcel falls within the study area, at this time, we are not certain if this parcel of land would be impacted in any way by the preferred solution and so cannot at this time say if the Stage 2 Archaeological Assessment would be necessary. With regard to ecological field work, I noted to Fawn that we have not yet completed ecological field work for this project as the scope of this work cannot be defined until we have more details of the areas of impact, which will be determined during the detailed design phase of the project. We understand that MNCFN would like to have their Field Liaison Representatives (FLRs) present during any archaeological (i.e. Stage 2-4) and ecological field work for this project and I have advised the Region of Peel of this request as they are the Proponent of this project. Regarding the draft Stage 1 Archaeological Assessment Report, I have received some comments from the Region that will need to be addressed by ASI and then the Region has indicated that

they would be pleased to provide a revised draft copy of the Stage 1 AA Report to MCNFN for review and comment prior to it being finalized and submitted to MTCS. In terms of timing, the Project Manager at the Region of Peel, Olena Gordiyenko is currently on vacation and so I anticipate that the draft Stage 1 Archaeological Assessment Report could be provided to you sometime in early to mid-January 2019.

Should you have any questions, please do not hesitate to contact me.

Best regards,  
Jennifer

---

**From:** Megan DeVries <[Megan.DeVries@mncfn.ca](mailto:Megan.DeVries@mncfn.ca)>  
**Sent:** Friday, November 16, 2018 1:14 PM  
**To:** Info <[Info@rjburnside.com](mailto:Info@rjburnside.com)>  
**Cc:** Amanda Parks <[AParks@asiheritage.ca](mailto:AParks@asiheritage.ca)>  
**Subject:** PIF Inquiry

Good afternoon,

Please see the attached letter from the Mississaugas of the New Credit First Nation regarding notification by the Ministry of Tourism, Culture, and Sport of a Project Information Form [PIF] listing your organization as the proponent.

We thank you in advance for your prompt reply to our inquiry.

Sincerely,  
Megan.

**Megan DeVries, M.A.**  
**Archaeological Operations Supervisor**  
**Department of Consultation and Accommodation (DOCA)**  
**Mississaugas of the New Credit First Nation (MNCFN)**  
4065 Highway 6 North, Hagersville, ON NOA 1H0  
P: 905-768-4260 | M: 289-527-2763  
<http://www.mncfn.ca>

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## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Tuesday, February 12, 2019 9:50 AM  
**To:** dlaforme@sixnations.ca  
**Cc:** 300042560 Fair Birch Sani Sewer; Gordiyenko, Olena; Jordan Phillips  
**Subject:** FW: Region of Peel - Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Notice of Commencement and Public Information Centre  
**Attachments:** 042560 NOCm Indigenous Community Letter\_Six Nations\_Joanne.pdf; 042560 NOCm Indigenous Community Letter\_Six Nations.pdf

Good morning Dawn,

Thank-you for taking my call. Please find attached a copy of the Notice of Commencement for the Region of Peel's Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). As discussed, I understand that you will be able to circulate this notice to your team for review. I would be grateful if you could please let me now if Six Nations has any interest with the project.

Best regards,  
Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
Office: +1 800-265-9662 Direct: +1 226-486-1559

---

**From:** Jennifer Vandermeer  
**Sent:** Monday, November 19, 2018 1:50 PM  
**To:** 'jthomas@sixnations.ca' <jthomas@sixnations.ca>; 'dlaforme@sixnations.ca' <dlaforme@sixnations.ca>  
**Cc:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>; 300042560 Fair Birch Sani Sewer <300042560fairbirchsanisewer@rjburnside.com>  
**Subject:** Region of Peel - Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Notice of Commencement and Public Information Centre

Good afternoon Joanne and Dawn,

On behalf of the Regional Municipality of Peel, we are writing to inform you that the Region is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). These improvements are required to maintain the system connection to the existing sanitary sewer. Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Kindly, please find enclosed, the Notice of Commencement and Public Information Centre for the project and letter. Burnside is also requesting on behalf of the Region of Peel, that Six Nations of the Grand River Territory complete the enclosed Response Form (to be returned via email to [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)), to assist the Region in understanding your communities' interest and involvement with this project.

Your contact information is part of the project contact list, and you will receive notices as the study progresses, unless indicated otherwise. Please feel free to contact the Region should you have any comments or questions.

Sincerely,  
Jennifer Vandermeer for the Project Team

## Jennifer Vandermeer

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 25, 2019 10:11 AM  
**To:** Megan DeVries; Fawn Sault  
**Cc:** Gordiyenko, Olena; Jordan Phillips; 300042560 Fair Birch Sani Sewer; Eliza Brandy  
**Subject:** RE: PIF Inquiry - Fair Birch Drive Sanitary Sewer

Good morning Megan,  
Thank-you for providing your feedback on the draft Stage 1 Archaeological Assessment Report. We appreciate MCFNs review of the document.  
Best regards,  
Jennifer

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**From:** Megan DeVries <Megan.DeVries@mncfn.ca>  
**Sent:** Monday, February 25, 2019 10:03 AM  
**To:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Fawn Sault <Fawn.Sault@mncfn.ca>  
**Cc:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>; Jordan Phillips <Jordan.Phillips@rjburnside.com>; 300042560 Fair Birch Sani Sewer <300042560fairbirchsanisewer@rjburnside.com>; Eliza Brandy <EBrandy@asiheritage.ca>  
**Subject:** RE: PIF Inquiry - Fair Birch Drive Sanitary Sewer

Hello Jennifer,

Thank you for distributing. At this time, I have no additional comments. However, please note that MCFN requires the participation of its Field Liaison Representatives during any Stage 2 fieldwork.

Sincerely,  
Megan.

**Megan DeVries, M.A.**  
**Archaeological Operations Supervisor**  
**Department of Consultation and Accommodation (DOCA)**  
**Mississaugas of the Credit First Nation (MCFN)**  
4065 Highway 6 North, Hagersville, ON N0A 1H0  
P: 905-768-4260 | M: 289-527-2763  
<http://www.mncfn.ca>

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**From:** Jennifer Vandermeer [<mailto:Jennifer.Vandermeer@rjburnside.com>]  
**Sent:** Tuesday, February 12, 2019 8:49 AM  
**To:** Fawn Sault <[Fawn.Sault@mncfn.ca](mailto:Fawn.Sault@mncfn.ca)>; Megan DeVries <[Megan.DeVries@mncfn.ca](mailto:Megan.DeVries@mncfn.ca)>  
**Cc:** Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>; Jordan Phillips <[Jordan.Phillips@rjburnside.com](mailto:Jordan.Phillips@rjburnside.com)>;

300042560 Fair Birch Sani Sewer <[300042560fairbirchsanisewer@rjburnside.com](mailto:300042560fairbirchsanisewer@rjburnside.com)>; Eliza Brandy <[EBrandy@asiheritage.ca](mailto:EBrandy@asiheritage.ca)>

**Subject:** RE: PIF Inquiry - Fair Birch Drive Sanitary Sewer

Good morning Fawn and Megan,

I hope this message finds you both well and that you are staying safe in this winter weather.

Further to my email below, on behalf of the Region of Peel, please find attached a draft copy of the Stage 1 Archaeological Assessment Report for your review. I would be grateful if you could please copy both the Region of Peel Project Manager (Olena Gordiyenko) and myself on any comments you may circulate to Archaeological Services Inc. with respect to this report so we can be apprised of your comments for the purposes of the project file. Please do not hesitate to contact me if you have any questions about the project.

Best regards,

Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
Office: +1 800-265-9662 Direct: +1 226-486-1559

---

**From:** Jennifer Vandermeer

**Sent:** Friday, November 30, 2018 2:06 PM

**To:** 'Megan.DeVries@mncfn.ca' <[Megan.DeVries@mncfn.ca](mailto:Megan.DeVries@mncfn.ca)>

**Cc:** 'Fawn Sault' <[Fawn.Sault@mncfn.ca](mailto:Fawn.Sault@mncfn.ca)>; Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>; Jordan Phillips <[Jordan.Phillips@rjburnside.com](mailto:Jordan.Phillips@rjburnside.com)>; Avid Banihashemi <[Avid.Banihashemi@rjburnside.com](mailto:Avid.Banihashemi@rjburnside.com)>; 300042560 Fair Birch Sani Sewer <[300042560fairbirchsanisewer@rjburnside.com](mailto:300042560fairbirchsanisewer@rjburnside.com)>; 'Eliza Brandy' <[EBrandy@asiheritage.ca](mailto:EBrandy@asiheritage.ca)>

**Subject:** FW: PIF Inquiry - Fair Birch Drive Sanitary Sewer

Good afternoon Megan,

Thank-you for your letter and on behalf of the Region of Peel, we acknowledge Mississaugas of the New Credit First Nation (MNCFN) interest in this project. We understand that our archaeological sub-consultant, ASI also received a similar letter from you, so I have copied Eliza Brandy, the associate archaeologist on this file so she is aware of this communication.

I spoke to Fawn on Wednesday November 21, in response to the Notice of Study Commencement / Public Information Centre that was emailed to her attention on Monday November 19 and provided her with an update on the status of the EA, including the preliminary preferred solution, the status of archaeological and ecological field work. In relation to archaeology, I noted that ASI has completed the draft Stage 1 Archaeological Assessment Report and has passed it onto us and the Region for review. I also noted that ASI has identified one parcel of land that has archaeological potential that is recommended for a Stage 2 Archaeological Assessment. Although this parcel falls within the study area, at this time, we are not certain if this parcel of land would be impacted in any way by the preferred solution and so cannot at this time say if the Stage 2 Archaeological Assessment would be necessary. With regard to ecological field work, I noted to Fawn that we have not yet completed ecological field work for this project as the scope of this work cannot be defined until we have more details of the areas of impact, which will be determined during the detailed design phase of the project. We understand that MNCFN would like to have their Field Liaison Representatives (FLRs) present during any archaeological (i.e. Stage 2-4) and ecological field work for this project and I have advised the Region of Peel of this request as they are the Proponent of this project. Regarding the draft Stage 1 Archaeological Assessment Report, I have received some comments from the Region that will need to be addressed by ASI and then the Region has indicated that they would be pleased to provide a revised draft copy of the Stage 1 AA Report to MNCFN for review and comment prior to it being finalized and submitted to MTCS. In terms of timing, the Project Manager at the Region of Peel, Olena Gordiyenko is currently on vacation and so I anticipate that the draft Stage 1 Archaeological Assessment Report could be provided to you sometime in early to mid-January 2019.

Should you have any questions, please do not hesitate to contact me.

Best regards,  
Jennifer

---

**From:** Megan DeVries <[Megan.DeVries@mncfn.ca](mailto:Megan.DeVries@mncfn.ca)>  
**Sent:** Friday, November 16, 2018 1:14 PM  
**To:** Info <[Info@rjburnside.com](mailto:Info@rjburnside.com)>  
**Cc:** Amanda Parks <[AParks@asiheritage.ca](mailto:AParks@asiheritage.ca)>  
**Subject:** PIF Inquiry

Good afternoon,

Please see the attached letter from the Mississaugas of the New Credit First Nation regarding notification by the Ministry of Tourism, Culture, and Sport of a Project Information Form [PIF] listing your organization as the proponent.

We thank you in advance for your prompt reply to our inquiry.

Sincerely,  
Megan.

**Megan DeVries, M.A.**  
**Archaeological Operations Supervisor**  
**Department of Consultation and Accommodation (DOCA)**  
**Mississaugas of the New Credit First Nation (MNCFN)**  
4065 Highway 6 North, Hagersville, ON N0A 1H0  
P: 905-768-4260 | M: 289-527-2763  
<http://www.mncfn.ca>

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**BURNSIDE**

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## Appendix D6

### Agency Correspondence



BURNSIDE

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## Minutes of Meeting

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**Meeting Date:** September 11, 2018                      **Project No.:** 300042560.1000  
**Project Name:** Fair Birch Drive and Area Sanitary Sewer Improvements  
**Meeting Subject:** Meeting with Ministry of Natural Resources and Forestry and Credit Valley Conservation staff  
**Meeting Location:** 10 PCD, Suite B, 4th Floor, MR4-830  
**Date Prepared:** September 17, 2018

---

**Those in attendance were:**

Olena Gordiyenko (OG)	Region of Peel (Region)	olena.gordiyenko@peelregion.ca
Mark Heaton (MH)	Ministry of Natural Resources and Forestry (MNR F)	mark.heaton@ontario.ca
Rebecca Stewart (RS)	Credit Valley Conservation (CVC)	rebecca.stewart@cvc.ca
Sarah Labrie (SL)	CVC	Sarah.labrie@cvc.ca
Jakub Kilis	CVC	jakub.kilis@cvc.ca
Jordan Phillips (JP)	R.J. Burnside & Associates Limited (Burnside)	jordan.phillips@rjburnside.com
Jennifer Vandermeer (JV)	Burnside	jennifer.vandermeer@rjburnside.com

**The following items were discussed**

**Action by**

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**1. Introductions**

1.1 OG welcomed the attendees to the meeting. All attendees introduced themselves and their roles.

**2. Project Overview**

2.1 OG provided an overview of the project for MNR F and CVC. OG noted that the Region would like to move the existing sanitary sewer service running through the Lornewood Creek tributary valley corridor into an existing right-of-way; which would require the abandonment of the existing sanitary sewer. OG noted that abandonment would likely consist of removing the existing maintenance holes (MHs) to approximately 1 m below grade and to

Info

The following items were discussed	Action by
<p>break the pipes near the MHs and fill them with unshrinkable grout. OG noted that at this early stage of the project, the Region is looking to receive comments from the MNRF and CVC on the proposal to move the sanitary sewer service out of the valley corridor and abandon the sewer. OG noted that the Region desires a solution that minimizes disturbance to the natural environment and provides a long-term solution for maintaining sanitary sewer in this area.</p>	
<p><b>3. Discussion of Potential Abandonment of Sewer</b></p>	
<p>3.1 JK asked whether the pipe is exposed anywhere. JP noted that the Study Team had recently visited the Study Area and described the areas that were observed noting that there was a large segment of the sewer that could not be accessed due to thickness of vegetation. JP noted that within the areas observed during the site visit, the MHs and sewer are buried, not exposed.</p>	Info
<p>3.2 JK asked if there are design drawings for the existing sanitary that can be used to determine the elevations of pipe and MHs. OG noted that the design drawings could be shown to CVC if desired. JK noted that for abandonment, CVC would want to see 2 m cover over the MH and pipe.</p>	Info
<p>3.3 JK asked how the Region was planning to undertake the abandonment to understand the level of disturbance expected to occur. JK asked whether the Region was planning to undertake the abandonment primarily through the use of manpower (e.g., bringing hand tools and cement in via wheelbarrows or through the use of heavy equipment. JK noted that the manpower option would result in less disturbance (e.g., may require trimming of tree limbs vs. tree removal for heavy equipment clearance). JK noted that a tree restoration plan would be required.</p>	Info
<p>JK also noted that consideration should be made for completing the abandonment works in the winter season or November/December once the trees are bare.</p>	Info
<p>3.4 MH noted the Study Team should determine whether there are any Species at Risk (SAR) present in the Study Area. A tree inventory should be completed to ascertain whether there are any Butternut present in the Study Area. MH noted that MNRF would also want to know whether there is any potential for SAR bats in the Study Area. MH noted that the mitigation for potential SAR will be dependent on the level of disturbance.</p>	Burnside

The following items were discussed	Action by
<p>3.5 JK noted that CVC does not need to see a formal tree inventory report; however, advised that a terrestrial ecologist should survey the area to assess the existing conditions and determine the potential impacts from the abandonment of the sewer. The degree of impact will be based on the method of abandonment (manpower vs. heavy equipment). A targeted restoration plan is likely to be required.</p>	Burnside
<p>3.6 JV noted that Burnside has drafted a letter requesting data sharing from CVC and will send this to JK. JK noted that once received he would have request processed by his staff and noted that a data sharing agreement would need to be signed prior to transfer of information.</p>	Burnside/ CVC
<p>JV noted that Burnside was in the process of preparing a Data Request Form through MNRF. MH asked that Burnside use the Make a Map feature through the MNRF website to obtain the information directly rather than submitting a Data Request Form. MH noted that if there were any specific requests for additional data based on what was obtained through Make a Map then to contact him. JV acknowledged that Burnside would use this approach.</p>	Burnside
<p>3.7 MH asked whether the Region has to retire or abandon the existing sewer? OG noted that yes, the Region is required to abandon the sewer if discontinuing use.</p>	Info
<p>MH asked whether you could selectively grout in areas of easier access and use other products, e.g., TCP expansion foam for areas of more difficult access. MH noted that selective grouting and the use of alternative products could result is less impact to the natural heritage features overall. MH noted that TransCanada has used an expansion foam for plugging abandoned pipes, and this or a similar technology might be a potential option here.</p>	Info
<p><b>4. Environmental Assessment Process</b></p>	
<p>4.1 JP noted that this project is subject to a Schedule B Municipal Class EA process and as part of this project the Study Team has brought forward the following three alternative solutions for consideration:</p> <ul style="list-style-type: none"> <li>• Do Nothing</li> <li>• Rehabilitate existing sanitary sewer</li> <li>• New infrastructure in an existing right-of-way (includes abandonment of existing sewer)</li> </ul>	Info

The following items were discussed	Action by
4.2 JP asked for CVC and MNRF to provide feedback on their preference for the rehabilitate vs. new infrastructure with abandonment alternatives.	Info
JK noted that CVC would prefer the Region to take the sanitary sewer service out of the tributary corridor. There is a long-term risk of continuing to operate a sanitary sewer in a tributary valley corridor.	Info
MH noted that MNRFs mandate and primary interest is avoiding or mitigating potential impacts to SAR. MH noted that the Study Team should look at all the planning policies in the Study Area to assess the project compatibility with these policies, e.g., Region of Peel Official Plan, City of Mississauga Official Plan, core greenlands designations. MH noted that if any Butternut were observed in the Study Area and anticipated to be impacted by the preferred solution (rehabilitation vs. abandonment) that a Butternut Health Assessment be completed. MNRF would look for the Study Team to avoid disturbance to any retainable Butternuts (i.e. those that are not diseased). MH also noted that Burnside's terrestrial ecologist should assess the potential for presence of any SAR that have been recorded in (or within proximity to) the Study Area. MH noted that Blanding's Turtle in the Study Area is likely to be present, given the presence of a pond in the Study Area and the proximity to the Lake Ontario shoreline.	Info
4.3 JV asked whether MH would be the primary MNRF contact for this project. MH noted that the Notices should be send to Bohdan Kowalyk.	Info
4.4 OG thanked MNRF and CVC for meeting with the Study Team and adjourned the meeting.	

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise Burnside within seven days of issuance. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

**R.J. Burnside & Associates Limited**

Jennifer Vandermeer, P.Eng.  
Environmental Assessment Lead  
JCV:sgd

Distribution:

All Attendees

Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

180911\_Minutes MNRF CVC Meeting  
2/27/2019 12:39 PM

## Jennifer Vandermeer

---

**From:** Jennifer Vandermeer  
**Sent:** Friday, October 12, 2018 2:06 PM  
**To:** 'Bell, Trevor (MOECC)'  
**Cc:** Gordiyenko, Olena; Jordan Phillips; Avid Banihashemi; 300042560 Fair Birch Sani Sewer  
**Subject:** Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Request for Indigenous Community List  
**Attachments:** 042560 Study Area.pdf

Good afternoon Trevor,

On behalf of the Region of Peel, we are contacting you to request confirmation of the list of Indigenous communities to contact for the above noted Schedule B Municipal Class EA as we are in the process of preparing the Project Contact List in advance of issuing the Notice of Commencement. We are aiming to circulate the Notice of Commencement the last week of October / first week of November 2018. We will of course complete the Project Information Form and circulate a copy of the Notice of Commencement to MECP per the notification procedure; however, at this time would very much appreciate the Ministry's assistance in confirming the Indigenous communities to contact.

Based on our previous project experience in the City of Mississauga we understand that the following communities may be interested in this project:

- Mississaugas of the New Credit First Nation
- Six Nations of the Grand River
- Haudenosaunee Development Institute
- Haudenosaunee Confederacy Chiefs Council
- Métis Nation of Ontario

Could you please confirm if this list is representative of all communities, which may be interested in the study and accordingly, should be consulted in regards to this study?

Putting aside any potential archaeological resources, which might be identified during the Stage 1 (or further) Archaeological Assessment being undertaken for this study, the Project Team is not aware of any potential impacts to Aboriginal or treaty rights arising from this project. If MECP are aware of any asserted potential impacts to Aboriginal or treaty rights, which might arise from this project or any other council that should be included in the list above, kindly identify those potential impacts and the corresponding community (including contact information).

To assist your review of this project, we have included a brief project description below and have attached a figure illustrating the Study Area to this email for reference.

***Project Description:***

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road and has retained R.J. Burnside & Associates Limited to undertake the Study. These improvements are required to maintain the sanitary system connection to the existing sanitary sewer. The Study will follow Schedule B of the Municipal Class Environmental Assessment process and will evaluate alternative solutions with consideration for the natural, cultural, economic and technical environments, and recommend a preferred solution in consultation with the public, Indigenous communities and regulatory agencies. Alternative solutions being considered include rehabilitating the existing sanitary sewer within the tributary of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

In order to assist Burnside in the delivery of future EA projects, could you kindly advise if this type of request should be addressed to Environmental Assessment Central Region Contact email ([eanotification.cregion@ontario.ca](mailto:eanotification.cregion@ontario.ca)) for future projects?

Should you have any questions or require additional information, please feel free to contact me.

Best regards,  
Jennifer

## Jennifer Vandermeer

---

**From:** Jennifer Vandermeer  
**Sent:** Monday, October 22, 2018 3:31 PM  
**To:** 'jakub.kilis@cvc.ca'  
**Cc:** Gordiyenko, Olena; Jordan Phillips; Kim Doyle; Avid Banihashemi; 300042560 Fair Birch Sani Sewer  
**Subject:** Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Data Request Letter  
**Attachments:** 042560\_Fair Birch\_CVC Background Request.pdf

Good afternoon Jakub,

I hope this message finds you well. At our meeting on September 11, 2018 I mentioned that Burnside would like to request some data from CVC for this project. Please find attached our request letter for your consideration. Should you have any questions, please do not hesitate to contact me.

Best regards,

Jenn



October 22, 2018

**Via: Email**

Mr. Jakub Kilis  
Environmental Assessment Planner  
Credit Valley Conservation Authority  
1255 Old Derry Road  
Mississauga, ON L5N 6R4

Dear Mr. Jakub Kilis:

**Re: Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Schedule B Municipal Class Environmental Assessment  
Project No.: 300042560.1000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Regional Municipality of Peel to conduct a Schedule B Municipal Class Environmental Assessment (MCEA) for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. As discussed at our meeting on September 11, 2018, alternative solutions being considered include the rehabilitation of the existing sanitary sewer within the tributary of Lornewood Creek or the construction of a new sanitary sewer within existing road rights-of-way or proposed easements. A Study Area map is attached to this letter. A Notice of Commencement/PIC for this Study will be issued separately.

In fulfillment of this work, current environmental background information (both terrestrial and aquatic) is required for the Study Area and adjacent lands. At this time, we are requesting any applicable / available data (preferably in GIS format) as listed below. Information we are seeking from Credit Valley Conservation (CVC) includes:

**Terrestrial**

- Sensitive wildlife habitat locations (e.g., nesting / breeding / hibernation) known to the CVC.

**Aquatics**

- Fish / Freshwater Mussel sampling locations (e.g., fish dot mapping) along with sample dates and species occurrence records for water bodies that are located within the Study Area.
- Confirmed and/or potential spawning / rearing / foraging habitat locations.
- Flow and temperature data.
- Surface water quality data.
- Channel structure and geomorphic information.

- Watershed reports.
- Thermal regime classifications.
- Stormwater drainage mapping and/or models.
- Any other aquatic information collected during CVC's field characterization of the Study Area.

### **Species of Conservation Concern (SCC)**

- A list or species records for Species of Conservation Concern applicable to the Study Area and adjacent lands.

### **Mapping**

- CVC Regulation mapping, including breakdown of the features contributing to the Regulation Limit (i.e., floodplain, steep slopes, etc.).
- CVC Ecological Land Classification (ELC) mapping if available.
- Natural Heritage System mapping if available.
- Natural Heritage mapping if available
- **Note:** Digital mapping would be preferred.

If you are able to respond by November 2, 2018, it would be greatly appreciated. Please do not hesitate to contact the undersigned if you have any questions or concerns.

Yours truly,

**R.J. Burnside & Associates Limited**

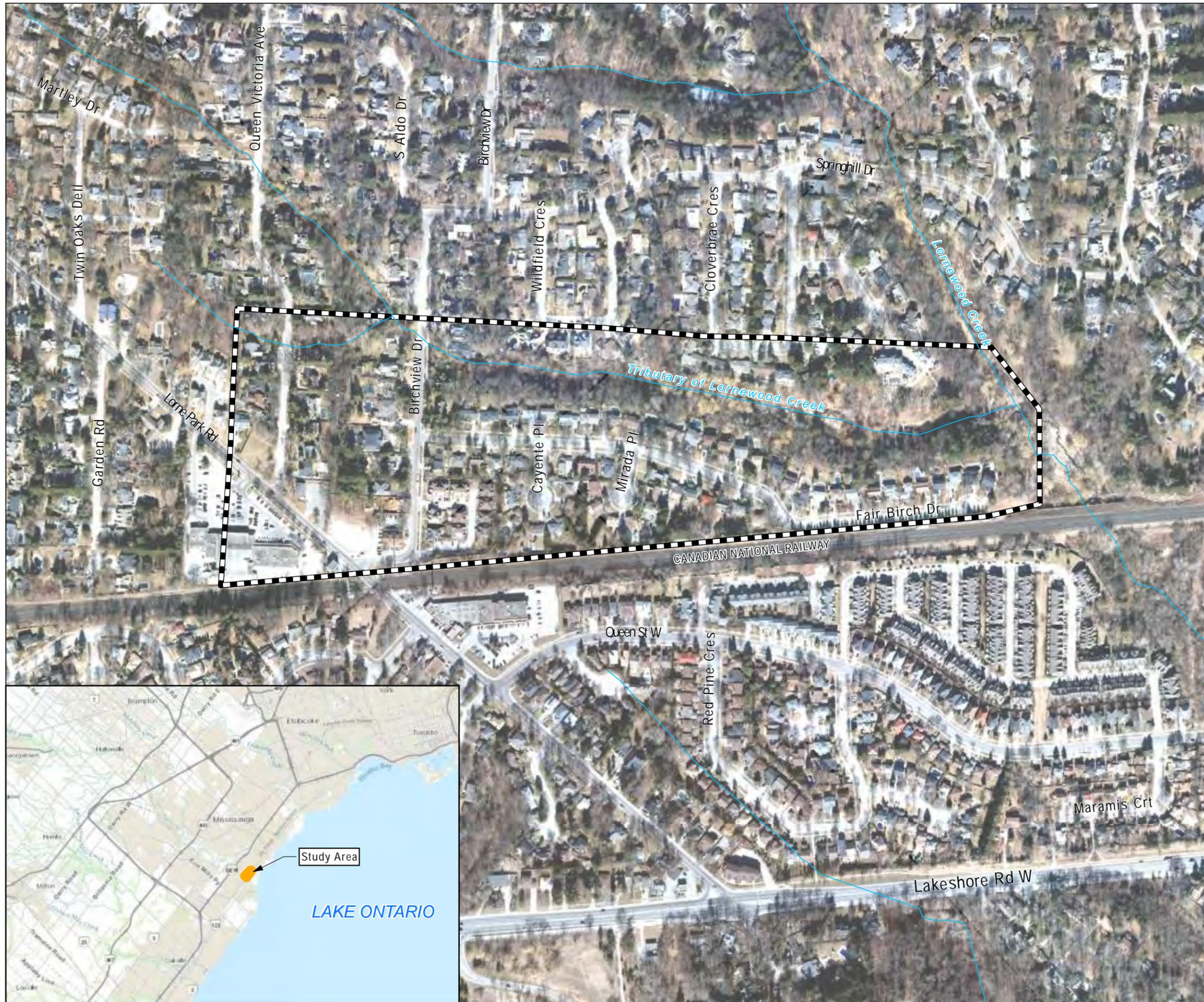


Jennifer Vandermeer, P.Eng.  
Environmental Assessment Lead  
JCV:sgd

Enclosure(s)      Study Area Location Map

cc:      Olena Gordiyenko, Region of Peel (enc.) (Via: Email)  
            Jordan Phillips, Burnside (enc.) (Via: Email)  
            Kim Doyle, Burnside (enc.) (Via: Email)  
            Avid Bani Hashemi Jahromi (enc.) (Via: Email)

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-  Watercourse
-  Study Area

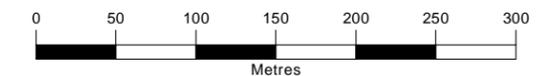
Sources:

1. Ministry of Natural Resources and Forestry, © Queen's Printer for Ontario.
2. Natural Resources Canada © Her Majesty the Queen in Right of Canada.
3. Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community.
4. Region of Peel.

Disclaimer:

R.J. Burnside & Associates Limited and the above mentioned sources and agencies are not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

Datum: North American 1983	
Coord. System: NAD 1983 UTM Zone 17N	
Projection: Transverse Mercator	
Central Meridian: 81°0'0.00"W	
False Easting: 500,000m	False Northing: 0m
Page Orientation: 312.35°	Scale Factor: 0.99960



Client

**REGION OF PEEL**

Figure Title

**FAIRBIRCH DRIVE AND AREA  
SANITARY SEWER IMPROVEMENTS  
ENVIRONMENTAL ASSESSMENT  
STUDY AREA**

Drawn	Checked	Date	Figure No. <b>1</b>
HN	JV	2018/10/12	
Scale		Project No.	
H 1:4,500		300042560.1000	

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Tuesday, November 13, 2018 3:07 PM  
**To:** Bell, Trevor (MECP)  
**Cc:** Martin, Paul (MECP); Gordiyenko, Olena; Jordan Phillips; Avid Banihashemi; 300042560  
Fair Birch Sani Sewer  
**Subject:** Re: Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Request for Indigenous Community List

Thank-you for getting back to me Trevor.

We'll proceed with the list we have for the Notice of Commencement and if you receive feedback from the Regional Aboriginal advisor we will update our contact list and move forward accordingly.

Best,  
Jennifer

Sent from my iPhone

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
**Office:** +1 800-265-9662 **Direct:** +1 226-486-1559

On Nov 13, 2018, at 12:35 PM, Bell, Trevor (MECP) <[Trevor.Bell@ontario.ca](mailto:Trevor.Bell@ontario.ca)> wrote:

Hi Jennifer,

Sorry for the delay. Unfortunately I haven't heard back from the Aboriginal Advisor regarding this, likely due to recent staffing changes. I have sent the request again to the current advisor who is covering projects in this region.

Based on my experience, I will say I believe it is fine for you to go ahead and move forward with circulating the communities on your current list. It is likely that your list is more extensive than the list that would be provided back to you from our Aboriginal Advisor. Should I hear anything different from the advisor in response to my request, I will notify you immediately.

Kind regards,  
Trevor

### **Trevor Bell, B.Sc., M.Env.**

Environmental Resource Planner and EA Coordinator  
Technical Support Section | Central Region  
Ministry of the Environment, Conservation and Parks  
5775 Yonge St., 8<sup>th</sup> Floor  
Toronto, ON M2M 4J1  
T: 416-326-3577  
E: [trevor.bell@ontario.ca](mailto:trevor.bell@ontario.ca)

---

**From:** Jennifer Vandermeer [<mailto:Jennifer.Vandermeer@rjburnside.com>]  
**Sent:** November-05-18 3:05 PM

**To:** Martin, Paul (MECP)

**Cc:** Bell, Trevor (MECP); Gordiyenko, Olena; Jordan Phillips; Avid Banihashemi; 300042560 Fair Birch Sani Sewer

**Subject:** FW: Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Request for Indigenous Community List

Good afternoon Paul,

I understand Trevor is out of the office until Nov 13. In his absence, I was wondering if you could follow up with the Regional Aboriginal Advisor to see if they had been able to review this request and provide the list of potentially interested Indigenous communities for this EA.

I have attached the study area map to this email for your reference.

Best regards,

Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
Office: +1 800-265-9662 Direct: +1 226-486-1559

---

**From:** Jennifer Vandermeer

**Sent:** Monday, November 05, 2018 11:40 AM

**To:** Bell, Trevor (MECP) <[Trevor.Bell@ontario.ca](mailto:Trevor.Bell@ontario.ca)>

**Cc:** Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>; Jordan Phillips <[Jordan.Phillips@rjburnside.com](mailto:Jordan.Phillips@rjburnside.com)>; Avid Banihashemi <[Avid.Banihashemi@rjburnside.com](mailto:Avid.Banihashemi@rjburnside.com)>; 300042560 Fair Birch Sani Sewer <[300042560fairbirchsani sewer@rjburnside.com](mailto:300042560fairbirchsani sewer@rjburnside.com)>

**Subject:** RE: Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Request for Indigenous Community List

Good morning Trevor,

I'm just following up to see if you received any feedback from the Regional Aboriginal Advisor with respect to the list of potentially interested Indigenous communities for this EA. I would appreciate the Ministry's input asap on this so we can ensure that the Notice of Commencement / PIC is delivered to the appropriate communities in a timely manner.

Best regards,

Jennifer

---

**From:** Bell, Trevor (MECP) <[Trevor.Bell@ontario.ca](mailto:Trevor.Bell@ontario.ca)>

**Sent:** Thursday, October 25, 2018 1:56 PM

**To:** Jennifer Vandermeer <[Jennifer.Vandermeer@rjburnside.com](mailto:Jennifer.Vandermeer@rjburnside.com)>

**Subject:** RE: Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Request for Indigenous Community List

Hi Jennifer,

I just received your voicemail. Your email below was forwarded to a Regional Aboriginal Advisor for confirmation of your list of potentially interested Aboriginal communities. She should respond to my inquiry within two weeks of my email, which would be by October 29. If I don't hear back from here on Monday I will follow up and get back to you asap.

Thanks,  
Trevor

---

**From:** Jennifer Vandermeer [<mailto:Jennifer.Vandermeer@rjburnside.com>]

**Sent:** October-12-18 2:06 PM

**To:** Bell, Trevor (MECP)

**Cc:** Gordiyenko, Olena; Jordan Phillips; Avid Banihashemi; 300042560 Fair Birch Sani Sewer

**Subject:** Environmental Assessment Study for Sanitary Sewer Improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Request for Indigenous Community List

Good afternoon Trevor,

On behalf of the Region of Peel, we are contacting you to request confirmation of the list of Indigenous communities to contact for the above noted Schedule B Municipal Class EA as we are in the process of preparing the Project Contact List in advance of issuing the Notice of Commencement. We are aiming to circulate the Notice of Commencement the last week of October / first week of November 2018. We will of course complete the Project Information Form and circulate a copy of the Notice of Commencement to MECP per the notification procedure; however, at this time would very much appreciate the Ministry's assistance in confirming the Indigenous communities to contact.

Based on our previous project experience in the City of Mississauga we understand that the following communities may be interested in this project:

- Mississaugas of the New Credit First Nation
- Six Nations of the Grand River
- Haudenosaunee Development Institute
- Haudenosaunee Confederacy Chiefs Council
- Métis Nation of Ontario

Could you please confirm if this list is representative of all communities, which may be interested in the study and accordingly, should be consulted in regards to this study?

Putting aside any potential archaeological resources, which might be identified during the Stage 1 (or further) Archaeological Assessment being undertaken for this study, the Project Team is not aware of any potential impacts to Aboriginal or treaty rights arising from this project. If MECP are aware of any asserted potential impacts to Aboriginal or treaty rights, which might arise from this project or any other council that should be included in the list above, kindly identify those potential impacts and the corresponding community (including contact information).

To assist your review of this project, we have included a brief project description below and have attached a figure illustrating the Study Area to this email for reference.

***Project Description:***

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road and has retained R.J. Burnside & Associates Limited to undertake the Study. These improvements are required to maintain the sanitary system connection to the existing sanitary sewer. The Study will follow Schedule B of the Municipal Class Environmental Assessment process and will evaluate alternative solutions with consideration for the natural, cultural, economic and technical environments, and recommend a preferred solution in consultation with the public, Indigenous communities and regulatory agencies. Alternative solutions being considered include rehabilitating the existing sanitary sewer within the tributary of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

In order to assist Burnside in the delivery of future EA projects, could you kindly advise if this type of request should be addressed to Environmental Assessment Central Region Contact email ([eanotification.cregion@ontario.ca](mailto:eanotification.cregion@ontario.ca)) for future projects?

Should you have any questions or require additional information, please feel free to contact me.

Best regards,  
Jennifer

<image001.png>  
**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
Office: 800-265-9662 Direct: 226-486-1559  
[www.rjburnside.com](http://www.rjburnside.com)

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Thank you.

\*\*\*\*\*

## Jennifer Vandermeer

---

**From:** Avid Banihashemi  
**Sent:** Friday, November 16, 2018 2:47 PM  
**To:** eanotification.cregion@ontario.ca  
**Cc:** 300042560 Fair Birch Sani Sewer; olena.gordiyenko@peelregion.ca; Jennifer Vandermeer  
**Subject:** Region of Peel, MEA Class EA, New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road [in Mississauga]  
**Attachments:** 042560\_Fair Birch EA\_PIF.xlsx; 042560\_Notice of Commencement\_Final.pdf

Hello,

Please find attached the Notice of Commencement [and Public Information Centre] and the completed Project Information Form for the MEA Class EA for New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road [in Mississauga].

Best regards,  
Avid Banihashemi for the Project Team

To stop receiving messages from [300042560 Fair Birch Sani Sewer](#) group, [stop following it](#).



**Avid Banihashemi**  
Environmental Project Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
**Office:** +1 800-265-9662 **Direct:** +1 226-486-1562  
[www.rjburnside.com](http://www.rjburnside.com)

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Thank you.

\*\*\*\*\*

What to do:

**Step 1:** Look for the type of EA project in column B that applies to you.

**Step 2:** Complete columns C to J for that project.

**Step 3:** Send this form in Excel format to the MECP regional office email address where the project is located.

MECP regional office email addresses are listed at

[www.ontario.ca/page/preparing-environmental-assessments](http://www.ontario.ca/page/preparing-environmental-assessments)

	Class EA/Streamlined EA	Proponent Name	Proponent Contact	Project Name	Project Schedule	Project Type	Project Location	MOECC Region	Project Initiation Date
1	CD - Remedial flood and erosion control projects								
2	GO Transit - Class EA								
3	Hydro One - Minor transmission facilities								
4	MEA - Class EA for municipal infrastructure projects	Regional Municipality of Peel	Olena Gordiyenko, P.Eng. Project Manager, Wastewater Capital Olena.Gordiyenko@peelregion.ca	Environmental Assessment Study - New Sanitary Sewer - Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road	Schedule B	Municipal water and wastewater projects	Mississauga, City of	Central	11/15/2018
5	Ministry of Infrastructure - Public work								
6	MNDM - Activities of the Ministry of Northern Development and Mines under the Mining Act								
7	MNRFP - Provincial parks and conservation reserves								
8	MNRFP - Resource stewardship and facility development projects								
9	MTO - Provincial transportation facilities								
10	O. Reg. 101/07 - Waste management projects								
11	O. Reg. 116/01 - Electricity projects								
12	OWA - Waterpower projects								

Enter the proponent's name.

Enter the name and email address of the person who the MECP should contact about your project. This should be the same contact person who is listed on the notice.

Enter the project name as it appears on the notice.

Select the project schedule from the drop-down menu.

Select the project type from the drop-down menu.

Select the name of the municipality or unorganized/unsurveyed area where your project is located from the drop-down menu.

Select the MECP region from the drop-streamlined EA process down menu. Read the "MECP regions" worksheet to find the MECP region where your project is located.

Enter the date that the process was initiated (e.g. notice of commencement). This date may be when the project notice was first published.

## Environmental Assessment Study

### NOTICE OF STUDY COMMENCEMENT AND PUBLIC INFORMATION CENTRE

#### New Sanitary Sewer

#### Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

#### The Study

The Region of Peel is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road. These improvements are required to maintain the system connection to the existing sanitary sewer. The study area is shown on the map.

Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

#### The Process

The Study will evaluate alternative solutions with consideration for the natural, cultural, economic and technical environments. A preferred solution will be recommended in consultation with the public, Indigenous communities and regulatory agencies. It will have the least long-term impact to the environment and public, the optimum cost and the maximum number of avoidable impacts to the community. A project file will be prepared for public review at the end of the Study.

#### Your Input Is Important – We Want to Hear from You

A key element of the EA planning process is consultation with the community. Early and active discussions will be critical to identify ways to reduce the impacts of this project to residents, businesses, traffic and pedestrians, while evaluating and selecting the preferred solution.

A Public Information Centre (PIC) will be held to present the findings of the Study and to provide an opportunity for feedback. The PIC will be held:

**Date:** November 27, 2018

**Time:** 6 to 8 p.m.

**Location:** Lorne Park Hall

For more information on the project visit [peelregion.ca](http://peelregion.ca), click on Public Works, Water & Wastewater, Environmental Assessments, Current Water & Wastewater Projects EAs, Mississauga, New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road.

#### Comments

If you are unable to attend the PIC and would like to provide comments or have questions, or if you would like to be added to the Project Contact List, please contact the Project Manager listed below.

Olena Gordiyenko, P.Eng.

Project Manager, Wastewater Capital

[Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)

905-791-7800, ext.7843



This notice was first issued on November 15, 2018

With the exception of personal information, all comments will become part of the public record of the study. The study is being conducted according to the requirements of the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act*.

## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:35 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

For EA File

---

**From:** Jennifer Vandermeer  
**Sent:** Tuesday, November 20, 2018 11:21 AM  
**To:** 300042560 Fair Birch Sani Sewer <300042560fairbirchsani sewer@rjburnside.com>  
**Subject:** FW: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

---

**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Tuesday, November 20, 2018 10:03 AM  
**To:** Jawdek, Wendy <wendy.jawdek@peelregion.ca>  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Subject:** RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Wendy,

The Consultant has been following a formal protocol to inform all review agencies on the project.

I don't think it was necessary as the Region of Peel, the owner of the existing infrastructure (sanitary sewer), initiated the study.

You don't have to respond to the letter.

Regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Jawdek, Wendy  
**Sent:** November 20, 2018 9:38 AM  
**To:** Gordiyenko, Olena  
**Subject:** FW: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Hi Olena,

I received this email but I don't think I need to. Please confirm.

Thanks,

*Wendy Jawdek*

PUCC Coordinator (Mississauga),  
Engineering Technical Services,  
Operations Support, Public Works

10 Peel Centre Dr, Suite B, 4th Floor (4-601C)  
Brampton, Ontario L6T 4B9  
Tel: (905) 791-7800 x5076  
General PUCC Mailbox: [PUCC.Applications@peelregion.ca](mailto:PUCC.Applications@peelregion.ca)

---

**From:** Avid Banihashemi [<mailto:Avid.Banihashemi@rjburnside.com>]  
**Sent:** November 16, 2018 12:36 PM  
**To:** ZZG-PUCC Applications  
**Cc:** 300042560 Fair Birch Sani Sewer  
**Subject:** Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

On behalf of the Regional Municipality of Peel, we are writing to inform you that the Region is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). These improvements are required to maintain the system connection to the existing sanitary sewer. Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Kindly, please find enclosed, the Notice of Commencement and Public Information Centre for the project and letter. Burnside is also requesting on behalf of the Region of Peel, that your agency complete the enclosed Response Form (to be returned via email by December 13, 2018 to [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)), to assist us in understanding your agency's involvement with this project.

Your contact information is part of the project contact list, and you will receive notices as the study progresses, unless indicated otherwise. Please feel free to contact us should you have any more comments or questions.

Sincerely,  
Avid Banihashemi for the Project Team



**Avid Banihashemi**  
Environmental Project Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
Office: +1 800-265-9662 Direct: +1 226-486-1562  
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Thank you.

\*\*\*\*\*

## Jennifer Vandermeer

---

**From:** Vir, Aanchal <Aanchal.Vir@cvc.ca>  
**Sent:** Tuesday, November 20, 2018 1:36 PM  
**To:** Jennifer Vandermeer  
**Subject:** RE: DR 18 060: Environmental Assessment Study  
**Attachments:** RQ0388\_FishCollectionSpecies.pdf; RQ0388\_SpeciesList\_final.xlsx; RQ0388\_FishCollectionRecords.pdf; ELC\_Land\_Use\_20170410.sbn; ELC\_Land\_Use\_20170410.sbx; ELC\_Land\_Use\_20170410.shp; ELC\_Land\_Use\_20170410.shp.xml; ELC\_Land\_Use\_20170410.shx; ESA\_near\_Fair\_Birch.cpg; ESA\_near\_Fair\_Birch.dbf; ESA\_near\_Fair\_Birch.prj; ESA\_near\_Fair\_Birch.sbn; ESA\_near\_Fair\_Birch.sbx; ESA\_near\_Fair\_Birch.shp; ESA\_near\_Fair\_Birch.shp.xml; ESA\_near\_Fair\_Birch.shx; fish\_community\_FairBirch.cpg; fish\_community\_FairBirch.dbf; fish\_community\_FairBirch.prj; fish\_community\_FairBirch.sbn; fish\_community\_FairBirch.sbx; fish\_community\_FairBirch.shp; fish\_community\_FairBirch.shp.xml; fish\_community\_FairBirch.shx; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.cpg; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.dbf; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.prj; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.sbn; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.sbx; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.shp; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.shp.xml; Gen\_Regs\_Fair\_Birch\_Dr\_Study\_Area.shx; hydrologic\_network\_2012\_Fair\_Birch.cpg; hydrologic\_network\_2012\_Fair\_Birch.dbf; hydrologic\_network\_2012\_Fair\_Birch.prj; hydrologic\_network\_2012\_Fair\_Birch.sbn; hydrologic\_network\_2012\_Fair\_Birch.sbx; hydrologic\_network\_2012\_Fair\_Birch.shp; hydrologic\_network\_2012\_Fair\_Birch.shp.xml; hydrologic\_network\_2012\_Fair\_Birch.shx; CRWNHS\_Final\_2015\_around\_Fair\_Birch.cpg; CRWNHS\_Final\_2015\_around\_Fair\_Birch.dbf; CRWNHS\_Final\_2015\_around\_Fair\_Birch.prj; CRWNHS\_Final\_2015\_around\_Fair\_Birch.sbn; CRWNHS\_Final\_2015\_around\_Fair\_Birch.sbx; CRWNHS\_Final\_2015\_around\_Fair\_Birch.shp; CRWNHS\_Final\_2015\_around\_Fair\_Birch.shp.xml; CRWNHS\_Final\_2015\_around\_Fair\_Birch.shx; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.cpg; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.dbf; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.prj; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.sbn; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.sbx; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.shp; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.shp.xml; CVC\_Lakes\_Ponds\_Fair\_Birch\_Area.shx; CVC\_wetlands\_NHP.cpg; CVC\_wetlands\_NHP.dbf; CVC\_wetlands\_NHP.prj; CVC\_wetlands\_NHP.sbn; CVC\_wetlands\_NHP.sbx; CVC\_wetlands\_NHP.shp; CVC\_wetlands\_NHP.shp.xml; CVC\_wetlands\_NHP.shx; ELC\_Land\_Use\_20170410.cpg; ELC\_Land\_Use\_20170410.dbf; ELC\_Land\_Use\_20170410.prj

Hi Jennifer,

Please see attached data as outlined in the Data Sharing Agreement. Please see additional notes below:

- The consultant should be directed to MNRF for additional SAR records and details
- according the *Peel-Caledon Significant Woodlands and Significant Wildlife Habitat Study* the area qualifies as a SWH under the criterion A4i: Landbird Migratory Stopover Areas and potential SWH under the criterion B7: Seeps and springs. CVC has not assessed all SWH criteria and the proponent is responsible for assessing the area for the presence of SWH.

Should you have any further questions, please contact me.

Regards,

**Aanchal Vir**

Technician, Planning | Credit Valley Conservation

905.670.1615 ext 304 | 1-800-668-5557

**From:** Jennifer Vandermeer [<mailto:Jennifer.Vandermeer@rjburnside.com>]  
**Sent:** November 16, 2018 1:41 PM  
**To:** Vir, Aanchal  
**Cc:** Gordiyenko, Olena; Heather Neary; 300042560 Fair Birch Sani Sewer  
**Subject:** RE: DR 18 060: Environmental Assessment Study

Good afternoon Aanchal,  
Please find attached the revised signed DSA with Schedule 2 completed.  
Best regards,  
Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | [www.rjburnside.com](http://www.rjburnside.com)  
**Office:** +1 800-265-9662 **Direct:** +1 226-486-1559

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**From:** Vir, Aanchal <[Aanchal.Vir@cvc.ca](mailto:Aanchal.Vir@cvc.ca)>  
**Sent:** Friday, November 16, 2018 12:29 PM  
**To:** Jennifer Vandermeer <[Jennifer.Vandermeer@rjburnside.com](mailto:Jennifer.Vandermeer@rjburnside.com)>  
**Cc:** Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>; Heather Neary <[Heather.Neary@rjburnside.com](mailto:Heather.Neary@rjburnside.com)>;  
300042560 Fair Birch Sani Sewer <[300042560fairbirchsanisewer@rjburnside.com](mailto:300042560fairbirchsanisewer@rjburnside.com)>  
**Subject:** RE: DR 18 060: Environmental Assessment Study

Hi,

Please complete schedule 2 with the user information.

Regards,

**Aanchal Vir**  
Technician, Planning | Credit Valley Conservation  
905.670.1615 ext 304 | 1-800-668-5557  
[aanchal.vir@cvc.ca](mailto:aanchal.vir@cvc.ca) | <http://cvc.ca>

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**From:** Jennifer Vandermeer [<mailto:Jennifer.Vandermeer@rjburnside.com>]  
**Sent:** November 16, 2018 12:25 PM  
**To:** Vir, Aanchal  
**Cc:** Gordiyenko, Olena; Heather Neary; 300042560 Fair Birch Sani Sewer  
**Subject:** RE: DR 18 060: Environmental Assessment Study

Good afternoon Aanchal,  
Please find attached the completed signed DSA. The form has been signed by Philip A. Rowe, who has the authorization to bind the company (Burnside). Please note that **Heather Neary**, copied to this email is our GIS Specialist for this project, so by way of this email I am requesting that you transfer the data to her directly. Please let me know if you have any questions.  
Best regards,  
Jennifer

---

**From:** Vir, Aanchal <[aanchal.vir@cvc.ca](mailto:aanchal.vir@cvc.ca)>  
**Sent:** Friday, November 09, 2018 9:54 AM  
**To:** Jennifer Vandermeer <[Jennifer.Vandermeer@rjburnside.com](mailto:Jennifer.Vandermeer@rjburnside.com)>  
**Subject:** DR 18 060: Environmental Assessment Study

Hi Jennifer,

Attached is the Data Sharing Agreement (DSA). Please complete Schedule 2 with user information, provide a signature from the proponent, sign and return the DSA at your earliest convenience.

Regards,

**Aanchal Vir**

Technician, Planning | Credit Valley Conservation  
905.670.1615 ext 304 | 1-800-668-5557  
[aanchal.vir@cvc.ca](mailto:aanchal.vir@cvc.ca) | <http://cvc.ca>

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## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:36 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

For EA File

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**From:** Jennifer Vandermeer  
**Sent:** Friday, November 23, 2018 3:07 PM  
**To:** 300042560 Fair Birch Sani Sewer <300042560fairbirchsani sewer@rjburnside.com>  
**Subject:** Fwd: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Sent from my iPhone

Begin forwarded message:

**From:** "Gordiyenko, Olena" <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>  
**Date:** November 23, 2018 at 1:46:35 PM EST  
**To:** Jennifer Vandermeer <[Jennifer.Vandermeer@rjburnside.com](mailto:Jennifer.Vandermeer@rjburnside.com)>  
**Subject:** FW: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Jennifer

FYI and file

Thank you

**Olena Gordiyenko, P.Eng.**  
Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** John Dunlop [<mailto:John.Dunlop@mississauga.ca>]  
**Sent:** November 23, 2018 1:44 PM  
**To:** Gordiyenko, Olena  
**Cc:** Michael Tunney  
**Subject:** RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Good Afternoon,

On behalf of the City of Mississauga, please find our form and contact information attached.

Thank you,

Regards,

John Dunlop

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Monday, February 11, 2019 8:37 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: New Sanitary Sewer - Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Schedule B Municipal Class EA  
**Attachments:** TSS Comments\_Notice of Commencement\_New Sanitary Sewer - Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road.pdf

For EA File

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**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Monday, November 26, 2018 8:48 AM  
**To:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>  
**Cc:** Jordan Phillips <Jordan.Phillips@rjburnside.com>; Avid Banihashemi <Avid.Banihashemi@rjburnside.com>  
**Subject:** FW: New Sanitary Sewer - Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Schedule B Municipal Class EA

Jennifer

Please find the letter from MOE FYI an action

Thank you

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** EA Notices to CRegion (MECP) [<mailto:eanotification.cregion@ontario.ca>]  
**Sent:** November 23, 2018 4:35 PM  
**To:** Gordiyenko, Olena  
**Cc:** Martin, Paul (MECP); Dufresne, Tina (MECP)  
**Subject:** New Sanitary Sewer - Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Schedule B Municipal Class EA

Good afternoon,

Please find attached a letter from the Ministry of the Environment, Conservation and Parks, Central Region Technical Support Section regarding the above mentioned project. Feel free to contact me directly with any questions or concerns you may have.

Sincerely,

**Trevor Bell, B.Sc., M.Env.**

Environmental Resource Planner and EA Coordinator  
Technical Support Section | Central Region

Ministry of the Environment, Conservation and Parks  
5775 Yonge St., 8<sup>th</sup> Floor  
Toronto, ON M2M 4J1  
T: 416-326-3577  
E: [trevor.bell@ontario.ca](mailto:trevor.bell@ontario.ca)

**Ministry of the  
Environment, Conservation  
and Parks**

Central Region  
5775 Yonge Street, 8<sup>th</sup> Floor  
North York ON M2M 4J1  
Phone: 416.326.6700  
Fax: 416.325.6345

**Ministère de l'Environnement,  
de la Protection de la nature et  
des Parcs**

Région du Centre  
8e étage, 5775, rue Yonge  
North York ON M2M 4J1  
Tél : 416 326-6700  
Télééc : 416 325-6345



November 23, 2018

File No.: EA 01-06-03

Olena Gordiyenko, P.Eng.  
Project Manager  
Wastewater Capital  
Region of Peel  
olena.gordiyenko@peelregion.ca  
BY EMAIL ONLY

**Re: New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Region of Peel  
Schedule B Municipal Class EA  
Response to Notice of Commencement**

Dear Ms. Gordiyenko,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Region of Peel has indicated that this study is following the approved environmental planning process for a Schedule B project under the Municipal Engineers Association's Municipal Class Environmental Assessment (Class EA).

The attached "Areas of Interest" document provides guidance regarding the Ministry's interests with respect to the Class EA process. Please identify the areas of interest which are applicable to the project and ensure they are addressed. Proponents who address all of the applicable areas of interest can minimize potential delays to the project schedule.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project, **the MOECC is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- Six Nations of the Grand River
- Haudenosaunee Confederacy Chiefs Council (HCCC)
- Mississaugas of the New Credit First Nation

Additionally, if you have an ongoing relationship with the Métis Nation of Ontario, you may wish to include them as well. Please note that while the HCCC may refer you to the Haudenosaunee Development Institute, with whom you may have had previous contact, we recommend that you contact HCCC first.

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the “Code of Practice for Consultation in Ontario’s Environmental Assessment Process” which can be found at the following link: <https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process>. Additional information related to Ontario’s Environmental Assessment Act is available online at: [www.ontario.ca/environmentalassessments](http://www.ontario.ca/environmentalassessments)

Please also refer to the attached document “A Proponent’s Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities” for further information.

The proponent must contact the Director of Environmental Approvals Branch under the following circumstances subsequent to initial discussions with the communities identified by MOECC:

- Aboriginal or treaty rights impacts are identified to the proponent by the communities
- The proponent has reason to believe that the proposed project may adversely affect an Aboriginal or treaty right
- Consultation has reached an impasse
- A Part II Order request or elevation request is expected

The Director of the Environmental Approvals Branch can be notified either by email with the subject line “Potential Duty to Consult” to [EAASIBgen@ontario.ca](mailto:EAASIBgen@ontario.ca) or by mail or fax at the address provided below:

<b>Email:</b>	<a href="mailto:EAASIBGen@ontario.ca">EAASIBGen@ontario.ca</a> Subject: Potential Duty to Consult
<b>Fax:</b>	416-314-8452
<b>Address:</b>	Environmental Approvals Branch 135 St. Clair Avenue West, 1 <sup>st</sup> Floor Toronto, ON, M4V 1P5

The MOECC will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role the proponent will be asked to play in them.

**A draft copy of the Project File Report (PFR) should be sent to this office prior to the filing of the final report, allowing a minimum of 30 days for the ministry’s technical reviewers to provide comments. Please also forward the Notice of Completion and final PFR to me when completed.**

Should you or any members of your project team have any questions regarding the material above, please contact me at [trevor.bell@ontario.ca](mailto:trevor.bell@ontario.ca) or 416-326-3577.

Sincerely,

A handwritten signature in black ink, appearing to read 'Trevor Bell', with a stylized flourish at the end.

Trevor Bell, B.Sc., M.Env.  
Regional Environmental Assessment Coordinator  
Air, Pesticides and Environmental Planning

cc: Paul Martin, Supervisor, Technical Support Section, MECP  
Tina Dufresne, Manager, Halton Peel District Office, MECP  
Central Region EA File  
A & P File

Attach: Areas of Interest  
A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with  
Aboriginal Communities

## AREAS OF INTEREST

*It is suggested that you check off each applicable area after you have considered / addressed it.*

### ☐ **Source Water Protection (all projects)**

The Clean Water Act, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- As you may be aware, in October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the PFR on source water protection.**
  - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area. If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the PFR how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.
- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.
- In order to determine if this project is occurring within a vulnerable area, proponents can use this mapping tool: <http://www.applications.ene.gov.on.ca/swp/en/index.php>. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be

applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. The contact for this project is Jennifer Stephens at 416-661-6600 ext. 5568 or [jstephens@trca.on.ca](mailto:jstephens@trca.on.ca). Please document the results of that consultation within the Report and include all communication documents/correspondence.**

#### More Information

For more information on the Clean Water Act, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the Clean Water Act. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

#### □ **Climate Change**

Ontario is leading the fight against climate change through the Climate Change Action Plan. Recently released, the plan lays out the specific actions Ontario will take in the next five years to meet its 2020 greenhouse gas reduction targets and establishes the framework necessary to meet its long-term targets. As a commitment of the action plan, **the province has now finalized a guide, "Considering Climate Change in the Environmental Assessment Process" (Guide), which is found online at: [www.ontario.ca/page/considering-climate-change-environmental-assessment-process](http://www.ontario.ca/page/considering-climate-change-environmental-assessment-process)**

The Guide is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. **Proponents should review this Guide in detail.**

- The MECP expects proponents to:
  1. Take into account during the assessment of alternative solutions and alternative designs, the following:
    - a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
    - b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
  2. Include a discrete section in the PFR detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature, and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered. Please ensure climate change is considered in the report.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "[Community Emissions Reduction Planning: A Guide for Municipalities](#)" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

## □ Planning and Policy

- Parts of the study area may be subject to the Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan, Greenbelt Plan, Lake Simcoe Protection Plan, or Growth Plan for the Greater Golden Horseshoe. Applicable policies should be referenced in the PFR, and the proponent should describe how the proposed study adheres to the relevant policies in these plans. **The [new 2017 provincial plans](#) are now in effect.**
- The [Provincial Policy Statement](#) (2014) contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the PFR, and the proponent should describe how this proposed project is consistent with these policies.

## □ Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, an air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.**
- **If a full Air Quality Impact Assessment is not required for the project, the PFR should still contain:**
  - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
  - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
  - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
  - A discussion of potential mitigation measures.
- As a common practice, "air quality" should be used an evaluation criterion for all road projects.
- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.
- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities*. Report prepared for Environment Canada. March 2005. <http://www.bv.transports.gouv.qc.ca/mono/1173259.pdf>
- The PFR should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

## □ Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The PFR should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.
- All natural heritage features should be identified and described in detail to assess potential impacts and

to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:

- Areas of Natural and Scientific Interest (ANSIs)
- Rare Species of flora or fauna
- Watercourses
- Wetlands
- Woodlots

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, you may consider the provisions of the Rouge Park Management Plan if applicable.

#### □ **Surface Water**

- The PFR must include a sufficient level of information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.
- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's [Stormwater Management Planning and Design Manual \(2003\)](#) should be referenced in the PFR and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:
  - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
  - Watershed information, drainage conditions, and other relevant background information
  - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
  - Information on maintenance and monitoring commitments.
- Ontario Regulation 60/08 under the Ontario Water Resources Act (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If the proposed sewage treatment plant is listed in Table 1 of the regulation, the PFR should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.
- Any potential approval requirements for surface water taking or discharge should be identified in the PFR. In particular, a Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the [Water Taking User Guide for EASR](#) for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

#### □ **Groundwater**

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the

PFR.

- If the potential construction or decommissioning of water wells is identified as an issue, the PFR should refer to Ontario Regulation 903, Wells, under the OWRA.
- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.
- Any potential approval requirements for groundwater taking or discharge should be identified in the PFR. In particular, a Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the [Water Taking User Guide for EASR](#) for more information.

#### □ **Contaminated Soils**

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act (EPA)* and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the ministry's District Offices for further consultation if contaminated sites are present.
- Any current or historical waste disposal sites should be identified in the PFR. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites.
- The location of any underground storage tanks should be investigated in the PFR. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.
- The PFR should identify any underground transmission lines in the study area. The owners should be consulted to avoid impacts to this infrastructure, including potential spills.

#### □ **Excess Materials Management**

- Activities involving the management of excess soil should be completed in accordance with the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014) available online (<http://www.ontario.ca/document/management-excess-soil-guide-best-management-practices>).
- All waste generated during construction must be disposed of in accordance with ministry requirements.

#### □ **Servicing and Facilities**

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with the Environmental Approvals Access and Service Integration Branch (EAASIB) to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's "D-Series" guidelines – Land Use Compatibility to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

#### □ Mitigation and Monitoring

Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the PFR and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.
- The proponent's construction and post-construction monitoring plans must be documented in the PFR, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

#### □ Consultation

- The PFR must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the PFR that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout the planning process. The Class EA also directs proponents to include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments.

#### □ Class EA Process

- The PFR should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.
- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. The Master Plan should clearly indicate the selected approach for conducting the plan, in particular by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Part II Order Requests under the *Environmental Assessment Act* (EAA), although the plan itself would not be.
- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment. The PFR should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments) such that all potential impacts can be identified and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the PFR.
- Please include in the PFR a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, and approvals under the *Canadian Environmental Assessment Act* (CEAA).
- Ministry guidelines and other information related to the issues above are available at <http://www.ontario.ca/environment-and-energy/environment-and-energy>. We encourage you to review all the available guides and to reference any relevant information in the PFR.

## A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

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### DEFINITIONS

The following definitions are specific to this document and may not apply in other contexts:

**Aboriginal communities** – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

**Consultation** – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

**Crown** – the Ontario Crown, acting through a particular ministry or ministries.

**Procedural aspects of consultation** – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

**Proponent** – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

### I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

### II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers issuing

a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

### **III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS**

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

### **IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS**

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a

project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

**a) What might a proponent be required to do in carrying out the procedural aspects of consultation?**

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;
- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

## **b) What documentation and reporting does the Crown need from the proponent?**

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;
- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

## **c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?**

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

## **V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?**

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;
- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigate any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

## **VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?**

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

## Meaghan Luis

---

**From:** Jennifer Vandermeer  
**Sent:** Wednesday, November 28, 2018 10:26 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** RE: New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road - EA Study Commencement and Notice of PIC

For EA File

---

**From:** Jennifer Vandermeer  
**Sent:** Wednesday, November 28, 2018 10:22 AM  
**To:** 300042560 Fair Birch Sani Sewer <300042560fairbirchsanisewer@rjburnside.com>  
**Subject:** FW: New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road - EA Study Commencement and Notice of PIC

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**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Wednesday, November 28, 2018 9:48 AM  
**To:** Auryn Soares <Auryn.Souares@mississauga.ca>  
**Cc:** Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Jordan Phillips <Jordan.Phillips@rjburnside.com>  
**Subject:** RE: New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road - EA Study Commencement and Notice of PIC

Auryn,

Thank you for your interest to the Region of Peel project.

WE will keep you updated and provide the City of Mississauga with all requested.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Auryn Soares [<mailto:Auryn.Souares@mississauga.ca>]  
**Sent:** November 28, 2018 9:16 AM  
**To:** Gordiyenko, Olena  
**Subject:** New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road - EA Study Commencement and Notice of PIC

Good morning Olena,

Staff at the City of Mississauga were recently informed of the commencement of the subject EA and kindly request a copy of the project file when available. The document will be circulated to City staff and the feedback will be provided to you. Please add myself to the contact list.

If you wish, I would also be happy to circulate the findings of the Study presented during the PIC held yesterday and provide you with any feedback received from staff.

Best regards,  
Auryn



**Auryn Soares**

Storm Drainage Coordinator, Environmental Services Section

T 905-615-3200 x3363

[auryn.soares@mississauga.ca](mailto:auryn.soares@mississauga.ca)

[City of Mississauga](#) | Transportation & Works Department | Transportation Infrastructure Planning Division

## Meaghan Luis

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**From:** Jennifer Vandermeer  
**Sent:** Wednesday, November 28, 2018 10:25 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

For EA File

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**From:** Jennifer Vandermeer  
**Sent:** Wednesday, November 28, 2018 10:22 AM  
**To:** 300042560 Fair Birch Sani Sewer <300042560fairbirchsanisewer@rjburnside.com>  
**Subject:** FW: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

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**From:** Gordiyenko, Olena <olena.gordiyenko@peelregion.ca>  
**Sent:** Wednesday, November 28, 2018 9:50 AM  
**To:** Gaggan Gill <Gaggan.Gill@mississauga.ca>  
**Cc:** Ras, Karen <karen.ras@mississauga.ca>; Hopton, Simon <simon.hopton@peelregion.ca>; Jennifer Vandermeer <Jennifer.Vandermeer@rjburnside.com>; Jordan Phillips <Jordan.Phillips@rjburnside.com>  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Dear Gaggan,

Please find the requested.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Gaggan Gill [<mailto:Gaggan.Gill@mississauga.ca>]  
**Sent:** November 28, 2018 9:41 AM  
**To:** Gordiyenko, Olena  
**Cc:** Ras, Karen; Hopton, Simon  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Good morning Olena:

Councillor Ras is hoping you can send over a copy of last night's presentation please. When you have a moment, can you send us a copy.

Thanks for your help.

Respectfully,

Gaggan  
Gaggan Gill  
Executive Assistant  
Councillor Karen Ras, Ward 2  
905-896-5200 b.



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**From:** Gordiyenko, Olena [<mailto:olena.gordiyenko@peelregion.ca>]  
**Sent:** 2018/11/26 4:25 PM  
**To:** Gaggan Gill  
**Cc:** Karen Ras; Hopton, Simon  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Gaggan,

Please find the sketch showing the project study area as well as a page from official Municipal Class Environmental Assessment.

This Page (A-55) outline requirements on public notification. Based on this we notified the property owner who may be affected by the project.

If any other individual citizen have a general interest in the project we would be happy to add them on the contact list and provide with the project update.

If you would send us the contact information to those who requested information about the project and are not currently on the list, we will be happy to send them the project updates.

Best regards,

**Olena Gordiyenko, P.Eng.**  
Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Gaggan Gill [<mailto:Gaggan.Gill@mississauga.ca>]  
**Sent:** November 26, 2018 4:10 PM  
**To:** Gordiyenko, Olena  
**Cc:** Ras, Karen  
**Subject:** Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Hi Olena:

Thanks for sending this list over. To be clear, the reason why you did not deliver entire streets is because this project doesn't affect certain homes? I'm trying to understand the rationale of only hand delivering to portions of the street. So the construction doesn't affect those who didn't receive the notice or is because they will not be serviced by the new sewer?

The residents who are have written to Councillor Ras are not on the attached list. They are the ones that are writing to Councillor Ras upset that they weren't made aware of the project and not everyone receives the Mississauga News. I know you said, I could sent them onto you, which I will but I'd like to understand the process of delivery.

Thanks again for your help with this.

Respectfully,

Gaggan  
Gaggan Gill  
Executive Assistant  
Councillor Karen Ras, Ward 2  
905-896-5200 b.



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**From:** Gordiyenko, Olena [<mailto:olena.gordiyenko@peelregion.ca>]  
**Sent:** 2018/11/26 1:46 PM  
**To:** Gaggan Gill  
**Subject:** FW: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Gaggan,

I need to clarify that the list provide is for both, resents and businesses.

Regards,

**Olena Gordiyenko, P.Eng.**  
Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Gordiyenko, Olena  
**Sent:** November 26, 2018 1:07 PM  
**To:** 'Gaggan Gill'  
**Cc:** Hopton, Simon; Ras, Karen  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Gaggan

As per your request, please find the attached list of residents we delivered project notices on November 15, 2018. We have also delivered the Notice of the project commencement to number of businesses. I will provide you with the list of businesses a little bit later.

Meanwhile please do not hesitate to forward to me any questions or concerns related to the project .

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Gordiyenko, Olena  
**Sent:** November 26, 2018 8:56 AM  
**To:** Ras, Karen; Gaggan Gill  
**Cc:** Hopton, Simon  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Dear Councillor Ras,

Please note that the notes to the residents and businesses located within the project study area have been hand delivered on November 15, 2018.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Karen Ras [<mailto:Karen.Ras@mississauga.ca>]  
**Sent:** November 25, 2018 5:54 PM  
**To:** Gordiyenko, Olena; Gaggan Gill  
**Cc:** Hopton, Simon  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Hi Olena,

Was there a notice also sent to the residents?

Most don't receive the Mississauga News so there needs to be a notice delivered to individual residences.

If not, we may have to have another PIC in the near future.

Thanks,

Karen Ras  
Councillor, Ward 2  
300 City Centre Drive  
Mississauga, ON L5B 3C1  
905-896-5200  
[www.karenras.ca](http://www.karenras.ca)

Join our [mailing list](#)



Karen Ras



@RasWard2

Please consider the environment before printing this e-mail.

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**From:** Gordiyenko, Olena [<mailto:olena.gordiyenko@peelregion.ca>]  
**Sent:** 2018/11/16 10:50 AM  
**To:** Gaggan Gill  
**Cc:** Hopton, Simon; Karen Ras  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Gaggan,

The attached is the Project commencement notice as it was published Mississauga News on November 15.

The second ad will be published on November 22, 2018.

Please let me know if Councillor Ras would like to meet to be briefed on the project before the PIC.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Gaggan Gill [<mailto:Gaggan.Gill@mississauga.ca>]  
**Sent:** October 24, 2018 10:16 AM  
**To:** Gordiyenko, Olena  
**Cc:** Hopton, Simon; Ras, Karen  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Olena:

Could you please send Councillor Ras a copy of the notice.

Thanks,

Gaggan

---

**From:** Gaggan Gill  
**Sent:** 2018/10/24 10:11 AM  
**To:** 'Gordiyenko, Olena'  
**Cc:** Hopton, Simon; Karen Ras  
**Subject:** RE: Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Hi Olena:

Councillor Ras has approved your request. She will also be attending.

Thanks for following up.

If you need anything else, please let me know.

Respectfully,

Gaggan  
Gaggan Gill  
Executive Assistant  
Councillor Karen Ras, Ward 2  
905-896-5200 b.



Karen Ras

This e-mail may not be forwarded to anyone for any reason without express written permission of the author.

---

**From:** Gordiyenko, Olena [<mailto:olena.gordiyenko@peelregion.ca>]  
**Sent:** 2018/10/17 10:07 AM  
**To:** Karen Ras  
**Cc:** Hopton, Simon  
**Subject:** Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Dear Councillor Ras:

We are planning to submit a Notice of Study Commencement for the Class EA which we informed you about earlier towards the end of October. We will need to include in the Notice of Study Commencement a notification of a Public Information Centre we are planning for the project.

We would like to set up this Public Information Centre at Lorne Park Hall (1288 Lorne Park Road, Mississauga) on November 27, 2018 from 6 to 8pm.

Please let me know if you are available on this date.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

---

**From:** Gordiyenko, Olena  
**Sent:** August 29, 2018 11:28 AM  
**To:** Ras, Karen  
**Cc:** Hopton, Simon ([Simon.Hopton@peelregion.ca](mailto:Simon.Hopton@peelregion.ca))  
**Subject:** Region of Peel capital project 18-2300-C in the City of Mississauga, Ward 2

Dear Councillor Ras,

Please be advised that the Region of Peel initiated a Municipal Class Environmental Assessment, Schedule B to consider options for raising the reliability of the sanitary sewer in residential areas including Queen Victoria Avenue, Aldo Drive, South Aldo Drive, Birchview Drive, Springhill Drive, Mobridge Court, Wildfield Crescent, Fair Birch Drive, and Lorne Parke Road (please refer to the attached sketch). The project will include construction of a new sewer as well as rehabilitation of some sections of the existing one and abandonment of the existing sewer running in close proximity to the creek bed.

This is an advanced notification only. As soon as we have details of the planning stages of the class environmental assessment we will keep you updated on every step of the project.

Best regards,

**Olena Gordiyenko, P.Eng.**

Project Manager, Public Works  
Wastewater Collection & Communal Treatment  
905-791-7800 x.7843

**From:** Bell, Trevor (MECP) <Trevor.Bell@ontario.ca>  
**Sent:** Thursday, May 02, 2019 12:56 PM  
**To:** Avid Banihashemi  
**Cc:** Jennifer Vandermeer; Jordan Phillips; Gordiyenko, Olena; 300042560 Fair Birch Sani Sewer  
**Subject:** RE: Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road MCEA - Draft PFR

Hi Avid,

Thanks for your email. I have downloaded the Draft PFR and will provide comments within 30 days. We appreciate the opportunity to comment on the draft.

Kind regards,  
Trevor

### **Trevor Bell, M.Env.**

Environmental Resource Planner and EA Coordinator  
Technical Support Section | Central Region  
Ministry of the Environment, Conservation and Parks  
5775 Yonge St., 8<sup>th</sup> Floor  
Toronto, ON M2M 4J1  
T: 416-326-3577  
E: [trevor.bell@ontario.ca](mailto:trevor.bell@ontario.ca)

---

**From:** Avid Banihashemi <[Avid.Banihashemi@rjburnside.com](mailto:Avid.Banihashemi@rjburnside.com)>  
**Sent:** May-02-19 11:57 AM  
**To:** Bell, Trevor (MECP) <[Trevor.Bell@ontario.ca](mailto:Trevor.Bell@ontario.ca)>  
**Cc:** Jennifer Vandermeer <[Jennifer.Vandermeer@rjburnside.com](mailto:Jennifer.Vandermeer@rjburnside.com)>; Jordan Phillips <[Jordan.Phillips@rjburnside.com](mailto:Jordan.Phillips@rjburnside.com)>; Gordiyenko, Olena <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>; 300042560 Fair Birch Sani Sewer <[300042560fairbirchsani sewer@rjburnside.com](mailto:300042560fairbirchsani sewer@rjburnside.com)>  
**Subject:** Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road MCEA - Draft PFR

Good afternoon Trevor,

On behalf of the Region of Peel, we would like to thank MECP for its participation in the New Sanitary Sewer - Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (Municipal Class EA) Study.

Further to your letter of response (File No. EA 01-06-03) on 23<sup>rd</sup> November, 2018 to the Notice of Commencement for this Study, please find a digital copy of the Draft Project File Report (PFR) for MECP's 30-day review and comment [here](#) (this link will expire in 30 days). The Study Project Team is aiming to finalize the Report promptly after completion of MECP's review and addressing any potential comments. Kindly please return MECP's comments on the draft PFR by Friday, June 7, 2019 to Burnside and the Region.

Thank you,

Best Regards,  
Avid

  
**Avid Banihashemi**  
Environmental Project  
Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario  
N1H 1C4  
Office: +1 800-265-9662 Direct: +1 226-486-1562  
[www.rjburnside.com](http://www.rjburnside.com)

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Thank you.

\*\*\*\*\*

**From:** Jennifer Vandermeer  
**Sent:** Friday, June 07, 2019 3:44 PM  
**To:** Bell, Trevor (MECP); Gordiyenko, Olena (olena.gordiyenko@peelregion.ca)  
**Cc:** Martin, Paul (MECP); Dufresne, Tina (MECP); Avid Banihashemi; Jordan Phillips; 300042560 Fair Birch Sani Sewer  
**Subject:** RE: New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Schedule B Municipal Class EA

Good afternoon Trevor,

On behalf of the Region of Peel and the Study Team we thank-you for completing a review of the draft PFR for this project. We will incorporate MECP's comments into the final PFR and issue for the 30-day review period shortly.

Best regards,  
Jennifer

**Jennifer Vandermeer, P.Eng.**  
Environmental Assessment Lead

R.J. Burnside & Associates Limited | www.rjburnside.com  
Office: +1 800-265-9662 Direct: +1 226-486-1559

---

**From:** Bell, Trevor (MECP) <[Trevor.Bell@ontario.ca](mailto:Trevor.Bell@ontario.ca)>  
**Sent:** Friday, June 07, 2019 2:52 PM  
**To:** Gordiyenko, Olena ([olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)) <[olena.gordiyenko@peelregion.ca](mailto:olena.gordiyenko@peelregion.ca)>  
**Cc:** Martin, Paul (MECP) <[Paul.D.Martin@ontario.ca](mailto:Paul.D.Martin@ontario.ca)>; Dufresne, Tina (MECP) <[Tina.Dufresne@ontario.ca](mailto:Tina.Dufresne@ontario.ca)>; Avid Banihashemi <[Avid.Banihashemi@rjburnside.com](mailto:Avid.Banihashemi@rjburnside.com)>; Jennifer Vandermeer <[Jennifer.Vandermeer@rjburnside.com](mailto:Jennifer.Vandermeer@rjburnside.com)>; Jordan Phillips <[Jordan.Phillips@rjburnside.com](mailto:Jordan.Phillips@rjburnside.com)>  
**Subject:** New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road - Schedule B Municipal Class EA

Good afternoon,

Please find attached a letter from the Ministry of the Environment, Conservation and Parks, Central Region Technical Support Section regarding the above mentioned project. Feel free to contact me directly with any questions or concerns you may have.

Sincerely,

**Trevor Bell, B.Sc., M.Env.**

Environmental Resource Planner and EA Coordinator  
Technical Support Section | Central Region  
Ministry of the Environment, Conservation and Parks  
5775 Yonge St., 8<sup>th</sup> Floor  
Toronto, ON M2M 4J1  
T: 416-326-3577  
E: [trevor.bell@ontario.ca](mailto:trevor.bell@ontario.ca)

Ministry of the Environment,  
Conservation and Parks

Ministère de l'Environnement, de  
la Protection de la nature et des Parcs

Central Region

Région du Centre

5775 Yonge Street, 8<sup>th</sup> floor  
North York ON M2M 4J1

Tel.: 416 326-6700

Fax.: 416 325-6345

8<sup>e</sup> étage, 5775, rue Yonge  
North York ON M2M 4J1

Tél. : 416 326-6700

Télééc. : 416 325-6345

June 7, 2019

File No.: EA 01-06-03

Olena Gordiyenko, P.Eng.  
Project Manager  
Wastewater Capital  
Region of Peel  
olena.gordiyenko@peelregion.ca  
BY EMAIL ONLY

Re: **New Sanitary Sewer – Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
Region of Peel  
Schedule B Municipal Class EA  
Draft Project File Report, May 2019**

Dear Ms. Gordiyenko,

The Ministry of the Environment, Conservation and Parks (MECP) has reviewed the Draft Project File Report (Draft PFR) for the Schedule B Municipal Class Environmental Assessment for the New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue, and Lorne Park Road in the City of Mississauga, dated May 2019. We understand that the preferred solution is Alternative 3: Construct New Sanitary Sewer, which improves access to the sanitary sewer system for maintenance purposes and provides a viable, safe, and structurally and hydraulically sound sanitary sewerage system through abandonment of the 40-year old sanitary system and placement of new infrastructure within the existing right-of-way.

## Comments

MECP is satisfied with the draft PFR and we appreciate the good planning and level of detail included in the project documentation. As such we have no technical comments to offer presently, save for the following minor comment with respect to mitigation of dust generated during the construction phase:

- Please note that MECP recommends that non-chloride dust suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities*. Report prepared for Environment Canada. March 2005. <http://www.bv.transports.gouv.qc.ca/mono/1173259.pdf>

Thank you for the opportunity to review and comment on the Draft PFR. Should you or any members of your project team have any questions regarding the material above, please contact me at trevor.bell@ontario.ca or 416-326-3577.

Sincerely,

A handwritten signature in black ink, appearing to read 'Trevor Bell', with a stylized flourish at the end.

Trevor Bell  
Regional Environmental Assessment Coordinator  
Air, Pesticides and Environmental Planning

cc: Paul Martin, Supervisor, Technical Support Section, MECP  
Tina Dufresne, Manager, Halton Peel District Office, MECP  
Avid Banihashemi, Environmental Project Manager, R.J. Burnside & Associates Ltd.  
Jennifer Vandermeer, Environmental Assessment Lead, R.J. Burnside & Associates Ltd.  
Jordan Phillips, Project Engineer, R.J. Burnside & Associates Ltd.  
Central Region EA File  
A & P File



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]



## Appendix D7

### Utility Correspondence

## Meaghan Luis

---

**From:** Avid Banihashemi  
**Sent:** Monday, November 19, 2018 9:06 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

---

**From:** Eastern Region Crossing <est.reg.crossing@enbridge.com>  
**Sent:** Monday, November 19, 2018 9:00 AM  
**To:** Avid Banihashemi <Avid.Banihashemi@rjburnside.com>  
**Subject:** RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Enbridge Pipelines Inc. does not have any assets in the area

Thank you

**Amy Robinson**

519-339-0517

—

enbridge.com

Integrity. Safety. Respect.

---

**From:** Avid Banihashemi [<mailto:Avid.Banihashemi@rjburnside.com>]  
**Sent:** Friday, November 16, 2018 11:59 AM  
**To:** Eastern Region Crossing  
**Cc:** 300042560 Fair Birch Sani Sewer  
**Subject:** [External] Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

On behalf of the Regional Municipality of Peel, we are writing to inform you that the Region is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). These improvements are required to maintain the system connection to the existing sanitary sewer. Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Kindly, please find enclosed, the Notice of Commencement and Public Information Centre for the project and letter. Burnside is also requesting on behalf of the Region of Peel, that your agency complete the enclosed Response Form (to be returned via email by December 13, 2018 to [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)), to assist us in understanding your agency's involvement with this project.

Your contact information is part of the project contact list, and you will receive notices as the study progresses, unless indicated otherwise. Please feel free to contact us should you have any more comments or questions.

Sincerely,

Avid Banihashemi for the Project Team



**Avid Banihashemi**  
Environmental Project Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
Office: +1 800-265-9662 Direct: +1 226-486-1562  
[www.rjburnside.com](http://www.rjburnside.com)

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Thank you.

\*\*\*\*\*

## Meaghan Luis

---

**From:** Avid Banihashemi  
**Sent:** Wednesday, December 05, 2018 3:48 PM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
**Attachments:** noname

**From:** phil.arbeau@zayo.com <phil.arbeau@zayo.com> **On Behalf Of** Utility Circulations  
**Sent:** Wednesday, December 05, 2018 3:47 PM  
**To:** Avid Banihashemi <Avid.Banihashemi@rjburnside.com>; Olena.Gordiyenko@peelregion.ca  
**Subject:** Re: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Good afternoon,

Zayo has no existing plant in the area indicated in your submission. No markup and no objection. Thank you. I am unable to edit the PDF due to protections on the file.

Phil Arbeau  
Utility Circulations

On Fri, 16 Nov 2018 at 12:03, Avid Banihashemi <[Avid.Banihashemi@rjburnside.com](mailto:Avid.Banihashemi@rjburnside.com)> wrote:

On behalf of the Regional Municipality of Peel, we are writing to inform you that the Region is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). These improvements are required to maintain the system connection to the existing sanitary sewer. Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Kindly, please find enclosed, the Notice of Commencement and Public Information Centre for the project and letter. Burnside is also requesting on behalf of the Region of Peel, that your agency complete the enclosed Response Form (to be returned via email by December 13, 2018 to [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)), to assist us in understanding your agency's involvement with this project.

Your contact information is part of the project contact list, and you will receive notices as the study progresses, unless indicated otherwise. Please feel free to contact us should you have any more comments or questions.

Sincerely,



**Avid Banihashemi**  
Environmental Project Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
Office: +1 800-265-9662 Direct: +1 226-486-1562  
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Thank you.

\*\*\*\*\*

## Meaghan Luis

---

**From:** Avid Banihashemi  
**Sent:** Wednesday, December 05, 2018 1:06 PM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

---

**From:** tpumarkup@HydroOne.com <tpumarkup@HydroOne.com>  
**Sent:** Wednesday, December 05, 2018 1:05 PM  
**To:** Avid Banihashemi <Avid.Banihashemi@rjburnside.com>  
**Cc:** tpumarkup@HydroOne.com  
**Subject:** RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Thank you for informing Hydro One of your upcoming project. Hydro One **does not** own or operate underground high voltage transmission facilities in the area described in your attachments.

Thanks,

Logan McClevis  
Hydro One Networks Inc.  
230 Bayview Dr, Barrie  
[tpumarkup@hydroone.com](mailto:tpumarkup@hydroone.com)

---

**From:** Avid Banihashemi [<mailto:Avid.Banihashemi@rjburnside.com>]  
**Sent:** Friday, November 16, 2018 12:12 PM  
**To:** TPUCC DRAWINGS  
**Cc:** 300042560 Fair Birch Sani Sewer  
**Subject:** Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

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On behalf of the Regional Municipality of Peel, we are writing to inform you that the Region is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). These improvements are required to maintain the system connection to the existing sanitary sewer. Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Kindly, please find enclosed, the Notice of Commencement and Public Information Centre for the project and letter. Burnside is also requesting on behalf of the Region of Peel, that your agency complete the enclosed Response Form (to be returned via email by December 13, 2018 to [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)), to assist us in understanding your agency's involvement with this project.

Your contact information is part of the project contact list, and you will receive notices as the study progresses, unless indicated otherwise. Please feel free to contact us should you have any more comments or questions.

Sincerely,  
Avid Banihashemi for the Project Team



**Avid Banihashemi**  
Environmental Project Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
Office: +1 800-265-9662 Direct: +1 226-486-1562  
[www.rjburnside.com](http://www.rjburnside.com)

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## Meaghan Luis

---

**From:** Avid Banihashemi  
**Sent:** Wednesday, January 02, 2019 9:35 AM  
**To:** 300042560 Fair Birch Sani Sewer  
**Subject:** FW: M185697\_RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road  
**Attachments:** M185697\_042560\_Fair Birch Dr\_PUCC Letter.pdf; M185697\_042560\_Fair Birch Dr\_Rogers Letter.pdf; M185697\_042560\_Fair Birch Dr .dwg

---

**From:** Chen, Philip <Philip.Chen@Telecon.ca>  
**Sent:** Friday, December 28, 2018 1:59 PM  
**To:** Olena.Gordiyenko@peelregion.ca; Avid Banihashemi <Avid.Banihashemi@rjburnside.com>  
**Cc:** GTAW.Markups@rci.rogers.com  
**Subject:** M185697\_RE: Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

Hi,

Please find attached rogers markup files as requested.

**\*\*\* Please use "REGEN" command for proper line style \*\*\***

Thanks,

### Philip Chen

*CAD Technician, Engineering – Central Canada  
Technicien CAO, Ingenierie – Centre du Canada*

T : 289 657 8054 | Email : [Philip.Chen@telecon.ca](mailto:Philip.Chen@telecon.ca)  
7777 Weston Road, Woodbridge, ON L4L 0G9



---

[telecon.ca](http://telecon.ca) | *Please consider the environment before printing this email.*

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**From:** Avid Banihashemi [<mailto:Avid.Banihashemi@rjburnside.com>]  
**Sent:** Friday, November 16, 2018 12:29 PM  
**To:** GTAW.Markups <[GTAW.Markups@rci.rogers.com](mailto:GTAW.Markups@rci.rogers.com)>  
**Cc:** 300042560 Fair Birch Sani Sewer <[300042560fairbirchsanisewer@rjburnside.com](mailto:300042560fairbirchsanisewer@rjburnside.com)>  
**Subject:** Class EA - New Sanitary Sewer on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road

On behalf of the Regional Municipality of Peel, we are writing to inform you that the Region is completing a Municipal Class Environmental Assessment (EA) Study for sanitary sewer improvements on Fair Birch Drive, Birchview Drive, Queen Victoria Avenue and Lorne Park Road (in Mississauga). These improvements are required to maintain the system

connection to the existing sanitary sewer. Alternative solutions being considered for the study include rehabilitating the existing sanitary sewer within a branch of Lornewood Creek or constructing a new sewer within existing road right-of-way or proposed easements.

Kindly, please find enclosed, the Notice of Commencement and Public Information Centre for the project and letter. Burnside is also requesting on behalf of the Region of Peel, that your agency complete the enclosed Response Form (to be returned via email by December 13, 2018 to [Olena.Gordiyenko@peelregion.ca](mailto:Olena.Gordiyenko@peelregion.ca)), to assist us in understanding your agency's involvement with this project.

Your contact information is part of the project contact list, and you will receive notices as the study progresses, unless indicated otherwise. Please feel free to contact us should you have any more comments or questions.

Sincerely,  
Avid Banihashemi for the Project Team

 **BURNSIDE**  
**Avid Banihashemi**  
Environmental Project Manager

R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Unit 20, Guelph, Ontario N1H 1C4  
Office: +1 800-265-9662 Direct: +1 226-486-1562  
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