

# NATURAL SCIENCES REPORT – EXISTING CONDITIONS

## VAUGHAN NORTH-SOUTH LINK SUBWAY ALIGNMENT SELECTION REPORT

*prepared for:*



*prepared by:*

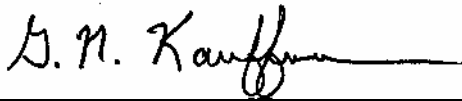


NOVEMBER 2006

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**LGL Project # TA4419**

**LGL LIMITED  
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## 1.0 INTRODUCTION

The Highway 7 Corridor and Vaughan North-South Link (VNSL) Public Transit Improvements Environmental Assessment (EA) was filed with the Ministry of the Environment (MOE) in August 2005. Chapter 12 of this report provided an assessment of a potential extension of the TTC's Spadina Subway from York University to the Vaughan Corporate Centre. The independent TTC/City of Toronto's Individual Environmental Assessment for the Extension of the Spadina Subway from Downsview Station to Steeles Avenue via York University was always intended to dictate the starting point (i.e. the south terminus) of the Vaughan North-South Subway Link. The York Region VNSL EA defined the subway alignment from the northern end of the TTC interim terminal tail track at the Steeles West Station (as defined by the City/TTC EA) to the northern limit of the tail track at the Highway 7 Station at the Vaughan Corporate Centre.

The alignment identified in the York Region VNSL EA was not, however, the alignment that was recommended in the final City/TTC EA Report. When the TTC completed their evaluation of alternative routes south of Steeles Avenue, the new TTC preferred alternative, as identified in the City/TTC EA Report issued to MOE in February 2006, was TTC's northern alignment alternative N3. The recommended alignment, as described in the York Region VNSL EA is not compatible with this alignment. As such, there is a need to re-analyze the portion of the alignment to achieve a tie-in to the final City/TTC alignment recommendation.

To meet the MOE's Conditions of Approval, York Region is preparing a Subway Alignment Selection Report to describe the revised/refined VNSL subway alignment and any supplemental analysis. The revised current alignment starts north of Steeles Avenue following the City/TTC alternative alignment refinement (slightly north and east of the alignment presented in their EA). The alignment then turns north just before crossing under Jane Street with a curve that allows an unbalanced speed of 80 k/h, complying with TTC design standards. Then the alignment follows a north-south tangent heading to the 23 metre wide easement along the future Millway Avenue Extension west of Jane Street. This easement has been negotiated with the City of Vaughan and the developers that own the land in the area. A new Highway 407 Subway Station would be located within the Highway 407 right-of-way on the south side of Highway 407. From here, the alignment heads north to a new Highway 7 Subway Station located at Highway 7 in the Vaughan Corporate Centre.

LGL Limited was retained by the York Consortium and the Regional Municipality of York, a public-private partnership formed to implement the Vaughan North-South Link, to conduct a natural sciences investigation in support of the Subway Alignment Selection Report. This Natural Sciences Report - Existing Conditions profiles the existing natural heritage features located within the study area. Much of the information is derived from the VNSL EA and the Spadina Subway Extension EA, both of which involved LGL Limited.

## **2.0 EXISTING CONDITIONS**

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

The study area for the natural sciences investigation is bounded by Steeles Avenue in the south to a distance of approximately 250 m on either side of the proposed subway alignment and north of Highway 7. The study area is under the jurisdiction of the Toronto Region Conservation Authority (TRCA) and the Ontario Ministry of Natural Resources Aurora District Office. A key plan of the study area is presented in Figure 1. Natural heritage features located within the study area are presented in Figure 2.

### **2.1 Physiography and Soils**

The study area is located within the Peel Plain physiographic region, which extends through the central portions of the Regions of Halton, Peel and York and ranges in elevation from 150 m to 230 m above sea level. The Peel Plain is a level to undulating tract of clay soils with imperfect drainage, through which the Credit, Humber, Don and Rouge Rivers have carved deep valleys (Chapman and Putnam 1984).

The soils in the study area are classified as Malton clay, Chinguacousey clay loam, Jeddo clay loam and Bottom Lands (Hoffman and Richards 1955). Between Weston Road and Highway 400, soils are predominantly Malton clay. Between Highway 400 and midway between Keele Street and Dufferin Street, soils are predominantly Chinguacousey clay loam. Bottom Land soils are located along Black Creek. A small pocket of Jeddo clay loam occurs north of Steeles Avenue immediately west of Black Creek.

#### **2.1.1 Malton clay**

Malton clay soils are poorly drained with a smooth, very gently sloping topography. This soil type is composed of lacustrine clay over gritty clay, which can be up to one metre deep. This soil type is friable, but poor drainage causes erosion to be slight under natural conditions.

#### **2.1.2 Chinguacousey clay loam**

Chinguacousey clay loam soils are imperfectly drained with a smooth, gently sloping topography. This soil type consists of shaly, calcareous clay till. Erosion is slight with this soil type as a result of the combination of gently sloping topography and low friability.

#### **2.1.3 Jeddo clay loam**

Jeddo clay loam soils are poorly drained with a smooth, very gently sloping topography. This soil type consists of shaly, calcareous clay till. Erosion is slight with this soil type as a result of its very gently sloping topography.

#### **2.1.4 Bottom Lands**

Bottom Land soils are comprised of recent alluvial deposits. They have variable drainage, variable to level topography and erosion is variable.

Figure 1. Key Plan of the Study Area

Figure 2. Natural Heritage Features Located Within the Study Area



## **2.2 Aquatic Habitats and Communities**

A preliminary field investigation of Black Creek was conducted for the VNSL EA. As part of the VNSL EA, watercourses were investigated only upstream and downstream of road crossings and habitat characterization was not performed for each stream reach. For this reason, a detailed field investigation was undertaken on November 20, 2006 to document the characteristics of aquatic habitat for each stream reach within the study area. The area of investigation for aquatic habitat includes Black Creek and its tributaries from Steeles Avenue to Highway 7. There are a total of four watercourses located within the study area including:

- Main Branch of Black Creek
- Tributary 1 of Black Creek (at Jane Street)
- Tributary 2 of Black Creek (at CN Rail)
- Tributary 3 pond outlet (upstream of Steeles Ave)

For the purposes of the investigation, the four watercourses were divided into a total of 13 reaches using physical landmarks such as roads, railways, etc. or stream characteristics such as confluences. A summary of habitat conditions at the reaches located in the study area is presented in Table 1. The location of the reaches is presented in Figure 2. Representative photos of watercourse reaches are presented in Appendix A. Black Creek and its tributaries are managed as warmwater communities by the TRCA.

### **2.2.1 Main Channel of Black Creek Between Highway 7 and Jane Street (Reaches 1-4)**

The watercourse is channelized in this section of Black Creek. Surrounding land use is commercial and industrial. Bank erosion is evident and is managed with concrete retaining walls and gabion baskets. Riparian vegetation consists of old field vegetation and shrubs in the upper portion with more trees and shading in lower reaches. The morphology of this reach is mostly flats over a gravel and muck substrate. A failed culvert and concrete debris pile form a significant barrier to fish migration. Upstream of this barrier the channel is flooded. No groundwater contributions to baseflow were observed. These reaches are permanent warmwater fish habitat.

### **2.2.2 Main Channel of Black Creek Between Jane Street and CN Rail (Reaches 5 and 6)**

The watercourse flows through a natural channel in this section of Black Creek. Surrounding land use is predominantly agricultural. Some bank erosion is evident. Morphology consists of riffle-pool sequences over cobble and gravel substrate. Riparian vegetation consists of reed-canary grass with some trees and shrubs. Two small swales were observed which may provide seasonal fish habitat. No groundwater contributions to baseflow were observed. These reaches are permanent warmwater fish habitat.

### **2.2.3 Main Channel of Black Creek Between CN Rail and Steeles Avenue (Reaches 7-9)**

The watercourse flows through a natural channel in this section of Black Creek. The surrounding woodlot is owned by the TRCA. Bank erosion is evident and water levels appear to be over bankfull at times. Morphology is mainly flats with some riffles over a sand and gravel substrate. Riparian vegetation consists of mature trees in a woodlot. A pond is situated on the east bank and outlets into Black Creek just upstream of Steeles Avenue. This outlet is intermittent. No groundwater contributions to baseflow were observed. These reaches are permanent warmwater fish habitat.

**TABLE 1.**  
**FISH HABITAT ASSESSMENT SUMMARY**

Reach Reference Number	Reach Location	Fish Community	Habitat Summary	Habitat Class (marginal, important, critical)	Flow Conditions (ephemeral, intermittent, permanent)	Drainage Connectivity (obstructed, partially obstructed, unobstructed)	Channel Structure (channelized, channelized lined, natural)	Comments
1	Main channel of Black Creek upstream of HWY 7	warmwater	<ul style="list-style-type: none"> <li>poor morphology – mostly flats with a small riffle</li> <li>riparian vegetation – cattail and grasses</li> <li>little shade</li> <li>instream cover – a few boulders and submergent vegetation</li> <li>substrate – mainly gravel with muck and silt</li> <li>no groundwater contributions to baseflow observed</li> <li>erosion controlled by concrete wall</li> <li>channel is approximately 2.0m wide and 0.1m deep.</li> <li>bankfull is approximately 4.0m wide and 0.5 m deep</li> </ul>	important	permanent	obstructed	channelized	<ul style="list-style-type: none"> <li>Stormwater management pond directly upstream</li> <li>Obstructed upstream at concrete box culvert</li> </ul>
2	Main channel of Black Creek between HWY 7 and truck driveway	warmwater	<ul style="list-style-type: none"> <li>some habitat heterogeneity</li> <li>morphology mostly flats with a few riffles, runs and pools</li> <li>riparian vegetation – old field vegetation with riparian shrubs and small trees such as Manitoba Maple, Russian Olive, and Red-Osier Dogwood</li> <li>riparian vegetation adjacent to banquet hall consists of larger trees providing moderate shade</li> <li>little shade in upstream section, moderate shade in downstream section</li> <li>instream cover – some cobble</li> <li>substrate – mainly sand with gravel, rubble and silt</li> <li>no groundwater contributions to baseflow observed</li> <li>banks are eroding</li> <li>water appears to be over bankfull at times</li> <li>channel is approximately 3.0m wide and 0.4m deep.</li> <li>bankfull is approximately 5.0m wide and 1.0 m deep</li> </ul>	important	permanent	unobstructed	channelized	<ul style="list-style-type: none"> <li>Some gabions to control erosion at Doughton Rd.</li> <li>Retaining wall and armour stone at downstream section, mostly on east bank.</li> </ul>
3	Main channel of Black Creek between truck driveway and HWY 407	warmwater	<ul style="list-style-type: none"> <li>large flooded area</li> <li>morphology mostly pools (flooded) with some riffles downstream of Peelar Rd.</li> <li>good riparian vegetation</li> <li>moderate shade</li> <li>minimal instream cover – some cobble</li> <li>substrate – Silt with some sand, gravel and cobble</li> <li>banks are eroding</li> <li>channel is approximately 3.0m wide and 0.4m deep. (flooded area 30m wide, unknown depth)</li> <li>bankfull is approximately 5.0m wide and 1.0 m deep</li> </ul>	important	permanent	obstructed	channelized	<ul style="list-style-type: none"> <li>Obstructed in middle by gabion basket in channel and concrete debris pile</li> </ul>
4	Main channel of Black Creek between Hwy 407 and Jane Street	warmwater	<ul style="list-style-type: none"> <li>morphology – mainly flats with riffles</li> <li>riparian vegetation – grasses</li> <li>little shade</li> <li>instream cover – boulders and cobble</li> <li>substrate – cobble, gravel and boulders with some sand and silt</li> <li>some erosion and undercut banks</li> <li>channel is approximately 2.0m wide and 0.15m deep.</li> <li>bankfull is approximately 3.0m wide and 0.75 m deep</li> </ul>	important	permanent	unobstructed	channelized	<ul style="list-style-type: none"> <li>Adjacent to a cemetery</li> <li>Stormwater management pond connected to stream on east bank</li> </ul>

**TABLE 1.**  
**FISH HABITAT ASSESSMENT SUMMARY**

Reach Reference Number	Reach Location	Fish Community	Habitat Summary	Habitat Class (marginal, important, critical)	Flow Conditions (ephemeral, intermittent, permanent)	Drainage Connectivity (obstructed, partially obstructed, unobstructed)	Channel Structure (channelized, channelized lined, natural)	Comments
5	Main channel of Black Creek from Jane Street to farm lane	warmwater	<ul style="list-style-type: none"> <li>• good habitat heterogeneity</li> <li>• morphology – riffles –pool sequence</li> <li>• riparian vegetation – old field vegetations and reed-canary grass with mature trees</li> <li>• moderate shade</li> <li>• instream cover – cobble</li> <li>• substrate – mainly sand with cobble and gravel</li> <li>• banks are eroding</li> <li>• a swale was observed on east bank at upstream end</li> <li>• channel is approximately 3.0 m wide and 0.4m deep.</li> <li>• bankfull is approximately 4.0m wide and 1.0 m deep</li> </ul>	important	permanent	unobstructed	natural	<ul style="list-style-type: none"> <li>• Surrounding land use is mainly agricultural</li> </ul>
6	Main channel of Black Creek downstream of farm lane to CN rail	warmwater	<ul style="list-style-type: none"> <li>• morphology – mainly flats with riffles</li> <li>• riparian vegetation – old field vegetation with some trees and shrubs</li> <li>• moderate shade</li> <li>• instream cover – cobble</li> <li>• substrate – cobble, gravel and boulders with some sand and silt</li> <li>• some erosion and undercut banks</li> <li>• a swale was observed on west bank just upstream of CN rail</li> <li>• channel is approximately 3.0m wide and 0.15m deep.</li> <li>• bankfull is approximately 4.0m wide and 1.0 m deep</li> </ul>	important	permanent	unobstructed	natural	<ul style="list-style-type: none"> <li>• Surrounding land use is mainly agricultural</li> <li>• Partially channelized along CN Rail</li> </ul>
7	Main channel of Black Creek downstream of CN Rail	warmwater	<ul style="list-style-type: none"> <li>• confluence of Black Creek and tributary downstream of CN Rail</li> <li>• morphology – mainly flats with some riffles and pools</li> <li>• riparian vegetation – woodlot</li> <li>• good shade</li> <li>• instream cover – cobble</li> <li>• substrate – cobble and gravel</li> <li>• eroding banks</li> <li>• banks appear to be over bankfull at times</li> <li>• channel is approximately 3.0m wide and 0.3m deep.</li> <li>• bankfull is approximately 6.0 m wide and 1.0 m deep</li> </ul>	important	permanent	unobstructed	natural	<ul style="list-style-type: none"> <li>• Flows through a woodlot</li> <li>• Pond on east bank</li> </ul>
8	Main channel of Black Creek upstream of Jane St and Steeles Ave	warmwater	<ul style="list-style-type: none"> <li>• morphology – mainly flats with some riffles and pools</li> <li>• riparian vegetation – woodlot</li> <li>• good shade</li> <li>• instream cover – cobble</li> <li>• substrate – cobble, gravel and sand</li> <li>• eroding banks</li> <li>• banks appear to be over bankfull at times</li> <li>• channel is approximately 4.0m wide and 0.3m deep.</li> <li>• bankfull is approximately 6.0 m wide and 1.0 m deep</li> </ul>	important	permanent	unobstructed	natural	<ul style="list-style-type: none"> <li>• Flows through a woodlot</li> <li>• Pond on east bank</li> </ul>

**TABLE 1.  
 FISH HABITAT ASSESSMENT SUMMARY**

Reach Reference Number	Reach Location	Fish Community	Habitat Summary	Habitat Class (marginal, important, critical)	Flow Conditions (ephemeral, intermittent, permanent)	Drainage Connectivity (obstructed, partially obstructed, unobstructed)	Channel Structure (channelized, channelized lined, natural)	Comments
9	Main channel of Black Creek Downstream of Jane St and Steeles Ave	warmwater	<ul style="list-style-type: none"> <li>morphology – mainly riffle with a pool</li> <li>riparian vegetation – woodlot</li> <li>good shade</li> <li>instream cover – cobble</li> <li>substrate – gravel, cobble, and sand</li> <li>access road along east bank</li> <li>eroding banks</li> <li>concrete wall along access road under bridge</li> <li>banks appear to be over bankfull at times</li> <li>channel is approximately 3.5m wide and 0.2m deep.</li> <li>bankfull is approximately 5.0 m wide and 0.7 m deep</li> </ul>	important	permanent	unobstructed	natural	<ul style="list-style-type: none"> <li>Flows through a woodlot</li> <li>Access road on east bank</li> </ul>
10	Tributary 1 of Black Creek upstream of Jane Street	warmwater	<ul style="list-style-type: none"> <li>morphology – mainly flats with riffles</li> <li>riparian vegetation – grasses</li> <li>little shade</li> <li>instream cover – boulders and cobble</li> <li>substrate – cobble, gravel and boulders with some sand and silt</li> <li>some erosion and undercut banks</li> <li>channel is approximately 0.5m wide and 0.05m deep.</li> <li>bankfull is approximately 2.0m wide and 0.75 m deep</li> </ul>	important	permanent	Unobstructed	natural	<ul style="list-style-type: none"> <li>Adjacent to a cemetery</li> </ul>
11	Tributary 1 of Black Creek downstream of Jane Street	warmwater	<ul style="list-style-type: none"> <li>morphology – mainly riffles and runs</li> <li>riparian vegetation – old field vegetation</li> <li>little shade</li> <li>instream cover – cobble</li> <li>substrate – gravel and cobble with some sand</li> <li>banks are eroding</li> <li>channel is approximately 1.0m wide and 0.10m deep.</li> <li>bankfull is approximately 3.0m wide and 0.70 m deep</li> </ul>	important	permanent	unobstructed	natural	<ul style="list-style-type: none"> <li>Surrounding land use is mainly agricultural.</li> </ul>
12	Tributary 2 of Black Creek upstream of CN Rail	warmwater	<ul style="list-style-type: none"> <li>morphology – mainly riffles and runs with a few pools</li> <li>riparian vegetation – old field vegetation and reed canary grass with some shrubs</li> <li>little shade</li> <li>instream cover – cobble</li> <li>substrate – cobble and gravel</li> <li>eroding banks</li> <li>swale at patch of cattails</li> <li>channel is approximately 2.0m wide and 0.2m deep.</li> <li>bankfull is approximately 3.0m wide and 0.7 m deep</li> </ul>	important	permanent	partially obstructed	channelized	<ul style="list-style-type: none"> <li>Channelized along CN Rail.</li> <li>Fish barrier from rail tie in stream.</li> </ul>
13	tributary 3 pond outlet	warmwater	<ul style="list-style-type: none"> <li>outlet of pond</li> <li>wooden foot bride at outlet of pond</li> <li>morphology – mainly flats and runs</li> <li>riparian vegetation – woodlot</li> <li>good shade</li> <li>instream cover – cobble and detritus</li> <li>berm along left bank</li> <li>eroding banks</li> <li>channel is approximately 1.5m wide and 0.1m deep.</li> <li>bankfull is approximately 2.0 m wide and 0.3 m deep</li> </ul>	important	intermittent	unobstructed	channelized	<ul style="list-style-type: none"> <li>Pond outlet</li> <li>Flows through a woodlot</li> </ul>

#### **2.2.4 Tributary 1 of Black Creek at Jane Street (Reaches 10-11)**

The watercourse flows through a narrow natural channel across Jane Street and into Black Creek. The surrounding land use is mainly natural and a cemetery. Bank erosion is evident. Morphology is mainly flats and riffles over a cobble and gravel substrate. Riparian vegetation consists of old field species. No groundwater contributions to baseflow were observed. These reaches are permanent warmwater fish habitat.

#### **2.2.5 Tributary 2 of Black Creek at CN Rail (Reach 12)**

The watercourse is channelized at its confluence with Black Creek. The surrounding land use is agricultural. Bank erosion is evident. Morphology is mainly riffles and runs over a cobble and gravel substrate. Riparian vegetation consists of old field species and shrubs. A small swale is evident amongst a patch of cattails. This reach is permanent warmwater fish habitat.

#### **2.2.6 Tributary 3 Pond Outlet (Reach 13)**

This intermittent tributary of Black Creek is an outlet of a pond on TRCA property between the CN Rail and Steeles Avenue. It is channelized through its entire reach and is separated from the main channel of Black Creek by a berm. The morphology is mainly flat over a silt and detritus substrate. This reach is seasonal warmwater fish habitat.

#### **2.2.7 Fisheries**

A review of fisheries information provided by the TRCA within the study area was completed to determine the presence/absence of a fish community, its composition and thermal regime. A summary of fish recorded within the study area is presented in Table 2. The locations of TRCA sampling stations are presented in Figure 2. LGL applied for a Scientific Collectors Permit from the OMNR but was denied because historical information on the fish community was available from secondary sources. As a result, the fish community is described using secondary source information and no sampling in Black Creek was performed. The fish community within Black Creek is comprised primarily of warmwater baitfish; however, pumpkinseed is considered a warmwater sportfish.

#### **2.2.8 Species at Risk**

No species at risk were reported by the TRCA in the study area. A review of the Ministry of Natural Resources Natural Heritage Information Centre database also revealed that no rare, threatened or endangered aquatic species are found in the study area.

**TABLE 2**  
**FISH COLLECTED BY TRCA AND MNR IN BLACK CREEK**

Species			Watercourse Sampling Stations	
Scientific Name	Common Name	Status	Black Creek	Tributary of Black Creek
<i>Rhinichthys atratulus</i>	blacknose dace		42 <sup>1991,1994,1999</sup>	
<i>Culaea inconstans</i>	brook stickleback		42 <sup>1991,1994</sup> , 44 <sup>1985</sup> , 225 <sup>1991</sup>	
<i>Cyprinus carpio</i>	common carp		42 <sup>1994</sup>	
<i>Luxilus cornutus</i>	common shiner		42 <sup>1991</sup> , 225 <sup>1991</sup>	226 <sup>1991</sup>
<i>Semotilus atromaculatus</i>	creek chub		42 <sup>1991,1994,1999</sup> , 44 <sup>1984,1985</sup> , 224 <sup>1991</sup> , 225 <sup>1991</sup> , HUFMP12 <sup>2004</sup>	226 <sup>1991</sup>
<i>Pimephales promelas</i>	fathead minnow		42 <sup>1991,1994</sup> , 44 <sup>1984,1985</sup> , HUFMP12 <sup>2004</sup>	
<i>Carassius auratus</i>	goldfish		42 <sup>1991</sup>	
<i>Lepomis gibbosus</i>	pumpkinseed		42 <sup>1999</sup> , 44 <sup>1984,1985</sup>	
<i>Catostomus commersoni</i>	white sucker		42 <sup>1991,1994</sup> , 44 <sup>1984,1985</sup> , HUFMP12 <sup>2004</sup>	226 <sup>1991</sup>

Source: Toronto and Region Conservation Authority (TRCA) fisheries data from fish collection stations; Received 2006

42 – Black Creek at Steeles Avenue and Jane Street

44 – Black Creek at Shoreham Drive

224 – Black Creek at Pennsylvania Avenue, West of Jane Street

225 – Black Creek upstream of Highway 7 and Jane Street

226 – Tributary of Black Creek upstream of CN Rail

HUFMP12 - Black Creek at Steeles Avenue and Jane Street

### 2.3 Terrestrial Flora and Fauna

An in-season, field investigation of the proposed subway alignment was conducted for the original VNSL EA and the Spadina Subway Extension EA. As a result, and due to seasonal limitations, a cursory field investigation was performed on November 20, 2006 to confirm the location, classification and general composition of vegetation communities and location and type of wildlife habitat within approximately 250 m of the proposed subway alignment.

#### 2.3.1 Vegetation Communities and Wildlife Habitat

Much of the vegetation within/adjacent to the study area is of anthropogenic origin, resulting from past/present land use. Land use adjacent to the study area is predominantly industrial, agricultural, rural residential and occasional commercial. A total of four vegetation community types were identified within/adjacent to the study area including: cultural meadows; cultural thickets; cultural woodlands; and, deciduous forests. A number of anthropogenic land uses occur in the area such as a cemetery, open agricultural fields, manicured lawns, hydro and rail corridors, and commercial usage. These communities are delineated in Figure 2 and described in Table 3.

The Black Creek valleyland provides a local migration corridor for wildlife. However, this riparian corridor is highly fragmented north of the Highway 407 corridor.

#### 2.3.2 Flora and Fauna

Floristic surveys and wildlife surveys of this area were not conducted in 2006 due to seasonal limitations and because this area had been investigated previously.

### **2.3.3 Species at Risk**

No plant or animal species considered rare, threatened or endangered at the provincial or local levels were observed during field investigations. No significant vegetation communities or wildlife habitat were observed during field investigations.

**TABLE 3.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Comments
Terrestrial – Natural/Semi-natural			
FOD	DECIDUOUS FOREST		
FOD7	Fresh-Moist Lowland Deciduous Forest Type	Crack willow ( <i>Salix X rubens</i> ), Manitoba maple, black walnut ( <i>Juglans nigra</i> ), trembling aspen, Carolina poplar ( <i>Populus X canadensis</i> ), white elm, basswood, green ash ( <i>Fraxinus pennsylvanica</i> ), alternate-leaved dogwood ( <i>Cornus stolonifera</i> ), riverbank grape, thicket creeper, poison ivy, spotted touch-me-not	In the study area this community type has a more open canopy (<60% cover in some locations) and is associated with CUM1-1 in some locations.  This community type is associated with Black Creek in the study area.
<b>Terrestrial – Cultural</b>			
CUM	CULTURAL MEADOW		
CUM1-1	Dry-Moist Old Field Meadow Type	Grasses such as brome ( <i>Bromus inermis inermis</i> ), timothy ( <i>Phleum pratense</i> ), Canada bluegrass ( <i>Poa compressa</i> ), Kentucky bluegrass ( <i>P. pratensis pratensis</i> ) and forbs, including common buttercup ( <i>Ranunculus acris</i> ), rough-fruited cinquefoil ( <i>Potentilla recta</i> ), black medic ( <i>Medicago lupulina</i> ), common dandelion ( <i>Taraxacum officinale</i> ), purple clover ( <i>Trifolium pratense</i> ), bird vetch ( <i>Vicia cracca</i> ), butter-and-eggs ( <i>Linaria vulgaris</i> ), ox-eye daisy ( <i>Chrysanthemum leucanthemum</i> ), wild strawberry ( <i>Fragaria virginiana</i> ), goat’s beard ( <i>Tragopogon dubius</i> ), common milkweed ( <i>Asclepias syriaca</i> )	This community type is located in areas that have been previously cleared, such as in hydro corridors and in association with institutions and industrial/commercial lands.  Portions of a number of the CUM1-1 communities in the study area have been planted with wheat ( <i>Triticum aestivum</i> ).  This community type has a higher incidence of non-native species.
CUT	CULTURAL THICKET		
CUT1	Mineral Cultural Thicket Ecosite	European buckthorn, tartarian honeysuckle, hawthorns ( <i>Crataegus spp.</i> ), riverbank grape, red-osier dogwood, wild red raspberry ( <i>Rubus idaeus melanolasius</i> ), white elm plus herbaceous species listed in CUM1-1 as well as Canada goldenrod ( <i>Solidago canadensis</i> ) and tall goldenrod ( <i>S. altissima</i> )	In these locations shrubs have colonized these previously cleared areas.  This community type has a higher incidence of non-native species.
CUW	CULTURAL WOODLAND		
CUW1	Mineral Cultural Woodland Ecosite	Manitoba maple, crack willow, sugar maple, Norway maple ( <i>Acer platanoides</i> ), white ash, tartarian honeysuckle, trembling aspen, choke cherry, black locust, common buckthorn, basswood, white elm and variable ground cover including garlic mustard, dame’s rocket ( <i>Hesperis matronalis</i> ) and many species also found in CUM1-1 communities	These are wooded areas with a canopy cover of less than 60 percent.  This community has a higher incidence of non-native species.



## **2.4 Designated Natural Areas**

Designated natural areas are lands identified for protection by the OMNR or TRCA including provincially or non-provincially significant wetlands (PSWs, N-PSWs), areas of natural or scientific interest (ANSIs) and environmentally sensitive areas (ESAs). No designated natural heritage features are located in the study area.

**APPENDIX A  
PHOTOGRAPHIC RECORD**