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NATURAL ENVIRONMENT EXISTING CONDITIONS TECHNICAL REPORT

Class EA for Portage Parkway Widening and Extension

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REPORT

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1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by CIMA+ to identify and document existing natural environment features along the existing section of Portage Parkway and within vacant lands east of Jane Street; both of which are associated with the proposed extension of Portage Parkway in the City of Vaughan (Vaughan), Ontario (the Project). Based on the features observed, Golder was asked to identify potential constraints posed to the proposed Project by existing features and identify potential areas where the Project might negatively impact the natural environment.

This report provides the findings the natural environment surveys and identifies sensitive feature constraints to the proposed widening and extension of Portage Parkway. This report is provided in support of the completion of the environmental study report (ESR) under the Municipal Class Environmental Assessment) for the Project.

1.1 Study Area Description

The Project is located within the Vaughan Metropolitan Centre (VMC) and involves the widening of Portage Parkway from two to four lanes from Applewood Crescent to Jane Street, and the extension of Portage Parkway from Jane Street to Creditstone Road, also crossing the Black Creek channel ('Study Area'). The portion of the Study Area along Portage Parkway between Applewood Cresent to Jane Street is urban boulevard with manicured grasses and typical urban landscaped tree plantings. East of Jane Street the Study Area consists of disturbed vacant lands and a portion of the Black Creek Valley associated with the Edgely Storm Water Management Ponds (Edgely Pond) extending east to Creditstone Road. The vacant land is privately owned and fenced. It contains a mix of gravel, vegetated areas, trailers and various equipment and materials stored throughout. The valley lands on either side of the creek are City owned but flanked by privately commercial businesses. Regulation of the creek and its floodplain is the responsibility of the Toronto and Region Conservation Authority (TRCA).

Golder noted that the entire section of Black Creek within the Study Area has been subject to urbanization and its overall condition is noted as degraded. There are noticeable effects of changes in upstream engineering alignments, as well as the effects of adjacent land use which includes evidence of ongoing dumping of garbage along the banks. Riparian areas were noted to contain a mix of native and non-native plants and trees, and in some areas riparian vegetation has been impacts by erosion and scour. Just south of the Study Area, Black Creek passes through a naturalized area of the Edgeley Ponds lands. Although both ponds appear to be offline from the creek, there is an existing flood control structure associated with the ponds that also regulates flow within this section of Black Creek. The concrete discharge structure is outside of the Study Area and located approximately 300 m north of Highway 7, east of Jane Street.

When assessing potential interactions between projects and the natural environment, the Provincial Policy Statement (PPS) (MMAH 2014) requires the potential for negative impacts of a proposed development to be assessed for both the natural features and the adjacent lands. Adjacent lands are defined as those lands contiguous to a specific natural heritage feature or area where it is likely that development or Study Area alteration would have a negative impact on the feature or area. The extent of the adjacent lands may be recommended by the Province or based on municipal approaches that achieve the same objectives. For this assessment, a distance of 120 metre m from the natural feature, as suggested in the PPS, was used as the area in which to consider effects on adjacent lands. For the purposes of this assessment, the Study Area is defined as the project footprint boundary plus lands within 120 m of it.

The Project location and appropriate study boundaries are shown in Figure 1.

2.0 STUDY AREA ENVIRONMENTAL POLICY CONTEXT

Documents reviewed to gain an understanding of the natural heritage features and regulations that are relevant to the Study Area are described in the following sections.

2.1 Endangered Species Act

Species at risk designations for species in Ontario are initially determined by the Committee on the Status of Species at Risk in Ontario (COSSARO) and, if approved by the provincial Minister of Natural Resources and Forestry, species are added to the provincial *Endangered Species Act* (ESA) (*Endangered Species Act*, 2007. S.O. 2007). Subsection 9(1) of the ESA prohibits the killing, harming or harassment of species identified as endangered or threatened under the ESA. Subsection 10(1) (a) of the ESA states that *"No person shall damage or destroy the habitat of a species that is listed on the* SARO *List as an endangered or threatened species."*

The ESA also provides habitat protection to all species listed as threatened or endangered in the Species at Risk in Ontario (SARO) List (O. Reg. 230/08) contained in the ESA. General habitat protection is provided by the ESA to all threatened and endangered species. Species-specific habitat protection is only afforded to those species for which a habitat regulation has been prepared and passed into law under the ESA. Alterations to protected species or their habitats may be considered under the amended permit process (MNRF, Endangered Species Act Permits or Authorizations 2014) in which authorization may be granted in the form of a permit (requiring application), or by using the new regulatory exemption "streamlined approval" process (provided projects meet specific conditions).

2.2 Species at Risk Act

At a federal level, species at risk designations for species occurring in Canada are initially determined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). If approved by the federal Minister of the Environment, species are added to the federal List of Wildlife Species at Risk (Government of Canada 2002). Species that are included on Schedule 1 as endangered or threatened are afforded protection of critical habitat on federal lands under the *Species at Risk Act* (SARA). On private or provincially-owned lands, only aquatic species listed as endangered, threatened or extirpated are protected under SARA, unless ordered by the Governor in Council.

2.3 Fisheries Act

The purpose of the *Fisheries Act* is to maintain healthy, sustainable and productive Canadian fisheries through the prevention of pollution, and the protection of fish and their habitat. In 2012, changes were made to the *Fisheries Act* to enhance the ability of Fisheries and Oceans Canada (DFO) to manage threats to Canada's commercial, recreational and Aboriginal (CRA) fisheries.

Projects affecting waterbodies supporting Canada's CRA fisheries must comply with the provisions of the *Fisheries Act*. The proponent is responsible for determining if the project is likely to cause impacts to CRA fish and if these impacts can be avoided or mitigated. The proponent must gather information on the type and scale of impact on the fishery and determine if the impacts will result in *serious harm to fish.* Proponents have a duty to maintain records of self-assessments completed for projects they undertake, and need to provide this information to DFO upon request. Serious harm to fish is defined as: the death of fish; and/or any permanent alteration to, or destruction of, fish habitat. If it is determined that the impacts cannot be avoided or mitigated and will result in serious harm to fish, an application for authorization must be submitted to the DFO. Projects that have the potential

to obstruct fish passage or, affect flows needed by fish also require an authorization; even if these occur outside of CRA fishery areas (DFO 2013).

Proponents of projects requiring a Fisheries Act Authorization are required to submit a Habitat Offsetting Plan, which provides details of how the serious harm to fish will be offset, as well as outlining associated costs and monitoring commitments (DFO 2013). Proponents also have a duty to notify DFO of any unforeseen activities that cause serious harm to fish and outline the steps taken to address them.

2.4 Migratory Birds Convention Act

The *Migratory Birds Convention Act* (MBCA) provides federal protection for most species of birds found in Canada. The MBCA was passed in 1917 and updated in 1994 and 2005 (Environment Canada 2013a). Environment Canada is responsible for providing protection for birds through the MBCA by implementing the Migratory Birds Regulations and the Migratory Birds Sanctuary Regulations (Environment Canada 2013b).

Protection of bird species from disturbance and destruction is provided under Section 12 of the MBCA. As outlined in this section, capturing, killing, injuring, taking or disturbing migratory birds is a violation of the MBCA, as is damaging, destroying, removing or disturbing the nests of migratory birds defined in the MBCA. Furthermore, Section 5 of the MBCA provides protection to aquatic habitats and other areas used by migratory birds. The release of substances into aquatic habitats or areas frequented by migratory birds or which flow into habitats frequented by migratory birds, which may cause harm to migratory birds, is a violation of the MBCA.

2.5 Provincial Policy Statement

The PPS was issued under Section 3 of the *Planning Act*, and came into effect on April 30, 2014 (MMAH 2014). It replaces the PPS issued March 1, 2005 and applies to all applications, matters or proceedings commenced on or after April 30, 2014.

The natural heritage policies of the PPS indicate that:

- 2.1.1 Natural features and areas shall be protected for the long term;
- 2.1.2 The diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognizing linkages between and among *natural heritage features and areas*, *surface water features* and *ground water features*;
- 2.1.3 Natural heritage systems shall be identified in Ecoregions 6E and 7E, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas;
- 2.1.4 *Development* and *site alteration* shall not be permitted in:
    a) Significant wetlands in Ecoregions 5E, 6E and 7E; and
    b) Significant coastal wetlands.
- 2.1.5 Unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, development and site alteration shall not be permitted in:
    a) Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;

b) Significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);

c) Significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);

d) Significant wildlife habitat;

e) Significant areas of natural and scientific interest; and

f) Coastal wetlands in Ecoregions 5E, 6E and 7E that are not subject to policy 2.1.4(b).

- 2.1.6 *Development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial and federal requirements;*
- 2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements; and
- 2.1.8 *Development* and *site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*.

2.6 City of Vaughan Official Plan

The Study Area is located within the City of Vaughan and the Project must comply with the policies of the City of Vaughan Official Plan (the Vaughan OP; Vaughan 2010). Development and site alteration within or adjacent to designated natural features may be prohibited or restricted according to the Vaughan OP). In some cases, development and site alteration may be permitted with the completion of appropriate environmental studies, such as an Environmental Impact Study (EIS) or Environmental Assessment (EA). Designated natural features within the Study Area are discussed further in Section 5.1.7.

2.7 York Region Official Plan

The York Region Official Plan (York OP; York 2013) was approved by the Minister of Municipal Affairs and Housing in 2010. The York Region OP describes how York Region plants to accommodate future growth and development and set out directions and policies that guide economic, environmental and community planning decisions. It is the policy of the OP to support local official plan and secondary plan policies that are more specific or restrictive (e.g., the City of Vaughan Official Plan). The York Region OP also recognizes that its policies may not be as restrictive as other environmental policies and considers factors in determining conformity with provincial plans and local official plans (York Region, 2013). Development and site alteration within or adjacent to designated natural features may also be prohibited or permitted with the completion of an EIS. Designated natural features within the Study Area are discussed further in Section 5.1.8.

2.8 Toronto and Region Conservation Authority Regulations

The Study Area and Study Area is located within the Humber River watershed and Black Creek subwatershed, which are within the jurisdiction of the TRCA (2008). Any work proposed within watercourses, wetlands or

waterbodies must be in compliance with the regulations of O.Reg 166/06 *Toronto and Region Conservation Authority Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

3.0 METHODS

3.1 Background Review

The investigation of existing conditions in the Study Area included a background information search and literature review to gather data about the local area and provide context for the evaluation of the natural features.

As part of the background review, a number of resources were used to evaluate the existing conditions in the Study Area including:

- Natural Heritage Information Centre (NHIC) database maintained by the Ontario Ministry of Natural Resources (MNRF) (MNRF 2015b);
- The Atlas of Breeding Birds of Ontario (Cadman et al. 2007);
- Atlas of the Mammals of Ontario (Dobbyn 1994);
- Royal Ontario Museum (ROM) range maps (ROM 2010);
- Bat Conservation International (BCI) range maps (BCI 2013);
- Reptile and Amphibian Atlas (Ontario Nature 2013);
- Land Information Ontario (MNRF 2015a);
- City of Vaughan Official Plan (2010);
- York Region Official Plan (2010);
- Toronto and Region Conservation Authority (2015); and
- Existing aerial imagery.

To develop an understanding of the ecological communities, wildlife habitat and potential natural heritage features that may be affected by the proposed Project, MNRF Land Information Ontario (LIO) data were used to create base layer mapping for the Study Area. A geographic query of the NHIC database was conducted to identify element occurrences of any natural heritage features, including wetlands, Areas of Natural and Scientific Interest (ANSIs), life science Study Areas, rare vegetation communities, rare, threatened or endangered species and other natural heritage features within the Study Area.

3.2 Species at Risk Screening

Species at risk (SAR) considered for this report include species listed on Schedule 1 of SARA, species listed under the ESA, species with provincial ranks of S1 to S3 (NHIC), and regionally rare species. An assessment was conducted to determine which SAR had potential habitat in the Study Area. A screening of all SAR that have the potential to be found in the Study Area was conducted as a desktop exercise using the sources listed above.

Species with ranges overlapping the Study Area, or recent occurrence records in the vicinity, were screened by comparing their habitat requirements to habitat conditions in the Study Area.

The potential for each SAR to occur in the Study Area was determined through a probability of occurrence. A ranking of low indicates no suitable habitat availability for that species in the Study Area and no specimens identified. Moderate probability indicates more potential for the species to occur, as suitable habitat appeared to be present in the Study Area, but no occurrence of the species has been recorded. High potential indicates a known species record in the Study Area (as determined through the background data review) and good quality habitat is present; and high/confirmed potential indicates a species was observed on near the Study Area during field surveys.

3.3 Field Survey

A field reconnaissance survey was conducted on September 1, 2015 which focussed on the lands along Portage Parkway and publicly accessible areas along Black Creek. During this survey there were areas where permission to enter was not available; requiring a follow up survey to be completed. The second field survey was conducted on July 6, 2016 to address portions of the Study Area where access was previously restricted and field data could not be obtained.

For the purposes of this report, field surveys consisted of plant communities classification according to the ELC system (Lee et al. 1998) along with a record of dominant plant species observed. A qualitative assessment of the potential for the Study Area to provide significant wildlife habitat and habitat for species at risk was conducted by assessing the Study Area features against the habitat requirements for the potential SAR or other provincial criteria, such as the PPS.

Fish and fish habitat assessment included identification of general habitat features (i.e., riffle, runs, pools), channel morphology (i.e., width, depth, flow status) and characteristics of the riparian areas. Incidental observation of fish were made. Electrofishing surveys were not undertaken on the basis that adequate information is available through recent existing information sources to understand the fishery of Black Creek.

4.0 EXISTING CONDITIONS

4.1 Land Use

Primary land use in the Study Area is employment area north of Portage Parkway and mixed use (office and retail uses), technology (i.e., office, research facilities, light industrial and public institutions) and residential to the south. Designated Core Features and Enhancement Areas also occur south of Portage Parkway and east of Jane Street (Urban Strategies 2012; Vaughan 2010). Several natural areas, including woodlands, parks, watercourses and valleylands, occur throughout the Study Area and are described in more detail below.

4.2 Ecological Land Classification

The Study Area is located within a developed portion of the City of Vaughan that is currently undergoing substantial growth; including new commercial office and retain development as well as intermodal subway infrastructure. Due to the historical development, naturally occurring vegetation is limited, and most of the Study Area contains disturbed or fragmented natural areas with a cultural origin, amidst urban landscaped features (i.e., boulevard

parks and manicured lawns). As a result there is limited naturally occurring vegetation and most of the Study Area is comprised of landscaped woody plants and manicured grass (e.g., Kentucky bluegrass, *Poa pratensis*); mostly contained within the boulevards along the existing portion of Portage Parkway.

Landscape trees include planted white ash (*Fraxinus americana*), Norway maple (*Acer platanoides*), blue spruce (*Picea pungens*), red pine (*Pinus resinosa*), and black locust (*Robinia pseudoacacia*). Although this habitat is of little value for wildlife, the trees may provide nesting habitat for birds protected under the MBCA.

The plant communities are shown on Figure 2 and 3 and are briefly described in Table 1.

Table 1: Plant Communities in the Study Area

ELC Community	Field Description
ANTHROPOGENIC	
Disturbed open area	Un-vegetated, disturbed open gravel area that occurs in the north of the storm water management pond, immediately east of Jane St.
WOODLAND	
CUW Cultural Woodland	Approximately 30 m downstream of the bridge, the south bank is a scrubby deciduous cultural woodland containing mostly non-native plants, composed of black walnut, black locust (*Robinia pseudoacacia*), Manitoba maple (*Acer negundo*), white/crack willow (*Salix x fragilis*), Norway maple (*Acer platanoides*), and sugar maple. Gray dogwood (*Cornus foemina*) and sweet cherry also occur in the understory, while ground cover is dominated by goldenrod (*Solidago spp.*), colts-foot (*Tussilago farfara*), garlic mustard (*Alliaria petiolata*), purple loosestrife (*Lythrum salicaria*) and asters.
THICKET	
CUT1-1 Sumac Cultural Thicket	To the south of the Study Area, the thicket separates the Study Area from a stormwater management pond. The deciduous thicket is dominated by staghorn sumac and European buckthorn.
CUT1-7 Hawthorn Cultural Thicket	The Hawthorn thicket is a mature thicket with a tree component. This plant community is undergoing succession to a forest community but is currently dominated by mature hawthorns. Most in this community are immature but there are a few larger trees including white pine (*Pinus strobus*), black walnut (*Juglans nigra*) and silver maple (*Acer saccharimum*). Black Creek flows through the Hawthorn thicket.
MEADOW	
CUM1-1 Dry – Moist Old Field Cultural Meadow	The cultural meadow has a low grass to forb ratio comprised primarily of smooth brome (*Bromus inermis*), Canada goldenrod (*Solidago canadensis*) and wild carrot (*Daucus carota*). It also contains scattered trees and shrubs including silver maple (*Acer saccharinum*), white spruce (*Picea glauca*), eastern cottonwood (*Populus deltoids*), staghorn sumac (*Rhus typhina*), European buckthorn (*Rhamnus cathartica*) and Russian olive (*Elaeagnus angustifolia*).

4.3 Aquatic Habitat and Fish

Between McIntosh Boulevard and Portage Parkway (general proximity, east of Jane Street) Black Creek is generally confined to a relatively narrow valley hardened by adjacent development. Wetted width ranged from 0.5

to 2.0 m, with associated water depths from 0.10 to 0.3 m. Substrates included silt and organics, some gravel and larger stone and anthropogenic materials. Flows were slow and there were a number of barriers to fish movement created by woody debris jams, garbage and bank slumping. South of the Study Area the creek valley opens and becomes more natural as it enters the Edgeley Ponds property east of Jane Street, north of Highway 7. In this area Black Creek's valley opens creating a broad floodplain area containing native and non-native vegetation.

Recent (circa 2012) realignment of Black Creek has removed an online pond, and the creek flows unobstructed past the existing stormwater management ponds, terminating at a concrete control structure just north of Highway 7, east of Jane Street. This structure acts as a permanent barrier to upstream fish movement under typical flow conditions; although under high water situations fish movement may occur across the structure.

Based on MNRF and TRCA information, Black Creek is a warmwater creek with a predominantly warmwater fish assemblage containing a mix of bait and forage fish species. The most common species in Black Creek include White Sucker (*Catostomus commersonii*), Blacknose Dace (*Rhinichthys atratulus*), Fathead Minnow (*Pimephales promelas*) and Creek Chub (*Semotilus atromaculatus*) (TRCA 2008). There are no aquatic SAR present within Black Creek. Historical urbanization in its catchment area has resulted in realignment and degradation of much of the upstream reach north of the Study Area.

5.0 CONSTRAINTS ANALYSIS

An assessment of the observed natural features in the Study Area was completed to identify their level of constraint to the proposed widening and extension of Portage Parkway and the degree to which the project may impact them. The sections below describe the finding of this assessment.

5.1 Natural Areas

5.1.1 Areas of Natural and Scientific Interest

Areas of Natural and Scientific Interest (ANSI) are designated by the province according to standardized evaluation procedures, and are ranked by the MNRF as being either provincially or regionally significant.

There are no ANSI located within the Study Area.

5.1.2 Significant Valleylands

The designation of this feature is deferred to local planning authorities. General guidelines for determining significance of this feature are presented in the Natural Heritage Reference Manual (NHRM) for Policy 2.3 of the PPS (MNR 2010).

Neither the City of Vaughan nor the York Region have identified and mapped significant valleylands.

The City of Vaughan Official Plan (Vaughan 2010) states that provincially significant valleylands are included as part of the Core Features mapping, and includes a minimum vegetation protection zone of 10 m. The plan also indicates that valley and stream corridors are significant valleylands and further clarification will be provided through the Natural Heritage Network Study and other studies supporting development applications (e.g., EIS, Natural Heritage studies).

Development and site alteration is prohibited within significant valleylands and associated vegetation protection zones, with some exceptions (e.g., transportation). Development and site alteration on adjacent lands is prohibited unless it is demonstrated that no negative impacts will occur (Vaughan 2010).

Although the York Region Official Plan identifies significant valleylands as a key natural heritage feature, the plan does not identify or map these features and defers identification criteria to the province (i.e., the PPS) (York 2013). Development and site alteration is prohibited within significant valleylands unless it is demonstrated that no negative impacts will occur, or the project is authorized through an EA. Development and site alteration on adjacent lands must be accompanied by an EIS (York 2013).

5.1.3 Significant Woodlands

Significant woodlands should be defined and designated by the planning authority (i.e., the City of Vaughan). General guidelines for determining significance of these features are presented in the NHRM for Policy 2.1 of the PPS (MNR 2010).

The City of Vaughan Official Plan (Vaughan 2010) does not contain any policies specific to significant woodlands and defers to regional or provincial policies. The York Region prohibits development or site alteration within significant woodlands and their vegetation protection zone (a minimum of 10 m from the dripline).

No definition or mapping for significant woodlands is provided in the City of Vaughan Official Plan (Vaughan 2010).

The York Region Official Plan (York 2013) defines significant woodlands as woodlands that are:

- 4 ha or larger;
- 0.5 ha or larger and contain globally or provincially rare plants, animals or communities, threatened or endangered species, or is within 30 m of wetlands, lakes, permanent and intermittent streams, kettle lakes, seepage areas and springs; or
- Greater than 2 ha in size and are either: i) within 100 m of another Core Feature or ii) occur within the Natural Heritage Network.

The Hawthorn cultural thicket in its current state does not meet the definition of Woodland outlined in the NHRM (MNR 2010).

5.1.4 City of Vaughan Official Plan – Natural Features

Black Creek valley is designated as a Core Feature of the municipal Natural Heritage Network. The following Core Features may occur in this area of the Study Area: valleyland and stream corridors, wetlands, and fish and wildlife habitat. Development and site alteration is prohibited within these features and associated vegetation protection zones, with some exceptions (e.g., transportation). Excepted projects must demonstrate that negative impacts will be minimized and measures to maintain habitat and enhance the overall ecosystem function are identified. Development and site alteration on adjacent lands is prohibited unless it is demonstrated that no negative impacts will occur (Vaughan 2010).

Black Creek valley is designated as an Enhancement Area and may require an EIS to be completed in support of future development.

5.1.5 York Region Official Plan – Natural Features

According to the York Region Official Plan (York 2013), there are no designated natural features in the Study Area.

5.2 Wildlife and Wildlife Habitat

5.2.1 Significant Wildlife Habitat

Significant wildlife habitat (SWH) is one of the more complicated natural heritage features to identify and evaluate. The NHRM includes criteria and guidelines for designating significant wildlife habitat. There are two other documents, the Significant Wildlife Habitat Technical Guide (SWHTG) and the Significant Wildlife Habitat Decision Support System (SWHDSS) (MNR 2000a and 2000b), that can be used to help decide what areas and features should be considered significant wildlife habitat. These documents were used as reference material for this study. Significant wildlife habitat should be evaluated in the context of the entire planning authority's jurisdiction, and only the best examples are considered significant. The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015) identifies the specific types of SWH that may occur within the Study Area. There are four general types of significant wildlife habitat: migration corridors, seasonal concentration areas, rare or specialized habitats, and species of conservation concern.

There is no significant wildlife habitat occurring within the Study Area.

5.2.2 Species at Risk

The desktop assessment indicated the potential for a number of SAR to occur in the Study Area based on either historical records or overlap with the species range (Appendix A). From these one species Monarch (*Danaus plexippus*) assessed to have moderate potential to occur within Study Area; however this species was not observed during the field surveys. Monarch is designated special concern under the ESA and the SARA. Monarch individuals and their habitat are not protected under the ESA, PPS or municipal policies.

Although not observed, Monarch may use the fallow lands in the Study Area for foraging, and common milkweed (*Asclepias syriaca*), the host plant of this species, was identified in the Study Area during field surveys. The boulevards along the existing Portage Parkway do not provide suitable habitat for SAR.

According to the PPS (MMAH 2014), development or site alteration is prohibited within habitat of threatened or endangered species except in accordance with provincial and federal permitting requirements. Policies of both the City of Vaughan Official Plan (Vaughan 2010) and the York Region Official Plan (York 2013) prohibit development or site alteration within significant habitat of threatened or endangered species, and appropriate buffers as identified in provincial guidelines must be applied for development on adjacent lands (Vaughan 2010). Development or site alteration on adjacent lands is permitted if it is demonstrated that no negative impacts will occur (Vaughan 2010; MMAH 2014).

5.3 Aquatic Features and Fish

5.3.1 Surface Water

The proposed Project is anticipated to cross Black Creek between Jane St. and Creditstone Rd. (Figure 2). There are also two stormwater management ponds in the Black Creek valleylands, adjacent to the Study Area, and within the Study Area.

According to the City of Vaughan Official Plan (Vaughan 2010) public works, including roadways, are permitted to cross valley and stream corridors with the completion of an EA. These structures must also be constructed using appropriate erosion and sediment control measures to minimize environmental impacts. In addition, the City's policies require that measures be taken to maintain the existing habitat and enhance the overall ecosystem function.

Development or site alteration within the floodplain or hazard lands must also comply with the policies of the TRCA. Because the proposed Project involves work within the valley and stream corridor for Black Creek, a permit from the TRCA will be required.

5.3.2 Significant Wetlands

The Ontario Ministry of Natural Resources and Forestry (MNRF) designates provincially significant wetlands (PSWs) based on a scientific point-based ranking system known as the Ontario Wetland Evaluation System (OWES) (MNR 2010). Evaluated wetlands that score 600 or more points, or 200 or more points in either the biological or special features component, are considered provincially significant (MNR 2010).

There are no PSWs in the Study Area.

5.3.3 Other Wetlands

Although available mapping does not identify any other wetlands not yet evaluated by the OWES process within the Study Area, previous natural heritage studies have identified a shallow cattail marsh within Black Creek valley (TMIG 2012) to the south of the Study Area (Figure 2).

According to the City's OP (Vaughan 2010), development or site alteration within other wetlands and a minimum 30 m vegetation protection zone is prohibited with some exceptions (e.g., transportation) and in accordance with provincial requirements. Consequently, there is a recommendation that further assessment of potential wetlands be completed to inform the design and permitting phases of this project.

5.3.4 Fisheries

Black Creek is a highly urbanized, disturbed watercourse that supports a warmwater fish community. Within the Study Area the creek has undergone significant modification that includes channelization, impoundment and re-alignment. All of these have historically affects and continue to limit the suitability of this section of Black Creek to support fish. If construction limits extend to within 30 m of a waterbody, a DFO self-assessment for impacts must be conducted. If impacts are unavoidable, a DFO Project Review is required. In addition, works within the TRCA's regulation limits are subject to TRCA permitting under O.Reg 166/06 which could include a requirement Project designs or restoration to enhance fisheries opportunities.

6.0 CONCLUSION

General natural environmental constraints within the Study Area include: Black Creek valleylands; Riparian wetlands; fish habitat; migratory bird habitat; and Core Features and Enhancement Areas. Based on the urban location of the Study Area and features present adjacent to it there is a considerable amount of existing disturbance influencing its natural environment potential. The Study Area itself consists of urban boulevard, multi-lane roads, commercial properties and storm water management features. Black Creek and its valleylands, while containing natural vegetation are severely impacted and shows signs of urbanization and degradation including colonization

by invasive species and disconnection to adjacent natural areas. Nonetheless, the presence of natural lands, storm ponds and creek offer a unique parcel of potential natural habitat within the City.

In general, the natural features present in the Study Area are considered common in the province and larger region, and are unlikely to pose significant constraints to the proposed widening and extension of Portage Parkway. Based on the findings of the field surveys, no moderate or high potential habitat for species listed as Threatened or Endangered under the ESA is present in the Study Area.

Based on the observed features present in the Study area, the following best management practices are recommended during construction to mitigate damage to the adjacent natural features and potential SAR habitat:

- Observe restricted activity construction timing windows for fish and fish habitat (April 1 to June 30) when planning works near water;
- Avoid removal of vegetation during the active season for breeding birds (April 15 – August 15), unless construction disturbance is preceded by a nesting survey conducted by a qualified biologist;
- Avoid activities resulting in major noise and vibration levels during the breeding bird season (April 15 - August 15), if possible; and
- Implement standard best management practices, including sediment and erosion controls, spill prevention, etc. during the construction phase of the project.

Additionally, it is recommended that breeding bird surveys and a further assessment of potential riparian wetlands be completed during detail design to support further assessment and permitting of the Project.

Report Signature Page

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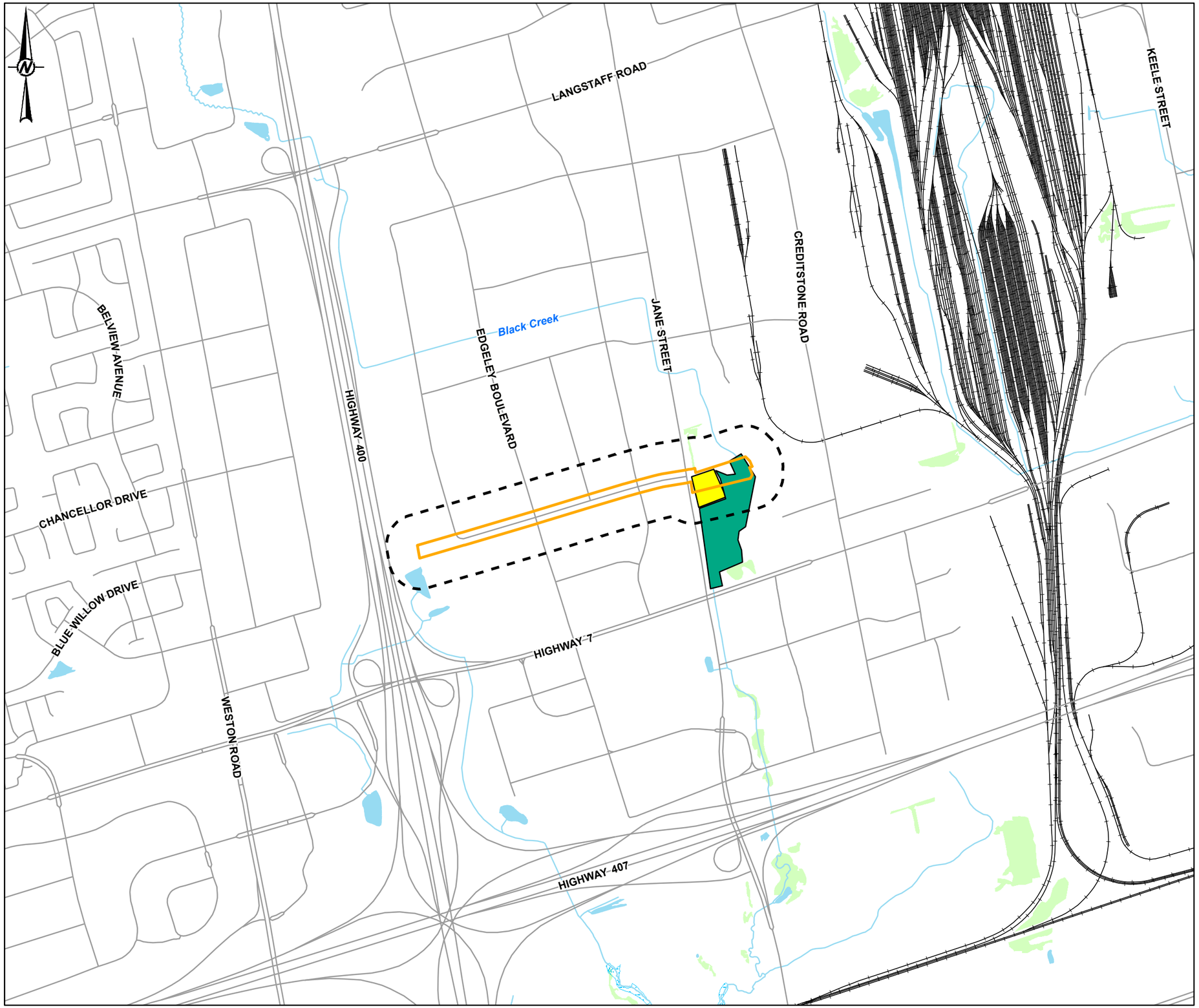
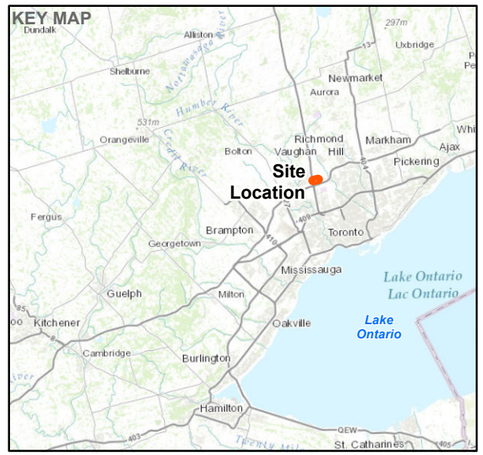
FIGURES



LEGEND

- ROAD
- RAILWAY
- WATERCOURSE
- WATERBODY
- WETLAND
- WOODED AREA
- CORE FEATURE
- ENHANCEMENT AREA
- SITE AREA
- STUDY AREA

KEY MAP



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CORE FEATURES - CITY OF VAUGHAN OFFICIAL PLAN, VOLUME 1 – 2010
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17

CLIENT
CITY OF VAUGHAN

PROJECT
VAUGHAN PORTAGE PKWY EA

TITLE
KEY PLAN

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-07-14
DESIGNED	SO
PREPARED	SO
REVIEWED	AS
APPROVED	RB

PROJECT NO.	CONTROL	REV.	FIGURE
1522372	-	-	1

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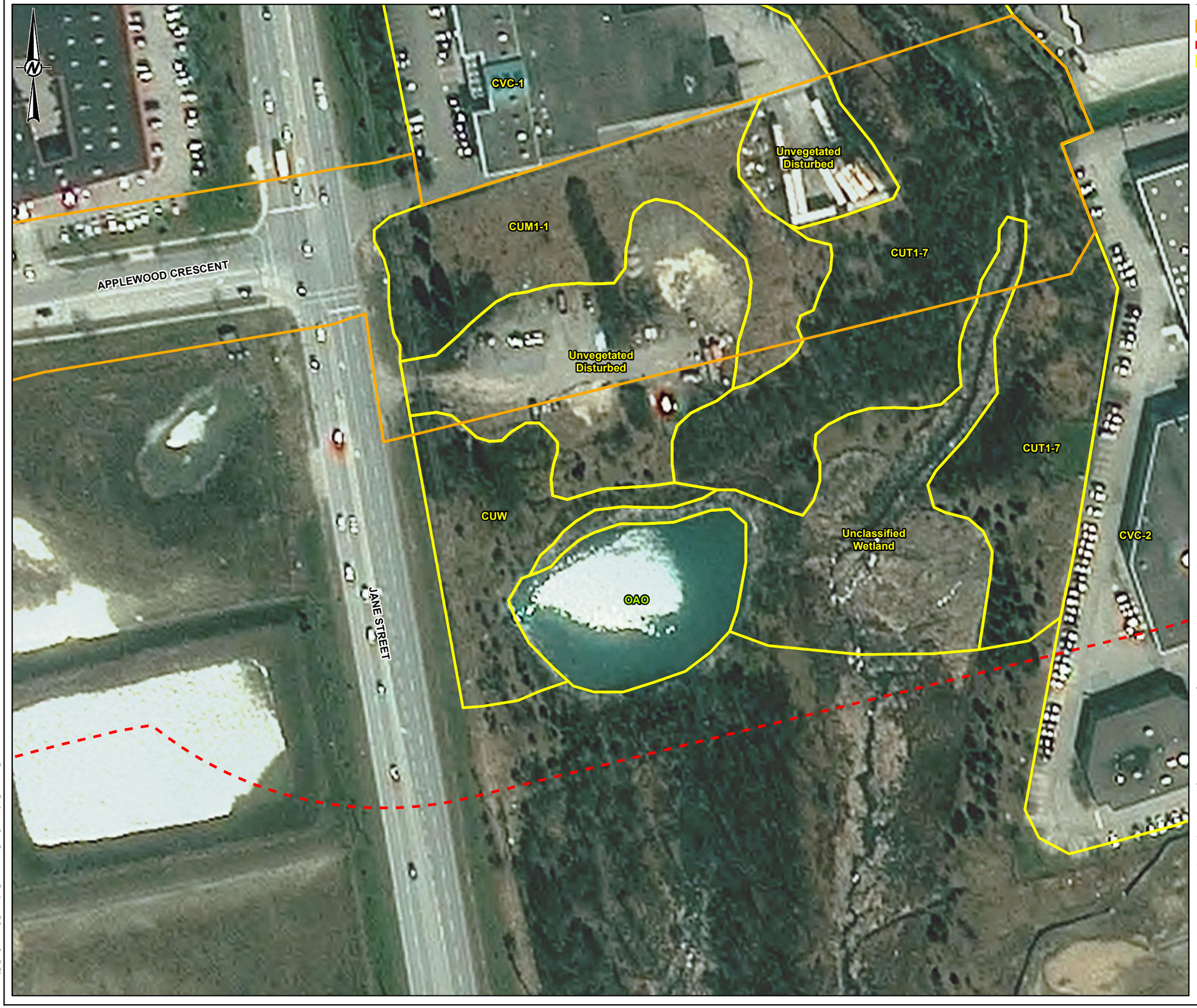

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- STUDY AREA
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CUT1-7 - HAWTHORN CULTURAL THICKET
CUW - CULTURAL WOODLAND
CVC-1 - BUSINESS SECTOR
CVC-2 - LIGHT INDUSTRY
OAO - OPEN AQUATIC SWM POND

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CLIENT
CITY OF VAUGHAN

PROJECT
VAUGHAN PORTAGE PKWY EA

TITLE
NATURAL ENVIRONMENTAL FEATURES - EAST OF JANE STREET

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-07-14
DESIGNED	SO
PREPARED	SO
REVIEWED	AS
APPROVED	RB

PROJECT NO.	CONTROL	REV.	FIGURE
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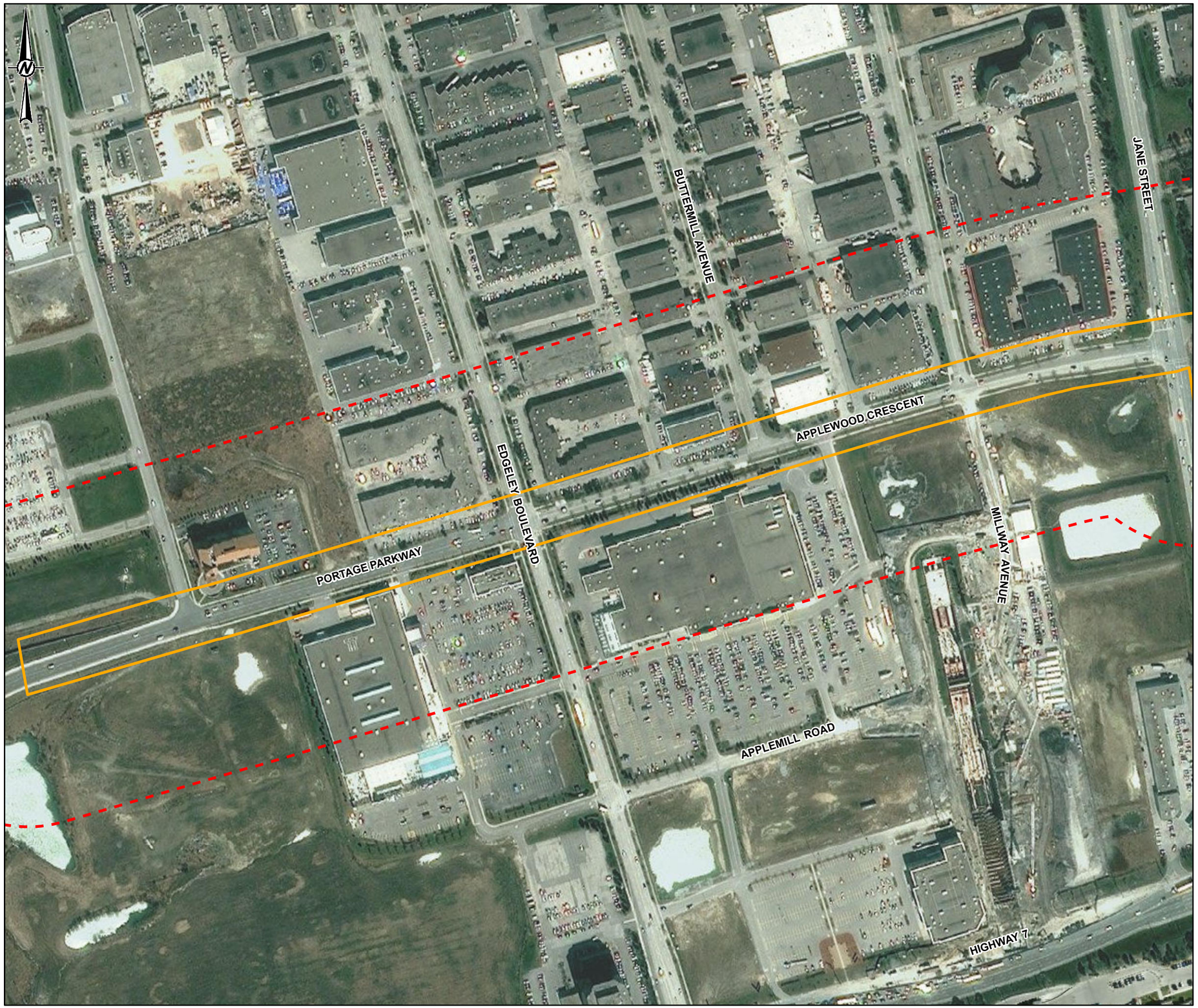

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- SITE AREA
- STUDY AREA

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CLIENT
CITY OF VAUGHAN

PROJECT
VAUGHAN PORTAGE PKWY EA

TITLE
NATURAL ENVIRONMENTAL FEATURES - WEST OF JANE STREET

CONSULTANT
Golder Associates

YYYY-MM-DD	2016-07-14
DESIGNED	SO
PREPARED	SO
REVIEWED	AS
APPROVED	RB

PROJECT NO.	CONTROL	REV.	FIGURE
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APPENDIX A

Species at Risk (SAR) Screening

July 2016
Report No. 1522372

Taxon	Common Name	Scientific Name	Species at Risk Act (Sch 1)[1]	Endangered Species Act[2]	COSEWIC[3]	Provincial (SRank)[4]	Habitat Requirements[5]	Potential to Occur on Site	Rationale for Potential to Occur on Site
Amphibian	Western chorus frog - Great Lakes St. Lawrence / Canadian Shield population	*Pseudacris triseriata*	THR	—	THR	S3	In Ontario, habitat for western chorus frog typically consists of marshes or wooded wetlands, particularly those with dense shrub layers and grasses because this species is a poor climber. They will breed in almost any fishless pond including roadside ditches, gravel [pits and flooded swales in meadows. This species hibernates in terrestrial habitats under rocks, dead trees or leaves, in loose soil or in animal burrows. During hibernation, this species is tolerant of flooding.	Low	No wetland habitat on site. Storm pond near site likely to be fish-bearing and therefore unsuitable habitat.
Arthropod	Monarch	*Danaus plexippus*	SC	SC	SC	S2N, S4B	In Ontario, monarch is found throughout the northern and southern regions. This butterfly is found wherever there are milkweed (*Asclepius* spp.) plants for its caterpillars and wildflowers that supply a nectar source for adults; often found on abandoned farmland, meadows, open wetlands, prairies and roadsides, but also in city gardens and parks. Important staging areas during migration occur along the north shores of the Great Lakes.	Moderate	Milkweed, the preferred forage species, was observed on site.
Bird	Bank swallow	*Riparia*	—	THR	THR	S4B	In Ontario, the bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and river banks, sand and gravel pits, and roadcuts. Nests are generally built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided.	Low	No suitable nesting substrate on site.
Bird	Barn swallow	*Hirundo rustica*	—	THR	THR	S4B	In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared rights-of-way, and wetlands. Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused.	Low	Although there are no suitable nesting structures on site, individuals may use the site and study area for foraging.
Bird	Chimney swift	*Chaetura pelagica*	THR	THR	THR	S4B, S4N	In Ontario, chimney swift breeding habitat is varied and includes urban, suburban, rural and wooded sites. They are most commonly associated with towns and cities with large concentrations of chimneys. Preferred nesting sites are dark, sheltered spots with a vertical surface to which the bird can grip. Unused chimneys are the primary nesting and roosting structure, but other anthropogenic structures and large diameter cavity trees are also used.	Low	No suitable nesting trees were observed in the Study Area.

Taxon	Common Name	Scientific Name	Species at Risk Act (Sch 1)[1]	Endangered Species Act[2]	COSEWIC[3]	Provincial (SRank)[4]	Habitat Requirements[5]	Potential to Occur on Site	Rationale for Potential to Occur on Site
Bird	Common nighthawk	*Chordeiles minor*	THR	SC	THR	S4B	These aerial foragers require areas with large open habitat. This includes farmland, open woodlands, clearcuts, burns, rock outcrops, alvars, bog ferns, prairies, gravel pits and gravel rooftops in cities.	Low	Unvegetated disturbed areas on site are unlikely to provide suitable nesting habitat due to their small size. Recent occurrence records exist in the surrounding region in similar habitat. Suitable nesting habitat is likely present on building rooftops in the vicinity of the Study Area.
Bird	Eastern wood-pewee	*Contopus virens*	—	SC	SC	S4B	In Ontario, the eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats, including deciduous, coniferous, or mixed forests. It occurs most frequently in forests with some degree of openness. Intermediate-aged forests with a relatively sparse midstory are preferred. Tends to inhabit edges of younger forests having a relatively dense midstory. Also occurs in anthropogenic habitats providing an open forested aspect such as parks and suburban neighborhoods. Nest is constructed atop a horizontal branch, one to two meters above the ground, in a wide variety of deciduous and coniferous trees.	Low	Cultural thicket with a treed component on site is unlikely to provide suitable nesting habitat due to its small size and its location within a densely developed urban area. No individuals were observed during the July 6th visit.
Bird	Peregrine falcon anatum subspecies	*Falco peregrinus anatum*	SC	SC	SC	S3B	In Ontario, the peregrine falcon breeds in areas containing suitable nesting locations and sufficient prey resources. Such habitat includes both natural locations containing cliff faces (heights of 50 - 200 m preferred) and also anthropogenic landscapes including urban centres containing tall buildings, open pit mines and quarries, and road cuts. Peregrine falcons nest on cliff ledges and crevices and building ledges. Nests consist of a simple scrape in the substrate.	Low	No suitable habitat observed on site.
Bird	Red-headed woodpecker	*Melanerpes erythrocephalus*	THR	SC	THR	S4B	In Ontario, the red-headed woodpecker breeds in open, deciduous woodlands or woodland edges and are often found in parks, cemeteries, golf courses, orchards and savannahs. They may also breed in forest clearings or open agricultural areas provided that large trees are available for nesting. They prefer forests with little or no understory vegetation. They are often associated with beech or oak forests, beaver ponds and swamp forests where snags are numerous. Nests are excavated in the trunks of large dead trees.	Low	Cultural thicket on site is unlikely to have an open understory preferred by this species.

Taxon	Common Name	Scientific Name	Species at Risk Act (Sch 1)[1]	Endangered Species Act[2]	COSEWIC[3]	Provincial (SRank)[4]	Habitat Requirements[5]	Potential to Occur on Site	Rationale for Potential to Occur on Site
Bird	Wood thrush	*Hylocichla mustelina*	—	SC	THR	S4B	During the breeding season, the wood thrush is found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches. Wood thrush chooses habitats based on the structure of the forest. Specifically, this species selects nesting sites with the following characteristics: lower elevations with trees >16 m in height, a closed canopy cover (>70%), a high variety of deciduous tree species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter.	Low	Cultural thicket on site unlikely to provide suitable nesting habitat due to its isolated position and small size.
Fish	Redside dace	*Clinostomus elongatus*	—	END	END	S2	In Ontario, the redside dace is found in tributaries of western Lake Ontario, Lake Erie, Lake Huron and Lake Simcoe. They are found in pools and slow-moving areas of small headwater streams with clear to turbid water. Overhanging grasses, shrubs, and undercut banks, are an important part of their habitat, as are instream boulders and large woody debris. Substrate is variable and includes silt, sand, gravel and boulders. Spawning occurs in shallow riffle areas.	Low	Black Creek does not provide suitable habitat for this species.
Mammal	Little brown myotis	*Myotis lucifugus*	END	END	END	S4	Little brown myotis is distributed through most of Ontario. It will roost in both natural and man-made structures. They require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas. May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required.	Low	No suitable roosting trees observed in the Study Area.
Mammal	Tri-colored bat	*Perimyotis subflavus*	END	END	END	S3?	The appearance of this species at tree-top levels indicates that they may roost in foliage or in high tree cavities and crevices. They are not often found in buildings or in deep woods, seeming to prefer edge habitats near areas of mixed agricultural use. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year.	Low	No suitable roosting trees observed in the Study Area.
Mammal	Northern myotis	*Myotis septentrionalis*	END	END	END	S3	In Ontario, this species range is extensive and covers much of the province. It will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required.	Low	No suitable roosting trees observed in the Study Area.

Taxon	Common Name	Scientific Name	Species at Risk Act (Sch 1)[1]	Endangered Species Act[2]	COSEWIC[3]	Provincial (SRank)[4]	Habitat Requirements[5]	Potential to Occur on Site	Rationale for Potential to Occur on Site
Reptile	Blanding's turtle - Great Lakes/St. Lawrence population	*Emydoidea blandingii*	THR	THR	THR	S3	Blanding's turtle will use a range of aquatic habitats, but favor those with shallow, standing or slow-moving water, rich nutrient levels, organic substrates and abundant aquatic vegetation. They will use rivers, but prefer slow-moving currents and are likely only transients in this type of habitat. This species is known to travel great distances over land in the spring in to order reach nesting sites, which can include dry conifer or mixed forests, partially vegetated fields, and roadsides. Suitable nesting substrates include organic soils, sands, gravel and cobble. They hibernate underwater and infrequently under debris close to water bodies.	Low	Habitat on site is fragmented from surrounding natural areas.
Reptile	Eastern ribbonsnake - Great Lakes population	*Thamnophis sauritius*	SC	SC	SC	S3	Eastern ribbonsnake is semi-aquatic, and is rarely found far from shallow ponds, marshes, bogs, streams or swamps bordered by dense vegetation. They prefer sunny locations and bask in low shrub branches. Hibernation occurs in mammal burrows, rock fissures or even ant mounds.	Low	Habitat on site is fragmented from surrounding natural areas.
Reptile	Milksnake	*Lampropeltis triangulum*	NAR	SC	SC	S3	Milksnake utilizes a wide range of habitats including prairies, pastures, hayfields, wetlands and various forest types, and is well-known in rural areas where it frequents older buildings. Proximity to water and cover enhances habitat suitability. Hibernation takes place in mammal burrows, hollow logs, gravel or soil banks, and old foundations.	Low-moderate	Habitat on site is fragmented from surrounding natural areas.
Reptile	Snapping turtle	*Chelydra serpentina*	SC	SC	SC	S3	Snapping turtle utilizes a wide range of waterbodies, but shows preference for areas with shallow, slow-moving water, soft substrates and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways.	Low-moderate	Habitat on site is fragmented from surrounding natural areas.
Reptile	Stinkpot or Eastern musk turtle	*Sternotherus odoratus*	THR	SC	SC	S3	Eastern musk turtle is very rarely out of water and prefers permanent bodies of water that are shallow and clear, with little or no current and soft substrates with abundant organic materials. Hibernation occurs in soft substrates under water. Eggs are sometimes laid on open ground, or in shallow nests in decaying vegetation, shallow gravel or rock crevices.	Low	Habitat on site is fragmented from surrounding natural areas.

Taxon	Common Name	Scientific Name	Species at Risk Act (Sch 1)[1]	Endangered Species Act[2]	COSEWIC[3]	Provincial (SRank)[4]	Habitat Requirements[5]	Potential to Occur on Site	Rationale for Potential to Occur on Site
Vascular Plant	Butternut	*Juglans cinerea*	END	END	END	S3?	Butternut is found along stream banks, on wooded valley slopes, and in deciduous and mixed forests. It is commonly associated with beech, maple, oak and hickory. Butternut prefers moist, fertile, well-drained soils, but can also be found in rocky limestone soils. This species is shade intolerant.	Low	This species was not observed during field surveys.

Notes:

[1] *Species at Risk Act* (SARA), 2002. Schedule 1 (Last amended 17 Dec 2014); Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern)

[2] *Endangered Species Act* (ESA), 2007 (O.Reg 242/08 last amended 10 Dec 2015 as O.Reg 387/15). Species at Risk in Ontario List, 2007 (O.Reg 230/08 last amended 31 Mar 2015 as O.Reg 66/15, s. 1.); Schedule 1 (Extirpated - EXP), Schedule 2 (Endangered - END), Schedule 3 (Threatened - THR), Schedule 4 (Special Concern - SC)

[3] Committee on the Status of Endangered Wildlife in Canada (COSEWIC) http://www.cosewic.gc.ca/

[4] Provincial Ranks (SRANK) are Rarity Ranks assigned to a species or ecological communities, by the Natural Heritage Information Centre (NHIC). These ranks are not legal designations. SRANKS are evaluated by NHIC on a continual basis and updated lists produced annually. SX (Presumed Extirpated), SH (Possibly Extirpated - Historical), S1 (Critacally Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), SNA (Not Applicable), S#S# (Range Rank), S? (Not ranked yet), SAB (Breeding Accident), SAN (Non-breeding Accident), SX (Apparently Extirpated). Last assessed August 2011.

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