Square One Drive Extension Municipal Class Environmental Assessment Environmental Study Report

Appendix C Natural Heritage Memorandum

Appendix C NATURAL HERITAGE MEMORANDUM



Memo



To: Diana Addley From: Brandon Holden

Markham, Ontario Stoney Creek, Ontario

File: Square One Drive EA Date: September 27, 2017

Reference: Natural Heritage Review, Square One Drive Extension Class EA

INTRODUCTION

Stantec was retained by the City of Mississauga (the City) to complete a Municipal Class Environmental Assessment (Class EA) and Preliminary Design for the extension of Square One Drive, including the intersections and approaches (the Study Area) in accordance with the Municipal Class Environmental Assessment (the Project).

This memorandum will characterize the significance and sensitivity of the natural features in the Study Area (**Attachment 1**, **Figure 1**) and Adjacent Lands (the planned road alignment plus 120 m), identify potential impacts of the Project on these natural features, and recommend appropriate measures to avoid or minimize potential negative impacts.

BACKGROUND REVIEW

METHODS

Background data applicable to the Study Area and Adjacent Lands were obtained through review of existing documents and information available online. Background resources reviewed include, but are not limited to:

- Natural Heritage Information Centre Data (NHIC 2017)
- Land Information Ontario Natural Heritage Mapping (LIO 2017)
- Fisheries and Oceans Canada Species at Risk Mapping (2015)
- Ontario Breeding Bird Atlas (Cadman et al. 2007)
- Ontario Mammal Atlas (Dobbyn 1994)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2017)
- Credit Valley Conservation Authority Regulation Mapping (CVC 2017)
- Mississauga Offical Plan, including Schedule 3 Natural System (City of Mississauga 2017)

Designated Natural Areas

The Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database was accessed on May 26, 2017 to determine the presence or absence of known significant natural features in the Study Area and Adjacent Lands, including areas of natural and scientific interest (ANSIs), provincially significant wetlands (PSWs), significant wildlife habitat (SWH), environmentally significant areas (ESAs), provincial or national parks, or conservation areas, and watercourses. An

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Information Request was sent to the MNRF on the same date to request additional information pertaining provincially designated natural features. MNRF provided a response dated June 21, 2017 (Attachment 3).

Schedule 3 - Natural System of the City of Mississauga Offical Plan (2017) was also reviewed to identify designated natural features in the Study Area and Adjacent Lands, including significant natural areas and natural green spaces, linkages, woodlands, PSWs, wetlands and natural hazards.

Species at Risk and Provincially Rare Species

The Natural Heritage Information Centre (NHIC) database was accessed on May 26, 2017 to identify records of species at risk and provincially rare species in the vicinity of the Study Area and Adjacent Lands. An Information Request was sent to the MNRF on the same date to request additional information pertaining to species at risk and provincially rare species. MNRF provided a response dated June 21, 2017 (Attachment 3).

RESULTS

Designated Natural Heritage Features

No significant natural features or designated natural areas were identified in the Study Area or Adjacent Lands (LIO 2017, City of Mississauga 2017). One warmwater watercourse was identified in the Adjacent Lands, but not the Study Area (LIO 2017, **Attachment 1, Figure 1**). There are no Credit Valley Conservation Authority regulation limits in the Study Area or Adjacent Lands (CVCA 2017).

Species at Risk and Provincially Rare Species

There are no no recent NHIC records (1980+) of species at risk and provicially rare species in the vicinity of the Study Area or Adjacent Lands; however, the MNRF indicated butternut, peregrine falcon, little brown myotis, small-footed myotis, northern myotis and tri-colored bat are possible (**Attachment 3**).

FIELD INVESTIGATIONS

METHODS

Natural heritage field investigations were conducted in the Study Area by Stantec in 2017 to characterize and map vegetation communities, conduct breeding bird inventories, assess wildlife habitat assessment, and document incidental wildlife observations.

Vegetation

Vegetation communities were assessed by Stantec on June 25, 2017 using the Ecological Land Classification (ELC) field guide for Southern Ontario (Lee et al., 1998), with 2008 ELC code updates. ELC was completed to the finest level of resolution where feasible. Vascular plants were recorded and identified to the lowest taxonomic level possible at the time of investigations. Scientific nomenclature of plant species followed the Database of Vascular Plants of Canada (VASCAN) (Brouillet et al. 2010+).

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Breeding Bird Surveys

All main habitat types identified in the Study Area were traversed on foot twice during the month of June. All species seen or heard were identified and recorded, along with the habitat the species was observed in, and the level of breeding evidence detected, as defined in the Ontario Breeding Bird Atlas (Cadman et al. 2007). For each habitat surveyed, a record was made of the start and end time and a hand held GPS unit was used to geo-reference the location.

Wildlife and Wildlife Habitat

Wildlife habitat is defined as an area where plants, animals and other organisms live, including areas where species concentrate at a vulnerable point in their life cycle and that are important to migratory and non-migratory species. The Significant Wildlife Habitat (SWH) Ecoregion 7E Criterion Schedule (MNRF 2015) groups wildlife habitat into four categories:

- seasonal concentration areas of animals
- rare vegetation communities or specialized habitat for wildlife
- habitat for species of conservation concern
- animal movement corridors

Prior to field investigations, MNRF's Land Information Ontario database was accessed to identify records of significant wildfile habitat for the Study Area and Adjacent Lands. Wildlife habitat surveys were conducted in conjunction with ELC. Wildlife habitat features identified in the MNRF's (2015) SWH Criteria Schedule for 7E were recorded if present, along with a description of the attributes and location of each feature identified.

Species At Risk and Provincially Rare Species

The provincial status of flora and fauna was provided by the Natural Heritage Information Centre (NHIC 2017). Status rankings (SRANKs) for plants, vegetation communities and wildlife are based on the number of occurrences in Ontario and have the following meanings:

- \$1: critically imperiled; often fewer than 5 occurrences
- S2: imperiled; often fewer than 20 occurrences
- S3: vulnerable; often fewer than 80 occurrences
- \$4: apparently secure
- \$5: secure

Provincially rare species are species with a ranking of \$1-\$3.



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Species at risk are classified provincially by COSSARO and federally by the COSEWIC. Classifications include:

- Extirpated no longer occurs in the wild
- Endangered facing imminent danger of becoming extinct or extirpated
- Threatened has the potential to become endangered
- Special Concern has the potential to become threatened

Species at risk protected under the provincial Endangered Species Act, 2007 include species listed as threatened and endangered on the current Species at Risk in Ontario (SARO) list (O. Reg. 230/08), while the federally protected species include those listed as threatened and endangered on current Schedules issued by COSEWIC under the federal Species at Risk Act (SARA). SARA protects species listed on Schedule 1 on federal lands.

The potential for species at risk and provincially rare species in the Study Area was evaluated based on a review of background information, agency consultation, and field investigations. This information was used to assess habitats during field investigations and to determine the habitat potential for species at risk in the Study Area. Species-specific methods were used to assess species at risk that MNRF indicated may occur in Study Area and Adjacent lands as described as follows:

- **Butternut** Searches for butternut were conducted during ELC investigations.
- **Peregrine Falcon** A habitat assessment was used to identify potentially suitable habitat for peregrine falcon during the ELC investigation, and searches peregrine falcon were conducted during breeding bird surveys.
- Endangered Bat Species A habitat assessment was used to identify pontentially suitable habitat for endangered species of bats that may occur in the Study Area. Survey methodology included a bat maternity, foraging and hibernation habitat assessment for large trees and old buildings with suitable openings. For trees, MNRF's Bat and Bat Habitat Guidelines (MNRF 2011) was used for the assessment.

Butternut and the endangered bat species are protected by the ESA. Peregrine falcon is a provincial species of special concern and is not protected by the ESA. Peregrine falcon is listed on Schedule 1 of SARA and is protected on federal land.

RESULTS

Vegetation

Two vegetation communities were documented for the Study Area. Vegetation communities are summarized in **Table 3.1** and mapped on **Attachment 2**. Both vegetation communities are considered common and widespread in southern Ontario. Wetlands were not recorded during field investigations. Other areas in the Study Area consisted of residential, commercial, urban parklands (incldugn Zonta Meadows Park), and disturbed areas. Active construction is occurring in the Adjacent Lands on the southside of the Study Area. Recently grading and fill activity at this location



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may have altered surface drainage entering the Study Area, and some evidence of surface pooling was noted in the Study Area.

Table 3.1: Ecological Land Classification (ELC) Vegetation Types

ELC Type	Community Description
Cultural	
CUW1	The canopy of CUW1 units were dominated by green ash, with rare occurances of Manitoba maple also present. The capony trees are largely dead or in severe decline as a result of the emerald ash borer beetle. Dead tree occupy approximaley 50% of the canopy by area (cover), otherwise the unit would likely be classified as a Fresh-Moist Lowland Deciduos Forest (FOD7-2).
	Common buckthorn dominated the shrub layer, with gray dogwood also present. Understory species are similar in composition to the Cultural Meadow described below/
CUM Cultural Meadow	Areas of mixed meadow occurred within the existing road allowance.

Butternut or other flora species at risk or provincially rare species were not recorded in the Study Area.

Wildlife and Wildlife Habitat

The Study Area provides fragmented cultural woodland and meadow habitat that is expected to support urban tolerant wildlife species. No candidate significant wildlife habitat features were identified during field investigations.

Treed areas and existing structures were surveyed for suitability for the endangered bat species; however, suitable features were not recorded. Trees were generally less than 10cm diameter breast height or were lacking in suitable decay features (e.g. peeling bark, cavities) for maternity roosting. One structure is present in the Study Area; however, suitable openings for bat entry/exit were not recorded.

One species at risk was observed during field investigations: Barn Swallow. It was observed foraging of the cultural meadow communities; however, no nests were observed.

PROPOSED WORKS

The preferred design for the Square One Drive Extension Class EA consists of a 2-lane extension of Square One Drive, from Confederation Parkway to Rathburn Road West (a distance of approximately 265 m); and, a realignment of Rathburn Road West, from Confederation Parkway to east of Elora Drive (west leg, a distance of approximately 500 m). Additionally, a new signalized intersection will be constructed at Square One Drive & Confederation Parkway, a new roundabout will be constructed at Square One Drive & Rathburn Road West, and the existing signalized intersection at Rathburn Road West & Elora Drive (east leg) will be converted to a right-in/right-out.



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PRELIMINARY IMPACT ASSESSMENT

The preferred design overlays an urban landscape that includes a cultural meadow community that is fragmented and disturbed by development, including active construction in Adjacent Lands to the south of the Study Area. Vegetation cover in the cultural meadow disturbance adapted flora that is common to urban environments. No designated natural areas, species at risk or provincially rare species (or their habitat) will be impacted by the preferred design. No significant natural features or designated natural areas were identified in the Study Area. Field investgations documented foreaging Barn Swallow in the Study Area; however, no nest were recorded. No other species at risk or provincially rare species were recorded.

Cultural woodland communities can likely be retained by the preferred design. This expectation will be confirmed when design details are available. Potential indirect impacts to natural areas that are adjacent to the preferred design include inadvertent vegetation disturbance, soil compaction, sedimentation, contamination from spills, noise and dust generation. These indirect impacts are associated with the construction phase of the Project and are temporary. Standard mitigation is available to prevent inadvertent encroachment into these areas, and provide sediment and erosion control.

STANDARD MITIGATION

Best management and standared mitigation measures are recommended to mitigation potential adverse impacts on adjacent natural features. These measures should be implemented, where required and reasonable.

Erosion and Sediment Control

Mitigation measures for sedimentation, erosion, and dust control will be implemented to prevent sediment and dust from entering the adjacent natural areas and the local storm water management system. The primary principles associated with sedimentation and erosion protection measures are to: (1) reduce the duration of soil exposure; (2) retain existing vegetation, where feasible; (3) encourage re-vegetation; (4) divert runoff away from exposed soils; (5) keep runoff velocities low; and to (6) trap sediment as close to the source as possible. To address these principles, the following mitigation measures are proposed:

- Silt fencing and/or vegetation protection barriers will be used along all work areas adjacent to natural areas.
- No equipment will be permitted to enter beyond the vegetation protection fencing.
- All exposed soil areas will be stabilized and re-vegetated, through the placement of seed and mulching or seed and an erosion control blanket, promptly upon completion of construction activities.
- All sediment and erosion controls will be monitored and properly maintained, as required.
- In addition to any specified requirements, additional silt fence will be available on site, prior to grading operations, to provide a contingency supply in the event of an emergency.



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- Controls are to be removed only after the soils of the work area have been stabilized and adequately protected or until cover is re-established.
- Soil, material storage and equipment refueling will occur 30 m away from natural areas to avoid potential impacts, to reduce potential for contamination.

Tree Protection

In addition to the mitigation measures outlined above for sediment and erosion control, a detailed tree inventory documenting the species, size and health of the trees to be removed at this location will be undertaken when design details are available. A strategy that is consistent with municipal bylaws will be developed to compensate for the removal of the trees, if any.

Trees to be removed should be clearly marked to prevent unnecessary clearing. A tree protection plan will also be prepared to clearly delineate / demarcate work areas to prevent encroachment and incidental damage to trees and natural vegetation. Native soil and seed bank retention, including avoidance of root grubbing along disturbed edges, and other edge management recommendations should also be developed.

Migratory Birds

The Primary Nesting Period (PNP) is the period when the percent of total nesting species is expected to be greater than 10%. The PNP for the Study Area is considered to fall between April 1 and August 15, although nesting also infrequently occurs outside of this period (Environment Canada 2014). No part of the work that could result in the incidental take of bird nests will be performed within the PNP unless an avian biologist is retained to conduct nest sweeps of the work area a maximum of seven (7) days prior to works. The biologist will search for nests or signs of nesting of migratory birds within and adjacent to work areas. Where the sweep determines that no nests are present, the work will commence within the searched area. If the Project is delayed beyond the seven day effective window for the nest sweep, a new sweep will be performed.

If a migratory bird nest is located within the work areas at any time, a no-disturbance buffer will be delineated. This buffer will be maintained for the entire duration of the nest activity, which will be determined using periodic checks by the avian biologist. The radius of the buffer generally varies from 5 m – 60 m depending on the sensitivity of the nesting species. Work will not resume within the nest buffer until the nest is confirmed to be no longer active.

Species at Risk

MNRF determines authorization requirements under the ESA. Loss of foraging habitat is not anticipated to require authorization from the MNRF under the ESA; however, consultation with MNRF is recommended to confirm this expectation. Consultation should occur via submission of an Information Gathering Form.



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CLOSING

This natural heritage review provides a summary of the existing conditions within the Study Area and Adjacent Lands; provides a preliminary assessment of impacts based on the preferred design, and most recent design details; and recommends standard mitigation to avoid impacts to natural areas. All information and recommendations are based on the most recent available information, and are and may be updates with new design information.

Please do not hesitate to contact me with any questions related to the content of this letter.

STANTEC CONSULTING LTD.

BCALL

Brandon Holden

Terrestrial Ecologist Phone: 519-820-2642 Fax: 905-385-3534

brandon.holden@stantec.com

Attachment: 1. Figure 1 Site Context

2. Figure 2 Vegetation Communities

3. MNRF Correspondence

c. Sean Spisani, Stantec; Chris Pengelly, Stantec



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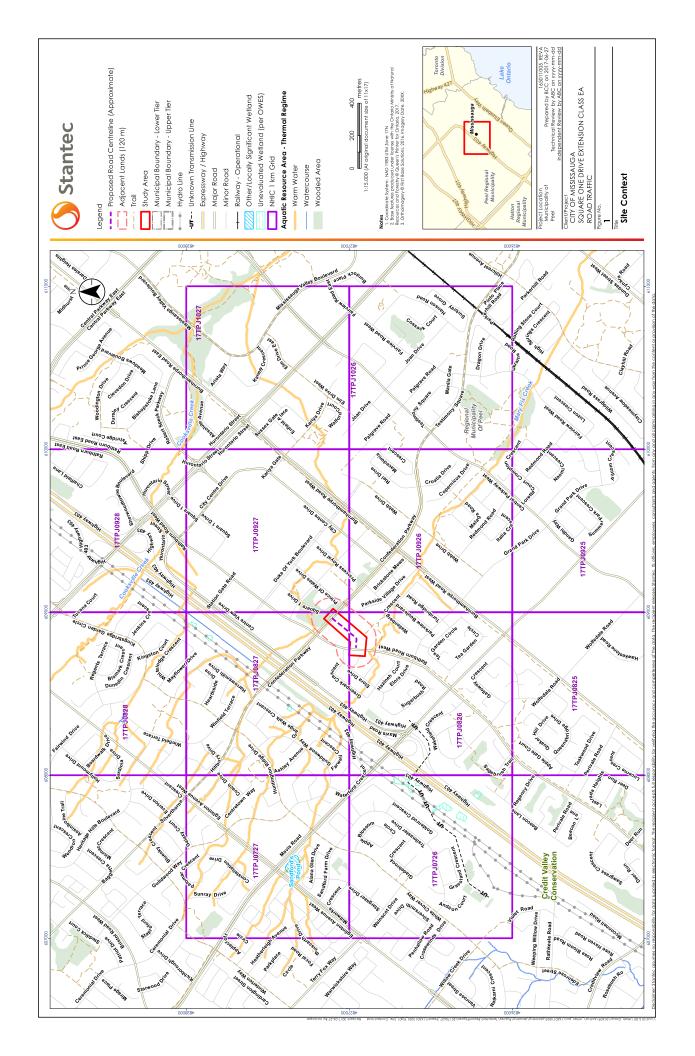


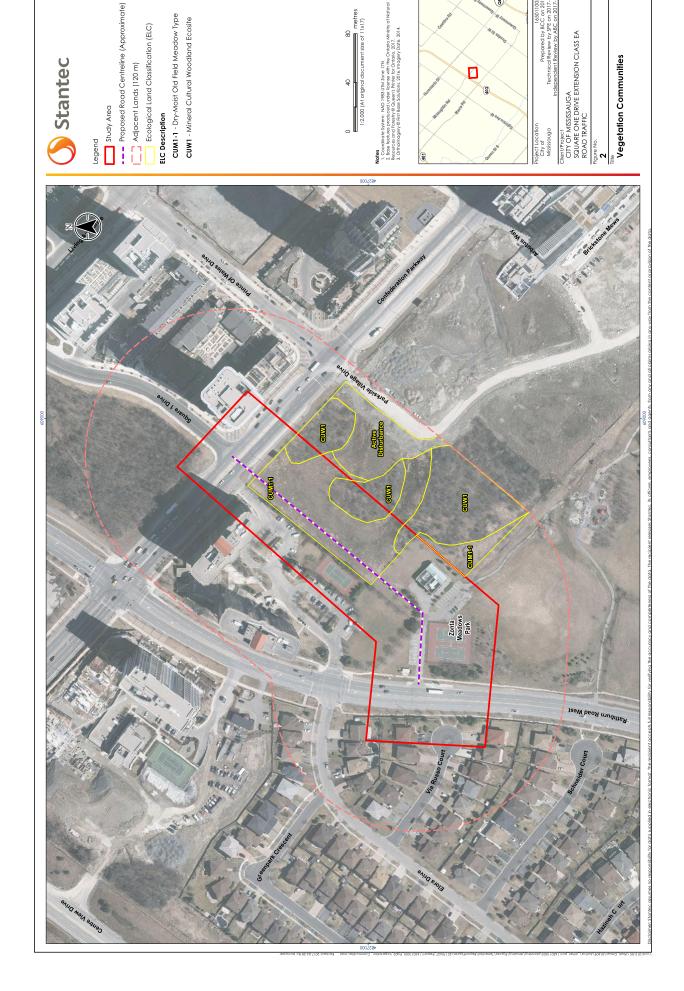
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Ministry of
Natural Resources
and Forestry
Aurora District Office

Aurora District Office 50 Bloomington Road Aurora, Ontario L4G 0L8 Ministère des Richesses naturelles et des Forets

Telephone: (905) 713-7400 Facsimile: (905) 713-7361



June 21, 2017

Chris Pengelly
Environmental Planner
Stantec
300W-675 Cochrane Drive
Markham, ON L3R 0B8
905-944-6879
Chris.Pengelly@stantec.com

Re: Square One Drive Extension to Rathburn Road West, Mississauga

Dear Chris Pengelly,

In your email of May 26, 2017 you requested information regarding the above location.

Species at risk recorded in the vicinity include Butternut (endangered) and Peregrine Falcon (special concern). There is potential for endangered bats (i.e., Eastern Smallfooted Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat) in cavities or leaf clusters.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. Appropriate inventory work is needed depending on the undertakings proposed. Approval from MNRF may be required if work you are proposing could cause harm to any species that receive protection under the *Endangered Species Act 2007*.

Species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific sensitive information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact <u>ESA.aurora@ontario.ca</u> or <u>Bohdan.Kowalyk@Ontario.ca</u>.

Sincerely,

Bohdan Kowalyk, R.P.F.

B. Kowalyk

Aurora District, Ontario Ministry of Natural Resources and Forestry



Aurora MNR Information Request Form

Name:	Chris Pengelly
Company Name:	Stantec Consulting Ltd.
Proponent Name:	City of Mississauga
Phone Number:	905-944-6879
Email Address:	chris.pengelly@stantec.com
Project Name:	Square One Drive Extension Class EA
Property Location (address):	Square One Drive and Confederation Parkway, Mississauga ON
Township (Geographic):	Toronto
Lot & Concession:	Lot 19, Concession 2 North of Dundas Street
UTM Coordinates:	Easting: 608902.6, Northing: 4827016.2, Zone 17.
Brief Description of Undertaking	The preferred design for the Square One Drive Extension Class EA consists of a 2-lane extension of Square One Drive, from Confederation Parkway to Rathburn Road West (a distance of approximately 265 m); and, a realignment of Rathburn Road West, from
Have you previous	y contacted someone at MNR for information on this site? Yes No
If yes, when and who?	
surrounding landscap	urate scale to illustrate footprint/study area of the proposed activity in relation to the pee (e.g. property boundaries, roads, waterbodies, natural features, towns, transmission numan landmarks). Use of aerial photography is strongly encouraged. Include scale, nd.
ATTACHMENTS - I h	ave attached a:
	☐ Picture ☐ Map ☐ Other
REQUEST - I would I	ike to request the following information for the property identified above:
Fish Dot Information (fish and other act a watercourse)	tion quatic species found in a particular area of provide name of ANSI if known)
	g (hard copy) and/or evaluation and data

Please forward the completed form to: esa.aurora@ontario.ca