

Appendix D **NATURAL HERITAGE MEMORANDUM**

To:	Diana Addley Markham, Ontario	From:	Brandon Holden Stoney Creek, Ontario
File:	165011016	Date:	October 3, 2017

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

INTRODUCTION

Stantec was retained by the City of Mississauga (the City) to complete a Municipal Class Environmental Assessment (Class EA) for the proposed extension of Living Arts Drive, from Rathburn Road West to Centre View Drive, including intersections and approaches (i.e., the Project Area).

This memorandum characterizes the significance and sensitivity of the natural features in the Project Area (please refer to **Attachment 1**) and Adjacent Lands (the planned road alignment plus 120 m) to 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 Project Area were obtained through review of existing documents and information available online. Background resources reviewed included:

- 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 Official Plan, including Schedule 3 - Natural System (City of Mississauga 2017)

Designated Natural Areas

The Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario database (LIO 2017) was accessed on May 26, 2017 to determine the presence or absence of known significant natural features in the Project 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. A request was submitted to Aurora District MNRF to obtain additional information regarding designated natural features on July 7, 2017.

Schedule 3 – Natural System of the Mississauga Official Plan (Schedule 3) was reviewed to identify significant natural features.

Design with community in mind

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

Species at Risk and Provincially Rare Species

The NHIC database was accessed on May 26, 2017 to identify records of species at risk and provincially rare species in the vicinity of the Project Area and Adjacent Lands. A request was submitted to Aurora District MNRF to obtain additional species records, if any, on July 7, 2017.

RESULTS

Designated Natural Heritage Features

LIO 2017 documents one warmwater watercourse in the Project Area (please refer to **Attachment 1**); however, the feature is overlain by built commercial use. Based on Stantec's review of 2016 aerial photographs of the Project Area, evidence of a natural drainage feature is not visible (please refer to **Attachment 2**). In addition, the feature is not illustrated in Schedule 3 of the Official Plan. No other significant natural areas or designated natural areas were identified in the Project Area or Adjacent Lands based on Stantec's review of the LIO 2017 mapping and Schedule 3 of the Official Plan.

Species at Risk and Provincially Rare Species

There are no recent NHIC records (1980+) of species at risk and provincially rare species in the vicinity of the Project Area or Adjacent Lands; however, some urban tolerant species with range overlap are possible, including butternut, peregrine falcon, little brown myotis, small-footed myotis, northern myotis and tri-colored bat.

FIELD INVESTIGATIONS

Natural heritage field investigations were conducted in the Project Area by Stantec ecologists on June 9, 2017, to characterize and map vegetation communities, conduct breeding bird inventories, conduct a wildlife habitat assessment, and document incidental wildlife observations.

METHODS

Vegetation

Vegetation communities were assessed by Stantec on June 9, 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+).

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

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 (MNR 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, MNR's LIO 2017 was accessed to identify records of significant wildlife habitat for the Project Area and Adjacent Lands. Wildlife habitat surveys were conducted in conjunction with ELC. Wildlife habitat features identified in the MNR'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 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:

- S1: critically imperiled; often fewer than 5 occurrences
- S2: imperiled; often fewer than 20 occurrences
- S3: vulnerable; often fewer than 80 occurrences
- S4: apparently secure
- S5: secure

Provincially rare species are species with a ranking of S1-S3.

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.

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

The potential for species at risk and provincially rare species in the Project 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 Project Area. Species-specific methods were used to assess species at risk that MNRF indicated may occur in Project 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 ELC investigations.
- **Endangered Bat Species** - A habitat assessment was used to identify potentially suitable habitat for endangered species of bats that may occur in the Project 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.

Fish Habitat

Watercourses or other areas of potential fish habitat were documented during field investigations, if present.

RESULTS

FIELD INVESTIGATIONS

Vegetation

One woodland community and one hedgerow were documented within the Project Area. Both features are summarized in **Table 1** and illustrated on **Attachment 2**. Other land uses in the Project Area consisted of commercial development.

Wetlands were not recorded during field investigations. A large concrete box culvert travelling underneath Centre View Drive was observed; however, it was not associated with a permeant watercourse and is anticipated to serve as part of the local stormwater management (SWM) system.

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

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

Table 1: Ecological Land Classification (ELC) Vegetation Types

ELC Type	Community Description
WODM4 Dry-Fresh Deciduous Woodland	The WODM4 community was a culturally influenced community that was dominated by green ash, with rare occurrences of black locust, Manitoba maple, Norway maple, poplar species also present. Dead ash trees occupied greater than 50% of the canopy by area. Common buckthorn dominated the shrub layer. This feature occurred in the extreme southeast corner of the Project Area and is not likely to be impacted by construction works.
HR Cultural Hedgerow	An open drain along Centre View Drive had a species composition similar to a WODM4; however, trees were generally less than 10 m high. Cattails and Phragmites were also present.
CVC Commercial Land	The majority of the Project Area comprises paved or manicured commercial lands, generally lacking native vegetation.
DIST Disturbed	Small areas of disturbed soil were present at the existing limit of Living Arts Drive.

Wildlife and Wildlife Habitat

The Project Area provides fragmented cultural woodland and hedgerow habitat that has limited potential to support wildlife beyond urban tolerant species. No species at risk and provincially rare species were recorded during field investigations. No candidate significant wildlife habitat features were identified during field investigations.

Treed areas and existing structures were surveyed for suitability for the potential 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. The existing cinema structure did not have suitable openings for bat entry/exit.

Fish Habitat

No watercourses are present in the Project Area, and fish habitat is considered to be absent.

PRELIMINARY IMPACT ASSESSMENT

PROPOSED WORKS

Currently Living Arts Drive terminates at Rathburn Road West and consists of a 2-lane cross-section with on-street parking south of Square One Drive. The City plans to maximize access into and beyond the Downtown by extending Living Arts Drive from Rathburn Road West to Centre View Drive. The proposed extension will create two (2) new intersections in the Project Area, including one new midblock intersection, between Rathburn Road and Centre View Drive, and one new intersection with Centre View Drive.

Design with community in mind

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

TERRESTRIAL ENVIRONMENT

The proposed extension overlays a built landscape, that primarily consists of existing commercial infrastructure and asphalt-paved surfaces. Vegetation cover in the Project Area is limited to the Cultural Hedgerow community, which comprises disturbance adapted flora that is common to urban environments. A portion of this hedgerow feature will be removed to accommodate the new intersection of Living Arts Drive and Centre View Drive. No significant natural features, designated natural areas, species at risk or provincially rare species were identified in the Project Area.

The WODM4 community can likely be retained by the Project. This expectation will be confirmed when design details are confirmed. Potential indirect impacts to natural areas that are adjacent to the Project include inadvertent vegetation disturbance, interaction with migratory birds, 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 in nature. Standard mitigation is available to prevent negative interaction or inadvertent encroachment into these areas, or to provide sediment and erosion control.

STANDARD MITIGATION

Best management and standard mitigation measures are recommended to mitigate the 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.

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

- 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 as part of the Municipal Class EA study. A strategy that is consistent with municipal by-laws 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 Project 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.

CLOSING

This natural heritage review provides a summary of the existing conditions within the Project Area and Adjacent Lands; an assessment of potential impacts; and recommends standard mitigation to avoid impacts to natural areas. All information and recommendations are based on the most recent available information, and may be updated as new design information becomes available.

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

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

STANTEC CONSULTING LTD.



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Attachment: 1. Figure 1 – Project Area Context
2. Figure 2 – ELC Vegetation Communities

c. Sean Spisani, Stantec

Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

REFERENCES

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Reference: Natural Heritage Review, Living Arts Drive Extension Class Environmental Assessment

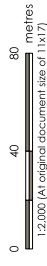
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http://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php



Legend

- Study Area
 - Adjacent Lands (120 m)
 - Ecological Land Classification (ELC)
- ELC Description**
- WODM4** - Dry-Fresh Deciduous Woodland
 - HR** - Cultural Hedgeflow
 - CYC** - Commercial Land
 - DIST** - Disturbed



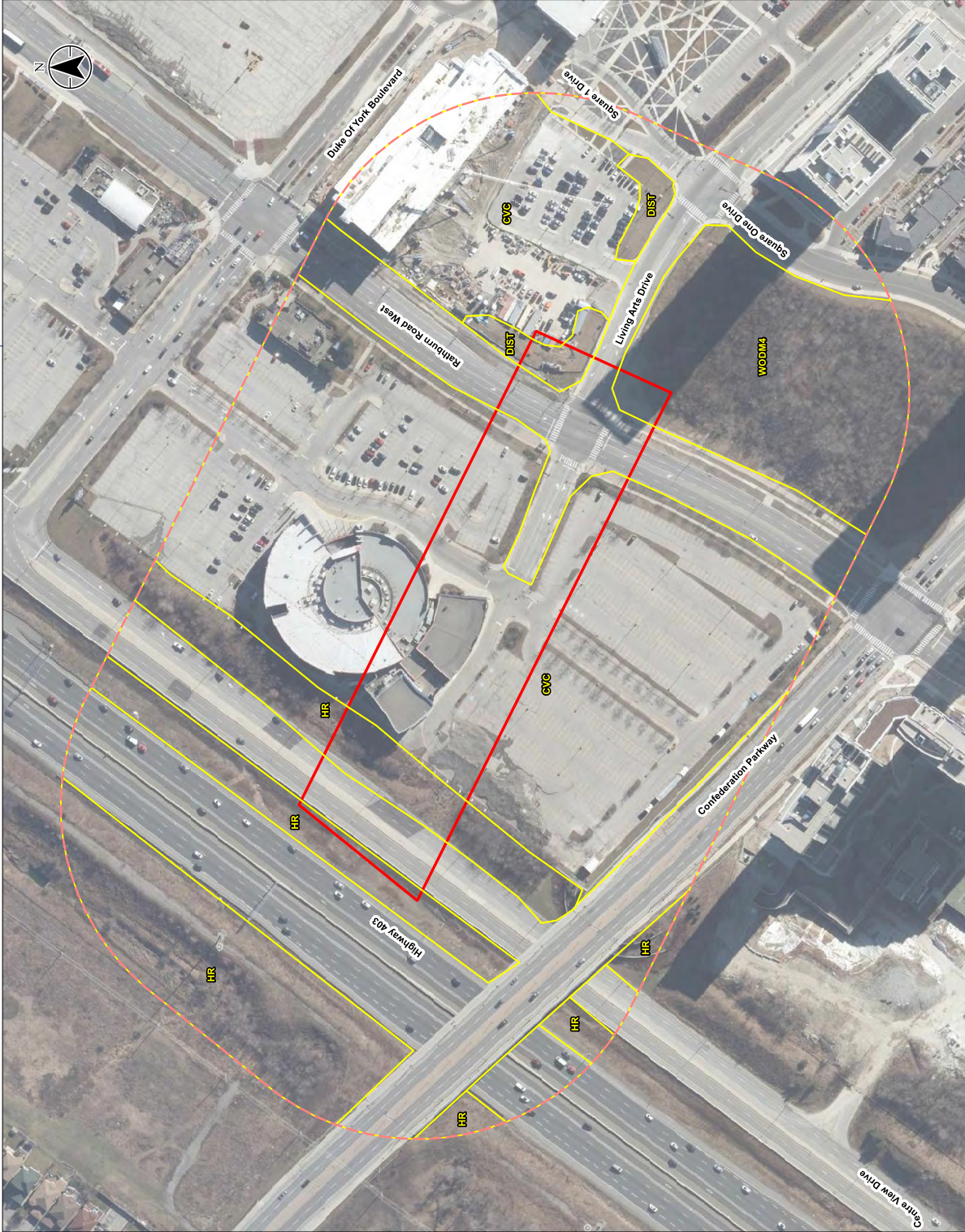
Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry.
3. Orthomaps by First Base Solutions, 2014; Imagery Data, 2014.



Project Location
 City of Mississauga
 Client/Project
 CITY OF MISSISSAUGA
 CLASS EA STUDY-LIVING ARTS DR.

Figure No. **2**
 Title
Vegetation Communities



49000
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