904 Mississauga Heights
Scoped Environmental Impact Study

June 2021

DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN

77 Wyndham Street South • Guelph ON N1E 5R3
T 519.822.1609 • F 519.822.5389 • www.dougan.ca

PREPARED FOR:

David Sajecki, MCIP RPP M.PL B.Eng LEED AP
Partner
Sajecki Planning

PREPARED BY:

Dougan & Associates
Ecological Consulting & Design
77 Wyndham Street South
Guelph Ontario N1E 5R3

Contributing Authors: Christina Myrdal, Ecologist, ISA Arborist
Carl-Adam Wegenschimmel, Wildlife Ecologist
Summer Graham, Ecologist
Ian Richards, Senior Wildlife Ecologist

GIS & Mapping: Janel Sauder, GIS Analyst
Nicole White, GIS/CAD Technician

Reviewed By: Todd Fell, Director, Senior Landscape Architect

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1. INTRODUCTION

1.1. STUDY PURPOSE & EIS TRIGGER

Dougan & Associates (D&A) was retained by Sajecki Planning to prepare a scoped Environmental Impact Study (EIS) for the property at 904 Mississauga Height Drive, Mississauga in support of a plan of subdivision. The proposed project will involve severance of the existing parcel of land into five (5) lots and construction of four (4) new residential dwellings. An EIS was requested by the City of Mississauga and Credit Valley Conservation due to the presence of Greenlands and a Significant Natural Area that is present within the subject lands per Schedules 3 and 10 of the City's Official Plan. A site visit and feature staking was conducted by Sajecki Planning, Wood Environment & Infrastructure, City of Mississauga and CVC representatives in 2018 and in 2019 the Terms of Reference (TOR) for an EIS was subsequently submitted to and approved by the Agencies (Appendix A).

The approved TOR established the following tasks as part of the EIS:

1. Description of the surrounding natural environment;
2. Secondary source review;
3. Agency consultation;
4. Field surveys including:
    a. Ecological Land Classification (ELC) surveys and mapping;
    b. One (1) season botanical inventory;
    c. Tree inventory;
    d. Breeding bird surveys;
    e. Incidental wildlife observations;
    f. Species at Risk (SAR) screening; and
    g. Significant Wildlife Habitat (SWH) screening
5. Identification of Key Natural Heritage Features and associated policy implications;
6. Identification and assessment of potential impacts; and
7. Avoidance and mitigation recommendations.

1.2. BACKGROUND

1.2.1. LOCATION & PHYSIOGRAPHY

The subject lands are located in CVC's Lower Watershed, at the south end of Subwatershed #9 (Norval to Port Credit Subwatershed). The property is approximately 1.28 ha in size and is located south of Queensway West, north of the Credit River, east of Erin Mills Parkway, and west of Hurontario Street. According to Schedule 10 of the City's Official Plan, the study area is located within the Residential Low Density 1 land use designation. Directly south adjacent to the study area are Greenlands and Special Waterfront designations, associated with the Credit River corridor and The Mississauga Golf and Country Club (City of Mississauga Official Plan, Schedule 10). The woodlands present in southern portion of the study area are part of a Significant Natural Area and Natural Green Space (City of Mississauga Official Plan, Schedule 3).

The subject lands are located within the Iroquois Plain physiographic region, which extends for the Lake Ontario shoreline to north of Dundas St E. The study area is also located within CVC's Lower Watershed. According to the 2005 Watershed Report Card, the surficial topography in this area is relatively flat, sloping gently towards Lake Ontario, and the surficial soils in this area generally have lower infiltration and higher runoff rates than elsewhere in the watershed (CVC, 2005). The Lower Watershed primarily consists of urban lands with little remaining natural cover, and therefore supports much less biodiversity than the Middle and Upper Watersheds.

1.2.2. PROPOSED SITE ALTERATIONS

The proposed work as part of the Draft Plan of Subdivision and Rezoning Application for this property includes a severance of the existing parcel of land, and construction of four (4) new residential lots, with the existing dwelling to remain (Appendix I).

2. METHODS

2.1. BACKGROUND REVIEW

The following documents and information were reviewed for relevant natural heritage information on the site and adjacent lands:

- Natural Heritage Information Centre (NHIC) Make-a-Natural-Heritage-Map;
- CVC Regulation Mapping;
- Ontario Reptile and Amphibian Atlas;
- Atlas of the Breeding Birds of Ontario;
- Ontario Butterfly Atlas;
- CVC Watershed Report Card (2005);
- City of Mississauga Natural Areas Survey (NAS) data.

2.2. FIELD STUDIES

2.2.1. VEGETATION RESOURCES

2.2.1.1. ECOLOGICAL LAND CLASSIFICATION

Vegetation communities within the study area were characterized according to the Ecological Land Classification (ELC) System protocol for Southern Ontario, 1st approximation (Lee *et al*., 1998). ELC classification and mapping were produced via aerial photo interpretation and confirmation through field surveys.

One (1) site visit was carried out by D&A ecologists on June 11, 2019, during which all vascular plant species encountered were recorded following standard ELC protocol; this included identifying species within the canopy, sub-canopy, understory, and ground layer, while recording relative abundance. Additional information collected for each polygon included human disturbance (e.g. trails, garbage), invasive species, and features requiring further investigation for potential candidate significant wildlife

habitat such as cavity trees. All of the ELC data collected was compiled into a Microsoft Access database and linked to mapped ELC units in an ArcGIS feature class where it could be managed, reviewed, and exported for analysis and reporting.

2.2.1.2. VASCULAR PLANT INVENTORY

The spring botanical survey by D&A was carried out simultaneously with the ELC survey on June 11, 2019. These surveys involved taking an inventory of vascular plant species growing within each ELC polygon. This information was added to the Microsoft Access ELC database to facilitate data management, QA/QC, analysis, and mapping. The taxonomy, nomenclature and provincial ranks for each of the species are consistent with the Natural Heritage Information Centre (NHIC, 2017). Plant rarity status was assessed using COSEWIC rankings for federal status (NHIC, 2017), S-rank for provincial status (NHIC, 2017), and the CVC rarity ranking for local significance (Kaiser, 2001).

The vascular plant species and status list containing the species observed during D&A's surveys are included as Appendix B.

2.2.1.3. TREE INVENTORY & ARBORIST ASSESSMENT

An ISA Certified Arborist carried out field surveys on April 3rd and June 11th, 2019 to inventory and assess all trees greater than 15cm diameter at breast height (DBH) located within the study area, per the Corporation of the City of Mississauga Private Tree Protection By-law 254-12. An additional survey was carried out on April 9th 2021 to tag and assess remaining trees 10 cm DBH and greater within the subject lands and within 6 m of the property boundaries, in accordance with the City of Mississauga's Terms of Reference for Arborist Reports, Tree Inventory/Survey & Tree Preservation Plans dated April 2019 (made available online in July 2020). In accordance with this document, the DBH for multi-stemmed trees was calculated by taking the sum of the square value of each stem, and then taking the square root.

Survey parameters included tree size (DBH, height, crown reserve), structural condition, and biological health. Each tree was uniquely identified using tree tags and geo-positioned using a Trimble R1 GPS unit. Trees under 10 cm DBH were not assessed, in accordance with the City's Tree By-law, nor were non-tree woody vegetation (such as large shrubs and vines). All observations were made from the ground, i.e. no tree climbing or aerial lift inspection methods were used.

Results of the tree inventory and assessment were overlaid with the draft site plan (Sajecki, 2019) to assess potential grading and/or construction impacts to inventoried trees, as follows:

- Trees with disturbance greater than 30% within their driplines are considered too heavily impacted to be retained and were therefore designated as "**remove**".
- Trees with disturbance for part of the dripline, but less than 30% are considered partly impacted and designated as "**injure**".
- Those trees that are clearly not affected by development are designated "**preserve**".

Additional details are provided in D&A's 2021 *Arborist Report & Tree Preservation Plan: 904 Mississauga Heights Drive* submitted under separate cover.

2.2.2. WILDLIFE RESOURCES

2.2.2.1. BREEDING BIRDS

Two breeding bird surveys were conducted on June 3 and June 12, 2019, following the protocols outlined by the Ontario Breeding Bird Atlas (OBBA, 2001). This protocol stipulates that the surveys be conducted between sunrise and 10:00 a.m., between May 24 and July 12, during appropriate weather conditions (i.e., light winds, no heavy rains). See Table 1 for details.

Table 1: Details on Wildlife Surveys

DATE	SURVEYOR	TIME	WEATHER	PURPOSE
June 3, 2019	Carl-Adam Wegenschimmel	05:10 – 05:28	Calm, partly cloudy, 7°C	Breeding Bird Survey #1
June 12, 2019	Carl-Adam Wegenschimmel	05:38 – 06:08	Calm, partly cloudy, 11°C	Breeding Bird Survey #2

2.2.2.2. BAT HABITAT ASSESSMENT

Ontario is home to four (4) Endangered bat species: Tri-coloured Bat (*Perimyotis subflavus*), Little Brown Myotis (*Myotis lucifugus*), Eastern Small-footed Myotis (*Myotis leibii*) and Northern Myotis (*Myotis septentrionalis*) that are protected under the Endangered Species Act (2007). The MECP (Ministry of Environment, Conservation and Parks; formerly MNRF) requires that any area classified as a deciduous, coniferous or mixed wooded ecosite (ELC per Lee et al., 1998) be assessed for suitable bat maternity roost habitat, prior to removal of trees. The MNRF's 2017 Survey Protocol for Species at Risk Bats within Treed Habitats consists of five (5) phases:

- Phase I: Bat Habitat Suitability Assessment;
- Phase II: Identification of Suitable Maternity Roost Trees;
- Phase III: Acoustic Surveys;
- Phase IV: Snag Density Surveys; and
- Phase V: Completion of an Information Gathering Form (IGF).

D&A completed Phases I, II and V, whereby trees were assessed during leaf-off (April 3rd, 2019) and leaf-on (June 11th, 2019) conditions in order to determine their suitability as bat habitat (MNRF, 2017).

For Little Brown Myotis and Northern Myotis, suitable roost trees, or "snags" (i.e. any live or dead tree ≥10cm DBH with cracks, crevices, hollows, cavities, and/or loose bark), were documented during the leaf-off season when these features are more easily identifiable (MNRF, 2017).

For Tri-colored bat, the following trees were documented during the leaf-on season (MNRF, 2017):

- any oak tree >10cm dbh;
- any maple tree >10cm dbh if the tree includes dead/dying leaf clusters; and
- any maple tree >25cm dbh.

Suitable trees were geolocated and are presented on Maps 2 and 4 .

2.2.2.3. INCIDENTAL WILDLIFE

Observations of incidental wildlife were recorded during all field visits.

2.2.3. SPECIAL FEATURES & ECOLOGICAL FUNCTIONS

2.2.3.1. SPECIES AT RISK (SAR) SCREENING

A list of SAR for the City of Mississauga was generated using MNRF's SAR list of Ontario (updated to May 2019). The habitats on site were screened against known habitat requirements of these species to determine if any potential species could be present. The results of the field investigations, where appropriate, were also used to screen for the presence of certain species.

2.2.3.2. SIGNIFICANT WILDLIFE HABITAT (SWH) SCREENING

During all field investigations, habitats on site were screened against the Significant Wildlife Habitat (SWH) categories contained within the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (OMNRF, 2015).

3. FINDINGS

The following inventory of existing conditions is based on field surveys supplemented with database records of historic species occurrences.

3.1. BACKGROUND REVIEW

3.1.1. NATURAL HERITAGE INFORMATION CENTRE (NHIC) MAPPING

The NHIC database was queried in March 2019 to identify any records of SAR and/or provincially significant species (Sranks of S1 to S3) in the site vicinity. A total of 12 1 km X 1 km squares were checked; these grid squares included the square containing the study area (17PJ0923) and adjacent lands as well as the surrounding squares. The 12 squares queried are as follows: 17PJ0921/22/23/24, 17PJ1021/22/23/24, and 17PJ1121/22/23/241946. The results of the query are displayed below in Table 2.

Table 2: Results of the NHIC database query for the Mississauga Heights EIS site

Scientific Name	Common Name	NHIC Srank	Federal status	Provincial status	Last observation date
Plants:					
Carex conoidea	Field Sedge	S3	---	---	1979
Trichophorum clintonii	Clinton's Clubrush	S2S3	---	---	1979
Dichanthelium praecocius	Early-branching Panicgrass	S3	---	---	1974

Scientific Name	Common Name	NHIC Srank	Federal status	Provincial status	Last observation date
Eurybia schreberi	Schreber's Aster	S2	---	---	---
Mertensia virginica	Virginia Bluebells	S3	---	---	1993
Lupinus perennis	Sundial Lupine	S2S3	---	---	1980
Aquatic:					
Anguilla rostrata	American Eel	S1?	THR	END	---
Acipenser fulvescens	Lake Sturgeon	S2	THR	THR	---
Insects:					
Enallagma anna	River Bluet	S2	---	---	2000
Arigomphus villosipes	Unicorn Clubtail	S3	---	---	1941
Reptiles:					
Chelydra serpentina	Snapping Turtle	S3	SC	SC	1996
Birds:					
Contopus virens	Eastern Wood-Pewee	S4	SC	SC	---
Hylocichla mustelina	Wood Thrush	S4	THR	SC	---
Ammodramus henslowii	Henslow's Sparrow	SHB	END	END	1932

Furthermore, four (4) natural areas were identified in the general vicinity, three (3) of them associated with the Credit River: Credit River Coastal Marsh, Credit River Marshes Wetland Complex, Credit River at Erindale (to the west), and Stavebank Oak Woods (to the east).

From a wildlife perspective, two of the species found in the query are historic in nature (Unicorn Clubtail and Henslow's Sparrow). All of the terrestrial species listed above were considered in the field program for this project and their status in the study area and adjacent lands has been assessed. Since the development has no anticipated negative impacts on the adjacent Credit River, no surveys were undertaken for American Eel and Lake Sturgeon.

3.1.2. CVC REGULATION MAPPING

CVC regulation mapping online indicates that the regulation limit extends within the subject property along the south and east portions of the property (Figure 1).

Figure 1 CVC Generic Regulation Mapping (CVC, 2021)

3.1.3. ATLAS OF THE BREEDING BIRDS OF ONTARIO

A review of the Ontario Breeding Bird Atlas data (Cadman *et al.* 2007) for the square that contained the study area (17PJ12) revealed that 102 species were recorded as at least possibly breeding during the atlas field seasons (2001 to 2005). Note that 20 of these species were only tallied as "possible" breeders so the individuals sighted may have only been non-breeding visitants. Also, these data are at least 14 years old so many species now have substantially different status in the area, such as Red-bellied Woodpecker which has increased in the Toronto Region in the past decade or so. Of the 102 species, many are associated with habitats that are not found within or adjacent to the study area, such as lakeshore (e.g. Red-necked Grebe, Ring-billed Gull), agricultural areas (e.g. Ring-necked Pheasant, Savannah Sparrow), wetlands (e.g. Virginia Rail, Sora), and larger forests (e.g. Hairy Woodpecker, American Redstart).

Of the species found during the atlas in square 17PJ12, the most noteworthy species are nine species that are currently considered Species at Risk: Peregrine Falcon (SC), Common Nighthawk (SC), Chimney Swift (THR), Eastern Wood-Pewee (SC), Bank Swallow (THR), Barn Swallow (THR), Wood Thrush (SC), Bobolink (THR), and Eastern Meadowlark (THR). Of these, only Eastern Wood-Pewee and Wood Thrush are likely on or adjacent to the site due to the habitat availability. However, Bank Swallow may be present along the Credit River, which is within 120 metres of the site. Note that the only species of the above that requires specialized survey protocols to detect them is Common Nighthawk, which is highly

unlikely to utilize the site for breeding due to the habitat being unsuitable. Therefore, all the other SAR listed were adequately surveyed for with the general breeding bird survey protocols utilized during the field investigations. Of these, only Chimney Swift was detected which was a single bird flying over the property (Appendix C). Chimney swifts would not be breeding on location and would more likely choose more accessible buildings further away.

3.1.4. EBIRD.ORG

Records submitted on eBird (https://ebird.org/canada/hotspots) were checked to see if any sightings have been submitted for the subject property or surrounding lands. There were no hotspots with associated records within two kilometres of the site. The nearest hotspots with a richer diversity of species listed (over 100 species) are Erindale Park (183 species), which is 2.5 km to the west, and the Port Credit harbour area (including J.C. Saddington Park, with 208 species), which is 3.5 km to the east. However, both these areas have different habitats than present in the vicinity of the study area so the species listed are not entirely representative of those that may be utilizing the site during the breeding season. Furthermore, the majority of the records for these hotspots are during the spring and fall migration periods (i.e., not the breeding window) when birders are more active.

3.1.5. ONTARIO REPTILE AND AMPHIBIAN ATLAS

A query of the ORAA (Ontario Nature, 2018) for square 17PJ12 yielded a total of 25 species records within the 10 km radius surrounding the study area, including ten (9) anuran (frog/toad) species, eight (5) snake species, seven (5) salamander species, and three (5) turtles. A full species list is provided in Appendix D; the following discussion pertains only to federally, provincially or locally significant species that were reported, which include the following summarized in Table 3. The habitat requirements of these species are described below.

Table 3: Significant herpetofaunal species records from the ORAA in the 10 km x 10 km lands surrounding the study area.

Common Name	Scientific Name	Federal SARA Status (NHIC, 2019)	Provincial ESA Status (Government of Ontario, 2018)	Provincial S Rank (NHIC, 2019)	Area Sensitivity	Last Observation Date
Western Chorus Frog (Great Lakes / St Lawrence Population)	*Pseudacris triseriata*	THR	---	S3	---	1989
American Bullfrog	*Lithobates catesbeianus*	---	---	S4	AS	1995
Eastern Milksnake	*Lampropeltis t. triangulum*	SC	---	S4	---	2017
Jefferson Salamander	*Ambystoma jeffersonianum*	THR	END	S2	---	2000
Snapping Turtle	*Chelydra serpentina*	SC	SC	S3	---	2019

Common Name	Scientific Name	Federal SARA Status (NHIC, 2019)	Provincial ESA Status (Government of Ontario, 2018)	Provincial S Rank (NHIC, 2019)	Area Sensitivity	Last Observation Date
Blanding's Turtle	*Emydoidea blandingii*	THR	THR	S3	---	1982
Northern Map Turtle	*Graptemys geopgraphica*	SC	SC	S3	AS	2013

END – Endangered; THR – Threatened; SC – Special Concern; NAR – Not At Risk
S Rank S1 to S3: provincial populations are vulnerable

Western Chorus Frog
Breeding and foraging habitat for Western Chorus Frog typically consists of temporary or shallow herbaceous wetlands often dominated by Cattails, Sedges or Reed Canary Grass with little to no aquatic predators, such as fish (EC, 2015a). This species is extremely adaptable and often found in roadside ditches, small farm ponds, etc., especially in open countryside. There is new suitable habitat on the subject lands.

American Bullfrog
Bullfrogs are normally associated with forested habitats that are associated with wetlands containing high invertebrate diversity (Dodd, 2013). They are highly aquatic species that breed in large, permanent bodies of water such as lakes, ponds and rivers (Dodd, 2013). No suitable habitat for American Bullfrog exists within or directly adjacent to the subject lands.

Eastern Milksnake
The eastern milksnake inhabits a variety of habitats including meadows, pastures, rocky outcrops, forests, and wetland edges (EC, 2015b). They hibernate communally in hibernacula such as rock crevices or human-made structures such as old building foundations and rubble piles (EC, 2015b). The proposed development will remove some low quality, anthropogenic movement and foraging habitat, with large areas of higher quality habitat remaining in adjacent areas. Therefore, so long as suitable mitigation measures, such as erecting silt fencing during construction activities, are implemented, there will be no adverse impacts to this species.

Blanding's Turtle
Blanding's turtles inhabit shallow lakes, ponds and wetlands where they spend most of their time during the summer. In wintertime they choose sites with free unfrozen shallow water which includes; permanent bogs, fens, marshes, ponds and other similar habitats (EC, 2016d). They will travel long distances in order to find mates, wintering sites and suitable nesting locations (The property is located in a mostly urban area with one end of the property backing onto the Credit River ravine. There are some ponds located in the Credit River valley below. There is a very small probability of suitable nesting habitat on the property and given that there is only one record dating back to 1982 the likelihood of the property being used for nesting is very slim.

Jefferson Salamander
Jefferson Salamanders typically breed in vernal pools within, or in close proximity to, a woodland; their non-breeding habitat is usually associated with deciduous or mixed woodlands (EC, 2016a). Suitable habitat for this species was not observed within or directly adjacent to the study area.

Snapping Turtle
Snapping Turtles are usually associated with areas of slow-moving, shallow water with soft muddy bottoms and dense aquatic vegetation (EC, 2016b). The shallow marsh communities present adjacent to the subject lands may provide suitable habitat for this species. There is no suitable basking, movement, or foraging habitat on site. It most likely that they utilize nesting sites with close proximity to the credit river (EC, 2016b).

Northern Map Turtle
Northern Map Turtles typically rely on aquatic habitat and make minimal use of terrestrial habitat for nesting and basking (EC, 2016c). Usually they prefer rivers and lake shorelines with slow to moderate flows (EC, 2016c). They prefer to nest in areas close to water and thus are unlikely to be found nesting on the property.

3.1.6. ONTARIO BUTTERFLY ATLAS

On September 16th, 2019 the 10 X 10km square 17PJ12 was queried for butterfly records (Macnaughton *et al*. 2019). In total 55 species have been detected in the atlas square (Appendix E). Most species are common in southern Ontario. However, Mottled Duskywing (*Erynnis martialis*) is listed as Endangered under the Endangered Species Act (2007) and it is considered provincially vulnerable with an S rank 2. Mottled Duskywing was last recorded from the square in 1950. This species was known to occur in tallgrass prairie fragments along the north shore of Lake Ontario where its host plants Prairie Redroot (*Ceanothus herbaceus*) or New Jersey Tea (*Ceanothus americanus*) are found. There remain more recent records of this species from Burlington to the west (2012) so one cannot completely rule out its presence (OBA, 2019). Monarch (*Danaus plexippus*) remains Special Concern both Provincially and Federally . Some of the queried species do not have recent records but they most likely lack survey effort, such as Hickory Hairstreak (*Satyrium caryaevorus*), Acadian Hairstreak (*Satyrium acadica*) and Northern Pearly-eye (*Enodia anthedon*) which should be expected annually in this area. Some species are vagrants or temporary breeders, these include Fiery Skipper (*Hylephila phyleus*), Sachem (*Atalopedes campestris*), Checkered White (*Pontia protodice*), Cloudless Sulphur (*Phoebis sennae),* Little Yellow (*Eurema lisa*) and Marine Blue (*Leptotes marina*).

3.1.7. ATLAS OF THE MAMMALS OF ONTARIO

On September 17th, 2019, the Atlas of the Mammals of Ontario (Dobbyn, 1994) was queried and iNaturalist was also searched for more recent observations (iNaturalist, 2019) but no mammals had been observed from the surrounding area. In total, 24 species were identified as having been observed in square 17PJ12, as summarized in Table 4 below. Most of these species are very common throughout southern Ontario with the exception being Little Brown Bat (*Myotis lucifugus*) which has been devastated by the invasive fungus white-nosed syndrome (*Pseudogymnoascus destructans*). It is now listed as Endangered Federally (NHIC, 2019), provincially (Government of Ontario, 2018) and ranked as provincially vulnerable (NHIC, 2019).

Table 4: Atlas of the Mammals of Ontario for square 17PJ12 (1994)

Common Name	Latin Name	Federal SARA Status (NHIC, 2019)	Provincial ESA Status (Government of Ontario, 2018)	Provincial S Rank (NHIC, 2019)
Virginia Opossum	*Didelphis virginiana*	---	---	S4
Masked Shrew	*Sorex cinereus*	---	---	S5
Northern Short-tailed Shrew	*Blarina brevicauda*	---	---	S5
Little Brown Bat	*Myotis lucifugus*	END	END	S3
Silver-haired Bat	*Lasionycteris noctivagans*	---	---	S4
Big Brown Bat	*Eptesicus fuscus*	---	---	S4
Eastern Red Bat	*Lasiurus borealis*	---	---	S4
Hoary Bat	*Lasiurus cinereus*	---	---	S4
Eastern Cottontail	*Sylbilaguus floridanus*	---	---	S5
Eastern Chipmunk	*Tamias striatus*	---	---	S5
Woodchuck	*Marmota monax*	---	---	S5
Gray squirrel	*Sciurus carolinensis*	---	---	S5
Red Squirrel	*Tamiascurus hudsonicus*	---	---	S5
Beaver	*Castor canadensis*	---	---	S5
White-footed mouse	*peromyscus leucopus*	---	---	S5
Deer Mouse	*Peromyscus maniculatus*	---	---	S5
Meadow Vole	*Mocrotus pennsylvanicus*	---	---	S5
Muskrat	*Ondatra zibethicus*	---	---	S5
Meadow Jumping Mouse	*Zapus hudsonius*	---	---	S5
Coyote	Canis latrans	---	---	S5
Long-tailed weasel	*Mustela frenata*	---	---	S4
Mink	*Mustela vision*	---	---	S4
Striped Skunk	*Mephitis mephitis*	---	---	S5
White-tailed deer	*Odocoileus virginianus*	---	---	S5

END – Endangered; THR – Threatened; SC – Special Concern
S Rank S1 to S3: provincial populations are vulnerable

3.1.8. CITY OF MISSISSAUGA NATURAL AREAS SURVEY (NAS) DATA (2017)

The study area is located partially within the City's Significant Natural Area Site CRR8, which is present along the slope of the southern edge of the property. This natural area is approximately 112 ha in size and is primarily valleylands. The soils north of the Credit River are primarily well-drained Bookton sand loam; it is of note that seepage occurs along the valley walls. The forested community located along the southern edge of the subject property (present on the slope) is classified as a mature Dry-Fresh Sugar Maple – Oak Deciduous Forest Type (FOD5-3) which is characterized by canopy species including Sugar Maple (*Acer saccharum),* Red Oak (*Quercus rubra)*, White Oak (*Quercus alba)*, White Pine (*Pinus strobus)* and Eastern Hemlock (*Tsuga canadensis)*. The golf course lands located at the bottom of slope, adjacent

to the subject lands, are manicured with planted tree species such as Norway Maple (*Acer platanoides)*, Norway Spruce (*Picea abies)* and Scot's Pine (*Pinus sylvestris)*.

The Credit River is an important movement corridor for many wildlife including fish and mammals, and there are important open water features that support areas for nesting, migrating and overwintering birds. Breeding bird species present within this Natural Area was among the highest in the City, including a variety of Urban, Forest, and Successional species with a few area-sensitive species noted. The following table identifies federally and provincially significant species that were recorded within site CRR8.

Table 5: Federally and provincially significant species records recorded in CCR8 Significant Natural Area

Common Name	Scientific Name	COSEWIC (2018)	ESA Status (Govt. of Ontario, 2016)	SRank
Barn Swallow	*Hirundo rustica*	THR	THR	S4B
Northern Map Turtle	*Graptemys geographica*	SC	SC	S3
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4B
Wood Thrush	*Hylocichla mustelina*	THR	SC	S4B
Prairie Goldenrod	*Solidago rigida*	---	---	S3
Butternut	*Juglans cinerea*	END	END	S2

Generally, Natural Area CCR8 is in Good condition. As it is surrounded by Residential land use, ongoing anthropogenic disturbances include highway noise, habitat fragmentation, siltation of the Credit River, and spread of invasive species.

3.2. FIELD STUDIES

3.2.1. VEGETATION RESOURCES

3.2.1.1. ECOLOGICAL LAND CLASSIFICATION

A total of three (3) ELC communities were mapped, within and immediately adjacent to the 1.28 ha study area. Communities included Anthropogenic, Mixed Forest, and Dry-Fresh Deciduous Forest. The largest community was Mixed Forest (Polygon 2), followed by existing Anthropogenic (Polygon 1) and Dry-Fresh Deciduous Forest (Polygon 3). A description of each of these communities is provided below and are based on the ELC manual (Lee et al., 1998).

The study area is approximately 1.28 ha in size and consists of three (3) ELC community types as shown on Map 1 and summarized in Table 6 below.

Table 6: ELC Vegetation Community Descriptions

Polygon Number (ref. Map 1)	ELC Code	ELC Description	Area (ha)	Area (%)
1	ANTH	Anthropogenic	0.35	28%
2	FOM	Mixed Forest	0.75	59%

3	FOD4	Dry-Fresh Deciduous Forest	0.18	14%
Total			1.28	100

Anthropogenic (ANTH, Polygon 1)
Anthropogenic lands include those which have been cleared of natural vegetation and are in use for human activities such as playgrounds, parking lots, residential dwellings and industrial buildings. Approximately 28% (0.35 ha) of the study area is currently Anthropogenic, consisting of an existing residential unit, maintained gardens and lawn. Due to the limited ecological role of Anthropogenic communities and the removal of natural habitats, all lands categorized as Anthropogenic are considered to be of low quality.

Mixed Forest (FOM, Polygon 2)
Mixed forests are characterized by their canopy layer, which has a cover greater than 60% and is comprised of at least 25% deciduous species and 25% coniferous species. This community comprises the largest percentage of land within the study area (59%, 0.75 ha), and surrounds the existing Anthropogenic lands to the east and north towards Mississauga Heights Drive. This community was quite disturbed and contained an abundance of non-native species.

In the canopy layer, this community was dominated by Norway Maple, with abundant Norway Spruce (*Picea abies)*, Scots Pine (*Pinus sylvestris),* and Red Oak (*Quercus rubra)* with associates including White Pine (*Pinus strobus)*, and Shagbark Hickory (*Carya ovata)*. The sub-canopy was sparse, and the shrub layer was abundant with Winged Euonymus (*Euonymus alatus)* and occasional Choke Cherry (*Prunus virginiana)*. The ground layer was abundant with invasive Garlic Mustard (*Alliaria petiolata)* with occasional Poison Ivy (*Toxicodendron radicans)* and False Solomon's Seal (*Maianthemum racemosum).*

Dry-Fresh Deciduous Forest (FOD4, Polygon 3)
Deciduous forests are characterized by their canopy layer, which is dominated by deciduous species and has greater than 60% canopy cover. This category of forest is typically located on tablelands or upper to mid-slope and includes species associations that are often a result of disturbance or management. This community comprises 14% (0.18 ha) of the study area and is located at the south end of the property along the top to mid-slope towards the Credit River. It was largely dominated by Norway Maple (*Acer platanoides*) in the canopy, shrub and ground layers, with abundant Red Oak (*Quercus rubra)* in the canopy layer, and associate canopy species including Bur Oak (Quercus macrocarpa), White Pine (*Pinus strobus)*, Green Ash (*Fraxinus pennsylvanica)* and White Elm (*Ulmus americana)*. In the ground layer, a mixture of species were observed including Thicket Creeper (*Parthenocissus inserta)*, Wild Grape (*Vitis riparia)*, Broad-leaved Enchanter's Nightshade (*Circaea canadensis)*, and Tall Goldenrod (*Solidago altissima).*

According to CVC NAS mapping, this community is likely an inclusion within the much larger Dry-Fresh Sugar Maple-Oak Forest (FOD5-3) which spans the valley slopes in this area. The abundance of non-native trees such as Norway Maple in the area investigated is likely be due to the proximity to anthropogenic properties including residential and golf course lands.

3.2.1.2. VASCULAR PLANT INVENTORY

During D&A's site visit in June 2019, a total of 68 vascular plants were observed, including 58 identified to species level, and ten (10) that could only be identified to genus. Of the plants identified to species level, 35 (60%) are native to Ontario, and 24 (40%) are introduced. Coefficient of Conservatism was used to look at the overall quality of the study area. This is a value (0 to 10) assigned to native species in Ontario based on their degree of fidelity to a specific vegetation community type. The lower this value, the more likely the plant is to be found in a wide variety of plant community types including disturbed sites. The presence of plants with a coefficient of conservatism of 9 or 10 indicates later-successional native plants that have undergone only minor disturbance. The average coefficient of conservatism across the site is 2.5, which indicates that in general the subject lands are quite disturbed based on the plant species present.

All of the species observed have provincial S rankings of S4 or S5, indicating that they are relatively common, widespread species with secure populations and none of the species are considered significant federally or provincially. At the local level, seven (7) plants are considered to be significant, including the following:

Table 7: Summary of regionally and locally rare plants detected within the study area

Scientific Name	Common Name	CVC Rarity Rank (Kaiser, 2001)	City of Mississauga Rarity Rank (2002)	Regional Municipality of Peel Rarity Rank (Varga et al., 2005)
Pinus resinosa	Red Pine	R/L		R1
Euonymus fortunei	Climbing Euonymus		1	
Euphorbia polygonifolia	Seaside Spurge		1	R1
Parthenocissus quinquefolia	Virginia Creeper		1	RLR
Spiraea japonica	Japanese Spiraea		1	
Taxus canadensis	Canadian Yew		2	
Viburnum lantana	Wayfaring-tree		1	

Climbing Euonymus, Japanese Spiraea, and Wayfaring-tree are all non-native species in Ontario, and although they may be rare, they should not be considered significant since they do not contribute to native biodiversity. Seaside Spurge was planted in the landscaped areas of the Anthropogenic community and therefore is not naturally occurring and should not be considered a significant observation. Canadian Yew was detected in both the Anthropogenic community and Mixed Forest, indicating that the individuals present within the naturalized Mixed Forest community likely resulted from the planted specimens in the Anthropogenic area and are therefore not naturally occurring. Virginia Creeper and Red Pine were observed in the Deciduous Forest and Mixed Forest communities, respectively and it is possible that these observations are naturally occurring, although Virginia Creeper could potentially be a garden escapee from a neighbouring lot.

A full vascular plant list is provided in Appendix B.

3.2.1.3. TREE INVENTORY & ARBORIST ASSESSMENT

A total of 290 trees were tagged within the study area +6m surroundings during the tree inventory and assessment. A total of 27 species were tagged and evaluated, plus an additional five (5) that were only

identified to genus due to lack of identifiable features at the time of survey. Map 4 shows the locations of the trees surveyed, their respective crown reserve (diameter of the canopy), and preservation priority. Appendix F contains a summary of all tagged tree data including definitions of the parameters used in the arborist assessment.

Of the 27 species identified, 19 are native to Ontario and 8 are non-native. The most abundant species was Norway Maple (*Acer platanoides)*, a non-native tree, with a total of 98 trees tagged, followed by White Pine (*Pinus strobus)*, a native tree, and Norway Spruce (*Picea abies*), a non-native tree, with 33 and 31 individuals identified, respectively.

The majority of trees were assessed as having good to fair structural condition, biological health and preservation priority. Generally, the trees on site exhibited young to mid-age characteristics, with the majority of trees falling within the 20-49 cm DBH size range, and 60 trees (20%) over 50 cm DBH. Generally the larger, mature trees were concentrated along the edges of the property (i.e. along the existing laneway, western property boundary and frontage onto Mississauga Heights Drive), with younger growth occurring in the central lands.

For further details on inventoried trees, please see the *Arborist Report & Tree Preservation Plan, 904 Mississauga Heights Drive* submitted under separate cover (D&A, 2021).

3.2.2. WILDLIFE RESOURCES

3.2.2.1. BREEDING BIRDS

A total of 20 species of birds was detected during the breeding bird surveys and other wildlife surveys; 18 of these species were considered as at least possibly breeding on the site. Two species – Chimney Swift, and Common Grackle – were observed flying or foraging over the site only, and were not considered breeding.

Of the 18 species of potentially breeding birds, all are native species except for the following introduced species: House Sparrow. None of the 18 breeding species are considered Species at Risk (SAR) at a Federal and/or Provincial level. As noted earlier, Chimney Swift, which is considered Threatened at both a Federal and Provincial level, was only observed foraging high over the study area on June 12 (one bird). There are no suitable nest sites in the study area (e.g. chimneys or large (50+ cm DBH) hollow trees) although the species is likely nesting locally.

At a provincial level, all of the native breeding species have been assigned Sranks of either S4 or S5 by the Natural Heritage Information Centre (NHIC, 2019), which indicates that their provincial populations are “apparently secure” or “secure”, respectively (NHIC, 2019).

At a local level, two of the potentially breeding species are considered of Conservation Concern within the Credit Watershed (CVC, 1997): Cooper’s Hawk and Pine Warbler. Note that Chimney Swift and Common Grackle are also considered of local Conservation Concern but, as outlined above, both species were not considered to be potentially breeding at the site or in adjacent lands. See Section 3.2.1.2 for more details.

The Ontario Ministry of Natural Resources and Forestry (OMNR, 2000) considered Cooper's Hawk, White-breasted Nuthatch, and Pine Warbler to be area sensitive. This indicates that they require large areas of suitable habitat for their long-term survival and thus can be sensitive to development.

The highest level of breeding evidence obtained during the surveys was "probable" breeding (OBBA, 2001), either by the observation of agitated birds (code A), pairs of birds (code P) or territorial males (code T), which is defined as a singing male being present at the same location at least seven days apart. This evidence was the highest level obtained for five species. The next highest level of breeding evidence was "possible" breeding (OBBA, 2001), as seen with singing males (code S) or birds being present in appropriate breeding habitat during the breeding season (code H); this evidence was the highest breeding level for the remaining 13 species.

For application of the Migratory Birds Convention Act (MBCA, 1994), six of the breeding species observed are afforded no protection from the Act: Cooper's Hawk, Blue Jay, American Crow, House Sparrow, Red-winged Blackbird, and Brown-headed Cowbird. All other species recorded as at least possibly breeding are protected by the Act. As such, it means that it is illegal to harm or kill these species, or to harm or destroy their nests and/or nesting habitat.

For full results of the breeding bird surveys for this site, please see Appendix C.

3.2.2.2. BAT MATERNITY ROOST HABITAT ASSESSMENT

During the leaf-on and leaf-off surveys targeted to identify suitable roosting trees for Endangered bats (i.e. Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis and Tri-coloured Bat), a total of **41 suitable bat maternity roosting trees** were recorded including 35 live trees and 6 dead trees. Features that identified them as suitable maternity roost trees included:

- Any oak tree 10 cm DBH or greater;
- Any maple tree with dead or dying leaf clusters 10 cm DBH or greater; or
- Any maple tree 25 cm DBH or greater;
- Any other tree with the following characteristics:
    - Knot holes;
    - Loose or peeling bark;
    - Another snag within 10m;
    - Dead or dying leaf clusters;
    - Cracks; and/or
    - Cavities.

Snag density was calculated by dividing the number of snags (41) by the area of the site (1.28 ha), and was determined to be 32 snags / ha. The MNRF 2017 protocol indicates that a snag density over 10 may be considered high quality potential maternity roost habitat.

Given the presence of potential high quality roosting habitat for Endangered bats within the proposed limits of development, an IGF (Information Gathering Form) is being submitted to MECP to determine the need for any further study, and to ensure tree removals are in compliance with the provincial Endangered Species Act (ESA).

3.2.2.3. INCIDENTAL WILDLIFE

No incidental wildlife was recorded by D&A during the site visits in 2019.

3.2.1. SPECIAL FEATURES & ECOLOGICAL FUNCTIONS

3.2.1.1. SPECIES AT RISK (SAR) SCREENING

Considering the location of the site, habitats present, and field survey results, the potential SAR that are likely to be found on the subject lands are limited to:

- **Myotis Bats (Endangered)** - Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-colored Bat: suitable maternity roost habitat present on the subject lands, as discussed in section 3.2.2.3.

The full results of the SAR screening can be found in Appendix G.

3.2.1.2. SIGNIFICANT WILDLIFE HABITAT (SWH) ASSESSMENT

Of the 38 categories of SWH listed in the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (OMNRF, 2015), six (6) are considered as "Candidate" within the study area and adjacent 120 metres as summarized in Table 8 below.

Table 8 Candidate SWH present on subject lands and/or adjacent lands

SWH Category	Candidate Habitat within Subject Lands	Candidate Habitat within Adjacent 120m
Bat Maternity Colonies	X	X
Turtle Wintering Areas		X
Landbird Migratory Stopover Areas		X
Turtle Nesting Areas		X
Special Concern and Rare Wildlife Species		X
Amphibian Movement Corridors		X

The only category of SWH present within the subject lands is Bat Maternity Colonies, which is candidate within polygons 2 and 3. The protected forested valleylands provide much higher habitat suitability for roosting bats than the tableland forest associated with the existing residential lot.

A comprehensive SWH screening table can be found in Appendix H.

4. LEGISLATION & POLICIES

Current Federal, Provincial, Regional, and Local land use policy and regulations relevant to the site and were reviewed and are documented in this section. Policy is used in subsequent sections as a context to evaluate the opportunities and constraints imposed by the existing natural heritage features present at the site.

Federal:

- Species at Risk Act (2002)
- Migratory Birds Convention Act (1994)

Provincial:

- Provincial Policy Statement (2014)
- Endangered Species Act (2007)
- Conservation Authorities Act & O. Reg. 162/06 (2013) / Credit Valley Conservation & CVC'S Watershed Planning & Regulation Policies (2010)

Local:

- Region of Peel Official Plan (2016)
- City of Mississauga Official Plan (2015)

Summaries of these policy documents are provided in Appendix J; policy implications based on the site context are discussed below.

4.1. FEDERAL

4.1.1. SPECIES AT RISK ACT (GOVERNMENT OF CANADA, 2002)

Site Implications: On private lands, SARA only applies to listed aquatic species and listed migratory birds that are also listed in the *Migratory Birds Convention Act, 1994* (Government of Canada, 1994a). Critical habitat for these species is also protected. Only one (1) federally listed species, Chimney Swift (Threatened) was detected during breeding bird surveys; however, as previously noted in Section 3.2.2.1, this individual was merely observed foraging only, and is not expected to be breeding on site due to absence of suitable habitat.

4.1.2. MIGRATORY BIRDS CONVENTION ACT (GOVERNMENT OF CANADA, 1994)

Site Implications: Incidental take of migratory birds, nests or eggs must be avoided by limiting construction activities during sensitive periods and mitigation measures to ensure appropriate nesting areas are re-established in the site. Vegetation clearing should not take place within the active nesting season between approximately **April 15 and August 15**. If the areas proposed for development are

thoroughly checked during the active breeding season for bird nests by a qualified biologist during the construction phase, and no nests are found, then construction may be permitted.

4.2. PROVINCIAL

4.2.1. PROVINCIAL POLICY STATEMENT (OMMAH, 2014)

Site Implications: The study area contains Significant Woodlands, six (6) categories of candidate Significant Wildlife Habitat (ref. Section 3.2.1.2 and Appendix H) and potential Habitat for Endangered and Threatened Species (Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tri-coloured Bat; sec. 3.2.2.2).

4.2.2. ENDANGERED SPECIES ACT (GOVERNMENT OF ONTARIO, 2007)

Site Implications: Suitable maternity roosting habitat for four (4) Endangered bat species (Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tri-coloured Bat) is present on the subject lands. Further consultation with MECP may be required to confirm additional study requirements and ensure tree removals are in compliance with the ESA (see section 8.1.6).

4.2.3. THE GREENBELT PLAN (GOVERNMENT OF ONTARIO, 2017)

Site Implications: The study area is partially located within the Urban River Valley designation of the Greenbelt, pertaining to the valley slope at the south end of the property. As per Section 6.2 of the plan, because these lands are privately-owned, the policies of this designation do not apply within the subject lands.

4.2.4. CONSERVATION AUTHORITIES ACT - ONTARIO REGULATION 162/06 (2013) / CREDIT VALLEY CONSERVATION & CVC'S WATERSHED PLANNING AND REGULATION POLICIES (2010)

Site Implications: The study area contains CVC-regulated valley lands. Permits are required for any site alterations within 15 metres of stable top-of-bank. The top-of-bank and stable valley slope were assessed as part of the geotechnical work completed by LGL in 2021 (see Maps 3 and 4). According to section 6.2.1 of CVC's Watershed and Regulation Policies, minimum 10 metre buffers are recommended for erosion hazards (i.e. top of stable slope) and from the dripline of Significant Woodlands (whichever is greater).

4.3. LOCAL

4.3.1. REGION OF PEEL OFFICIAL PLAN (ROP)

Site Implications: The valleylands are designated as a Core Area under the ROP. Site alterations and development within a Core Area is generally not permitted.

4.3.2. CITY OF MISSISSAUGA OFFICIAL PLAN (2015)

Site Implications: The subject lands contain Valleylands, Significant Woodlands, and Hazard Lands associated with the City's Significant Natural Area CRR8 (see Map 2). Potential habitat for Endangered bats (i.e. roost trees) are also present. The EIS therefore must demonstrate no negative impacts to these features, to the satisfaction of the City and CVC. According to the City of Mississauga's online Residential Woodland mapping (2019), the subject lands do not contain designated Residential Woodlands.

4.3.3. CITY OF MISSISSAUGA PRIVATE TREE PROTECTION BYLAW (2012)

Site Implications: In accordance with the City's Tree Bylaw (2012), all privately-owned trees that are greater than 15 cm DBH (i.e. *regulated trees*) required a permit if three (3) or more individual trees are proposed for injury or destruction. This includes dead, dying or hazardous trees. See the *Arborist Report & Tree Preservation Plan* (D&A, 2021) submitted under separate cover for details.

5. CONSTRAINT IDENTIFICATION

Based on the background and policy review and field studies completed, key natural heritage constraints are limited to the following (ref. Map 2):

- Local Significant Natural Area CRR8 (including Significant Woodlands, Valleylands, Hazard Lands);
- Existing trees and vegetation in polygons 2 and 3;
- Breeding bird habitat;
- Potential roosting habitat for Endangered bats; and
- Candidate SWH for Bat Maternity Colonies.

6. DESCRIPTION OF PROPOSED ACTIVITIES

6.1. CLEARING & GRADING

Clearing and re-grading will occur over the majority of the site (approximately 0.83 ha, 66.4% of the total area). Lot A, B, C and E will ultimately be graded to ensure drainage is directed away from the houses. Lot D, which is the existing house, will remain per existing conditions.

6.2. STORMWATER MANAGEMENT

A Stormwater Management (SWM) Report was submitted for this site under separate cover by WSP (2021). The following are proposed SWM activities according to WSP (2021):

- New storm sewers will be installed beneath roadway and stormwater storage tank at limit of CEC road; and
- Outlet swale between Lot D and E to convey major and minor storm drainage, along with rip rap flow spreader trench and vegetated buffer at top of slope.

6.3. SERVICING

A Functional Servicing Report (FSR) has been prepared under separate cover by WSP (2021). A summary of the proposed servicing activities include the following:

- Paved Common Element Condominium roadway with realigned entrance from Mississauga Heights Drive;
- New sanitary sewer beneath roadway; and
- New watermain beneath roadway.

6.4. CONSTRUCTION OF RESIDENTIAL DWELLINGS

Construction of four (4) new single-family residential dwellings will occur in Lots A, B, C, and E with the existing house in Lot D to remain per existing conditions. Specific building locations and sizing have not yet been determined.

6.4.1. DRIVEWAY ALIGNMENT OPTIONS

During a conference call with CVC in July 2020, it was recommended that two driveway alignment options be considered to inform the site plan design:

- Option 1: maintain original driveway location along eastern side of property; and
- Option 2: relocate driveway to western edge of property.

These two options were reviewed and compared for impacts to trees and vegetation.

Option 1: Maintain original driveway location

- Number of impacted trees: **31**
- Number of impacted bat habitat trees: **3**

Option 2: Relocate driveway to western edge of property

- Number of impacted trees: **39**
- Number of impacted bat habitat trees: **4**

Based on this review, D&A recommended that Option 1 be used as the preferred driveway location due to removal of less trees overall, including suitable bat roosting trees.

7. IMPACT ASSESSMENT

Potential impacts, both *positive* and *negative*, that may result from the identified activities are identified and assessed in this section, and displayed on Map 3. Where mitigation of identified negative impacts is possible, the result will be applied to determine if any residual negative impacts remain. Further enhancement opportunities will be identified to offset residual negative impacts to determine the net effect of the proposed site alterations.

7.1. DIRECT IMPACTS

7.1.1. TREE REMOVAL AND/OR INJURY

Of the 290 trees inventoried and assessed, 242 will be impacted, including 223 proposed for removal and 19 identified as "injure" due to work occurring within critical root zones (Map 5).

Tree removal and/or injury is a direct and permanent impact.

Anticipated grading and construction impacts to trees proposed to be injured or preserved could include:

- Severance of roots due to excavation;
- Root exposure to air and sunlight;
- Broken branches;
- Soil Compaction;
- Trunk damage;
- Wildlife impacts; and
- Decreased infiltration.

Mitigation and protection measures to address these impacts are presented in Section 8.1. Additional details can be found in the *Arborist Report & Tree Preservation Plan* (D&A, 2021).

7.1.2. VEGETATION REMOVAL

The proposed works will result in removal of 0.72 ha of deciduous and mixed forest (polygons 2 and 3, Map 1) as summarized in Table 12 below. The total area of proposed site alterations is 0.83 ha (66% of the subject lands) based on the current site and grading plan.

Table 9 Summary of impacted area by ELC community

Polygon #	ELC Community	Total Area (ha)	Area Impacted (ha)	Percent Impacted (%)
1	ANTH	0.30	0.12	38.9
2	FOM	0.75	0.71	93.9
3	FOD4	0.20	0.01	4.11
Total		**1.25**	**0.83**	**66.4**

7.1.3. BREEDING BIRD HABITAT

Existing breeding bird habitat on the landscape will be impacted through the loss of **0.72 ha** of forested habitat, including removal of up to **223** trees. Despite the high number of trees proposed for removal on the existing residential lot, this impact will be relatively low magnitude given that the higher quality breeding habitat present in the adjacent valleylands will not be impacted.

7.1.4. ENDANGERED BAT ROOSTING HABITAT & CANDIDATE SWH FOR BAT MATERNITY COLONIES

Potential Endangered bat roosting habitat and candidate SWH for Bat Maternity Colonies will be impacted by the removal of up to 19 suitable bat roosting trees. This impact is considered to be permanent and of low magnitude, given the relatively low number of suitable trees proposed for removal in comparison to the higher quality habitat that will remain in the surrounding forested valleylands.

7.2. INDIRECT IMPACTS

7.2.1. INCREASED SEDIMENTATION & EROSION

Vegetation clearing, grading, and the subsequent construction activities will make portions of the site temporarily more susceptible to erosion. Increased susceptibility to erosion may result in increased sediment runoff, thereby affecting the quantity and quality of runoff contributions to the adjacent woodlands and valleylands. These impacts are temporary until the site is stabilized and will be insignificant to the function of impacted features if properly mitigated (see section 8.1).

7.2.2. WILDLIFE MORTALITY

The presence of wildlife and wildlife habitat in the general area of the proposed clearing area poses a risk of mortality during construction. Clearing, grading, and servicing activities could result in incidental death or injury to wildlife such as amphibians, small mammals or reptiles that enter the construction area. This impact would be temporary, while construction works are taking place.

7.2.3. HUMAN ENCROACHMENT

Following site preparation and construction, the residential units will become occupied and human use of the property will increase slightly. Normal use of the dwellings and yards introduce a large and uncertain number of practices but they are generally associated with recreation, residential landscaping and other passive activities. Types of encroachments into the adjacent natural area may include:

- Extension of mowed, planted or cleared property;
- Construction of fences, sheds, swing sets, composters;
- Dumping of yard debris and garbage, building materials into natural area;
- Ornamental (garden) plantings create the potential for the introduction of non-native and invasive plant species to the adjacent natural habitat.

These activities will vary in frequency and duration but are considered to be repetitive and permanent.

8. MITIGATION AND ENHANCEMENT MEASURES

8.1. MITIGATION MEASURES

8.1.1. TREE PROTECTION

Key recommendations to mitigate impacts anticipated to trees proposed as “injure” or “preserve” include:

- Prior to construction activities, Tree Preservation Hoarding (TPH) should be established to protect trees identified as "injure" or "preserve" (Map 5).
- Trees proposed as "preserve" or "injure" must be surrounded by a continuous barrier (TPF), which shall be installed prior to site clearing, grading and demolition, and maintained through construction and landscaping.

For details see *Arborist Report & Tree Preservation Plan* (D&A, 2021).

8.1.2. ECOLOGICAL BUFFER

A 10 m ecological buffer from the dripline of the Locally Significant Natural Area CRR8 is proposed where no site alterations will be permitted. This 10 m buffer will provide an adequate distance for structural integration of most natural features including tree root zones. Buffer plantings of native shrubs and groundcover in this area should address critical functions including, maintaining surface runoff regimes, adequately protection of the forest and its provision of habitat, and avoidance of human encroachment.

8.1.3. SEDIMENT AND EROSION CONTROL

Details on proposed erosion and sediment control (ESC) can be found in the Stormwater Management Report (WSP, 2021). A summary of these measures include:

- Erosion protection will be provided at the outlet through flow diffuser riprap.
- Temporary erosion control measures shall be provided during construction, such as:
    - Siltation control around the perimeter of the site;
    - Sediment traps on external catch basins adjacent to site;
    - Mud mats at site access points; and
    - Regular maintenance of the above listed ESC measures.

In addition, it is recommended that a temporary seed mix be applied immediately upon completion of works within limits of disturbance to promote the establishment of permanent vegetation.

8.1.4. STORMWATER MANAGEMENT

According to the SWM report (WSP, 2021), the following provisions are proposed for the site to maintain water quality, quantity, and control runoff:

- Water quality control: *Stormwater runoff from proposed impervious roof areas is considered clean and expected to leave the site effectively unchanged in terms of water quality. Runoff from paved at grade areas will be treated for 80% TSS removal with use of an Imbrium JF4-1-1 sized for the site.*
- Runoff control: *A sump storage volume of 87 m3 will be provided in the infiltration chamber system to allow for infiltration of the runoff reduction volume for the site.*
- Water quantity control: *Runoff from all areas of the site will be directed to the proposed infiltration chamber system for quantity control. The chamber system will have a total storage volume of 219 m^3. A 240 mm orifice plate will control flows for all storm events up to and including the 100-year*

storm to the allowable flow rate of 93 L/s prior to discharging to the Credit River. An emergency overflow will be provided and shall discharge the water at-grade.

8.1.5. WILDLIFE EXCLUSION

Properly installed erosion and sediment control fencing should prevent terrestrial wildlife (i.e. reptiles, amphibians small mammals) from entering active construction zones. This fencing should be installed pre-construction and monitored on a regular basis. If wildlife are encountered within the work zone, they should be carefully moved to safety.

8.1.6. CONSTRUCTION TIMING RESTRICTIONS

Where possible, vegetation removal and/or general construction works should take **place outside of the breeding bird season (April 15 – August 15)** to avoid contravention of the federal 1994 Migratory Birds Convention Act. If vegetation clearing and/or construction work cannot be completed outside of this window, it is recommended that a qualified avian biologist/ecologist be hired prior to the initiation of any construction works to check for the presence of breeding migratory birds. If nesting birds are encountered, an avoidance strategy should be developed until the birds have fully fledged and no nesting activity is evident in the area.

Further, tree removals should **take place outside of the active bat roosting window (April 1 – September 30)** to avoid impacting Endangered bats. If tree removals cannot take place outside of this window, further consultation with MECP is required to confirm additional study requirements.

Tree and vegetation clearing is essentially limited to **October 1 – March 31** in order to avoid these critical windows.

8.2. RESIDUAL IMPACTS

The above mitigation measures addressed several of the anticipated impacts associated with the proposed development, however the following residual impacts remain:

- Removal of **0.72 ha of natural vegetation (polygons 2 and 3)**
- Removal of **223 trees** (**152 regulated trees** and **19 suitable bat roosting trees)**.

8.3. ENHANCEMENT OPPORTUNITIES

Opportunities exist to enhance existing degraded habitats and to create additional habitats to demonstrate no negative impacts to natural heritage features and functions by improving biodiversity, controlling the spread of invasive exotic species, and planting native species. The intent in these areas is to reinforce existing functions such as vegetation community cover and habitat connectivity, and native species diversity.

8.3.1. NATIVE SEEDING AND BIODIVERSITY ENHANCEMENTS

It is recommended that biodiversity enhancements including native seeding occur in the proposed enhancement areas which total 0.21 ha (Map 6). A formal landscape plan should be prepared for this area comprising a mix of native groundcover, shrubs and trees. **CVC's list of Woodland Plants for Landscaping (2015)** and/or **Native Plant List for Breeding Birds (2015)** should be used for species selection.

8.3.2. TREE COMPENSATION

According to the City's Forestry website, tree replacement plantings and/or fees are required for **all regulated trees proposed for removal**; replacement is required for dead, dying or hazardous trees. The *Arborist Report & Tree Preservation Plan* (D&A 2021) details the City's tree compensation requirements which may include fees and/or replacement plantings, summarized in Tables 10 and 11 below.

Table 10 Summary of tree compensation fee requirements

NUMBER OF HEALTHY, LIVE TREES >15 CM DBH PROPOSED FOR REMOVAL	**152**
FEE PER TREE REMOVED*	$ 98.09
SUB-TOTAL FEES (152 X $98.09)	$ 14,909.68
CITY'S PERMIT FEE*	$ 434.40
TOTAL FEE PAYABLE TO CITY	**$ 15,344.08**

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If tree replacements can be accommodated on private property, these plantings may serve to reduce the fees. The City's requirements for replacement tree planting are:

- *At least 1.8 m tall if it's a coniferous (evergreen) tree or at least 6 cm in diameter if it's a deciduous (leaves) tree*
- *One replacement tree is required if a healthy tree was removed that was 0 to 49 cm.*
- *Two replacement trees are required if a healthy tree removed is 50 cm or greater.*
- ***If the replacement tree is healthy one year after being planted, the security deposit will be refunded.***

Table 11. Summary of replacement tree requirements

Tree Size Category	Number of healthy trees proposed for removal	Compensation Tree Ratio*	Number of Replacement Trees Required
16-49 cm DBH	111	1:1	111
50 cm DBH+	41	2:1	82
Total	**152**		**193**

* City of Mississauga, 2021

In summary:

1. Fees payable to the City of Mississauga *if no replacement trees are planted* total **$15,344.08** based on 2021 rates provided on the City's website;
2. The number of replacement trees required to compensate for all the tree removals is **193** based on the City's current compensation ratios.

It is further recommended that any tree replacement plantings should be selected based on **CVC's Native Plant List for Breeding Birds**.

The City of Mississauga will confirm the final compensation fees and/or tree plantings required through the tree removal permitting process.

Further details on tree related matters can be found in the *Arborist Report and TPP (D&A, 2021)*.

8.3.3. BAT BOX INSTALLATION

A bat box from a respected manufacturer (i.e. Canadian Bat Houses, recommended by Bat Conservation International) should be installed in combination with replacement tree plantings to compensate for any suitable bat roosting habitat that is proposed to be impacted (i.e. up to 19 potential roosting trees).

The bat box should be installed in an open, south-facing location, at least 10 m away from tree branches or other obstacles and 4-7 m above the ground (Bat Conservation International). It should also be located within approximately 400m from the Credit River which provides suitable foraging habitat.

8.3.4. HOMEOWNER EDUCATION

It is recommended that a stewardship email / brochure /pamphlet be developed for distribution to the new homeowners of the residential development. This will contain information explaining the significance of the adjacent natural heritage features, and how to act as environmental stewards. This should include a summary of potential impacts associated with ornamental plantings (invasive species), littering, and encroachment.

9. SUMMARY OF IMPACTS, MITIGATION & ENHANCEMENT STRATEGIES

The potential impacts to natural heritage features and functions based on the proposed development activities as described in section 7 are summarized in Table 11 below. Recommended mitigation and enhancement strategies discussed in section 8 are summarized to demonstrate the net result of the proposed activities will not negatively impacting existing natural heritage on the subject lands.

Table 12 Summary of Potential Impacts, Mitigation and Enhancement Strategies

IMPACT	MAGNITUDE	DIRECT OR INDIRECT	DURATION	MITIGATION STRATEGY	RESIDUAL IMPACT	ENHANCEMENT STRATEGY	NET IMPACT
Tree removal and injury	High - 223 trees proposed as "remove" and 9 proposed as "injure".	Direct	Permanent	Install Tree Protection Hoarding (TPH) around trees proposed as "preserve" and "injure"; follow all other mitigation recommendations in *Arborist Report & Tree Preservation Plan* (D&A, 2021)	Loss of 223 trees	Replacement of trees proposed for removal in accordance with City requirements and/or payment to City's Replacement Tree Fund. Total fees and/or number of replacement plantings to be confirmed through permitting process.	Neutral
Vegetation removal	Moderate - 0.72 ha proposed.	Direct	Temporary	Protect vegetation in Significant Natural Area CRR8 via a 10m ecological buffer from dripline.	Removal of 0.72 ha of vegetation in polygons 2 and 3	Seeding and restoration plantings using **native species** in proposed enhancement areas totaling 0.21 ha (Map 6).	Neutral
Removal of breeding bird habitat	Moderate - 0.72 ha vegetation loss including 223 trees proposed for removal.	Direct	Temporary	Install Tree Protection Hoarding (TPH) around trees proposed as "preserve" and "injure"; follow all other mitigation recommendations in *Arborist Report & Tree Preservation Plan* (D&A, 2021). Protect higher quality bird breeding habitat via a 10m ecological buffer from dripline of Significant Natural Area CRR8. Avoid construction works during active bird season April 15 – August 15.	Removal of 0.72 ha of vegetation and 223 trees	Replacement of trees proposed for removal in accordance with City requirements. Species selection should be based on CVC's Native Plant List for Breeding Birds. Native seeding and restoration plantings in proposed enhancement areas (Map 6).	Neutral
Impacts to SAR bats / Bat Maternity Colony SWH	Low - 19 suitable bat roosting trees identified as "remove"	Direct	Permanent	Install Tree Protection Fencing around trees proposed as "preserve" and "injure". Avoid tree removal during active roosting season April 1 – September 30. Protect higher quality bat roosting habitat via a 10m ecological buffer from dripline of Significant Natural Area CRR8.	Removal of 19 suitable bat roosting trees	Installation of a MECP-approved bat box post-construction.	Neutral
Increased sediment and erosion	Moderate - 0.83 ha proposed for grading	Direct	Temporary	Permanent erosion protection will be provided at the SWM outlet through flow diffuser riprap. Temporary erosion control measures and maintenance to be provided in an Erosion and Sediment Control Plan. *(see section 8.1.3 and Stormwater Report by WSP, 2021 for details)*	None	Application of temporary seed mix to be applied immediately upon completion of works within limits of disturbance.	Positive
Incidental Wildlife Mortality	Low - Unlikely	Direct	Temporary	Adhere to timing windows specific in section 8.1.6. Install sediment & control fencing pre-construction to prevent wildlife from entering active construction zone.	None	n/a	Neutral

IMPACT	MAGNITUDE	DIRECT OR INDIRECT	DURATION	MITIGATION STRATEGY	RESIDUAL IMPACT	ENHANCEMENT STRATEGY	NET IMPACT
Increased runoff	Low - The total volume of 5 mm runoff from the proposed site's impervious areas is 21 m3. *(see sec. 8.1.4 and SWM Report, WSP 2021 for details)*	Indirect	Permanent	A sump storage volume of 87 m^3 will be provided in the infiltration chamber system to allow for infiltration of the runoff reduction volume for the site (WSP, 2021). *(see sec. 8.1.4 and SWM Report, WSP 2021 for details)*	None	n/a	Neutral
Changes to water quality	Low - Increase in paved at-grade areas *(see sec. 8.1.4 and SWM Report, WSP 2021 for details)*	Indirect	Permanent	Runoff from paved at grade areas will be treated for 80% TSS removal with use of an Imbrium JF4-1-1 sized for the site. The chamber system will also include isolator rows at the inlets to further provide water quality treatment of the runoff (WSP, 2021). *(see sec. 8.1.4 and Functional Servicing Report, WSP 2021 for details)*	None	n/a	Neutral
Changes in water quantity	Low - The total volume of 5 mm runoff from the proposed site's impervious areas is 21 m3. *(see sec. 8.1.4 and SWM Report, WSP 2021 for details)*	Indirect	Permanent	Runoff will be directed to the proposed infiltration chamber system for quantity control to meet the allowable flow rate for the site (93L/s). Total storage volume will be 219 m^3. A 240 mm orifice plate will control flows for all storm events up to and including the 100-year storm to the allowable flow rate of 93 L/s prior to discharging to the Credit River. Emergency overflow will be provided (WSP, 2021) *(see sec. 8.1.4 and Functional Servicing Report, WSP 2021 for details)*	None	n/a	Neutral

10. CONCLUSIONS

Dougan & Associates (D&A) prepared this scoped EIS in support of a proposed plan of subdivision at 904 Mississauga Heights Drive. We trust this report satisfies the TOR established through consultation with the City of Mississauga and CVC. Through the identification of natural heritage constraints, mitigation, and enhancement strategies the EIS demonstrates that the proposed activities will not result in negative impacts to existing natural heritage features.

Section 8.2 identified the following residual impacts associated with the proposed works including:

- Removal of **0.72 ha of vegetation**
- Removal of **223 trees**, including **152 regulated trees** and **19 suitable bat roosting trees**.

Recommended mitigation and enhancement strategies include:

1. Establish appropriate **tree protection** for trees proposed for preservation and injury (see *Arborist Report & Tree Preservation Plan, D&A 2021* for details).
2. Maintain a **10 m ecological buffer** from the natural feature CRR8 dripline.
3. Follow the **erosion and sediment control recommendations** provided in the SWM Report (WSP, 2021). Apply a **temporary seed mix** immediately upon completion of works within limits of disturbance to promote establishment of permanent vegetation.
4. Follow the **stormwater / runoff control recommendations** provided in the SWM report (WSP, 2021).
5. **Maintain and monitor erosion control fencing** regularly to prevent wildlife from the adjacent natural area entering the construction zone. If wildlife are found within the construction zone, they should be carefully moved to safety.
6. Tree and vegetation removal should take place between **October 1st and March 31st** to avoid the active seasons for migratory birds and roosting bats. **MECP consultation** should be undertaken with regard to impacts to potential SAR bat habitat through the submission of an IGF **if trees are proposed for removal between April 1st and September 30th**.
7. Based on an assessment of the City's current policy, tree compensation required for the proposed tree removals total **$15,344.08 in fees and/or planting of 193 trees** (or a combination of fees and planting). Tree replacement and/or compensation fees for removal of regulated trees are to be confirmed through consultation with the City of Mississauga via a Private Tree Removal Permit. It is recommended that any tree replacement plantings should be selected based on **CVC's Native Plant List for Breeding Birds**.
8. **An MECP-approved bat box** should be installed on the subject lands post-construction.
9. A **stewardship email / brochure /pamphlet** should be developed for distribution to the new homeowners of the residential development. This will contain information explaining the significance of the adjacent natural heritage features, and how to act as environmental stewards.
10. Native seeding & restoration plantings should occur in the proposed Enhancement Areas (Map 6) post-construction using plants selected from **CVC's Woodland Plants for Landscaping (2015)** and/or **Native Plant List for Breeding Birds (2015).**

Overall, the proposed development at 904 Mississauga Heights Drive will have permanent and localized impacts that the above mitigation and enhancement measures will address. The higher quality habitat present in the adjacent valleylands (City of Mississauga Nautral Area CRR8) will be adequately protected through a 10 m buffer.

If the mitigation and enhancement measures outlined in this EIS and supporting studies (i.e. FSR, SWM, Arborist Report and TPP) are followed, the proposed development should not result in any net negative impact to natural heritage features and functions in the long term.

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PROJECT: DA19-002-01

CLIENT: Investex Holdings Limited

DATE: 09, June 2021

DRAWN BY: J.Sauder

Vegetation Communities

Mississauga Heights EIS

Legend

Vegetation Communities

2
FOM
Mixed Forest

1
ANTH
Anthropogenic

3
FOD4
Dry-Fresh Deciduous Forest

Orthoimagery: Hamilton, Spring 2017 (FBS)

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UTM Zone 17N NAD83

DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN

PROJECT: DA19-002-01

CLIENT: Investex Holdings Limited

DATE: 14, June 2021

DRAWN BY: N. White

Map 2: Constraints

Mississauga Heights EIS

Study Area

Floodline *(Credit Valley Conservation Authority, 2005)*

Long Term Stable Slope *(GHD, 2021)*

Constraints

City of Mississauga Significant Natural Area CRR8 *(City of Mississauga, 2018)*

Significant Natural Area 10m Buffer

Tree Inventory

High Constraint

Medium Constraint

Low Constraint

Suitable Bat Maternity Roost

Key Map Data Map data © OpenStreetMap contributors, Map layer by Esri
Orthoimagery Source: Credit Valley Conservation Authority

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Metres

SCALE: 1:900

NAD 1983 UTM Zone 17N

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CLIENT: Investex Holdings Limited

DATE: 14, June 2021

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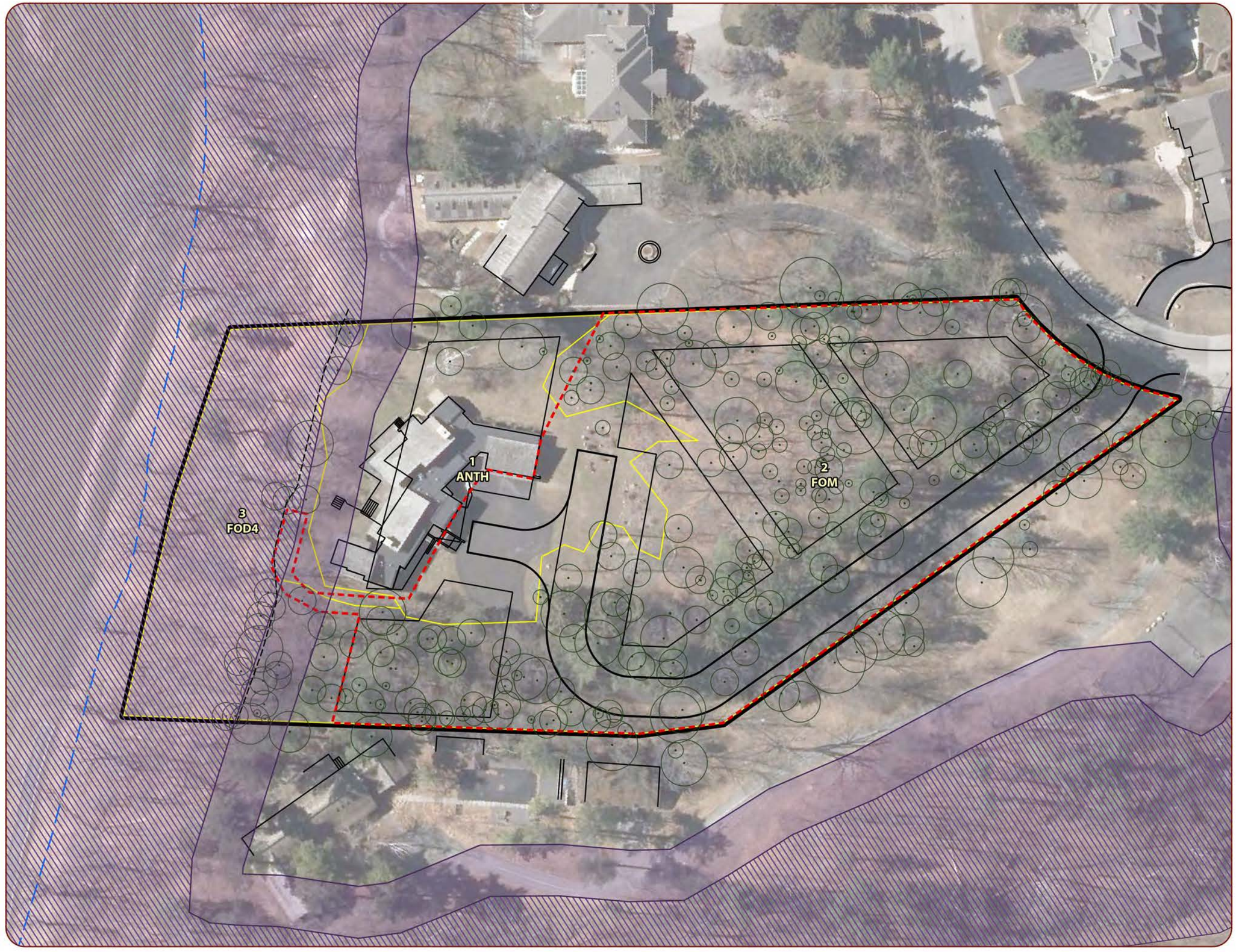
Map 3
Impact Assessment
Mississauga Heights EIS



- Study Area
- Vegetation Community *(Wood and CVC, 2018)*
- Tree Inventory
- Site Plan *(Sajecki Planning, 2021)*
- Limit of Disturbance
- Floodline *(Credit Valley Conservation Authority, 2005)*
- City of Mississauga Significant Natural Area CRR8 *(City of Mississauga, 2018)*
- Significant Natural Area 10m Buffer
- Long Term Stable Slope *(GHD, 2021)*

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Orthoimagery Source: Credit Valley Conservation Authority

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Metres

SCALE: 1:700

NAD 1983 UTM Zone 17N

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Map 4
Tree Inventory Overview
Mississauga Heights EIS

Study Area

Tree Inventory
Preservation Priority

- High
- Medium
- Low
- To be Determined
- Suitable Bat Maternity Roost

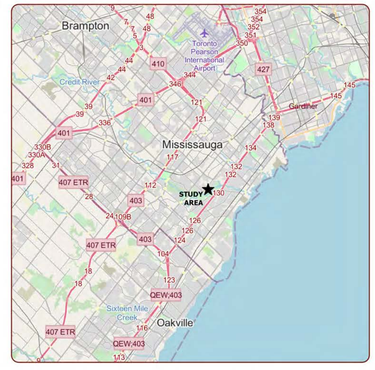
Mississauga Heights Drive

Map 4.1

Map 4.2

Map 4.3

Map 4.4



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NAD 1983 UTM Zone 17N

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph, ON N1E 5R8
T 519.822.1600 • F 519.822.5389
www.dougan.ca

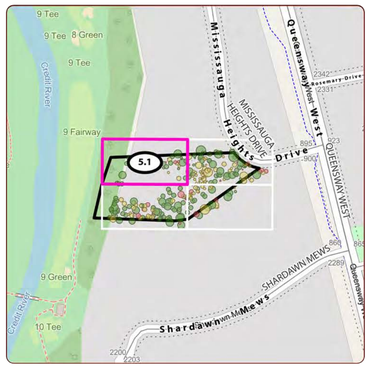
Map 4.1
Tree Inventory
Mississauga Heights EIS

Study Area

Tree Inventory

Preservation Priority

- High
- Medium
- Low
- To be Determined
- Suitable Bat Maternity Roost



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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph, ON N1E 3B3
T 519.822.1600 • F 519.822.5389
www.dougan.ca

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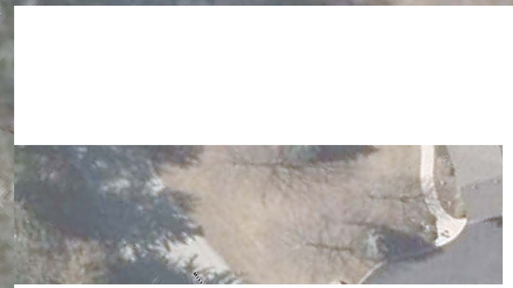
CLIENT: Fiowstex Holdings Limited
DATE: 14, June 2021
DRAWN BY: N. White

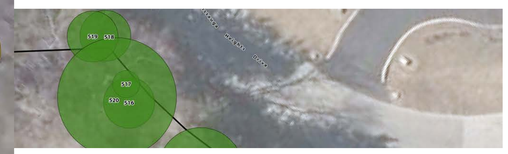
Map 4.2
Tree Inventory
Mississauga Heights EIS

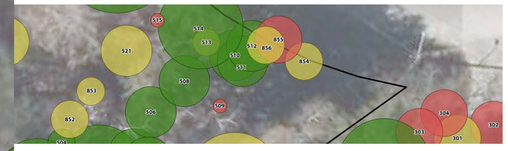
Study Area

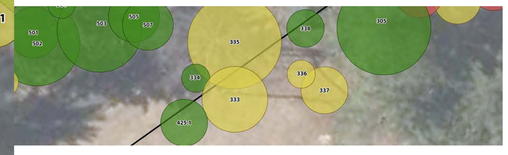
Tree Inventory
Preservation Priority

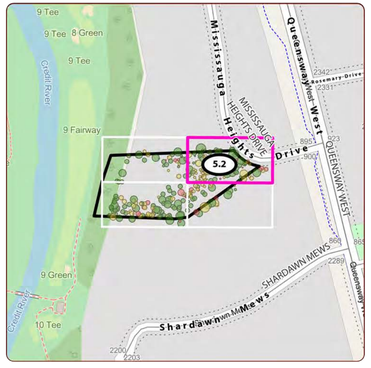
- High
- Medium
- Low
- To be Determined
- Suitable Bat Maternity Roost











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Orthoimagery Source: Credit Valley Conservation Authority

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph, ON N1E 3B3
T 519.822.1609 • F 519.822.5389
www.dougan.ca

PROJECT: DA19-002-01
CLIENT: Investex Holdings Limited
DATE: 14, June 2021
DRAWN BY: N. White

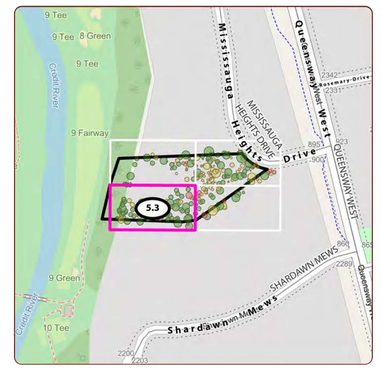
Map 4.3
Tree Inventory
Mississauga Heights EIS

Study Area

Tree Inventory

Preservation Priority

- High
- Medium
- Low
- To be Determined
- Suitable Bat Maternity Roost



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0 2.25 4.5 9

Metres

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph, ON N1E 3B3
T 519.822.1609 • F 519.822.5389
www.dougan.ca

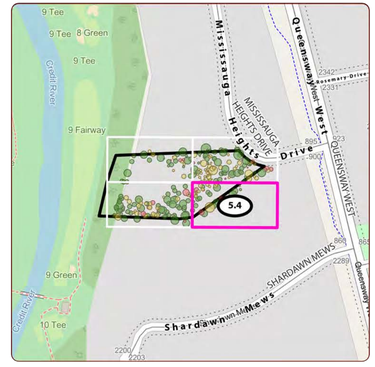
PROJECT: DA19-002-01
CLIENT: Fowstex Holdings Limited
DATE: 14, June 2021
DRAWN BY: N. White

Map 4.4
Tree Inventory
Mississauga Heights EIS

Study Area

Tree Inventory
Preservation Priority

- High
- Medium
- Low
- To be Determined
- Suitable Bat Maternity Roost



Key Map Data Map data © OpenStreetMap contributors, Map layer by Esri

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ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph, ON N1E 3B3
T 519.822.1600 • F 519.822.5389
www.dougan.ca

PROJECT: DA19-002-01
CLIENT: Fowstex Holdings Limited
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DRAWN BY: N. White

Map 5
Tree Protection Plan Overview
Mississauga Heights EIS

Map 5.1

Map 5.2

Map 5.3

Map 5.4

Miller Sawdge Heights Drive

Shardawn Mews

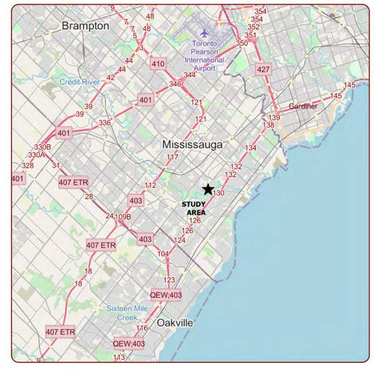
- Study Area
- Limit of Disturbance
- Tree Protection Hoarding *

Tree Inventory

Action

- Preserve
- Injure
- Remove
- Suitable Bat Maternity Roost

* Tree Preservation Hoarding should be installed per the City of Mississauga's standard details.



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Metres

SCALE: 1:400

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph ON N1E 3E8
T. 519.822.1609 • F. 519.822.5389
www.dougan.ca

PROJECT: DA19-002-01
CLIENT: Investeo Holdings Limited
DATE: 09, June 2021
DRAWN BY: N. White

Map 5.1
Tree Preservation Plan
Mississauga Heights EIS

Study Area

Limit of Disturbance

Tree Protection Hoarding*

Tree Inventory

Action

Preserve

Injure

Remove

Suitable Bat Maternity Roost

Site Plan (Sajecki Planning, 2021)

Proposed and Existing Features

* Tree Preservation Hoarding should be installed per the City of Mississauga's standard details.

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0 0.75 1.5 3 4.5
Metres
SCALE: 1:150

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph ON N1E 3E3
T 519.822.1609 • F 519.822.5389
www.dougan.ca

PROJECT: DA19-002-01
CLIENT: Investee Holdings Limited
DATE: 09 June 2021
DRAWN BY: N. White

Map 5.2
Tree Preservation Plan
Mississauga Heights EIS

Study Area

Limit of Disturbance

Tree Protection Hoarding*

Tree Inventory

Action

Preserve

Injure

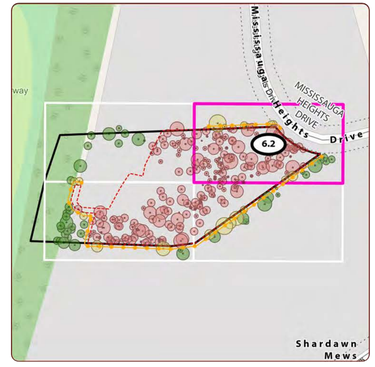
Remove

Suitable Bat Maternity Roost

Site Plan (Sajecki Planning, 2021)

Proposed and Existing Features

* Tree Preservation Hoarding should be installed per the City of Mississauga's standard details.



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Metres
SCALE: 1:150

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph, ON N1E 3B3
T 519.822.1609 • F 519.822.5389
www.dougan.ca

PROJECT: DA19-002-01
CLIENT: Investeq Holdings Limited
DATE: 09 June 2021
DRAWN BY: N. White

Map 5.3
Tree Preservation Plan
Mississauga Heights EIS

Study Area

Limit of Disturbance

Tree Protection Hoarding*

Tree Inventory

Action

Preserve

Injure

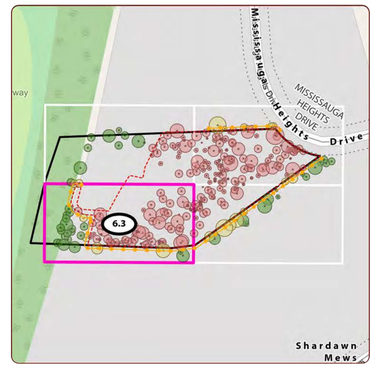
Remove

Suitable Bat Maternity Roost

Site Plan (Sajecki Planning, 2021)

Proposed and Existing Features

* Tree Preservation Hoarding should be installed per the City of Mississauga's standard details.



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Metres
SCALE: 1:150

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ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph ON N1E 5R3
T 519.822.1609 • F 519.822.5389
www.dougan.ca

PROJECT: DA19-002-01
CLIENT: Investeo Holdings Limited
DATE: 09 June 2021
DRAWN BY: N. White

Map 5.4
Tree Preservation Plan
Mississauga Heights EIS

Study Area

Limit of Disturbance

Tree Protection Hoarding*

Tree Inventory

Action

Preserve

Injure

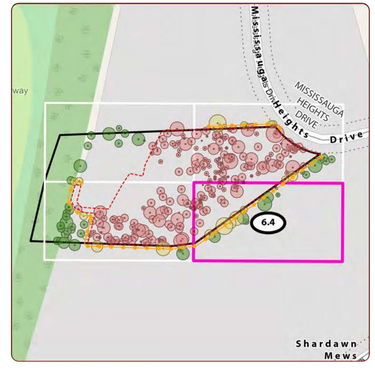
Remove

Suitable Bat Maternity Roost

Site Plan (Sajecki Planning, 2021)

Proposed and Existing Features

* Tree Preservation Hoarding should be installed per the City of Mississauga's standard details.



Key Map Data Map data © OpenStreetMap contributors, Map layer by Esri. Orthoimagery Source: Credit Valley Conservation Authority

0 0.75 1.5 3 4.5
Metres
SCALE: 1:150

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DOUGAN & ASSOCIATES
ECOLOGICAL CONSULTING & DESIGN
77 Wyndham Street South
Guelph ON N1E 3X3
T 519.822.1609 • F 519.822.5389
www.dougan.ca

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DRAWN BY: N. White

PROJECT: DA19-002-01

CLIENT: Investex Holdings Limited

DATE: 14, June 2021

DRAWN BY: N. White

Map 6:
Enhancement Opportunities
Mississauga Heights EIS

- Study Area
- Proposed and Existing Features
- Designated Enhancement Area

Key Map Data Map data © OpenStreetMap contributors, Map layer by Esri
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0 6.25 12.5 25

Metres

SCALE: 1:700

NAD 1983 UTM Zone 17N

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Appendix A: Terms of Reference & Agency Correspondance

MEMORANDUM

Project No.: TC180414

To: David Sajecki, Sajecki Planning

From: Melissa Torchia, Wood

Date: 21 November 2018

Subject: **DRAFT: Terms of Reference: 904 Mississauga Heights Drive, Mississauga Ontario**

1.0 INTRODUCTION

Wood Environment & Infrastructure, a division of Wood Canada Limited (Wood), is pleased to provide Sajecki Planning with this Terms of Reference (TOR) to provide natural heritage and biological assessment services as required to support the proposed development of 904 Mississauga Heights Drive, Mississauga, Ontario (Figure 1) (herein after referred to as the Project). The Project Location encompasses the entire parcel, and preliminary design aims to severe the existing parcel and build a total of four (4) or five (5) new residential lots. This TOR has been prepared using the Credit Valley Conservation Authority (CVC) EIS guidelines (2008) and information collected following an initial site walk. The site walk was completed with Wood, City of Mississauga, and CVC staff on October 24, 2018. During the site walk, Wood took part in the natural feature staking of the property with City of Mississauga Urban Forestry staff and CVC staff. Based on the outcome of the site walk, a large portion of the property was determined to be part of natural feature.

Figure 1: Project Location

2.0 TERMS OF REFERENCE

The goal of this TOR is to provide a framework for the future Environmental Impact Study (EIS) for the Project Location. The EIS will document natural heritage information on the existing conditions within the Project Location and will identify the following:

- The purpose of the proposed project and proposed design details;
- The existing environmental conditions of the Project Location (inclusive of flora and faunal inventory, key natural heritage features (e.g., wetlands), species-at-risk (SAR), and noted hazards (i.e., flood hazard);
- The natural feature constraints and buffer setbacks;
- Groundwater and surface water implications;
- The impacts to physical and biological resources;
- The requirements for the protection and conservation of natural heritage features and functions;
- Avoidance and mitigation measures; and
- Monitoring requirements (as required).

A brief description of the EIS report objectives is provided below.

2.1 Description of the Surrounding Natural Environment

The EIS will describe and justify the level of investigation undertaken as part of the field survey program. The data will be provided in text and tabular form, including the date and time of the surveys, weather conditions, and personnel involved in the fieldwork.

2.1.1 Secondary Source Review

As part of the EIS report and as a component of the background review of natural heritage elements within the Project Location, a secondary source review will be performed. Database searches will be undertaken to ascertain information on natural heritage features, inclusive of SAR. Resources to be reviewed include those but not limited to:

- MNRF Natural Heritage Information Centre (NHIC) database;
- Atlas of the Breeding Bird of Ontario (ABBO; Cadman et al., 2007);
- eBird.org (Audubon and Cornell Lab of Ornithology, 2016);
- Atlas of the Mammals of Ontario (AMO; Dobbyn, 1994);
- Ontario Reptile and Amphibian Atlas (ORRA; Ontario Nature, 2014);
- Ontario Butterfly Atlas (OBA; Jones et al. 2016);
- CVC publications including watershed report cards; and,
- Municipal records associated with the Official and Master Plans and/or other planning documents.

- CVC SAR data (to be released by MECP)
-City of Mississauga NAS data

2.1.2 Agency Consultation

Regulatory agencies (i.e., CVC, City of Mississauga and MECP), will be contacted to provide existing environmental data for the Project Location. Based on recent discussions between Wood and the Ministry of Natural Resources and Forestry (MNRF) regarding SAR, Wood will forego submission of SAR information request to MNRF, and instead will

review the MNRF's Natural Heritage Information Center (NHIC) for information available at the time regarding SAR for the Project Location. Based on the existing conditions of the Project Location observed during the site walk on October 24, 2018, habitat for potential SAR does occur and as such, a series of field investigations will be completed as part of the EIS to confirm presence or absence. If SAR are identified, additional consultation with MNRF will be completed to provide information on the path forward.

2.1.3 Field Survey Program

In support of the EIS, Wood will undertake a natural heritage and biological field survey program within the Project Location. Following the site visit on October 24, 2018 and preliminary desktop analysis, a field survey program has been established. Relevant field studies required to support the EIS have been identified and are indicated below. Note aquatic field studies are not planned at this time and have been omitted from the field survey program.

2.1.3.1 Terrestrial Studies

- Vegetation community surveys and mapping using the Ecological Land Classification (ELC);
- One (1) season (spring / summer) botanical inventory;
- Tree inventory;
- Breeding bird surveys;
- Incidental wildlife observations; and
- Rare species, SAR screening surveys (inclusive of bat cavity search), and Significant Wildlife Habitat screening.

To determine and further evaluate the presence of natural areas, unevaluated wetlands, and significant wildlife habitats, the field survey program will assist in developing a detailed description of the terrestrial environment. These surveys shall be conducted at the seasonally appropriate time to allow for the determination of habitat use for candidate significant wildlife habitat.

Botanical Surveys and Ecological Land Classification

Initial ELC and vegetation community (ecosite) delineation will be undertaken through the review of satellite imagery and existing mapping resources from CVC, the City of Mississauga, Peel Region, and provincial Land Information Ontario (LIO) database. A three (3) season field survey will then confirm and update the vegetation community boundaries and classification from LIO, converting the community delineations into Ecological Land Classifications (ELC; Lee et al., 1998, 2008).

ELC will be utilized to broadly characterize the ecosites within the Project Location, as well as to identify the presence of rare and/or sensitive vegetation communities and/or species. ELC will be further utilized to focus and target efforts for other field survey program components as required.

The inventory and documentation of vegetation and vascular plants will be undertaken through visual observations during the three (3) field surveys. Observations will continuously be recorded and updated throughout the implementation of all components of the field survey program. The identification of species will not only focus on common species, but also on rare and sensitive species, SAR, and invasive/non-native species.

Tree Inventory

The tree inventory will be conducted for the Project Location. The goal of the inventory will be to provide information on species composition and size across the Project Location. The methodology employed in conducting the tree inventory will include the following:

- Survey of all trees greater than 10 cm diameter at breast height (DBH) which will include:

- Identification of tree species;
- Attachment of uniquely numbered tree tag;
- Tree size/caliper (DBH);
- Tree health condition;
- Tree crown dimension estimate (dripline);
- Tree protection zone (TPZ); and
- Tree location (Georeferenced and rectified to previous survey)

An Arborist Report will be prepared of which will provide details of the tree inventory (list of trees greater than 10 cm DBH) with associated UTM coordinates, georeferenced figure of tree locations health condition assessment and arborist recommendations**.**

Breeding Bird Surveys

Breeding bird surveys will be undertaken between May 24 and July 7 at two (2) point count stations within the Project Location and will follow the protocols as described in the Ontario Breeding Bird Atlas Guide for Participants (2001) and the Atlas of Breeding Birds of Ontario (Cadman et al., 2007). Surveys will include morning point counts starting 30 minutes after sunrise to capture the period of maximum bird song activity. Each station will consist of a circle with a 100 m radius from the center point (the location of the observer). All birds heard or observed will be recorded at intervals of 0 – 50 m, 50 - 100 m, >100 m and flyovers (birds seen flying overhead). Each point count will be ten (10) minutes in duration. Birds will be recorded at intervals of 0 - 3 minutes, 3 - 5 minutes and 5 – 10 minutes. Species will be identified through their unique vocalizations and by visual observations. Each bird will be recorded once and mapped on the field data sheets to ensure no duplication of individual birds. All bird surveys will be undertaken in mild weather with warm temperatures, no precipitation, and little or no wind. All observations were recorded on Breeding Bird Survey (BBS) field forms. Breeding evidence will be provided.

Species at Risk

An assessment of potential presence and suitable habitat for SAR within the Project Location will be undertaken. To obtain information on SAR potentially occurring within the vicinity of the Project Location, Wood will undertake a desktop review of the NHIC database and wildlife atlases and consult with the CVC regarding SAR records not publicly available for the area.

The assessment of SAR and SAR habitat will be conducted concurrently with the biological surveys noted herein. Based on the results of the SAR desktop assessment, Wood will compare the preferred habitat of each potential SAR with the physical conditions present at the Project Location and document any SAR occurrences observed during the biological inventories. A summary of potential SAR occurrence will be based on availability of preferred habitat. At present time, no SAR targeted surveys have been identified for the Project Location. The potential for SAR birds will be captured during the breeding bird surveys for the Project, and similarly vegetative SAR will be captured during the botanical inventories. Given the characteristics of the Project Location, additional SAR (e.g., amphibians, reptiles) are not expected to occur. Any SAR identified during the field surveys will be documented within the EIS and further consultation with MNRF will be required to identify the path forward.

Species at Risk Bats

Due to the characteristics of the woodland at the Project Location, a bat habitat survey will be undertaken as part of the field survey program in early 2019. Surveys will include the identification of potential maternal roost habitat (i.e., cavity trees) identified during the leaf-off period. Information collected will denote

whether further survey requirements are needed (i.e., the need for acoustic monitoring) or permitting and approvals under the *Endangered Species Act*, 2007 (as amended) will be required for the Project. MNRF / MECP will be consulted to ensure survey requirements are met.

2.1.3.2 Key Natural Heritage Features

An overview and summary of Key Natural Heritage Features will be completed for the Project Location. This includes documenting the presence and/or absence of:

- Significant Wetlands;
- Significant Woodlands;
- Areas of Natural and Scientific Interest (ANSI's);
- Environmentally Sensitive Areas (ESA's)
- Significant Valleylands;
- Aquatic Habitat and Lake Ontario Shoreline; and
- Significant Wildlife Habitat and Habitat for Endangered and Threatened Species

The significance of a feature will be identified through secondary source information (inclusive of mapping provided by Land Information Ontario), CVC's Natural Heritage Strategy (2015), the Regional and/or City's Official Plans, and the *Significant Wildlife Habitat Criterion Schedule for Ecoregion 7E* (MNRF, 2015) and *Peel Caledon Woodlands and Significant Wildlife Habitat Study* criteria.

2.2 Identification of Potential Project Impacts

The impacts of the proposed Project on the natural heritage features and functions, will be identified and assessed.

Specific impacts may include:

- Direct on-site effects of the proposed project, including direct removals, fragmentation, encroachment or alteration of the significant natural features, altered hydrology and drainage, and anticipated tree removal;
- Introduction of non-native species;
- Effects on the ecological characteristics of the entire natural area (e.g. loss of habitat, edge effect, change in habitat);
- Short-term and long-term effects; and
- Secondary effects, including changes to the aesthetic qualities or educational value of the area, obstruction of greenway connections, and effects on adjacent natural areas.

2.3 Avoiding Impacts and Evaluation of Mitigation Measures

Measures to be taken to avoid and mitigate negative impacts on the natural heritage features and functions will be provided in the EIS. The assessment will consider cumulative, short and long-term impacts, and the potential for further demand or stress on natural features and functions, by the development proposal.

The EIS will:

- Identify and recommend feasible measures necessary to protect, maintain, or improve the identified ecological functions of the natural heritage features;

- Identify and recommend measures for the preservation of significant vegetation communities, special habitats, and specimen trees on the site;
- Identify timing restrictions, buffer setbacks, invasive species management/control, and potential compensation;
- Recommend improvements for the diversity of natural heritage features in the immediate project area and the natural connections between them, as necessary; and
- Recommend options for ongoing rehabilitation, protection, management, and enhancement of the natural heritage features, as necessary.

2.4 Monitoring Plan

A monitoring plan shall be prepared within the context of the EIS, if necessary. Depending on the findings of the EIS (i.e., significance and/or sensitivity of the natural heritage feature and function), on-site or adjacent monitoring may be required pre-construction, during construction and/or post-construction. Details of monitoring requirements will be determined through the EIS and consultation with CVC and the City of Mississauga.

2.5 Recommendations and Conclusion

A summary of the findings, potential impacts on natural features and functions, recommended mitigation, monitoring and residual impacts will be provided within the EIS. The EIS will provide the foundation for future requirements for development approval as it relates to the natural heritage system. As the EIS progresses, consultation with the City of Mississauga and CVC will be maintained throughout to disclose observations and identify concerns and constraints. The EIS will also provide the foundation for impacts (if any) to SAR and/or their habitat and denote recommendations for next steps should SAR be identified.

3.0 TABLE OF CONTENTS OF THE EIS

This TOR has been prepared based EIS guidelines (CVC, 2008). The proposed draft EIS table of contents is as follows:

- Executive Summary
- Introduction
    - Purpose of the Study
    - Scope of the Study
    - Study Area
- Relevant Policies, Legislation and Planning Studies
- Methodology
    - Secondary Source Review Methods
    - Terrestrial Field Methods
- Existing Conditions
    - Abiotic Environment
    - Terrestrial Environment
    - Species at Risk

- Significant Natural Heritage Features
    - Significant Wetlands
    - ANSI's and ESA's
    - Significant Valleylands
    - Significant Woodlands
    - Significant Wildlife Habitat
    - Residential Woodlands
- Assessment of policy implications based on features & functions present
- Summary Table of Predicted Impacts, Mitigation, Monitoring and Residual Effects
- Further recommendations and Conclusions (Inclusive of permit and approval requirements understood at the time of completion).

4.0 PROJECT SCHEDULE

It is important to note that most of the field survey program cannot begin until spring 2019 to meet approved regulatory standards for field methods. The survey program is expected to extend into fall 2019. A formal EIS will be delivered following the collection of field data sometime in late fall 2019.

To provide some preliminary constraints to the project, a cavity search will be completed for SAR bats during leaf-off conditions (early 2019). It is assumed that permission to enter will be provided to Wood to complete the required work program.

5.0 CLOSURE

We trust this information is sufficient for your needs. Should additional information be required, please contact the undersigned at (905) 335.2353 ext. 3196.

Sincerely,

Wood Environment & Infrastructure Solutions,
a division of Wood Canada Limited
3450 Harvester Road, Suite 100
Burlington, Ontario L7N 3W5
T: 905.335.2353 ext. 3196

Prepared by:

DRAFT

Melissa Torchia, M.Sc., CAN-CISEC
Senior Environmental Specialist
melissa.torchia@woodplc.com

Reviewed by:

DRAFT

Jeff Balsdon M.Sc.,
Senior Terrestrial Ecologist
jeff.balsdon@woodplc.com

6.0 REFERENCES

1. Audubon and Cornell Lab of Ornithology. 2015. eBird, Ithaca, New York. Available: http://www.ebird.org.

2. Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage and A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, Ontario Nature. 728 pp.

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10. Ontario Breeding Bird Atlas (ABBO). 2001. Guide for Participants. Federation of Ontario Naturalists, Bird Studies Canada, Environment Canada, Ontario Ministry of Natural Resources. 45 pp.

11. Ontario Nature. 2018. Ontario Reptile and Amphibian Atlas (ORAA). http://www.ontarionature.org/protect/species/herpetofaunal_atlas.php.

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Appendix B: Vascular Plant List

Appendix B – Vascular Plant List

Scientific Name	Common Name	G Rank	S Rank	COSEWIC	CVC	Mississauga	RM_Peel	Native Status	CW	CC
Acer negundo	Manitoba Maple	G5	S5					N	-2	0
Acer platanoides	Norway Maple	GNR	SNA					I	5	0
Acer saccharum	Sugar Maple	G5	S5					N	3	4
Actaea sp	Baneberry Species									
Alliaria petiolata	Garlic Mustard	GNR	SNA					I	0	0
Arctium sp	Burdock Species									
Athyrium filix-femina	Common Lady Fern	G5	S5					N	0	4
Betula alleghaniensis	Yellow Birch	G5	S5					N	0	6
Betula papyrifera	Paper Birch	G5	S5					N	2	2
Carex pensylvanica	Pennsylvania Sedge	G5	S5					N	5	5
Carya ovata	Shagbark Hickory	G5	S5					N	3	6
Circaea canadensis	Broad-leaved Enchanter's Nightshade	G5T5	S5					N	3	3
Cirsium vulgare	Bull Thistle	GNR	SNA					I	4	0
Convallaria majalis	European Lily-of-the-valley	G5	SNA					I	5	0
Daucus carota	Wild Carrot	GNR	SNA					I	5	0
Diervilla lonicera	Northern Bush-honeysuckle	G5	S5					N	5	5
Euonymus alatus	Winged Euonymus	GNR	SNA					I	5	0
Euonymus fortunei	Climbing Euonymus	GNR	SNA			1		I	5	0
Euphorbia polygonifolia	Seaside Spurge	G5?	S4			1	R1	N	5	10
Festuca sp	Fescue Species									
Fragaria virginiana	Wild Strawberry	G5	S5					N	1	2
Fraxinus pennsylvanica	Green Ash	G5	S4					N	-3	3
Galium odoratum	Sweet Bedstraw	GNR	SNA					I		
Geum sp	Avens Species									
Heuchera americana	American Alumroot	G5	S1					N	4	9
Hydrophyllum sp	Water-leaf Species									

Scientific Name	Common Name	G Rank	S Rank	COSEWIC	CVC	Mississauga	RM_Peel	Native Status	CW	CC
Leonurus cardiaca	Common Motherwort	GNR	SNA					I	5	0
Lonicera sp	Honeysuckle Species									
Lonicera tatarica	Tartarian Honeysuckle	GNR	SNA					I	3	0
Maianthemum canadense	Wild Lily-of-the-valley	G5	S5					N	0	5
Maianthemum racemosum	False Solomon's-seal	G5	S5					N	3	4
Mentha sp	Mint Species									
Oxalis sp	Wood Sorrel Species									
Parthenocissus quinquefolia	Virginia Creeper	G5	S4?			1	RLR	N	1	6
Parthenocissus vitacea	Thicket Creeper	G5	S5					N	3	3
Phalaris arundinacea	Reed Canary Grass	G5	S5					N	-4	0
Picea abies	Norway Spruce	G5	SNA					I	5	0
Picea pungens	Blue Spruce	G5	SNA					I		
Pinus resinosa	Red Pine	G5	S5		R/L		R1	N	3	8
Pinus strobus	Eastern White Pine	G5	S5					N	3	4
Pinus sylvestris	Scots Pine	GNR	SNA					I	5	0
Prunus serotina	Black Cherry	G5	S5					N	3	3
Prunus virginiana	Choke Cherry	G5	S5					N	1	2
Quercus macrocarpa	Bur Oak	G5	S5					N	1	5
Quercus rubra	Northern Red Oak	G5	S5					N	3	6
Rhamnus cathartica	Common Buckthorn	GNR	SNA					I	3	0
Ribes americanum	Wild Black Currant	G5	S5					N	-3	4
Robinia pseudoacacia	Black Locust	G5	SNA					I	4	0
Rubus allegheniensis	Allegheny Blackberry	G5	S5					N	2	2
Rubus idaeus	Common Red Raspberry	G5	S5					N		
Rubus occidentalis	Black Raspberry	G5	S5					N	5	2
Salvia officinalis	Kitchen Sage	GNR	SNA					I	5	0
Solanum dulcamara	Climbing Nightshade	GNR	SNA					I	0	0
Solidago altissima	Tall Goldenrod	G5	S5					N		

Scientific Name	Common Name	G Rank	S Rank	COSEWIC	CVC	Mississauga	RM_Peel	Native Status	CW	CC
Solidago sp	Goldenrod Species									
Sorbus aucuparia	European Mountain-ash	G5	SNA					I	5	0
Spiraea japonica	Japanese Spiraea	G5	SNA			1		I	5	0
Symphoricarpos albus	Common Snowberry	G5	S5					N	4	7
Syringa vulgaris	Common Lilac	GNR	SNA					I	5	0
Taraxacum officinale	Common Dandelion	G5	SNA					I	3	0
Taxus canadensis	Canadian Yew	G5	S4			2		N	3	7
Toxicodendron radicans	Poison Ivy	G5	S5					N	-1	5
Toxicodendron radicans var. rydbergii	Western Poison Ivy	G5	S5					N	0	0
Ulmus americana	American Elm	G5	S5					N	-2	3
Verbascum thapsus	Common Mullein	GNR	SNA					I	5	0
Viburnum lantana	Wayfaring-tree	GNR	SNA			1		I	5	0
Vinca minor	Periwinkle	GNR	SNA					I	5	0
Vitis riparia	Riverbank Grape	G5	S5					N	-2	0

Appendix C: Wildlife List

Appendix C – Wildlife List

Common Name	Scientific Name	CONSERVATION STATUS				Area Sensitivity (OMNR 2000)	Protected by MBCA (1994)	Breeding Evidence (OBBA 2001)	Comments
		NATIONAL	PROVINCIAL		LOCAL				
		COSEWIC Designation (COSEWIC 2018)	ESA Status per O.R. 230/08 (Gov. of Ont. 2019)	S Rank (NHIC 2019)	Credit Watershed (CVC 1997)				
Chimney Swift	*Chaetura pelagica*	THR	THR	S4	CC	---	Y	X	Observed flying over the site on June 12; foraging only, no evidence of breeding on site nor suitable habitat available.
Cooper's Hawk	*Accipiter cooperii*	NAR	NAR	S4	CC	AS	N	POSSIBLE	One bird observed on June 3 only.
Red-bellied Woodpecker	*Melanerpes carolinus*	---	---	S4		---	Y	POSSIBLE	
Great Crested Flycatcher	*Myiarchus crinitus*	---	---	S4		---	Y	PROBABLE	
Eastern Phoebe	*Sayornis phoebe*	---	---	S5		---	Y	POSSIBLE	
Red-eyed Vireo	*Vireo olivaceus*	---	---	S5		---	Y	POSSIBLE	
Blue Jay	*Cyanocitta cristata*	---	---	S5		---	N	POSSIBLE	
American Crow	*Corvus brachyrhynchos*	---	---	S5		---	N	PROBABLE	
Black-capped Chickadee	*Poecile atricapillus*	---	---	S5		---	Y	PROBABLE	
White-breasted Nuthatch	*Sitta carolinensis*	---	---	S5		AS	Y	POSSIBLE	
American Robin	*Turdus migratorius*	---	---	S5		---	Y	PROBABLE	

Common Name	Scientific Name	CONSERVATION STATUS				Area Sensitivity (OMNR 2000)	Protected by MBCA (1994)	Breeding Evidence (OBBA 2001)	Comments
		NATIONAL	PROVINCIAL		LOCAL				
		COSEWIC Designation (COSEWIC 2018)	ESA Status per O.R. 230/08 (Gov. of Ont. 2019)	S Rank (NHIC 2019)	Credit Watershed (CVC 1997)				
Cedar Waxwing	*Bombycilla cedrorum*	---	---	S5		---	Y	POSSIBLE	
House Sparrow	*Passer domesticus*	---	---	SNA		---	N	POSSIBLE	
American Goldfinch	*Spinus tristis*	---	---	S5		---	Y	POSSIBLE	
Song Sparrow	*Melospiza melodia*	---	---	S5		---	Y	POSSIBLE	
Red-winged Blackbird	*Agelaius phoeniceus*	---	---	S4		---	N	POSSIBLE	
Brown-headed Cowbird	*Molothrus ater*	---	---	S4		---	N	POSSIBLE	
Common Grackle	*Quiscalus quiscula*	---	---	S5	CC	---	N	X	Observed flying over the site on June 12 only; not breeding.
Pine Warbler	*Setophaga pinus*	---	---	S5	CC	AS	Y	POSSIBLE	One bird detected on June 12 only.
Northern Cardinal	*Cardinalis cardinalis*	---	---	S5		---	Y	PROBABLE	

LEGEND:

COSEWIC: THR - Threatened; NAR - assessed and considered Not at Risk; --- = not assessed as population secure

ESA (per OMNRF): THR - Threatened; NAR - assessed and considered Not at Risk; --- = not assessed as population secure

Provincial Sranks: S4 - apparently secure; S5 - secure; SNA - non-native exotic

Area Sensitivity: AS - Area Sensitive species

MBCA: Y - Yes; N - No

OBBA: X - species observed but not considered a potential breeder

Appendix D. Ontario Reptile and Amphibian Atlas

Appendix D – Ontario Reptile and Amphibian Atlas

Common Name	Scientific Name	Federal SARA Status (NHIC, 2019)	Provincial ESA Status (Government of Ontario, 2018)	Provincial S Rank (NHIC, 2019)	Last Observation Date
Snapping Turtle	Chelydra *serpentina*	SC	SC	S4	2019
Midland Painted Turtle	Chrysemys *picta marginata*	---	---	S4	2018
Blanding's Turtle	Emydoidea *blandingii*	THR	THR	S3	1982
Northern Map Turtle	Graptemys *geographica*	SC	SC	S3	2013
Red-eared Slider	Trachemys *scripta elegans*	---	---	SNA	2018
Eastern Milksnake	Lampropeltis *t. triangulum*	SC	---	S4	2016
Smooth Greensnake	Opheodrys *vernalis*	---	---	S4	1969
Northern Watersnake	Nerodia *sipedon sipedon*	---	---	S5	2012
DeKay's Brownsnake	Storeria *dekayi*	---	---	S5	2019
Eastern Gartersnake	Thamnophis *sirtalis sirtalis*	---	---	S5	2016
Mudpuppy	Necturus *maculosus*	---	---	S4	2007
Red-spotted Newt	Notophthalmus *viridescens viridescens*	---	---	S5	1969
Jefferson Salamander	Ambystoma *jeffersonianum*	END	END	S2	2000
Jefferson/Blue-spotted Salamander Complex	---	---	---	---	2000
Spotted Salamander	Ambystoma *maculatum*	---	---	S4	1990
Eastern Red-backed Salamander	Plethodon *cinereus*	---	---	S5	2012
American Toad	Anaxyrus *americanus*	---	---	S5	2011
Gray Treefrog	Hyla *versicolor*	---	---	S5	2012
Spring Peeper	Pseudacris *crucifer*	---	---	S5	1969

Appendix E. Ontario Butterfly Atlas

Appendix E – Ontario Butterfly Atlas

Common Name	Latin Name	Federal SARA Status (NHIC, 2019)	Provincial ESA Status (Government of Ontario, 2018)	Provincial S Rank (NHIC, 2019)	Last Observation Date
Silver-spotted Skipper	*Epargyreus clarus*	---	---	S4	2018
Northern Cloudywing	*Thorybes pylades*	---	---	S3	1975
Mottled Duskywing (Great Lakes pop.)	*Erynnis martialis*	No Status	END	S2	1950
Columbine Duskywing	*Erynnis lucilius*	---	---	S4	1903
Wild Indigo Duskywing	*Erynnis baptisiae*	---	---	S4	2018
Least Skipper	*Ancyloxypha numitor*	---	---	S5	2017
European Skipper	*Thymelicus lineola*	---	---	SNA	2017
Fiery Skipper	*Hylephila phyleus*	---	---	SNA	2012
Peck's Skipper	*Polites peckius*	---	---	S5	2017
Crossline Skipper	*Polites origenes*	---	---	S4	1961
Northern Broken-Dash	*Wallengrenia egeremet*	---	---	S5	1962
Sachem	*Atalopedes campestris*	---	---	SNA	2012
Hobomok Skipper	*Poanes hobomok*	---	---	S5	1996
Dun Skipper	*Euphyes vestris*	---	---	S5	2018
Black Swallowtail	*Papilio polyxenes*	---	---	S5	2014
Eastern Giant Swallowtail	*Papilio cresphontes*	---	---	S4	2003
Eastern Tiger Swallowtail	*Papilio glaucus*	---	---	S5	2018
Checkered White	*Pontia protodice*	---	---	SNA	(year not recorded)
Cabbage White	*Pieris rapae*	---	---	SNA	2018
Clouded Sulphur	*Colias philodice*	---	---	S5	2018
Orange Sulphur	*Colias eurytheme*	---	---	S5	2017
Cloudless Sulphur	*Phoebis sennae*	---	---	S5	1985
Little Yellow	*Pyrisitia lisa*	---	---	SNA	1958
Harvester	*Feniseca tarquinius*	---	---	S4	1997
Acadian Hairstreak	*Satyrium acadica*	---	---	S4	1962
Edwards' Hairstreak	*Satyrium edwardsii*	---	---	S4	1962
Banded Hairstreak	*Satyrium calanus*	---	---	S4	1980
Hickory Hairstreak	*Satyrium caryaevorus*	---	---	S4	1981
Striped Hairstreak	*Satyrium liparops*	---	---	S5	1997
Marine Blue	*Leptotes marina*	---	---	SNA	2008
Eastern Tailed Blue	*Cupido comyntas*	---	---	S5	2017
Azure sp.	*Celastrina sp.*	---	---	---	2018
Silvery Blue	*Glaucopsyche lygdamus*	---	---	S5	2018
Atlantis Fritillary	*Speyeria atlantis*	---	---	S5	1904
Meadow Fritillary	*Boloria bellona*	---	---	S5	1962
Silvery Checkerspot	*Chlosyne nycteis*	---	---	S5	1962
Pearl Crescent	*Phyciodes tharos*	---	---	S4	2018
Northern Crescent	*Phyciodes cocyta*	---	---	S5	1995
Question Mark	*Polygonia interrogationis*	---	---	S5	2012

Common Name	Latin Name	Federal SARA Status (NHIC, 2019)	Provincial ESA Status (Government of Ontario, 2018)	Provincial S Rank (NHIC, 2019)	Last Observation Date
Eastern Comma	*Polygonia comma*	---	---	S5	2011
Compton Tortoiseshell	*Nymphalis l-album*	---	---	S5	1996
Mourning Cloak	*Nymphalis antiopa*	---	---	S5	2017
American Lady	*Vanessa virginiensis*	---	---	S5	2017
Painted Lady	*Vanessa cardui*	---	---	S5	2017
Red Admiral	*Vanessa atalanta*	---	---	S5	2017
Common Buckeye	*Junonia coenia*	---	---	SNA	2017
White Admiral	*Limenitis arthemis arthemis*	---	---	S5	1980
Red-spotted Purple	*Limenitis arthemis astyanax*	---	---	S5	1993
Viceroy	*Limenitis archippus*	---	---	S5	2016
Northern Pearly-Eye	*Lethe anthedon*	---	---	S5	1971
Eyed Brown	*Lethe eurydice*	---	---	S5	1965
Little Wood-Satyr	*Megisto cymela*	---	---	S5	2018
Common Ringlet	*Coenonympha tullia*	---	---	S5	2017
Common Wood-Nymph	*Cercyonis pegala*	---	---	S5	1980
Monarch	*Danaus plexippus*	SC	SC	S2,S4B	2018

Appendix F. Tree Inventory & Bat Habitat Data

Tree Tag #	Scientific Name	Common Name	Tree Status	Total DBH[1]	Crown Reserve [2] (m)	Height [3] (m)	Structural Condition [4]	Biological Health [5]	Preservation Priority [6]	Native Status [7]	Regulated Tree Subject to Permitting	Suitable Bat Maternity Roost Tree	Tree Action [8]	Compensation [9]	Coordinate Source [10]
1	*Pinus sylvestris*	Scots Pine	Alive	29	3	10-15	L	L	L	I	x	No	Remove	1:1	Trimble R1
2	*Pinus sylvestris*	Scots Pine	Alive	33	4	15-20	L	L	L	I	x	No	Remove	1:1	Trimble R1
3	*Fraxinus americana*	White Ash	Dead	22	1	10-15	L	L	L	N	x	No	Remove	n/a	Trimble R1
4	*Pinus sylvestris*	Scots Pine	Alive	36	5	10-15	M	L	L	I	x	No	Remove	1:1	Trimble R1
5	*Picea abies*	Norway Spruce	Alive	69	8	15-20	M	M	L	I	x	No	Remove	2:1	Trimble R1
6	*Carya ovata*	Shagbark Hickory	Alive	22	5	10-15	H	H	H	N	x	No	Remove	1:1	Trimble R1
7	*Acer saccharum*	Sugar Maple	Alive	16	6	15-20	H	H	H	N	x	No	Remove	1:1	Trimble R1
8	*Pinus sylvestris*	Scots Pine	Alive	57	8	10-15	M	M	L	I	x	No	Remove	2:1	Trimble R1
9	*Acer platanoides*	Norway Maple	Alive	19	6	10-15	H	H	M	I	x	No	Remove	1:1	Trimble R1
10	*Pinus sylvestris*	Scots Pine	Alive	50	8	15-20	M	M	M	I	x	No	Remove	2:1	Trimble R1
10.1	*Acer platanoides*	Norway Maple	Alive	10	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
11	*Quercus rubra*	Northern Red Oak	Alive	57.31	8	15-20	M	H	H	N	x	Yes	Remove	1:1	Trimble R1
12	*Quercus rubra*	Northern Red Oak	Alive	65.12	12	10-15	M	H	H	N	x	Yes	Remove	1:1	Trimble R1
13	*Acer saccharum*	Sugar Maple	Alive	15	6	10-15	M	H	H	N		No	Remove	n/a	Trimble R1
14	*Picea abies*	Norway Spruce	Alive	53	8	15-20	H	M	M	I	x	No	Remove	2:1	Trimble R1
15	*Picea abies*	Norway Spruce	Alive	44	8	15-20	M	M	M	I	x	No	Remove	1:1	Trimble R1
16	*Picea abies*	Norway Spruce	Alive	15	1	03-05	L	L	L	I		No	Remove	n/a	Trimble R1
17	*Picea abies*	Norway Spruce	Alive	16	2	05-10	L	L	L	I	x	No	Remove	1:1	Trimble R1
18	*Acer platanoides*	Norway Maple	Alive	25	10	10-15	H	H	M	I	x	Yes	Remove	1:1	Trimble R1
19	*Pinus sylvestris*	Scots Pine	Alive	75	10	15-20	H	H	M	I	x	No	Remove	2:1	Trimble R1
20	*Acer platanoides*	Norway Maple	Alive	20	8	10-15	M	H	M	I	x	No	Remove	1:1	Trimble R1
21	*Acer platanoides*	Norway Maple	Alive	17	5	10-15	H	H	M	I	x	No	Remove	1:1	Trimble R1
22	*Carya ovata*	Shagbark Hickory	Alive	22	7	10-15	H	H	H	N	x	No	Injure	n/a	Trimble R1
23	*Picea abies*	Norway Spruce	Alive	24	5	10-15	H	M	M	I	x	No	Remove	1:1	Trimble R1
24	*Carya ovata*	Shagbark Hickory	Alive	31	10	15-20	H	H	H	N	x	No	Remove	1:1	Trimble R1
25	*Acer saccharum*	Sugar Maple	Alive	75	12	15-20	H	H	H	N	x	Yes	Remove	2:1	Trimble R1
26	*Picea abies*	Norway Spruce	Alive	48	10	15-20	M	M	M	I	x	No	Remove	1:1	Trimble R1
27	*Picea abies*	Norway Spruce	Alive	56	10	15-20	H	M	M	I	x	No	Injure	n/a	Trimble R1
28	*Quercus rubra*	Northern Red Oak	Alive	42	8	15-20	M	M	H	N	x	Yes	Preserve	n/a	Trimble R1
29	*Pinus strobus*	Eastern White Pine	Alive	55	10	15-20	M	H	H	N	x	No	Preserve	n/a	Trimble R1
30	*Betula papyrifera*	Paper Birch	Alive	19	2	10-15	M	H	H	N	x	No	Preserve	n/a	Trimble R1
31	*Betula papyrifera*	Paper Birch	Alive	23	3	10-15	H	H	H	N	x	No	Preserve	n/a	Trimble R1
32	*Quercus rubra*	Northern Red Oak	Alive	71	10	15-20	M	H	H	N	x	Yes	Preserve	n/a	Trimble R1
33	*Quercus rubra*	Northern Red Oak	Alive	35	8	15-20	M	M	H	N	x	Yes	Preserve	n/a	Trimble R1
35	*Acer platanoides*	Norway Maple	Alive	17	5	10-15	M	M	M	I	x	No	Preserve	n/a	Trimble R1
36	*Acer saccharum*	Sugar Maple	Alive	16	7	10-15	M	H	H	N	x	No	Preserve	n/a	Trimble R1
37	*Acer platanoides*	Norway Maple	Alive	20	8	10-15	H	H	H	I	x	No	Preserve	n/a	Trimble R1
38	*Acer platanoides*	Norway Maple	Alive	21	8	10-15	H	H	H	I	x	No	Preserve	n/a	Trimble R1
39	*Quercus macrocarpa*	Bur Oak	Alive	32	8	15-20	H	H	H	N	x	Yes	Preserve	n/a	Trimble R1
40	*Acer platanoides*	Norway Maple	Alive	27	12	15-20	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
41	*Acer platanoides*	Norway Maple	Alive	28	6	10-15	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
42	*Acer platanoides*	Norway Maple	Alive	32	10	10-15	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
43	*Acer platanoides*	Norway Maple	Alive	24	8	15-20	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
44	*Acer platanoides*	Norway Maple	Alive	23	6	10-15	H	H	H	I	x	No	Preserve	n/a	Trimble R1
45	*Picea abies*	Norway Spruce	Alive	60	8	10-15	H	H	H	I	x	No	Preserve	n/a	Trimble R1
46	*Acer platanoides*	Norway Maple	Alive	37	10	10-15	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
48	*Acer platanoides*	Norway Maple	Alive	31	7	15-20	H	H	H	I	x	Yes	Injure	n/a	Trimble R1
49	*Acer platanoides*	Norway Maple	Alive	25	6	15-20	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
50	*Betula papyrifera*	Paper Birch	Alive	30	8	10-15	H	H	H	N	x	No	Injure	n/a	Trimble R1
51	*Acer platanoides*	Norway Maple	Alive	45	13	10-15	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
52	*Pinus sylvestris*	Scots Pine	Alive	31	7	15-20	M	M	M	I	x	No	Remove	1:1	Trimble R1
53	*Pinus strobus*	Eastern White Pine	Alive	59	8	15-20	H	H	H	N	x	No	Remove	2:1	Trimble R1
54	*Robinia pseudoacacia*	Black Locust	Alive	36	4	10-15	M	M	M	I	x	No	Remove	1:1	Trimble R1
55	*Pinus strobus*	Eastern White Pine	Alive	40	7	15-20	M	M	M	N	x	No	Remove	1:1	Trimble R1
235	*Fraxinus americana*	White Ash	Alive	14	3	10-15	M	L	L	N		No	Preserve	n/a	Trimble R1
236	*Quercus rubra*	Northern Red Oak	Alive	51	10	15-20	H	H	H	N	x	Yes	Remove	2:1	Trimble R1
240	*Quercus rubra*	Northern Red Oak	Alive	55	10	15-20	H	H	H	N	x	Yes	Injure	n/a	Trimble R1
301	*Malus sp*	Apple Species	Alive	25	5	5-10	M	M	M	<Null>	x	No	Preserve	n/a	Trimble R1
302	*Malus sp*	Apple Species	Alive	24	5	3-5	M	M	L	<Null>	x	No	Preserve	n/a	Trimble R1
303	*Malus sp*	Apple Species	Alive	14	5	5-10	M	M	L	<Null>		No	Preserve	n/a	Trimble R1
304	*Malus sp*	Apple Species	Alive	18	5	5-10	M	M	L	<Null>	x	No	Preserve	n/a	Trimble R1
305	*Pinus strobus*	Eastern White Pine	Alive	79	10	15-20	H	H	H	N	x	No	Preserve	n/a	Trimble R1
321	*Carya ovata*	Shagbark Hickory	Alive	30	9	15-20	H	H	H	N	x	Yes	Preserve	n/a	Trimble R1
322	*Picea glauca*	White Spruce	Alive	24	7	10-15	L	M	L	N	x	No	Injure	n/a	Trimble R1
323	*Acer saccharum*	Sugar Maple	Alive	48	8	15-20	M	H	H	N	x	Yes	Preserve	n/a	Trimble R1
324	*Quercus rubra*	Northern Red Oak	Alive	67	12	15-20	M	H	M	N	x	Yes	Injure	n/a	Trimble R1
325	*Acer saccharum*	Sugar Maple	Alive	28	8	10-15	H	H	H	N	x	Yes	Injure	n/a	Trimble R1
326	*Acer saccharum*	Sugar Maple	Alive	41	10	15-20	H	H	H	N	x	Yes	Injure	n/a	Trimble R1
327	*Acer saccharum*	Sugar Maple	Alive	54	8	15-20	M	H	M	N	x	Yes	Preserve	n/a	Trimble R1
328	*Picea glauca*	White Spruce	Alive	32	4	10-15	M	M	M	N	x	No	Preserve	n/a	Trimble R1
329	*Crataegus sp*	Hawthorn Species	Alive	25	5	5-10	L	M	L	<Null>	x	No	Injure	n/a	Trimble R1
330	*Acer saccharum*	Sugar Maple	Alive	56	10	15-20	H	H	H	N	x	Yes	Preserve	n/a	Trimble R1
331	*Acer saccharum*	Sugar Maple	Alive	52	8	15-20	H	H	H	N	x	Yes	Preserve	n/a	Trimble R1

Tree Tag #	Scientific Name	Common Name	Tree Status	Total DBH[1]	Crown Reserve [2] (m)	Height [3] (m)	Structural Condition [4]	Biological Health [5]	Preservation Priority [6]	Native Status [7]	Regulated Tree Subject to Permitting	Suitable Bat Maternity Roost Tree	Tree Action [8]	Compensation [9]	Coordinate Source [10]
332	*Picea pungens*	Blue Spruce	Alive	16	3	5-10	H	M	H	I	x	No	Preserve	n/a	Trimble R1
333	*Populus deltoides*	Eastern Cottonwood	Alive	25	7	5-10	M	M	M	N	x	No	Injure	n/a	Trimble R1
334	*Acer platanoides*	Norway Maple	Alive	17	3	5-10	H	H	H	I	x	No	Remove	1:1	Trimble R1
335	*Prunus serotina*	Black Cherry	Alive	66	10	15-20	H	M	M	N	x	Yes	Remove	2:1	Trimble R1
336	*Acer platanoides*	Norway Maple	Alive	15	3	5-10	H	H	M	I		No	Preserve	n/a	Trimble R1
337	*Populus deltoides*	Eastern Cottonwood	Alive	30	5	10-15	H	M	M	N	x	No	Preserve	n/a	Trimble R1
338	*Picea pungens*	Blue Spruce	Alive	16	4	5-10	H	H	H	I	x	No	Remove	1:1	Trimble R1
401	*Acer x freemanii*	(Acer rubrum X Acer saccharir	Alive	47	8	10-15	H	H	H	I	x	0	Preserve	n/a	Trimble R1
402	*Pinus strobus*	Eastern White Pine	Alive	35	6	10-15	H	H	H	N	x	0	Preserve	n/a	Trimble R1
403	*Quercus rubra*	Northern Red Oak	Alive	66	11	15-20	M	H	H	N	x	0	Preserve	n/a	Trimble R1
404	*Betula pendula*	Weeping Birch	Alive	39	7	10-15	M	H	H	I	x	0	Preserve	n/a	Trimble R1
405	*Pinus strobus*	Eastern White Pine	Alive	69	6	15-20	M	M	M	N	x	0	Preserve	n/a	Trimble R1
406	*Acer platanoides*	Norway Maple	Alive	70	11	15-20	H	H	H	I	x	Yes	Preserve	n/a	Trimble R1
407	*Tilia americana*	American Basswood	Alive	38	3	15-20	M	H	H	N	x	0	Preserve	n/a	Trimble R1
408	*Acer platanoides*	Norway Maple	Alive	39	8	15-20	H	H	H	I	x	0	Remove	1:1	Trimble R1
409	*Acer platanoides*	Norway Maple	Alive	17	5	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
410	*Acer platanoides*	Norway Maple	Alive	29	8	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
411	*Pinus sylvestris*	Scots Pine	Dead	31	0	15-20	TBD	TBD	TBD	I	x	Yes	Remove	n/a	Trimble R1
412	*Pinus sylvestris*	Scots Pine	Alive	24	2	15-20	L	L	L	I	x	Yes	Remove	1:1	Trimble R1
413	*Thuja occidentalis*	Eastern White Cedar	Alive	25	3	10-15	H	M	M	N	x	0	Remove	1:1	Trimble R1
414	*Picea abies*	Norway Spruce	Alive	48	8	15-20	M	M	M	I	x	0	Remove	1:1	Trimble R1
415	*Acer platanoides*	Norway Maple	Alive	31	10	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
416	*Acer platanoides*	Norway Maple	Alive	21	5	10-15	M	H	M	I	x	Yes	Remove	1:1	Trimble R1
417	*Quercus rubra*	Northern Red Oak	Alive	35	10	15-20	H	H	H	N	x	0	Remove	1:1	Trimble R1
418	*Quercus rubra*	Northern Red Oak	Alive	21	6	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
419	*Populus grandidentata*	Large-toothed Aspen	Alive	43	8	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
420	*Acer platanoides*	Norway Maple	Alive	25	10	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
421	*Quercus rubra*	Northern Red Oak	Alive	31	8	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
422	*Picea pungens*	Blue Spruce	Alive	28	5	10-15	M	M	M	I	x	0	Remove	1:1	Trimble R1
423	*Picea abies*	Norway Spruce	Alive	62	13	20-25	H	H	H	I	x	0	Remove	2:1	Trimble R1
424	*Picea abies*	Norway Spruce	Alive	38	10	15-20	H	H	H	I	x	0	Remove	1:1	Trimble R1
425	*Picea abies*	Norway Spruce	Alive	56	14	20-25	H	H	H	I	x	0	Remove	2:1	Trimble R1
425.1	*Gymnocladus dioicus*	Kentucky Coffee-tree	Alive	14	5	5-10	H	H	H	N		No	Injure	n/a	Trimble R1
426	*Pinus strobus*	Eastern White Pine	Alive	64	12	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
426.1	*Picea pungens*	Blue Spruce	Alive	11	2	5-10	M	M	M	I		No	Preserve	n/a	Trimble R1
427	*Pinus strobus*	Eastern White Pine	Alive	48	8	15-20	M	H	H	N	x	0	Remove	1:1	Trimble R1
428	*Picea abies*	Norway Spruce	Alive	48	6	15-20	H	M	M	I	x	0	Remove	1:1	Trimble R1
428.1	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
429	*Acer platanoides*	Norway Maple	Alive	99	15	15-20	H	H	H	I	x	Yes	Remove	2:1	Trimble R1
430	*Pinus strobus*	Eastern White Pine	Alive	56	10	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
431	*Picea abies*	Norway Spruce	Alive	56	10	20-25	H	H	H	I	x	0	Remove	2:1	Trimble R1
432	*Pinus strobus*	Eastern White Pine	Alive	52	8	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
433	*Acer rubrum*	Red Maple	Alive	65.73	10	10-15	H	H	H	N	x	0	Remove	2:1	Trimble R1
434	*Picea sp*	Spruce Species	Dead	42	0	10-15	L	L	L	<Null>	x	Yes	Remove	n/a	Trimble R1
435	*Prunus serotina*	Black Cherry	Alive	35	10	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
436	*Picea abies*	Norway Spruce	Alive	44	8	20-25	H	H	H	I	x	0	Remove	1:1	Trimble R1
437	*Pinus strobus*	Eastern White Pine	Alive	44	5	20-25	H	H	H	N	x	0	Remove	1:1	Trimble R1
438	*Prunus serotina*	Black Cherry	Alive	38	8	10-15	M	M	M	N	x	0	Remove	1:1	Trimble R1
439	*Quercus rubra*	Northern Red Oak	Alive	26	6	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
440	*Acer platanoides*	Norway Maple	Alive	24	6	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
441	*Pinus sylvestris*	Scots Pine	Alive	38	8	20-25	M	M	L	I	x	0	Remove	1:1	Trimble R1
442	*Pinus sylvestris*	Scots Pine	Alive	26	4	15-20	L	L	L	I	x	0	Remove	1:1	Trimble R1
443	*Pinus strobus*	Eastern White Pine	Alive	45	8	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
444	*Pinus strobus*	Eastern White Pine	Alive	73.82	10	20-25	M	H	H	N	x	0	Remove	2:1	Trimble R1
445	*Pinus strobus*	Eastern White Pine	Alive	55	10	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
446	*Pinus strobus*	Eastern White Pine	Alive	51	8	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
447	*Fraxinus sp*	Ash Species	Dead	49	0	20-25	L	L	L	<Null>	x	0	Remove	n/a	Trimble R1
448	*Pinus strobus*	Eastern White Pine	Dead	43	0	20-25	TBD	TBD	TBD	N	x	Yes	Remove	n/a	Trimble R1
449	*Quercus rubra*	Northern Red Oak	Alive	59	8	15-20	M	H	H	N	x	0	Remove	2:1	Trimble R1
450	*Acer platanoides*	Norway Maple	Alive	56	10	15-20	M	M	H	I	x	0	Remove	2:1	Trimble R1
451	*Juglans nigra*	Black Walnut	Alive	40	8	15-20	M	M	M	N	x	0	Remove	1:1	Trimble R1
452	*Acer platanoides*	Norway Maple	Alive	56	7	15-20	M	M	M	I	x	0	Remove	2:1	Trimble R1
453	*Acer platanoides*	Norway Maple	Alive	52	15	15-20	H	H	H	I	x	0	Remove	2:1	Trimble R1
454	*Quercus rubra*	Northern Red Oak	Alive	79.25	15	20-25	M	M	H	N	x	0	Remove	2:1	Trimble R1
455	*Acer platanoides*	Norway Maple	Alive	20	8	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
456	*Acer platanoides*	Norway Maple	Alive	17	3	10-15	M	H	H	I	x	0	Remove	1:1	Trimble R1
457	*Acer platanoides*	Norway Maple	Alive	20	5	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
458	*Acer platanoides*	Norway Maple	Alive	18	4	10-15	M	H	H	I	x	0	Remove	1:1	Trimble R1
459	*Acer platanoides*	Norway Maple	Alive	28	8	10-15	M	H	H	I	x	0	Remove	1:1	Trimble R1
460	*Pinus sp*	Pine Species	Dead	36	0	15-20	TBD	TBD	TBD	<Null>	x	Yes	Remove	n/a	Trimble R1
461	*Prunus serotina*	Black Cherry	Alive	21	6	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
462	*Acer platanoides*	Norway Maple	Alive	15	3	10-15	M	H	H	I		0	Remove	n/a	Trimble R1
463	*Fraxinus sp*	Ash Species	Alive	23	3	15-20	M	L	L	<Null>	x	0	Remove	1:1	Trimble R1

Tree Tag #	Scientific Name	Common Name	Tree Status	Total DBH[1]	Crown Reserve [2] (m)	Height [3] (m)	Structural Condition [4]	Biological Health [5]	Preservation Priority [6]	Native Status [7]	Regulated Tree Subject to Permitting	Suitable Bat Maternity Roost Tree	Tree Action [8]	Compensation [9]	Coordinate Source [10]
464	*Acer platanoides*	Norway Maple	Alive	17	5	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
465	*Pinus strobus*	Eastern White Pine	Alive	48	7	20-25	H	H	H	N	x	0	Remove	1:1	Trimble R1
466	*Acer platanoides*	Norway Maple	Alive	16	5	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
467	*Acer platanoides*	Norway Maple	Alive	17	6	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
468	*Robinia pseudoacacia*	Black Locust	Alive	35	5	15-20	M	M	M	I	x	0	Remove	1:1	Trimble R1
469	*Prunus serotina*	Black Cherry	Alive	23	1	10-15	L	L	M	N	x	Yes	Remove	1:1	Trimble R1
470	*Robinia pseudoacacia*	Black Locust	Alive	34	5	15-20	M	H	M	I	x	0	Remove	1:1	Trimble R1
471	*Robinia pseudoacacia*	Black Locust	Alive	52	8	15-20	M	M	M	I	x	0	Remove	2:1	Trimble R1
472	*Fraxinus pennsylvanica*	Green Ash	Dead	16	5	10-15	M	M	M	N	x	0	Remove	n/a	Trimble R1
473	*Fraxinus pennsylvanica*	Green Ash	Alive	15	4	10-15	M	M	M	N		0	Remove	n/a	Trimble R1
474	*Acer platanoides*	Norway Maple	Alive	16	4	10-15	M	H	H	I	x	0	Remove	1:1	Trimble R1
474.1	*Acer platanoides*	Norway Maple	Alive	31.32	8	10-15	M	M	M	I	x	No	Preserve	n/a	Trimble R1
475	*Pinus strobus*	Eastern White Pine	Alive	58	10	20-25	M	H	H	N	x	Yes	Remove	2:1	Trimble R1
476	*Pinus strobus*	Eastern White Pine	Alive	48	10	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
477	*Pinus strobus*	Eastern White Pine	Alive	45	10	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
478	*Acer platanoides*	Norway Maple	Alive	15	6	10-15	H	H	H	I		0	Remove	n/a	Trimble R1
479	*Pinus strobus*	Eastern White Pine	Alive	45	8	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
480	*Pinus sylvestris*	Scots Pine	Dead	23	0	15-20	L	L	L	I	x	Yes	Remove	n/a	Trimble R1
481	*Pinus strobus*	Eastern White Pine	Alive	33	5	15-20	M	H	H	N	x	0	Remove	1:1	Trimble R1
482	*Pinus strobus*	Eastern White Pine	Alive	49	10	20-25	M	H	M	N	x	Yes	Remove	1:1	Trimble R1
483	*Robinia pseudoacacia*	Black Locust	Alive	40	5	20-25	M	M	M	I	x	0	Remove	1:1	Trimble R1
484	*Robinia pseudoacacia*	Black Locust	Alive	34	5	20-25	M	M	M	I	x	0	Remove	1:1	Trimble R1
485	*Robinia pseudoacacia*	Black Locust	Alive	34	5	20-25	M	M	M	I	x	0	Remove	1:1	Trimble R1
486	*Robinia pseudoacacia*	Black Locust	Dead	17	0	15-20	L	L	L	I	x	Yes	Remove	n/a	Trimble R1
487	*Robinia pseudoacacia*	Black Locust	Alive	35	6	15-20	L	M	M	I	x	0	Remove	1:1	Trimble R1
488	*Robinia pseudoacacia*	Black Locust	Alive	23	2	15-20	M	M	M	I	x	0	Remove	1:1	Trimble R1
488.1	*Pinus strobus*	Eastern White Pine	Alive	60	8	10-15	H	H	H	N	x	No	Injure	n/a	Trimble R1
489	*Robinia pseudoacacia*	Black Locust	Alive	35	5	15-20	M	M	M	I	x	0	Remove	1:1	Trimble R1
490	*Pinus strobus*	Eastern White Pine	Alive	40	7	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
491	*Pinus strobus*	Eastern White Pine	Alive	55	12	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
492	*Pinus strobus*	Eastern White Pine	Alive	66	10	20-25	L	H	H	N	x	0	Remove	2:1	Trimble R1
493	*Pinus sylvestris*	Scots Pine	Alive	27	5	15-20	M	M	M	I	x	0	Remove	1:1	Trimble R1
494	*Acer platanoides*	Norway Maple	Alive	22	7	15-20	H	H	H	I	x	0	Remove	1:1	Trimble R1
495	*Acer platanoides*	Norway Maple	Alive	19	6	15-20	H	H	H	I	x	0	Remove	1:1	Trimble R1
496	*Acer platanoides*	Norway Maple	Alive	17	7	15-20	H	H	H	I	x	0	Remove	1:1	Trimble R1
497	*Betula papyrifera*	Paper Birch	Alive	30.89	9	15-20	M	H	H	N	x	0	Remove	1:1	Trimble R1
498	*Pinus strobus*	Eastern White Pine	Alive	60	15	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
499	*Acer saccharum*	Sugar Maple	Alive	53	15	20-25	M	H	H	N	x	0	Remove	2:1	Trimble R1
500	*Pinus sylvestris*	Scots Pine	Alive	35	8	15-20	M	H	M	I	x	0	Remove	1:1	Trimble R1
501	*Picea abies*	Norway Spruce	Alive	53	10	20-25	H	H	H	I	x	0	Remove	2:1	Trimble R1
502	*Pinus strobus*	Eastern White Pine	Alive	61	12	20-25	M	H	H	N	x	0	Remove	2:1	Trimble R1
503	*Picea abies*	Norway Spruce	Alive	43	12	20-25	H	H	H	I	x	0	Remove	1:1	Trimble R1
504	*Betula papyrifera*	Paper Birch	Alive	27	5	15-20	M	H	H	N	x	0	Remove	1:1	Trimble R1
505	*Betula papyrifera*	Paper Birch	Alive	30	8	15-20	M	M	H	N	x	Yes	Remove	1:1	Trimble R1
506	*Picea abies*	Norway Spruce	Alive	35	6	15-20	H	H	H	I	x	0	Remove	1:1	Trimble R1
507	*Betula papyrifera*	Paper Birch	Alive	30	8	15-20	M	H	H	N	x	0	Remove	1:1	Trimble R1
508	*Picea abies*	Norway Spruce	Alive	35	7	20-25	H	H	H	I	x	0	Remove	1:1	Trimble R1
509	*Betula papyrifera*	Paper Birch	Dead	41.82	2	10-15	L	L	L	N	x	0	Remove	n/a	Trimble R1
510	*Picea abies*	Norway Spruce	Alive	33	6	20-25	H	H	H	I	x	0	Remove	1:1	Trimble R1
511	*Picea abies*	Norway Spruce	Alive	53	6	20-25	H	H	H	I	x	0	Remove	2:1	Trimble R1
512	*Picea abies*	Norway Spruce	Alive	45.18	6	20-25	M	H	H	I	x	0	Remove	1:1	Trimble R1
513	*Betula papyrifera*	Paper Birch	Dead	28	5	20-25	M	L	M	N	x	0	Remove	n/a	Trimble R1
514	*Picea abies*	Norway Spruce	Alive	54	12	20-25	H	H	H	I	x	0	Remove	2:1	Trimble R1
515	*Picea abies*	Norway Spruce	Alive	38	3	20-25	M	L	L	I	x	0	Remove	1:1	Trimble R1
516	*Picea abies*	Norway Spruce	Alive	26	6	10-15	M	H	H	I	x	0	Remove	1:1	Trimble R1
517	*Picea abies*	Norway Spruce	Alive	45	5	20-25	M	H	H	I	x	0	Remove	1:1	Trimble R1
518	*Picea abies*	Norway Spruce	Alive	39	7	20-25	H	H	H	I	x	0	Injure	n/a	Trimble R1
519	*Picea abies*	Norway Spruce	Alive	55	9	20-25	H	H	H	I	x	0	Injure	n/a	Trimble R1
520	*Acer saccharinum*	Silver Maple	Alive	127	20	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
521	*Picea abies*	Norway Spruce	Alive	48	7	20-25	H	M	M	I	x	0	Remove	1:1	Trimble R1
522	*Pinus sylvestris*	Scots Pine	Alive	31	5	20-25	M	H	M	I	x	0	Remove	1:1	Trimble R1
523	*Pinus strobus*	Eastern White Pine	Alive	36	6	20-25	H	H	H	N	x	0	Injure	n/a	Trimble R1
524	*Pinus strobus*	Eastern White Pine	Alive	46	6	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
525	*Acer saccharum*	Sugar Maple	Alive	71	15	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
526	*Pinus strobus*	Eastern White Pine	Alive	37	3	20-25	M	M	M	N	x	0	Preserve	n/a	Trimble R1
527	*Quercus rubra*	Northern Red Oak	Alive	50	15	15-20	H	H	H	N	x	0	Remove	2:1	Trimble R1
528	*Acer platanoides*	Norway Maple	Alive	18	4	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
529	*Acer platanoides*	Norway Maple	Alive	16	4	10-15	H	H	H	I	x	0	Remove	1:1	Trimble R1
530	*Carya ovata*	Shagbark Hickory	Alive	17	6	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
531	*Pinus strobus*	Eastern White Pine	Alive	73	7	20-25	M	H	H	N	x	0	Remove	2:1	Trimble R1
532	*Acer saccharum*	Sugar Maple	Alive	16	6	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1
533	*Acer saccharum*	Sugar Maple	Alive	15	6	10-15	M	H	H	N		0	Remove	n/a	Trimble R1
534	*Acer saccharum*	Sugar Maple	Alive	23	6	10-15	H	H	H	N	x	0	Remove	1:1	Trimble R1

Tree Tag #	Scientific Name	Common Name	Tree Status	Total DBH[1]	Crown Reserve [2] (m)	Height [3] (m)	Structural Condition [4]	Biological Health [5]	Preservation Priority [6]	Native Status [7]	Regulated Tree Subject to Permitting	Suitable Bat Maternity Roost Tree	Tree Action [8]	Compensation [9]	Coordinate Source [10]
535	*Carya ovata*	Shagbark Hickory	Alive	31	7	15-20	H	H	H	N	x	0	Remove	1:1	Trimble R1
536	*Picea abies*	Norway Spruce	Alive	25	3	10-15	M	M	M	I	x	0	Remove	1:1	Trimble R1
537	*Acer saccharum*	Sugar Maple	Alive	67	12	20-25	H	H	H	N	x	0	Remove	2:1	Trimble R1
538	*Acer saccharum*	Sugar Maple	Alive	35	10	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
539	*Acer saccharum*	Sugar Maple	Alive	78	15	20-25	M	H	H	N	x	0	Remove	2:1	Trimble R1
540	*Acer saccharum*	Sugar Maple	Alive	48	10	20-25	M	H	H	N	x	0	Remove	1:1	Trimble R1
606	*Picea glauca*	White Spruce	Alive	60	8	15-20	H	H	H	N	x	No	Preserve	n/a	Trimble R1
805	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
806	*Prunus serotina*	Black Cherry	Alive	15	2	5-10	L	L	L	N		No	Remove	n/a	Trimble R1
807	*Malus sp*	Apple Species	Alive	20.62	8	5-10	L	L	L	<Null>		No	Remove	1:1	Trimble R1
808	*Acer platanoides*	Norway Maple	Alive	16	3	5-10	M	M	M	I	x	No	Remove	1:1	Trimble R1
809	*Acer platanoides*	Norway Maple	Alive	12	4	5-10	M	H	M	I		No	Remove	n/a	Trimble R1
810	*Prunus serotina*	Black Cherry	Alive	12	4	5-10	L	L	L	N		No	Remove	n/a	Trimble R1
811	*Fraxinus americana*	White Ash	Alive	14	3	5-10	L	M	L	N		No	Remove	n/a	Trimble R1
812	*Prunus serotina*	Black Cherry	Alive	15	7	5-10	M	M	M	N		No	Remove	n/a	Trimble R1
813	*Prunus serotina*	Black Cherry	Alive	12	3	5-10	L	L	L	N		No	Remove	n/a	Trimble R1
814	*Acer platanoides*	Norway Maple	Alive	12	8	10-15	M	M	M	I		No	Remove	n/a	Trimble R1
815	*Acer platanoides*	Norway Maple	Alive	12	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
816	*Acer platanoides*	Norway Maple	Alive	12	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
817	*Acer platanoides*	Norway Maple	Alive	13	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
818	*Acer platanoides*	Norway Maple	Alive	13	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
819	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
820	*Acer platanoides*	Norway Maple	Alive	13	5	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
821	*Acer platanoides*	Norway Maple	Alive	14	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
822	*Acer platanoides*	Norway Maple	Alive	11	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
823	*Acer platanoides*	Norway Maple	Alive	11	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
824	*Acer platanoides*	Norway Maple	Alive	15	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
825	*Acer platanoides*	Norway Maple	Alive	10	3	5-10	L	M	L	I		No	Remove	n/a	Trimble R1
826	*Acer platanoides*	Norway Maple	Alive	12	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
827	*Acer platanoides*	Norway Maple	Alive	11	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
828	*Acer platanoides*	Norway Maple	Alive	13	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
829	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
830	*Acer platanoides*	Norway Maple	Alive	10	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
831	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
832	*Acer platanoides*	Norway Maple	Alive	12	3	5-10	L	M	M	I		No	Remove	n/a	Trimble R1
833	*Acer platanoides*	Norway Maple	Alive	12	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
834	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	L	M	L	I		No	Remove	n/a	Trimble R1
835	*Acer platanoides*	Norway Maple	Alive	15	5	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
836	*Acer platanoides*	Norway Maple	Alive	10	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
837	*Acer platanoides*	Norway Maple	Alive	10	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
838	*Acer platanoides*	Norway Maple	Alive	11	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
839	*Acer platanoides*	Norway Maple	Alive	11	11	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
840	*Acer platanoides*	Norway Maple	Alive	15	6	10-15	M	M	M	I		No	Remove	n/a	Trimble R1
842	*Robinia pseudoacacia*	Black Locust	Alive	80.61	12	15-20	H	H	H	I	x	No	Injure	n/a	Trimble R1
843	*Thuja occidentalis*	Eastern White Cedar	Alive	14	1	3-5	H	H	H	N		No	Injure	n/a	Trimble R1
844	*Thuja occidentalis*	Eastern White Cedar	Alive	13	2	3-5	M	H	H	N		No	Preserve	n/a	Trimble R1
845	*Thuja occidentalis*	Eastern White Cedar	Alive	14	3	3-5	M	H	H	N		No	Injure	n/a	Trimble R1
846	*Acer platanoides*	Norway Maple	Alive	13	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
847	*Acer platanoides*	Norway Maple	Alive	10	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
848	*Acer platanoides*	Norway Maple	Alive	11	3	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
849	*Acer platanoides*	Norway Maple	Alive	11	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
850	*Acer platanoides*	Norway Maple	Alive	16.34	2	3-5	L	L	L	I		No	Remove	1:1	Trimble R1
851	*Acer platanoides*	Norway Maple	Alive	12	3	5-10	H	H	M	I		No	Remove	n/a	Trimble R1
852	*Prunus serotina*	Black Cherry	Alive	10	4	5-10	M	M	M	N		No	Remove	n/a	Trimble R1
853	*Prunus serotina*	Black Cherry	Alive	11	3	5-10	M	M	M	N		No	Remove	n/a	Trimble R1
854	*Acer platanoides*	Norway Maple	Dead	12	4	3-5	L	M	M	I		No	Remove	n/a	Trimble R1
855	*Morus alba*	White Mulberry	Alive	24.08	5	3-5	L	L	L	I	x	No	Remove	1:1	Trimble R1
856	*Populus deltoides*	Eastern Cottonwood	Alive	23	4	5-10	L	M	M	N	x	No	Remove	1:1	Trimble R1
857	*Acer platanoides*	Norway Maple	Alive	11	2	10-15	M	M	M	I		No	Remove	n/a	Trimble R1
858	*Acer platanoides*	Norway Maple	Alive	11	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
859	*Acer platanoides*	Norway Maple	Alive	11	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
860	*Acer platanoides*	Norway Maple	Alive	15	6	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
861	*Acer platanoides*	Norway Maple	Alive	15	5	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
862	*Acer platanoides*	Norway Maple	Alive	15	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
863	*Acer platanoides*	Norway Maple	Alive	15	5	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
864	*Acer platanoides*	Norway Maple	Alive	20.3	6	5-10	L	M	L	I		No	Remove	1:1	Trimble R1
865	*Acer platanoides*	Norway Maple	Alive	12	2	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
866	*Acer platanoides*	Norway Maple	Alive	13	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
867	*Acer platanoides*	Norway Maple	Alive	11	4	5-10	M	M	M	I		No	Remove	n/a	Trimble R1
868	*Juniperus virginiana*	Eastern Red Cedar	Alive	12	4	3-5	M	M	M	N		No	Preserve	n/a	Trimble R1
869	*Acer platanoides*	Norway Maple	Alive	48	10	15-20	M	H	H	I	x	No	Remove	1:1	Trimble R1

ree Assessment Criteria

1. *DBH (cm) : Diameter at breast height, 1.4 m above ground, measured in centimetres.For multistemmed specimen, the total DBH was calculated by taking the square root of the sum of the square value of each stem.*

Tree Tag #	Scientific Name	Common Name	Tree Status	Total DBH_1	Crown Reserve [2] (m)	Height [3] (m)	Structural Condition [4]	Biological Health [5]	Preservation Priority [6]	Native Status [7]	Regulated Tree Subject to Permitting	Suitable Bat Maternity Roost Tree	Tree Action [8]	Compensation [9]	Coordinate Source [10]

2. *Crown Reserve (m) : Crown diameter (tree's canopy) measured at intervals of 1, 3, 5, 7.5, 10, 15 metres*

3. *Height (m) : Height of tree from ground to top of crown.*

4. *Structural Condition : Related to defects in a tree's structure, (i.e., lean, codominant trunks).*
High *- No structural defects, well-developed crown.*
Medium *- Presence of minor structural defects.*
Low *- Presence of major structural defects including drastic leans and imminent branch and/or trunk failure.*

5. *Biological Health : Related to presence and extent of disease/disease symptoms and the vigour of the tree.*
High *- No diseases/disease symptoms present, and moderate to high vigour.*
Medium *- Presence of minor diseases/disease symptoms, and/or moderate vigour.*
Low *- Presence of major diseases/disease symptoms, (i.e., extensive crown dieback), and/or severely poor vigour.*

6. *Preservation Priority : A rating of each tree's projected survival related to existing conditions.*
High *- High to moderate biological health, and well developed crown. Well suited as a shade tree or screen planting. Will survive existing conditions indefinitely.*
Medium *- One or more moderate to severe defects in biological health and/or structural condition. Marginally suited as a shade tree or screen planting. Can survive at least 3 - 5 years under existing conditions.*
This category also includes stock planted within past 2 years that is not yet established.
Low *- Low biological health and/or severely damaged/defective structural condition, and/or unsuitable for urban uses. If biologically defective, survival for more than 1-3 years under existing conditions is unlikely.*

7. *Native Status :*
Native *– Native to Ontario*
Introduced *– Not native to Ontario*
Genus *- Unable to identify species level due to lack of key characteristics at the time of survey.*
Source: NHIC (Natural Heritage Information Centre). 2009. Ontario Vascular Plant Species List. Biodiversity Explorer Online Database. Ontario Ministry of Natural Resources.

8. *Tree Action*
Preserve *- Trees that have a dripline that is substantially outside the limits of disturbance (less than 30% of the crown reserve will be impacted) and having moderate to high Preservation Priority. Protection of the entire root zone of the tree is desirable.*
Injure *- Trees located near construction activities that may be damaged.*
Remove *- Any tree for which at least 30% of the dripline is within the limits of disturbance, has low biological health, and/or severe structural defects, and is not likely to survive more than 1-3 years, and/or will not survive proposed development.*
N/A *- Not applicable. Tree not present. Removed since D&A's 2014 arborist assessment.*

9. *Compensation*
1:1 *- One replacement tree is required if a healthy tree was removed that was 0 to 49 cm (City of Mississauga, 2021)*
2:1 *- Two replacement trees are required if a healthy tree removed is 50 cm or greater (City of Mississauga, 2021)*
n/a *- Compensation not required for trees proposed for preservation, or proposed for injury of removal that are 15 cm DBH or smaller (City of Mississauga, 2012)*

10. *Coordinate Source*
Trimble R1 GPS Unit *- Global Positioning System (GPS) device used to locate each tree.*

Appendix G. Species at Risk (SAR) Screening

Appendix G - Species at Risk Screening for Mississauga Heights EIS

SPECIES	SAR Designation (if different = federal / provincial)	Status in Ontario (updated to December 2018)	Key Habitats Used By Species	Status at Mississauga Heights EIS site and adjacent lands (within 120 metres)
AMPHIBIANS				
Western Chorus Frog (GL/St. Lawrence - Canadian Shield) (*Pseudacris triseriata*)	Threatened (federal only)	Widespread in southern Ontario	Inhabits forest openings around woodland ponds, also found in or near damp meadows, marshes, bottomland swamps and temporary ponds in open country, or even urban areas. Breeds in almost any fishless pond with at least 10 cm of water, including quiet, shallow, usually temporary waterbodies with vegetation that is submerged or protrudes from the water, especially in rain-flooded meadows, ditches, and temporary ponds on floodplains. Overwinters underground or under surface cover e.g. fallen logs.	**No suitable habitat on site or in adjacent lands.**
BIRDS				
Acadian Flycatcher (*Empidonax virescens*)	Endangered	Carolinian Region (as far north as Toronto)	Generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines.	**No suitable habitat on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Bald Eagle (*Haliaeetus leucocephalus*)	Special Concern (provincial only)	Widespread in southern Ontario	Prefers deciduous and mixed-deciduous forest; and habitat close to water bodies such as lakes and rivers; they roost in super canopy trees such as pine.	**Likely present foraging and overwintering along adjacent Credit River. However, no breeding records on file with NHIC or CVC. Not recorded during 2019 breeding bird surveys.**
Bank Swallow (*Riparia riparia*)	Threatened	Widespread in southern Ontario	Low areas along rivers, streams, coasts or reservoirs; nest in natural bluffs and eroding streamside banks, also sand and gravel quarries and road cuts	**CVC records from CRR8; breeding status along Credit River unknown. Not detected during 2019 breeding bird surveys.**
Barn Swallow (*Hirundo rustica*)	Threatened	Widespread in southern Ontario	Prefers farmland, lake/river shorelines, wooded clearings, urban populated areas, rocky cliffs, and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves, etc.	**CVC records from CRR8; Known to breed at Port Credit harbour. Breeding status along Credit River in the vicinity of the study area is unknown. No habitat present on subject lands. Not detected during 2019 breeding bird surveys.**
Black Tern (*Childonias niger*)	Special Concern (provincial only)	Scattered in southern Ontario; breed mainly along edges of the Great Lakes	Generally prefers freshwater marshes and wetlands; nests either on floating material in a marsh or on the ground very close to water.	**No suitable habitat on site or in adjacent lands.**
Bobolink (*Dolichonyx oryzivorus*)	Threatened	Widespread in southern Ontario	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands.	**No suitable habitat on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Cerulean Warbler (*Dendroica cerulea*)	Endangered / Threatened	Widespread but local in southern Ontario	Generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	**No suitable habitat on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Chimney Swift (*Chaetura pelagica*)	Threatened	Widespread in southern Ontario	Historically found in deciduous and coniferous, usually wet forest types, all with a well developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys.	**CVC records for CRR8 from 2014. However, the records likely represent foraging birds rather than breeding birds. One bird was seen foraging high over the site on June 12 only (not breeding). No suitable nesting habitat is found on site.**
Common Nighthawk (*Chordeiles minor*)	Threatened / Special Concern	Widespread in southern Ontario	Generally prefers open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nests on flat roof-tops).	**eBird records from 1986 likely represent migrants rather than breeders. No suitable habitat available on site or in adjacent lands.**
Eastern Meadowlark (*Sturnella Magna*)	Threatened	Widespread in southern Ontario	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	**No suitable habitat on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Eastern Wood-Pewee (*Contopus virens*)	Special Concern	Widespread in southern Ontario	Found in deciduous, mixed woods, or pine plantations; also found in mature woodlands, urban shade trees, roadsides, and orchards; usually found in clearings and forest edges.	**NHIC record. CVC Records from 2005 in CRR8. Likely present in valleylands but not recorded during 2019 breeding bird surveys.**

Golden-winged Warbler (*Vermivora chrysoptera*)	Threatened / Special Concern	Local; primarily central-eastern Ontario	Generally prefers areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	**eBird records from 1980 likely represent migrants rather than breeders. No suitable habitat available on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Grasshopper Sparrow (*Ammodramus savannarum*)	Special Concern	Widespread in southern Ontario	Open grasslands and prairie with patches of bare ground.	**No suitable habitat on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Henslow's Sparrow *(Ammodramus henslowii)*	Endangered	Extremely rare; may be extirpated	Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material.	**NHIC record from 1932. No longer extant in this entire region; may be extirpated from entire province.**
Least Bittern *(Ixobrychus exilis)*	Threatened	Widespread in southern Ontario	Generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants.	**No suitable habitat on site or in adjacent lands.**
Louisiana Waterthrush *(Seiurus motacilla)*	Special Concern	Widespread but local in southern Ontario	Generally inhabits mature forests along steeply sloped ravines adjacent to running water. Prefers clear, cold streams and densely wooded swamps.	**No suitable habitat on site or in adjacent lands.**
Peregrine Falcon (*Falco peregrinus*)	Special Concern	Nests in large cities in southern Ontario; primarily found in northwestern Ontario	Mountain ranges, coastlines, river valleys, and increasingly in cities.	**No suitable habitat on site or in adjacent lands.**
Red-headed Woodpecker *(Melanerpes erythrocephalus)*	Threatened / Special Concern	Widespread but rare in southern Ontario	Generally prefers open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks.	**No suitable habitat on site or in adjacent lands. Not recorded during 2019 breeding bird surveys.**
Short-eared Owl *(Asio flammeus)*	Special Concern	Very local in southern Ontario	Generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields.	**No suitable habitat on site or in adjacent lands.**
Wood Thrush (*Hylocichla mustelina*)	Threatened / Special Concern	Widespread in southern Ontario	Breeds in mature deciduous and mixed forests, most commonly those with American beech, sweet gum, red maple, black gum, eastern hemlock, flowering dogwood, American hornbeam, oaks, or pines; nests less successfully in fragmented forests and suburban parks with enough large trees for a territory; ideal habitat includes trees over 50 feet tall, a moderate understory of saplings/shrubs, an open floor with moist soil and decaying leaf litter, and water nearby.	**NHIC record. CVC Records from 2005 in CRR8. Not recorded during 2019 breeding bird surveys.**
Yellow-breasted Chat *(Icteria virens)*	Endangered	Breeds mainly Point Pelee and Pelee Island	Generally prefers dense thickets around wood edges, riparian areas, and in overgrown clearings.	**Limited suitable habitat on site and in adjacent lands. Not recorded during 2019 breeding bird surveys.**
INSECTS				
American Bumble Bee (*Bombus pensylvanicus*)	Special Concern (federal only)	Widespread in southern Ontario	Open farmland and fields.	**No suitable habitat on site or in adjacent lands.**
Monarch *(Danaus plexippus)*	Endangered / Special Concern	Widespread in southern Ontario	Exist primarily wherever milkweed and wildflowers exist, such as abandoned farmland, along roadsides, and other open spaces.	**Likely seen during fall migration in open areas along river valley; may breed where milkweed exists. No suitable habitat for foraging or breeding is found on site. None recorded during 2019 field investigations.**
Rapids Clubtail (*Gomphus quadricolor*)	Endangered	In Ontario, found only along Thames, Humber, Credit, and Mississippi Rivers.	Found along fast-moving streams, with males resting on rocks and vegetation along the edge of the stream; like to hunt along riffle sections of stream	**No suitable habitat on site or in adjacent lands.**
Yellow-banded Bumble Bee (*Bombus terricola*)	Special Concern	Widespread in southern Ontario	A forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. Has a large range throughout much of Canada and it can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. Nest sites are often underground in abandoned rodent burrows or decomposing logs.	**No suitable habitat on site or in adjacent lands.**
MAMMALS				

Eastern Small-footed Myotis (*Myotis leibii*)	Endangered (provincial only)	Widespread in southern Ontario	Overwintering habitat: caves and mines that remain above 0 degrees Celsuis; Maternal roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses, and under tree bark.	**Suitable woodlands exist on site and in adjacent lands that may provide maternity roost habitat as well as provide other roosting sites (e.g. for individual bats during migration). The bat habitat assessment indicated that there are suitable roosting trees for this species. Snag density for trees observed during the leaf-off survey was calculated to be >10 snags/ha indicating potentially high quality maternity roost habitat for these species.**
Little Brown Myotis (*Myotis lucifugus*)	Endangered	Widespread in southern Ontario	Overwintering habitat: caves and mines that remain above 0 C; Maternal roosts: Often associated with buildings (attics, barns, etc.). Occasionally found in trees (25-44 cm dbh).	**See Eastern Small-footed Myotis.**
Northern Myotis (*Myotis septentrionalis)*	Endangered	Widespread in southern Ontario	Overwintering habitat: caves and mines that remain above 0 C; Maternal roosts: often asssociated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns, etc.)	**See Eastern Small-footed Myotis.**
Tri-colored Bat (*Perimyotis subflavus*)	Endangered	Very rare; widespread but scattered in southern Ontario	Overwintering habitat: caves and mines that remain above 0 degrees Celsius; Maternal roosts: can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures.	**Suitable woodlands exist on site and in adjacent lands that may provide maternity roost habitat as well as provide other roosting sites (e.g. for individual bats during migration). The bat habitat assessment indicated that there are suitable roosting trees for this species. Snag density for trees observed during the leaf-on survey was calculated to be >10 snags/ha indicating potentially high quality maternity roost habitat for Tri-colored Bat.**
Woodland Vole (*Microtus pinetorum*)	Special Concern	Carolinian Region only	Occurs in deciduous forests, dry fields, and apple orchards, preferring wooded areas with high vertical vegetative stratification, also evergreen shrubs, ground cover, and old fallen logs. Voles are most abundant in deciduous forests with moist, friable soils suitable for burrowing.	**No suitable habitat on site or in adjacent lands.**
REPTILES				
Blanding's Turtle *(Emydonidea blandingii)*	Threatened	Widespread in south, central, and eastern Ontario	Generally occurs in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. Prefers shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.	**No records in CVC or NHIC databases and likely extirpated from the general region. If population still persists, it would be confined to the Credit River to the south (and outside of adjacent lands) and these animals and their habitats would not be adversely impacted by proposed development.**
Eastern Ribbonsnake *(Thamnophis sauritus)*	Special Concern	Widespread in southern and eastern Ontario	Generally occurs along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	**No records in CVC or NHIC databases and but the species may persist in the general area. If the species is locally extant, they would be confined to the Credit River to the south (and outside of adjacent lands). No individuals were detected incidentally on the subject lands during surveys.**
Northern Map Turtle (*Graptemys geographica*)	Special Concern	Widespread along shores of Georgian Bay and lakes Erie, Ontario, and St. Clair	Found in large rivers and lakes with slow-moving currents and soft bottoms	**No records in CVC or NHIC databases and but the species may persist in the general area. If the species is locally extant, they would be confined to the Credit River to the south (and outside of adjacent lands); as such, they would not be adversely impacted by the proposed development. No individuals were detected**
Snapping Turtle *(Chelydra serpentina)*	Special Concern	Very widespread and common in southern Ontario	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	**NHIC record from 1996. Records from adjacent CRR8; known to nest in sand traps of Mississauga Golf and County Club along Credit River (to south of study area). Steep valley slope limit the suitability of nesting habitat present on the subject lands. No individuals were observed incidentally during surveys.**
VASCULAR PLANTS				

American Columbo (*Frasera caroliniensis*)	Endangered	Only found in the Carolinian forest region; 22 populations recorded. Based on field surveys in 2004/2005, 13 populations are currently believed to exist.	Most commonly associated with open deciduous forested slopes, thickets and clearings; grows in a variety of relatively stable habitats as well as on a wide variety of soils.	**No records in CVC and NHIC databases. Not recorded during 2019 botanical and ELC surveys.**
American Ginseng (*Panax quinquefolius*)	Endangered	Southern Ontario	Grows in rich, moist, undisturbed and relatively mature deciduous woods (dominated by Sugar Maple, White Ash, and American Basswood) in areas of neutral soil (such as over limestone or marble bedrock).	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**
Bird's-foot Violet (*Viola pedata*)	Endangered	In 2001, the population was estimated at < 7,000 plants at five locations.	Found only in black oak savannah.	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**
Butternut (*Juglans cinerea*)	Endangered	Found throughout the southwest, north to the Bruce Peninsula, and south of the Canadian Shield.	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows.	**No records in CVC and NHIC databases. Suitable habitat found on site and in adjaent lands, however no Butternut were detected during the site investigations.**
Colicroot (*Aletris farinosa*)	Endangered	Southwest Ontario	Grows in open, sunny, and moist habitats with sandy or mucky soil, such as prairies and old abandoned fields. Also found along roadsides and forest edges. Does not tolerate shade or competition from other plants and appears to do well in areas that are kept open by fire, drought, grazing and other disturbances.	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**
Eastern Flowering Dogwood (*Cornus florida*)	Endangered	Only in the Carolinian Zone (southwest of Toronto to Sarnia down to the shores of Lake Erie).	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; also grows around edges and hedgerows.	**No records in CVC and NHIC databases. Not recorded during 2019 botanical and ELC surveys.**
False Hop Sedge (*Carex lupuliformis*)	Endangered	A few scattered locations in southern Ontario.	Grows in riverine swamps and marshes, and around temporary forest ponds. It prefers open areas and areas under forest canopy openings, with lots of sunlight.	**No records in CVC and NHIC databases. Not recorded during 2019 botanical and ELC surveys.**
Goldenseal (*Hydrastis canadensis*)	Threatened	Carolinian Zone	Grows in rich, moist semi-open to closed areas of deciduous forests. It is found at periodically flooded upland sites and in moist lowlands near floodplains. Associated with Red Oak, Sugar Maple, Hawthorns, Shagbark Hickory, Ironwood and Basswood. The species typically grows in disturbed areas where trees have fallen, or next to recreational paths or woodland edges.	**No records in CVC and NHIC databases. Not recorded during 2019 botanical and ELC surveys.**
Green Dragon (*Arisaema dracontium*)	Special Concern	Believed to still occur at about 30 to 35 sites in southwestern Ontario.	Generally grows in damp deciduous forests, particularly maple forest and forest dominated by Red Ash and White Elm trees, and along streams.	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**
Heart-leaved Plantain (*Plantago cordata*)	Endangered	Grows in just two locations in southwestern Ontario.	Found in relatively undisturbed wet woods, often along the rocky or gravelly limestone beds of shallow, slow-moving clear streams.	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**
Kentucky Coffee-tree (*Gymnocladus dioicus*)	Threatened	Found in southwest Ontario where it was documented at 20 locations in 2000.	Grows best on moist, rich soil. Consequently, it is often found in floodplains, though it will tolerate shallow rocky or sandy soils. Shade-intolerant so grows along the edges of woodlots or relies on canopy openings in forests and woodlots.	**No records in CVC and NHIC databases. Not recorded during 2019 botanical and ELC surveys.**
Red Mulberry (*Morus rubra*)	Endangered	Found in the Carolinian Zone, especially the shores of Lake Erie and the slopes of the Niagara Escarpment.	Generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; can grow in open areas such as hydro corridors.	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**

Swamp Rose-mallow (*Hibiscus moscheutos*)	Special Concern	Found at approximately 60 to 70 sites and is believed to currently occur at about 50 sites, most in coastal marshes of lakes Erie & St. Clair. In last 15 years has colonized sites on the shores of Lake Ontario.	Most commonly found in deep-water cattail marshes and in meadow marshes. Reaches its greatest numbers in dyked wetlands, where competition from other plants is controlled and the open habitat is maintained by periodic flooding. Also found in open wet woods, thickets, spoil banks, and drainage ditches.	**No records in CVC and NHIC databases. No suitable habitat found on site or in adjacent lands. Not recorded during 2019 botanical and ELC surveys.**

Appendix H. Significant Wildlife Habitat (SWH) Screening

Screening for Known/Candidate SWH at Mississauga Heights EIS site and adjacent lands (within 120 metres) – using Ecoregion 7E Criteria Schedule (Final version: OMNRF, January 2015)

Significant Wildlife Habitat (SWH) Type	Qualifying ELC communities/species and/or other recommended criteria for SWH identification	SWH on site or within 120 m?	Assessment Rationale (Habitat Presence or Absence)	Additional field studies required?
Seasonal Concentration Areas of Animals				
Waterfowl Stopover and Staging Areas (Terrestrial)	CUM1; CUT1; plus evidence of spring flooding (mid-Mar – May); does not include agricultural fields unless sheet water present. Eight indicator species; any mixed species groups of 100+ birds.	No	No suitable habitat on site or in adjacent lands.	No
Waterfowl Stopover and Staging Areas (Aquatic)	MAS1–3; SAS1; SAM1; SAF1; SWD1–7. 26 indicator species; 100+ of listed species for 7 days; areas with annual staging of Canvasback, Redhead, and Ruddy Duck.	No	No suitable habitat on site or in adjacent lands.	No
Shorebird Migratory Stopover Area	BB01–2; BBS1–2; BBT1–2; SDO1; SDS2; SDT1; MAM1–5. Shorelines of lakes, rivers & wetlands. SWM ponds not included. 22 indicator species; 3+ species & 1000+ shorebird use days in spring or fall, or 100+ Whimbrel for 3+ years. Habitat extremely rare with long history of use.	No	Credit River adjacent to site. Shorebirds likely use the shoreline of this river but not in significant numbers. Past history of use by shorebirds not noted by MNRF, CVC, etc.	No
Raptor Wintering Area	One of FOD, FOM, FOC & one of CUM, CUT, CUS, CUW (20+ ha); least disturbed sites: 15+ ha with adjacent woodlands; Bald Eagle: FOD, FOM, FOC, SWD or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water. 7 indicator species. Confirmed SWH: 1+ Short-eared Owl or Bald Eagle; 10+ of 2+ indicator species for at least 20 days. Note: site must be used regularly (3 in 5 years).	No	Credit River adjacent to site but woodlands and open habitats in area do not meet size thresholds; overall area fairly disturbed in nature.	No
Bat Hibernacula	Big Brown Bat/Tri-colored Bat only; CCR1; CCR2; CCA1; CCA2; does not include buildings.	No	No suitable habitat on site or in adjacent lands.	No
Bat Maternity Colonies	Big Brown Bat/Silver-Haired Bat only; all FOD, FOM, SWD, SWM; does not include buildings. 10+ large diameter (25+ cm dbh) snag trees per hectare. 10+ BBBA or 5+ SHBA	Candidate	Suitable snag trees ≥25cm DBH are present on the subject lands. Snag density for trees of this size was calculated as being 18.8 snags/ha, potentially indicating high quality maternity roost habitat (MNRF, 2015).	Potentially

Significant Wildlife Habitat (SWH) Type	Qualifying ELC communities/species and/or other recommended criteria for SWH identification	SWH on site or within 120 m?	Assessment Rationale (Habitat Presence or Absence)	Additional field studies required?
Bat Migratory Stopover Area	No specific ELC types. Eastern Red, Hoary, and Silver-haired Bats only. For 7E-2 only. Long Point is only area with this habitat identified to date; check with MNRF.	No	Site not in 7E-2.	No
Turtle Wintering Areas	Snapping/Midland Painted Turtles: SW, MA, OA, SA; FEO and BOO; Northern Map Turtle: open water areas (e.g. deeper rivers, streams) and lakes with current can be used. Must be permanent water. Does not include man-made ponds.	Candidate	Wintering habitat may exist along Credit River, in adjacent lands. No suitable wintering habitat found on site. Wintering habitat along Credit River will not be adversely impacted by proposed development.	No
Reptile Hibernaculum	Snakes: any ecosite except very wet ones; talus, rock barren, crevice, cave, and alvar site may be directly related. 8 indicator species. 5+ individuals or 2+ species, or 1+ Eastern Ribbonsnake.	No	No suitable habitat on site or in adjacent lands.	No
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	CUM1, CUS1, BLS1, CLO1, CLT1; CUT1; BLO1; BLT1; CLS1. Cliff and Northern Rough-winged Swallows. Does not include bridges, berms, soil piles, aggregate pits, etc. 8+ pairs (combined).	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SWM2; SWM3; SWM5; SWM6; SWD1; SWD2; SWD3; SWD4; SWD5; SWD6; SWD7; FET1. Great Blue, Green, and Black-crowned Night-Herons, Great Egret. 2+ active nests of listed species.	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Colonially - Nesting Bird Breeding Habitat (Ground)	MAM1–6; MAS1–3; CUM; CUS; CUT. 7 indicator species (4 gulls, 2 terns, Brewer's Blackbird). Nests: 25+ Herring and Ring-billed gulls; 1+ Great Black-backed and Little gulls; 5+ Common Tern; 2+ Caspian Tern; 5+ Brewer's Blackbird.	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Migratory Butterfly Stopover Areas	Field: CUM, CUS, CUT; Forest: FOC, FOD, FOM, CUT; Candidate sites 10+ ha, within 5 km of Lake Ontario/Erie. 3 indicator species. 5000+ "Monarch Use Days" or 3000 with Painted Lady/Red Admiral.	No	Site within 5 km of Lake Ontario; however, extent of field and forest does not meet size thresholds. Migratory butterflies are likely present, especially in fall, but numbers would not meet significance thresholds.	No
Landbird Migratory Stopover Areas	FOC, FOM, FOD, SWC, SWM, SWD; 5+ ha, within 5 km of Lake Ontario. If woodlots are rare in an area of shoreline, then woodlots 2–5 ha can be considered SWH.	Candidate	Site within 5 km of Lake Ontario. Riparian woodlands along Credit River would be suitable for use by landbird migrants. Unknown if significance thresholds would be met in spring	No

Significant Wildlife Habitat (SWH) Type	Qualifying ELC communities/species and/or other recommended criteria for SWH identification	SWH on site or within 120 m?	Assessment Rationale (Habitat Presence or Absence)	Additional field studies required?
			and fall. These habitats would not be adversely impacted by the proposed development.	
Deer Winter Congregation Areas	FOC; FOM; FOD; SWC; SWM; SWD; typically 100+ ha or 50+ if woodlots rare; conifer plantations less than 50 ha may be used. Identified by MNRF.	No	No suitable habitat on site or in adjacent lands. None identified in area by MNRF.	No
Rare Vegetation Communities				
Cliffs and Talus Slopes	TAO; TAS; TAT; CLO; CLS; CLT. Vertical cliff 3+ metres. Most occur along the Niagara Escarpment.	No	No indicator ELC categories on site or in adjacent lands.	No
Sand Barren	SBO1; SBS1; SBT1. Tree cover ≤ 60%; 0.5+ ha.	No	No indicator ELC categories on site or in adjacent lands.	No
Alvar	ALO1; ALS1; ALT1; FOC1; FOC2; CUM2; CUS2; CUT2-1; CUW2; 0.5+ ha. Site support 4 of 5 indicator species, and not dominated (< 50%) by exotic or introduced species.	No	No indicator ELC categories on site or in adjacent lands. Only known sites in 7E are in western islands of Lake Erie.	No
Old Growth Forest	FOD; FOC; FOM; SWC; SWD; SWM; 0.5+ ha. Rare in 7E.	No	None identified on site or in adjacent lands.	No
Savannah	TPS1; TPS2; TPW1; TPW2; CUS2. Tree cover 25–60%. No min. size; does not include remnant sites. 1+ indicator sp.	No	No indicator ELC categories on site or in adjacent lands. Extremely rare in Ontario.	No
Tallgrass Prairie	TPO1 or TPO2. Tree cover < 25%. No min. size; does not include remnant sites. 1+ indicator sp.	No	No indicator ELC categories on site or in adjacent lands. Extremely rare in Ontario.	No
Other Rare Vegetation Communities	S1, S2, or S3 vegetation communities. May include beaches, fens, forest, marsh, barrens, dunes and swamps.	No	None identified on site or in adjacent lands.	No
Specialized Habitat for Wildlife				
Waterfowl Nesting Area	MAS1–3; SAS1; SAM1; SAF1; MAM1–6; SWT1–2; SWD1–4. Nine indicator species. Wetland size and numbers/diversity thresholds.	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	FOD; FOM; FOC; SWD; SWM; SWC; adjacent to riparian areas (rivers, lakes, ponds and wetlands). 1+ nests; includes 300 m radius for OSPR, 400–800 m for BAEA.	No	Suitable nesting habitat occurs along the adjacent Credit River. No Bald Eagles or Ospreys were observed during 2019 breeding bird surveys.	No
Woodland Raptor Nesting Habitat	All forested ELC ecosites; also SWC, SWM, SWD, CUP3; 30+ ha with 4+ ha IF (200m buffer). Six indicator species. 1+ nests; specific radius around nest for each species.	No	Suitable forest occurs in adjacent lands but do not meet interior forest size thresholds. No indicator species were observed during 2019 breeding bird surveys.	No

Significant Wildlife Habitat (SWH) Type	Qualifying ELC communities/species and/or other recommended criteria for SWH identification	SWH on site or within 120 m?	Assessment Rationale (Habitat Presence or Absence)	Additional field studies required?
Turtle Nesting Areas	MAS1; MAS2; MAS3; SAS1; SAM1; SAF1; BOO1; FEO1. Midland Painted, Snapping, and N. Map Turtles only. 5+ Painted, 1+ Snapping/N. Map.	Candidate	Suitable nesting areas found along Credit River, including in the adjacent golf course. No suitable habitat is found within the proposed development site.	No
Seeps and Springs	Any forested ecosite (with < 25% meadow/field/pasture). Often found within headwater areas. Confirmed site: 2+ seeps/springs.	No	None were detected during field investigations. No wildlife indicators were observed during field investigations.	No
Amphibian Breeding Habitat (Woodland)	FOC; FOM; FOD; SWC; SWM; SWD. 500+ m^2 wetland, pond or woodland (incl. vernal) pool within or adjacent (within 120 m) to woodland (any size). 7 indicator sp. Combination of observational study and call count surveys required.	No	No suitable habitat on site or in adjacent lands.	No
Amphibian Breeding Habitat (Wetlands)	SW, MA, FE, BO, OA, SA; typically 120+ m from woodlands 500+ m^2. 12 indicator species. Combination of observational study and call count surveys required.	No	No suitable habitat on site or in adjacent lands.	No
Woodland Area-Sensitive Bird Breeding Habitat	All FOC, FOM, FOD, SWC, SWM, SWD ecosites; Habitats where interior forest birds are breeding; typically mature (60+ years), or 30+ ha; Interior habitat 200+ m from forest edge. Note: gaps < 20 m in width not typically considered breaks in the forest. 14 indicator sp.	No	Suitable forest occurs in adjacent lands but do not meet overall or interior forest size thresholds. No indicator species were observed during 2019 breeding bird surveys.	No
Habitats for Species of Conservation Concern (not including END or THR species)				
Marsh Breeding Bird Habitat	MAM1–6; SAS1; SAM1; SAF1; FEO1; BOO1; Green Heron: all SW, MA, CUM1 sites. 13 indicator sp.	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Open Country Bird Breeding Habitat	CUM1; CUM2; 30+ ha; not Class 1 or 2 agricultural lands and not actively used for farming in last 5 years. 6 indicator sp.	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Shrub/Early Successional Bird Breeding Habitat	CUT1; CUT2; CUS1; CUS2; CUW1; CUW2; 10+ ha; not Class 1 or 2 agricultural lands and not actively farmed in last 5 years. 2 "Indicator: sp., 4 "Common" sp., and 2 SC sp. listed.	No	No suitable habitat on site or in adjacent lands. No indicator species observed during 2019 breeding bird surveys.	No
Terrestrial Crayfish	MAM1–6; MAS1–3; SWT; SWD; SWM; CUM1 with inclusions of above MAM ecosites. 2 indicator species: Chimney (Digger) Crayfish (*Fallicambrarus fodiens*) and Devil (Meadow) Crayfish (*Cambarus diogenes*). No minimum size. Habitats very rare.	No	No suitable habitat occurs on site or in adjacent lands. None were observed during 2019 field investigations.	No

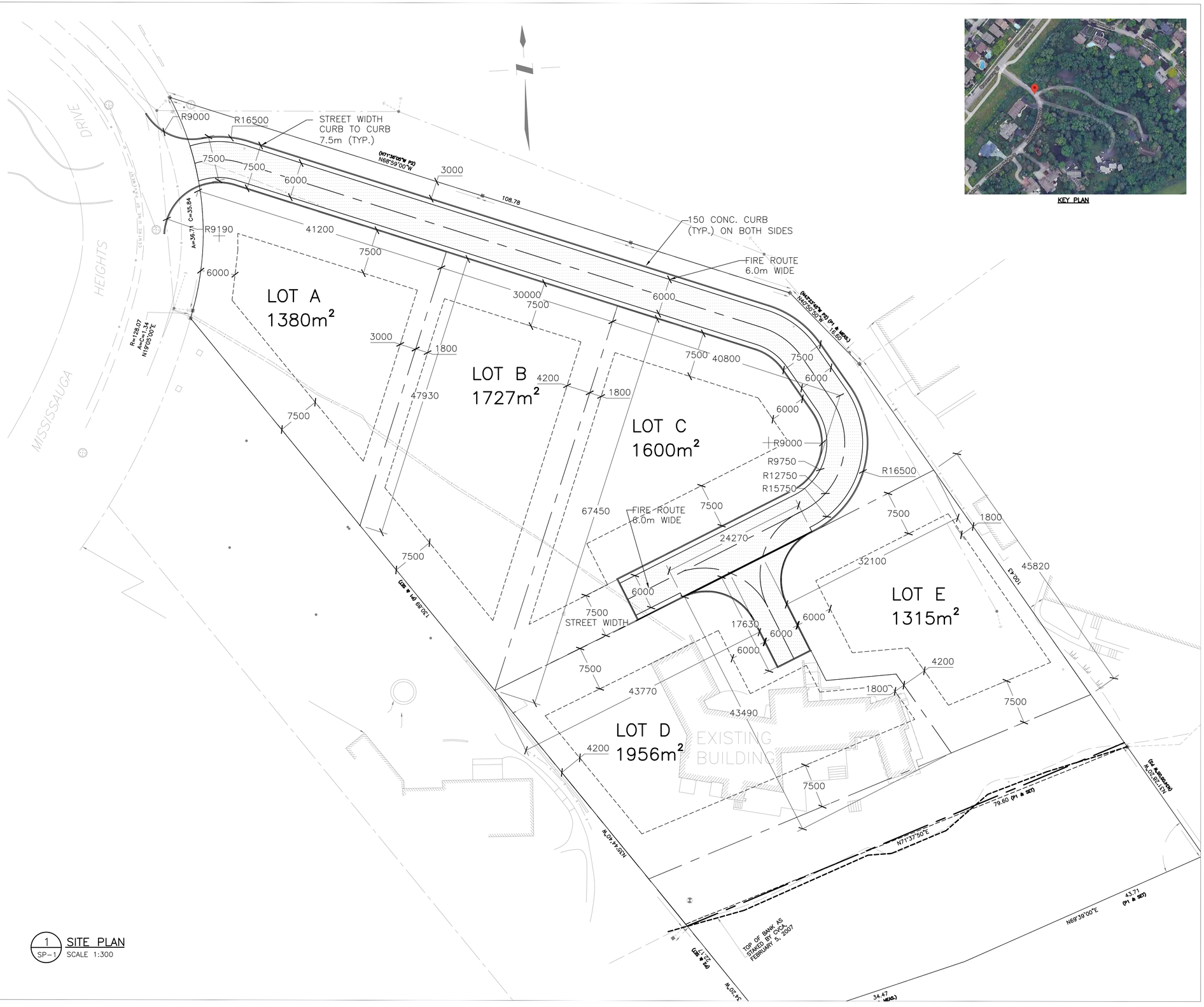
Significant Wildlife Habitat (SWH) Type	Qualifying ELC communities/species and/or other recommended criteria for SWH identification	SWH on site or within 120 m?	Assessment Rationale (Habitat Presence or Absence)	Additional field studies required?
Special Concern and Rare Wildlife Species	All SC and S1, S2, S3, and SH species. Includes all plant and animal species.	Candidate	No SC or S1 to S3 species were detected during field investigations. Monarch (SC), Snapping Turtle (SC) and Eastern Ribbonsnake (SC) likely occur in adjacent lands but would not occur on the proposed development site.	No
Animal Movement Corridors				
Amphibian Movement Corridors	All ecosites associated with water. 12 indicator sp. No thresholds for numbers/diversity have been determined by MNRF. Check if relevant Region has developed thresholds.	Candidate	Movement corridor likely present along the adjacent Credit River. However, there is no suitable habitat on or beyond the proposed development site so no movement would occur across it.	No

References:

OMNRF (Ontario Ministry of Natural Resources and Forestry). 2014. Significant Wildlife Habitat Mitigation Support Tool. Version 2014. 533 pp

OMNRF (Ontario Ministry of Natural Resources and Forestry). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. January, 2015. 41 pp

Appendix I. Draft Site Plan (Sajecki Planning, 2021)



1 SP–1 SITE PLAN
SCALE 1:300

KEY PLAN

Sajecki Planning

904 MISSISSAUGA HEIGHTS DR
MISSISSAUGA, ON

PROPOSED SITE PLAN

PLAN OF TOPOGRAPHY OF
PART OF LOT 2
REGISTERED PLAN 342
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT PLANTED
IB	DENOTES	IRON BAR
SIB	DENOTES	STANDARD IRON BAR
IP	DENOTES	IRON PIPE
TC	DENOTES	TOP OF CURB
BC	DENOTES	BOTTOM OF CURB
CCT	DENOTES	CURB CUT
MH	DENOTES	MANHOLE
CB	DENOTES	CATCH BASIN
WUP	DENOTES	WOOD UTILITY POLE
WV	DENOTES	WATER VALVE
A/C	DENOTES	AIR CONDITIONER
GUY	DENOTES	GUY WIRE
ICV	DENOTES	IRRIGATION CONTROL VALVE
TRW	DENOTES	TOP OF RETAINING WALL
P1	DENOTES	TARASICK McMILLAN KUBICKI LTD., O.L.S., APRIL 9, 1986
P2	DENOTES	PLAN 43R–21696
(923)	DENOTES	TARASICK McMILLAN KUBICKI LTD., O.L.S.
0.20ØD	DENOTES	DECIDUOUS TREE WITH TRUNK DIAMETER
0.20ØC	DENOTES	CONIFEROUS TREE WITH TRUNK DIAMETER

TREE CANOPIES ARE DRAWN TO SCALE.

FIRE ROUTE – FULL WIDTH 6.0m

ZONING CATEGORY: –			PROVIDED	BY–LAW REQUIREMENT
SITE STATISTICS	LOT A AREA		1380m²	
	LOT B AREA		1727m²	
	LOT C AREA		1600m²	
	LOT D AREA		1956m²	
	LOT E AREA		1315m²	
	TOTAL LOT AREA		7978m²	
	LOT FRONTAGE	LOT A	41.20m	
		LOT B	30.00m	
		LOT C	40.80m	
		LOT D	43.77m	
		LOT E	32.10m	
	LOT DEPTH	LOT A	47.94m	
		LOT B	67.45m	
		LOT C	67.45m	
		LOT D	43.49m	
		LOT E	45.82m	
	BUILDING AREA	LOT A	606.85m²	
		LOT B	981.15m²	
		LOT C	746.05m²	
		LOT D	1013.31m²	
		LOT E	651.26m²	
	LOT COVERAGE(%)	LOT A	43.97%	
		LOT B	56.81%	
		LOT C	46.63%	
		LOT D	51.81%	
		LOT E	49.53%	
	FRONT YARD SETBACK	LOT A	7.5m	
		LOT B	7.5m	
		LOT C	7.5m	
		LOT D	7.5m	
		LOT E	7.5m	
	SIDE YARD SETBACK	LOT A	6.0m	
		LOT B	1.8m	
		LOT C	1.8m	
		LOT D	4.2m	
		LOT E	4.2m	
	SIDE YARD SETBACK	LOT A	3.0m	
		LOT B	4.2m	
		LOT C	6.0m	
		LOT D	1.8m	
		LOT E	1.8m	
	REAR YARD SETBACK	LOT A	7.5m	
		LOT B	7.5m	
		LOT C	7.5m	
		LOT D	7.5m	
		LOT E	7.5m	

Appendix J. Natural heritage policy summaries

FEDERAL LEGISLATION

SPECIES AT RISK ACT (2002)

Enacted in 2002, the Species at Risk Act (SARA) provides the federal mandate for the protection of species identified as Endangered or Threatened at the federal level (Government of Canada, 2002). This act also helps to protect species identified as sensitive from becoming extinct and secure the actions for their recovery. This may include protecting critical habitat, and rehabilitation of impacted critical habitat. On private lands, SARA only applies to listed aquatic species and listed migratory birds that are also listed in the *Migratory Birds Convention Act, 1994* (Government of Canada, 1994a). Critical habitat for these species is also protected.

MIGRATORY BIRD CONVENTION ACT (1994)

Most species of birds in Canada are protected under this act through the Migratory Birds Regulations and the Migratory Birds Sanctuary Guidelines. These policies and regulations ensure the protection of listed migratory bird species, their nests, eggs and offspring. In its application, it requires best management practices to detect and avoid disturbance to active nests during development activities.

PROVINCIAL LEGISLATION

PROVINCIAL POLICY STATEMENT (2020)

The Provincial Policy Statement (PPS) is issued under the authority of Section 3 of the Planning Act (Government of Ontario, 1990a). Section 3 requires that decisions affecting planning matters "shall be consistent with" policy statements under the Act. It should also be noted that Page 2 of the PPS establishes that the PPS is to be read in its entirety and all relevant policies are to be applied to each situation.

Section 2.1 of the Provincial Policy Statement, which relates specifically to natural heritage, establishes clear direction on the adoption of an ecosystem approach, and the protection of resources that have been identified as 'significant': wetlands, woodlands, valleylands, wildlife habitat, areas of natural and scientific interest, and coastal wetlands.

Natural heritage systems are currently defined under the Provincial Policy Statement (PPS) as follows:

> *"…a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue. The Province has a recommended approach for identifying natural heritage systems, but municipal approaches that achieve or exceed the same objective may also be used."*

Relevant portions of the Section 2.1 include the following:

Section 2.1.4 of the PPS states that development and site alteration of the following features is not permitted in:

a) Significant wetlands in Ecoregions 5E, 6E and 7E; and
b) Significant coastal wetlands.

Section 2.1.5 states that development and site alteration is not permitted in the following features, unless it has been demonstrated that there will be *no negative impacts* on the natural features or their ecological functions:

a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E1;
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 7E1 that are not subject to policy 2.1.4(b)

Per section 2.1.6 and 2.1.7, development and site alterations within the following features are not permitted, except in accordance with provincial and federal requirements:

a) *Fish habitat; and*
b) *Habitat of Endangered and Threatened species.*

In accordance with section 2.1.8, development and site alteration on *adjacent lands* to natural heritage features identified in Section 2.1.4, 2.1.5 and 2.1.6 are not permitted unless there has been an evaluation of the ecological function of the adjacent lands and it has been demonstrated that there will be *no negative impacts* on the natural features or on their ecological functions (OMMAH, 2005).

ENDANGERED SPECIES ACT (2007)

This legislation provides the provincial mandate for the protection of species identified as Endangered or Threatened at the provincial level. Significant habitats of provincial Special Concern species are recognized under the Province's Significant Wildlife Habitat categories. The General Regulation, O. Reg. 242/08, allows certain activities to proceed that would otherwise contravene the species and habitat protection provisions of the Endangered Species Act (ESA), provided specific conditions are followed to protect species and their habitat.

<u>Myotis Bats: Little Brown Myotis, Eastern Small-footed Myotis, Northern Myotis, Tricolored Bat (Endangered)</u>

All four (4) Endangered bat species in Ontario receive habitat protection under the ESA, however a species habitat regulation has not been prescribed in O. Reg. 242/08. Until such regulation exists, foraging habitat, hibernacula and swarming sites, and maternity roosts are recommended to be protected (Humphrey, 2017).

THE GREENBELT PLAN (2017)

Ontario's Greenbelt was introduced in 2005 to help shape the future of the Greater Golden Horseshoe (GGH) Growth Plan. Together with the Oak Ridges Moraine Conservation Plan (ORMCP) and Niagara Escarpment Plan (NEP), the Greenbelt Plan identifies where urbanization should not occur in order to protect existing agricultural, ecological and hydrological features, areas, and functions. The Greenbelt Protected Countryside is intended to enhance the extent of agriculturally and environmentally protected lands covered by the ORMCP and NEP while improving linkages between them and surrounding lakes and watersheds.

The Greenbelt Plan was revised in 2017 and is comprised of the following land designations:

1. Lands within the Oak Ridges Moraine Area;
2. Lands within the Niagara Escarpment Plan Area;
3. Lands within the Parkway Belt West Plan Area;
4. Lands within the Protected Countryside Area; and
5. Lands within the Urban River Valley Area.

The Protected Countryside is comprised of the following:

1. Agricultural System – includes Prime Agricultural Areas and Rural Lands that support the province's agri-food sector.
2. Natural System – includes natural heritage and hydrologic features and functions.
3. Parkland, Open Space and Trails.
4. Settlement Areas – include Towns, Villages and Hamlets. The plan defers to regional / municipal Official Plans for detailed delineations of settlement area boundaries.

The Urban River Valley designation applies to the main river valley corridors connecting the Greenbelt to the Great Lands and inland lakes. Generally, these lands are characterized as being:

1. Lands containing natural and hydrologic features, including coastal wetlands; and/or
2. Lands designated in official plans for uses such as parks, open space, recreation, conservation and environmental protection.

According to Section 6.2 of the Plan, only publicly-owned lands (i.e. owned by the Province, municipality or local board including a Conservation Authority) within the Urban River Valley designation are subject to its policies. **Private lands are not subject to the policies of this designation**.

CONSERVATION AUTHORITIES ACT - ONTARIO REGULATION 162/06 (2013) / CREDIT VALLEY CONSERVATION & CVC'S WATERSHED PLANNING AND REGULATION POLICIES (2010)

Credit Valley Conservation (CVC) is authorized under Section 28 of the Conservation Authorities Act to implement and enforce the Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 42/06). Permits are required to identify potential interference in areas within the 100-year floodline, 15 metres of the shoreline, 15 metres within a valley's top of bank, hazard lands, 120 metres around all Provincially Significant Wetlands and ELC wetlands greater than 2 ha, and 30 metres around ELC wetlands greater than 0.5 ha.

In April 2010, CVC released a report entitled "CVC Planning and Regulations Policies" which provided updated policies on watershed planning and regulation, and the parameters under which CVC

administers O. Reg. 160/06 of the Conservation Authorities Act. The goals of this documents are, i) to be more consistent with existing legislation, guidelines and initiatives, ii) to recognize the best available sciences as they relate to planning, natural heritage and natural hazard management, iii) to further address the implementation of O. Reg. 160/06, and, iv) to provide more clear and consistent direction to CVC staff, partners and stakeholders with regard to the interdisciplinary nature of watershed planning and natural hazard management (CVC, 2010).

Per section 6 of the Planning and Regulations Policies, CVC will comment and review planning applications including Zoning By-law Amendments, Official Plan Amendments, Site Plans, and others. Relevant policies of section 6 are as follows:

f. "CVC will provide recommendations consistent with the recommendations of the CVC supported comprehensive environmental study for an area when providing comments on applications. Where a comprehensive environmental study for an area does not exist, or the existing ones are outdated, site specific technical reports may be required for applications determined to be small scale, have limited area available for development (2) or limited potential impacts on hazardous land and the natural heritage system.

g. CVC will recommend that planning related applications adjacent to the natural heritage system, including natural heritage features and areas, significant natural areas, hazardous land, erosion access allowances and associated buffers, maintain existing topography to the maximum extent possible, discouraging the use of structural measures such as retaining walls to meet or maintain existing grades.

h. CVC will encourage that planning related applications follow a natural approach to landscaping, restoration or enhancement efforts by using native, non-invasive and locally appropriate species. In addition, genetic diversity, vegetated linkages and the incorporation of a variety of native, locally appropriate plant species to support biodiversity and connectivity will be promoted.

i. CVC will not support modifications to components of the natural heritage system, including natural heritage features and areas, significant natural areas, hazardous land, erosion access allowances and associated buffers, to create additional useable area or to accommodate or facilitate development (2) and site alteration unless the modifications have been appropriately addressed through an environmental assessment, comprehensive environmental study or technical report, to the satisfaction of CVC.

j. Where any component of the natural heritage system, including natural heritage features and areas, significant natural areas, hazardous land or erosion access allowances, has been altered, damaged or destroyed by unauthorized activities, CVC will not support a boundary adjustment to recognize such activities and will recommend replacement or rehabilitation of the feature(s) and its functions."

Development is defined as "the creation of a new lot; a change in land use; or the construction of buildings and structures, requiring approval under the Planning Act, but does not include: (a) activities that create or maintain infrastructure authorized under an environmental assessment process; (b) works subject to the Drainage Act (OMMAH, 2005)."

Section 6.2.1 of CVC's Watershed Planning and Regulation Policies describes that CVC will not support development or creation of new lots within the natural heritage system. In addition, the following buffers are recommended for lots created through a plan of subdivision:

i. 10 metres from the limit of flood hazards;
ii. 10 metres from the limit of erosion hazards;

iii. 10 metres from the limit of dynamic beach hazard;
iv. 10 metres from the drip line of significant woodlands;
v. 10 metres from the limit of other wetlands;
vi. 30 metres from the limit of provincially significant wetlands;
vii. 30 metres from the bankfull flow location of watercourses; and/or
viii. A distance to be determined through the completion of a comprehensive environmental
ix. study or technical report, to the satisfaction of CVC, from the limit of the following:
    a. significant wildlife habitat;
    b. significant habitat of threatened species and endangered species;
    c. regionally and provincially significant life science ANSIs;
    d. ESAs; and/or
    e. significant habitat of species of conservation concern.

CVC may recommend larger buffers based on the outcome of an EIS.

LOCAL POLICY

REGION OF PEEL OFFICIAL PLAN

The Region of Peel Greenlands system consists of the following components:

1. **Core Areas;**
2. Natural Areas and Corridors; and
3. Potential Natural Areas and Corridors.

Core Areas within the Greenlands system are defined as one or more of the following features, as described in Section 2.3.2.2 of the OP:

a. Significant wetlands;
b. Significant coastal wetlands;
c. Core Woodlands;
d. Environmentally Sensitive or Significant Areas (ESAs);
e. Provincial Life Science Areas of Natural and Scientific Interest (ANSIs);
f. Significant Habitat of Threatened and Endangered species;
g. Escarpment Natural Areas of the Niagara Escarpment Plan; and
h. Core valley and stream corridors.

Core Areas are shown on Schedule A of the OP, and are protected by the Plan; generally, these areas function to increase biodiversity and maintain natural systems within the Region.

CITY OF MISSISSAUGA OFFICIAL PLAN

The natural heritage policies in Section 6.3 of the City of Mississauga's Official Plan (2015) address the protection of the City's Green System, which is comprised of the following components:

1. Natural Heritage System;
2. Urban Forest (including Residential Woodlands);
3. Natural Hazard Lands; and
4. Parks and Open Spaces.

Relevant to the subject lands, the following components make up the Natural Heritage System and Urban Forest:

1. **Significant Natural Areas, including:**
    - **a.** provincially or regional significant life science areas of natural and scientific interest (ANSI);
    - **b. environmentally sensitive or significant areas;**
    - **c. habitat of threatened species or endangered species;**
    - d. fish habitat;
    - **e. significant wildlife habitat;**
    - f. **significant woodlands** are those that meet one or more of the following criteria:
        - woodlands, excluding cultural savannahs, greater than or equal to four hectares;
        - woodlands, excluding cultural woodlands and cultural savannahs, greater than or equal to two hectares and less than four hectares;
        - any woodland greater than 0.5 hectares that:
            - supports old growth trees (greater than or equal to 100 years old);
            - supports a significant linkage function as determined through an Environmental Impact Study approved by the City in consultation with the appropriate conservation authority;
            - is located within 100 metres of another Significant Natural Area supporting a significant ecological relationship between the two features;
            - is located within 30 metres of a watercourse or significant wetland; or
            - supports significant species or communities;
    - g. significant wetlands are one of the following:
        - Provincially significant coastal wetlands;
        - Provincially significant wetlands;
        - Coastal wetlands;
        - other wetlands greater than 0.5 hectares; and
    - h. **significant valleylands** are associated with the main branches, major tributaries and other tributaries and watercourse corridors draining directly to Lake Ontario including the Credit River, Etobicoke Creek, Mimico Creek and Sixteen Mile Creek.
2. Natural Green Spaces;
3. Special Management Areas;
4. Residential Woodlands; and
5. Linkages.

Per section 6.3.17 and 6.3.18, **Residential Woodlands** are areas, generally with large lots that have mature trees forming a fairly continuous canopy and minimal native understory due to the maintenance of lawns and landscaping. Lands within Residential Woodlands will be subject to Site Plan Control.

According to the policies within section 6.3.19, development proposals and site alteration for lands within a Residential Woodland will have regard for how existing tree canopy and understorey are protected, enhanced, restored and expanded. A site development plan may be required to demonstrate how the following, among other matters, have been addressed:

a. existing topography and drainage patterns;

b. maintenance of a high proportion of permeable ground cover to facilitate ground water recharge;

c. habitat for tolerant canopy birds (both in migration and for breeding);
d. habitat for urban wildlife; and
e. connections to other elements within the Green System.

Under the Natural Hazard Lands component are the following features:

1. **Valleylands;**
2. Floodplains; and
3. Lake Ontario Shoreline.

There are no Park and Open Space designations within or immediately adjacent to the study area.

Provisions for the protection of the City's Natural Heritage system are provided in section 6.3.24:

"The Natural Heritage System will be protected, enhanced, restored and expanded through the following measures:

a. ensuring that development in or adjacent to the Natural Heritage System protects and maintains natural heritage features and their ecological functions through such means as tree preservation, appropriate location of building envelopes, grading, landscaping, and parking and amenity area locations;
b. placing those areas identified for protection, enhancement, restoration and expansion in public ownership, where feasible;
c. using native plant materials and non-invasive species, and reducing and/or eliminating existing invasive, non-native plant species to improve ecological value and the sustainability of indigenous vegetation, where appropriate;
d. retaining areas in a natural condition and/or allowing them to regenerate to assume a natural state;
e. the promotion of stewardship within privately and publicly owned lands within the Natural Heritage System;
f. controlling activities that may be incompatible with the retention of the Natural Heritage System and associated ecological functions; and
g. regulation of encroachment into the Natural Heritage System and other public open spaces."

Furthermore, section 6.3.27 states "Development and site alteration as permitted in accordance with the Greenlands designation **within or adjacent to** a **Significant Natural Area** will not be permitted unless all reasonable alternatives have been considered and any **negative impacts minimized**. Any negative impact that cannot be avoided will be **mitigated through restoration and enhancement** to the greatest extent possible." An EIS is required to demonstrate no negative impacts to the natural heritage features or their function, as described in section 6.3.29.

Regarding Urban Forest and Residential Woodlands, Section 6.3.44 states that "Development and site alteration will demonstrate that there will be **no negative impacts** to the Urban Forest. An **arborist report and tree inventory** that demonstrates **tree preservation and protection** both pre and post construction, and where preservation of some trees is not feasible, identifies opportunities for **replacement**, will be prepared to the satisfaction of the City in compliance with the **City's tree permit by-law**."

Regarding valleylands, development and site alteration must provide appropriate buffers to erosion hazards, to the satisfaction of the City and Conservation Authority.

CITY OF MISSISSAUGA PRIVATE TREE PROTECTION BYLAW (2012)

Enacted in 2012, the City's Private Tree Protection Bylaw was issued to protect privately-owned trees from damage or destruction in order to preserve the City's urban trees and wooded areas. Per section 6.2 of the bylaw, a permit is required if three (3) or more trees greater than 15 cm DBH are proposed for damage or removal (including dead, dying and hazardous trees).

Exemptions to a permit for injuring or destroying a tree are as follows, according to section 6.3 of the bylaw:
"a Permit is not required to Injure or Destroy a Tree:
a) if the number of Trees with a Diameter greater than 15 centimetres being Injured or Destroyed on the Lot in a Calendar Year is 2 or less;
b) where the Tree has a Tree Diameter of 15 centimetres or less;
c) for Emergency Work;
d) as a result of activities or matters undertaken by a Governmental Body or a school board;
e) for the construction of a school building or part thereof;
f) for the purpose of Pruning the Tree;
g) for Trees located on rooftop gardens, interior courtyards, or solariums;
h) for Trees on a Nursery or Golf Course;
i) by a Person licensed under the Surveyors Act to engage in the practice of cadastral surveying or his agent while making a survey;
j) for the purpose of satisfying a condition to a development permit authorized by regulation made under section 70.2 of the Planning Act, as may be amended or replaced from time to time, or as a requirement of an agreement entered into under the regulation;
k) for the purpose of satisfying a condition to the approval of a site plan, a plan of subdivision, or a consent under sections 41, 51, and 53 of the Planning Act, as may be amended or replaced from time to time, or as a requirement of a site plan or subdivision agreement under those sections of the Act;
l) where the removal of a Tree(s) is specifically required in an order made under the City's Property Standards By-law;
m) by a transmitter or distributor as defined in the Electricity Act, 1998 for the purpose of constructing and maintaining a transmission system or a distribution system, as defined under that Act;
n) if an approval has been provided under subsection 6(1); or
o) where an Owner is required to comply with the requirements of a Province of Ontario forest management plan that specifically encompasses the Owner's Lot."

The following items are required as part of the Permit submission, as indicated in Part VI of the bylaw:
a) a completed application form;
b) a plan to the satisfaction of the Commissioner illustrating the Trees to be Injured or Destroyed, the Tree(s) to be retained, and any other measures to be taken in relation to the Injury or Destruction of the Tree(s) or Tree preservation, as required by the Commissioner;
c) the fees as described in the Fees and Charges By law;
d) an Arborist Report, if required by the Commissioner;
e) the written consent of the adjacent property Owner if the base of the Tree(s) to be Injured or Destroyed is partially located on the adjacent property Owner's property; and
f) the written consent of the Owner of the Lot where the subject Trees are located, if the Person who is applying for the Permit is not the Owner of the Lot.

At the request of the City Commissioner, the following conditions may need to be met prior to receiving a Permit, per section VII.11(1):

a) the requirement for a Replacement Tree(s);

b) satisfactory plans for Tree preservation and replanting; and

c) Hoarding to be provided around a Tree(s) not subject to Injury or Destruction, and plans indicating the location and type of Hoarding to the satisfaction of the Commissioner.

Where the planting of a Replacement Tree(s) has been imposed as a condition, the Commissioner may require any one or more of the following, per section VII.11(2):

a) the Replacement Tree(s) be located on the same Lot in a location, number, size; and/or species to the satisfaction of the Commissioner;

b) a replanting plan be filed to the satisfaction of the Commissioner;

c) a written undertaking by the Owner to carry out the replacement planting;

d) monies or a letter of credit in a form satisfactory to the Commissioner be delivered to the Commissioner to cover the costs of the Replacement Trees, and the maintenance of the Tree(s) for a period of up to two (2) years; or

e) payment of each Replacement Tree not replanted on the Owner's Lot be made into the City's Replacement Tree Planting Fund. The payment for each such Tree shall be the cost of each street Tree planting as provided in the Fees and Charges By-law.