InnServices Utilities Inc.
Lakeshore WWTP Upgrade

ESR Addendum

2021-08-13	A	Draft	S. Thompson	M. Alexander	A. Kavoosi
Date	**Rev.**	**Status**	**Prepared By**	**Checked By**	**Approved By**
HATCH					

Table of Contents

List of Tables

List of Figures

Appendices

Glossary of Terms and Acronyms	
ANSI	Areas of Natural and Scientific Interest
EA	Environmental Assessment
ELC	Ecological Land Classification
ESA	Environmentally Sensitive Areas
ESR	Environmental Study Report
LSRCA	Lake Simcoe Region Conservation Authority
LSWWTP	Lakeshore Wastewater Treatment Plant
MECP	Ministry of the Environment, Conservation and Parks
MLD	Million Litres per Day
MNRF	Ministry of Natural Resources and Forestry
O. Reg.	Ontario Regulation
SAR	Species at Risk

1. Introduction

In February 2019, Hatch Limited (Hatch) was retained by InnServices Utilities Corporation (InnServices) on behalf of the Town of Innisfil to provide engineering and construction services to implement the Stage III expansion for the Lakeshore Wastewater Treatment Plant (LSWWTP). In May 2021, Hatch's scope of work was amended to include an Addendum to the Environmental Study Report (ESR) previously completed in in 2011 for the proposed expansion to the LSWWTP.

1.1 Background

The LSWWTP is located at 1578 St. Johns Road in the Town of Innisfil, Ontario. Figure 1-1 shows an aerial map of the LSWWTP and surrounding area. The LSWWTP is an extended aeration activated sludge treatment system with screening, grit removal, aeration, secondary clarification, filtration and disinfection prior to discharge to Lake Simcoe. The waste sludge is stabilized through aerobic digestion prior to offsite disposal.

The LSWWTP was constructed in 1987, was expanded in 1996, and has a current interim rated capacity of 17,000 m^3/d. The Town of Innisfil's 2008 Official Plan identified that additional wastewater treatment capacity would be required to meet the servicing requirement for future growth.

Figure 1-1: Aerial Photo of the Lakeshore WWTP

1.2 Class Environmental Assessment and Selection of Preferred Alternative

To support the planning process for the expansion to the LSWWTP, InnServices completed a Schedule C Municipal Class Environmental Assessment (Class EA) in 2011 (Ainley Group 2011). The Class EA identified potential impacts to the biophysical and socioeconomic environments that could result from the LSWWTP expansions and involved public and regulatory consultation.

The preferred alternative identified through the Class EA was to expand the facility on the Municipal lands at the existing site and continue to discharge effluent into Lake Simcoe. Total average flow capacity would increase over a two phased expansion from 14,300 m^3/d (14.3 MLD) to 25,000 m^3/d (25 MLD) in the first phase (Stage III) of the expansion, and ultimately to 40,000 m^3/d (40 MLD) in the second phase of the expansion (Stage IV).

1.3 Rationale for Project Changes

A portion of the expanded LSWWTP footprint will encroach on lands regulated by the Lake Simcoe Region Conservation Authority (LSRCA) (Figure 1-2). Accordingly, Hatch and InnServices engaged the LSRCA in 2019 during the preliminary design phase to discuss the project and to determine permitting requirements under O.Reg. 179/06 of the *Conservation Authorities Act*. During a meeting on August 22, 2019 the LSRCA raised concerns about the location of proposed structures, the significant number of trees that would need to be cut down in order to accommodate the expansion, as well as the potential impact on the existing wetlands. It was noted that wetlands were not described in the ESR. The LSRCA was also concerned that the EA had been completed eight years earlier. The LSRCA requested that a number of additional studies be completed including ecosystem mapping, a tree and vascular plant inventory, wetland staking and evaluation, bat snag surveys, bird surveys, Species at Risk (SAR) surveys, and a floodplain impact assessment.

To address the LSRCA request, Hatch retained LGL Ltd. (LGL) to assist with the required studies. Two reports entitled Natural Heritage Evaluation and Arborist Report were submitted to the LSRCA in December 2020. These reports are attached as Appendix A and Appendix B respectively.

To further address LSRCA's concerns, the project design has been revised. Various proposed infrastructure components have been relocated to be closer to the existing components and to each other thereby minimizing the size of the overall footprint (see Figure 1-3).

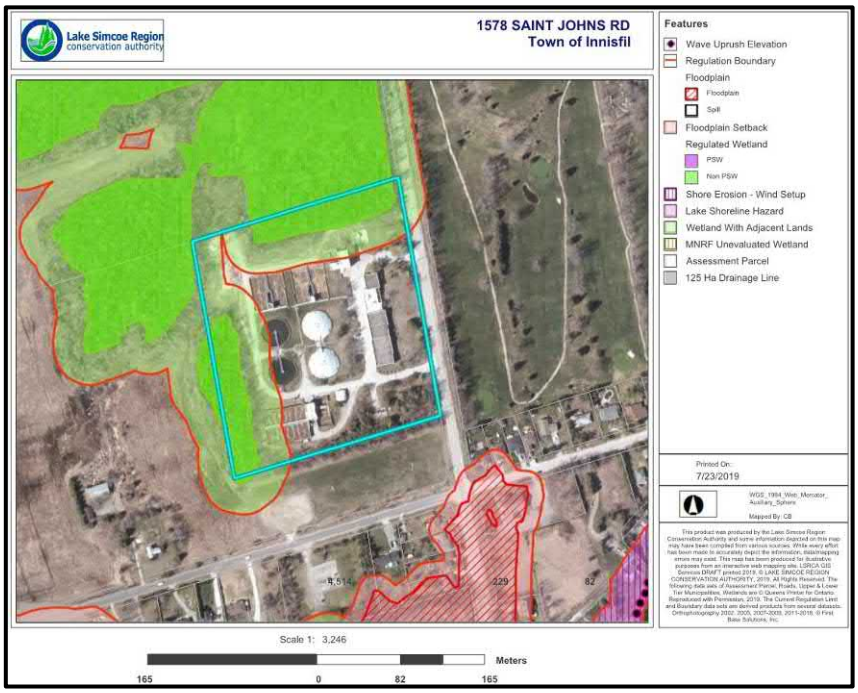


Figure 1-2: Lake Simcoe Region Conservation Authority (LSRCA) Regulated Areas

Figure 1-3. Change in Project Footprint

1.4 Purpose of the ESR Addendum

Owing to the new environmental information available, the change in the proposed project footprint, as well as the approaching 10-year lapse time since the original ESR was filed, the purpose of this ESR Addendum is to identify environmental implications of the project that were not identified in the original ESR. In addition, the EA Amendment will identify options to mitigate those impacts, and provide an opportunity for review and comment by the public and review agencies.

2. Project Description

The Project will include upgrades to or conversion of existing infrastructure along with construction of new infrastructure, as listed below. Construction is estimated to begin in January 2022 and end by January 2025.

Preliminary Treatment Facilities

- Construction of a new headworks building consisting of screening, grit removal and septage receiving station.
- Modifications for redirecting a portion of each of the existing forcemains to the new headworks.
- Modifications to the existing headworks building including repurposing of the screen room to house the new odour control equipment, and modifications to the storage room and generator room to house the new bioreactor blowers.
- Construction of a new odour control biofilter facility.

Primary Treatment Facilities

- Construction of a new influent flow meter chamber.
- Construction of a new primary distribution chamber.
- Construction of two (2) new circular primary clarifiers.
- Construction of a primary effluent distribution chamber.

Secondary Treatment Facilities

- Converting the four (4) existing aeration tanks to bioreactors by addition of the new Anaerobic zones.
- Construction of two (2) additional bioreactors.
- Upgrades to four (4) existing secondary clarifiers.
- Construction of one (1) new secondary clarifier.

- Decommissioning and removal of the two existing sludge draw-off/scum pump stations and the two existing RAS pump stations.
- Construction of a new RAS/WAS pump station with all associated equipment in the new constructed sludge building.

Tertiary Treatment Facilities

- Construction of a new tertiary membrane ultrafiltration building including a UV disinfection area, effluent flow meter area, and a service water pumping station.
- Modifications to the existing outfall from the new tertiary membrane building.
- Conversion of existing tertiary filters building to office space, chemical storage and dosing and storage area.

Sludge Management

- Construction of a new sludge building.
- Converting the existing sludge holding tank to accommodate the biosolids from the Lystek system including construction of a concrete roof slab on top of the tank.
- Converting the existing aerobic digesters to emergency sludge holding tanks.
- Construction of a new odour control biofilter to treat the odourous air from the new sludge management facilities.
- Construction of a new biotrickling filter for the pretreatment of the foul air from Lsytek Facility.
- Modification to the existing Lystek Facility for addition of the second train.

Other

- Construction of new switchgear building.
- Construction of new outdoor diesel generator.
- Construction of new substation and transformer.
- Construction of two new storm management ponds.

3. Consultation Process

The study followed the requirements of the *Environmental Assessment Act* for consultation pursuant to the Municipal Class EA. Revisions to Schedule C projects, only require the issuance of a Revised Notice of Filing of Addendum to start the 30-calendar day review period of the ESR Addendum. The ESR Addendum was made available to review agencies for 30 calendar days for comment, and subsequently made available to the public and affected parties for 30 calendar days. The Notice was published in local newspapers and distributed to those on the Project contact list to announce the start of the 30-day public review period.

The notice included the public's right to request a Part II Order within the 30-day review period. In the event that no comments are received, the proponent can then proceed to implementation and construction.

4. Existing Environment

The existing environmental conditions are summarized below and reflect information from the original ESR (Ainley Group 2011), as well as the two technical reports completed in 2020 (Appendix A and Appendix B).

4.1 Archaeological Resources

Stage 1 and Stage 2 Archaeological Assessments were completed as part of the original Class EA for the expansion of the LSWWTP. Reports were produced in 2009 and 2010 by Archaeworks Inc. and appended to the ESR (Ainley Group 2011). No archaeological resources were encountered within the limits of the property.

4.2 Soil and Terrain

The Study Area is located within the Simcoe Lowlands physiographic region. The terrain is relatively flat, with elevation ranging from approximately 226.25 in the northwest corner of the Study Area to an elevation of approximately 222.00 m in the southeast corner of the Study Area. Soils are comprised of sand, silt, and clay.

4.3 Aquatic Habitat

There are no watercourses in the Study Area.

4.4 Vegetation

Vegetation communities were delineated by LGL according to *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee *et al*. 1998) using air photo interpretation and field investigations (including wetland and woodland boundary staking) in August and September 2019. As detailed in the Natural Heritage Evaluation Study (LGL 2020a, Appendix A) and as shown in Figure 4-1 a total of five ELC community types were identified within the Study Area:

- FOM7: Fresh-Moist White Cedar Hardwood Mixed Forest. A natural/semi-natural forest community with at least 60% canopy cover containing both coniferous and deciduous species. Evidence of disturbance was identified within this community within the existing facility boundary, while forests were of higher quality in the north of the Study Area.
- SWC1: White Cedar Mineral Coniferous Swamp. A natural/semi-natural wetland community with tree or shrub cover greater 25%; predominately coniferous species, especially eastern white cedar (*Thuja occidentalis)*.
- MAM2-10: Forb Mineral Meadow Marsh. A wetland community with tree and shrub cover less than 25%. Although generally considered to be a natural/semi-natural community type, the meadow marsh area on the eastern side of the Study Area is considered to be of low quality as it is dominated by non-native common reed (*Phargmites australis*). Quality is moderate on the west side of the Study Area.
- CUW1: Mineral Cultural Woodland. Tree cover between 25% and 35%. Disturbed community type comprised primarily of non-native and invasive species.
- CUM1-1: Dry-Moist Old Field Meadow. Tree and shrub cover less than 25%. Disturbed community type comprised primarily of non-native and invasive species.

All vegetation communities identified within the Study Area are considered to be widespread and common in Ontario. In addition to these five ELC communities, manicured landscapes are also found in the Study Area.

A total of 104 vascular plant species were identified during the vegetation field surveys (including three which could only be identified to the genus level). A list of plants recorded is provided within Appendix A.

An ISA Certified Arborist conducted an inventory of tree resources in August and September 2019 including size, species, location, and health. A total of 2,656 trees were identified and assessed, consisting of 22 different species (LGL 2020b, Appendix B). Most trees were in good health with the exception of the majority of ash trees which were in varying states of decline as a result of Emerald Ash Borer. Detailed maps are provided in Appendix B.

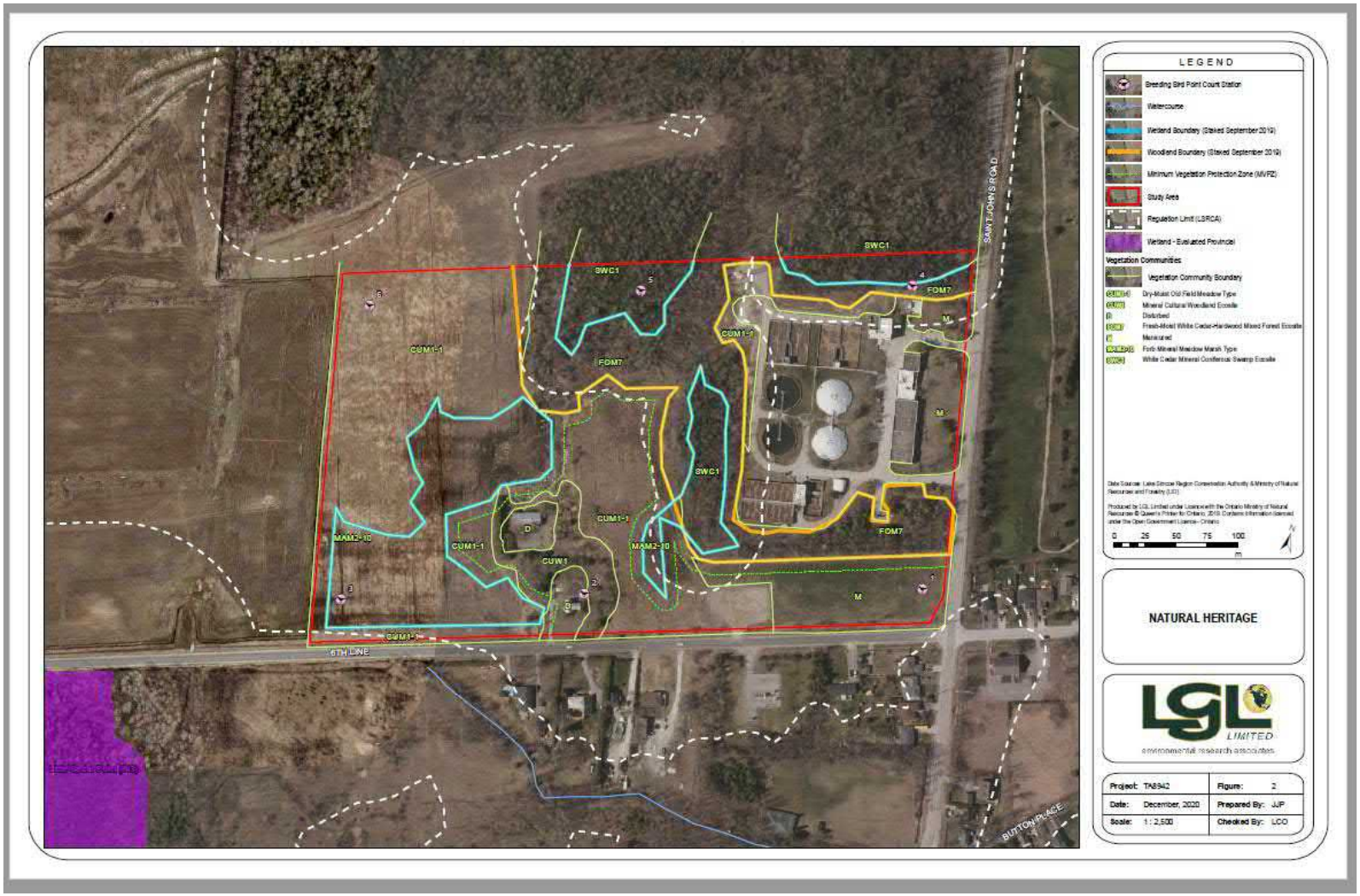


Figure 4-1: Vegetation Community Types in the WWTP Study Area

4.5 Wildlife

The Study Area provides moderate quality wildlife habitat overall. Much of the area has been disturbed by existing and surrounding land uses, especially the manicured areas and the cultural woodland at the southern extent of the Study Area which contains an abandoned farmstead. Disturbance is also evident in the forests within the existing footprint boundary.

A moderate diversity of species is supported by the range of habitats in the Study Area. The cultural habitats provide open and edge habitats preferred by some species, however the forests at the north end of the Study Area are part of a larger more contiguous forested area that provides interior habitat.

4.5.1 Breeding Birds

Breeding bird surveys were conducted on three dates in the summer 2020 in accordance with the Breeding Bird Atlas Protocol Guidelines (2001), as well as the MNRF survey protocol for Bobolink (*Dolichonyx oryzivorus*) (MNRF Guelph, no date) for the cultural meadow habitat areas. A total of 37 bird species were recorded in the Study Area. Breeding evidence was confirmed for seven species and suspected for 19 species, while breeding potential was observed for an additional 10 species. The species identified are representative of different habitats including cultural meadows, mixed forests, forest edges, and wetlands. A full list of species encountered during the breeding bird surveys is found in Appendix A.

4.5.2 Reptiles and Amphibians

Three amphibian species, green frog (*Rana clamitans*), northern leopard frog (*Lithobates pipiens*) and American toad (*Anaxyrus americanus*) were confirmed in the Study Area. These were observed incidentally in the meadow marsh habitat and around the farmstead. There appears to be limited frog and toad breeding habitat in the Study Area, as the wetlands were not observed to contain any large pools of water.

One snake species, eastern gartersnake (*Thamnophis sirtalis sirtalis*) and one turtle species, Midland Painted Turtle (*Chrysemys picta marginata*) were also observed on the property.

4.5.3 Mammals

LGL recorded incidental observations of white-tailed deer (*Odocoileus virginianus*), northern raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*) and gray squirrel (*Sciurus carolinensis*).

4.6 Species at Risk (SAR)

Species at Risk (SAR) in the Study Area were assessed using a combination of a desktop review of wildlife atlases and species occurrence databases, consultation with the Ministry of Environment, Conservation and Parks (MECP), and targeted field surveys.

No plant SAR were encountered during the vegetation and tree inventories. Two SAR bird species were confirmed during the 2020 breeding bird surveys: Barn swallow (*Hirundo rustica*) and Eastern wood-pewee (*Contopus virens)*. Henslow's Sparrow (*Ammodramus henslowii*) and Eastern meadowlark (*Sturnella magna*) SAR were not observed during the breeding bird surveys but there are public species occurrence database records from within or directly adjacent to the Study Area.

Following the Survey Protocol for SAR Bats within Treed Habitats, suitable habitat for bat SAR was identified in the Study Area for Little Brown Myotis, Northern Myotis and Tri-Colored Bat (OMNRF 2007). A number of snag/cavity trees were found, especially within the White Cedar Mineral Coniferous Swamp (SWC1; see Figure 4-1, and Appendix A). Table 4-1 summarizes the SAR information for the Study Area.

4.7 Designated Natural Areas

4.7.1 Areas of Natural and Scientific Interest (ANSIs).

There are no Areas of Natural and Scientific Interest (ANSIs) within the Study Area.

4.7.2 Provincially Significant Wetlands

There are no Provincially Significant Wetlands within the Study Area.

4.7.3 Environmentally Sensitive Areas

There are no identified Environmentally Sensitive Areas within the Study Area.

4.7.4 Significant Valleylands

There are no Significant Valleylands within the Study Area.

4.7.5 Significant Woodlands

According to the Innisfil Official Plan (2018) the woodlands and forested areas within the Study Area have been designated as a Significant Woodland (i.e., they meet certain criteria regarding size, age, and species composition). As described in the Plan, Significant Woodlands are a Key Natural Heritage Feature, and are subject to certain restrictions.

4.7.6 Conservation Areas

As noted in Section 1.3 and Figure 1-2, the Study Area partially overlaps land regulated by the LSRCA. As such, the project requires approval under O.Reg. 179/06 of the *Conservation Authorities Act*.

4.7.7 Lake Simcoe

The Study Area is within the *Lake Simcoe Protection Act* Watershed Boundary and subject to the Lake Simcoe Protection Plan, which was created under the *Lake Simcoe Protection Act* in 2008. This Plan establishes a “Minimum Vegetation Protection Zone” around key natural heritage features within which development or site alternation is not permitted. However, because the LSWWTP expansion project has been through the EA process and it has been determined there is no reasonable alternative to the project, it is excepted from this policy.

Table 4-1: Species at Risk (SAR) within the Study Area

Common Name	Latin Name	Endangered Species Act	Species at Risk Act	Habitat Preferences	Presence in Study Area
Barn Swallow	*Hirundo rustica*	Threatened	Threatened	Cup-shaped mud nests found almost exclusively on human made structures (i.e. barns, culverts, bridges)	Yes. Active nest found on brick building in abandoned farmstead.
Eastern meadowlark	*Sturnella magna*	Threatened	Threatened	Moderately tall grasslands (i.e. pastures, hayfields), roadsides, orchards, shrubby overgrown fields, or other over- grown areas	Not observed during 2020 breeding bird surveys. There is potentially suitable habitat within the Study Area. There is a species occurrence record from a 1 km x 1 km grid centered on the Study Area in the Natural Heritage Information Centre (NHIC) database.
Henslow's Sparrow	*Ammodramus henslowii*	Endangered	Endangered	Extensive, dense, tall grasslands/open fields (e.g., abandoned farm fields, pastures, and wet meadows)	Not observed during 2020 breeding bird surveys. There is potentially suitable habitat within the Study Area. There is a species occurrence record from a 1 km x 1 km grid centered on the Study Area in the NHIC database.
Eastern Wood-Pewee	*Contopus virens*	Special Concern	Special Concern	Intermediate to mature mixed and deciduous forest stands with little understory vegetation, forest edges and clearings	Yes, probably breeding. Observed in north end of the Study Area (see Appendix B).
Little brown myotis	*Myotis lucifugus*	Endangered	Endangered	Roosts in tree cavities, and under exfoliating bark. Also commonly in attics, barns, and abandonened buildings.	Potentially suitable habitat confirmed (tree snags)
Northern myotis	*Myotis septentrionalis*	Endangered	Endangered	Roosts in tree cavities, and under exfoliating bark; less frequently in buildings/structures.	Potentially suitable habitat confirmed (tree snags)
Eastern small-footed myotis	*Myotis leibii*	Endangered	Endangered	Commonly roots in cracks and crevices in rock piles and outcrops; also hollow trees; less frequently in buildings/ structures.	Potentially suitable habitat confirmed (tree snags)
Tri-colored bat	*Perimyotis subflavus*	Endangered	Endangered	Roosts in older forests. Typically clumps of leaves in the foliage. Occasionally barns or other structures.	Potentially suitable habitat confirmed (tree snags)

5. Potential Environmental Impacts

The project has the potential to adversely impact the environment in a number of ways. The majority of impacts would be limited to the construction phase and thus would be short-term in nature. Standard mitigation measures can be applied to avoid or minimize impacts (see Section 6).

5.1 Soil

Project construction may lead to soil compaction from heavy machinery, erosion of disturbed areas when cleared of vegetation and temporary stockpiles, and soil contamination from oil and fuel spills.

5.2 Vegetation and Trees

The expansion of the LSWWTP will require clearing of 3.08 ha of land. The majority (1.7 ha) of the clearing will occur within the cultural woodland and cultural meadow communities. Clearing will also result in the loss of 0.76 ha of mixed forest and 0.52 ha of wetlands. A small amount (0.1) of manicured lands will be lost. Table 5-1 and Figure 5-1 illustrate the expected impacts of the project on vegetation communities.

The majority of the area that will be lost is considered to be disturbed, including the meadow marsh and mixed forest. An increase in forest edge will result from clearing and fragmentation of the forests and swamps, which can make the remaining forest stands vulnerable to invasive species and windthrow.

Table 5-1: Impact to Vegetation Communities

Type	Vegetation Community	Area (ha) to be Impacted
Cultural	Mineral Cultural Woodland (CUW1)	0.5
	Dry-Moist Old Field Meadow (CUM1-1a and b)	1.2
	Sub-total	1.7
Forest	Fresh-Moist White Cedar-Hardwood Mixed Forest (FOM7)	0.76
	Sub-total	0.76
Wetland	Forb Mineral Meadow Marsh (MAM2-10)	0.11
	White Cedar mineral Coniferous Swamp (SWC1)	0.41
	Sub-Total	0.52
Anthropogenic	Manicured	0.1
	Sub-Total	0.1
TOTAL		**3.08**

Of the 2,656 individual trees recorded and assessed during the tree inventory, a total of 984 trees have been recommended for removal as a result of the proposed expansion of the LSWWTP, while 1,672 have been identified for retention. These impacts to trees are illustrated in Figure 5-2 and elaborated on in Appendix B.

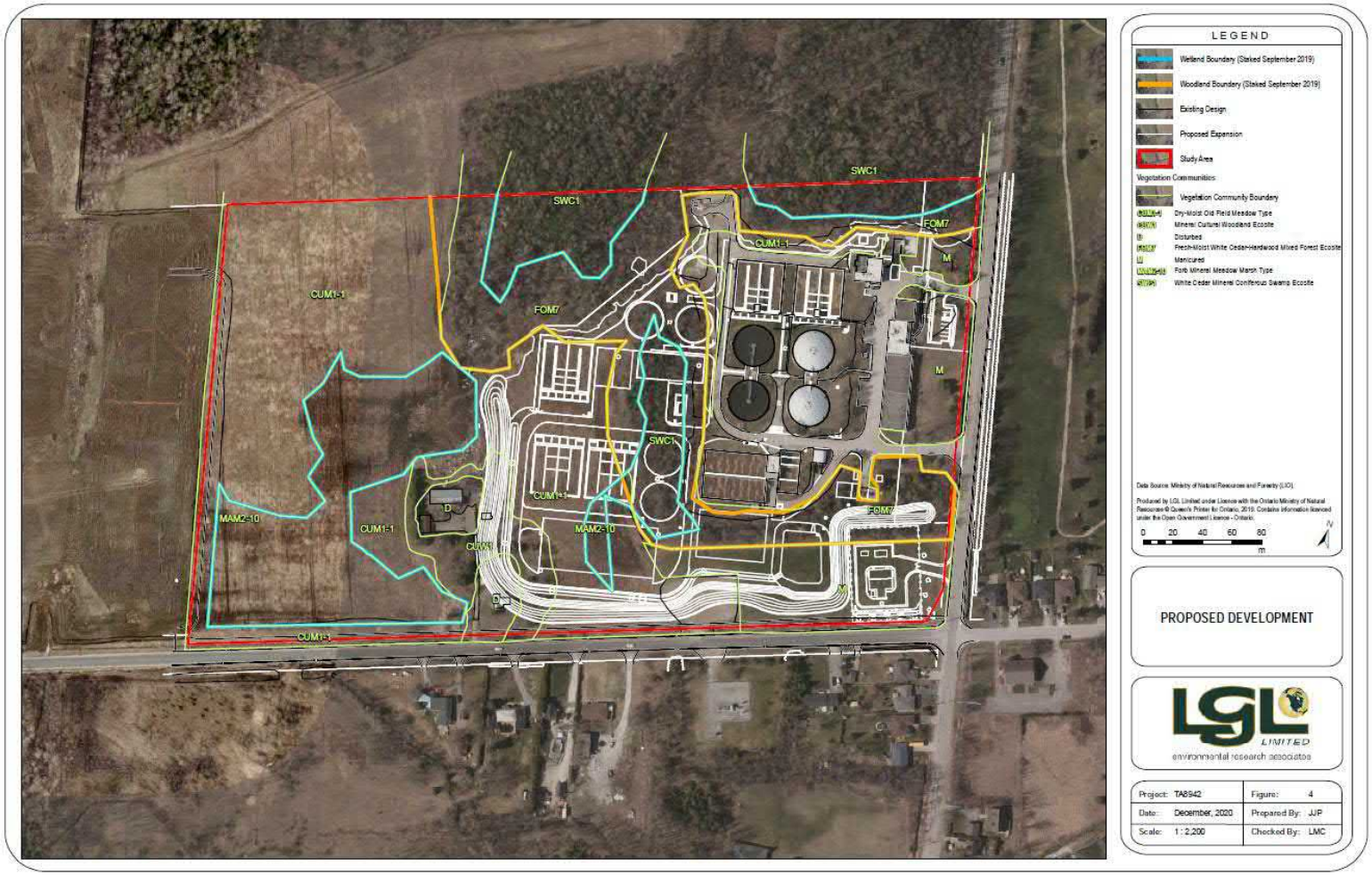


Figure 5-1: Impacts of the LSWTTP on Vegetation Communities

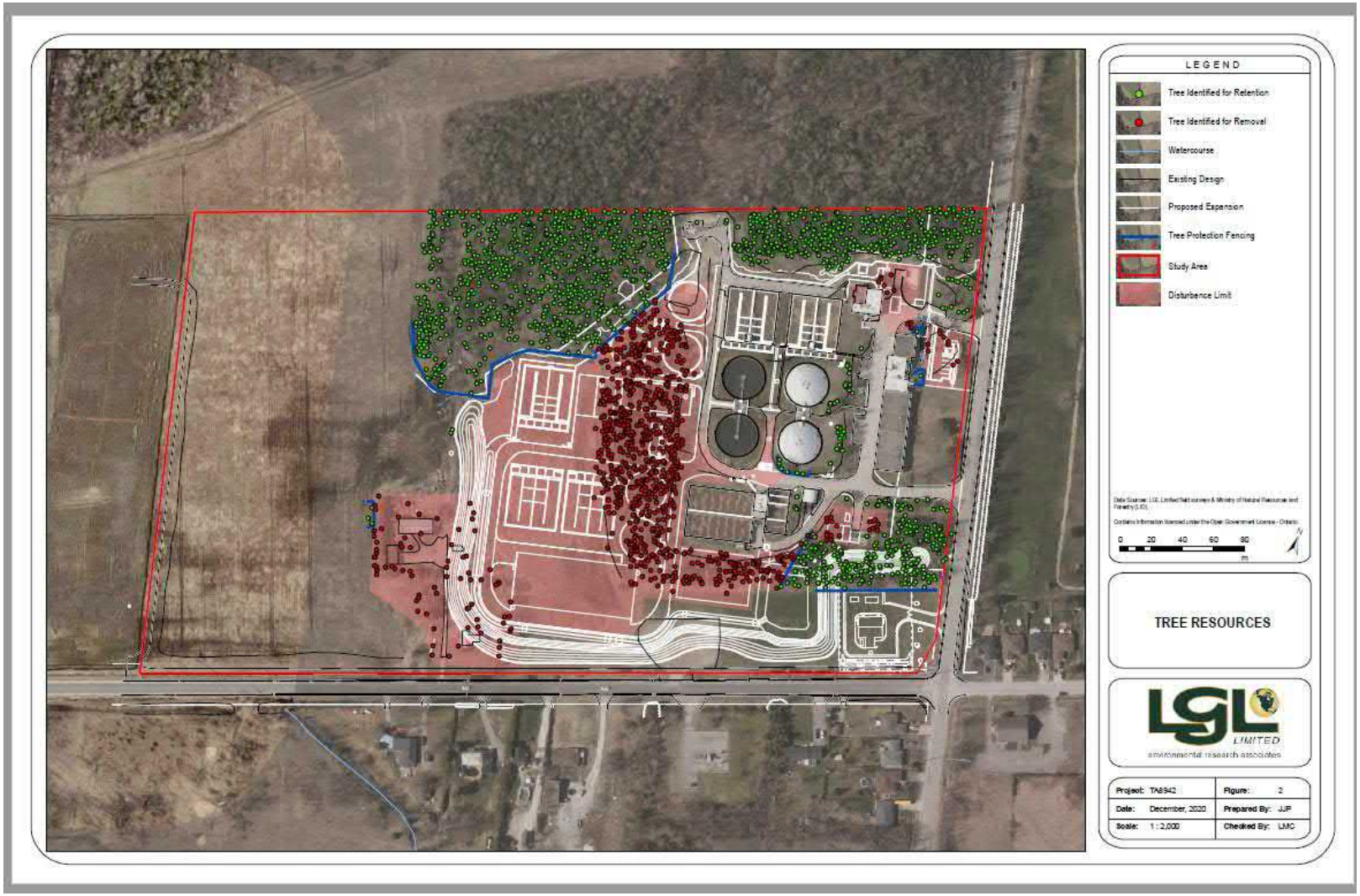


Figure 5-2: Impacts of the LSWWTP on Tree Resources

5.3 Wildlife

5.3.1 Habitat Loss and Fragmentation

The expansion of the LSWWTP has the potential to adversely impact wildlife through the removal of habitat. As noted in Section 4.1, the Project will require removal of 3.08 ha of land, including forests, woodlands, meadows and wetlands. The areas to be removed are disturbed, lower quality habitats comprised of a high proportion of invasive and non-native plant species and a relatively low diversity of habitats for wildlife. Yet some breeding birds do utilize these areas and could suffer direct mortality from tree clearing if appropriate mitigation is not followed (see Section 6). Vegetation clearing and placement of project infrastructure will also fragment the forest and reduce habitat connectivity. However, wildlife in the area to be impacted are considered to be tolerant of anthropogenic disturbance. The Project will not impact the higher quality forest habitat in the northern areas of the project area. Therefore, impacts to wildlife movement are not anticipated.

5.3.1.1 Species at Risk (SAR)

The expansion of the LSWWTP has the potential to impact SAR. Clearing of forests and swamps including the White Cedar Mineral Coniferous Swamp (SWC1) in the central portion of the Study Area will result in a loss of documented tree snag/cavities that are potential maternity roost habitat for bat SAR. The Project will also involve removal of the structures in the old farmstead within the Study Area where an active Barn swallow nest was observed. Other SAR birds including the Eastern pee-wee may be impacted by vegetation clearing.

5.3.2 Sensory Disturbance

Noise, light and visual intrusion can disturb wildlife and adversely impact behaviour and activity. However given that wildlife found within the Study Area are acclimatized to the presence of road infrastructure and other anthropogenic influences, any increase in noise, light and visual intrusion that may result from the project are not expected to adversely impact wildlife in the Study Area, particularly if lighting is minimized and controlled to avoid light spill (see Section 6).

6. Mitigation

Standard mitigation measures will be implemented to avoid or minimize potential adverse effects of the project on the environment (Table 6-1).

Table 6-1: Mitigation Measures

Potential Effect	Mitigation
Soil contamination	• Develop and implement a Spill Prevention and Response Plan. • Ensure machinery is clean and free of leaks. • Follow the *On-Site and Excess Soil Management Regulation* (O. Reg 406/19) for excavated soils.
Soil erosion	• Develop erosion and sediment control plan.
Invasive species introduction	• Dispose of invasive plants and soil carefully after clearing areas with invasive plants; • Clean equipment before entering and leaving the site, and when travelling from one area to the next; • Implement erosion control methods; • Promptly revegete disturbed areas/edges with native species; • Other actions per TRCA's *Forest Edge Management Plan Guidelines* (2004).
Windthrow	• Follow Edge management guidelines described in TRCA's *Forest Edge Management Plan Guidelines* (2004) including planting native plants along forest edge as a protection buffer.
Loss of trees	• Establish a temporary fenced tree protection zone during construction to exclude vehicles, machinery and equipment and minimize loss of/disturbance to trees. Additional details provided in Tree Protection Plan (Appendix B).
Disturbance/mortality of breeding birds incl. SAR	• Follow vegetation removal timing window per the *Migratory Bird Convention Act* and Regulations. • Compensation for barn swallow nest per O. Reg 242/08.
Disturbance/mortality of bat SAR	• Follow vegetation removal timing window for bats (do not remove trees between April 1 to October 31).
Sensory disturbance to wildlife	• To the extent possible, minimize interior and exterior lighting, use downlighting, and minimize light spill.

7. Change in Impacts

As shown in Table 7-1, the revised project footprint will reduce the overall area to be cleared from approximately 5.31 ha to 3.08 ha. The updated Project will therefore have a reduced impact on vegetation communities, trees, wildlife and SAR. The largest reduction in impacts will be to the Dry-Moist Old Field Meadow (CUM1), the Forb Mineral Meadow Marsh (MAM2-10), and the Fresh-Moist White Cedar-Hardwood Mixed Forest (FOM7).

Table 7-1: Impacts of Original vs. New Project Footprint

Type	Vegetation Community	Area (ha) to be Impacted (New Footprint)	Area (ha) to be Impacted (Old Footprint)
Cultural	Mineral Cultural Woodland (CUW1)	0.5	0.5
	Dry-Moist Old Field Meadow (CUM1-1a and b)	1.2	2.1
	Sub-total	*1.7*	*2.6*
Forest	Fresh-Moist White Cedar-Hardwood Mixed Forest (FOM7)	0.76	0.95
	Sub-total	*0.76*	*0.95*
Wetland	Forb Mineral Meadow Marsh (MAM2-10)	0.11	0.94
	White Cedar mineral Coniferous Swamp (SWC1)	0.41	0.42
	Sub-Total	*0.52*	*1.36*
Anthropogenic	Manicured	0.1	0.2
	Disturbed	0.0	0.2
	Sub-Total	*0.1*	*0.4*
TOTAL		**3.08**	**5.31**

8. References

Lee, H.T. et al. 1998. *Ecological Land Classification for Southern Ontario: First Approximation and Its Application*. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch, SCSS Field Guide FG-02.

Ministry of Natural Resources and Forestry. No Date. Bobolink Survey Methodology.

Ministry of Natural Resources and Forestry. 2017. *Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis and Tri-Colored Bat.*

Toronto and Region Conservation Authority. 2004. *Forest Edge Management Plan Guidelines.*

Town of Innisfil. 2018. Our Place – Innisfil Official Plan. Prepared by SGL Planning & Design Inc. in association with Project for Public Spaces · Cumming + Company · Hemson Consulting Ltd. North-South Environmental Inc. · LEA Consulting Ltd. · HDR Inc. · AgPlan Limited · Tate Economic Research Inc.

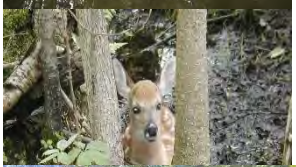
Breeding Bird Atlas Protocol Guidelines. 2001. Guide for Participants. Atlas Management Board, Federation of Ontario Naturalists, Don Mills.

Appendix A

Natural Heritage Evaluation (LGL 2020)

LGL LIMITED
environmental research associates

Natural Heritage Evaluation



Town of Innisfil Lakeshore Wastewater Treatment Plant Expansion

prepared for:

HATCH

prepared by:

LGL LIMITED
environmental research associates

DECEMBER 2020

Natural Heritage Evaluation

Town of Innisfil Lakeshore Wastewater Treatment Plant Expansion

prepared by:

Lisa M. Catcher, Hons. B.A.
Botanist/ISA Certified Arborist

reviewed by:

Grant N. Kauffman, M.E.S.
Vice President, Ontario Region

LGL Limited
environmental research associates
22 Fisher Street, P.O. Box 280
King City, Ontario L7B 1A6
Tel: 905-833-1244 Fax: 905-833-1255
E-mail: kingcity@lgl.com
URL: www.lgl.com

DECEMBER 2020

LGL Project # TA8942

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

The Town of Innisfil (Town) is preparing to expand the Lakeshore Wastewater Treatment Plant (WWTP) to accommodate the full buildout of the Town's approved Official Plan expansion. InnServices on behalf of the Town is undertaking a detail design study for the expansion. The expansion of the WWTP will be fully within the existing facility property (study area). The limits of the study area are presented in **Figure 1**.

This detail design study is being conducted by Hatch on behalf of InnServices. LGL Limited (LGL), as a sub-consultant to Hatch, is providing natural heritage services. A Terms of Reference (ToR) was submitted to the Lake Simcoe Region Conservation Authority (LSRCA) for approval in September 2019 by Hatch and as such, this report serves to satisfy the requirements of the ToR. This report summarizes the results of LGL's data collection and analysis conducted in the summer and fall of 2019, and the spring of 2020. The potential effects of this project on natural heritage features, including environmental protection measures, are presented in this report. The impact assessment and mitigation is based on a review of the site plan prepared by Hatch in December 2020.

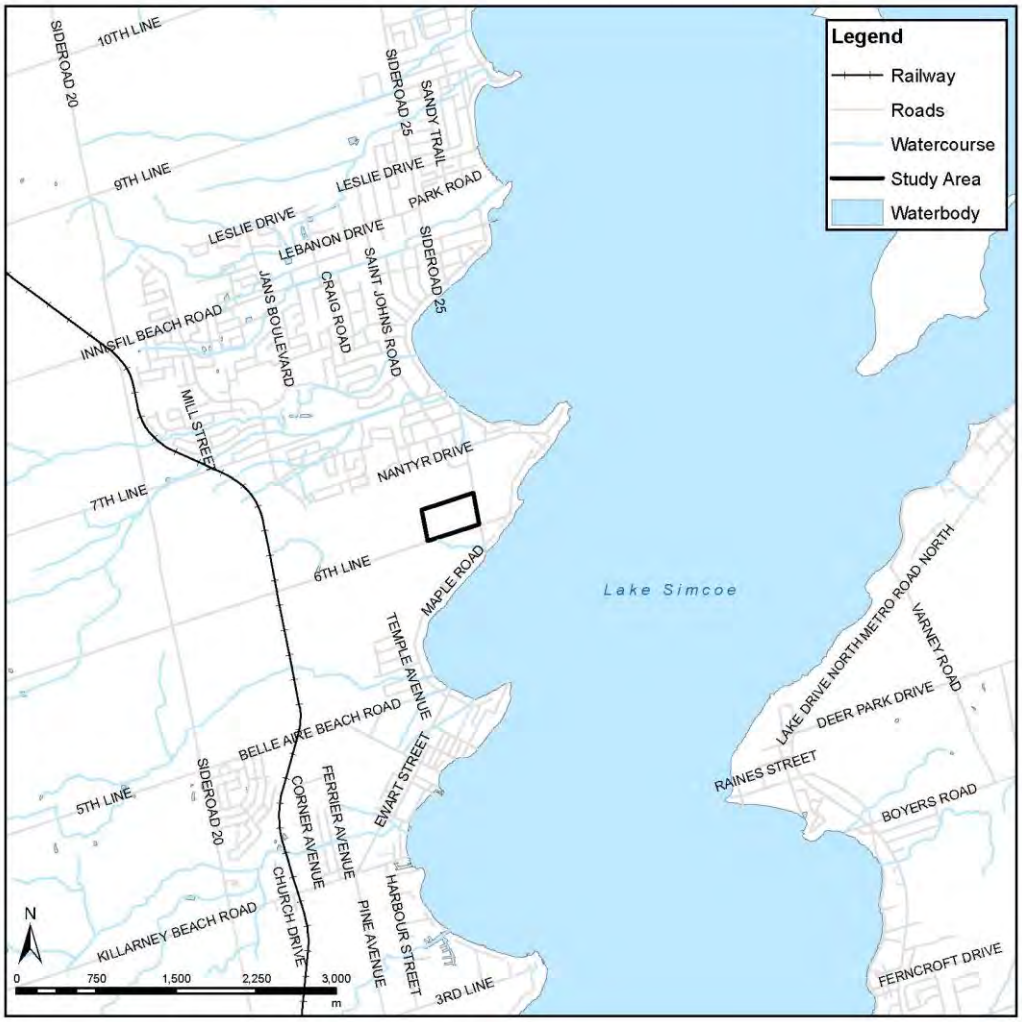


FIGURE 1. KEY PLAN

2.0 IDENTIFICATION OF NATURAL HERITAGE FEATURES AND FUNCTION

The following discussion outlines the existing environmental conditions found within the study area and identifies natural heritage areas and/or features of environmental sensitivity and/or significance.

2.1 Physiography and Soils

The site is located within the Simcoe Lowlands physiographic region (Chapman and Putnam 1984). The Simcoe Lowlands were flooded by glacial Lake Algonquin, are relatively flat and contain sand, silt and clay deposits. Bedrock consists of the Simcoe Group, which is Middle Ordovician in age, and composed of limestone (Ontario Geological Survey 1991). Quaternary geology consists of littoral foreshore deposits (Barnett, Cowan and Henry 1991). The site is relatively flat, sloping from an elevation of approximately 226.25 in the northwest corner to an elevation of approximately 222.00 at the culvert inlet in the southeast corner at the intersection of the 6th Line and the Road Allowance between Lots 25 and 26. There are no significant physical features located within the study area.

2.2 Aquatic Habitats and Communities

The study area is located in the Innisfil Creeks subwatershed. Based on a review of LSRCA mapping and site investigations, there are no watercourses located within the study area. Moyer Creek is located approximately 250 m north of the study area.

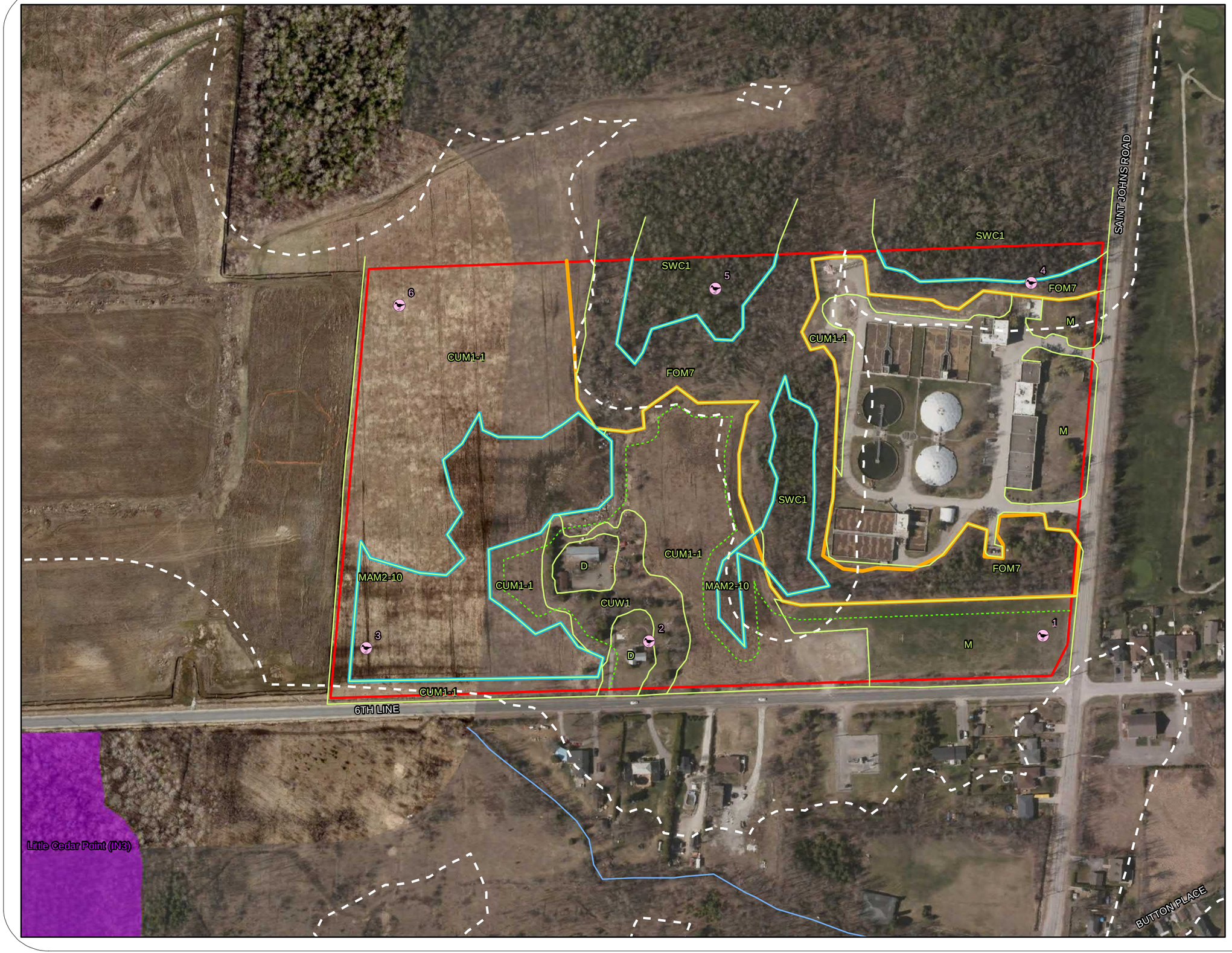
2.3 Vegetation and Vegetation Communities

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation and field investigations. Air photos were interpreted to determine the limits and characteristics of vegetation communities. A field investigation of the vegetation communities located within the study area and beyond to the extent possible, was undertaken on August 26th and September 20th, 2019.

Vegetation communities were classified according to the *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee *et al*. 1998). The communities were sampled using a plotless method for the purpose of determining general composition and structure of the vegetation. Plant species status was reviewed for Ontario (Oldham 2009), LSRCA (Lake Simcoe Environmental Management Strategy State of the Lake Simcoe Watershed 2003) and Simcoe County (Riley 1989). Vascular plant nomenclature follows Newmaster *et al*. (1998) with a few exceptions that have been updated to Newmaster *et al.* (2007).

2.3.1 Vegetation Communities

A total of five ELC community types were identified within the study area during LGL's botanical surveys including: Fresh-Moist White Cedar Hardwood Mixed Forest (FOM7), White Cedar Mineral Coniferous Swamp (SWC1), Forb Mineral Meadow Marsh (MAM2-10), Dry-Moist Old Field Meadow (CUM1-1), and Mineral Cultural Woodland (CUW1). Vegetation communities identified in the study area are presented in **Figure 2** and described in **Table 1**. All of the vegetation communities found within the study area are considered widespread and common in Ontario and are secure globally.



LEGEND

- Breeding Bird Point Count Station
- Watercourse
- Wetland Boundary (Staked September 2019)
- Woodland Boundary (Staked September 2019)
- Minimum Vegetation Protection Zone (MVPZ)
- Study Area
- Regulation Limit (LSRCA)
- Wetland - Evaluated Provincial

Vegetation Communities

- Vegetation Community Boundary

CUM1-1	Dry-Moist Old Field Meadow Type
CUW1	Mineral Cultural Woodland Ecosite
D	Disturbed
FOM7	Fresh-Moist White Cedar-Hardwood Mixed Forest Ecosite
M	Manicured
MAM2-10	Forb Mineral Meadow Marsh Type
SWC1	White Cedar Mineral Coniferous Swamp Ecosite

Data Sources: Lake Simcoe Region Conservation Authority & Ministry of Natural Resources and Forestry (LIO).

0 25 50 75 100 m

N

NATURAL HERITAGE

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 2,500	**Checked By:**	LCO

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIAL – NATURAL/SEMI-NATURAL			
FOM	Mixed Forest		
FOM7	Fresh-Moist White Cedar-Hardwood Mixed Forest	**Canopy:** includes eastern white cedar (*Thuja occidentalis*), trembling aspen (*Populus tremulodies*), red ash (*Fraxinus pennsylvanica*), and white birch (*Betula papyrifera*). **Understory:** includes white elm (*Ulmus americana*), trembling aspen, common buckthorn (*Rhamnus catharica*), Tartarian honeysuckle (*Lonicera tatatrica*) and ironwood (*Ostrya virginiana*). **Ground Cover:** includes yellowish enchanter's nighshade (*Circaea lutetiana* ssp. *canadensis*), white avens (*Geum canadense*), scarlet strawberry (*Fragaria virginiana* ssp. *virginiana*), and common dandelion (*Taraxacum officinale*).	• Tree cover > 60 % (FO). • Coniferous trees > 25 % and deciduous trees > 25 % of canopy cover (M). • Middle to lower slopes, seepage areas and bottomlands topographic positions (7).
WETLAND			
SWC	Coniferous Swamp		
SWC1	White Cedar Mineral Coniferous Swamp	**Canopy:** includes eastern white cedar and white birch. **Understory:** includes eastern white cedar, red ash, and trembling aspen. **Ground cover:** includes sensitive fern (*Onoclea sensibilis*) and sedges (*Carex* spp.).	• Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Conifer tree cover >75% of canopy cover (1).
MAM2-10	Forb Mineral Meadow Marsh	**Emergent Trees/Shrubs:** includes red-osier dogwood (*Cornus stolonifera*). **Ground Cover:** includes reed-canary grass (*Phalaris arundinacea*), narrow-leaved cattail (*Typha angustifolia*), tall white aster (*Aster lanceolatus* ssp. *lanceolatus*), stick-tight (*Bidens cernua*), purple loosestrife (*Lythrum salicara*), and common water-plantain (*Alisma plantago-aquatica*).	• Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Species less tolerant of prolonged flooding (MAM). • Mineral soil (2). • Forb dominant (-10).
TERRESTRIAL – CULTURAL			
CUM	Cultural Meadow		

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUM1-1	Dry-Moist Old Field Meadow	**Emergent Trees/Shrubs:** includes trembling aspen and Manitoba maple (*Acer negundo*). **Ground Cover:** includes Kentucky blue grass (*Poa pratensis* ssp. *pratensis*), Canada goldenrod (*Solidago canadensis*), swallow-wort (*Cynanchum rossicum*), awnless brome (*Bromus inermis* ssp. *inermis*), Canada thistle (*Cirsium arvense*), and red clover (*Trifolium pretense*).	• Cultural communities (CU). • Tree cover and shrub cover < 25 % (M). • This community can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).
CUW	Cultural Woodland		
CUW1	Mineral Cultural Woodland	**Canopy:** includes eastern white cedar, crack willow (*Salix fragilis*), white birch. **Understory:** includes Manitoba maple, trembling aspen, Tartarian honeysuckle, and eastern white cedar. **Ground Cover:** includes awnless brome, Kentucky bluegrass, Canada goldenrod, and common dandelion.	• Cultural communities (CU). • 25 % < tree cover < 35 % • Mineral Soil (1).
OTHER*			
M	Manicured	Areas where large expanses of grass/shrubs/trees are maintained and/or planted.	• Manicured grasses and planted shrubs and/or trees

The western portion of the study area is largely comprised of a mixture of cultural vegetation communities that have been subjected to disturbance as a result of existing land uses. In general, cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant.

The natural/semi-natural vegetation communities found within the study area are comprised of a large mixed forest and coniferous swamp that extends beyond the plant property. In addition, a large meadow marsh community is located in the south-western corner of the property. The limits of the mixed forest and wetland communities were determined through a staking exercise undertaken on September 27, 2019 with LSRCA staff. The results of the wetland and forest dripline staking are presented in **Figure 2.** In general, the forest communities are considered to be of higher quality and contain a higher proportion of native species. However, evidence of disturbance was identified within the mixed forest community (FOM7) found within the existing facility boundary. The meadow marsh community on the east side of the study area is largely comprised of common reed (*Phargmites australis*) and as such, is considered to be of low quality. The meadow marsh community on the west side of the property is considered to be of moderate quality.

There are several areas that are not identified as ELC vegetation communities including manicured (M), which includes mown lawn and trees that have been planted or that have been maintained as amenity features.

2.3.2 Flora

A total of 104 plant species have been recorded within the study area. Three of these plants could only be identified to genus and are not included in the following calculations. Of the 101 plant species identified, 59 (58%) plant species identified are native to Ontario and 42 (42%) plant species are considered introduced and non-native to Ontario. A list of vascular plants is presented in **Appendix A**. Definitions of the acronyms and species ranks used in **Appendix A** are described in **Appendix C**.

2.4 Wildlife and Wildlife Habitat

Field investigations were conducted with the purpose of documenting wildlife and wildlife habitat and to characterize the nature, extent and significance of wildlife usage within the study area. Incidental observations of wildlife were also documented during each site visit. Direct observations, calls and tracks were used to record wildlife presence within the study area. A summary of survey date(s), tasks and weather is presented in **Table 2**.

Secondary source data from the MNRF, Ministry of Environment, Conservation and Parks (MECP), eBird, and LSRCA was reviewed to screen for wildlife, wildlife habitat and records of species at risk found within the study area.

TABLE 2.
SUMMARY OF DATE OF INVENTORY, TASK, WEATHER AND PERSONNEL

Date of Inventory	Task	Weather	Personnel Involved
September 20, 2010	General wildlife survey		Heather Polan (LGL)
June 11, 2020	Breeding Bird survey and incidental wildlife survey	Overcast, 16ºC, calm	David Smith (LGL)
June 22, 2020	Breeding Bird survey and incidental wildlife survey	Partial cloud cover, 19ºC, calm	David Smith (LGL)
July 6, 2020	Breeding Bird survey and incidental wildlife survey	Clear, 20ºC, calm.	David Smith (LGL)

2.4.1 Wildlife Habitat

The study area provides moderate quality wildlife habitat throughout, with higher quality habitat limited to the northern portion of the study area. The manicured areas within the current WWTP footprint and in the south-east corner, in addition to the cultural woodland associated with the abandoned homestead within the southern border of the study area were found to be highly disturbed. These areas are disturbed from surrounding anthropogenic influences which limit the function for use by sensitive wildlife species; as such, the wildlife assemblage documented is considered tolerant to human disturbance.

The larger and more contiguous natural area to the north supports a moderate diversity of wildlife species and appears to provide locally important habitat connectivity and movement opportunities to the west and southwest. Within the study area, particularly the White Cedar Mineral Coniferous Swamp (SWC1), wildlife trees (trees supporting cavities) were documented. The natural habitat present along the north side of the property would support interior habitats.

The wetland communities identified appear to provide limited anuran breeding habitat, as no large pools of water were documented. Topography within the SWC1 community indicates that some small vernal pools may be present in the spring and after large storm events; however, it is not anticipated that these small pools would be large enough to support amphibian breeding.

The cultural habitats present contained a moderately diverse wildlife assemblage comprised of a mix of open country and edge habitat species. No species at risk grassland birds were documented.

2.4.2 Fauna

Based on field observations, 51 species of wildlife could be verified in the study area and the majority of these recordings came from identification (through calls and sightings) of bird species with more modest numbers of herpetofauna and mammal species identified. A summary of the wildlife species documented in the study area during the field investigations is presented in **Table 3**.

Mammal Species
Four mammal species were recorded incidentally, mostly within open habitats present on the property or along habitat edges: White-tailed Deer (*Odocoileus virginianus)*, Northern Raccoon (*Procyon lotor*), Eastern Cottontail (*Sylvilagus floridanus*) and Gray Squirrel (*Sciurus carolinensis)* were recorded.

Breeding Birds

Three breeding bird surveys were conducted according to the Breeding Bird Atlas Protocol Guidelines (2001) as well as the MNRF survey protocol for Bobolink (*Dolichonyx oryzivorus*) (MNRF Guelph, no date) for the cultural meadow habitat areas. Breeding bird surveys were conducted on three dates in 2020, to document breeding bird evidence (BBE) and to characterize the nature, extent and significance of breeding bird usage of the habitats within the study area (**see Appendix B-Breeding Bird Survey Results**). A total of 37 bird species were recorded in the study area during the breeding bird season. Breeding evidence was confirmed for seven species and suspected for 19 species. An additional 10 species were identified as having the potential to breed within the study area. Confirmed breeding by bird species was generally documented based on adults carrying food for young, a nest observation or the presence of fledged young. Species with confirmed breeding evidence include American Robin (*Turdus migratorius*), Barn Swallow (*Hirundo rustica*), Canada Goose (*Branta canadensis*), European Starling (*Sturnus vulgaris*), Hairy Woodpecker (*Picoides villosus*), Osprey (*Pandion haliaetus*) and Yellow Warbler (*Setophaga petechia*). An active Barn Swallow nest (threatened species) was documented on the side of a brick building located in the abandoned farmstead and an active Osprey nest was identified within the current WWTP footprint atop of a light pole.

The bird assemblage identified within the study area represents a variety of habitat types, including open-country (cultural meadow), mixed forest, forest edge, swamp, meadow marsh wetland and anthropogenic habitats. The area around the farmstead supported a large number of bird species (23 species documented), the majority of which are commonly found along edge and open habitats. Species commonly associated with forest interior, were observed near the north end of the study area (in Swamp/forest communities); notably Northern Goshawk (*Accipiter gentilis*), Black and White Warbler (Mniotilta varia), Red-eyed Vireo (*Vireo olivaceus)* and Eastern Wood Pewee (*Contopus virens)*, a species designated as Special Concern.

Herpetofauna Species

There was limited evidence of amphibian breeding on the property, however three amphibian species, Green Frog (*Rana clamitans*), Northern Leopard Frog (*Lithobates pipiens*) and American Toad (*Anaxyrus americanus)* were confirmed present, mostly observed incidentally in the meadow marsh habitat and around the farmstead. One snake species, Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) and one turtle species, Midland Painted Turtle (*Chrysemys picta marginata*) were also observed on the property.

TABLE 3.
SUMMARY OF WILDLIFE SPECIES IDENTIFIED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity			
			Fed SARA	Prov ESA	Legal Status	Other
Amphibians	*Bufo americanus*	American Toad			-	
	Lithobates calamitans	Green Frog			-	
	Lithobates pipiens	Northern Leopard Frog			-	
	Lithobates sylvatica	Wood Frog			-	
Birds	*Corvus brachyhrynchos*	American Crow			-	
	Spinus tristis	American Goldfinch			MBCA	
	Turdus migratorius	American Robin			MBCA	
	Setophaga ruticilla	American Redstart			MBCA	SWH
	Hirundo rustica	Barn Swallow	**THR**	**THR**	MBCA	
	Dendroica fusca	Blackburnian Warbler			MBCA	
	Poecile atricapillus	Black-capped Chickadee			MBCA	
		Black and White Warbler			MBCA	SWH/ INT
	Cyanocitta cristata	Blue Jay			FWCA (SP-B)	
	Molothrus ater	Brown-headed Cowbird			-	
	Branta canadensis	Canada Goose			MBCA	
	Bombycilla cedrorum	Cedar Waxwing			MBCA	
	Quiscalus quiscula	Common Grackle			-	
	Geothlypis trichas	Common Yellowthroat			MBCA	
	Picoides pubescens	Downy Woodpecker			MBCA	
	Tyrannus tyrannus	Eastern Kingbird			MBCA	
	Contopus virens	Eastern Wood Pewee	**SC**	**SC**	MBCA	
	Sturnus vulgaris	European Starling			-	
	Dumetella carolinensis	Gray Catbird			MBCA	
	Picoides villosus	Hairy Woodpecker			MBCA	SWH
	Troglodytes aedon	House Wren			MBCA	
	Passerina cyanea	Indigo Bunting			MBCA	
	Charadrius vociferus	Killdeer			MBCA	
	Anas platyrhynchos	Mallard			MBCA	
	Zenaida macroura	Mourning Dove			MBCA	
	Cardinalis cardinalis	Northern Cardinal			MBCA	
	Colaptes auratus	Northern Flicker			MBCA	
	Accipiter gentilis	Northern Goshawk			FWCA (SP-R)	INT
	Pandion haliaetus	Osprey			FWCA (SP-R)	
	Melanerpes carolinus	Red-bellied Woodpecker			MBCA	
	Vireo olivaceus	Red-eyed Vireo			MBCA	INT

TABLE 3.
SUMMARY OF WILDLIFE SPECIES IDENTIFIED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity			
			Fed SARA	Prov ESA	Legal Status	Other
	Buteo jamaicensis	Red-tailed Hawk			FWCA (SP-R)	
	Agelaius phoeniceus	Red-winged Blackbird			-	
	Larus delawarensis	Ring-billed Gull			-	
	Passerculus sandwichensis	Savannah Sparrow			MBCA	SWH
	Melospiza melodia	Song Sparrow			MBCA	
	Vireo gilvus	Warbling Vireo			MBCA	
	Meleagris gallopava	Wild Turkey			FWCA (Game-B)	
	Empidonax traillii	Willow Flycatcher			MBCA	
	Dendroica palmarum palmarum	Yellow Palm Warbler			MBCA	
	Setophaga petechia	Yellow Warbler			MBCA	
Reptiles	*Thamnophis sirtalis sirtalis*	Eastern Gartersnake			-	
	Chrysemys picta marginata	Midland Painted Turtle			FWCA (P)	
Mammals	*Sylvilagus floridanus*	Eastern Cottontail			FWCA(G)	
	Sciurus carolinensis	Eastern Gray Squirrel			FWCA(G)	
	Procyon lotor	Northern Raccoon			FWCA(F)	
	Odocoileus virginianus	White-tailed Deer			FWCA(G)	

All acronyms used in this table are defined in **Appendix C** (Acronyms and Definitions Used in Species Lists).

Legislation Referenced in the Table:
SARA – Federal *Species at Risk Act*
ESA – Ontario *Endangered Species Act, 2007*
MBCA – *Migratory Bird Convention Act*
FWCA – *Fish and Wildlife Conservation Act*
Other:
Significant Wildlife Habitat Technical Guide:
SWH – Area Sensitive Species
INT - Interior Species

2.5 Species at Risk

Endangered and threatened species are identified by the MNRF using procedures established by the Committee on the Status of Species at Risk in Ontario (COSSARO). Species and their habitats are protected under the *Endangered Species Act* (ESA), 2007. In order to address the most current species at risk (SAR) requirements, LGL completed a SAR habitat screening, whereby available data for the area was screened for SAR occurrences, and consultation with the MECP was undertaken to identify any concerns regarding species at risk. Consultation with MECP comprised a data request which included a summary of the information compiled through the background review and site investigations to date.

LGL conducted a field visit in the late summer/fall of 2019 and spring/summer 2020 to assess available habitat within the study area for SAR. The intent of this effort was to identify potential SAR habitat in proximity to project works, assess the potential of the project to impact SAR habitat, and to summarize the proponent's responsibilities in relation to the *Endangered Species Act*, 2007 (ESA), should SAR have the potential to be impacted. Breeding bird surveys completed in spring/summer of 2020 confirmed the presence of two SAR bird species: Barn Swallow and Eastern Wood-Pewee. Where SAR and their habitat cannot be avoided though the implementation of timing windows or other mitigation measures, LGL will identify next steps specific to SAR. A discussion of potential SAR within the study area is presented in **Section 2.6.1.1 and 2.6.1.2.**

2.5.1 Plant Species

No plant species that are regulated under the Ontario *Endangered Species Act* or the Canada *Species at Risk Act* were encountered during LGL's botanical investigation. A review of the MNRF Natural Heritage Information Centre (2020) indicates that there are no historic records of plant species at risk found within the study area. Consultation with MECP indicates a record of butternut (*Juglans cinerea*) as species regulated as Endangered under the ESA, within the vicinity of the study area. However, no butternut were identified within the study during LGL's field investigations.

2.5.2 Wildlife Species

A discussion of wildlife SAR potential within the study area is provided below.

Eastern Meadowlark
Eastern Meadowlark is regulated as 'Threatened' under the ESA. Eastern Meadowlark receives species and general habitat protection under the ESA. The Eastern Meadowlark is a prairie species that breeds primarily in moderately tall grassland, including pastures and hayfields, and can also be found in shrubby overgrown fields or other open areas. Eastern Meadowlarks are commonly associated with agricultural lands. Potential suitable breeding habitat to support Eastern Meadowlark was identified within the study area (the cultural meadow habitat). However, this species was not detected during 2020 surveys, using the Bobolink Survey Methodology (MNRF, no date).

Eastern Wood-Pewee
Eastern Wood-Pewee is provincially regulated as 'Special Concern' under the ESA. Eastern Wood-Pewee were encountered at three of the breeding bird survey locations, mostly in the wooded areas. They are probably breeding in the area based on the evidence of males singing on two separate occasions (**see Appendix C-Breeding bird table**). Eastern Wood-Pewee inhabit deciduous and mixed forests and nest in trees as such, to minimize potential impacts to this species tree removals during construction should occur outside the breeding window.

Barn Swallow
Barn Swallow is currently listed as 'Threatened' and is provincially regulated as 'Threatened' under the ESA. Barn Swallows will build cup-shaped mud nests almost exclusively on human-made structures including open barns. An active Barn Swallow nest was located on the brick building of the homestead within the study area, thus confirming that this species is breeding within the study area.

Bats
As noted above, mature trees are present within the study area that may provide suitable roosting habitat for a variety of bat species. There are currently four bat species regulated as 'Endangered' under the Ontario ESA, including: eastern small-footed myotis (*Myotis leibii*); little brown myotis (*Myotis lucifugus*); northern myotis (*Myotis septentrionalis*); and, tri-colored bat (*Perimyotis subflavus*). The ESA affords protection for both individuals of these species (subsection 9(1)) and their habitat (subsection 10(1)). Given that species-specific habitat regulations have not yet been developed for SAR bats, habitat is protected according to the general definition provided in the ESA. Specifically, according to section 2(1), the Act protects "an area, on which the species depends, directly or indirectly, to carry on its life processes, including processes such as reproduction, rearing, hibernation, migration or feeding." A general description of the habitat requirements of each of the four bat species is provided below.

Little brown myotis and northern myotis will use cavities in the trees or exfoliating bark, while tri-coloured bat roosts in clumps of leaves in the foliage. Little brown myotis will frequently use buildings and the other three endangered bat species will use buildings, but far less frequently. Eastern small-footed myotis is a saxicolous (rock-loving) species and will frequently roost in rock piles, talus or crack and crevices in rock outcrops. Lake Simcoe which is situated just east of the study area offers suitable foraging habitat for bat species.

Given the presence of possible suitable roosting habitat for SAR bats within the study area a snag survey was undertaken in the fall of 2019 in accordance with the *Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis and Tri-Colored Bat (*Ontario Ministry of Natural Resources and Forestry: Guelph District, 2007). A limit number of oak and maple trees were identified within the study area during LGL's arborist survey (available under separate cover) and as such, no suitable leave clumps were identified within the study area. A number of potential suitable snag/cavity trees were identified within the study area. The majority of these trees were identified within the mixed forest community (FOD7), the locations of these trees are presented on **Figure 3**.

LEGEND

Snag/Cavity Tree

Watercourse

Study Area

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

0 20 40 60 80

m

N

BAT SNAG/CAVITY SURVEY RESULTS

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	3
Date:	January, 2020	**Prepared By:**	JJP
Scale:	1 : 2,200	**Checked By:**	LCO

2.6 Designated Natural Areas

The following sections describe the designated natural areas found within or adjacent to the study area that have been identified for protection by MNRF, LSRCA, and the Town of Innisfil.

2.6.1 Areas of Natural and Scientific Interest (ANSIs)

There are no ANSIs identified by the MNRF located within the study area.

2.6.2 Provincially Significant Wetlands (PSWs)

There are no PSWs identified within the study area. A portion of the Little Cedar Point PSW is located approximately 100 m south-west of the study area (**Figure 2**). Consultation was undertaken with the MNRF to determine if complexing the wetland identified within the study area into the PSW would occur. It was confirmed by Jodi Benvenuti (Management Biologist, Midhurst MNRF) that complexing is not considered suitable in this situation given the wetlands are currently protected under the Lake Simcoe Protection Plan (2009).

2.6.3 Town of Innisfil Natural Heritage System

A review of the Innisfil Official Plan- Our Place (Draft; 2017) Appendix 10 Natural Areas identifies the woodlands within the study area as 'significant woodlands'.

2.6.4 Environmentally Sensitive Area (ESAs)

There are no ESAs identified by the LSRCA located within the study area.

2.6.5 Lake Simcoe Region Conservation Authority

The north-eastern portion of the study area is regulated by LSRCA under Ontario Regulation 179/06. This regulation pertains to Development, Interference with Wetland and Alterations to Shorelines and Watercourses. The regulated area within the study area is identified in **Figure 2**.

2.6.6 Lake Simcoe Protection Plan

The Lake Simcoe Protection Plan (LSPP) was prepared and approved under the Lake Simcoe Protection Act and took effect in 2009. The policy document is a watershed plan that protects and restores the ecological health of Lake Simcoe and its watershed. The regulation under the Lake Simcoe Protection Act describes the area within the watershed and its boundaries. The entire study area is within the 'Lake Simcoe Protection Act Watershed Boundary'. The LSPP prohibits the development or site alteration within Key Natural Heritage Features, with certain exceptions including infrastructure, '*but only if the need for the project has been demonstrated through an Environmental Assessment or other similar environmental approval and there is no reasonable alternative'*.

The Lake Simcoe Protection Plan requires a 30 m minimum vegetation protection zone (MVPZ) from all Key Natural Heritage Features including wetlands and significant woodlands. However, given the constraints of the site and the quality of habitat that are present a reduced 10 m MVPZ has been recommended where development does not currently extend to the woodland edge and is presented on **Figure 2**. Adherence to and planting of a 10 m MVPZ will prevent impact to the woodland and wetland. Planting of the MVPZ is further discussed in **Section 5.0**.

3.0 IMPACT IDENTIFICATION ANALYSIS

Sections 3.0 and 4.0 provide an analysis of the potential impacts to the natural heritage features found within the study area and provide recommendations for mitigation and enhancement.

3.1 Vegetation and Vegetation Communities

The expansion of the Town of Innisfil Lakeshore WWTP has the potential to result in impacts to vegetation and vegetation communities. Effects on vegetation related to the proposed development could include:

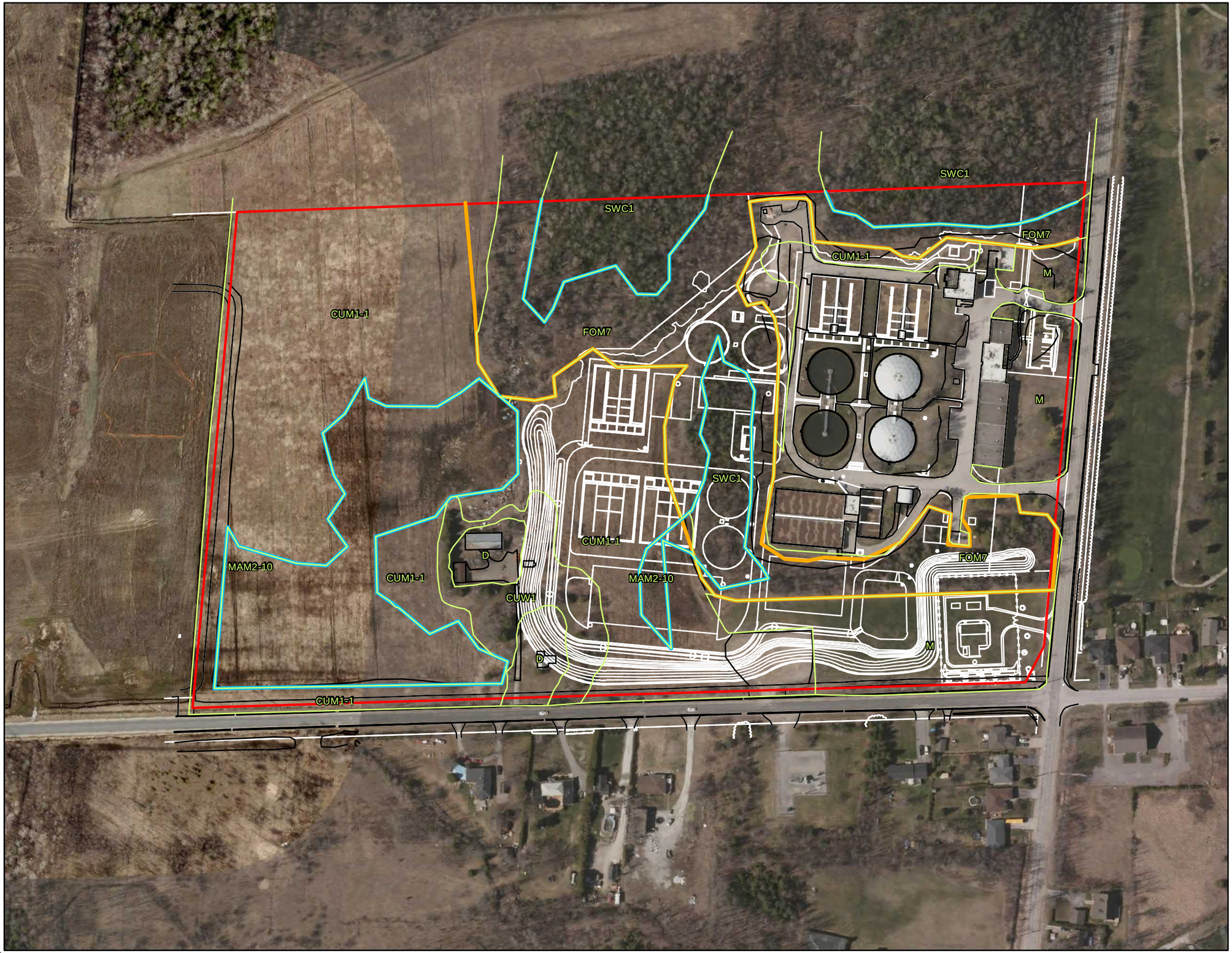
- displacement of/disturbance to vegetation and vegetation communities; and,
- displacement of rare, threatened or endangered vegetation of significant vegetation communities.

3.1.1 Displacement of/Disturbance to Vegetation and Vegetation Communities

Clearing of vegetation will be required to accommodate the proposed expansion of the Lakeshore WWTP. The expansion will result in the removal of approximately 3.08 ha of naturalized and planted area. The largest area of impact will be to lands that have been anthropogenically influenced, including cultural vegetation communities and manicured areas. A total of 1.80 ha of anthropogenically influenced lands and cultural vegetation communities will be removed as a result of the proposed improvements. In addition, a total of 0.76 ha and 0.52 ha of forest and wetland communities will be removed, respectively. **Table 3** provides a summary of the total area of vegetation communities that will be removed for the expansion of the WWTP.

TABLE 3.
IMPACTS TO VEGETATION COMMUNITIES FOUND WITHIN THE STUDY AREA

Vegetation Community Type	Vegetation Community	Total Area (ha) to be Impacted
Cultural	Mineral Cultural Woodland (CUW1)	0.50
	Dry-Moist Old Field Meadow (CUM1-1a and b)	1.20
	Sub-total	**1.70**
Forest	Fresh-Moist White Cedar-Hardwood Mixed Forest (FOM7)	0.76
	Sub-total	**0.76**
Wetland	Forb Mineral Meadow Marsh (MAM2-10)	0.11
	White Cedar Mineral Coniferous Swamp (SWC1)	0.41
	Sub-total	**0.52**
Human Influenced Lands	Manicured	0.10
	Sub-total	**0.10**
	Total Area	**3.08**



LEGEND

- Wetland Boundary (Staked September 2019)
- Woodland Boundary (Staked September 2019)
- Existing Design
- Proposed Expansion
- Study Area

Vegetation Communities

- Vegetation Community Boundary

CUM1-1	Dry-Moist Old Field Meadow Type
CUW1	Mineral Cultural Woodland Ecosite
D	Disturbed
FOM7	Fresh-Moist White Cedar-Hardwood Mixed Forest Ecosite
M	Manicured
MAM2-10	Forb Mineral Meadow Marsh Type
SWC1	White Cedar Mineral Coniferous Swamp Ecosite

Data Source: Ministry of Natural Resources and Forestry (LIO).

0 20 40 60 80 m

N

PROPOSED DEVELOPMENT

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	4
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 2,200	**Checked By:**	LMC

Cultural Vegetation Communities
Expansion of the Lakeshore WWTP will result in the removal of approximately 1.20 ha and 0.50 ha of cultural meadow and cultural woodland, respectively. Overall, impacts resulting in the loss of vegetation within these cultural communities are considered to be minor. Cultural communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are tolerant of these conditions.

It is expected that plant species displaced and/or disturbed within the cultural communities due to the proposed expansion will re-colonize available lands in the remaining portions of the communities. Disturbance activities often serve to promote the establishment and/or spread of certain plant species (including the disturbance tolerant species identified within the study area).

Forest Vegetation Communities
As noted in **Table 3**, a total of 0.76 ha of mixed forest will be removed as a result of the proposed expansion of the WWTP. The majority of these impacts will occur within the central portion of the study area and will bisect the mixed forest community, creating a forest fragment. Though forest fragmentation can have a negative impact, the adjacent forest lands to the north are large and as such, it is anticipated there will be no impact to interior forest habitat within the northern portion of the study area. A small isolated fragment of mixed forest (**Figure 3**) will remain adjacent to the south-east corner of the existing facility. The isolation of this portion of the mixed forest will likely cause negative impacts to the remaining portion of this forest, given the very small area of habitat to be retained, which would have a high edge-to-interior ratio with increased vulnerability to invasion by non-native species and increased exposure to windthrow.

New forest edges are exposed to greater potential for non-native and invasive species infiltration further into the forest, and as such, forest edge management is recommended for the mixed forest community. Implementation of forest edge management will enhance the forest edge and increase resiliency against invasive species and windthrow. Forest edge management is further discussed in **Section 5.1**.

Wetland Vegetation Communities
As noted in **Table 3**, a total of 0.52 ha of wetland will be removed including 0.11 ha and 0.41 ha of meadow marsh and coniferous swamp, respectively. Impacts to the coniferous swamp as a result of the proposed expansion of the WWTP will remove the entire swamp community in the central portion of the property, while the remaining swamp communities within the northern portion of the site will be left intact.

As shown in **Figure 3**, impacts will occur to both of the meadow marsh communities within the study area. The proposed expansion will remove almost the entire meadow marsh community located on the east side of the study area. This meadow marsh community is almost entirely dominated by common reed (*Phragmites australis*) and is considered of low quality. It is anticipated that the remaining portion of this meadow marsh community will not continue to persist post-construction. Given the nature of this meadow marsh, its loss is not considered to be significant. Impacts to the meadow marsh community on the west side of the property will remove the eastern portion of the community. A large portion of the community will remain post-construction and as such, it is anticipated this community will continue to persist post-construction.

3.1.2 Displacement of Rare, Threatened or Endangered Vegetation and Vegetation Communities

All of the vegetation communities identified within the study area are considered to be widespread and common in Ontario and secure globally. As noted in **Section 2.5.**, no plant species that are regulated under the Ontario *Endangered Species Act* were identified within the study area. In addition, no plant species considered rare in Simcoe Region were identified.

3.2 Wildlife and Wildlife Habitat

The proposed expansion of the Town of Innisfil Lakeshore WWTP, has the potential to result in the displacement of and disturbance to wildlife and wildlife habitat. Effects on wildlife related to these undertakings may include:

- displacement of wildlife and wildlife habitat;
- disturbance to wildlife from noise, light and visual intrusion;
- potential impacts to migratory birds; and,
- displacement of rare, threatened or endangered wildlife and significant wildlife habitat.

3.2.1 Displacement of Wildlife and Wildlife Habitat

As noted in **Section 2.4**, wildlife habitat within the study area is considered to be of moderate quality with higher quality habitat found within the northern and western portions of the site. Forest habitat units located within and immediately adjacent to the existing facility were found to be disturbed, and as such, provide wildlife habitat with low diversity and limited habitat potential.

As a result of the expansion of the WWTP, there is the potential for disturbance/destruction to wildlife and wildlife habitat. However, the proposed areas for development have been subject to disturbance from the existing WWTP infrastructure. As such, the majority of species residing in habitats located within or directly adjacent to the proposed expansion appear generally tolerant of anthropogenic disturbances. In addition, the proposed expansion has the potential to result in a barrier to the movement of wildlife as it will fragment the woodland found within the study area. The larger forest unit to the north supports interior forest habitat and provides important habitat for breeding birds. No modification/disturbance of these habitats is proposed and consequently wildlife use of habitats and movement function will be maintained.

3.2.2 Disturbance to Wildlife from Noise, Light and Visual Intrusion

Noise, light and visual intrusion may alter wildlife activities and patterns. In urban settings, such as the study area, wildlife has become acclimatized to urban conditions and only those fauna that are tolerant of human activities tend to persist. Given that wildlife found within the study area are acclimatized to the presence of road infrastructure and other anthropogenic influences, disturbance to wildlife from any increase in noise, light and visual intrusion are not expected to have any significant adverse effects.

However, bird-friendly best management practices should be incorporated into the design of the new WWTP buildings. Consideration should be given to implement the following mitigation measures:

- Minimize office lighting after-hours by using timers, area control switches and occupancy sensors;
- Where offices must be lit, use blinds, electronic shutters and task lighting to minimize light spill;
- Where external lighting of the building is necessary, use downlighting and turn off lighting between the hours of 11:00 p.m. and 6:00 a.m., to the extent possible; and;
- Shield street facing lighting so that establishments and the sidewalks can be seen by passers-by.

3.2.3 Potential Impacts to Migratory Birds

Numerous bird species listed under the *Migratory Birds Convention Act* (MBCA) are located within the study area. The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. Environment Canada provides Nesting Periods when migratory birds are most likely to be nesting, within a respective geographic zone. The subject lands fall within Environment Canada's Nesting Zone C2 (Nesting Period: end of March – end of August). To comply with the requirements of the MBCA, disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the window of April 1 to August 31. In the event that these activities must be undertaken between April 1 and August 31, a nest survey should be conducted by a qualified avian biologist to identify and locate active nests of species covered by the MBCA. If an active nest is located, a mitigation plan shall be developed and provided to Environment Canada – Ontario Region for review prior to implementation.

3.2.4 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat

The proposed construction has the potential to impact SAR habitat. As noted in **Section 2.5**, potential habitat for a number of wildlife SAR was identified within the study area. A snag tree survey was undertaken and confirmed the presence of potential maternity roost trees within the study area. The results of the snag survey were submitted to MECP for review in January 2020. A response was received from Megan Eplett, Management Biologist with MECP on March 3, 2020 that confirmed no additional surveys were required for potential bat species at risk within the study area. In addition, as confirmed by MECP, to mitigate potential impacts to bats within the study area no trees removals will be allowed within the bat active season timing window of April 1 to September 1 of any given year.

Although potential habitat for Eastern Meadowlark exists in the cultural meadow community, breeding bird surveys completed in 2020 did not detect the presence of this species. Breeding bird surveys confirmed the presence of Eastern Wood-Pewee and that they are probably breeding in the area; however, given that Eastern Wood-Pewee are regulated as Special Concern their habitat is not protected under the ESA. However, these species are protected under the MBCA.

As noted in **Section 2.5.2**, Barn Swallow is regulated as Threatened under the ESA and an active nest was observed in 2020, located on a building within the abandoned farmstead. This building is being shown as requiring removal as part of the WWTP upgrades. In accordance with Ontario Regulation 242/08, it is anticipated that the removal of any barn swallow nest would require registration under O.Reg. 242/08. Any nest removed must be replaced with a nest cup (1:1) either on a different structure suitable for Barn Swallow nesting within 1 km of the nest that was removed, or on a new structure created or modified to be suitable for Barn Swallow nesting within 1 km (i.e. kiosk). The habitat must also be maintained for three years after it is created and monitoring barn swallow presence and nesting activity is to be completed during this time. Any barn swallow nest removal would have to be completed outside of the barn swallow active season (approx. May-August).

4.0 ENVIRONMENTAL PROTECTION MEASURES

The following environmental protection measures shall be implemented to minimize the effects of construction related impacts on the natural heritage features.

4.1 Soil and Water Contamination

Soil and water contamination can arise from fuel storage or re-fuelling and maintenance of vehicles on site. The following mitigation measures are recommended to prevent contamination from on-site use of hydrocarbons:

- an appropriate spill prevention, contamination and clean-up contingency plan for hydrocarbon products (petroleum, oil and lubricants) and other deleterious substances shall be put in place prior to work commencing;
- appropriate spill contamination and clean-up supplies shall be kept available on-site whenever the works are occurring;
- all personnel working on the project shall be familiar with implementing the spill clean-up plan and the deployment of spill response materials;
- all machinery used on-site shall be in good repair and free of excess oil and lubricants; and,
- machinery refuelling and maintenance shall be carried out using appropriate precautions to prevent spillage and in designated areas.

Existing contamination will be managed in accordance with applicable brownfield legislation under the *Environmental Protection Act* and its Regulations, including O. Reg. 153/04 (Records of Site Condition).

4.2 Invasive Species Management

Efforts should be made to prevent the spread of invasive species during construction both on and off site. Sanitation of construction equipment should be undertaken in accordance with the *Clean Equipment Protocol* (2013) and at a minimum should include sanitation of construction vehicles and equipment prior to leaving and moving to the next site. A cleaning station should be set up, so vehicles and equipment can be inspected and cleaned regularly.

In addition, where common reed (*Phragmites australis*) and pale swallowwort (*Cynanchum rossicum*) are present within the limit of disturbance, all plant materials must be removed and disposed of appropriately, including soil from these areas, to prevent any further spread of these species

4.3 Erosion and Sediment Control

An effective Erosion and Sediment Control Plan (ESCP) will be developed prior to the start of construction in accordance with the requirements of the Erosion and Sediment Control Guideline for Urban Construction (GGHA CA 2006). The ESCP will prescribe a multi-barrier approach to prevent erosion during construction to deal with suspended sediment at the source and minimize sediment transport from leaving the construction site. Implementation of the ESCP during construction will mitigate the quality and quantity of runoff, and help to localize any potential areas of intense erosion and sedimentation. Inspection of the erosion and sediment control measures will be performed regularly in accordance with the Erosion and Sediment Control Inspection Guide (GGHA CA 2008). Installation, maintenance and removal of the erosion and sediment control measures will be carried out in accordance with Ontario Provincial Standard Specification (OPSS) 805, Construction Specification for Temporary Erosion and Sediment Control Measures.

4.4 Earthworks

Urban development results in the excavation, storage/stockpiling and grading/spreading of soils at a construction site. Excess soil materials can also be generated that require management on or off-site and as such, a Soil Management Plan should be prepared. The Soil Management Plan will recommend appropriate post-construction soil quality and depth standards, identify soil management best practices; identify verification procedures and post-construction monitoring requirements. Excess soils generated at the construction site will be managed in accordance with the Management of Excess Soil: A Guide for Best Management Practices (MOECC 2016).

4.5 Tree Protection Measures

An Arborist Report and Tree Preservation Plan was prepared by LGL in February 2020 and provides detailed recommendations for tree protection. The following general tree protection measures should be implemented:

- Tree protection fencing must be installed as per the approved Tree Preservation Plan and in accordance with OPSS 801, Construction Specification for the Protection of Trees. The contract administrator must review and approve the fencing prior to the commencement of any grading work and the fencing will be maintained until all construction is complete;
- Tree protection fencing should be installed at a minimum at the dripline of the tree plus 1 m;
- Heavy machinery should not to be operated within the TPZ (including overhead swinging of machine arms);
- Construction materials, equipment, soil, construction waste or debris are not to be stored within the TPZ or dripline of the trees identified for protection;
- There should be no movement or parking of vehicles, placement of equipment or pedestrian traffic within the TPZ;
- No grade changes shall occur within the TPZ unless approved by the Tree Protection Plan;
- Trees shall not have any rigging cables or hardware of any sort attached or wrapped around them, nor shall any contaminants be dumped within protected areas;
- All removals must be felled into the work zone to ensure that damage does not occur to trees within the TPZ;
- Should any additional, incidental or accidental tree injuries occur during construction, a qualified Arborist should be consulted to determine whether additional mitigation measures should be employed; and
- Tree clearing shall not be conducted during the *Migratory Bird Convention Act* (MBCA) breeding season commonly considered May 1 – August 31, unless under appropriate permitting.

4.6 Construction Monitoring

Regular inspection and monitoring of environmental protection measures outlined above will be carried out during construction. Construction activities will be monitored to ensure that there are no impacts to natural heritage features or properties adjacent to the study area. When serious environmental concerns are identified, immediate notification to the following individuals will occur to correct the problem: the contractor responsible for activities on the site and the developer of the site.

The recommended monitoring tasks include:

- in consultation with contractors identify the location of areas for protection and ensure the installation of appropriate fencing for the protection of these areas;

- verify the placement and construction of sediment and erosion control measures as identified in the sediment and erosion control plan;
- undertake regular site inspections to monitor all erosion and sediment control measures and tree protection measures; and,
- site inspections shall consider the need to vegetate areas or exposed soil that may be prone to wind and/or water erosion.

5.0 SITE PLANTING

Confirmation from LSRCA was provided on January 7, 2020 that ecological offsetting is not required for the proposed works as it was not a requirement during the Environmental Assessment approval for the project. However, planting will be undertaken within the 10 m MVPZ including edge management along the newly created forest edges and the establishment of planted MVPZ along the eastern edge of the wetland community.

5.1 Edge Management

Edge management will be used to enhance the newly created edges along the mixed forest community and will include high-density plantings of native trees and shrubs. Edge management techniques are further discussed below, since LSRCA does not have edge management guidelines, following the Toronto and Region Conservation Authority guidelines is recommended. An edge management plan has been prepared by Vertechs Design with consideration for the principals outlined below and is available under separate cover.

Forest edge management should be undertaken where new community edges are exposed. Forest edge management should be implemented in accordance with the TRCA *Forest Edge Management Plan Guidelines* (2004). Where new forest edges are exposed, forest management techniques should be implemented to mitigate the associated impacts to the forest communities. As part of the Forest Edge Management, mitigation measures will include, but not be limited to the following:

- Planting of appropriate native trees, shrubs and ground flora shall be undertaken as soon as possible following vegetation removals. Plantings along the disturbed forest edges will provide a protective buffer. Newly exposed forest edges become exposed to a greater potential for aggressive and invasive species infiltration further into the forest interior causing greater impacts. Micro-habitat conditions are also altered due to a greater incident of light penetrating further into the forest resulting in decreased soil moisture and increased windthrow. Plant species used within the buffer shall be somewhat similar to those in the adjacent habitat and be non-invasive in nature.
- Grading within areas where edges will be newly created shall be designed to meet existing grades a minimum of 3 m away from the tree drip-line.
- Compaction of soils on lands immediately adjacent to the newly exposed forest edge will be minimized to the extent possible. Construction activities can result in cut roots, and soil compaction due to re-grading and fill placement. Cut tree roots can reduce a tree's capacity to uptake and transfer water and nutrients, and soil compaction can result in a decrease in air spaces within the soil which can reduce the infiltration capacity of the soil, limits soil oxygen and limits root penetration. Decompaction efforts and methodology shall be site specific. Where decompaction is required, it shall extend to a minimum depth of approximately 25 cm.
- Drainage patterns adjacent to newly created edges shall be maintained to avoid changes in soil moisture, this is especially important around wetland areas and forest communities with substrates that maintain increased moisture capacity.
- A plan must be in place to immediately mitigate the spread/invasion of aggressive plant species.

- A monitoring plan must be developed to ensure that the newly planted material survives and fulfils the intended function and to ensure that the inadvertent spread of aggressive or non-native plant species is appropriately managed.

As noted above, an edge management plan has been prepared by Vertechs Designs and is available under separate cover. The plans include recommendations for dense plantings along the edge of the significant woodland within the study area. Once implemented the plantings associated with the edge management area will serve as a reduce MVPZ (generally 10 m) to the significant woodlands in the study area.

5.2 Wetland MVPZ

A planting plan has been developed Vertechs Design to allow for the establishment of a 10 m MVPZ to the wetland community. In some instances where pinch points occur the MVPZ may be slightly less than 10 m. The planting plan includes densely planted native grass, forbs and shrubs.

6.0 CONCLUSION

This Natural Heritage Evaluation has been prepared in support of the Lakeshore WWTP expansion in the Town of Innisfil. A botanical and wildlife survey, and a preliminary desktop fisheries review have been completed. An assessment of impacts to natural heritage features within the study area was undertaken based on the site plan prepared by Hatch in December 2020. Environmental Protection Measures and recommended planting are provided in **Section 4.0** and **Section 5.0**, respectively to protect and enhance natural heritage features within the study area, to the extent possible.

7.0 REFERENCES

Barnett, P.J., W.R. Cowan and A.P. Henry 1991. Quaternary geology of Ontario, southern sheet; Ontario Geological Survey, Map 2556, scale 1:1 000 000.

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. *Bird Studies Canada, Environment Canada, Ontario Field Ornithologists*, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp.

Chapman, L.J. and D.F. Putnam 1984. The physiography of southern Ontario.

Chapman, L.J. and D.F. Putnam. 1984. *The Physiography of Southern Ontario*, *3rd Edition.* Ontario Geological Survey Special Volume 2.

Couturier, A. 1999. Conservation Priorities for the Birds of Southern Ontario. Bird Studies Canada.

Department of Fisheries and Oceans (DFO). 2015. Distribution of Fish Species at Risk Mapping. May 2015.

Dobbyn, J.S. 1994. *Atlas of the Mammals of Ontario*. Federation of Ontario Naturalists, Don Mills,Ontario.

Farrar, John Laird. 1995. *Trees in Canada.* Fizhenry & Whiteside Limited.

Greater Golden Horseshoe Area Conservation Authorities. 2006. *Erosion and Sediment Control Guidelines for Urban Construction*.

Greater Golden Horseshoe Area Conservation Authorities. 2008. *Erosion and Sediment Control Inspection Guide.*

Harding, J.H. 1997. *Amphibians and Reptiles of the Great Lakes Region.* The University of Michigan Press, Michigan. 378pp.

Lee, H.T. *et al.* 1998. *Ecological Land Classification for Southern Ontario: First Approximation and Its Application.* Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch, SCSS Field Guide FG-02.

Newmaster, S.G., A. Lehela, P.W.C. Uhlig, S. McMurray and M.J. Oldham. 1998. *Ontario Plant List*. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, Ontario, Forest Research Information Paper No. 123, 550 pp. + appendice.

Newmaster, S.G. 2005. *Flora Ontario - Integrated Botanical Information System (FOIBIS)* 2006 species scientific names obtained March 2007 from the University of Guelph.

Ministry of Environment and Climate Change. 2016. *Management of Excess Soil: A Guide for Best Management Practices.*

Ministry of Municipal Affairs and Housing. 2014. *Provincial Policy Statement*.

Ministry of Natural Resources and Forestry. 2016. *Natural Heritage Information Centre website* (http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm). Peterborough, Ontario.

Ministry of Natural Resources and Forestry. No Date. Bobolink Survey Methodology.

Ministry of Natural Resources. 2007. *Natural Heritage Information Centre: Lists of Ontario Plants, Birds, Reptiles, Amphibians, Mammals, Fish and Crustaceans*. Peterborough, Ontario.

Ministry of Natural Resources. 2007. *Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario*. Species at Risk Project. Peterborough, Ontario.

Ontario Geological Survey 1991. Bedrock geology of Ontario, southern sheet; Ontario Geological Survey, Map 2544, scale 1: 1 000 000.

Ontario Provincial Standard Specification. 2010. *Construction Specification for the Protection of Trees.*

Ontario Ministry of Natural Resources. 1991. *A Natural Heritage Framework: A Strategy for the Protection and Management of Natural Heritage in the Greater Toronto Area-Discussion Paper No. 1*. Greater Toronto Area District. Maple, Ontario.

Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide*. 151pp.

Ontario Ministry of Natural Resources. 2010. *Natural Heritage Reference Manual Heritage Policies of the Provincial Policy Statement, 2005. Second Edition*. Toronto: Queen's Printer for Ontario. 248 pp.

Oldham, M.J. 1999. *Natural Heritage Resources of Ontario: Rare Vascular Plants*. Natural Heritage *Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario.*

Oldham, M.J. 2009. *Natural Heritage Resources of Ontario: Rare Vascular Plants*. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario.

Oldham, M.J. and W.F. Weller. 2000. *Ontario Herpetofaunal Atlas*. Natural Heritage Information

Centre, Ontario Ministry of Natural Resources.

Riley, J.L. and P. Mohr. 1994. *The Natural Heritage of Southern Ontario's Settled Landscapes: A Review of Conservation and Restoration Ecology for Land Use and Landscape Planning*. Ontario Ministry of Natural Resources, Southern Region, Aurora. Ontario

Toronto and Region Conservation Authority. 2004. *Forest Edge Management Plan Guidelines.*

Town of Innisfil. 2018. *Our Place – Innisfil Official Plan.*

APPENDIX A.
VASCULAR PLANT LIST

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	EQUISETACEAE	**HORSETAIL FAMILY**											
	Equisetum arvense	field horsetail	G5	S5			X			X			X
	DRYOPTERIDACEAE	**WOOD FERN FAMILY**											
	Matteuccia struthiopteris var. *pensylvanica*	ostrich fern	G5	S5			X				X		
	Onoclea sensibilis	sensitive fern	G5	S5			X		X		X		
	PINACEAE	**PINE FAMILY**											
	Larix laricina	Tamarack	G5	S5			X		X				
	Picea glauca	white spruce	G5	S5			X				X	X	
*	*Pinus nigra*	Austrian pine	G?	SE2				+			X		
*	*Pinus sylvestris*	scotch pine	G?	SE5			X	+			X		
	CUPRESSACEAE	**CEDAR FAMILY**											
	Thuja occidentalis	eastern white cedar	G5	S5			X		X		X	X	
	RANUNCULACEAE	**BUTTERCUP FAMILY**											
	Anemone canadensis	Canada anemone	G5	S5			X				X		
*	*Ranunculus acris*	tall buttercup	G5	SE5			X	+					X
	Ranunculus sceleratus var. *sceleratus*	cursed buttercup	G5T5	S5			X			X			
	Thalictrum dioicum	early meadow-rue	G5	S5			X				X		
	ULMACEAE	**ELM FAMILY**											
	Ulmus americana	white elm	G5?	S5			X				X		
	URTICACEAE	**NETTLE FAMILY**											
*	*Urtica dioica* ssp. *dioica*	European stinging nettle	G5T?	SE2						X			

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	BETULACEAE	**BIRCH FAMILY**											
	Betula papyrifera	white birch	G5	S5			X		X		X	X	
	Ostrya virginiana	Ironwood	G5	S5			X				X		
	CHENOPODIACEAE	**GOOSEFOOT FAMILY**											
*	*Chenopodium album* var. *album*	lamb's quarters	G5T5	SE5			X						X
	POLYGONACEAE	**SMARTWEED FAMILY**											
*	*Polygonum persicaria*	lady's-thumb	G?	SE5			X	+		X			
*	*Rumex crispus*	curly-leaf dock	G?	SE5			X	+					X
	TILIACEAE	**LINDEN FAMILY**											
	Tilia americana	Basswood	G5	S5			X				X		
	SALICACEAE	**WILLOW FAMILY**											
	Populus balsamifera ssp. *balsamifera*	balsam poplar	G5T?	S5			X		X				
	Populus deltoides ssp. *deltoides*	eastern cottonwood	G5T?	SU			X Int		X		X		
	Populus tremuloides	trembling aspen	G5	S5			X		X		X	X	X
*	*Salix fragilis*	crack willow	G?	SE5			X					X	
	Salix sp.	Willow		?						X			
	BRASSICACEAE	**MUSTARD FAMILY**											
*	*Alliaria petiolata*	garlic mustard	G5	SE5			X	+			X		
*	*Hesperis matronalis*	dame's rocket	G4G5	SE5			X	+			X		
	GROSSULARIACEAE	**GOOSEBERRY FAMILY**											
	Ribes americanum	wild black currant	G5	S5			X				X		

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	ROSACEAE	**ROSE FAMILY**											
	Fragaria virginiana ssp. virginiana	scarlet strawberry	G5T?	SU			X				X		
	Geum aleppicum	yellow avens	G5	S5			X				X		
	Geum canadense	white avens	G5	S5			X				X		
	Malus sp.	Apple									X		
	Prunus virginiana var. virginiana	choke cherry	G5T?	S5			X				X		
	Rubus idaeus ssp. strigosus	wild red raspberry	G5T	S5			X	+			X		
	Rubus occidentalis	thimble-berry	G5	S5			X						X
	FABACEAE	**PEA FAMILY**											
*	*Lotus corniculatus*	bird's-foot trefoil	G?	SE5			X	+				X	X
*	*Medicago lupulina*	black medick	G?	SE5			X	+					X
*	*Robinia pseudo-acacia*	black locust	G5	SE5			X	+				X	
*	*Trifolium pratense*	red clover	G?	SE5			X	+		X			X
*	*Vicia cracca*	tufted vetch	G?	SE5			X	+		X		X	X
	LYTHRACEAE	**LOOSESTRIFE FAMILY**											
*	*Lythrum salicaria*	purple loosestrife	G5	SE5			X	+		X			
	ONAGRACEAE	**EVENING-PRIMROSE FAMILY**											
	Circaea lutetiana ssp. canadensis	yellowish enchanter's nightshade	G5T5	S5			X				X		
	Oenothera biennis	common evening-primrose	G5	S5			X						X
	CORNACEAE	**DOGWOOD FAMILY**											
	Cornus sericea ssp. sericea	red-osier dogwood	G5	S5			X			X			

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	RHAMNACEAE	**BUCKTHORN FAMILY**											
*	*Rhamnus cathartica*	common buckthorn	G?	SE5			X	+			X		
	VITACEAE	**GRAPE FAMILY**											
	Parthenocissus vitacea	inserted Virginia-creeper	G5	S5			X				X		
	Vitis riparia	riverbank grape	G5	S5			X		X		X	X	X
	ACERACEAE	**MAPLE FAMILY**											
	Acer negundo	manitoba maple	G5	S5			X	+			X	X	X
*	*Acer platanoides*	norway maple	G?	SE5			X	+			X	X	
	Acer saccharinum	silver maple	G5	S5			X				X		
	Acer saccharum var. saccharum	sugar maple	G5T?	S5			X				X		
	ANACARDIACEAE	**SUMAC FAMILY**											
	Rhus hirta	staghorn sumac	G5	S5			X				X		X
	Toxicodendron radicans ssp. negundo	poison-ivy	G5T	S5			X				X		
	GERANIACEAE	**GERANIUM FAMILY**											
*	*Geranium robertianum*	herb-robert	G5	SE5			X	+			X		
	BALSAMINACEAE	**TOUCH-ME-NOT FAMILY**											
	Impatiens capensis	spotted touch-me-not	G5	S5			X			X			
	APIACEAE	**PARSLEY FAMILY**											
*	*Daucus carota*	wild carrot	G?	SE5			X	+		X			X
	ASCLEPIADACEAE	**MILKWEED FAMILY**											
	Asclepias syriaca	common milkweed	G5	S5			X						X
*	*Cynanchum rossicum*	swallow-wort	G?	SE5			X	+	X		X	X	X

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	SOLANACEAE	**POTATO FAMILY**											
*	*Solanum dulcamara*	bitter nightshade	G?	SE5			X	+		X	X		
	CONVOLVULACEAE	**MORNING-GLORY FAMILY**											
*	*Convolvulus arvensis*	field bindweed	G?	SE5				+					X
	VERBENACEAE	**VERVAIN FAMILY**											
	Verbena hastata	blue vervain	G5	S5			X			X			
	LAMIACEAE	**MINT FAMILY**											
	Lycopus uniflorus	northern water-horehound	G5	S5			X			X			
	Mentha arvensis	American wild mint	G5T5	S5						X			
	PLANTAGINACEAE	**PLANTAIN FAMILY**											
*	*Plantago lanceolata*	ribgrass	G5	SE5			X	+					X
*	*Plantago major*	common plantain	G5	SE5			X	+				X	X
	OLEACEAE	**OLIVE FAMILY**											
	Fraxinus americana	white ash	G5	S5			X				X		
	Fraxinus pennsylvanica	red ash	G5	S5			X		X	X	X		
	SCROPHULARIACEAE	**FIGWORT FAMILY**											
*	*Linaria vulgaris*	butter-and-eggs	G?	SE5			X	+					X
*	*Verbascum thapsus*	common mullein	G?	SE5			X	+		X			X
	CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**											
*	*Lonicera tatarica*	tartarian honeysuckle	G?	SE5			X	+			X	X	
*	*Viburnum opulus*	guelder rose	G5	SE4			X	+			X		

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	DIPSACACEAE	**TEASEL FAMILY**											
*	*Dipsacus fullonum* ssp. *sylvestris*	wild teasel	G?T?	SE5			X					X	X
	ASTERACEAE	**ASTER FAMILY**											
	Ambrosia artemisiifolia	common ragweed	G5	S5			X	+					X
	Aster lanceolatus ssp. *lanceolatus*	tall white aster	G5T?	S5			X			X			
	Aster lateriflorus var. *lateriflorus*	calico aster	G5T5	S5						X			X
	Bidens cernua	stick-tight	G5	S5			X			X			
	Bidens frondosa	devil's beggar-ticks	G5	S5			X			X			X
*	*Cichorium intybus*	chicory	G?	SE5			X	+				X	X
*	*Cirsium arvense*	Canada thistle	G?	SE5			X	+		X		X	X
	Eupatorium maculatum var. *maculatum*	spotted joe-pye-weed	G5T5	S5			X						X
	Euthamia graminifolia	flat-topped bushy goldenrod	G5	S5						X			X
*	*Leucanthemum vulgare*	ox-eye daisy	G?	SE5			X	+					X
	Rudbeckia hirta	black-eyed Susan	G5	S5			X						X
	Solidago canadensis	canada goldenrod	G5	S5			X			X	X	X	X
*	*Sonchus arvensis ssp. arvensis*	field sow-thistle	G?T?	SE5			X			X			X
	Symphyotrichum novae-angliae	New England aster	G5	S5			X				X		X
*	*Tanacetum vulgare*	common tansy	G?	SE5			X	+					X
*	*Taraxacum officinale*	common dandelion	G5	SE5			X	+			X	X	X
*	*Tussilago farfara*	coltsfoot	G?	SE5			X	+		X	X		

Appendix A.
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
	ALISMATACEAE	**WATER-PLANTAIN FAMILY**											
	Alisma plantago-aquatica	common water-plantain	G5	S5			X			X			
	JUNCACEAE	**RUSH FAMILY**											
	Juncus tenuis	path rush	G5	S5			X			X			
	CYPERACEAE	**SEDGE FAMILY**											
	Carex sp.	sedge							X				
	Carex vulpinoidea	fox sedge	G5	S5			X			X			
	Scirpus atrovirens	dark-green bulrush	G5?	S5			X			X			
	POACEAE	**GRASS FAMILY**											
*	*Bromus inermis* ssp. *inermis*	awnless brome	G4G5T?	SE5			X	+				X	X
*	*Dactylis glomerata*	orchard grass	G?	SE5			X	+				X	X
*	*Elymus repens*	quack grass	G?	SE5			X	+					X
	Phalaris arundinacea	reed canary grass	G5	S5			X	+	X	X			X
*	*Phleum pratense*	timothy	G?	SE5			X	+					X
	Phragmites australis	common reed	G5	S5			X	+	X	X			X
	Poa pratensis ssp. *pratensis*	Kentucky bluegrass	G5T	S5			X	+		X	X	X	X
	TYPHACEAE	**CATTAIL FAMILY**											
	Typha angustifolia	narrow-leaved cattail	G5	S5			X	+		X			
	LILIACEAE	**LILY FAMILY**											
*	*Convallaria majalis*	lily-of-the-valley	G5	SE5			X	+			X		
	ORCHIDACEAE	**ORCHID FAMILY**											

Appendix A.
Vascular Plant List

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Simcoe	LSRCA	SWC1	MAM2-10	FOM7	CUW1	CUM1-1
* *Epipactis helleborine*	common helleborine	G?	SE5			X	+			X		

X-indicates presence/*-indicates non-native species

APPENDIX B.
BREEDING BIRD SURVEY RESULTS

Appendix B.
Breeding Bird Survey Results

Scientific Name	Common Name	SARA[1]	ESA[1]	Legal Status[1]	Other[1]	BBE[2]		Station #[3]
Corvus brachyhrynchos	American Crow			-		H,S	Possible	1,2,4,5,6
Spinus tristis	American Goldfinch			MBCA		T,A	Probable	2,3,4,6
Turdus migratorius	American Robin			MBCA		NEST	Confirmed	2,4,5
Setophaga ruticilla	American Redstart			MBCA	SWH	S	Possible	4
Hirundo rustica	Barn Swallow	THR	THR	MBCA	L4	NEST	Confirmed	2
Mniotilta varia	Black and White Warbler			MBCA	SWH/ INT/L3	T	Probable	5
Cyanocitta cristata	Blue Jay			FWCA (SP-B)		T,A	Probable	1,2,4,5
Molothrus ater	Brown-headed Cowbird			-		H	Possible	2,3
Branta canadensis	Canada Goose			MBCA		FY	Confirmed	3,4,6
Bombycilla cedrorum	Cedar Waxwing			MBCA		H	Possible	4
Geothlypis trichas	Common Yellowthroat			MBCA		T,A	Probable	6
Picoides pubescens	Downy Woodpecker			MBCA		T	Probable	2
Tyrannus tyrannus	Eastern Kingbird			MBCA	L3	T,A	Probable	2
Contopus virens	Eastern Wood Pewee	SC	SC	MBCA		T	Probable	2,4,5
Sturnus vulgaris	European Starling			-		NEST, CF	Confirmed	2,3,6
Dumetella carolinensis	Gray Catbird			MBCA	L4	T	Probable	2
Picoides villosus	Hairy Woodpecker			MBCA	SWH	NEST	Confirmed	2
Troglodytes aedon	House Wren			MBCA		T,A	Probable	2,3,4
Passerina cyanea	Indigo Bunting			MBCA		T,S	Probable	2,4,6
Charadrius vociferus	Killdeer			MBCA		A,T	Probable	1,4,6
Anas platyrhynchos	Mallard			MBCA		H	Possible	3
Zenaida macroura	Mourning Dove			MBCA		T,A	Probable	1,2,4
Cardinalis cardinalis	Northern Cardinal			MBCA		T	Probable	1,2,3,4
Colaptes auratus	Northern Flicker			MBCA		S	Possible	2,6

Appendix B.
Breeding Bird Survey Results

Scientific Name	Common Name	SARA[1]	ESA[1]	Legal Status[1]	Other[1]	BBE[2]		Station #[3]
Accipiter gentilis	Northern Goshawk			FWCA (SP-R)	SWH/INT /L2	H	Possible	4
Pandion haliaetus	Osprey			FWCA (SP-R)	L2	NEST	Confirmed	4
Melanerpes carolinus	Red-bellied Woodpecker			MBCA		S	Possible	2
Vireo olivaceus	Red-eyed Vireo			MBCA	INT	T	Probable	4,5
Buteo jamaicensis	Red-tailed Hawk			FWCA (SP-R)		H	Possible	5
Agelaius phoeniceus	Red-winged Blackbird			-		T, A	Probable	1,4,5
Larus delawarensis	Ring-billed Gull			-		INC		4
Passerculus sandwichensis	Savannah Sparrow			MBCA	SWH/L2	T,A	Probable	2,3,6
Melospiza melodia	Song Sparrow			MBCA		T, A	Probable	1,2,3,4,6
Vireo gilvus	Warbling Vireo			MBCA		T	Probable	2,4,5
Meleagris gallopava	Wild Turkey			FWCA (Game-B)		H	Possible	2
Empidonax traillii	Willow Flycatcher			MBCA		T	Probable	6
Setophaga petechia	Yellow Warbler			MBCA		CF	Confirmed	2

[1]For definitions of species ranks, refer to **Appendix C**.
[2]BBE - Breeding Bird Evidence (according to Bird Studies Canada):
Possible Breeding:
H - Species observed in its breeding season in suitable nesting habitat.
S - Singing male present in its breeding season in suitable nesting habitat.
Probable Breeding:
T - Permanent territory presumed through registration of territorial song on at least two days, a week or so apart, at the same place.
A - Agitated behaviour or anxiety calls of an adult.
Confirmed Breeding:
NU - Used nest or egg shell found (occupied or laid within the period of study).
FY - Recently fledged young or downy young, including young incapable of sustained flight.
CF - Adult carrying food for young.
NE - Nest containing eggs.
NY - Nest with young seen or heard.
[3]Bredding Bird Point Count Station.

APPENDIX C.
ACRONYMS AND DEFINITIONS USED IN SPECIES LISTS

Species Status

GRANK	**Global Rank**
Global ranks are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and The Nature Conservatory to designate a rarity rank based on the range-wide status of a species, subspecies or variety. The most important factors considered in assigning global ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria include the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.	
Short Form	**Definition**
G1	**Extremely rare;** usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2	**Very rare;** usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3	**Rare to uncommon**; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G4	**Common**; usually more than 100 occurrences; usually not susceptible to immediate threats.
G5	**Very common**; demonstrably secure under present conditions.
GH	Historic, no records in the past 20 years.
GU	Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.
GX	Globally extinct. No recent records despite specific searches.
?	Denotes inexact numeric rank (i.e. G4?).
G	A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy.
G?	Unranked**,** or, if following a ranking, rank tentatively assigned (e.g. G3?).
Q	Denotes that the taxonomic status of the species, subspecies, or variety is questionable.
T	Denotes that the rank applies to a subspecies or variety.

SRANK	**Provincial Rank**
Provincial (or Sub-national) ranks are used by the Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.	
Short Form	**Definition**
S1	**Critically Imperiled** in Ontario because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.
S2	**Imperiled** in Ontario because of rarity due to very restricted range, very few populations (often 20 or fewer occurrences) steep declines or other factors making it very vulnerable to extirpation.

SRANK	Provincial Rank
Provincial (or Sub-national) ranks are used by the Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.	
Short Form	**Definition**
S3	**Vulnerable** in Ontario due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	**Apparently Secure**—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5	**Secure**—Common, widespread, and abundant in Ontario.
SX	**Presumed Extirpated** – Species or community is believed to be extirpated from Ontario.
SH	**Possibly Extirpated** – Species or community occurred historically in Ontario and there is some possibility that it may be rediscovered.
SNR	**Unranked**—Conservation status in Ontario not yet assessed
SU	**Unrankable**—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA	**Not Applicable** —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S#	**Range Rank** —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

COSEWIC	Committee on the Status of Endangered Wildlife in Canada
The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species that are considered to be at risk in Canada.	
Status	**Definition**
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

COSSARO/OMNR	Committee on the Status of Species at Risk in Ontario/Ontario Ministry of Natural Resources
The Committee on the Status of Species at Risk in Ontario (COSSARO)/Ontario Ministry of Natural Resources (OMNR) assesses the provincial status of wild species that are considered to be at risk in Ontario.	
Status	**Definition**
Extinct (EXT)	A species that no longer exists anywhere.
Extirpated (EXP)	A species that no longer exists in the wild in Ontario but still occurs elsewhere.
Endangered (Regulated) (END–R)	A species facing imminent extinction or extirpation in Ontario which has be regulated under Ontario's *Endangered Species Act*.
Endangered (END)	A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's *Endangered Species Act*.
Threatened (THR)	A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
Special Concern (SC)	A species with characteristics that make it sensitive to human activities or natural events.
Not at Risk (NAR)	A species that has been evaluated and found to be not at risk.
Data Deficient (DD)	A species for which there is insufficient information for a provincial status recommendation.

Species Status under Federal Legislation

MBCA	Migratory Birds Convention Act
The Canada *Migratory Birds Convention Act* provides for the protection of migratory birds in Canada and the United States. The provisions of this Act are implemented through the Migratory Bird Regulations. Bird species that are regulated under the *Migratory Birds Convention Act* are noted in the applicable species lists.	

SARA	Species at Risk Act
The Canada *Species at Risk Act* provides a framework for actions across Canada to ensure the survival of wildlife species and the protection of our natural heritage. It sets out how to decide which species are a priority for action and what to do to protect a species. It identifies ways governments, organizations and individuals can work together, and it establishes penalties for a failure to obey the law. Regulated species are listed in Schedules 1, 2 and 3 of the Act.	
Schedule 1 SARA (1)	Species that are currently covered under the Act.
Schedule 2 SARA (2)	Species that are endangered or threatened that have not been re-assessed by COSEWIC for inclusion on Schedule 1.
Schedule 3 SARA (3)	Species that are of special concern that have not yet been re-assessed by COSEWIC for inclusion on Schedule 1.

Species Status under Provincial Legislation

ESA	**Endangered Species Act**
The Ontario *Endangered Species Act* provides for the conservation, protection, restoration and propagation of species of fauna and flora of the Province of Ontario that are threatened with extinction. Regulated species are listed in Ontario Regulation 338.	

Schedule No.	**Short Form**	**Status**
Schedule 1 ESA (1)	EXT	The species of flora and fauna listed in Schedule 1 are declared to be threatened with extinction.
Schedule 2 ESA (2)	EXP	The species of flora and fauna listed in Schedule 2 are declared to be extirpated.
Schedule 3 ESA (3)	END	The species of flora and fauna listed in Schedule 3 are declared to be endangered.
Schedule 4 ESA (4)	THR	The species of flora and fauna listed in Schedule 4 are declared to be threatened.
Schedule 5 ESA (5)	SC	The species of flora and fauna listed in Schedule 5 are declared to be special concern.

FWCA	**Fish and Wildlife Conservation Act**
The Ontario *Fish and Wildlife Conservation Act* outlines the restrictions for hunting, trapping and fishing; handling of live wildlife; sale, purchase and transport of wildlife; and, licences that can be secured under the Act. Under Schedules 1 to 11 of the Act, wildlife are grouped for the purpose of regulating these species. These schedules are further defined below. Note: where there is a conflict between this Act and the Ontario *Endangered Species Act*, the provision with the most protection will prevail (s. 2 of the *Fish and Wildlife Conservation Act*).	

Schedule No.	**Short Form**	**Status**
Schedule 1	Furbearing – M	The species of fauna listed in Schedule 1 are declared to be furbearing mammals.
Schedule 2	Game – M	The species of fauna listed in Schedule 2 are declared to be game mammals.
Schedule 3	Game – B	The species of fauna listed in Schedule 3 are declared to be game birds.
Schedule 4	Game – R	The species of fauna listed in Schedule 4 are declared to be game reptiles.
Schedule 5	Game – A	The species of fauna listed in Schedule 5 are declared to be game amphibians.
Schedule 6	Specially Protected – M	The species of fauna listed in Schedule 6 are declared to be specially protected mammals.
Schedule 7	Specially Protected – R	The species of fauna listed in Schedule 7 are declared to be specially protected birds (raptors).
Schedule 8	Specially Protected – B	The species of fauna listed in Schedule 8 are declared to be specially protected birds (other than raptors).
Schedule 9	Specially Protected – R	The species of fauna listed in Schedule 9 are declared to be specially protected reptiles.
Schedule 10	Specially Protected – A	The species of fauna listed in Schedule 10 are declared to be specially protected amphibians.

FWCA	Fish and Wildlife Conservation Act	
The Ontario *Fish and Wildlife Conservation Act* outlines the restrictions for hunting, trapping and fishing; handling of live wildlife; sale, purchase and transport of wildlife; and, licences that can be secured under the Act. Under Schedules 1 to 11 of the Act, wildlife are grouped for the purpose of regulating these species. These schedules are further defined below. Note: where there is a conflict between this Act and the Ontario *Endangered Species Act*, the provision with the most protection will prevail (s. 2 of the *Fish and Wildlife Conservation Act*).		
Schedule No.	**Short Form**	**Status**
Schedule 11	Specially Protected – I	The species of fauna listed in Schedule 11 are declared to be specially protected invertebrates.

Local Species Status

LSRCA and York	Local Species Status Definitions		
Level of Conservation Concern in Lake Simcoe Region Conservation Authority (2003), and York (Varga *et al.* 2000; Riley 1999).			
LSRCA		**York**	
w	Rare	Nat	Naturalized
P	S1 to S3	Int	Introduced
NE	nationally endangered	R	Rare
NC	national species of special concern	U	Uncommon

BSC	Bird Studies Canada
The Bird Studies Canada *Conservation Priorities for the Birds of Southern Ontario* (1999), based on work completed by Bird Studies Canada, the Canadian Wildlife Service and the MNR identifies bird species of high conservation priority. This list was prepared to assist municipalities in identifying significant natural heritage features, through using the information regarding the presence of birds of conservation priority in their municipality. Birds of conservation priority have been noted (BSC) in the appropriate species lists.	

Appendix B

Arborist Report (LGL 2020)

Arborist Report

TOWN OF INNISFIL
LAKESHORE WASTEWATER TREATMENT PLANT EXPANSION

prepared for:

HATCH

prepared by:

LGL LIMITED
environmental research associates

DECEMBER 2020

LGL FILE TA8942

ARBORIST REPORT

TOWN OF INNISFIL
LAKESHORE WASTEWATER TREATMENT PLAN EXPANSION

prepared by:

Lisa M. Catcher, Hons. B.A.
Botanist/ISA Certified Arborist

reviewed by:

Grant N. Kauffman, M.E.S.
Vice President, Ontario Region

LGL Limited
environmental research associates
22 Fisher Street, P.O. Box 280
King City, Ontario L7B 1A6
Tel: 905-833-1244 Fax: 905-833-1255
E-mail: kingcity@lgl.com
URL: www.lgl.com

DECEMBER 2020
LGL PROJECT TA8942

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

InnServices is undertaking a detail design study for the expansion of the Lakeshore Wastewater Treatment Plant (WWTP) in the Town of Innisfil. Upgrades to the facility include new process buildings, process tanks and yard piping at various locations at the existing site. Installation of these services is proposed within the plant property (study area). The limits of the study area are presented in **Figure 1**.

The detail design study is being conducted by Hatch on behalf of InnServices. LGL Limited (LGL), as a sub-consultant to Hatch, is providing arborist services. This Arborist Report documents the results of the tree inventory conducted in the summer and fall of 2019 and provides recommendations for tree protection, removals and mitigation measures. The impact assessment and mitigation is based on a review of the proposed site plan prepared by Hatch in December 2020.

In total, 2,656 trees are addressed in this report. The Tree Inventory is provided in **Appendix A**.

2.0 METHODOLOGY

An LGL ISA Certified Arborist conducted an inventory of tree resources on August 21, 22, 26 and September 4, 5, and 13, 2019. The tree survey was undertaken within the limits of the Lakeshore WWTP property. All trees 10 cm diameter at breast height (DBH) and greater within the facility property were surveyed.

The following information was collected for each tree:

- Species identification;
- Measurements including: DBH, and estimation of canopy dripline;
- Location: trees were given a unique numerical identifier and their locations recorded using a TopCon GRS1 GPS unit. Trees were affixed with an aluminium numbered tag and,
- Health Assessment: trees were assessed as poor, fair, or good based on qualities such as trunk integrity, crown structure, vigour, and dieback. Physical irregularities were also noted for each tree.

Surveyed trees have been screened for rare species as referenced by the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC), which includes classification of Endangered, Threatened, and Special Concern species both at a provincial and federal scale

3.0 RESULTS

A total of 2,656 trees were identified and assessed during the tree inventory. Trees within the study area range in size from 10 to 80 cm DBH and are generally in good to fair condition with the exception of ash trees. The majority of ash trees within the study area were in varying states of decline as a result of Emerald Ash Borer. A detailed summary of all trees surveyed is presented in the **Appendix A Tree Inventory** and the locations of each tree (by identifier number) are presented in **Figure 2** and **Figures 2.1 to 2.16**.

3.1 SPECIES AT RISK

No trees species that are regulated under the Ontario *Endangered Species Act*, 2007 were identified within the study area.

4.0 IMPACT ASSESSMENT

An impact assessment was completed to determine impacts to tree resources as a result of the proposed expansion of the Lakeshore WWTP. This assessment was conducted using the site plan provided to LGL by Hatch in December 2020. The impact assessment was completed by comparing the extent of tree dripline and tree protection zones with the proposed disturbance limits. Trees recommended for removal include trees within or outside the disturbance limits that would not be able to withstand construction-related impacts. In addition, trees identified as retained are considered to be minimally affected and will be protected through mitigation measures. Note that this impact assessment is an estimate based on the information available at the time of report preparation and some assumptions have been made since the exact machine type and dimension, limits of disturbance, and roots zones are not known.

4.1 TREE REMOVALS

As noted in **Section 4.0**, trees identified for removal includes trees within or outside the limit of disturbance where the amount of critical root zone that will be removed will likely cause significant and irreversible decline of the health of the tree. As such, a total of 984 trees have been recommended for removal as a result of the proposed expansion of the Lakeshore WWTP. Trees identified for removal are listed in **Appendix A** and presented in **Figure 2** and **Figures 2.1 to 2.16.**

4.2 TREE RETENTION

Trees identified for retention will not be adversely affected by the proposed expansion of the Lakeshore WWTP. A total of 1,672 trees have been identified for retention and listed in **Appendix A** and presented in **Figure 2** and **Figures 2.1 to 2.16**.

5.0 MITIGATION

5.1 GENERAL RECOMMENDATIONS

The following general recommendations conform to good arboriculture practices and are designed to help ensure impacts to trees surrounding the work zone, and those identified to be retained are minimized. General recommendations include:

- Tree protection fencing must be installed as per the approved Tree Preservation Plan in accordance with OPSS 801 – Construction Specification for the Protection of Trees. The contract administrator must review and approve the fencing prior to the commencement of any grading work and the fencing will be maintained until all construction is complete;
- Tree protection fencing shall be installed at a minimum at the dripline of the tree plus 1 m;
- Heavy machinery shall not to be operated within the TPZ (including overhead swinging of machine arms);
- Construction materials, equipment, soil, construction waste or debris shall not to be stored within the TPZ or dripline of the trees identified for protection;
- No movement or parking of vehicles, placement of equipment or pedestrian traffic shall occur within the TPZ;
- No grade changes shall occur within the TPZ unless approved by the Tree Protection Plan;
- Trees shall not have any rigging cables or hardware of any sort attached or wrapped around them, nor shall any contaminants be dumped within protected areas;
- All removals must be felled into the work zone to ensure that damage does not occur to trees within the TPZ;
- Should any additional, incidental or accidental tree injuries occur during construction, a qualified Arborist shall be consulted to determine whether additional mitigation measures should be employed; and
- Tree clearing shall not be conducted during the *Migratory Bird Convention Act* (MBCA) breeding season commonly considered May 1 – August 31, unless under appropriate permitting.

5.2 PRUNING

The following recommendations shall be implemented for any root or canopy pruning taken on the property.

5.2.1 Root Pruning

All approved root pruning shall be undertaken by an ISA Certified Arborist or an Ontario College of Trades 444A Arborist or Arborist Apprentice and in accordance with Best Management Practices. The following practices shall be implemented for any root pruning:

- Prior to root pruning low pressure hydro-vac excavation should be undertaken in a 0.5 m wide section within and along the length of the TPZ to a depth of 500 mm to expose the roots;
- No roots greater than 6 cm in diameter shall be pruned;
- Exposed roots shall not be allowed to dry out, where roots are exposed they shall be covered by dampened mulch or topsoil to prevent desiccation;
- All pruning shall maintain the integrity of the root bark ridge;

- A slow release deep root low nitrogen fertilizer shall be applied to any trees requiring root pruning to increase vigour; and,
- Backfilling shall occur as soon as possible and shall occur with clean native uncontaminated topsoil.

5.2.2 Canopy Pruning

All canopy and clearance pruning shall be undertaken by an ISA Certified Arborist or an Ontario College of Trades 444A Arborist or Arborist Apprentice. Any branches that overhang the work site and require pruning shall be pruned using good arboricultural practices in accordance with American National Standard (ANSI) A300 (Part 1) – 2008 Pruning;

6.0 CONCLUSION

An inventory of tree resources located within the study area was conducted on August 21, 22, 26 and September 4, 5, and 13, 2019 by an ISA Certified Arborist. Recommendations for tree removal, tree retention and mitigation measures have been made based on the site plan prepared by Hatch in December 2020. Updates to the recommendations contained in this report will be required to address refinements to the proposed site plan.

7.0 DISCLAIMER

7.1 LIMITATIONS OF THIS ASSESSMENT

This Assessment is based on the circumstances and observations as they existed at the time of the site inspection of the Client's Property and the trees situate thereon and upon information provided by the Client to LGL Limited. The opinions in this Assessment are given based on observations made and using generally accepted professional judgment, however, because trees and plants are living organisms and subject to change, damage and disease, the results, observations, recommendations, and analysis as set out in this Assessment are valid only as at the date any such testing, observations and analysis took place and no guarantee, warranty, representation or opinion is offered or made as to the length of the validity of the results, observations, recommendations and analysis contained within this Assessment. As a result the Client shall not rely upon this Assessment, save and except for representing the circumstances and observations, analysis and recommendations that were made as at the date of such inspections. It is recommended that the trees discussed in this Assessment should be re-assessed periodically.

7.2 RESTRICTION OF ASSESSMENT

The Assessment carried out was restricted to the Property. No assessment of any other trees or plants has been undertaken by LGL. LGL is not legally liable for any other trees or plants on the Property except those expressly discussed herein. The conclusions of this Assessment do not apply to any areas, trees, plants or any other property not within the study area or referenced in this Assessment.

7.3 PROFESSIONAL RESPONSIBILITY

In carrying out this Assessment, LGL Limited and any Assessor appointed for and on behalf of LGL Limited to perform and carry out the Assessment has exercised a reasonable standard of care, skill and diligence as would be customarily and normally provided in carrying out this Assessment. The Assessment has been made using accepted arboricultural techniques. These include a visual examination of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of insect attack, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the current or planned proximity of property and people. Except where specifically noted in the Assessment, none of the trees examined on the property were dissected, cored, probed, or climbed and detailed root crown examinations involving excavation were not undertaken.

While reasonable efforts have been made to ensure that the trees recommended for retention are healthy, no guarantees are offered, or implied, that these trees, or all parts of them will remain standing. It is professionally impossible to predict with absolute certainty the behaviour of any single tree or group of trees, or all their component parts, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential to fall, lean, or otherwise pose a danger to property and persons in the event of adverse weather conditions, and this risk can only be eliminated if the tree is removed.

Without limiting the foregoing, no liability is assumed by LGL or its directors, officers, employers, contractors, agents or Assessors for:

a) any legal description provided with respect to the Property;

b) issues of title and or ownership respect to the Property;

c) the accuracy of the Property line locations or boundaries with respect to the Property;

d) the accuracy of any other information provided to LGL by the Client or third parties;

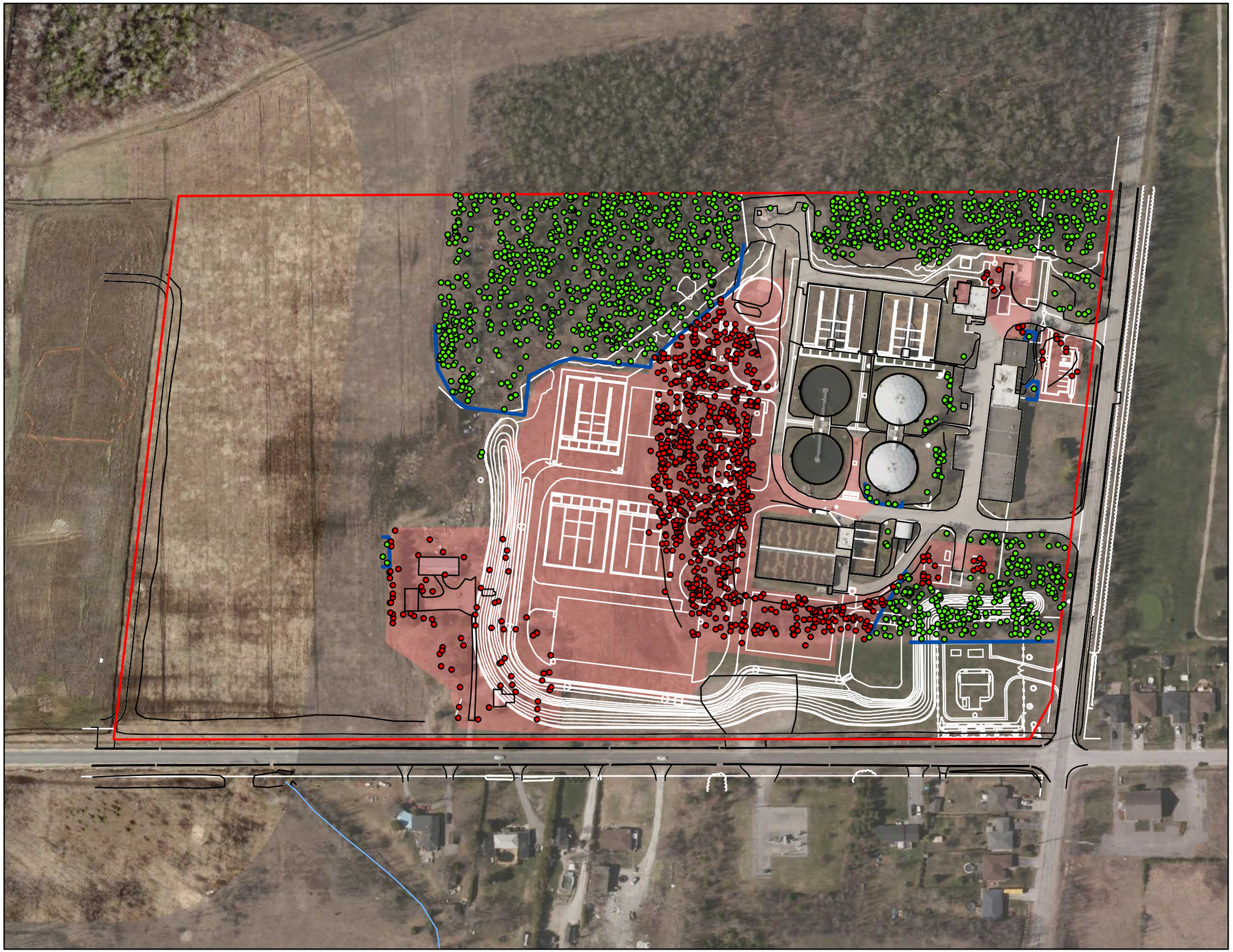
e) any consequential loss, injury or damages suffered by the Client or any third parties, including but not limited to replacement costs, loss of use, earnings and business interruption; and,

f) the unauthorized distribution of the Assessment.

7.4 GENERAL

Any plans and/or illustrations in this Assessment are included only to help the Client visualize the issues in this Assessment and shall not be relied upon for any other purpose.

Figures



LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Watercourse
- Existing Design
- Proposed Expansion
- Tree Protection Fencing
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 20 40 60 80 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 2,000	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

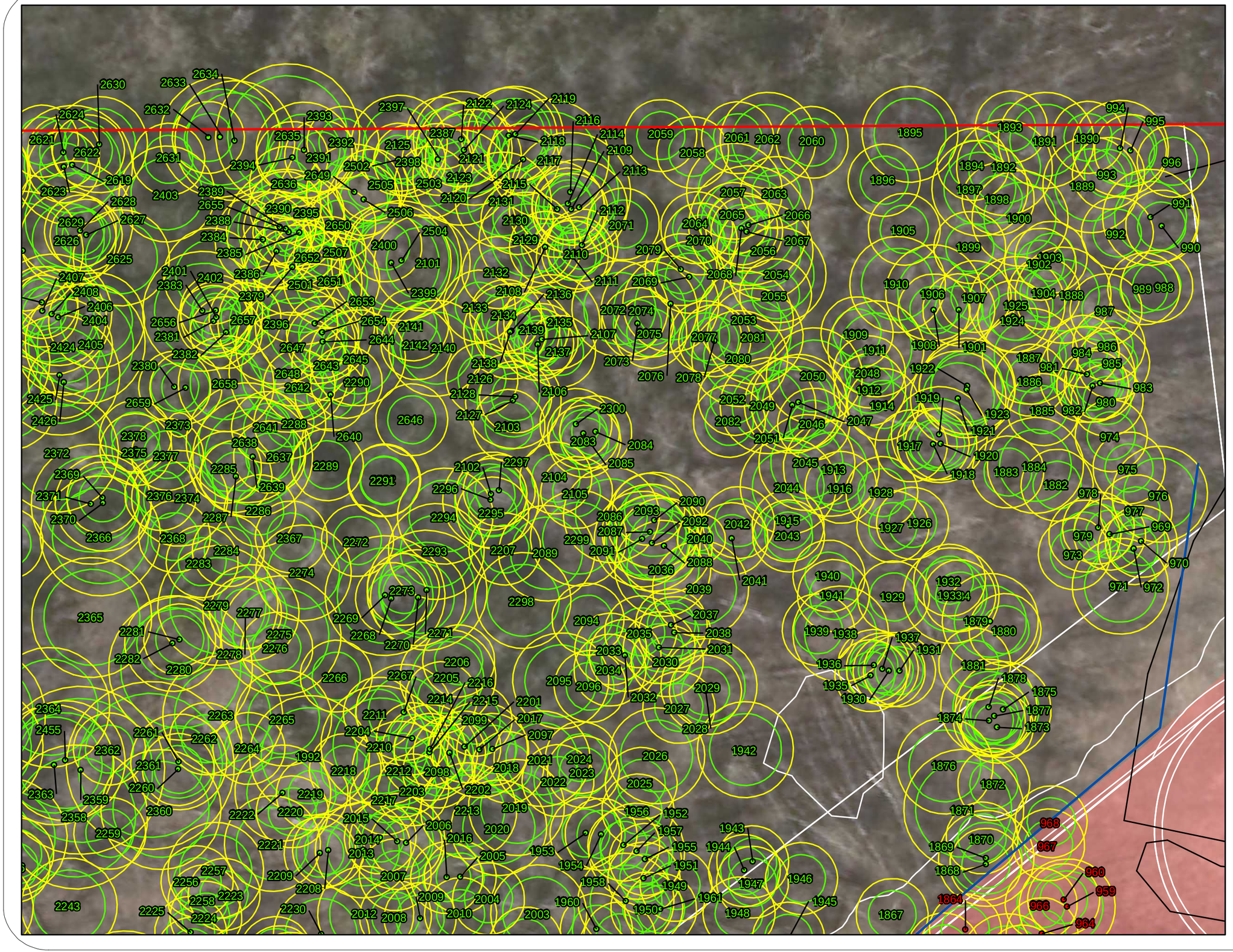
0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.1
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- 2347 — Tree Identified for Retention
- 1696 — Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.2
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.3
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.4
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention (2347)
- Tree Identified for Removal (1696)
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

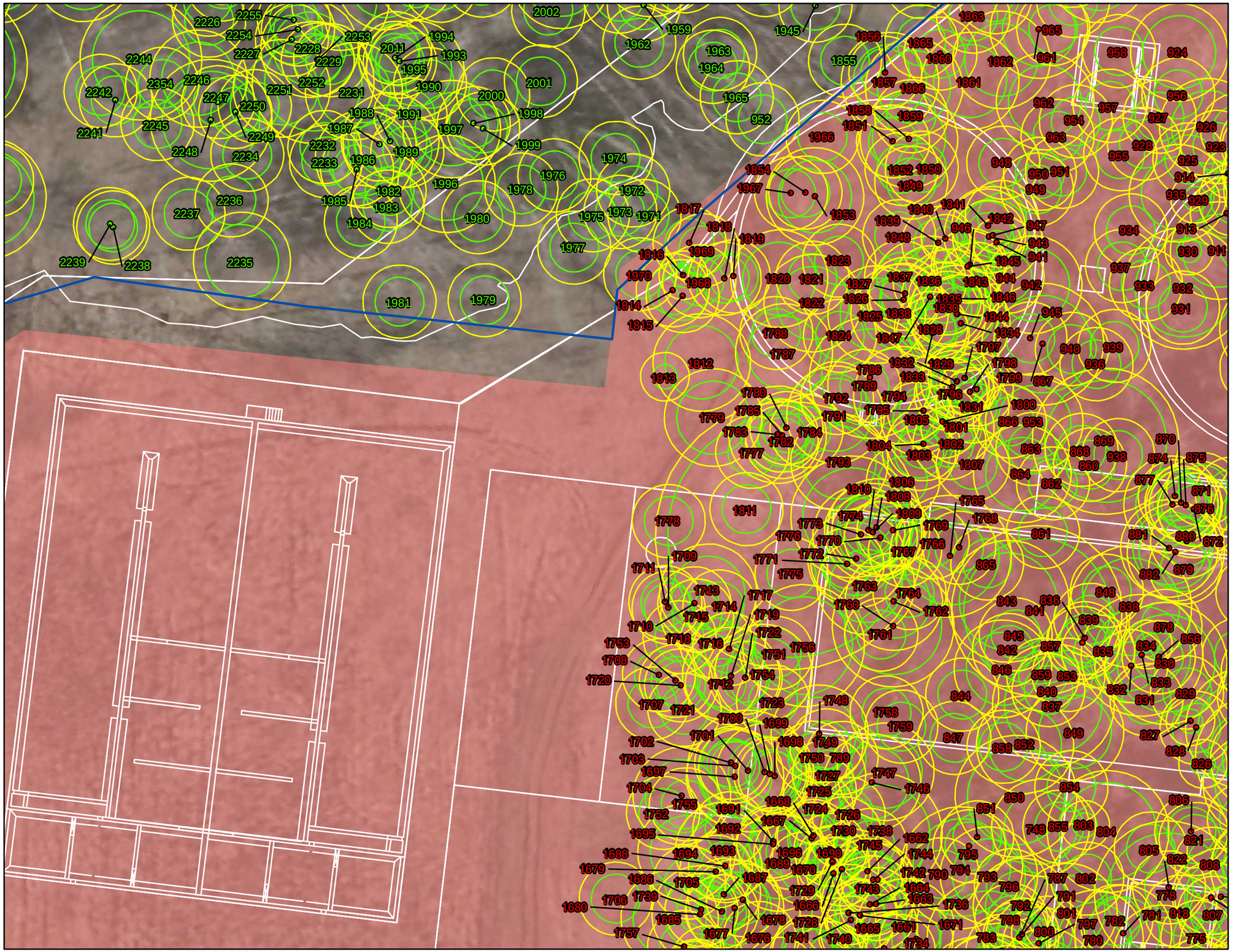
0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.5
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

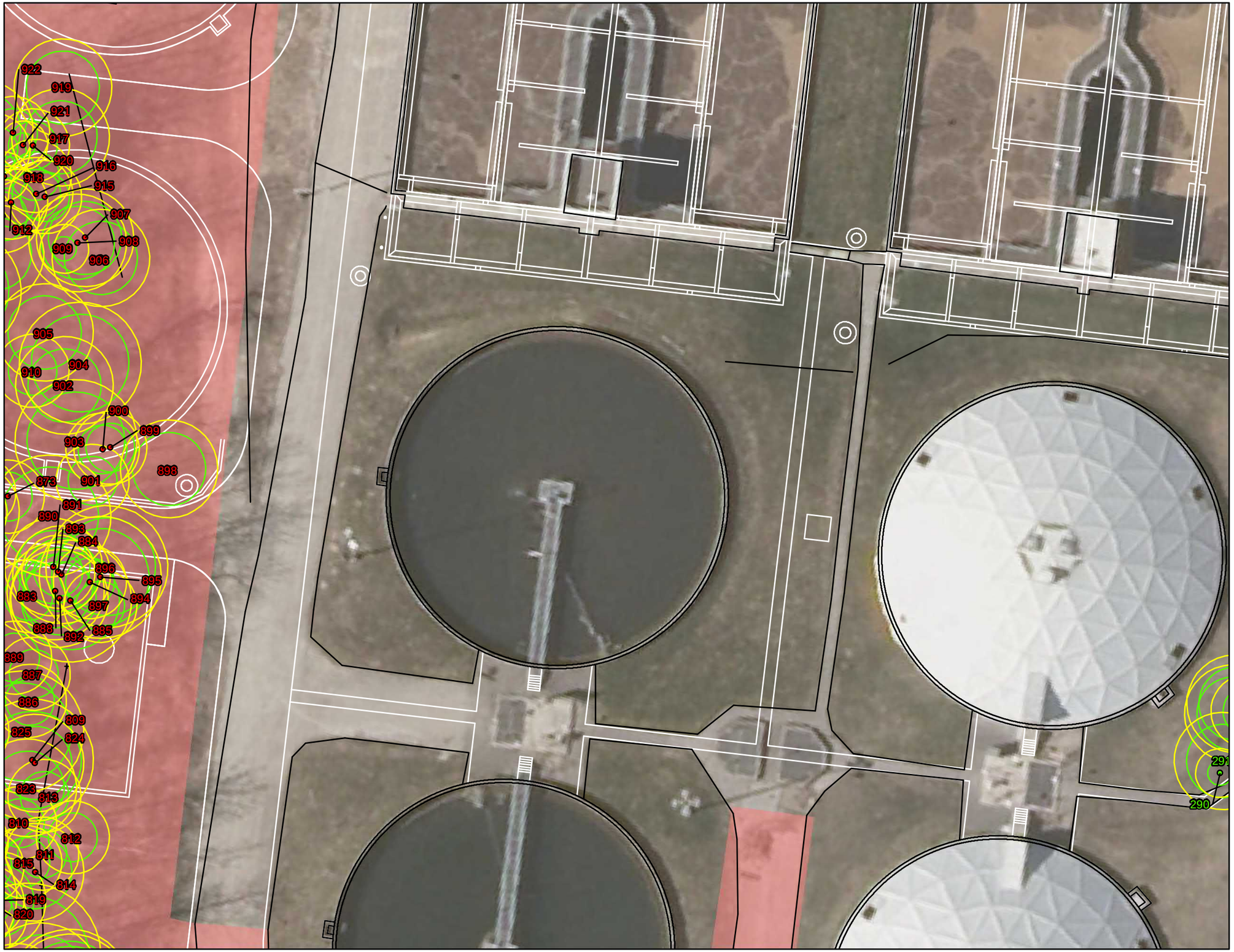
0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.6
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- 2347 Tree Identified for Retention
- 1696 Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.7
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- 2347 — Tree Identified for Retention
- 1696 — Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

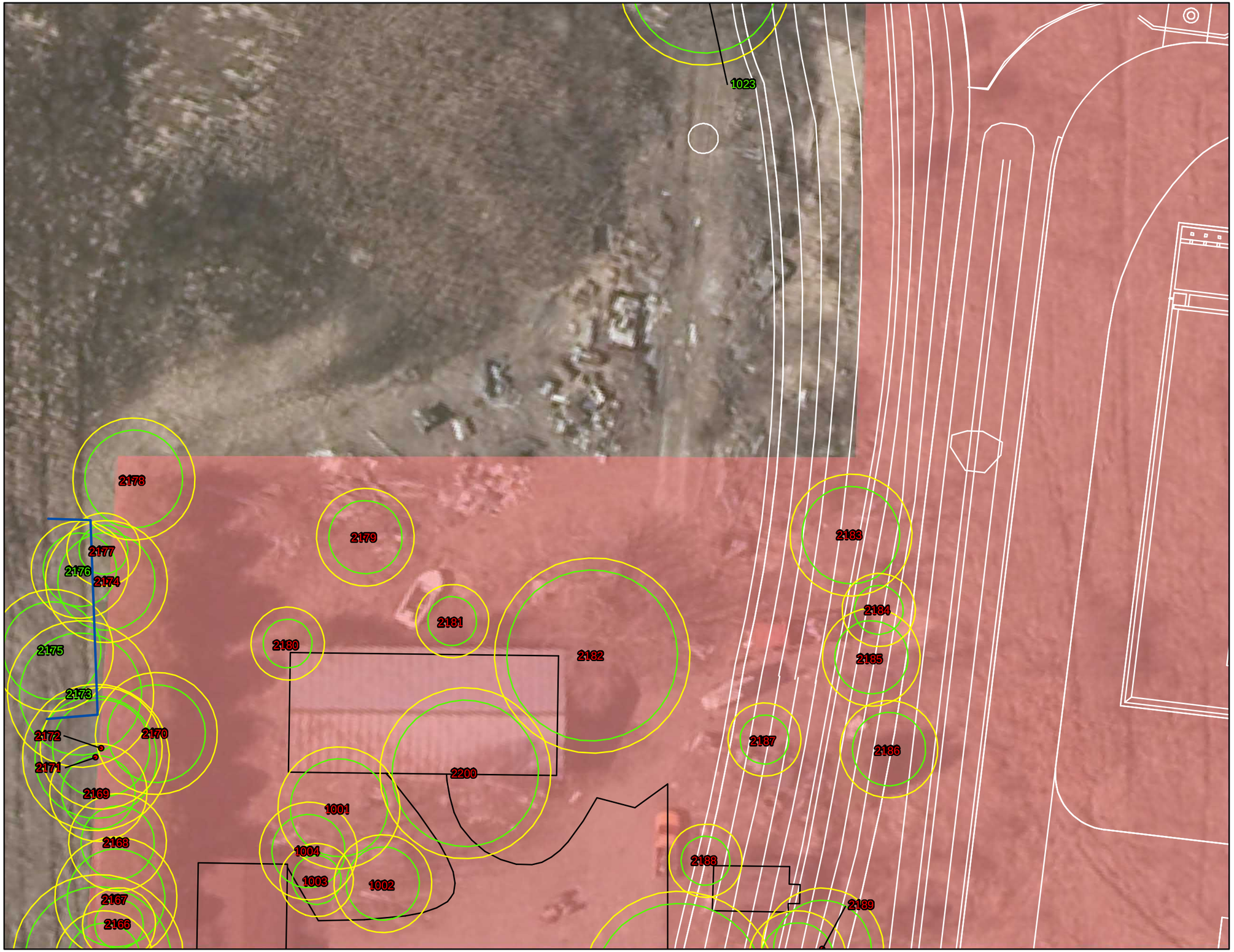
0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.8
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- 2347 — Tree Identified for Retention
- 1696 — Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

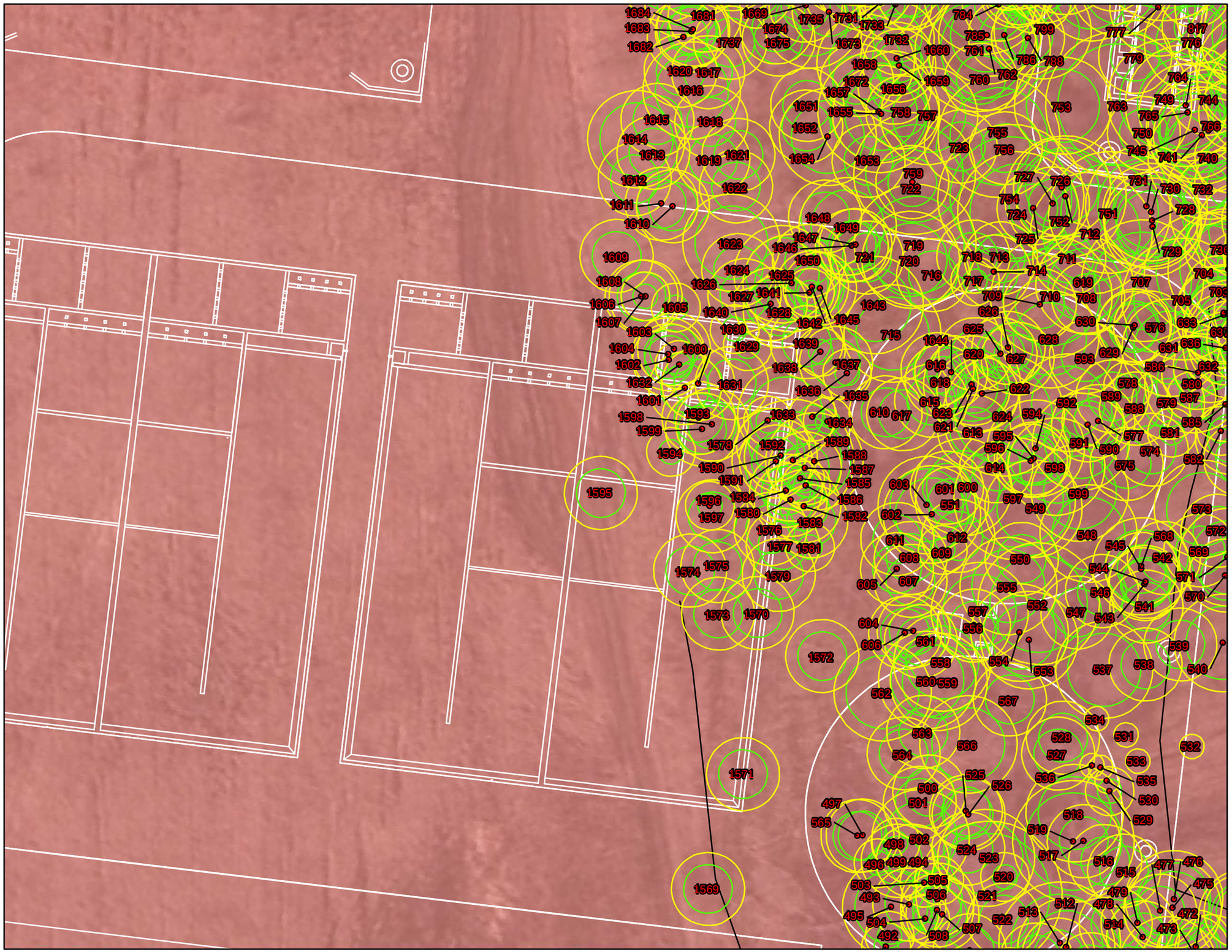
0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.9
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.10
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention (2347)
- Tree Identified for Removal (1696)
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.11
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- 2347 — Tree Identified for Retention
- 1696 — Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

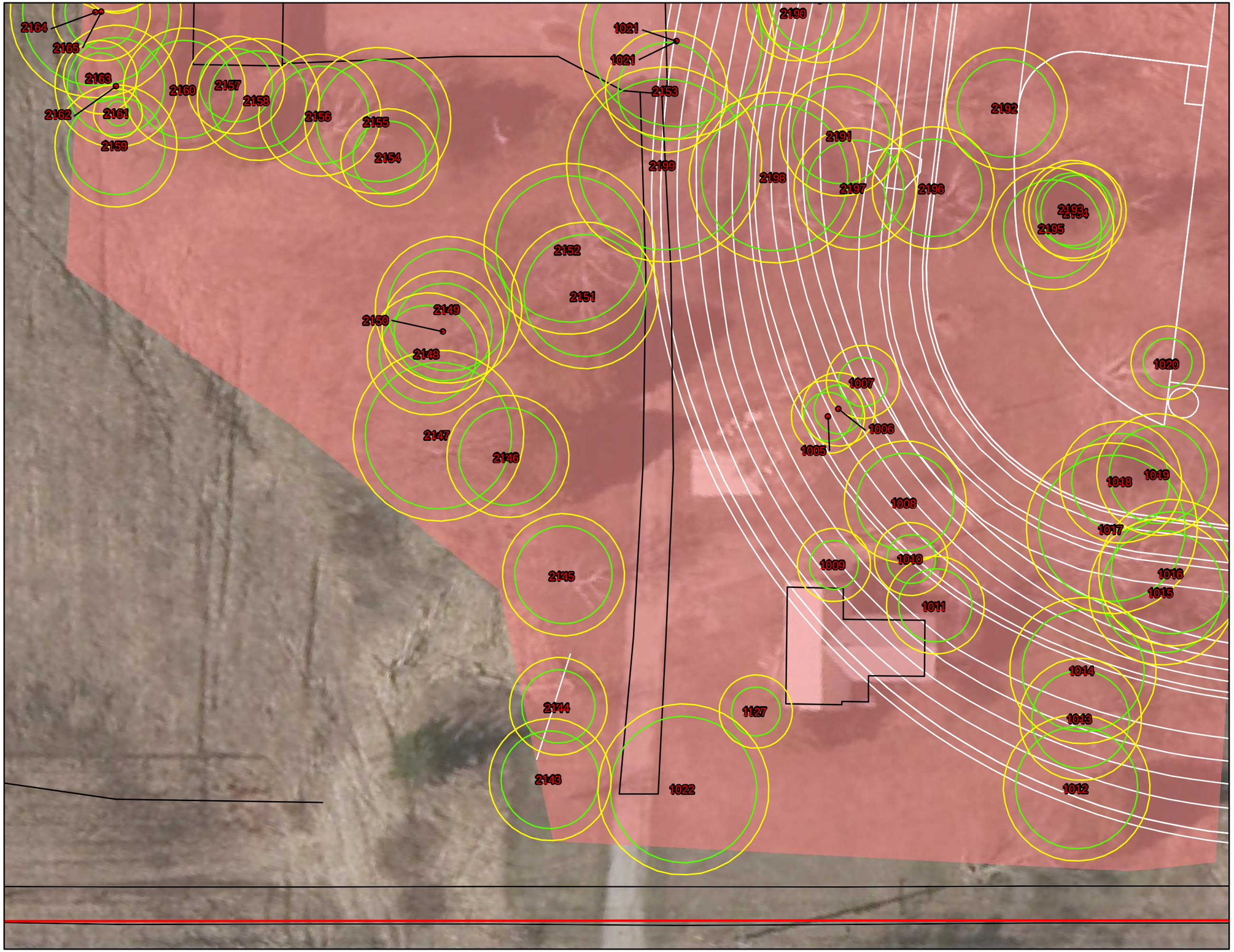
0 2.5 5 7.5 10 m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.12
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- 2347 Tree Identified for Retention
- 1696 Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

Contains information licenced under the Open Government Licence - Ontario.

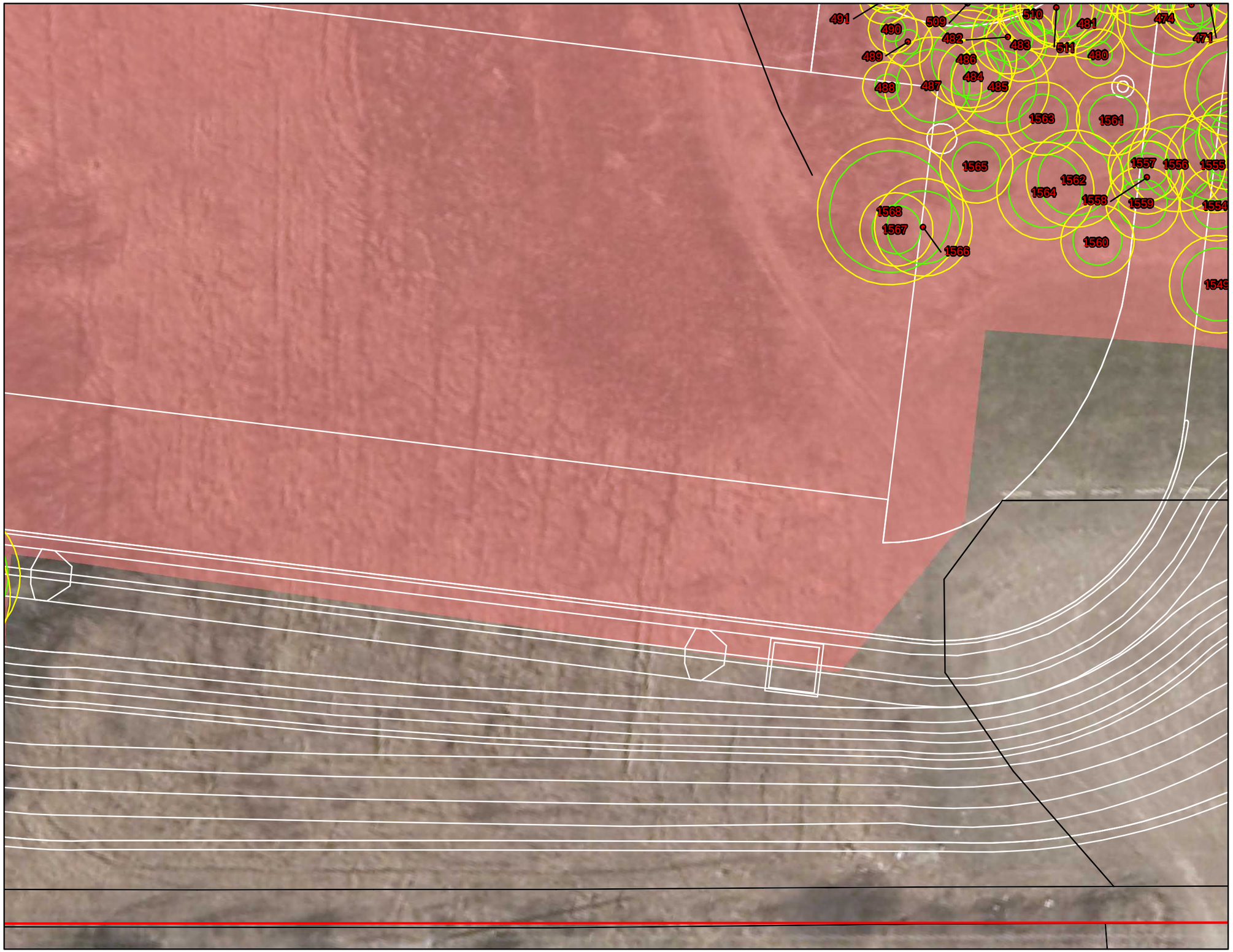
0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.13
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC



LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.14
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention
- Tree Identified for Removal
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.15
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

LEGEND

- Tree Identified for Retention (2347)
- Tree Identified for Removal (1696)
- Dripline
- Tree Protection Zone (TPZ)
- Tree Protection Fencing
- Existing Design
- Proposed Expansion
- Study Area
- Disturbance Limit

Data Sources: LGL Limited field surveys & Ministry of Natural Resources and Forestry (LIO).

0 2.5 5 7.5 10
m

N

TREE RESOURCES

LGL LIMITED
environmental research associates

Project:	TA8942	**Figure:**	2.16
Date:	December, 2020	**Prepared By:**	JJP
Scale:	1 : 300	**Checked By:**	LMC

Appendix A
Tree Inventory

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1	Pinus nigra	Austrian pine	37.0			g	g	f	3	30															4	X		
2	Pinus strobus	white pine	21.0	17.0		g	g	g	3																4	X		
3	Fraxinus pennsylvanica	red ash	32.0			f	f	f	4	30										x	x				5	X		
4	Ostrya virginiana	ironwood	24.0			p	p	p	3	60															4	X		
5	Pinus nigra	Austrian pine	17.0			p	p	p	3	70															4	X		
6	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
7	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
8	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
9	Populus tremuloides	trembling aspen	13.0			g	g	g	2	10															3	X		
10	Acer saccharum ssp. saccharum	sugar maple	33.0			g	g	g	4																5	X		
11	Acer saccharum ssp. saccharum	sugar maple	30.0			g	g	g	4																5	X		
12	Acer saccharum ssp. saccharum	sugar maple	31.0			g	g	g	4	10															5	X		
13	Fraxinus nigra	black ash	18.0			p	p	p	3	30										x	x				4	X		
14	Fraxinus americana	white ash	28.0			p	p	p	4																5	X		
15	Fraxinus americana	white ash	25.0			p	p	p	3																4	X		
16	Fraxinus pennsylvanica	red ash	11.0			p	p	p	1																2	X		
17	Fraxinus pennsylvanica	red ash	11.0	11.0		p	p	p	1																2	X		
18	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2																3	X		
19	Fraxinus nigra	black ash	18.0			p	p	p	3																4	X		
20	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2																3	X		
21	Fraxinus pennsylvanica	red ash	10.0			p	p	p	1																2	X		
22	Fraxinus pennsylvanica	red ash	14.0			p	p	p	1																2	X		
23	Malus sp.	apple	15.0			g	g	g	4																5	X		
24	Fraxinus pennsylvanica	red ash	22.0			f	f	f	3																4	X		
25	Malus sp.	apple	15.0	10,13		f	f	f	4	30	x	x								x					5	X		
26	Acer platanoides	Norway maple	14.0			g	g	g	3																4	X		
27	Malus sp.	apple	10.0			f	f	f	2					x	x					x					3	X		
28	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
29	Fraxinus pennsylvanica	red ash	19.0			g	g	g	3																4	X		
30	Malus sp.	apple	15.0	18.0		g	g	g	3		x	x								x					4	X		
31	Fraxinus pennsylvanica	red ash	18.0			f	f	f	2																3	X		
32	Fraxinus pennsylvanica	red ash	15.0			p	p	p	3	90															4	X		
33	Fraxinus pennsylvanica	red ash	16.0			f	f	f	3																4	X		
34	Thuja occidentalis	eastern white cedar	14.0			g	g	g	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
35	Fraxinus pennsylvanica	red ash	13.0			f	f	f	3																4	X		
36	Fraxinus pennsylvanica	red ash	12.0			p	p	p	2																3	X		
37	Fraxinus pennsylvanica	red ash	14.0			p	p	p	3																4	X		
38	Fraxinus pennsylvanica	red ash	17.0			f	f	f	3																4	X		
39	Fraxinus pennsylvanica	red ash	12.0	10.0		f	f	f	2																3	X		
40	Fraxinus pennsylvanica	red ash	19.0			f	f	f	3																4	X		
41	Thuja occidentalis	eastern white cedar	11.0			g	g	d	2																3	X		
42	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2																3	X		
43	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2	X		
44	Populus tremuloides	trembling aspen	18.0			p	p	p	3	98															4	X		
45	Fraxinus pennsylvanica	red ash	10.0			p	f	p	2	30															3	X		
46	Populus tremuloides	trembling aspen	21.0			g	g	g	4																5	X		
47	Fraxinus pennsylvanica	red ash	23.0			f	f	f	3	30															4	X		
48	Fraxinus pennsylvanica	red ash	14.0			f	f	f	3	30															4	X		
49	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
50	Fraxinus pennsylvanica	red ash	13.0			f	f	f	3																4	X		
51	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
52	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
53	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
54	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
55	Fraxinus nigra	black ash	22.0			f	f	f	4	30															5	X		
56	Thuja occidentalis	eastern white cedar	17.0			g	g	g	3																4	X		
57	Populus balsamifera	balsam poplar	10.0			f	g	g	2				l,n							x					3	X		
58	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
59	Thuja occidentalis	eastern white cedar	24.0	18,10,15		g	g	g	4																5	X		
60	Thuja occidentalis	eastern white cedar	27.0	11.0		g	g	f	4	30															5	X		
61	Populus tremuloides	trembling aspen	25.0			g	g	p	4	40															5	X		
62	Populus tremuloides	trembling aspen	23.0			g	g	g	4																5	X		
63	Populus tremuloides	trembling aspen	22.0			g	g	g	4																5	X		
64	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
65	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2																3	X		
66	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
67	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
68	Fraxinus pennsylvanica	red ash	21.0			g	g	g	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
69	Fraxinus pennsylvanica	red ash	22.0			g	g	g	2																3	X		
70	Fraxinus pennsylvanica	red ash	15.0			g	g	g	1																2	X		
71	Fraxinus pennsylvanica	red ash	12.0			g	g	g	1																2	X		
72	Populus balsamifera	balsam poplar	28.0			g	g	g	4											x					5	X		
73	Populus balsamifera	balsam poplar	38.0			g	g	g	4																5	X		
74	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2																3	X		
75	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
76	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3																4	X		
77	Populus balsamifera	balsam poplar	20.0			f	f	p	2	70										x					3	X		
78	Populus tremuloides	trembling aspen	25.0			g	g	g	5																6	X		
79	Fraxinus pennsylvanica	red ash	19.0	10.0		f	f	f	3																4	X		
80	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
81	Ulmus americana	white elm	26.0			g	g	g	4																5	X		
82	Fraxinus pennsylvanica	red ash	14.0	12.0		f	f	f	2		x	x													3	X		
83	Ulmus americana	white elm	27.0			g	g	g	4																5	X		
84	Fraxinus pennsylvanica	red ash	19.0	17.0		f	f	f	4		x	x								x					5	X		
85	Fraxinus americana	white ash	27.0			f	f	f	4																5	X		
86	Ulmus americana	white elm	14.0			g	g	g	2																3	X		
87	Fraxinus pennsylvanica	red ash	16.0			f	f	f	4	30															5	X		
88	Fraxinus pennsylvanica	red ash	11.0			p	p	p	2																3	X		
89	Fraxinus pennsylvanica	red ash	10.0			p	p	p	2																3	X		
90	Fraxinus pennsylvanica	red ash	20.0	12.0		p	p	p	3		x	x													4	X		
91	Ulmus americana	white elm	15.0	8.0		g	g	g	3		x	x													4	X		
92	Fraxinus pennsylvanica	red ash	20.0	18.0		p	p	p	4		x	x													5	X		
93	Ulmus americana	white elm	10.0			g	g	g	1																2	X		
94	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3																4	X		
95	Fraxinus americana	white ash	39.0			f	f	f	4																5	X		
96	Fraxinus pennsylvanica	red ash	15.0	26.0		g	f	f	3		x	x													4	X		
97	Acer platanoides	Norway maple	10.0			g	g	g	2																3	X		
98	Fraxinus pennsylvanica	red ash	15.0			f	f	f	4																5	X		
99	Acer platanoides	Norway maple	21.0			g	g	g	4																5	X		
100	Fraxinus pennsylvanica	red ash	20.0			p	p	p	4																5	X		
101	Fraxinus pennsylvanica	red ash	19.0	12,10		p	p	p	2		x	x				x				x					3	X		
102	Fraxinus pennsylvanica	red ash	13.0			p	p	p	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
103	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3	X		
104	Fraxinus pennsylvanica	red ash	26.0			f	f	f	4																5	X		
105	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2											x	x				3	X		
106	Fraxinus pennsylvanica	red ash	13.0			f	f	f	1																2	X		
107	Ulmus americana	white elm	14.0			g	g	g	2																3	X		
108	Fraxinus pennsylvanica	red ash	15.0			p	p	p	1																2	X		
109	Fraxinus pennsylvanica	red ash	27.0			f	f	f	4																5	X		
110	Fraxinus pennsylvanica	red ash	11.0			p	p	p	1																2	X		
111	Fraxinus pennsylvanica	red ash	22.0			f	f	f	4	30											x				5	X		
112	Fraxinus pennsylvanica	red ash	22.0			f	f	f	3																4	X		
113	Fraxinus pennsylvanica	red ash	14.0			g	g	g	1																2	X		
114	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
115	Ulmus americana	white elm	13.0			g	g	g	2		x	x													3	X		
116	Fraxinus pennsylvanica	red ash	25.0			f	f	f	4	30															5	X		
117	Fraxinus pennsylvanica	red ash	11.0			f	f	f	1																2	X		
118	Fraxinus americana	white ash	30.0			p	p	p	4																5	X		
119	Fraxinus pennsylvanica	red ash	11.0			g	g	g	1																2	X		
120	Ulmus americana	white elm	11.0			g	g	g	1																2	X		
121	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2																3	X		
122	Fraxinus pennsylvanica	red ash	13.0			f	f	f	1																2	X		
123	Fraxinus pennsylvanica	red ash	31.0			g	g	g	4		x	x													5	X		
124	Fraxinus pennsylvanica	red ash	19.0	26.0		f	f	f	3		x	x													4	X		
125	Populus tremuloides	trembling aspen	10.0			g	g	g	1																2	X		
126	Ulmus americana	white elm	10.0			g	g	g	1																2	X		
127	Fraxinus pennsylvanica	red ash	12.0	5.0		f	f	f	2																3	X		
128	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
129	Malus sp.	apple	12.0	4.0		f	g	g	2		x	x						x		x					3	X		
130	Fraxinus pennsylvanica	red ash	17.0			f	f	g	2																3	X		
131	Populus tremuloides	trembling aspen	15.0			f	f	f	2	30															3	X		
132	Fraxinus americana	white ash	40.0			f	f	f	4																5	X		
133	Ulmus americana	white elm	19.0			g	g	g	4																5	X		
134	Populus tremuloides	trembling aspen	14.0			f	f	f	3	30															4	X		exposed roots
135	Ulmus americana	white elm	15.0			g	g	g	3																4	X		
136	Fraxinus pennsylvanica	red ash	21.0	20.0		f	f	f	4		x	x													5	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
137	Fraxinus pennsylvanica	red ash	18.0			p	p	p	2																3	X		
138	Populus tremuloides	trembling aspen	14.0	14.0		p	p	p	3	40															4	X		
139	Ulmus americana	white elm	11.0			g	g	g	2																3	X		
140	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2	30										x					3	X		
141	Fraxinus pennsylvanica	red ash	11.0			p	p	p	1																2	X		
142	Populus tremuloides	trembling aspen	15.0			g	g	g	4																5	X		
143	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
144	Fraxinus pennsylvanica	red ash	33.0			f	f	f	4																5	X		
145	Fraxinus pennsylvanica	red ash	29.0			f	f	f	4																5	X		
146	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
147	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
148	Ulmus americana	white elm	10.0			g	g	g	1																2	X		
149	Fraxinus pennsylvanica	red ash	31.0			f	f	f	5	30															6	X		
150	Ulmus americana	white elm	16.0			f	f	g	3									x							4	X		
151	Populus tremuloides	trembling aspen	10.0			f	f	f	1																2	X		
152	Populus tremuloides	trembling aspen	13.0			f	f	f	3																4	X		
153	Fraxinus pennsylvanica	red ash	21.0			g	g	g	4																5	X		
154	Ulmus americana	white elm	21.0			g	g	g	4											x					5	X		
155	Populus tremuloides	trembling aspen	10.0			g	g	g	1																2	X		
156	Populus tremuloides	trembling aspen	12.0			f	f	f	1	30															2	X		
157	Populus tremuloides	trembling aspen	23.0			f	f	f	4	30															5	X		
158	Fraxinus pennsylvanica	red ash	17.0	15.0		f	f	f	4																5	X		
159	Fraxinus pennsylvanica	red ash	13.0			g	g	g	1																2	X		
160	Fraxinus pennsylvanica	red ash	36.0			g	g	g	6																7	X		
161	Fraxinus pennsylvanica	red ash	27.0			g	g	g	4																5	X		
162	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3	X		
163	Fraxinus pennsylvanica	red ash	17.0			f	f	f	3																4	X		
164	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
165	Ulmus americana	white elm	22.0			g	g	g	3																4	X		
166	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2	X		
167	Thuja occidentalis	eastern white cedar	12.0			g	g	g	1																2	X		
168	Populus tremuloides	trembling aspen	12.0			g	g	f	2																3	X		
169	Populus tremuloides	trembling aspen	12.0			g	g	f	2																3	X		
170	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
171	Fraxinus pennsylvanica	red ash	24.0	15.0		f	f	f	4																5		X	
172	Ulmus americana	white elm	16.0			g	g	g	3									x							4	X		
173	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
174	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
175	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
176	Fraxinus pennsylvanica	red ash	23.0			g	g	g	4																5	X		
177	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2																3	X		
178	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2	30															3	X		
179	Fraxinus pennsylvanica	red ash	19.0			g	g	g	3																4	X		
180	Fraxinus pennsylvanica	red ash	19.0			g	g	g	3																4	X		
181	Fraxinus pennsylvanica	red ash	11.0	11.0		f	f	f	2		x	x													3	X		
182	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1																2		X	
183	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2		x	x													3	X		
184	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3		X	
185	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
186	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2		X	
187	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3		X	
188	Betula papyrifera	white birch	13.0	12.0		g	g	g	3		x	x													4	X		
189	Malus sp.	apple	16.0			g	g	g	3																4		X	
190	Fraxinus pennsylvanica	red ash	20.0			f	f	f	3																4		X	
191	Tilia americana	basswood	21.0			g	g	g	4																5		X	
192	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3																4		X	
193	Fraxinus pennsylvanica	red ash	19.0	12,15		g	g	g	3																4		X	
194	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2																3		X	
195	Tilia americana	basswood	14.0			g	g	g	2																3	X		
196	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
197	Populus tremuloides	trembling aspen	21.0			g	g	g	4																5		X	
198	Populus tremuloides	trembling aspen	15.0			g	g	g	4																5		X	
199	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
200	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
201	Populus tremuloides	trembling aspen	32.0			g	g	g	5																6		X	
202	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3		X	
203	Thuja occidentalis	eastern white cedar	10.0			g	g	g	3																4		X	
204	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4																5		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
205	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3		X	
206	Fraxinus pennsylvanica	red ash	23.0			g	g	g	3																4		X	
207	Populus tremuloides	trembling aspen	15.0			g	g	g	4																5		X	
208	Fraxinus pennsylvanica	red ash	23.0			g	g	g	3																4		X	
209	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2																3		X	
210	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2																3		X	
211	Fraxinus pennsylvanica	red ash	19.0			f	f	f	3																4		X	
212	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3		X	
213	Fraxinus pennsylvanica	red ash	25.0			f	f	f	4																5		X	
214	Fraxinus pennsylvanica	red ash	18.0			g	g	g	4																5		X	
215	Fraxinus pennsylvanica	red ash	19.0			g	g	g	2																3		X	
216	Ulmus americana	white elm	15.0			g	g	g	2																3		X	
217	Fraxinus pennsylvanica	red ash	32.0			g	g	g	4																5		X	
218	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4																5		X	
219	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3		X	
220	Tilia americana	basswood	14.0			g	g	g	2																3		X	
221	Populus tremuloides	trembling aspen	13.0	16.0		g	g	g	2																3		X	
222	Populus tremuloides	trembling aspen	19.0			g	g	g	4																5		X	
223	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3		X	
224	Fraxinus pennsylvanica	red ash	24.0	8.0		f	f	f	4																5		X	
225	Fraxinus pennsylvanica	red ash	23.0			f	f	f	4																5		X	
226	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
227	Populus tremuloides	trembling aspen	18.0			g	g	g	4																5		X	
228	Fraxinus pennsylvanica	red ash	14.0			g	g	g	3																4		X	
229	Populus tremuloides	trembling aspen	19.0			g	g	g	3																4		X	
230	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2																3		X	
231	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2																3		X	
232	Fraxinus pennsylvanica	red ash	23.0			g	g	g	4																5		X	
233	Ulmus americana	white elm	21.0			g	g	g	2																3		X	
234	Ulmus americana	white elm	34.0			g	g	g	4																5		X	
235	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
236	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2																3	X		
237	Fraxinus pennsylvanica	red ash	21.0			f	f	f	4																5	X		
238	Thuja occidentalis	eastern white cedar	12.0	14,12		f	f	f	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
239	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
240	Fraxinus pennsylvanica	red ash	17.0			g	g	g	2	30															3	X		
241	Fraxinus pennsylvanica	red ash	22.0			f	f	f	4	40															5	X		
242	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2																3	X		
243	Populus tremuloides	trembling aspen	17.0			g	g	g	4																5	X		
244	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
245	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
246	Populus balsamifera	balsam poplar	28.0			g	g	g	4																5	X		
247	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3																4	X		
248	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
249	Populus balsamifera	balsam poplar	20.0			g	g	g	2																3	X		
250	Thuja occidentalis	eastern white cedar	13.0	8.0		g	g	g	2																3	X		
251	Populus balsamifera	balsam poplar	26.0			g	g	g	4																5	X		
252	Thuja occidentalis	eastern white cedar	18.0			g	g	g	3																4	X		
253	Thuja occidentalis	eastern white cedar	16.0			g	g	g	3																4	X		
254	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
255	Populus tremuloides	trembling aspen	33.0			g	g	g	5																6	X		
256	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
257	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
258	Populus balsamifera	balsam poplar	13.0			g	g	g	2																3	X		
259	Thuja occidentalis	eastern white cedar	10.0	8.0		g	g	g	2																3	X		
260	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
261	Populus balsamifera	balsam poplar	13.0			g	g	g	2																3	X		
262	Populus tremuloides	trembling aspen	29.0			f	f	p	5																6	X		
263	Thuja occidentalis	eastern white cedar	11.0			f	f	f	2																3	X		
264	Thuja occidentalis	eastern white cedar	19.0			g	g	g	3																4	X		
265	Fraxinus pennsylvanica	red ash	38.0			g	g	f	5	30															6	X		
266	Fraxinus pennsylvanica	red ash	47.0			g	g	f	5	30										x					6	X		
267	Pinus strobus	white pine	18.0			f	f	f	3	30										x					4	X		
268	Pinus nigra	Austrian pine	13.0			p	p	p	1	70															2	X		
269	Pinus nigra	Austrian pine	21.0			f	f	p	3	60															4	X		
270	Pinus nigra	Austrian pine	14.0			p	p	p	1	90															2	X		
271	Pinus nigra	Austrian pine	21.0			p	p	p	2	90															3	X		
272	Pinus strobus	white pine	50.0			g	g	g	7	5	x	x													8	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
273	Quercus rubra	red oak	16.0			g	g	g	3	3															4	X		
274	Pinus strobus	white pine	36.0			g	g	f	4	30	x	x													5	X		
275	Fraxinus pennsylvanica	red ash	38.0			g	g	f	6	30															7	X		
276	Fraxinus pennsylvanica	red ash	21.0			g	g	g	4											x					5	X		
277	Fraxinus pennsylvanica	red ash	25.0			g	g	g	4	10										x					5	X		
278	Fraxinus pennsylvanica	red ash	24.0			g	g	g	3											x					4	X		
279	Fraxinus pennsylvanica	red ash	33.0			g	g	g	5	10	x	x								x					6	X		
280	Fraxinus pennsylvanica	red ash	24.0			f	f	f	3	30										x					4	X		
281	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2											x					3	X		
282	Fraxinus pennsylvanica	red ash	19.0			f	f	p	2	40										x					3	X		
283	Fraxinus pennsylvanica	red ash	21.0			f	f	f	3	20															4	X		
284	Fraxinus pennsylvanica	red ash	47.0			g	g	g	5		x	x													6	X		
285	Fraxinus pennsylvanica	red ash	17.0	16,15		f	f	f	3	30	x	x								x					4	X		
286	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4	20															5	X		
287	Fraxinus pennsylvanica	red ash	29.0			g	g	g	4																5	X		
288	Fraxinus pennsylvanica	red ash	28.0			g	g	f	4																5	X		
289	Betula papyrifera	white birch	12.0	10,13		g	g	g	2																3	X		
290	Larix laricina	tamarack	17.0			f	f	f	1	40															2	X		
291	Larix laricina	tamarack	15.0			f	f	f	3																4	X		
292	Larix laricina	tamarack	20.0			f	f	f	2																3	X		
293	Larix laricina	tamarack	15.0	17.0		f	f	f	3		x	x													4	X		
294	Larix laricina	tamarack	17.0			f	f	f	3																4	X		
295	Larix laricina	tamarack	15.0	8.0		f	f	f	2																3	X		
296	Larix laricina	tamarack	20.0			f	f	f	3																4	X		
297	Fraxinus pennsylvanica	red ash	29.0			g	f	f	4	30										x					5	X		
298	Fraxinus pennsylvanica	red ash	24.0			g	f	f	4	30										x					5	X		
299	Fraxinus pennsylvanica	red ash	26.0			g	g	f	4	30										x					5	X		
300	Fraxinus pennsylvanica	red ash	22.0			f	f	f	4	30										x					5	X		
301	Fraxinus pennsylvanica	red ash	27.0			g	g	g	5											x					6	X		
302	Fraxinus pennsylvanica	red ash	26.0			g	g	g	4	10															5	X		
303	Fraxinus pennsylvanica	red ash	17.0			g	g	g	2	10										x					3	X		
304	Fraxinus pennsylvanica	red ash	28.0			g	g	g	2	10										x					3	X		
305	Fraxinus pennsylvanica	red ash	34.0			g	g	f	5	30										x					6	X		
306	Fraxinus pennsylvanica	red ash	36.0			f	f	f	5	30										x					6	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
307	Fraxinus pennsylvanica	red ash	40.0			g	g	f	5	10										x					6	X		
308	Pinus strobus	white pine	27.0			p	p	p	4																5		X	
309	Pinus strobus	white pine	14.0			p	p	p	2																3		X	
310	Betula papyrifera	white birch	17.0			g	g	g	2																3		X	
311	Fraxinus pennsylvanica	red ash	24.0			f	f	f	4	30										x					5		X	
312	Pinus nigra	Austrian pine	15.0			p	p	p	2	90															3		X	
313	Pinus nigra	Austrian pine	13.0			p	p	p	2	90															3		X	
314	Pinus nigra	Austrian pine	17.0			p	p	p	2	90															3		X	
315	Pinus strobus	white pine	24.0			p	p	p	2	90															3		X	
316	Pinus strobus	white pine	24.0			p	p	p	3	90															4		X	
317	Pinus strobus	white pine	37.0			p	p	p	3	90															4		X	
318	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
319	Pinus nigra	Austrian pine	25.0			f	f	p	1	90															2	X		
320	Pinus nigra	Austrian pine	20.0			f	f	p	3	90															4	X		
321	Pinus nigra	Austrian pine	22.0			f	f	p	3	90															4	X		
322	Pinus nigra	Austrian pine	21.0			f	f	p	3	90															4	X		
323	Populus tremuloides	trembling aspen	12.0			g	g	g	1																2	X		
324	Pinus nigra	Austrian pine	19.0			p	p	p	3	95															4	X		
325	Pinus nigra	Austrian pine	18.0			p	p	p	3	95															4	X		
326	Pinus nigra	Austrian pine	28.0			f	f	p	4	80															5		X	
327	**Tag Number Not Assigned**																											
328	Pinus nigra	Austrian pine	19.0			f	f	p	3	80															4		X	
329	Pinus nigra	Austrian pine	23.0			f	f	p	4	80															5	X		
330	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
331	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
332	Thuja occidentalis	eastern white cedar	16.0			g	g	g	3																4	X		
333	Thuja occidentalis	eastern white cedar	25.0			g	g	g	3																4		X	
334	Thuja occidentalis	eastern white cedar	24.0			g	g	g	3																4		X	
335	Thuja occidentalis	eastern white cedar	17.0	5.0		g	g	g	2																3		X	
336	Fraxinus pennsylvanica	red ash	13.0			f	f	f	2																3	X		
337	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2																3	X		
338	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
339	Thuja occidentalis	eastern white cedar	17.0	12,15,17,17		g	g	g	3																4	X		
340	Thuja occidentalis	eastern white cedar	14.0	14.0		g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
341	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
342	Thuja occidentalis	eastern white cedar	14.0			g	g	g	3																4	X		
343	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
344	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
345	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
346	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
347	Thuja occidentalis	eastern white cedar	16.0	14,12,10		g	g	g	4																5	X		
348	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
349	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
350	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
351	Populus tremuloides	trembling aspen	19.0			g	g	g	4																5	X		
352	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
353	Populus tremuloides	trembling aspen	10.0			p	p	p	2																3	X		
354	Populus tremuloides	trembling aspen	13.0			g	g	g	3																4	X		
355	Populus tremuloides	trembling aspen	14.0			f	f	f	2	30															3	X		
356	Populus tremuloides	trembling aspen	18.0	15.0		g	g	g	3		x	x													4	X		
357	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
358	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
359	Fraxinus pennsylvanica	red ash	14.0			f	f	f	3	70															4	X		
360	Fraxinus pennsylvanica	red ash	24.0			f	f	f	3	70															4	X		
361	Fraxinus pennsylvanica	red ash	28.0			p	p	p	6	70															7	X		
362	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
363	Fraxinus pennsylvanica	red ash	14.0			f	f	f	3																4	X		girdled
364	Fraxinus pennsylvanica	red ash	18.0			f	f	f	3	80															4	X		
365	Fraxinus pennsylvanica	red ash	17.0			g	g	g	3																4	X		
366	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
367	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
368	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3	X		
369	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3	X		
370	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3	X		
371	Thuja occidentalis	eastern white cedar	12.0			g	g	g	3																4	X		
372	Thuja occidentalis	eastern white cedar	18.0			g	g	g	3																4	X		
373	Thuja occidentalis	eastern white cedar	16.0			g	g	g	3																4	X		
374	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30															3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
375	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
376	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2	30															3		X	
377	Fraxinus pennsylvanica	red ash	18.0			f	f	f	2	30															3		X	
378	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
379	Fraxinus pennsylvanica	red ash	28.0			g	g	g	6																7		X	
380	Gleditsia triacanthos	honey locust	18.0	14.0		g	g	g	4																5		X	
381	Populus tremuloides	trembling aspen	17.0			f	f	f	3	30															4		X	
382	Populus tremuloides	trembling aspen	15.0			p	p	p	2	30															3		X	
383	Fraxinus pennsylvanica	red ash	32.0			f	f	f	4								x	x							5		X	
384	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
385	Fraxinus pennsylvanica	red ash	32.0			g	g	g	4																5		X	
386	Fraxinus pennsylvanica	red ash	20.0			g	g	g	2																3		X	
387	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
388	Thuja occidentalis	eastern white cedar	18.0	15.0		p	p	p	3																4		X	
389	Thuja occidentalis	eastern white cedar	18.0	15,13		p	p	p	4																5	X		
390	Thuja occidentalis	eastern white cedar	14.0	14,15,15		g	g	g	4																5	X		
391	Thuja occidentalis	eastern white cedar	16.0	18,16		g	g	g	3		x	x													4	X		
392	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30															3	X		
393	Thuja occidentalis	eastern white cedar	14.0	15,16,16		g	g	g	2																3	X		
394	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
395	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3	X		
396	Populus tremuloides	trembling aspen	16.0			p	p	p	2	90															3	X		
397	Populus tremuloides	trembling aspen	18.0			p	p	p	3	80															4	X		
398	Thuja occidentalis	eastern white cedar	14.0	13,12		f	f	f	3	80								x							4	X		
399	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
400	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
401	Populus tremuloides	trembling aspen	13.0			f	f	f	3	80															4	X		
402	Thuja occidentalis	eastern white cedar	24.0	22.0		g	g	g	4		x	x						x							5	X		
403	Thuja occidentalis	eastern white cedar	18.0			g	g	g	3																4	X		
404	Thuja occidentalis	eastern white cedar	18.0			g	g	g	3																4	X		
405	Thuja occidentalis	eastern white cedar	17.0			g	g	g	3																4	X		
406	Thuja occidentalis	eastern white cedar	15.0			g	g	g	3																4	X		
407	Thuja occidentalis	eastern white cedar	10.0			f	f	f	2		x														3	X		
408	Thuja occidentalis	eastern white cedar	24.0	12.0		g	f	g	3		x	x													4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
409	Thuja occidentalis	eastern white cedar	12.0			g	g	g	4																5	X		
410	Populus tremuloides	trembling aspen	15.0			g	g	g	4																5	X		
411	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3																4	X		
412	Populus tremuloides	trembling aspen	12.0			f	f	f	2																3	X		
413	Populus tremuloides	trembling aspen	14.0			g	g	g	3	20															4	X		
414	Populus tremuloides	trembling aspen	14.0			g	g	g	2	10															3	X		
415	Populus tremuloides	trembling aspen	15.0			g	g	g	3																4	X		
416	Populus tremuloides	trembling aspen	11.0			p	p	p	2	10				x	x		x	x					x		3	X		
417	Thuja occidentalis	eastern white cedar	11.0			g	g	g	3																4	X		
418	Populus tremuloides	trembling aspen	10.0			f	g	g	3																4	X		
419	Populus tremuloides	trembling aspen	12.0			g	g	g	3						x			x							4	X		
420	Thuja occidentalis	eastern white cedar	12.0			g	g	g	4																5	X		
421	Populus tremuloides	trembling aspen	13.0			f	p	p	3	80															4		X	
422	Populus tremuloides	trembling aspen	10.0			g	p	p	3	70															4		X	
423	Thuja occidentalis	eastern white cedar	24.0	19.0		g	g	g	2																3		X	
424	Tilia americana	basswood	23.0			g	g	g	3						x										4		X	
425	Thuja occidentalis	eastern white cedar	10.0			g	f	f	2	10															3	X		
426	Thuja occidentalis	eastern white cedar	19.0			g	g	g	2	20															3		X	
427	Thuja occidentalis	eastern white cedar	13.0	8,10		g	g	g	3	10	x														4		X	
428	Thuja occidentalis	eastern white cedar	18.0	15,13		g	g	g	2	10	x														3		X	
429	Thuja occidentalis	eastern white cedar	10.0			g	p	p	2	70								x							3		X	broken top
430	Thuja occidentalis	eastern white cedar	11.0	12.0		g	g	g	2		x														3		X	
431	Fraxinus pennsylvanica	red ash	10.0			g	g	g	3																4		X	
432	Populus tremuloides	trembling aspen	16.0			f	f	f	2	20															3		X	
433	Betula papyrifera	white birch	20.0	14,12,10		g	g	g	3	10	x	x					x								4		X	
434	Populus tremuloides	trembling aspen	13.0			f	f	f	3	20															4		X	
435	Fraxinus pennsylvanica	red ash	14.0			g	g	g	3	20											x				4		X	
436	Populus tremuloides	trembling aspen	16.0			g	g	g	3	10															4		X	
437	Populus tremuloides	trembling aspen	13.0			g	g	g	3	10			h,n												4		X	
438	Populus tremuloides	trembling aspen	12.0			g	g	g	3	10			h,n												4		X	
439	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3		X	
440	Fraxinus pennsylvanica	red ash	27.0			g	g	g	3																4		X	
441	Populus tremuloides	trembling aspen	21.0			g	g	g	2																3		X	
442	Fraxinus pennsylvanica	red ash	10.0			g	g	g	1																2		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
443	Ulmus americana	white elm	24.0			g	g	g	4																5		X	
444	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3	10															4		X	
445	Fraxinus pennsylvanica	red ash	17.0			g	g	g	2																3		X	
446	Fraxinus pennsylvanica	red ash	10.0			g	f	f	3												x				4		X	
447	Fraxinus pennsylvanica	red ash	12.0			g	f	f	4	20											x				5		X	
448	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2	10															3		X	
449	Ulmus americana	white elm	10.0			g	g	g	3																4		X	
450	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2																3		X	
451	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3		X	
452	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2																3		X	
453	Populus tremuloides	trembling aspen	13.0			g	g	g	3																4		X	
454	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
455	Populus tremuloides	trembling aspen	11.0			g	f	f	2	20															3		X	
456	Fraxinus pennsylvanica	red ash	22.0			g	g	g	2																3		X	
457	Populus tremuloides	trembling aspen	12.0			g	g	f	3	10															4		X	
458	Fraxinus pennsylvanica	red ash	18.0			g	g	g	4																5		X	
459	Fraxinus pennsylvanica	red ash	15.0			g	f	f	3	20															4		X	
460	Fraxinus pennsylvanica	red ash	16.0			g	g	g	4	10															5		X	
461	Fraxinus pennsylvanica	red ash	25.0			g	g	g	3																4		X	
462	Fraxinus pennsylvanica	red ash	26.0			g	g	g	4																5		X	
463	Fraxinus pennsylvanica	red ash	10.0	10.0		g	f	f	3	30	x										x				4		X	
464	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4																5		X	
465	Fraxinus pennsylvanica	red ash	10.0	5.0		f	f	f	3		x				x		x								4		X	
466	Acer negundo	Manitoba maple	15.0			g	g	g	4		x														5		X	
467	Fraxinus pennsylvanica	red ash	12.0			g	g	g	3																4		X	
468	Fraxinus pennsylvanica	red ash	16.0			g	g	g	3																4		X	
469	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2																3		X	
470	Fraxinus pennsylvanica	red ash	28.0			g	g	g	3																4		X	
471	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3		X	
472	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3		X	
473	Populus tremuloides	trembling aspen	12.0			p	p	p	2																3		X	
474	Fraxinus pennsylvanica	red ash	24.0			g	f	f	3																4		X	
475	Fraxinus pennsylvanica	red ash	24.0			g	g	g	3																4		X	
476	Populus tremuloides	trembling aspen	21.0			g	g	g	3																4		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
477	Populus tremuloides	trembling aspen	19.0			g	g	g	2																3		X	
478	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3		X	
479	Populus tremuloides	trembling aspen	19.0			g	g	g	2																3		X	
480	Fraxinus pennsylvanica	red ash	13.0			g	f	f	1	30											x				2		X	
481	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2																3		X	
482	Fraxinus pennsylvanica	red ash	12.0			g	f	f	2	80											x				3		X	
483	Fraxinus pennsylvanica	red ash	13.0			g	f	f	2	70															3		X	
484	Fraxinus pennsylvanica	red ash	15.0			g	f	f	2	50											x				3		X	
485	Ulmus americana	white elm	16.0			g	g	g	3																4		X	
486	Fraxinus pennsylvanica	red ash	26.0			f	p	p	3	80	x						x				x				4		X	
487	Fraxinus pennsylvanica	red ash	11.0			g	g	g	3																4		X	
488	Fraxinus pennsylvanica	red ash	13.0			g	g	g	1																2		X	
489	Fraxinus pennsylvanica	red ash	11.0			g	g	g	1												x				2		X	
490	Fraxinus pennsylvanica	red ash	10.0			f	f	f	1	10											x				2		X	
491	Fraxinus pennsylvanica	red ash	11.0			f	f	f	1	20											x				2		X	
492	Fraxinus pennsylvanica	red ash	12.0			f	p	p	1	50											x				2		X	
493	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	10											x				3		X	
494	Ulmus americana	white elm	10.0			g	g	g	2																3		X	
495	Ulmus americana	white elm	11.0			g	g	g	3																4		X	
496	Fraxinus pennsylvanica	red ash	11.0			f	f	p	1	50															2		X	
497	Fraxinus pennsylvanica	red ash	11.0			p	p	p	2	95															3		X	
498	Fraxinus pennsylvanica	red ash	12.0			f	f	f	1	50															2		X	
499	Fraxinus pennsylvanica	red ash	10.0			f	f	f	2	60															3		X	
500	Fraxinus pennsylvanica	red ash	14.0			f	f	p	2	60															3		X	
501	Fraxinus pennsylvanica	red ash	10.0			g	p	p	2	50															3		X	
502	Fraxinus pennsylvanica	red ash	26.0			g	f	f	3	40															4		X	
503	Fraxinus pennsylvanica	red ash	10.0			g	f	f	1	20															2		X	
504	Fraxinus pennsylvanica	red ash	12.0			g	f	f	1	10															2		X	
505	Fraxinus pennsylvanica	red ash	12.0			g	f	f	1	10															2		X	
506	Fraxinus pennsylvanica	red ash	18.0			g	f	f	2	10															3		X	
507	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2	10															3		X	
508	Fraxinus pennsylvanica	red ash	15.0			g	f	f	2	20															3		X	
509	Fraxinus pennsylvanica	red ash	14.0	12.0		g	g	g	2		x														3		X	
510	Populus tremuloides	trembling aspen	10.0			g	g	f	2	10			m,s												3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
511	Populus tremuloides	trembling aspen	10.0			g	p	p	2	30															3		X	
512	Fraxinus pennsylvanica	red ash	12.0			g	p	p	3	30															4		X	
513	Populus tremuloides	trembling aspen	17.0			g	g	g	4																5		X	
514	Fraxinus pennsylvanica	red ash	20.0	8.0		g	g	g	2		x														3		X	
515	Fraxinus pennsylvanica	red ash	20.0			g	g	g	2																3		X	
516	Populus tremuloides	trembling aspen	20.0	25.0		g	f	f	2		x														3		X	
517	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
518	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4		X	
519	Fraxinus pennsylvanica	red ash	34.0			g	f	f	4																5		X	
520	Populus tremuloides	trembling aspen	10.0			g	f	f	1																2		X	
521	Fraxinus pennsylvanica	red ash	28.0	27.0		g	f	f	5		x														6		X	
522	Fraxinus pennsylvanica	red ash	15.0			g	p	p	2	30															3		X	
523	Fraxinus pennsylvanica	red ash	14.0	24.0		f	f	f	3	30	x														4		X	smaller stem dead
524	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2																3		X	
525	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2																3		X	
526	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3		X	
527	Fraxinus pennsylvanica	red ash	17.0			g	f	f	2																3		X	
528	Populus tremuloides	trembling aspen	25.0			g	f	f	2																3		X	
529	Fraxinus pennsylvanica	red ash	12.0			g	g	g	1																2		X	
530	Fraxinus nigra	black ash	12.0			g	f	f																	1		X	
531	Fraxinus pennsylvanica	red ash	11.0			g	g	g																	1		X	
532	Fraxinus pennsylvanica	red ash	12.0			g	g	g		10															1		X	
533	Fraxinus pennsylvanica	red ash	13.0			g	g	f																	1		X	
534	Ulmus americana	american elm	11.0			g	g	g																	1		X	
535	Fraxinus pennsylvanica	red ash	18.0			g	f	f		10															1		X	
536	Fraxinus pennsylvanica	red ash	18.0			g	f	f		10															1		X	
537	Fraxinus pennsylvanica	red ash	14.0			f	f	f	3	20															4		X	
538	Fraxinus pennsylvanica	red ash	20.0			g	g	g	2	10															3		X	
539	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	10															3		X	
540	Populus tremuloides	trembling aspen	12.0	12.0		g	g	g	3		x														4		X	
541	Populus tremuloides	trembling aspen	12.0			f	f	f	2	10			l,e												3		X	
542	Populus tremuloides	trembling aspen	14.0			f	p	p	2	95															3		X	broken top
543	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2																3		X	
544	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2																3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
545	Populus tremuloides	trembling aspen	14.0			f	p	p	2	90															3		X	broken top
546	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3		X	
547	Fraxinus nigra	black ash	16.0			g	g	g	2	10															3		X	
548	Fraxinus pennsylvanica	red ash	21.0			g	g	g	3	10															4		X	
549	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4		X	
550	Fraxinus pennsylvanica	red ash	18.0			g	f	f	2																3		X	
551	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2																3		X	
552	Fraxinus pennsylvanica	red ash	24.0			g	f	f	4	60															5		X	
553	Ulmus americana	american elm	12.0			g	g	g	3																4		X	
554	Populus tremuloides	trembling aspen	24.0			f	f	f	3	20															4		X	
555	Populus tremuloides	trembling aspen	32.0			g	g	g	3				l,e												4		X	
556	Populus tremuloides	trembling aspen	10.0			p	p	p	2	20			l,e												3		X	
557	Populus tremuloides	trembling aspen	15.0			g	g	f	3	10															4		X	
558	Fraxinus pennsylvanica	red ash	21.0			g	g	g	3																4		X	
559	Fraxinus pennsylvanica	red ash	23.0			g	p	p	3	80															4		X	
560	Fraxinus pennsylvanica	red ash	25.0			g	f	f	3	70															4		X	
561	Fraxinus pennsylvanica	red ash	17.0			g	f	f	2	20															3		X	
562	Fraxinus pennsylvanica	red ash	14.0	32.0		g	f	f	3	10	x														4		X	
563	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2	10															3		X	
564	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2	20															3		X	
565	Fraxinus pennsylvanica	red ash	10.0			f	p	p	2	80															3		X	
566	Fraxinus pennsylvanica	red ash	26.0			g	f	f	3	20															4		X	
567	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2	20															3		X	
568	Populus tremuloides	trembling aspen	30.0			g	f	p	3	50															4		X	
569	Populus tremuloides	trembling aspen	13.0			g	f	f	2																3		X	
570	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3		X	
571	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4		X	
572	Populus tremuloides	trembling aspen	12.0	11.0		g	g	g	2		x														3		X	
573	Fraxinus pennsylvanica	red ash	30.0			f	f	f	3	20															4		X	
574	Fraxinus pennsylvanica	red ash	19.0			f	f	f	2	20															3		X	
575	Fraxinus pennsylvanica	red ash	25.0			g	f	f	2	10															3		X	
576	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3		X	
577	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
578	Thuja occidentalis	eastern white cedar	13.0			g	g	g	1																2		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
579	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3		X	
580	Populus tremuloides	trembling aspen	31.0			f	g	g	3																4		X	
581	Thuja occidentalis	eastern white cedar	14.0			g	g	g	1																2		X	
582	Thuja occidentalis	eastern white cedar	14.0			g	g	g	1																2		X	
583	Populus tremuloides	trembling aspen	12.0			f	f	f	2																3		X	
584	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
585	Populus tremuloides	trembling aspen	14.0	10.0		g	g	g	2																3		X	
586	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
587	Thuja occidentalis	eastern white cedar	12.0			g	g	g	1				h,s												2		X	
588	Populus tremuloides	trembling aspen	15.0			g	g	g	2	10															3		X	
589	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3		X	
590	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3		X	
591	Ulmus americana	american elm	20.0			g	g	g	3																4		X	
592	Fraxinus pennsylvanica	red ash	31.0			g	g	g	3	10															4		X	
593	Fraxinus pennsylvanica	red ash	15.0			g	f	f	2	10															3		X	
594	Fraxinus pennsylvanica	red ash	30.0			g	f	f	3	30															4		X	
595	Populus tremuloides	trembling aspen	15.0			f	f	f	2	20															3		X	
596	Populus tremuloides	trembling aspen	14.0			p	f	f	2	20															3		X	
597	Fraxinus pennsylvanica	red ash	38.0			g	g	f	4	30															5		X	
598	Fraxinus pennsylvanica	red ash	12.0			g	g	g	3	10															4		X	
599	Ulmus americana	american elm	17.0			g	g	o	3	90															4		X	
600	Populus tremuloides	trembling aspen	19.0			f	f	f	3	50															4		X	
601	Populus tremuloides	trembling aspen	17.0			g	f	f	2																3		X	
602	Fraxinus pennsylvanica	red ash	30.0			g	f	p	3	90															4		X	
603	Fraxinus pennsylvanica	red ash	16.0			g	f	p	3	90															4		X	
604	Populus tremuloides	trembling aspen	16.0			p	f	f	2																3		X	
605	Fraxinus pennsylvanica	red ash	10.0			p	p	p	2	10															3		X	
606	Populus tremuloides	trembling aspen	10.0			f	f	f	2	10															3		X	
607	Fraxinus pennsylvanica	red ash	10.0	13.0		g	f	f	2	20															3		X	
608	Fraxinus pennsylvanica	red ash	15.0			g	g	f	2	30															3		X	
609	Thuja occidentalis	eastern white cedar	10.0			g	g	p	1	90															2		X	
610	Populus tremuloides	trembling aspen	10.0			p	p	g	2																3		X	
611	Fraxinus pennsylvanica	red ash	10.0			p	f	g	2																3		X	
612	Populus tremuloides	trembling aspen	15.0			p	f	g	2	10															3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
613	Populus tremuloides	trembling aspen	15.0			f	f	f	2																3		X	
614	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2	40															3		X	
615	Populus tremuloides	trembling aspen	16.0			p	f	g	2	10															3		X	
616	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	50															3		X	
617	Populus tremuloides	trembling aspen	17.0			f	p	f	2	20															3		X	
618	Fraxinus pennsylvanica	red ash	27.0			g	g	f	2	50															3		X	
619	Fraxinus pennsylvanica	red ash	28.0			g	g	f	3	50															4		X	
620	Fraxinus pennsylvanica	red ash	19.0			g	f	p	2	80															3		X	
621	Fraxinus pennsylvanica	red ash	12.0			g	f	p	2	70															3		X	
622	Fraxinus pennsylvanica	red ash	14.0			g	f	p	2	60															3		X	
623	Fraxinus pennsylvanica	red ash	21.0			g	f	f	3	60															4		X	
624	Fraxinus pennsylvanica	red ash	32.0			f	f	f	4	70															5		X	
625	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	20															3		X	
626	Populus tremuloides	trembling aspen	21.0			p	p	g	2	10															3		X	
627	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	20															3		X	
628	Fraxinus pennsylvanica	red ash	24.0			f	f	f	3	50															4		X	
629	Fraxinus pennsylvanica	red ash	12.0			f	g	f	2	60															3		X	
630	Thuja occidentalis	eastern white cedar	12.0			f	g	g	2																3		X	
631	Populus tremuloides	trembling aspen	13.0			f	f	f	3	10															4		X	
632	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3		X	
633	Fraxinus pennsylvanica	red ash	26.0			g	g	f	3	20						x									4		X	
634	Populus tremuloides	trembling aspen	14.0			f	f	f	3																4		X	
635	Thuja occidentalis	eastern white cedar	15.0			g	g	g	3																4		X	
636	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3		X	
637	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
638	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
639	Populus tremuloides	trembling aspen	10.0			g	g	g	2									x							3		X	
640	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
641	Fraxinus pennsylvanica	red ash	25.0			g	f	f	3	10						x									4		X	
642	Fraxinus pennsylvanica	red ash	25.0			g	f	f	2	40															3	X		
643	Fraxinus pennsylvanica	red ash	34.0			f	g	f	3	30															4	X		
644	Fraxinus pennsylvanica	red ash	16.0	8.0		f	f	f	2	40															3	X		
645	Fraxinus nigra	black ash	10.0			g	f	p	2	70	x	x			x	x									3	X		
646	Fraxinus pennsylvanica	red ash	20.0			g	g	f	3	10															4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
647	Fraxinus pennsylvanica	red ash	21.0			g	g	g	2																3	X		
648	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2	20							x	x							3	X		sloughing bark
649	Fraxinus pennsylvanica	red ash	30.0			f	f	f	3	30															4	X		
650	Populus balsamifera	balsam poplar	26.0			g	g	g	3																4	X		
651	Fraxinus pennsylvanica	red ash	19.0			g	f	f	2	20															3	X		
652	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	10															3	X		
653	Fraxinus pennsylvanica	red ash	24.0			g	f	f	3	10															4	X		
654	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2																3	X		
655	Fraxinus pennsylvanica	red ash	21.0			g	g	g	2																3	X		
656	Fraxinus pennsylvanica	red ash	11.0			g	g	f	1	10															2	X		
657	Fraxinus pennsylvanica	red ash	47.0			g	g	f	3	30						x									4	X		multiple cavities
658	Populus tremuloides	trembling aspen	25.0			g	g	g	3																4	X		
659	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	20															3	X		
660	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	10															3	X		
661	Fraxinus pennsylvanica	red ash	17.0			g	g	f	2	10															3	X		
662	Fraxinus pennsylvanica	red ash	23.0			g	g	f	3	20															4	X		
663	Fraxinus pennsylvanica	red ash	21.0			g	g	g	2																3	X		
664	Fraxinus nigra	black ash	14.0			g	f	f	2	20															3	X		
665	Fraxinus nigra	black ash	13.0			g	f	f	1	30															2	X		
666	Fraxinus pennsylvanica	red ash	13.0	9.0		g	f	f	2	20															3	X		
667	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	10															3	X		
668	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2	30															3	X		
669	Fraxinus pennsylvanica	red ash	11.0			g	f	g	1	10															2	X		
670	Populus tremuloides	trembling aspen	26.0			g	g	g	2																3	X		
671	Populus tremuloides	trembling aspen	33.0			g	g	g	2																3	X		
672	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2																3	X		
673	Fraxinus pennsylvanica	red ash	11.0			g	g	g	1																2	X		
674	Fraxinus pennsylvanica	red ash	10.0			g	g	g	1		x														2	X		
675	Fraxinus pennsylvanica	red ash	13.0			g	f	f	3																4	X		
676	Fraxinus pennsylvanica	red ash	12.0			g	f	f	2																3	X		
677	Fraxinus nigra	black ash	10.0			g	g	g	2																3	X		
678	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2	10															3	X		
679	Fraxinus pennsylvanica	red ash	18.0	10.0		g	g	g	3																4	X		
680	Fraxinus pennsylvanica	red ash	32.0			g	f	f	5	30									x						6	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
681	Populus tremuloides	trembling aspen	18.0			g	g	g	3															4	X		
682	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2															3	X		
683	Fraxinus pennsylvanica	red ash	21.0			g	g	g	3	20									x					4	X		
684	Fraxinus pennsylvanica	red ash	11.0			g	f	f	1															2	X		
685	Ulmus americana	white elm	16.0			g	g	g	2															3	X		
686	Fraxinus pennsylvanica	red ash	35.0			g	f	p	4	60														5	X		
687	Fraxinus pennsylvanica	red ash	22.0			g	f	f	3	20			l,n											4	X		
688	Populus tremuloides	trembling aspen	35.0			f	f	p	4	70			h,e			x	x							5	X		falling over
689	Fraxinus pennsylvanica	red ash	15.0			g	g	f	2	10														3	X		
690	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	10														3	X		
691	Fraxinus pennsylvanica	red ash	18.0			g	g	g	1	10														2	X		
692	Fraxinus pennsylvanica	red ash	15.0			g	g	f	2															3	X		
693	Fraxinus nigra	black ash	10.0			g	g	g	1															2	X		
694	Fraxinus nigra	black ash	10.0			g	g	g	1															2	X		
695	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2				l,e											3	X		
696	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2															3	X		
697	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2															3	X		
698	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2															3	X		
699	Fraxinus pennsylvanica	red ash	19.0			g	g	f	2	10														3	X		
700	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30			h,s											3	X		bent
701	Fraxinus pennsylvanica	red ash	12.0	10,8,5		g	g	g	3															4		X	
702	Ulmus americana	american elm	14.0			g	g	g	2											x				3		X	
703	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3		X	
704	Fraxinus pennsylvanica	red ash	21.0			g	g	f	4	30														5		X	
705	Fraxinus pennsylvanica	red ash	22.0			g	g	g	4															5		X	
706	Populus tremuloides	trembling aspen	21.0			g	g	g	4															5		X	
707	Populus tremuloides	trembling aspen	24.0			g	g	g	4															5		X	
708	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2	10														3		X	
709	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2															3		X	
710	Populus tremuloides	trembling aspen	24.0			g	g	g	4															5		X	
711	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	10														3		X	
712	Fraxinus pennsylvanica	red ash	22.0			g	g	f	4	30														5		X	
713	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2				l,e											3		X	
714	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2															3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
715	Thuja occidentalis	eastern white cedar	16.0			g	g	g	3																4		X	
716	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2																3		X	
717	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2		X	
718	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3		X	
719	Populus tremuloides	trembling aspen	30.0			g	g	g	4																5		X	
720	Thuja occidentalis	eastern white cedar	14.0	14,8		g	g	g	3																4		X	
721	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3		X	
722	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
723	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
724	Fraxinus pennsylvanica	red ash	28.0			g	g	f	4	30															5		X	
725	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
726	Fraxinus nigra	black ash	16.0			g	g	f	3	30															4		X	
727	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
728	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4		X	
729	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4		X	
730	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4		X	
731	Fraxinus pennsylvanica	red ash	26.0			g	g	g	4	30															5		X	
732	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3		X	
733	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
734	Fraxinus pennsylvanica	red ash	26.0			g	g	g	4																5		X	
735	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4		X	
736	Ulmus americana	american elm	12.0			g	g	g	2																3		X	
737	Fraxinus pennsylvanica	red ash	15.0			g	g	g	3																4		X	
738	Fraxinus pennsylvanica	red ash	22.0			g	g	g	4																5		X	
739	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
740	Fraxinus pennsylvanica	red ash	20.0			f	f	f	4																5		X	
741	Fraxinus pennsylvanica	red ash	18.0			f	f	f	3	10										x					4		X	
742	Ulmus americana	american elm	16.0			g	g	g	2																3		X	
743	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
744	Ulmus americana	american elm	10.0			g	g	g	2																3		X	
745	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4		X	
746	Fraxinus pennsylvanica	red ash	20.0			g	g	g	4																5		X	
747	**Tag Number Not Assigned**																											
748	Fraxinus pennsylvanica	red ash	18.0	16.0		g	g	g	3		x	x													4		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
749	Ulmus americana	american elm	30.0			g	g	f	4	40										x					5		X	
750	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
751	Fraxinus pennsylvanica	red ash	31.0			f	f	p	4	60															5		X	
752	Populus tremuloides	trembling aspen	18.0			g	g	f	4	30															5		X	
753	Fraxinus pennsylvanica	red ash	10.0			f	f	f	3	30															4		X	
754	Populus tremuloides	trembling aspen	24.0			g	g	g	5																6		X	
755	Fraxinus pennsylvanica	red ash	16.0	16.0		g	g	g	4		x	x													5		X	
756	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
757	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4		X	
758	Populus tremuloides	trembling aspen	10.0			f	f	p	2																3		X	leader dead
759	Fraxinus pennsylvanica	red ash	28.0			f	f	f	4	30															5		X	
760	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
761	Fraxinus pennsylvanica	red ash	16.0			g	g	g	4																5		X	
762	Fraxinus pennsylvanica	red ash	18.0			g	g	g	4																5		X	
763	Fraxinus pennsylvanica	red ash	26.0			g	g	f	5	30															6		X	
764	Fraxinus pennsylvanica	red ash	22.0			g	g	f	4																5		X	
765	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4		X	
766	Fraxinus pennsylvanica	red ash	22.0			g	g	g	4																5		X	
767	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3																4		X	
768	Populus tremuloides	trembling aspen	20.0			g	g	g	4	10															5		X	
769	Fraxinus pennsylvanica	red ash	16.0			g	g	g	4											x					5		X	
770	Populus tremuloides	trembling aspen	18.0			g	g	g	4																5		X	
771	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4		X	
772	Populus tremuloides	trembling aspen	24.0			g	g	g	4																5		X	
773	Ulmus americana	american elm	22.0			g	g	g	3											x					4		X	
774	Fraxinus nigra	black ash	12.0			g	g	g	2																3		X	
775	Ulmus americana	american elm	10.0			g	g	g	2																3		X	
776	Ulmus americana	american elm	10.0			g	g	g	3																4		X	
777	Fraxinus nigra	black ash	12.0			g	g	g	3																4		X	
778	Fraxinus pennsylvanica	red ash	24.0	16.0		f	f	f	5	30	x	x													6		X	
779	Fraxinus pennsylvanica	red ash	16.0			f	f	f	2	30															3		X	
780	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3																4		X	
781	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3																4		X	
782	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2																3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
783	Populus tremuloides	trembling aspen	30.0			g	g	g	4																5		X	
784	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
785	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3																4		X	
786	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
787	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2	95															3		X	
788	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3		X	
789	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
790	Fraxinus pennsylvanica	red ash	10.0			f	p	p	2	70															3		X	
791	Fraxinus pennsylvanica	red ash	12.0			p	p	p	2	70															3		X	
792	Fraxinus pennsylvanica	red ash	32.0			p	p	p	3	70															4		X	
793	Fraxinus pennsylvanica	red ash	18.0			f	f	f	3																4		X	
794	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4																5		X	
795	Fraxinus pennsylvanica	red ash	10.0			p	p	p	2	70															3		X	
796	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2																3		X	
797	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	30															3		X	
798	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
799	Fraxinus pennsylvanica	red ash	22.0			g	g	f	3	30															4		X	
800	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3		X	
801	Fraxinus pennsylvanica	red ash	18.0			p	p	p	3	70															4		X	
802	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2	70															3		X	
803	Fraxinus pennsylvanica	red ash	10.0			g	g	g	1																2		X	
804	Thuja occidentalis	eastern white cedar	18.0	14.0	16.0	f	f	f	4	30															5		X	
805	Fraxinus pennsylvanica	red ash	14.0			p	p	p	2	70															3		X	
806	Thuja occidentalis	eastern white cedar	14.0	12.0		g	g	g	2																3		X	
807	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3		X	
808	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2																3		X	
809	Populus tremuloides	trembling aspen	28.0			g	g	g	4																5		X	
810	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
811	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3		X	
812	Fraxinus nigra	black ash	12.0			g	g	g	2																3		X	
813	Acer negundo	manitoba maple	10.0			g	g	g	2				m,e												3		X	
814	Populus tremuloides	trembling aspen	18.0			g	g	g	3				m,e												4		X	
815	Ulmus americana	american elm	12.0			g	g	g	2																3		X	
816	Fraxinus pennsylvanica	red ash	32.0			f	f	f	5									x							6		X	

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
817	Fraxinus pennsylvanica	red ash	14.0			p	p	p	2	70															3		X	
818	Fraxinus pennsylvanica	red ash	18.0			p	p	p	2	70															3		X	
819	Fraxinus pennsylvanica	red ash	20.0			p	p	p	3	70	x	x	m,e												4		X	
820	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2																3		X	
821	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3		X	
822	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
823	Fraxinus pennsylvanica	red ash	14.0			g	g	g	3																4		X	
824	Thuja occidentalis	eastern white cedar	18.0			g	g	g	3																4		X	
825	Thuja occidentalis	eastern white cedar	26.0			f	f	f	4	30						x									5		X	
826	Thuja occidentalis	eastern white cedar	14.0			p	p	p	1																2		X	
827	Populus tremuloides	trembling aspen	10.0			g	g	g	1	30															2		X	
828	Populus tremuloides	trembling aspen	12.0			f	f	f	2	30															3		X	
829	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3		X	
830	Populus tremuloides	trembling aspen	28.0			g	g	g	4																5		X	
831	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
832	Fraxinus pennsylvanica	red ash	18.0			f	f	f	2	30															3		X	
833	Fraxinus pennsylvanica	red ash	26.0			f	f	f	4																5		X	
834	Fraxinus pennsylvanica	red ash	10.0			g	g	g	1																2		X	
835	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30															3		X	
836	Fraxinus pennsylvanica	red ash	10.0			f	f	f	2	30															3		X	
837	Fraxinus pennsylvanica	red ash	35.0			f	f	f	4	30															5		X	
838	Fraxinus pennsylvanica	red ash	32.0			f	f	f	4	30															5		X	
839	Fraxinus pennsylvanica	red ash	10.0			f	f	f	2	30															3		X	
840	Fraxinus pennsylvanica	red ash	18.0			p	p	p	2	70															3		X	
841	Fraxinus pennsylvanica	red ash	24.0			g	g	g	6																7		X	
842	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
843	Fraxinus pennsylvanica	red ash	32.0			f	f	f	4	30															5		X	
844	Fraxinus pennsylvanica	red ash	18.0			p	p	p	2	70															3		X	
845	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3		X	
846	Thuja occidentalis	eastern white cedar	12.0			g	g	g	3																4		X	
847	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
848	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
849	Thuja occidentalis	eastern white cedar	20.0	12.0		g	g	g	3		x	x													4		X	
850	Thuja occidentalis	eastern white cedar	20.0	16.0		g	g	g	4																5		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
851	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30														3		X	
852	Fraxinus pennsylvanica	red ash	16.0			f	f	f	3	30			m,n					x		x				4		X	
853	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2	30														3		X	
854	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2															3		X	
855	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3		X	
856	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2															3		X	
857	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3		X	
858	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3		X	
859	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3		X	
860	Fraxinus pennsylvanica	red ash	10.0			f	f	f	2															3		X	
861	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2															3		X	
862	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
863	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
864	Populus tremuloides	trembling aspen	28.0			g	g	g	3															4		X	
865	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
866	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2															3		X	
867	Thuja occidentalis	eastern white cedar	18.0	16.0		g	g	g	4		x	x												5		X	
868	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3		X	
869	Populus balsamifera	balsam poplar	38.0			f	f	f	5	30										x				6		X	
870	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2															3		X	
871	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2															3		X	
872	Fraxinus pennsylvanica	red ash	18.0			p	p	p	2											x				3		X	leader dead
873	Fraxinus pennsylvanica	red ash	12.0			g	g	f	2	30														3		X	
874	Fraxinus pennsylvanica	red ash	18.0			g	g	f	2	30										x				3		X	
875	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2											x				3		X	
876	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3											x				4		X	
877	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3									x						4		X	
878	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2															3		X	
879	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2															3		X	
880	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2															3		X	
881	Fraxinus pennsylvanica	red ash	24.0	10.0		g	g	g	3															4		X	
882	Fraxinus pennsylvanica	red ash	28.0			g	g	g	3															4		X	
883	Fraxinus pennsylvanica	red ash	14.0			g	g	f	2	30														3		X	
884	Fraxinus pennsylvanica	red ash	18.0			g	g	f	3	30														4		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
885	Fraxinus pennsylvanica	red ash	16.0			g	g	g	4																5		X	
886	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
887	Thuja occidentalis	eastern white cedar	12.0			g	g	f	2	40															3		X	
888	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4		X	
889	Ulmus americana	american elm	16.0	10.0		g	g	g	2		x	x													3		X	
890	Fraxinus pennsylvanica	red ash	22.0			f	f	f	4	30															5		X	
891	Fraxinus pennsylvanica	red ash	22.0			f	f	f	3	30															4		X	
892	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3																4		X	
893	Fraxinus nigra	black ash	18.0			g	g	g	2											x					3		X	
894	Fraxinus pennsylvanica	red ash	12.0			g	g	f	2	30										x					3		X	
895	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4																5		X	
896	Fraxinus pennsylvanica	red ash	24.0			g	g	g	4																5		X	
897	Fraxinus pennsylvanica	red ash	10.0	10.0		g	g	g	2																3		X	
898	Populus balsamifera	balsam poplar	10.0			f	g	g	3																4		X	
899	Populus balsamifera	balsam poplar	11.0			g	f	g	2																3		X	
900	Fraxinus pennsylvanica	red ash	21.0			g	f	f	2	10															3		X	
901	Fraxinus pennsylvanica	red ash	10.0			f	p	g	2																3		X	
902	Fraxinus pennsylvanica	red ash	10.0			g	f	f	3																4		X	
903	Acer negundo	manitoba maple	11.0			p	p	g	4																5		X	
904	Fraxinus pennsylvanica	red ash	46.0			f	f	p	4	80															5		X	dead top
905	Populus tremuloides	trembling aspen	23.0			g	g	g	3																4		X	
906	Populus tremuloides	trembling aspen	18.0			p	p	g	3																4		X	
907	Populus tremuloides	trembling aspen	28.0			g	f	g	3																4		X	
908	Populus tremuloides	trembling aspen	24.0			g	g	g	3																4		X	
909	Populus tremuloides	trembling aspen	12.0			f	g	g	1																2		X	
910	Populus tremuloides	trembling aspen	11.0	14.0		f	f	g	2																3		X	
911	Populus tremuloides	trembling aspen	14.0			g	g	g	3		x														4		X	
912	Thuja occidentalis	eastern white cedar	10.0	11.0		g	g	g	2		x					x									3		X	
913	Thuja occidentalis	eastern white cedar	10.0	9.0		g	g	g	2		x					x									3		X	
914	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1				m,s												2		X	
915	Populus tremuloides	trembling aspen	12.0			f	f	g	2				l,e												3		X	
916	Populus tremuloides	trembling aspen	10.0			f	f	f	2																3		X	
917	Populus balsamifera	balsam poplar	25.0			f	p	f	3																4		X	
918	Fraxinus pennsylvanica	red ash	10.0			p	p	p	2	80															3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
919	Thuja occidentalis	eastern white cedar	17.0	18.0		g	g	g	3															4		X	
920	Thuja occidentalis	eastern white cedar	19.0			g	g	g	2															3		X	
921	Thuja occidentalis	eastern white cedar	10.0	15.0		g	g	g	1															2		X	
922	Fraxinus pennsylvanica	red ash	16.0			f	f	f	2	60														3		X	
923	Fraxinus pennsylvanica	red ash	16.0			f	f	f	2	70														3		X	
924	Fraxinus pennsylvanica	red ash	30.0			g	g	f	3	60														4		X	
925	Populus tremuloides	trembling aspen	16.0			f	p	f	2	30														3		X	
926	Populus tremuloides	trembling aspen	28.0			p	p	f	3	10														4		X	kink in stem
927	Populus tremuloides	trembling aspen	11.0			f	p	f	2															3		X	
928	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3		X	
929	Thuja occidentalis	eastern white cedar	14.0			g	g	g	1															2		X	
930	Thuja occidentalis	eastern white cedar	14.0	11.0		g	g	g	1		x													2		X	
931	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2				H,E											3		X	
932	Populus tremuloides	trembling aspen	40.0			f	f	f	4	30														5		X	
933	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3		X	
934	Thuja occidentalis	eastern white cedar	14.0	10,12		g	f	g	2				h,s											3		X	
935	Populus tremuloides	trembling aspen	34.0			g	f	g	3				l,n											4		X	
936	Thuja occidentalis	eastern white cedar	15.0	10.0		g	g	g	2															3		X	
937	Thuja occidentalis	eastern white cedar	14.0			g	g	f	2															3		X	
938	Thuja occidentalis	eastern white cedar	15.0	12,12		g	g	f	2															3		X	
939	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3		X	
940	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
941	Thuja occidentalis	eastern white cedar	11.0			g	g	f	1															2		X	
942	Thuja occidentalis	eastern white cedar	14.0	12,12,10		g	g	g	3															4		X	
943	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2				l,w											3		X	
944	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2															3		X	
945	Thuja occidentalis	eastern white cedar	10.0	10.0		g	g	g	2															3		X	
946	Thuja occidentalis	eastern white cedar	12.0	7.0		g	g	g	2															3		X	
947	Populus tremuloides	trembling aspen	29.0			g	p	p	3	50					x									4		X	
948	Fraxinus pennsylvanica	red ash	14.0	12.0		f	f	f	2	20														3		X	
949	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2	30														3		X	
950	Populus tremuloides	trembling aspen	10.0			p	p	f	2															3		X	
951	Fraxinus pennsylvanica	red ash	13.0			g	f	f	2						x									3		X	
952	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2															3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
953	Thuja occidentalis	eastern white cedar	30.0	10,20,32		f	g	g	3		x				x	x									4		X	
954	Populus tremuloides	trembling aspen	29.0			p	f	f	2																3		X	
955	Populus tremuloides	trembling aspen	21.0			f	f	f	2	20															3		X	
956	Acer negundo	manitoba maple	10.0			f	p	f	2											x					3		X	
957	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
958	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
959	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4		X	
960	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
961	Populus tremuloides	trembling aspen	22.0			g	f	f	3	10															4		X	
962	Betula papyrifera	white birch	14.0	16.0		g	g	g	3				l,e												4		X	
963	Betula papyrifera	white birch	10.0			g	g	g	2				l,n												3		X	
964	Populus tremuloides	trembling aspen	20.0			g	p	f	2																3		X	
965	Populus tremuloides	trembling aspen	13.0			g	f	g	2																3		X	
966	Populus tremuloides	trembling aspen	15.0			g	f	g	2																3		X	
967	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
968	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3		X	
969	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
970	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
971	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
972	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
973	Populus tremuloides	trembling aspen	15.0			g	g	f	2				h,s												3	X		
974	Populus tremuloides	trembling aspen	17.0			f	p	p	2	50															3	X		
975	Populus balsamifera	balsam poplar	10.0			g	f	f	2	10															3	X		
976	Populus tremuloides	trembling aspen	16.0	14,11		g	g	g	3		x														4	X		
977	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
978	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
979	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
980	Populus balsamifera	balsam poplar	14.0			g	g	g	2																3	X		
981	Populus tremuloides	trembling aspen	19.0			g	g	g	3																4	X		
982	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
983	Populus balsamifera	balsam poplar	16.0			f	f	p	2				h,s												3	X		
984	Betula papyrifera	white birch	16.0			g	g	g	2																3	X		
985	Betula papyrifera	white birch	14.0	6.0		g	f	p	2																3	X		
986	Betula papyrifera	white birch	10.0	9.0		f	f	p	2				m,s												3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
987	Betula papyrifera	white birch	13.0			g	g	f	2																3	X		
988	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
989	Populus tremuloides	trembling aspen	12.0			g	g	g	2									x							3	X		
990	Betula papyrifera	white birch	19.0			g	g	f	2																3	X		
991	Populus tremuloides	trembling aspen	24.0			g	g	g	3																4	X		
992	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
993	Betula papyrifera	white birch	15.0			g	g	g	2																3	X		
994	Betula papyrifera	white birch	19.0			g	g	g	3																4	X		
995	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
996	Fraxinus pennsylvanica	red ash	12.0			g	g	f	2	60											x				3	X		
997	Populus deltoides	cottonwood	19.0	17,25,30		g	f	g	4																5	X		
998	Betula papyrifera	white birch	14.0			g	g	g	2																3	X		
999	Populus balsamifera	balsam poplar	13.0			g	g	g	3																4	X		
1,000	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,001	Acer negundo	Manitoba maple	26.0			g	g	g	4		x	x								x					5		X	
1,002	Populus tremuloides	trembling aspen	27.0			g	g	g	3																4		X	
1,003	Acer negundo	Manitoba maple	18.0			g	g	g	2																3		X	
1,004	Acer negundo	Manitoba maple	25.0	18.0		g	g	g	3																4		X	
1,005	Acer negundo	Manitoba maple	12.0			g	g	g	2																3		X	
1,006	Acer negundo	Manitoba maple	14.0	11.0		g	g	g	2																3		X	
1,007	Acer negundo	Manitoba maple	13.0			g	g	g	2																3		X	
1,008	Sorbus aucuparia	European mountain ash	12.0	11,11		g	g	g	4		x	x													5		X	
1,009	Acer negundo	Manitoba maple	15.0			g	g	g	2																3		X	
1,010	Acer negundo	Manitoba maple	13.0			g	g	g	2																3		X	
1,011	Betula papyrifera	white birch	31.0			g	g	g	3																4		X	
1,012	Thuja occidentalis	eastern white cedar	25.0	15,18,20		g	g	g	5																6		X	
1,013	Betula papyrifera	white birch	20.0	15,14		g	g	g	4																5		X	
1,014	Thuja occidentalis	eastern white cedar	18.0	16,10,10,12		g	g	g	5																6		X	
1,015	Acer negundo	Manitoba maple	53.0	31.0		f	f	f	5	10	x	x													6		X	
1,016	Acer negundo	Manitoba maple	35.0	20.0		g	g	g	5																6		X	
1,017	Betula papyrifera	white birch	46.0			g	g	g	6																7		X	
1,018	Thuja occidentalis	eastern white cedar	27.0	10,18		g	g	g	4																5		X	
1,019	Acer negundo	Manitoba maple	29.0	27.0		g	g	g	4		x	x													5		X	
1,020	Acer negundo	Manitoba maple	15.0	10.0		g	g	g	2		x	x													3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,021	Betula papyrifera	white birch	25.0	23,23		g	g	g	7																8		X	
1,022	Thuja occidentalis	eastern white cedar	22.0	22,15,5		g	g	g	6																7		X	
1,023	Salix sp.	willow	35.0	30,23		g	g	g	6																7	X		
1,024	Salix sp.	willow	11.0	10,9		g	g	g	2																3	X		
1,025	Salix sp.	willow	33.0	20.0		g	g	g	4																5	X		
1,026	Salix sp.	willow	22.0	13,14,14		g	g	g	5																6	X		
1,027	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
1,028	Populus tremuloides	trembling aspen	15.0			g	g	g	3																4	X		
1,029	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
1,030	Populus tremuloides	trembling aspen	32.0			g	g	g	4																5	X		
1,031	Populus tremuloides	trembling aspen	15.0			g	g	g	3																4	X		
1,032	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
1,033	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,034	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,035	Populus tremuloides	trembling aspen	20.0			g	g	g	3																4	X		
1,036	Populus tremuloides	trembling aspen	18.0	12.0		f	f	f	3																4	X		
1,037	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
1,038	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
1,039	Populus tremuloides	trembling aspen	14.0			g	g	g	4																5	X		
1,040	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
1,041	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3	X		
1,042	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
1,043	Populus tremuloides	trembling aspen	13.0			g	g	g	3																4	X		
1,044	Populus tremuloides	trembling aspen	18.0			g	g	g	4																5	X		
1,045	Populus tremuloides	trembling aspen	23.0			g	g	g	4																5	X		
1,046	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,047	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
1,048	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
1,049	Populus tremuloides	trembling aspen	14.0	14.0		g	g	g	2																3	X		
1,050	Populus tremuloides	trembling aspen	15.0	15.0		g	g	g	3																4	X		
1,051	Populus tremuloides	trembling aspen	18.0	13.0		g	g	g	4																5	X		
1,052	Populus tremuloides	trembling aspen	12.0	8.0		g	g	g	3																4	X		
1,053	Populus tremuloides	trembling aspen	15.0			g	g	g	4																5	X		
1,054	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,055	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
1,056	Populus tremuloides	trembling aspen	23.0			g	g	g	4																5	X		
1,057	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
1,058	Populus tremuloides	trembling aspen	11.0			g	g	g	3																4	X		
1,059	Populus tremuloides	trembling aspen	15.0			g	g	g	4																5	X		
1,060	Populus tremuloides	trembling aspen	13.0			g	g	g	4																5	X		
1,061	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
1,062	Populus tremuloides	trembling aspen	11.0			g	g	g	3																4	X		
1,063	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
1,064	Populus tremuloides	trembling aspen	14.0	10,10,12		g	g	g	4																5	X		
1,065	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
1,066	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,067	Populus tremuloides	trembling aspen	18.0			g	g	g	4																5	X		
1,068	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,069	Populus tremuloides	trembling aspen	15.0	13.0		g	g	g	4	30															5	X		
1,070	Populus tremuloides	trembling aspen	17.0			g	g	g	4																5	X		
1,071	Populus tremuloides	trembling aspen	15.0			g	g	g	3																4	X		
1,072	Populus tremuloides	trembling aspen	26.0			g	g	g	4																5	X		
1,073	Fraxinus pennsylvanica	red ash	18.0	11,12		p	p	p	4		x	x													5	X		
1,074	Fraxinus pennsylvanica	red ash	27.0	25.0		p	p	p	4																5	X		
1,075	Fraxinus pennsylvanica	red ash	24.0			p	p	p	3																4	X		
1,076	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
1,077	Fraxinus pennsylvanica	red ash	17.0			g	g	g	3																4	X		
1,078	Populus tremuloides	trembling aspen	28.0			g	g	g	4																5	X		
1,079	Populus tremuloides	trembling aspen	31.0			g	g	g	3																4	X		
1,080	Fraxinus pennsylvanica	red ash	24.0			p	p	p	4																5	X		
1,081	Populus tremuloides	trembling aspen	26.0	14.0		g	g	g	5																6	X		
1,082	Populus tremuloides	trembling aspen	20.0			g	g	g	2																3	X		
1,083	Populus tremuloides	trembling aspen	26.0			g	g	g	2																3	X		
1,084	Populus tremuloides	trembling aspen	26.0			g	g	g	5																6	X		
1,085	Populus tremuloides	trembling aspen	15.0			g	g	g	3																4	X		
1,086	Populus tremuloides	trembling aspen	21.0	18.0		g	g	g	4																5	X		
1,087	Fraxinus pennsylvanica	red ash	10.0			p	p	p	1																2	X		
1,088	Fraxinus pennsylvanica	red ash	20.0			p	p	p	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,089	Populus tremuloides	trembling aspen	19.0	17.0		g	g	g	4																5	X		
1,090	Fraxinus pennsylvanica	red ash	14.0			p	f	f	2																3	X		
1,091	Fraxinus pennsylvanica	red ash	17.0	16,13		f	f	f	4																5	X		
1,092	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
1,093	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
1,094	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,095	Populus tremuloides	trembling aspen	27.0	10.0		g	g	g	3																4	X		
1,096	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
1,097	Populus tremuloides	trembling aspen	32.0			g	g	g	4																5	X		
1,098	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
1,099	Populus tremuloides	trembling aspen	32.0			g	g	g	4																5	X		
1,100	Populus tremuloides	trembling aspen	13.0			p	p	p	2																3	X		
1,101	Fraxinus pennsylvanica	red ash	17.0			g	g	g	2	10															3	X		
1,102	Populus tremuloides	trembling aspen	27.0			g	g	g	3																4	X		
1,103	Fraxinus pennsylvanica	red ash	23.0			g	g	f	3	20															4	X		
1,104	Ulmus americana	american elm	12.0			g	f	f	2																3	X		
1,105	Fraxinus pennsylvanica	red ash	13.0			g	g	p	2	30															3	X		
1,106	Fraxinus pennsylvanica	red ash	20.0			g	g	f	2	20															3	X		
1,107	Fraxinus pennsylvanica	red ash	24.0			g	g	f	2	30															3	X		
1,108	Populus tremuloides	trembling aspen	21.0			g	f	p	2	90															3	X		
1,109	Ulmus americana	american elm	14.0			g	g	g	2	10															3	X		
1,110	Fraxinus pennsylvanica	red ash	10.0			f	p	f	2	30															3	X		
1,111	Fraxinus pennsylvanica	red ash	12.0			g	f	p	2	20															3	X		
1,112	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2	10															3	X		
1,113	Fraxinus pennsylvanica	red ash	16.0			f	p	g	2	10															3	X		
1,114	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2	10															3	X		
1,115	Fraxinus pennsylvanica	red ash	16.0			f	f	f	2																3	X		
1,116	Ulmus americana	american elm	12.0	10.0		f	f	f	2																3	X		
1,117	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2	30															3	X		
1,118	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2	20															3	X		
1,119	Fraxinus pennsylvanica	red ash	23.0			g	g	f	2	10															3	X		
1,120	Fraxinus pennsylvanica	red ash	16.0			g	g	g	1	10															2	X		
1,121	Fraxinus pennsylvanica	red ash	10.0			g	g	f	1	80															2	X		
1,122	Populus tremuloides	trembling aspen	31.0			g	f	f	3	30								x							4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,123	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
1,124	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
1,125	Populus tremuloides	trembling aspen	22.0			f	p	p	3	80															4	X		
1,126	Populus tremuloides	trembling aspen	14.0			g	f	g	2																3	X		
1,127	Populus tremuloides	trembling aspen	12.0			g	f	g	2	20															3		X	
1,128	Populus tremuloides	trembling aspen	14.0			g	g	g	2				l,n		x			x	x						3	X		
1,129	Populus tremuloides	trembling aspen	23.0			g	g	g	3																4	X		
1,130	Fraxinus pennsylvanica	red ash	33.0			g	f	f	3	50															4	X		
1,131	Fraxinus pennsylvanica	red ash	13.0			g	f	f	3	40															4	X		
1,132	Fraxinus pennsylvanica	red ash	13.0			g	f	f	2	20															3	X		
1,133	Fraxinus pennsylvanica	red ash	11.0			g	f	g	2																3	X		
1,134	Fraxinus pennsylvanica	red ash	12.0			g	f	f	2	20															3	X		
1,135	Fraxinus pennsylvanica	red ash	21.0			g	f	f	2	60															3	X		
1,136	Fraxinus pennsylvanica	red ash	35.0			g	g	g	2																3	X		
1,137	Fraxinus pennsylvanica	red ash	11.0			g	f	f	1																2	X		
1,138	Fraxinus pennsylvanica	red ash	11.0			f	f	f	1	10															2	X		
1,139	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2	20															3	X		
1,140	Fraxinus pennsylvanica	red ash	11.0	13.0		g	g	f	2	20	x														3	X		
1,141	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2	30															3	X		
1,142	Populus tremuloides	trembling aspen	16.0	19.0		g	f	f	3	10	x														4	X		
1,143	Fraxinus pennsylvanica	red ash	15.0			g	f	f	2																3	X		
1,144	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
1,145	Fraxinus pennsylvanica	red ash	15.0			g	g	f	2	10															3	X		
1,146	Fraxinus pennsylvanica	red ash	19.0			g	f	g	2																3	X		
1,147	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	10															3	X		
1,148	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
1,149	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
1,150	Populus tremuloides	trembling aspen	22.0			g	g	f	2	20															3	X		
1,151	Tilia americana	basswood	16.0			g	g	f	3	10															4	X		
1,152	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2																3	X		
1,153	Populus tremuloides	trembling aspen	18.0	12.0		f	f	p	2	80	x														3	X		
1,154	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2	10															3	X		
1,155	Fraxinus pennsylvanica	red ash	20.0			g	g	g	2	10															3	X		
1,156	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,157	Fraxinus pennsylvanica	red ash	10.0			g	g	f	1	10														2	X		
1,158	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3	X		
1,159	Fraxinus pennsylvanica	red ash	14.0			g	g	f	2															3	X		
1,160	Fraxinus pennsylvanica	red ash	22.0			g	g	f	3	10														4	X		
1,161	Fraxinus pennsylvanica	red ash	16.0	10.0		g	g	f	2															3	X		
1,162	Fraxinus pennsylvanica	red ash	10.0			f	f	p	2	10														3	X		
1,163	Populus tremuloides	trembling aspen	16.0			f	f	p	2															3	X		
1,164	Fraxinus nigra	black ash	14.0			g	g	f	1															2	X		
1,165	Populus tremuloides	trembling aspen	18.0			g	g	f	2															3	X		
1,166	Fraxinus pennsylvanica	red ash	10.0			g	g	f	1	10														2	X		
1,167	Fraxinus pennsylvanica	red ash	13.0			g	g	f	1	20														2	X		
1,168	Populus tremuloides	trembling aspen	10.0			p	f	f	2															3	X		
1,169	Acer rubrum	red maple	16.0			g	g	g	3															4	X		
1,170	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2															3	X		
1,171	Fraxinus pennsylvanica	red ash	14.0			g	g	f	2	20														3	X		
1,172	Fraxinus pennsylvanica	red ash	17.0			g	g	f	2															3	X		
1,173	Populus tremuloides	trembling aspen	14.0			g	g	g	3															4	X		
1,174	Betula papyrifera	white birch	32.0	14.0		g	g	g	2															3	X		
1,175	Populus tremuloides	trembling aspen	23.0			g	g	g	3															4	X		
1,176	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2															3	X		
1,177	Populus tremuloides	trembling aspen	27.0			g	g	g	2															3	X		
1,178	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2															3	X		
1,179	Betula papyrifera	white birch	19.0			g	g	g	2															3	X		
1,180	Populus tremuloides	trembling aspen	16.0	14.0		g	g	g	2															3	X		
1,181	Thuja occidentalis	eastern white cedar	12.0			g	g	g	1															2	X		
1,182	Populus tremuloides	trembling aspen	11.0			g	g	f	1															2	X		
1,183	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3	X		
1,184	Betula papyrifera	white birch	26.0			g	g	g	2															3	X		
1,185	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2															3	X		
1,186	Thuja occidentalis	eastern white cedar	16.0			g	g	g	1															2	X		
1,187	Populus tremuloides	trembling aspen	38.0			g	g	f	4															5	X		
1,188	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3	X		
1,189	Ulmus americana	american elm	14.0			g	g	p	2	50														3	X		
1,190	Populus tremuloides	trembling aspen	33.0			g	g	f	3															4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,191	Fraxinus pennsylvanica	red ash	12.0			g	g	f	2																3	X		
1,192	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
1,193	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
1,194	Populus tremuloides	trembling aspen	19.0			g	g	g	2																3	X		
1,195	Populus tremuloides	trembling aspen	13.0			g	g	f	2																3	X		
1,196	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2	10															3	X		
1,197	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2	30															3	X		
1,198	Fraxinus pennsylvanica	red ash	18.0			g	g	f	2	10															3	X		
1,199	Fraxinus pennsylvanica	red ash	17.0			g	g	g	2	20									x						3	X		
1,200	Fraxinus pennsylvanica	red ash	12.0			g	f	f	1	10															2	X		
1,201	Ulmus americana	american elm	20.0			g	g	g	2																3	X		
1,202	Populus tremuloides	trembling aspen	13.0			f	f	f	2				m,s												3	X		
1,203	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2																3	X		
1,204	Populus tremuloides	trembling aspen	16.0			g	g	g	2				m,s												3	X		
1,205	Populus tremuloides	trembling aspen	19.0			f	f	f	2				m,s							x					3	X		
1,206	Populus tremuloides	trembling aspen	10.0			f	f	f	1	20			m,s												2	X		
1,207	Populus tremuloides	trembling aspen	10.0			f	f	f	2	20			m,s	x											3	X		
1,208	Fraxinus pennsylvanica	red ash	13.0			f	f	f	2		x														3	X		
1,209	Fraxinus pennsylvanica	red ash	11.0			p	p	p	1	60					x										2	X		
1,210	Populus tremuloides	trembling aspen	10.0			g	g	g	1																2	X		
1,211	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	10															3	X		
1,212	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	10															3	X		
1,213	Fraxinus pennsylvanica	red ash	11.0			g	f	f	1																2	X		
1,214	Populus tremuloides	trembling aspen	10.0			g	f	f	1																2	X		
1,215	Populus tremuloides	trembling aspen	12.0			g	f	f	2																3	X		
1,216	Populus tremuloides	trembling aspen	17.0			g	g	f	2																3	X		
1,217	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3	X		
1,218	Fraxinus pennsylvanica	red ash	14.0			p	f	f	2	30				x											3	X		
1,219	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
1,220	Fraxinus pennsylvanica	red ash	15.0			g	g	f	2																3	X		
1,221	Populus tremuloides	trembling aspen	13.0			g	f	f	1	20															2	X		
1,222	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,223	Fraxinus nigra	black ash	11.0			g	f	f	2																3	X		
1,224	Fraxinus pennsylvanica	red ash	14.0			g	g	f	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,225	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3	X		
1,226	Betula papyrifera	white birch	30.0			g	g	g	3															4	X		
1,227	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3	X		
1,228	Populus tremuloides	trembling aspen	14.0			g	g	g	1															2	X		
1,229	Populus tremuloides	trembling aspen	21.0			g	g	g	2															3	X		
1,230	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2															3	X		
1,231	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2				l,w											3	X		
1,232	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3	X		
1,233	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1															2	X		
1,234	Thuja occidentalis	eastern white cedar	15.0			g	g	g	1															2	X		
1,235	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3	X		
1,236	Populus tremuloides	trembling aspen	33.0			g	g	g	3															4	X		
1,237	Betula papyrifera	white birch	26.0			g	g	g	2															3	X		
1,238	Betula papyrifera	white birch	20.0			g	g	g	2															3	X		
1,239	Thuja occidentalis	eastern white cedar	24.0			g	g	g	2															3	X		
1,240	Thuja occidentalis	eastern white cedar	19.0			g	g	g	2															3	X		
1,241	Fraxinus pennsylvanica	red ash	19.0			g	f	f	2	20														3	X		
1,242	Populus tremuloides	trembling aspen	16.0			g	f	f	2															3	X		
1,243	Ulmus americana	american elm	19.0			g	f	p	2															3	X		
1,244	Ulmus americana	american elm	15.0			g	g	g	1															2	X		
1,245	Fraxinus pennsylvanica	red ash	10.0			g	g	f	1	10														2	X		
1,246	Fraxinus pennsylvanica	red ash	11.0			g	f	f	1	20														2	X		
1,247	Fraxinus pennsylvanica	red ash	12.0			g	g	f	2	10														3	X		
1,248	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2															3	X		
1,249	Populus tremuloides	trembling aspen	13.0			g	g	f	2	10														3	X		
1,250	Populus tremuloides	trembling aspen	11.0			g	f	f	2	20				x										3	X		
1,251	Populus tremuloides	trembling aspen	11.0			f	f	g	2	10														3	X		
1,252	Fraxinus pennsylvanica	red ash	25.0	21.0		g	f	f	3	30	x													4	X		
1,253	Populus tremuloides	trembling aspen	16.0			g	g	f	2									x						3	X		broken top
1,254	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	10	x				x	x								3	X		
1,255	Fraxinus pennsylvanica	red ash	25.0			g	f	f	3	10														4	X		
1,256	Fraxinus pennsylvanica	red ash	20.0			g	g	f	2	20														3	X		
1,257	Fraxinus pennsylvanica	red ash	10.0			f	f	f	2	50														3	X		
1,258	Populus tremuloides	trembling aspen	13.0			f	p	f	2	20														3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,259	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2	10															3	X		
1,260	Populus tremuloides	trembling aspen	13.0			g	g	g	1																2	X		
1,261	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
1,262	Fraxinus pennsylvanica	red ash	16.0			g	p	p	1	50															2	X		
1,263	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	20															3	X		
1,264	Populus tremuloides	trembling aspen	20.0			g	p	p	2	80															3	X		
1,265	Populus tremuloides	trembling aspen	24.0			g	g	g	3																4	X		
1,266	Fraxinus pennsylvanica	red ash	16.0			f	f	g	2																3	X		
1,267	Fraxinus pennsylvanica	red ash	12.0			p	p	f	1																2	X		
1,268	Fraxinus pennsylvanica	red ash	32.0			g	g	f	3	20															4	X		
1,269	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2	95															3	X		
1,270	Fraxinus pennsylvanica	red ash	26.0			f	g	f	2	30															3	X		
1,271	Fraxinus pennsylvanica	red ash	26.0			g	g	g	3																4	X		
1,272	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2																3	X		
1,273	Fraxinus pennsylvanica	red ash	22.0			g	g	f	2	20															3	X		
1,274	Ulmus americana	white elm	18.0			g	f	f	2	30															3	X		
1,275	Fraxinus pennsylvanica	red ash	22.0			g	g	g	3																4	X		
1,276	Ulmus americana	white elm	16.0			p	p	p	2	95															3	X		
1,277	Fraxinus pennsylvanica	red ash	22.0			g	g	g	2																3	X		
1,278	Fraxinus pennsylvanica	red ash	10.0			f	f	f	1	30															2	X		
1,279	Thuja occidentalis	eastern white cedar	24.0			g	g	g	2																3	X		
1,280	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2	X		
1,281	Populus balsamifera	balsam poplar	16.0			f	g	g	2																3	X		
1,282	Thuja occidentalis	eastern white cedar	26.0			g	g	g	2																3	X		
1,283	Thuja occidentalis	eastern white cedar	22.0			g	g	g	2																3	X		
1,284	Thuja occidentalis	eastern white cedar	12.0			g	g	g	1																2	X		
1,285	Ulmus americana	white elm	10.0			g	g	g	2																3	X		
1,286	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2																3	X		
1,287	Fraxinus pennsylvanica	red ash	16.0			f	p	f	2	10															3	X		
1,288	Fraxinus pennsylvanica	red ash	26.0			f	f	f	2	30															3	X		
1,289	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2	X		
1,290	Thuja occidentalis	eastern white cedar	14.0			g	g	g	1																2	X		
1,291	Populus tremuloides	trembling aspen	24.0			g	g	g	3																4	X		
1,292	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,293	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1															2	X		
1,294	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2	30														3	X		
1,295	Fraxinus pennsylvanica	red ash	44.0			f	f	f	4	10						x			x					5	X		
1,296	Tilia americana	basswood	12.0			g	g	g	2															3	X		
1,297	Fraxinus pennsylvanica	red ash	12.0			f	f	g	2															3	X		
1,298	Fraxinus pennsylvanica	red ash	20.0			g	f	g	3															4	X		
1,299	Populus tremuloides	trembling aspen	22.0			f	f	p	2	60														3	X		
1,300	Populus tremuloides	trembling aspen	24.0			g	f	f	2	40														3	X		
1,301	Populus tremuloides	trembling aspen	20.0			g	f	p	2	60														3	X		
1,302	Populus tremuloides	trembling aspen	20.0			g	f	p	2	60														3	X		
1,303	Fraxinus pennsylvanica	red ash	10.0			f	f	g	1															2	X		
1,304	Populus tremuloides	trembling aspen	20.0			f	f	f	2	50			h,s											3	X		
1,305	Fraxinus pennsylvanica	red ash	14.0			f	p	g	2															3	X		
1,306	Populus tremuloides	trembling aspen	16.0			g	f	f	1				l,s											2	X		
1,307	Populus tremuloides	trembling aspen	24.0			g	g	f	2															3	X		
1,308	Populus tremuloides	trembling aspen	12.0			g	g	g	1															2	X		
1,309	Populus tremuloides	trembling aspen	10.0			g	g	g	1															2	X		
1,310	Populus tremuloides	trembling aspen	14.0	14.0		f	p	f	2		x													3	X		
1,311	**Tag Number Not Assigned**																										
1,312	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3	X		
1,313	Populus tremuloides	trembling aspen	20.0	12.0		g	f	g	2		x													3	X		
1,314	Populus tremuloides	trembling aspen	22.0			f	f	f	4				l,s											5	X		
1,315	Populus tremuloides	trembling aspen	10.0			g	g	g	2		x						x		x					3	X		
1,316	Populus tremuloides	trembling aspen	10.0			g	g	g	1				l,s											2	X		
1,317	Populus tremuloides	trembling aspen	16.0			g	g	g	2				l,s											3	X		
1,318	Populus tremuloides	trembling aspen	16.0			g	g	g	2				l,s											3	X		
1,319	Fraxinus pennsylvanica	red ash	32.0			g	f	f	2				l,s											3	X		
1,320	Populus tremuloides	trembling aspen	22.0			g	g	g	3	10														4	X		
1,321	Fraxinus pennsylvanica	red ash	32.0			g	f	f	3															4	X		
1,322	Populus tremuloides	trembling aspen	20.0			g	g	g	2	30														3	X		
1,323	Fraxinus pennsylvanica	red ash	28.0			g	g	f	3															4	X		
1,324	Populus tremuloides	trembling aspen	18.0	16.0		g	f	f	2	20														3	X		
1,325	Fraxinus pennsylvanica	red ash	40.0			g	g	f	2	30														3	X		
1,326	Populus tremuloides	trembling aspen	18.0			g	g	g	2															3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,327	Populus tremuloides	trembling aspen	12.0			f	f	p	2	60			h,s											3	X		
1,328	Populus tremuloides	trembling aspen	12.0			f	f	f	2	30			h,s											3	X		
1,329	Fraxinus pennsylvanica	red ash	24.0			g	g	f	2	30														3	X		
1,330	Fraxinus pennsylvanica	red ash	24.0			g	g	f	2	10														3	X		
1,331	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2	20														3	X		
1,332	Populus tremuloides	trembling aspen	12.0			f	f	p	1	70														2	X		
1,333	Fraxinus pennsylvanica	red ash	30.0			g	f	f	2	30														3	X		
1,334	Fraxinus pennsylvanica	red ash	44.0			g	g	f	3	10														4	X		
1,335	Fraxinus pennsylvanica	red ash	26.0			g	g	g	3	10														4	X		
1,336	Populus tremuloides	trembling aspen	10.0			f	f	g	2															3	X		
1,337	Fraxinus pennsylvanica	red ash	30.0			g	g	f	2	7														3	X		
1,338	Populus tremuloides	trembling aspen	14.0			f	f	g	2	10														3	X		
1,339	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30					x	x								3	X		
1,340	Populus tremuloides	trembling aspen	14.0			g	f	f	2	10														3	X		
1,341	Populus tremuloides	trembling aspen	12.0			g	g	g	2	10														3	X		
1,342	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3	X		
1,343	Thuja occidentalis	eastern white cedar	20.0			g	g	g	2															3	X		
1,344	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1															2	X		
1,345	Populus tremuloides	trembling aspen	26.0			g	g	f	3				l,s											4	X		
1,346	Fraxinus pennsylvanica	red ash	12.0			g	f	f	2	30														3	X		
1,347	Fraxinus pennsylvanica	red ash	17.0			g	f	f	2	10														3	X		
1,348	Fraxinus pennsylvanica	red ash	30.0			g	g	g	3															4	X		
1,349	Populus tremuloides	trembling aspen	34.0			g	f	g	3		x								x					4	X		
1,350	Fraxinus pennsylvanica	red ash	44.0			p	g	f	3	60						x	x	x		x			x	4	X		
1,351	Populus tremuloides	trembling aspen	12.0			g	g	g	2															3	X		
1,352	Fraxinus pennsylvanica	red ash	18.0			g	g	f	2	10														3	X		
1,353	Populus tremuloides	trembling aspen	16.0			g	g	g	2															3	X		
1,354	Populus tremuloides	trembling aspen	14.0			g	g	f	2	10														3	X		
1,355	Populus tremuloides	trembling aspen	16.0			g	g	f	2	20														3	X		
1,356	Populus tremuloides	trembling aspen	16.0			g	g	g	2															3	X		
1,357	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3	X		
1,358	Populus tremuloides	trembling aspen	18.0			f	p	f	2	40														3	X		
1,359	Fraxinus pennsylvanica	red ash	30.0			g	g	f	3	10														4	X		
1,360	Populus tremuloides	trembling aspen	14.0			g	g	f	2	20														3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,361	Fraxinus pennsylvanica	red ash	20.0			g	g	f	2	10														3	X		
1,362	Fraxinus nigra	black ash	12.0			f	f	p	1	80														2	X		
1,363	Fraxinus pennsylvanica	red ash	32.0			g	g	f	3	20														4	X		
1,364	Fraxinus pennsylvanica	red ash	32.0			g	g	f	2	30														3	X		
1,365	Fraxinus pennsylvanica	red ash	38.0	34.0		f	f	p	3	80	x	x				x	x			x				4	X		
1,366	Fraxinus pennsylvanica	red ash	24.0			p	g	f	2	10					x	x	x		x	x				3	X		
1,367	Fraxinus pennsylvanica	red ash	18.0			g	g	f	2	50														3	X		
1,368	Populus tremuloides	trembling aspen	12.0			g	f	f	2	20			l,s											3	X		
1,369	Fraxinus pennsylvanica	red ash	28.0			g	g	g	2	10														3	X		
1,370	Populus balsamifera	balsam poplar	16.0			g	g	g	2															3	X		
1,371	Fraxinus pennsylvanica	red ash	34.0			g	g	f	2	20														3	X		
1,372	Populus tremuloides	trembling aspen	22.0			g	g	g	2				l,s											3	X		
1,373	Populus tremuloides	trembling aspen	22.0			g	g	g	2				l,s											3	X		
1,374	Populus tremuloides	trembling aspen	12.0			g	g	g	2				l,s											3	X		
1,375	Populus tremuloides	trembling aspen	12.0			g	g	g	2				l,s											3	X		
1,376	Fraxinus pennsylvanica	red ash	54.0			f	f	f	3		x	x												4	X		
1,377	Ulmus americana	white elm	10.0			g	g	g	2															3	X		
1,378	Populus balsamifera	balsam poplar	22.0			g	f	g	3															4	X		
1,379	Populus balsamifera	balsam poplar	32.0			g	g	f	2															3	X		
1,380	Fraxinus pennsylvanica	red ash	24.0	20.0		g	f	f	2	60	x													3	X		
1,381	Populus tremuloides	trembling aspen	12.0			g	g	g	2				l,s											3	X		
1,382	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2	10														3	X		
1,383	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2	10														3	X		
1,384	Fraxinus pennsylvanica	red ash	12.0			g	g	g	1	20														2	X		
1,385	Populus tremuloides	trembling aspen	22.0			g	g	g	3	10			l,s											4	X		
1,386	Populus tremuloides	trembling aspen	26.0			g	f	g	2	10														3	X		
1,387	Fraxinus pennsylvanica	red ash	12.0			g	g	f	2	20														3	X		
1,388	Populus tremuloides	trembling aspen	26.0			g	g	g	3															4	X		
1,389	Fraxinus nigra	black ash	12.0			g	g	g	2	10														3	X		
1,390	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	60								x		x				3	X		broken top
1,391	Populus tremuloides	trembling aspen	16.0			g	g	g	2															3	X		
1,392	Fraxinus pennsylvanica	red ash	12.0			f	g	f	2	30										x				3	X		
1,393	Populus balsamifera	balsam poplar	30.0			f	p	f	3	40														4	X		
1,394	Picea glauca	white spruce	12.0			f	f	p	1	80			h,n											2	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,395	Fraxinus pennsylvanica	red ash	10.0			g	f	f	1	20															2	X		
1,396	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
1,397	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2																3	X		
1,398	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	20															3	X		
1,399	Fraxinus pennsylvanica	red ash	24.0			g	f	f	3	40															4	X		
1,400	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
1,401	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	10															3	X		
1,402	Fraxinus pennsylvanica	red ash	20.0			g	g	g	2																3	X		
1,403	Fraxinus pennsylvanica	red ash	16.0	16.0		g	f	g	2		x	x													3	X		
1,404	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2	50															3	X		
1,405	Fraxinus pennsylvanica	red ash	30.0			g	g	g	3	10															4	X		
1,406	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2																3	X		
1,407	Fraxinus pennsylvanica	red ash	20.0			f	f	g	2										x	x					3	X		
1,408	Fraxinus pennsylvanica	red ash	32.0			g	f	f	3	30															4	X		
1,409	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
1,410	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2	20										x					3	X		
1,411	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	20										x					3	X		
1,412	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	20															3	X		
1,413	Fraxinus pennsylvanica	red ash	24.0			f	f	p	2	60										x					3	X		
1,414	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2	10										x					3	X		
1,415	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2	20										x					3	X		
1,416	Fraxinus pennsylvanica	red ash	26.0			g	f	f	2	30															3	X		
1,417	Ulmus americana	white elm	12.0			g	g	g	2																3	X		
1,418	Populus tremuloides	trembling aspen	34.0			g	g	g	4																5	X		
1,419	Fraxinus pennsylvanica	red ash	20.0	10.0		g	f	g	2		x														3	X		
1,420	Populus tremuloides	trembling aspen	14.0			g	g	g	2				l,s												3	X		
1,421	Populus tremuloides	trembling aspen	22.0			g	g	g	3																4	X		
1,422	Populus tremuloides	trembling aspen	22.0			g	g	g	3																4	X		
1,423	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	20															3	X		
1,424	Fraxinus pennsylvanica	red ash	12.0			f	f	g	2	10															3	X		
1,425	Fraxinus pennsylvanica	red ash	24.0			g	g	f	2	20															3	X		
1,426	Fraxinus pennsylvanica	red ash	42.0			g	f	f	2	40															3	X		
1,427	Fraxinus pennsylvanica	red ash	18.0			g	f	p	2	70															3	X		
1,428	Fraxinus pennsylvanica	red ash	32.0			g	g	g	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,429	Fraxinus pennsylvanica	red ash	20.0			f	f	p	1	70														2	X		
1,430	Fraxinus nigra	black ash	14.0			g	g	f	2	20														3	X		
1,431	Populus tremuloides	trembling aspen	18.0			f	f	f	2	30														3	X		broken top
1,432	Fraxinus pennsylvanica	red ash	10.0			f	p	p	1	80														2	X		
1,433	Fraxinus pennsylvanica	red ash	28.0	26.0		f	f	f	2	20					x	x	x							3	X		
1,434	Populus balsamifera	balsam poplar	32.0			g	g	f	2	30										x				3	X		
1,435	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2	10														3	X		
1,436	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2	10														3	X		
1,437	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2															3	X		
1,438	Fraxinus pennsylvanica	red ash	22.0			g	g	f	2	20										x				3	X		
1,439	Fraxinus nigra	black ash	12.0			g	f	f	2	50														3	X		
1,440	Fraxinus pennsylvanica	red ash	42.0			g	f	f	3	20										x				4	X		
1,441	Fraxinus pennsylvanica	red ash	30.0			g	f	f	3	20														4	X		
1,442	Fraxinus pennsylvanica	red ash	12.0			f	p	p	1	80														2	X		broken top
1,443	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30														3	X		
1,444	Fraxinus pennsylvanica	red ash	14.0			g	f	f	2	20										x				3	X		
1,445	Ulmus americana	white elm	12.0			g	g	g	2															3	X		
1,446	Fraxinus nigra	black ash	14.0			g	g	g	2															3	X		
1,447	Fraxinus pennsylvanica	red ash	22.0			g	g	g	2	10										x				3	X		
1,448	Fraxinus pennsylvanica	red ash	28.0			g	g	g	3	10														4	X		
1,449	Fraxinus pennsylvanica	red ash	18.0			f	p	p	2	20										x				3	X		
1,450	Fraxinus pennsylvanica	red ash	26.0			g	g	g	3	5														4	X		
1,451	Fraxinus pennsylvanica	red ash	14.0			f	p	p	1	80														2	X		
1,452	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2															3	X		
1,453	Fraxinus pennsylvanica	red ash	18.0			f	f	f	2	50														3	X		
1,454	Fraxinus pennsylvanica	red ash	33.0			g	f	f	3	30														4	X		
1,455	Populus tremuloides	trembling aspen	19.0			f	f	g	3				l,s											4	X		
1,456	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	30														3	X		
1,457	Populus tremuloides	trembling aspen	20.0			g	g	g	2															3	X		
1,458	Fraxinus pennsylvanica	red ash	17.0			f	f	f	2															3	X		
1,459	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2															3	X		
1,460	Populus tremuloides	trembling aspen	24.0			g	g	g	2				l,s											3	X		
1,461	Fraxinus pennsylvanica	red ash	23.0	14.0		g	f	f	2															3	X		
1,462	Fraxinus pennsylvanica	red ash	27.0			f	g	g	2															3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,463	Fraxinus pennsylvanica	red ash	13.0			f	f	f	2	20														3	X		
1,464	Fraxinus pennsylvanica	red ash	11.0			f	f	f	1	20														2	X		
1,465	Fraxinus pennsylvanica	red ash	33.0			g	f	f	3	20														4	X		
1,466	Fraxinus pennsylvanica	red ash	20.0			g	f	f	3	50														4	X		
1,467	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2															3	X		
1,468	Fraxinus pennsylvanica	red ash	22.0			g	g	g	2															3	X		
1,469	Fraxinus pennsylvanica	red ash	12.0			p	f	f	1	20														2	X		
1,470	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2	10										x				3	X		
1,471	Fraxinus pennsylvanica	red ash	22.0			p	f	f	2															3	X		
1,472	Fraxinus pennsylvanica	red ash	10.0			g	f	f	1	20														2	X		
1,473	Fraxinus nigra	black ash	10.0			g	g	g	1	20										x				2	X		
1,474	Fraxinus pennsylvanica	red ash	35.0	24.0		f	f	f	3	50	x				x	x	x							4	X		
1,475	Fraxinus nigra	black ash	12.0			g	f	p	1	70														2	X		
1,476	Populus tremuloides	trembling aspen	38.0			g	f	f	4															5	X		
1,477	Fraxinus pennsylvanica	red ash	12.0			g	f	p	2	70														3	X		
1,478	Fraxinus pennsylvanica	red ash	22.0	11.0		f	f	p	2	30														3	X		
1,479	Fraxinus pennsylvanica	red ash	13.0			f	f	f	1	10														2	X		
1,480	Populus tremuloides	trembling aspen	19.0			g	g	g	3															4	X		
1,481	Fraxinus pennsylvanica	red ash	17.0			p	p	f	2	30			l,e											3	X		
1,482	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3	X		
1,483	Fraxinus pennsylvanica	red ash	40.0			g	f	f	4	20			l,e											5	X		
1,484	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2															3	X		
1,485	Ulmus americana	white elm	13.0			g	g	g	2															3	X		
1,486	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2	20														3	X		
1,487	Fraxinus pennsylvanica	red ash	18.0			f	f	f	2	10														3	X		
1,488	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2	10														3	X		
1,489	Populus tremuloides	trembling aspen	15.0			g	g	g	2															3	X		
1,490	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3															4	X		
1,491	Fraxinus pennsylvanica	red ash	19.0			g	f	f	3	20														4	X		
1,492	Fraxinus pennsylvanica	red ash	11.0			f	p	p	1	80														2	X		
1,493	Fraxinus pennsylvanica	red ash	20.0			g	f	g	2	10														3	X		
1,494	Acer x freemanii	Freeman's maple	12.0			g	g	g	3															4	X		
1,495	Fraxinus pennsylvanica	red ash	22.0			g	f	f	3	10														4	X		
1,496	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2	10														3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,497	Populus tremuloides	trembling aspen	33.0			g	f	f	4	30														5	X		
1,498	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	10														3	X		
1,499	Fraxinus pennsylvanica	red ash	12.0			g	p	g	3	20														4	X		broken top
1,500	Fraxinus pennsylvanica	red ash	12.0			p	f	g	2	10														3	X		
1,501	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2															3	X		
1,502	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2	10														3	X		
1,503	Fraxinus pennsylvanica	red ash	24.0			g	f	f	3	30														4	X		
1,504	Ulmus americana	white elm	12.0	9.0		g	g	g	3															4	X		
1,505	Betula papyrifera	white birch	22.0			g	f	g	3	10														4	X		
1,506	Fraxinus pennsylvanica	red ash	10.0			g	f	f	2	20			l,e											3	X		
1,507	Quercus rubra	red oak	22.0			g	f	f	3															4	X		
1,508	Fraxinus pennsylvanica	red ash	18.0			g	f	f	2	20														3	X		
1,509	Fraxinus nigra	black ash	10.0			g	g	g	2															3	X		
1,510	Fraxinus nigra	black ash	10.0			g	g	g	2	10														3	X		
1,511	Populus tremuloides	trembling aspen	20.0			g	g	g	3															4	X		
1,512	Fraxinus pennsylvanica	red ash	21.0	19.0		g	f	g	3	20	x	x								x				4	X		
1,513	Populus tremuloides	trembling aspen	18.0			g	g	g	3															4	X		
1,514	Fraxinus nigra	black ash	16.0			f	f	p	1	90														2	X		
1,515	Ostrya virginiana	ironwood	18.0			g	g	g	4															5	X		
1,516	Ostrya virginiana	ironwood	10.0			g	g	g	2															3	X		
1,517	Pinus nigra	Austrian pine	22.0			g	g	p	2	60														3	X		
1,518	Pinus nigra	Austrian pine	18.0			g	g	p	2	70														3	X		
1,519	Acer saccharinum	silver maple	35.0			g	g	g	3															4	X		
1,520	Acer saccharinum	silver maple	29.0			g	g	g	3															4	X		
1,521	Acer saccharinum	silver maple	22.0			g	g	g	3															4	X		
1,522	Acer saccharinum	silver maple	23.0			g	g	g	4															5	X		
1,523	Pinus strobus	white pine	32.0			g	g	f	3	20														4	X		
1,524	Pinus strobus	white pine	25.0			g	g	f	2	20														3	X		
1,525	Pinus strobus	white pine	20.0			g	g	f	2	20														3	X		
1,526	Pinus strobus	white pine	27.0			g	g	f	2	20														3	X		
1,527	Pinus strobus	white pine	26.0			g	g	f	2	20														3	X		
1,528	Pinus strobus	white pine	33.0			g	g	f	3	20														4	X		
1,529	Pinus nigra	Austrian pine	30.0			g	g	p	2	30														3	X		
1,530	Pinus strobus	white pine	30.0			g	g	f	3	20														4		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,531	Pinus strobus	white pine	22.0			g	g	f	2	20															3		X	
1,532	Pinus strobus	white pine	25.0			g	g	f	2	20															3		X	
1,533	Pinus strobus	white pine	15.0			g	g	f	2	20															3		X	
1,534	Pinus strobus	white pine	25.0			g	f	f	2	20	x	x													3		X	
1,535	Ostrya virginiana	ironwood	28.0			g	g	g	4																5		X	
1,536	Acer saccharinum	silver maple	53.0			g	g	g	5																6		X	
1,537	Betula papyrifera	white birch	34.0			g	g	g	5																6	X		
1,538	Pinus strobus	white pine	24.0			g	g	f	2	20															3		X	
1,539	Pinus strobus	white pine	16.0	14.0		g	g	f	2	30	x	x													3		X	
1,540	Pinus strobus	white pine	34.0			g	g	f	2	20															3	X		
1,541	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3		X	
1,542	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2																3		X	
1,543	Fraxinus pennsylvanica	red ash	29.0	21.0		g	f	f	3	20	x	x													4		X	
1,544	Fraxinus pennsylvanica	red ash	10.0			f	f	f	2	10															3		X	
1,545	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3		X	
1,546	Ulmus americana	white elm	14.0			g	g	g	3																4		X	
1,547	Populus tremuloides	trembling aspen	20.0			g	g	g	3																4		X	
1,548	Populus tremuloides	trembling aspen	17.0			g	f	g	2																3		X	
1,549	Tilia americana	basswood	12.0			g	g	g	3																4		X	
1,550	Tilia americana	basswood	21.0	12,6		g	f	g	3																4		X	
1,551	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	10															3		X	
1,552	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	20															3		X	
1,553	Populus tremuloides	trembling aspen	26.0			g	f	f	3	10															4		X	
1,554	Tilia americana	basswood	10.0			g	g	g	2																3		X	
1,555	Fraxinus pennsylvanica	red ash	24.0			g	g	f	3	20															4		X	
1,556	Fraxinus pennsylvanica	red ash	36.0			g	g	f	3	30															4		X	
1,557	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3		X	
1,558	Fraxinus pennsylvanica	red ash	25.0			g	g	f	2	10															3		X	
1,559	Ulmus americana	white elm	14.0			g	g	g	2																3		X	
1,560	Ulmus americana	white elm	17.0			g	g	g	2																3		X	
1,561	Ulmus americana	white elm	11.0			g	g	g	2																3		X	
1,562	Fraxinus pennsylvanica	red ash	21.0	21.0		g	f	g	3	10	x	x													4		X	
1,563	Fraxinus pennsylvanica	red ash	12.0			g	f	f	2	20															3		X	
1,564	Tilia americana	basswood	16.0	16,14		g	f	g	3																4		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,565	Populus tremuloides	trembling aspen	11.0			g	g	p	2	80														3		X	
1,566	Fraxinus pennsylvanica	red ash	12.0			g	g	g	3															4		X	
1,567	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2															3		X	
1,568	Salix sp.	willow	10.0			p	p	g	5		x	x		x		x				x				6		X	
1,569	Fraxinus pennsylvanica	red ash	33.0	21.0		g	g	g	2	10														3		X	
1,570	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	10														3		X	
1,571	Populus tremuloides	trembling aspen	12.0			p	g	g	2					x	x				x					3		X	
1,572	Populus tremuloides	trembling aspen	11.0			g	g	g	2															3		X	
1,573	Populus tremuloides	trembling aspen	12.0			g	g	g	2															3		X	
1,574	Populus tremuloides	trembling aspen	11.0			g	g	g	2				l,w											3		X	
1,575	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3		X	
1,576	Populus tremuloides	trembling aspen	11.0			g	g	g	2															3		X	
1,577	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3		X	
1,578	Populus tremuloides	trembling aspen	11.0			g	g	g	1	10														2		X	
1,579	Populus tremuloides	trembling aspen	13.0	12.0		g	g	g	2															3		X	
1,580	Populus tremuloides	trembling aspen	20.0	12.0		g	f	f	2	10	x	x												3		X	
1,581	Fraxinus pennsylvanica	red ash	15.0			g	f	f	1	10														2		X	
1,582	Populus tremuloides	trembling aspen	17.0			g	g	g	2															3		X	
1,583	Fraxinus pennsylvanica	red ash	15.0			g	g	f	2	20														3		X	
1,584	Fraxinus pennsylvanica	red ash	17.0			g	f	f	2	10														3		X	
1,585	Fraxinus pennsylvanica	red ash	10.0			g	g	g	1															2		X	
1,586	Populus tremuloides	trembling aspen	13.0			g	g	g	1															2		X	
1,587	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2															3		X	
1,588	Fraxinus pennsylvanica	red ash	22.0	17.0		g	f	f	3	20														4		X	
1,589	Salix sp.	willow	36.0			f	f	f	4								x							5		X	
1,590	Populus tremuloides	trembling aspen	21.0			g	g	g	2															3		X	
1,591	Populus tremuloides	trembling aspen	17.0			g	g	g	2															3		X	
1,592	Populus tremuloides	trembling aspen	15.0			g	g	g	2															3		X	
1,593	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3		X	
1,594	Populus tremuloides	trembling aspen	11.0			g	g	g	1															2		X	
1,595	Populus tremuloides	trembling aspen	12.0	11.0		g	g	g	2		x	x												3		X	
1,596	Populus tremuloides	trembling aspen	11.0			g	g	g	1															2		X	
1,597	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3		X	
1,598	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,599	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3		X	
1,600	Populus tremuloides	trembling aspen	12.0	9.0		g	g	g	2																3		X	
1,601	Populus tremuloides	trembling aspen	11.0	9.0		g	g	g	2																3		X	
1,602	Populus tremuloides	trembling aspen	12.0			g	g	p	2	80															3		X	
1,603	Populus tremuloides	trembling aspen	12.0			g	g	f	2																3		X	
1,604	Populus tremuloides	trembling aspen	12.0			g	g	f	2																3		X	
1,605	Populus tremuloides	trembling aspen	11.0			g	g	f	1																2		X	
1,606	Populus tremuloides	trembling aspen	11.0			g	g	f	2																3		X	
1,607	Populus tremuloides	trembling aspen	11.0			g	g	p	1																2		X	
1,608	Populus tremuloides	trembling aspen	12.0			g	g	f	2																3		X	
1,609	Populus tremuloides	trembling aspen	14.0			f	g	g	2						x	x			x						3		X	
1,610	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3		X	
1,611	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3		X	
1,612	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3		X	
1,613	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,614	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4		X	
1,615	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,616	Malus sp.	apple	10.0			f	p	f	3	30															4		X	
1,617	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	10															3		X	
1,618	Fraxinus pennsylvanica	red ash	15.0	14.0		f	f	f	2	20	x														3		X	
1,619	Populus tremuloides	trembling aspen	12.0			f	f	f	2	20															3		X	
1,620	Populus tremuloides	trembling aspen	11.0			f	f	f	2	10															3		X	
1,621	Populus tremuloides	trembling aspen	14.0			f	f	f	2	30			l,w												3		X	
1,622	Populus tremuloides	trembling aspen	13.0			f	f	f	2	20															3		X	
1,623	Populus tremuloides	trembling aspen	18.0			g	g	g	3	10															4		X	
1,624	Populus tremuloides	trembling aspen	21.0			g	g	f	2	10			l,w												3		X	
1,625	Populus tremuloides	trembling aspen	21.0			g	g	f	3	20															4		X	
1,626	Populus tremuloides	trembling aspen	18.0			g	f	f	3	50															4		X	
1,627	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	10															3		X	
1,628	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3		X	
1,629	Fraxinus pennsylvanica	red ash	19.0			g	g	f	1	50															2		X	
1,630	Populus tremuloides	trembling aspen	10.0			g	g	g	1																2		X	
1,631	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
1,632	Populus tremuloides	trembling aspen	10.0			g	g	g	1																2		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,633	Populus tremuloides	trembling aspen	23.0	18.0		g	g	g	3																4		X	
1,634	Fraxinus pennsylvanica	red ash	14.0			g	g	f	1	30															2		X	
1,635	Fraxinus pennsylvanica	red ash	11.0			g	g	f	1	30															2		X	
1,636	Fraxinus pennsylvanica	red ash	15.0			g	g	f	1	40															2		X	
1,637	Fraxinus pennsylvanica	red ash	21.0			g	g	f	2	20															3		X	
1,638	Fraxinus pennsylvanica	red ash	11.0			g	g	f	1	30															2		X	
1,639	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2	10															3		X	
1,640	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	20															3		X	
1,641	Fraxinus pennsylvanica	red ash	12.0			g	g	f	1	30															2		X	
1,642	Fraxinus pennsylvanica	red ash	26.0			g	g	f	2	30															3		X	
1,643	Thuja occidentalis	eastern white cedar	18.0	16,15		g	g	g	3		x														4		X	
1,644	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
1,645	Thuja occidentalis	eastern white cedar	16.0	10,16		g	g	g	2		x														3		X	
1,646	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3		X	
1,647	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2																3		X	
1,648	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,649	Tilia americana	basswood	11.0			g	g	g	3																4		X	
1,650	Thuja occidentalis	eastern white cedar	12.0			p	p	p	2	90															3		X	
1,651	Thuja occidentalis	eastern white cedar	13.0	12.0		g	g	g	2		x														3		X	
1,652	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2				h,e												3		X	
1,653	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
1,654	Thuja occidentalis	eastern white cedar	18.0	12.0		g	g	g	3		x														4		X	
1,655	Thuja occidentalis	eastern white cedar	15.0			g	g	g	3																4		X	
1,656	Thuja occidentalis	eastern white cedar	14.0	12,8		g	f	g	2				h,e												3		X	
1,657	Fraxinus pennsylvanica	red ash	35.0			g	g	f	4	30															5		X	
1,658	Fraxinus pennsylvanica	red ash	32.0			g	f	f	3	20	x														4		X	
1,659	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	30															3		X	
1,660	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
1,661	Fraxinus pennsylvanica	red ash	30.0			g	g	f	3	40															4		X	
1,662	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3		X	
1,663	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
1,664	Fraxinus pennsylvanica	red ash	25.0			g	g	f	3	80										x					4		X	
1,665	Fraxinus pennsylvanica	red ash	20.0			g	g	f	3	40															4		X	
1,666	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,667	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
1,668	Thuja occidentalis	eastern white cedar	14.0	13.0		g	g	g	2		x														3		X	
1,669	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3		X	
1,670	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
1,671	Fraxinus pennsylvanica	red ash	16.0			g	f	f	2	50										x	x				3		X	
1,672	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3		X	
1,673	Thuja occidentalis	eastern white cedar	10.0	6.0		g	g	g	2		x														3		X	
1,674	Populus tremuloides	trembling aspen	10.0			g	g	g	2	10															3		X	
1,675	Thuja occidentalis	eastern white cedar	18.0	16.0		g	g	g	2		x														3		X	
1,676	Thuja occidentalis	eastern white cedar	13.0	9.0		g	f	g	2		x														3		X	
1,677	Thuja occidentalis	eastern white cedar	14.0			g	g	g	3																4		X	
1,678	Thuja occidentalis	eastern white cedar	12.0	8.0		g	g	g	2																3		X	
1,679	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
1,680	Populus tremuloides	trembling aspen	22.0			g	f	g	3																4		X	
1,681	Populus tremuloides	trembling aspen	10.0			g	f	f	2	10			l,w												3		X	
1,682	Populus tremuloides	trembling aspen	12.0			g	f	f	2	30															3		X	
1,683	Populus tremuloides	trembling aspen	20.0	8.0		f	f	f	2	30															3		X	
1,684	Populus tremuloides	trembling aspen	15.0			g	f	f	2	20															3		X	
1,685	Populus tremuloides	trembling aspen	26.0			g	g	g	3																4		X	
1,686	Thuja occidentalis	eastern white cedar	14.0	8.0		g	g	g	2																3		X	
1,687	Thuja occidentalis	eastern white cedar	18.0	10.0		g	g	g	2																3		X	
1,688	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
1,689	Fraxinus pennsylvanica	red ash	34.0			g	g	f	3	30								x							4		X	
1,690	Thuja occidentalis	eastern white cedar	15.0			g	g	f	2																3		X	
1,691	Thuja occidentalis	eastern white cedar	10.0	8,5		g	g	g	2																3		X	
1,692	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2																3		X	
1,693	Populus tremuloides	trembling aspen	24.0			g	g	f	3																4		X	
1,694	Populus tremuloides	trembling aspen	31.0			g	g	f	3																4		X	
1,695	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2				h,e												3		X	
1,696	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2	10															3		X	
1,697	Populus tremuloides	trembling aspen	23.0			g	g	g	3																4		X	
1,698	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2																3		X	
1,699	Fraxinus pennsylvanica	red ash	22.0			g	g	f	2	30										x					3		X	
1,700	Populus tremuloides	trembling aspen	12.0			g	f	g	3																4		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,701	Fraxinus pennsylvanica	red ash	34.0	27,25,25		f	p	g	4	10	x	x												5		X	
1,702	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3		X	
1,703	Populus tremuloides	trembling aspen	10.0			g	g	g	2	10														3		X	
1,704	Populus tremuloides	trembling aspen	17.0			g	g	g	3															4		X	
1,705	Populus tremuloides	trembling aspen	13.0			g	g	g	2															3		X	
1,706	Populus tremuloides	trembling aspen	11.0			g	g	g	2															3		X	
1,707	Populus tremuloides	trembling aspen	11.0			g	f	g	2				l,w											3		X	
1,708	Populus tremuloides	trembling aspen	12.0	6.0		g	f	p	2	70														3		X	broken top
1,709	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3		X	
1,710	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3		X	
1,711	Populus tremuloides	trembling aspen	12.0			g	g	g	2															3		X	
1,712	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3		X	
1,713	Populus tremuloides	trembling aspen	20.0			g	g	g	3															4		X	
1,714	Acer negundo	Manitoba maple	14.0			f	p	f	2	50														3		X	broken top
1,715	Populus tremuloides	trembling aspen	12.0			g	g	g	2															3		X	
1,716	Populus tremuloides	trembling aspen	12.0			g	g	g	2															3		X	
1,717	Populus tremuloides	trembling aspen	13.0			g	g	g	2															3		X	
1,718	Populus tremuloides	trembling aspen	11.0			g	g	f	2	10			l,w											3		X	
1,719	Populus tremuloides	trembling aspen	14.0			g	g	g	3															4		X	
1,720	Populus tremuloides	trembling aspen	10.0			g	f	f	2	10														3		X	
1,721	Populus tremuloides	trembling aspen	11.0			f	f	f	2	10														3		X	
1,722	Populus tremuloides	trembling aspen	13.0			g	g	f	2	10														3		X	
1,723	Populus tremuloides	trembling aspen	12.0			g	f	f	2	10			l,w											3		X	
1,724	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	20														3		X	
1,725	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	20														3		X	
1,726	Fraxinus pennsylvanica	red ash	13.0			g	f	f	2	40										x				3		X	
1,727	Fraxinus pennsylvanica	red ash	24.0			g	g	f	2	30														3		X	
1,728	Populus tremuloides	trembling aspen	16.0			g	g	f	2															3		X	
1,729	Fraxinus pennsylvanica	red ash	20.0			g	g	f	2	40														3		X	
1,730	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
1,731	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3		X	
1,732	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	60														3		X	
1,733	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
1,734	Populus tremuloides	trembling aspen	33.0	14.0		p	p	p	2															3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,735	Fraxinus pennsylvanica	red ash	25.0			g	g	g	3	10															4		X	
1,736	Fraxinus pennsylvanica	red ash	24.0			g	g	g	3																4		X	
1,737	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2	10															3		X	
1,738	Populus tremuloides	trembling aspen	22.0			g	g	g	4																5		X	
1,739	Thuja occidentalis	eastern white cedar	14.0	14.0		g	g	g	2																3		X	
1,740	Thuja occidentalis	eastern white cedar	14.0			g	g	g	1																2		X	
1,741	Thuja occidentalis	eastern white cedar	10.0			g	g	g	1																2		X	
1,742	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3		X	
1,743	Fraxinus pennsylvanica	red ash	14.0			f	f	f	3																4		X	
1,744	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3		X	
1,745	Fraxinus pennsylvanica	red ash	12.0			p	p	p	2																3		X	
1,746	Thuja occidentalis	eastern white cedar	23.0			g	g	g	3																4		X	
1,747	Fraxinus pennsylvanica	red ash	18.0			p	p	p	3																4		X	
1,748	Fraxinus pennsylvanica	red ash	14.0			p	p	p	3																4		X	
1,749	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,750	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
1,751	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2																3		X	
1,752	Populus tremuloides	trembling aspen	14.0			f	f	f	2																3		X	
1,753	Populus tremuloides	trembling aspen	12.0			f	f	f	2																3		X	
1,754	Fraxinus pennsylvanica	red ash	28.0			f	f	f	3																4		X	
1,755	Fraxinus pennsylvanica	red ash	18.0			f	f	f	2																3		X	
1,756	Fraxinus pennsylvanica	red ash	34.0			p	p	p	4																5		X	
1,757	Fraxinus pennsylvanica	red ash	16.0			p	p	p	2																3		X	
1,758	Fraxinus pennsylvanica	red ash	20.0			p	p	p	2																3		X	
1,759	Fraxinus pennsylvanica	red ash	24.0			f	f	f	2																3		X	
1,760	Populus tremuloides	trembling aspen	32.0			p	p	p	4																5		X	
1,761	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	
1,762	Thuja occidentalis	eastern white cedar	14.0	12.0		g	g	g	3		x	x	l,e												4		X	
1,763	Thuja occidentalis	eastern white cedar	20.0			g	g	g	3																4		X	
1,764	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
1,765	Fraxinus pennsylvanica	red ash	24.0			f	f	f	4																5		X	
1,766	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3		X	
1,767	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3		X	
1,768	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,769	Thuja occidentalis	eastern white cedar	10.0	10.0		g	g	g	2																3		X	
1,770	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2																3		X	
1,771	Thuja occidentalis	eastern white cedar	10.0			f	f	f	2	30			l,n												3		X	
1,772	Thuja occidentalis	eastern white cedar	16.0			f	f	f	3				l,w												4		X	
1,773	Thuja occidentalis	eastern white cedar	16.0			g	g	g	3																4		X	
1,774	Thuja occidentalis	eastern white cedar	22.0	18,18		f	f	f	4																5		X	
1,775	Thuja occidentalis	eastern white cedar	22.0	10.0		g	g	g	2																3		X	
1,776	Thuja occidentalis	eastern white cedar	24.0	22.0		g	g	g	10																11		X	
1,777	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,778	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
1,779	Populus tremuloides	trembling aspen	32.0			g	g	g	3																4		X	
1,780	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,781	Populus tremuloides	trembling aspen	20.0			g	g	g	4																5		X	
1,782	Populus tremuloides	trembling aspen	35.0			g	g	g	2																3		X	
1,783	Populus tremuloides	trembling aspen	28.0			g	g	g	3																4		X	
1,784	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3		X	
1,785	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3		X	
1,786	Populus tremuloides	trembling aspen	30.0			g	g	f	4																5		X	
1,787	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4		X	
1,788	Pinus sylvestris	Scots pine	12.0			g	g	g	2																3		X	
1,789	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3		X	
1,790	Thuja occidentalis	eastern white cedar	18.0	14,14,12		g	g	g	3																4		X	
1,791	Thuja occidentalis	eastern white cedar	22.0	14,10		g	g	g	3																4		X	
1,792	Thuja occidentalis	eastern white cedar	18.0	16.0		g	g	g	2																3		X	
1,793	Fraxinus pennsylvanica	red ash	30.0			g	g	g	3																4		X	
1,794	Populus tremuloides	trembling aspen	23.0			g	g	g	3																4		X	
1,795	Thuja occidentalis	eastern white cedar	14.0	10.0		g	g	g	2		x														3		X	
1,796	Thuja occidentalis	eastern white cedar	11.0	14.0		g	g	g	2																3		X	
1,797	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2				m,e												3		X	
1,798	Thuja occidentalis	eastern white cedar	10.0	5.0		g	g	g	1																2		X	
1,799	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3		X	
1,800	Thuja occidentalis	eastern white cedar	10.0	9.0		g	g	g	2																3		X	
1,801	Thuja occidentalis	eastern white cedar	10.0			g	f	f	2																3		X	
1,802	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,803	Thuja occidentalis	eastern white cedar	10.0	13.0		g	g	g	2															3		X	
1,804	Thuja occidentalis	eastern white cedar	13.0	9.0		g	g	g	2		x					x								3		X	
1,805	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2				m,e											3		X	
1,806	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3		X	
1,807	Thuja occidentalis	eastern white cedar	26.0			g	g	g	2															3		X	
1,808	Thuja occidentalis	eastern white cedar	21.0			g	g	g	3															4		X	
1,809	Thuja occidentalis	eastern white cedar	20.0			g	g	g	3				m,s											4		X	
1,810	Thuja occidentalis	eastern white cedar	18.0	20.0		g	g	g	2				l,s											3		X	
1,811	Ulmus americana	American Elm	11.0			g	g	g	2				l,n											3		X	
1,812	Populus tremuloides	trembling aspen	14.0			g	g	g	3															4		X	
1,813	Populus tremuloides	trembling aspen	10.0			g	g	g	1	30														2		X	
1,814	Populus tremuloides	trembling aspen	13.0			g	g	g	2															3		X	
1,815	Populus tremuloides	trembling aspen	11.0			g	g	g	2															3		X	
1,816	Populus tremuloides	trembling aspen	10.0			g	g	g	1															2		X	
1,817	Populus tremuloides	trembling aspen	12.0			g	f	f	2	20														3		X	
1,818	Populus tremuloides	trembling aspen	16.0			g	g	g	2															3		X	
1,819	Populus tremuloides	trembling aspen	19.0			g	g	g	2															3		X	
1,820	Betula papyrifera	white birch	15.0			g	g	g	3															4		X	
1,821	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3		X	
1,822	Betula papyrifera	white birch	16.0			g	g	g	3															4		X	
1,823	Populus tremuloides	trembling aspen	15.0			g	g	g	2															3		X	
1,824	Populus tremuloides	trembling aspen	14.0			f	g	f	2	10			l,n											3		X	
1,825	Fraxinus pennsylvanica	red ash	15.0	26.0		f	f	f	3	40	x	x												4		X	
1,826	Fraxinus pennsylvanica	red ash	17.0			g	g	f	2	20														3		X	
1,827	Thuja occidentalis	eastern white cedar	11.0	10.0		g	g	g	2															3		X	
1,828	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2															3		X	
1,829	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2															3		X	
1,830	Thuja occidentalis	eastern white cedar	13.0	8.0		g	g	g	2		x													3		X	
1,831	Thuja occidentalis	eastern white cedar	14.0	7.0		g	g	g	2		x							x						3		X	
1,832	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3		X	
1,833	Thuja occidentalis	eastern white cedar	17.0	10,5		g	g	g	2		x													3		X	
1,834	Thuja occidentalis	eastern white cedar	25.0	13,17		g	g	g	3		x					x								4		X	
1,835	Fraxinus pennsylvanica	red ash	31.0			g	g	f	3	60										x				4		X	
1,836	Thuja occidentalis	eastern white cedar	12.0	9.0		g	g	g	2		x	x												3		X	

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,837	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2															3		X	
1,838	Populus tremuloides	trembling aspen	30.0			g	g	f	3	30														4		X	
1,839	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2	10														3		X	
1,840	Fraxinus pennsylvanica	red ash	13.0			g	g	f	1	20														2		X	
1,841	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2															3		X	
1,842	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3		X	
1,843	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2															3		X	
1,844	Fraxinus pennsylvanica	red ash	19.0			g	f	f	3	30														4		X	
1,845	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2															3		X	
1,846	Fraxinus pennsylvanica	red ash	17.0			g	f	f	2	30														3		X	
1,847	Fraxinus pennsylvanica	red ash	17.0			g	g	g	4															5		X	
1,848	Populus tremuloides	trembling aspen	13.0	10.0		g	f	f	2															3		X	
1,849	Populus tremuloides	trembling aspen	14.0			g	g	f	2	10														3		X	
1,850	Populus tremuloides	trembling aspen	17.0			g	g	f	2	10			l,w											3		X	
1,851	Populus tremuloides	trembling aspen	17.0	15.0		g	f	f	2	20			l,w											3		X	
1,852	Populus tremuloides	trembling aspen	15.0			g	g	f	2	30			l,w											3		X	
1,853	Populus tremuloides	trembling aspen	13.0			g	g	g	3															4		X	
1,854	Populus tremuloides	trembling aspen	12.0			g	f	g	2															3		X	
1,855	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3	X		
1,856	Populus tremuloides	trembling aspen	16.0			g	f	g	2															3		X	
1,857	Populus tremuloides	trembling aspen	17.0			g	g	f	3	30			l,w											4		X	
1,858	Betula papyrifera	white birch	10.0			g	g	g	3															4		X	
1,859	Populus tremuloides	trembling aspen	12.0			g	f	f	2	20														3		X	
1,860	Populus tremuloides	trembling aspen	11.0			g	g	f	2	30														3		X	
1,861	Populus tremuloides	trembling aspen	22.0			g	g	g	3	20														4		X	
1,862	Populus tremuloides	trembling aspen	22.0			g	g	g	3															4		X	
1,863	Betula papyrifera	white birch	13.0			g	g	g	2															3		X	
1,864	Betula papyrifera	white birch	10.0			g	g	g	2															3		X	
1,865	Populus tremuloides	trembling aspen	15.0	14.0		f	p	f	2	50														3		X	one stem dead
1,866	Betula papyrifera	white birch	16.0	13.0		g	f	g	3															4		X	
1,867	Betula papyrifera	white birch	14.0			g	g	f	2	10														3	X		
1,868	Fraxinus pennsylvanica	red ash	13.0			g	g	f	2	20														3	X		
1,869	Betula papyrifera	white birch	14.0			g	g	g	3															4	X		
1,870	Betula papyrifera	white birch	12.0			g	f	g	2		x													3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,871	Betula papyrifera	white birch	10.0	7,8		f	f	g	4		x	x													5	X		
1,872	Populus tremuloides	trembling aspen	14.0			g	g	f	2																3	X		
1,873	Populus tremuloides	trembling aspen	10.0			g	g	f	2																3	X		
1,874	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,875	Betula papyrifera	white birch	11.0			g	g	g	3				l,e												4	X		
1,876	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
1,877	Betula papyrifera	white birch	10.0			g	g	g	2																3	X		
1,878	Betula papyrifera	white birch	16.0			g	g	g	3																4	X		
1,879	Populus tremuloides	trembling aspen	17.0			g	g	f	3																4	X		
1,880	Populus tremuloides	trembling aspen	16.0			g	g	f	2	10															3	X		
1,881	Betula papyrifera	white birch	11.0			g	g	g	2																3	X		
1,882	Populus tremuloides	trembling aspen	24.0			g	g	f	2	10															3	X		
1,883	Betula papyrifera	white birch	12.0			g	g	f	2	20															3	X		
1,884	Populus tremuloides	trembling aspen	17.0			g	g	g	3																4	X		
1,885	Populus tremuloides	trembling aspen	17.0			g	g	f	2	60															3	X		
1,886	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
1,887	Populus tremuloides	trembling aspen	28.0			g	f	g	3																4	X		
1,888	Betula papyrifera	white birch	16.0			g	g	g	3																4	X		
1,889	Betula papyrifera	white birch	15.0			g	g	g	3																4	X		
1,890	Populus tremuloides	trembling aspen	15.0			g	g	f	2	10															3	X		
1,891	Populus tremuloides	trembling aspen	16.0	23.0		g	g	g	3																4	X		
1,892	Betula papyrifera	white birch	12.0			g	g	g	3																4	X		
1,893	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,894	Populus tremuloides	trembling aspen	20.0			f	f	f	2	60															3	X		
1,895	Betula papyrifera	white birch	22.0			g	g	g	3																4	X		
1,896	Fraxinus pennsylvanica	red ash	20.0	14.0		f	f	f	2	10	x	x													3	X		
1,897	Populus tremuloides	trembling aspen	28.0			g	g	f	3	20															4	X		
1,898	Populus tremuloides	trembling aspen	18.0			g	g	g	2				l,e												3	X		
1,899	Populus tremuloides	trembling aspen	15.0			f	g	f	2	10															3	X		
1,900	Populus tremuloides	trembling aspen	30.0			g	g	g	3																4	X		
1,901	Populus tremuloides	trembling aspen	18.0			g	f	f	2																3	X		
1,902	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
1,903	Betula papyrifera	white birch	14.0			g	g	g	2																3	X		
1,904	Betula papyrifera	white birch	12.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,905	Populus tremuloides	trembling aspen	14.0			g	g	f	2															3	X		
1,906	Populus tremuloides	trembling aspen	25.0			g	g	g	3															4	X		
1,907	Populus tremuloides	trembling aspen	12.0			g	f	f	2															3	X		
1,908	Populus tremuloides	trembling aspen	20.0	20.0		g	f	g	2		x	x												3	X		
1,909	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3	X		
1,910	Populus tremuloides	trembling aspen	21.0			g	g	f	3				l,e											4	X		
1,911	Populus tremuloides	trembling aspen	34.0			f	g	f	3	30														4	X		
1,912	Populus balsamifera	balsam poplar	24.0			g	g	f	2	20														3	X		
1,913	Populus balsamifera	balsam poplar	35.0			g	g	g	3	10														4	X		
1,914	Populus balsamifera	balsam poplar	28.0			g	g	f	2	20														3	X		
1,915	Fraxinus pennsylvanica	red ash	20.0	22.0		g	g	f	2	10	x	x												3	X		
1,916	Populus tremuloides	trembling aspen	17.0	14,10		g	g	f	2	10	x	x												3	X		
1,917	Populus tremuloides	trembling aspen	12.0			g	g	f	2	10														3	X		
1,918	Populus tremuloides	trembling aspen	16.0			g	g	g	2															3	X		
1,919	Populus tremuloides	trembling aspen	24.0			g	g	g	3															4	X		
1,920	Populus tremuloides	trembling aspen	14.0			g	g	g	2															3	X		
1,921	Populus tremuloides	trembling aspen	23.0			g	g	g	3															4	X		
1,922	Populus tremuloides	trembling aspen	22.0			g	g	g	3															4	X		
1,923	Populus tremuloides	trembling aspen	20.0			g	g	g	3															4	X		
1,924	Populus tremuloides	trembling aspen	11.0			g	g	g	2															3	X		
1,925	Populus tremuloides	trembling aspen	21.0			g	g	g	3															4	X		
1,926	Populus tremuloides	trembling aspen	18.0			g	g	f	2	20														3	X		
1,927	Populus tremuloides	trembling aspen	20.0			g	g	f	2	20														3	X		
1,928	Populus tremuloides	trembling aspen	17.0			g	g	g	2															3	X		
1,929	Populus tremuloides	trembling aspen	16.0			g	g	g	2				h,e											3	X		
1,930	Populus tremuloides	trembling aspen	12.0			g	g	g	2	40														3	X		
1,931	Populus tremuloides	trembling aspen	11.0			g	g	f	2	10														3	X		
1,932	Populus tremuloides	trembling aspen	13.0			g	g	f	2	10														3	X		
1,933	Betula papyrifera	white birch	10.0			g	g	g	3		x													4	X		
1,934	Populus tremuloides	trembling aspen	12.0			g	g	f	2															3	X		
1,935	Populus tremuloides	trembling aspen	10.0			g	g	f	2															3	X		
1,936	Populus tremuloides	trembling aspen	13.0			g	g	g	2															3	X		
1,937	Populus tremuloides	trembling aspen	13.0			g	f	f	2	10														3	X		
1,938	Populus tremuloides	trembling aspen	17.0			g	g	f	3	20														4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,939	Populus tremuloides	trembling aspen	16.0			g	g	f	2	10															3	X		
1,940	Populus tremuloides	trembling aspen	19.0			g	g	f	2	10															3	X		
1,941	Populus tremuloides	trembling aspen	16.0			g	g	f	2	10															3	X		
1,942	Populus tremuloides	trembling aspen	22.0			g	g	f	3																4	X		
1,943	Populus tremuloides	trembling aspen	17.0			g	f	g	2				l,e												3	X		
1,944	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	30															3	X		
1,945	Populus tremuloides	trembling aspen	14.0			g	g	f	2	10															3	X		
1,946	Betula papyrifera	white birch	10.0	5.0		g	g	g	2																3	X		
1,947	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
1,948	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,949	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
1,950	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
1,951	Populus tremuloides	trembling aspen	20.0			g	g	g	2	10															3	X		
1,952	Populus tremuloides	trembling aspen	16.0			g	g	f	2																3	X		
1,953	Populus tremuloides	trembling aspen	13.0			g	g	f	2																3	X		
1,954	Populus tremuloides	trembling aspen	18.0			g	g	f	2	10															3	X		
1,955	Populus tremuloides	trembling aspen	14.0			g	g	f	2	20															3	X		
1,956	Populus tremuloides	trembling aspen	18.0			g	g	f	2	20															3	X		
1,957	Populus tremuloides	trembling aspen	20.0			g	g	g	3	10															4	X		
1,958	Populus tremuloides	trembling aspen	22.0			g	g	g	3																4	X		
1,959	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3	X		
1,960	Populus tremuloides	trembling aspen	20.0			g	g	g	2																3	X		
1,961	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,962	Populus tremuloides	trembling aspen	13.0			g	f	g	2				H,E												3	X		
1,963	Populus tremuloides	trembling aspen	14.0	8.0		g	f	g	2				H,E												3	X		
1,964	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,965	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,966	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3		X	
1,967	Populus tremuloides	trembling aspen	12.0			g	f	f	2	20															3		X	
1,968	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3		X	
1,969	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3		X	
1,970	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3		X	
1,971	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
1,972	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
1,973	Populus tremuloides	trembling aspen	12.0			g	p	f	2	50								x							3	X		broken top
1,974	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,975	Populus tremuloides	trembling aspen	13.0			g	g	f	2	10															3	X		
1,976	Populus tremuloides	trembling aspen	16.0			f	f	f	2	10			H,E												3	X		weak roots
1,977	Populus tremuloides	trembling aspen	11.0	11.0		g	g	g	2																3	X		
1,978	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,979	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,980	Populus tremuloides	trembling aspen	10.0	13.0		g	f	g	2																3	X		
1,981	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
1,982	Populus tremuloides	trembling aspen	19.0			g	g	g	2																3	X		
1,983	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3	X		
1,984	Fraxinus pennsylvanica	red ash	12.0	9.0		g	g	f	2	20															3	X		
1,985	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3	X		
1,986	Populus tremuloides	trembling aspen	26.0			g	g	f	3																4	X		
1,987	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
1,988	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4	X		
1,989	Populus tremuloides	trembling aspen	10.0			f	f	f	2	40															3	X		
1,990	Populus tremuloides	trembling aspen	16.0			f	f	f	2	40															3	X		
1,991	Fraxinus pennsylvanica	red ash	16.0			g	f	p	2	80										x	x				3	X		
1,992	Fraxinus pennsylvanica	red ash	28.0			g	g	f	4	20															5	X		
1,993	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
1,994	Populus tremuloides	trembling aspen	18.0			g	g	f	2	10															3	X		
1,995	Populus tremuloides	trembling aspen	22.0			g	g	f	3	30															4	X		
1,996	Populus tremuloides	trembling aspen	26.0			g	g	f	3	20															4	X		
1,997	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
1,998	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
1,999	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
2,000	Populus tremuloides	trembling aspen	13.0			g	g	f	2	20			l,e												3	X		
2,001	Populus tremuloides	trembling aspen	11.0			g	g	f	2	20															3	X		
2,002	Populus tremuloides	trembling aspen	10.0			g	g	f	2	30															3	X		
2,003	Populus tremuloides	trembling aspen	22.0			g	g	g	3																4	X		
2,004	Thuja occidentalis	eastern white cedar	12.0	10.0		g	g	g	2																3	X		
2,005	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3	X		
2,006	Fraxinus pennsylvanica	red ash	21.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,007	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,008	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,009	Populus tremuloides	trembling aspen	17.0			g	g	f	2	20															3	X		
2,010	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,011	Populus tremuloides	trembling aspen	16.0			g	g	f	2	20															3	X		
2,012	Fraxinus pennsylvanica	red ash	24.0			g	g	f	3	50															4	X		
2,013	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
2,014	Thuja occidentalis	eastern white cedar	17.0			g	g	g	2																3	X		
2,015	Thuja occidentalis	eastern white cedar	19.0			g	g	g	3																4	X		
2,016	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,017	Populus tremuloides	trembling aspen	20.0			g	g	g	3																4	X		
2,018	Populus tremuloides	trembling aspen	16.0			g	f	f	2	20															3	X		
2,019	Fraxinus pennsylvanica	red ash	27.0			g	g	f	3	20										x					4	X		
2,020	Populus tremuloides	trembling aspen	26.0			g	g	f	3																4	X		
2,021	Populus tremuloides	trembling aspen	24.0			g	g	g	3	30															4	X		
2,022	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,023	Populus tremuloides	trembling aspen	16.0			f	g	g	2	10				x				x	x						3	X		
2,024	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
2,025	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
2,026	Populus tremuloides	trembling aspen	23.0	10.0		g	g	g	3																4	X		
2,027	Populus tremuloides	trembling aspen	25.0			g	g	g	2																3	X		
2,028	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
2,029	Populus tremuloides	trembling aspen	16.0	18.0		g	g	g	3	10	x														4	X		
2,030	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
2,031	Fraxinus pennsylvanica	red ash	12.0			g	f	p	2	70															3	X		
2,032	Fraxinus pennsylvanica	red ash	17.0			g	f	f	2	60															3	X		
2,033	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,034	Fraxinus pennsylvanica	red ash	20.0			g	f	p	2	80															3	X		
2,035	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,036	Populus tremuloides	trembling aspen	26.0			g	g	f	3																4	X		
2,037	Fraxinus pennsylvanica	red ash	11.0			f	p	f	2	20	x														3	X		
2,038	Fraxinus pennsylvanica	red ash	11.0			g	f	f	2	20															3	X		
2,039	Betula papyrifera	white birch	27.0			g	g	g	3																4	X		
2,040	Fraxinus pennsylvanica	red ash	13.0			g	f	p	1	80															2	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,041	Fraxinus pennsylvanica	red ash	14.0			g	g	f	2	30														3	X		
2,042	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	30														3	X		
2,043	Fraxinus pennsylvanica	red ash	20.0			g	g	f	2	50														3	X		
2,044	Fraxinus pennsylvanica	red ash	22.0	19.0		g	f	f	3	20	x	x									x			4	X		
2,045	Betula papyrifera	white birch	10.0	12.0		g	f	g	3															4	X		
2,046	Fraxinus pennsylvanica	red ash	20.0			g	f	f	2															3	X		
2,047	Betula papyrifera	white birch	24.0	21.0		g	g	g	3		x													4	X		
2,048	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	10														3	X		
2,049	Betula papyrifera	white birch	24.0			g	g	f	3	10														4	X		
2,050	Betula papyrifera	white birch	12.0			g	g	g	3															4	X		
2,051	Betula papyrifera	white birch	16.0			g	g	g	3															4	X		
2,052	Betula papyrifera	white birch	10.0			g	g	g	2															3	X		
2,053	Betula papyrifera	white birch	12.0			g	g	g	3															4	X		
2,054	Betula papyrifera	white birch	12.0	10.0		g	g	g	3															4	X		
2,055	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2	10														3	X		
2,056	Populus tremuloides	trembling aspen	34.0			g	g	g	3	20														4	X		
2,057	Populus tremuloides	trembling aspen	26.0			g	g	g	3															4	X		
2,058	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3	X		
2,059	Betula papyrifera	white birch	22.0			g	g	g	2				l,w											3	X		
2,060	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3	X		
2,061	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3	X		
2,062	Populus tremuloides	trembling aspen	20.0			g	g	f	3	20														4	X		
2,063	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3	X		
2,064	Populus tremuloides	trembling aspen	11.0			g	g	g	2															3	X		
2,065	Populus tremuloides	trembling aspen	21.0			g	g	g	2															3	X		
2,066	Populus tremuloides	trembling aspen	27.0			g	g	g	4															5	X		
2,067	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3	X		
2,068	Populus tremuloides	trembling aspen	10.0			g	g	g	2															3	X		
2,069	Fraxinus pennsylvanica	red ash	25.0			g	g	f	2	10														3	X		
2,070	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	20														3	X		
2,071	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2															3	X		
2,072	Betula papyrifera	white birch	16.0			g	g	g	3															4	X		
2,073	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2															3	X		
2,074	Populus tremuloides	trembling aspen	24.0			g	g	g	3															4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,075	Populus tremuloides	trembling aspen	14.0			g	g	f	2																3	X		
2,076	Populus tremuloides	trembling aspen	21.0			g	g	f	3	20															4	X		
2,077	Fraxinus pennsylvanica	red ash	22.0			g	g	f	2	20															3	X		
2,078	Populus tremuloides	trembling aspen	21.0			g	g	f	2	50															3	X		
2,079	Populus tremuloides	trembling aspen	33.0			g	f	f	2	20				x											3	X		
2,080	Populus tremuloides	trembling aspen	30.0			f	f	p	3	70				x			x								4	X		
2,081	Populus tremuloides	trembling aspen	23.0			f	f	p	3	70				x			x								4	X		
2,082	Populus tremuloides	trembling aspen	28.0			g	g	g	2																3	X		
2,083	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
2,084	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
2,085	Thuja occidentalis	eastern white cedar	34.0			g	g	g	2																3	X		
2,086	Populus tremuloides	trembling aspen	26.0			g	g	f	3																4	X		
2,087	Populus tremuloides	trembling aspen	18.0	28.0		g	g	f	3		x														4	X		
2,088	Populus tremuloides	trembling aspen	28.0			g	g	f	3	10															4	X		
2,089	Populus tremuloides	trembling aspen	24.0			g	g	f	3	10															4	X		
2,090	Populus tremuloides	trembling aspen	36.0			g	g	f	3	30															4	X		
2,091	Populus tremuloides	trembling aspen	25.0			g	g	f	3	20															4	X		
2,092	Fraxinus pennsylvanica	red ash	25.0			g	f	f	3	30										x	x				4	X		
2,093	Fraxinus pennsylvanica	red ash	27.0			g	f	f	2	30										x	x				3	X		
2,094	Fraxinus pennsylvanica	red ash	17.0			g	f	p	2	70										x	x				3	X		
2,095	Fraxinus pennsylvanica	red ash	29.0			g	f	f	3	50									x	x					4	X		
2,096	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,097	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2																3	X		
2,098	Thuja occidentalis	eastern white cedar	17.0			g	g	f	2																3	X		
2,099	Malus sp.	apple	10.0	8,8		g	f	f	2	20	x														3	X		
2,100	Fraxinus pennsylvanica	red ash	20.0			g	g	g	2																3	X		
2,101	Populus tremuloides	trembling aspen	26.0			g	g	g	3																4	X		
2,102	Fraxinus pennsylvanica	red ash	26.0			g	g	f	2	20															3	X		
2,103	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,104	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,105	Fraxinus pennsylvanica	red ash	11.0			g	g	f	2	10															3	X		
2,106	Betula papyrifera	white birch	23.0			g	g	g	2																3	X		
2,107	Betula papyrifera	white birch	17.0			g	g	g	2																3	X		
2,108	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,109	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,110	Populus tremuloides	trembling aspen	13.0			g	g	f	2	10															3	X		
2,111	Betula papyrifera	white birch	11.0	5.0		g	g	g	2																3	X		
2,112	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,113	Populus tremuloides	trembling aspen	25.0			g	g	f	3																4	X		
2,114	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,115	Populus tremuloides	trembling aspen	13.0			g	g	g	3																4	X		
2,116	Populus balsamifera	balsam poplar	31.0			g	g	g	4	10															5	X		
2,117	Populus tremuloides	trembling aspen	26.0			g	g	g	4	10															5	X		
2,118	Fraxinus pennsylvanica	red ash	18.0			g	g	g	3																4	X		
2,119	Populus balsamifera	balsam poplar	27.0			g	g	f	3	20															4	X		
2,120	Fraxinus pennsylvanica	red ash	27.0			g	g	f	2	20															3	X		
2,121	Populus tremuloides	trembling aspen	23.0			g	g	f	3	10															4	X		
2,122	Populus tremuloides	trembling aspen	26.0			g	g	g	3																4	X		
2,123	Populus tremuloides	trembling aspen	27.0			g	g	g	3	10															4	X		
2,124	Populus tremuloides	trembling aspen	27.0			g	g	g	3	10															4	X		
2,125	Populus tremuloides	trembling aspen	21.0			g	g	g	3																4	X		
2,126	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,127	Populus tremuloides	trembling aspen	17.0			g	g	g	3																4	X		
2,128	Thuja occidentalis	eastern white cedar	11.0	9.0		g	g	g	2																3	X		
2,129	Populus tremuloides	trembling aspen	30.0			g	g	g	3	10															4	X		
2,130	Fraxinus pennsylvanica	red ash	19.0			g	g	f	2	30											x				3	X		
2,131	Populus tremuloides	trembling aspen	19.0			g	g	g	3																4	X		
2,132	Thuja occidentalis	eastern white cedar	14.0	10,6,5		g	g	g	2																3	X		
2,133	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,134	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
2,135	Populus tremuloides	trembling aspen	30.0			g	g	f	3	10															4	X		
2,136	Betula papyrifera	white birch	27.0			g	g	g	3																4	X		
2,137	Betula papyrifera	white birch	17.0			g	g	g	2																3	X		
2,138	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,139	Betula papyrifera	white birch	17.0			g	g	g	2																3	X		
2,140	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
2,141	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2																3	X		
2,142	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,143	Aesculus hippocastanum	horsechestnut	20.0	17.19.15		g	g	g	4		x	x													5		X	
2,144	Acer negundo	Manitoba maple	15.0	13.0		p	p	p	3	70						x	x								4		X	main stem dead
2,145	Betula papyrifera	white birch	28.0			g	g	g	4																5		X	
2,146	Thuja occidentalis	eastern white cedar	22.0	15.15.17		g	g	g	4		x	x													5		X	
2,147	Acer negundo	Manitoba maple	42.0	24,38,21		g	g	g	6											x					7		X	
2,148	Acer negundo	Manitoba maple	25.0	23.0		f	f	f	4		x	x		x						x					5		X	
2,149	Acer negundo	Manitoba maple	58.0			g	g	g	5	10	x	x								x					6		X	
2,150	Acer negundo	Manitoba maple	31.0	26.0		g	g	g	4		x	x								x					5		X	
2,151	Thuja occidentalis	eastern white cedar	26.0	22,22,18,20,15		g	g	g	5																6		X	
2,152	Betula papyrifera	white birch	44.0			g	g	g	6																7		X	
2,153	Thuja occidentalis	eastern white cedar	24.0	18,23		g	g	g	4		x	x													5		X	
2,154	Acer negundo	Manitoba maple	26.0	8.0		g	g	g	3																4		X	
2,155	Thuja occidentalis	eastern white cedar	16.0	14,13		g	g	g	5																6		X	
2,156	Betula papyrifera	white birch	21.0	17,17,21		g	g	g	4	10	x	x						x							5		X	
2,157	Acer negundo	Manitoba maple	17.0	14.0		g	g	g	3		x	x													4		X	
2,158	Thuja occidentalis	eastern white cedar	17.0	15,14		g	g	g	4																5		X	
2,159	Betula papyrifera	white birch	21.0	17,10		g	g	g	4																5		X	
2,160	Fraxinus pennsylvanica	red ash	31.0			p	p	p	4	90															5		X	
2,161	Fraxinus pennsylvanica	red ash	12.0			p	p	p	1																2		X	
2,162	Thuja occidentalis	eastern white cedar	22.0	16.0		g	g	g	4																5		X	
2,163	Acer negundo	Manitoba maple	13.0			g	g	g	2																3		X	
2,164	Thuja occidentalis	eastern white cedar	25.0	21,10,13,14,13		g	g	g	6																7		X	
2,165	Acer negundo	Manitoba maple	21.0	7,9		g	g	g	3		x	x													4		X	
2,166	Fraxinus pennsylvanica	red ash	14.0			p	p	p	2																3		X	
2,167	Thuja occidentalis	eastern white cedar	19.0	15,14,13,17		g	g	g	4																5		X	
2,168	Thuja occidentalis	eastern white cedar	37.0	14,13		g	g	g	3																4		X	
2,169	Thuja occidentalis	eastern white cedar	24.0	23.0		g	g	g	3																4		X	
2,170	Acer negundo	Manitoba maple	18.0	15.0		g	g	g	4		x	x													5		X	
2,171	Acer negundo	Manitoba maple	31.0	15.0		g	g	g	5		x	x													6		X	
2,172	Thuja occidentalis	eastern white cedar	25.0	17.0		g	g	g	4																5		X	
2,173	Thuja occidentalis	eastern white cedar	35.0	15,10		g	g	g	5																6	X		
2,174	Fraxinus pennsylvanica	red ash	22.0			p	p	p	4																5		X	
2,175	Thuja occidentalis	eastern white cedar	26.0	22,15		g	g	g	4																5	X		
2,176	Thuja occidentalis	eastern white cedar	28.0	27.0		g	g	g	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,177	Acer negundo	Manitoba maple	15.0			g	g	g	2				l,e												3		X	
2,178	Thuja occidentalis	eastern white cedar	25.0	21,15		g	g	g	4																5		X	
2,179	Acer negundo	Manitoba maple	15.0	14.0		g	g	g	3		x	x													4		X	
2,180	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2																3		X	
2,181	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3		X	
2,182	Acer negundo	Manitoba maple	80+			f	p	p	7	30						x									8		X	sloughing bark, small cavity
2,183	Betula papyrifera	white birch	20.0	19.0		g	g	g	4																5		X	
2,184	Thuja occidentalis	eastern white cedar	11.0	8.0		g	g	g	2																3		X	
2,185	Acer negundo	Manitoba maple	17.0	13,13		g	g	g	3																4		X	
2,186	Thuja occidentalis	eastern white cedar	19.0	15,14		g	g	g	3																4		X	
2,187	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3		X	
2,188	Betula papyrifera	white birch	12.0			g	g	g	2																3		X	
2,189	Acer negundo	Manitoba maple	30.0			g	g	g	4																5		X	
2,190	Acer negundo	Manitoba maple	21.0	15.0		g	g	g	3									x							4		X	
2,191	Betula papyrifera	white birch	22.0	21,21		g	g	g	4		x	x													5		X	
2,192	Acer negundo	Manitoba maple	21.0			g	g	g	4																5		X	
2,193	Betula papyrifera	white birch	29.0			g	g	g	3																4		X	
2,194	Thuja occidentalis	eastern white cedar	27.0			g	g	g	3																4		X	
2,195	Thuja occidentalis	eastern white cedar	25.0	21.0		g	g	g	4																5		X	
2,196	Betula papyrifera	white birch	32.0	20,19		g	g	g	4		x	x													5		X	
2,197	Pinus sylvestris	Scots pine	40.0			p	p	p	4																5		X	
2,198	Betula papyrifera	white birch	39.0	35.0		g	g	g	6		x	x													7		X	
2,199	Fraxinus pennsylvanica	red ash	55.0			p	p	p	7																8		X	
2,200	Betula papyrifera	white birch	30.0			g	g	g	6																7		X	
2,201	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2	20															3	X		
2,202	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,203	Populus tremuloides	trembling aspen	20.0			g	g	f	2	10															3	X		
2,204	Populus tremuloides	trembling aspen	24.0			g	f	f	2	60															3	X		
2,205	Fraxinus pennsylvanica	red ash	20.0			f	f	p	3	70							x								4	X		
2,206	Populus tremuloides	trembling aspen	20.0			g	g	f	2	50															3	X		
2,207	Populus tremuloides	trembling aspen	16.0			g	f	f	2	40															3	X		
2,208	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
2,209	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2																3	X		
2,210	Populus tremuloides	trembling aspen	21.0			g	g	g	4																5	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,211	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2																3	X		
2,212	Fraxinus pennsylvanica	red ash	16.0			g	g	f	3	30															4	X		
2,213	Populus tremuloides	trembling aspen	14.0			g	g	g	3																4	X		
2,214	Betula papyrifera	white birch	14.0			g	g	g	2																3	X		
2,215	Populus tremuloides	trembling aspen	23.0			g	g	g	3	10															4	X		
2,216	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,217	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,218	Fraxinus pennsylvanica	red ash	28.0			g	f	f	2	40											x				3	X		
2,219	Betula papyrifera	white birch	16.0	18.0		g	g	g	2		x	x													3	X		
2,220	Populus tremuloides	trembling aspen	27.0			g	g	g	2																3	X		
2,221	Betula papyrifera	white birch	18.0	20.0		g	g	g	3																4	X		
2,222	Betula papyrifera	white birch	22.0			g	g	g	3																4	X		
2,223	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
2,224	Fraxinus pennsylvanica	red ash	11.0			g	g	g	2																3	X		
2,225	Populus tremuloides	trembling aspen	14.0			g	g	g	2										x						3	X		
2,226	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,227	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2	40															3	X		
2,228	Betula papyrifera	white birch	23.0			g	g	g	3																4	X		
2,229	Fraxinus pennsylvanica	red ash	27.0			g	g	g	2	10											x				3	X		
2,230	Fraxinus pennsylvanica	red ash	10.0			g	g	g	3	20											x				4	X		
2,231	Populus tremuloides	trembling aspen	21.0			g	g	g	3	10															4	X		
2,232	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
2,233	Populus tremuloides	trembling aspen	22.0			g	g	g	2																3	X		
2,234	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2	30															3	X		
2,235	Malus sp.	apple	15.0	14.0		g	g	g	3																4	X		
2,236	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2	30															3	X		
2,237	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2	40															3	X		
2,238	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2	20															3	X		
2,239	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2	20															3	X		
2,240	Fraxinus pennsylvanica	red ash	18.0	8.0		g	g	g	2	20															3	X		
2,241	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
2,242	Fraxinus pennsylvanica	red ash	10.0			g	g	g	2																3	X		
2,243	Betula papyrifera	white birch	25.0			g	g	g	3	10															4	X		
2,244	Salix sp.	willow	23.0			g	g	g	4																5	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,245	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,246	Populus tremuloides	trembling aspen	24.0	10.0		g	f	f	3	30															4	X		one stem dead
2,247	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
2,248	Fraxinus pennsylvanica	red ash	20.0	16,11		g	f	f	4	20															5	X		
2,249	Populus tremuloides	trembling aspen	11.0			g	f	f	2																3	X		
2,250	Populus tremuloides	trembling aspen	19.0			f	g	p	2	60															3	X		
2,251	Fraxinus pennsylvanica	red ash	16.0	12.0		g	g	g	3											x					4	X		
2,252	Betula papyrifera	white birch	17.0			g	g	g	4																5	X		
2,253	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,254	Fraxinus pennsylvanica	red ash	10.0			g	g	f	2																3	X		
2,255	Populus tremuloides	trembling aspen	18.0			g	g	g	2																3	X		
2,256	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
2,257	Betula papyrifera	white birch	14.0			g	g	g	3																4	X		
2,258	Populus tremuloides	trembling aspen	10.0			g	g	f	2	40															3	X		
2,259	Populus tremuloides	trembling aspen	16.0			g	f	f	2	50			l,e												3	X		
2,260	Fraxinus pennsylvanica	red ash	16.0			g	g	f	2	30															3	X		
2,261	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4	X		
2,262	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
2,263	Populus tremuloides	trembling aspen	28.0			g	g	g	4				l,e												5	X		
2,264	Populus tremuloides	trembling aspen	13.0			g	f	f	2				l,e												3	X		
2,265	Betula papyrifera	white birch	16.0			g	g	g	3	20															4	X		
2,266	Betula papyrifera	white birch	16.0			g	g	g	2																3	X		
2,267	Fraxinus pennsylvanica	red ash	22.0			g	g	f	3	20															4	X		
2,268	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,269	Populus tremuloides	trembling aspen	22.0			g	g	g	4																5	X		
2,270	Ulmus americana	white elm	14.0			g	g	g	3																4	X		
2,271	Populus tremuloides	trembling aspen	22.0			g	g	g	4																5	X		
2,272	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
2,273	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,274	Populus tremuloides	trembling aspen	24.0			g	g	g	3																4	X		
2,275	Fraxinus pennsylvanica	red ash	27.0			g	g	g	4																5	X		
2,276	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2				l,e												3	X		
2,277	Betula papyrifera	white birch	19.0			g	g	g	3																4	X		
2,278	Betula papyrifera	white birch	13.0	10.0		g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,279	Populus tremuloides	trembling aspen	34.0			g	g	g	4																5	X		
2,280	Populus tremuloides	trembling aspen	40.0			g	g	g	5																6	X		
2,281	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,282	Fraxinus pennsylvanica	red ash	22.0			g	g	f	3	20															4	X		
2,283	Betula papyrifera	white birch	14.0	12.0		g	g	g	2		x	x													3	X		
2,284	Betula papyrifera	white birch	10.0			g	g	g	2																3	X		
2,285	Betula papyrifera	white birch	13.0			g	g	g	2																3	X		
2,286	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,287	Thuja occidentalis	eastern white cedar	12.0	10,10,11,8,9		g	f	g	2																3	X		
2,288	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,289	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,290	Betula papyrifera	white birch	14.0			g	g	g	2				l,s												3	X		
2,291	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,292	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,293	Fraxinus pennsylvanica	red ash	26.0			g	f	f	3	30															4	X		
2,294	Populus tremuloides	trembling aspen	22.0			g	g	g	3	10															4	X		
2,295	Populus tremuloides	trembling aspen	17.0			g	g	f	2																3	X		
2,296	Fraxinus pennsylvanica	red ash	14.0			g	g	g	3																4	X		
2,297	Populus tremuloides	trembling aspen	21.0			g	g	g	2																3	X		
2,298	Populus tremuloides	trembling aspen	28.0			g	g	g	3																4	X		
2,299	Populus tremuloides	trembling aspen	26.0			g	g	g	3																4	X		
2,300	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2																3	X		
2,301	Populus tremuloides	trembling aspen	30.0	23.0		g	g	g	4																5	X		
2,302	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
2,303	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
2,304	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
2,305	Populus tremuloides	trembling aspen	16.0	14.0		g	g	g	4		x	x													5	X		
2,306	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
2,307	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
2,308	Populus tremuloides	trembling aspen	13.0			g	g	g	3																4	X		
2,309	Populus tremuloides	trembling aspen	16.0			g	g	g	4																5	X		
2,310	Populus tremuloides	trembling aspen	21.0			g	g	g	3																4	X		
2,311	Populus tremuloides	trembling aspen	33.0			g	g	g	4																5	X		
2,312	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,313	Populus tremuloides	trembling aspen	23.0			g	g	g	4																5	X		
2,314	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
2,315	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
2,316	Populus tremuloides	trembling aspen	22.0	21,19		g	g	g	4																5	X		
2,317	Populus tremuloides	trembling aspen	11.0			g	g	g	2																3	X		
2,318	Robinia pseudoacacia	black locust	24.0			g	g	g	4																5	X		
2,319	Robinia pseudoacacia	black locust	11.0			g	g	g	2																3	X		
2,320	Robinia pseudoacacia	black locust	15.0	15.0		g	g	g	4																5	X		
2,321	Acer negundo	Manitoba maple	16.0	9,12		g	g	g	4																5	X		
2,322	Acer negundo	Manitoba maple	16.0	16.0		g	g	g	2				l,e												3	X		
2,323	Acer negundo	Manitoba maple	20.0			g	g	g	3																4	X		
2,324	Acer negundo	Manitoba maple	14.0			g	g	g	2																3	X		
2,325	Salix sp.	willow	23.0	14.0		g	g	g	4																5	X		
2,326	Salix sp.	willow	13.0			g	g	g	2																3	X		
2,327	Salix sp.	willow	17.0	12.0		g	g	g	3		x	x													4	X		
2,328	Acer negundo	Manitoba maple	26.0	19,21		f	f	f	7		x	x				x				x					8	X		
2,329	Acer negundo	Manitoba maple	38.0			g	g	g	6																7	X		
2,330	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3	X		
2,331	Populus tremuloides	trembling aspen	21.0			g	g	g	4																5	X		
2,332	Fraxinus pennsylvanica	red ash	11.0	8.0		f	f	f	2																3	X		
2,333	Populus tremuloides	trembling aspen	31.0	24.0		f	f	f	4																5	X		
2,334	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
2,335	Populus tremuloides	trembling aspen	34.0			g	g	g	5																6	X		
2,336	Populus tremuloides	trembling aspen	31.0			g	g	g	4																5	X		
2,337	Populus tremuloides	trembling aspen	25.0			g	g	g	4																5	X		
2,338	Populus tremuloides	trembling aspen	16.0			g	g	g	2																3	X		
2,339	Populus tremuloides	trembling aspen	17.0			g	g	g	4																5	X		
2,340	Populus tremuloides	trembling aspen	29.0			g	g	g	4																5	X		
2,341	Populus tremuloides	trembling aspen	22.0			g	g	g	3																4	X		
2,342	Fraxinus pennsylvanica	red ash	27.0			g	g	g	4																5	X		
2,343	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
2,344	Populus tremuloides	trembling aspen	26.0	12.0		g	g	g	6																7	X		
2,345	Populus tremuloides	trembling aspen	28.0			g	g	g	7																8	X		
2,346	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,347	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
2,348	Populus tremuloides	trembling aspen	29.0			g	g	g	5																6	X		
2,349	Fraxinus pennsylvanica	red ash	16.0			f	f	f	2																3	X		
2,350	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
2,351	Populus tremuloides	trembling aspen	16.0			g	g	g	3																4	X		
2,352	Fraxinus pennsylvanica	red ash	15.0			g	g	g	4																5	X		
2,353	Fraxinus pennsylvanica	red ash	11.0			f	f	f	1																2	X		
2,354	Fraxinus pennsylvanica	red ash	11.0			p	p	p	2																3	X		
2,355	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,356	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
2,357	Betula papyrifera	white birch	14.0			g	g	g	4																5	X		
2,358	Populus tremuloides	trembling aspen	21.0			g	g	g	5																6	X		
2,359	Populus tremuloides	trembling aspen	28.0			g	g	g	6																7	X		
2,360	Fraxinus pennsylvanica	red ash	22.0			f	f	f	4																5	X		
2,361	Fraxinus pennsylvanica	red ash	24.0	22,22		f	f	f	6	x	x														7	X		
2,362	Populus tremuloides	trembling aspen	13.0			g	g	g	2																3	X		
2,363	Populus tremuloides	trembling aspen	27.0			f	f	f	4																5	X		
2,364	Fraxinus pennsylvanica	red ash	26.0	15.0		f	f	f	4																5	X		
2,365	Fraxinus pennsylvanica	red ash	28.0			f	f	f	4																5	X		
2,366	Fraxinus pennsylvanica	red ash	25.0			f	f	f	4																5	X		
2,367	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,368	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,369	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,370	Thuja occidentalis	eastern white cedar	14.0			g	g	g	3																4	X		
2,371	Betula papyrifera	white birch	18.0	15.0		g	g	g	4																5	X		
2,372	Populus tremuloides	trembling aspen	25.0			g	g	g	4																5	X		
2,373						g	g	g																	1	X		
2,374	Populus tremuloides	trembling aspen	15.0			g	g	g	3																4	X		
2,375	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,376	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,377	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,378	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,379	Thuja occidentalis	eastern white cedar	12.0			g	g	g	3																4	X		
2,380	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,381	Thuja occidentalis	eastern white cedar	16.0			g	g	g	2															3	X		
2,382	Thuja occidentalis	eastern white cedar	12.0	9.0		g	g	g	2															3	X		
2,383	Thuja occidentalis	eastern white cedar	14.0			g	g	g	4															5	X		
2,384	Populus tremuloides	trembling aspen	16.0			g	g	g	3															4	X		
2,385	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2															3	X		
2,386	Thuja occidentalis	eastern white cedar	16.0	10.0		g	g	g	2															3	X		
2,387	Thuja occidentalis	eastern white cedar	15.0	14.0		g	g	g	2															3	X		
2,388	Thuja occidentalis	eastern white cedar	11.0	9.0		g	g	g	2															3	X		
2,389	Fraxinus pennsylvanica	red ash	26.0			f	f	f	4															5	X		
2,390	Betula papyrifera	white birch	15.0			g	g	g	2															3	X		
2,391	Thuja occidentalis	eastern white cedar	11.0	8.0		g	g	g	2															3	X		
2,392	Betula papyrifera	white birch	14.0			g	g	g	2															3	X		
2,393	Fraxinus pennsylvanica	red ash	20.0			f	f	f	3															4	X		
2,394	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3	X		
2,395	Populus tremuloides	trembling aspen	22.0			g	g	g	2															3	X		
2,396	Populus tremuloides	trembling aspen	26.0			g	g	g	4															5	X		
2,397	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2															3	X		
2,398	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3	X		
2,399	Fraxinus pennsylvanica	red ash	23.0			g	g	g	4															5	X		
2,400	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2															3	X		
2,401	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3	X		
2,402	Thuja occidentalis	eastern white cedar	14.0			g	g	g	3															4	X		
2,403	Betula papyrifera	white birch	13.0			g	g	g	3															4	X		
2,404	Betula papyrifera	white birch	15.0	12.0		g	g	g	3	x	x													4	X		
2,405	Betula papyrifera	white birch	19.0			g	g	g	4															5	X		
2,406	Betula papyrifera	white birch	24.0			g	g	g	3															4	X		
2,407	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2															3	X		
2,408	Fraxinus pennsylvanica	red ash	16.0			f	f	f	4															5	X		
2,409	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2															3	X		
2,410	Populus tremuloides	trembling aspen	31.0			g	g	g	4															5	X		
2,411	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1															2	X		
2,412	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1															2	X		
2,413	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1															2	X		
2,414	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1															2	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,415	Thuja occidentalis	eastern white cedar	12.0			p	p	p	1																2	X		
2,416	Fraxinus pennsylvanica	red ash	22.0			g	g	g	3																4	X		
2,417	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1																2	X		
2,418	Populus tremuloides	trembling aspen	27.0			g	g	g	4																5	X		
2,419	Betula papyrifera	white birch	20.0			g	g	g	3																4	X		
2,420	Betula papyrifera	white birch	14.0			g	g	g	2																3	X		
2,421	Thuja occidentalis	eastern white cedar	12.0			g	g	g	1																2	X		
2,422	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1																2	X		
2,423	Betula papyrifera	white birch	17.0			g	g	g	4																5	X		
2,424	Thuja occidentalis	eastern white cedar	13.0			g	g	g	3																4	X		
2,425	Populus tremuloides	trembling aspen	27.0			g	g	g	4																5	X		
2,426	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,427	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2																3	X		
2,428	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,429	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,430	Populus tremuloides	trembling aspen	31.0			g	g	g	4																5	X		
2,431	Fraxinus pennsylvanica	red ash	17.0			p	p	p	3																4	X		
2,432	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,433	Betula papyrifera	white birch	18.0			g	g	g	4																5	X		
2,434	Populus tremuloides	trembling aspen	22.0			g	g	g	4																5	X		
2,435	Populus tremuloides	trembling aspen	26.0			p	p	p	4	90															5	X		
2,436	Fraxinus pennsylvanica	red ash	40.0			f	f	f	6																7	X		
2,437	Populus tremuloides	trembling aspen	31.0			g	g	g	6																7	X		
2,438	Populus tremuloides	trembling aspen	27.0			g	g	g	5																6	X		
2,439	Thuja occidentalis	eastern white cedar	15.0			g	g	g	3																4	X		
2,440	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,441	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,442	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,443	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
2,444	Betula papyrifera	white birch	15.0			g	g	g	3																4	X		
2,445	Populus tremuloides	trembling aspen	14.0			f	f	f	2	10															3	X		
2,446	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3	X		
2,447	Acer saccharinum	silver maple	14.0			f	f	f	2									x							3	X		
2,448	Populus tremuloides	trembling aspen	19.0			g	g	g	4																5	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																		Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,449	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30														3	X		
2,450	Betula papyrifera	white birch	17.0			g	g	g	4															5	X		
2,451	Populus tremuloides	trembling aspen	27.0			g	g	g	4															5	X		
2,452	Populus tremuloides	trembling aspen	25.0			f	f	f	4					x		x		x						5	X		
2,453	Populus tremuloides	trembling aspen	31.0			p	p	p	4	90														5	X		
2,454	Populus tremuloides	trembling aspen	31.0			g	g	g	5															6	X		
2,455	Populus tremuloides	trembling aspen	27.0			p	p	p	4															5	X		
2,456	Populus tremuloides	trembling aspen	36.0			p	f	f	5	30				x										6	X		
2,457	Fraxinus pennsylvanica	red ash	36.0	30.0		p	p	p	7	90	x	x								x				8	X		
2,458	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2															3	X		
2,459	Populus tremuloides	trembling aspen	35.0			g	g	g	5				l,s											6	X		
2,460	Populus tremuloides	trembling aspen	25.0			g	g	g	4															5	X		
2,461	Fraxinus pennsylvanica	red ash	18.0			p	p	p	2	90			m,s											3	X		
2,462	Populus tremuloides	trembling aspen	24.0			g	g	g	4															5	X		
2,463	Populus tremuloides	trembling aspen	23.0			g	f	f	4															5	X		
2,464	Populus tremuloides	trembling aspen	27.0			g	f	f	4															5	X		
2,465	Populus tremuloides	trembling aspen	18.0			g	g	g	4															5	X		
2,466	Populus tremuloides	trembling aspen	30.0			f	f	f	4	30														5	X		
2,467	Populus tremuloides	trembling aspen	15.0			g	f	f	3	30														4	X		
2,468	Populus tremuloides	trembling aspen	31.0			p	p	p	4	70														5	X		sloughing bark
2,469	Fraxinus pennsylvanica	red ash	17.0			f	f	f	2	30										x	x			3	X		
2,470	Fraxinus pennsylvanica	red ash	18.0			f	f	p	3	70										x	x			4	X		
2,471	Fraxinus pennsylvanica	red ash	21.0			f	f	f	4	30														5	X		
2,472	Fraxinus pennsylvanica	red ash	18.0			p	p	p	4	70														5	X		
2,473	Fraxinus pennsylvanica	red ash	12.0			f	f	f	3															4	X		
2,474	Populus tremuloides	trembling aspen	20.0	15.0		g	g	g	4		x	x												5	X		
2,475	Ulmus americana	white elm	15.0			g	g	g	2															3	X		
2,476	Populus tremuloides	trembling aspen	19.0			p	p	p	2	70														3	X		
2,477	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2															3	X		
2,478	Populus tremuloides	trembling aspen	27.0			g	g	g	4															5	X		
2,479	Populus tremuloides	trembling aspen	25.0			g	f	f	4															5	X		
2,480	Fraxinus pennsylvanica	red ash	26.0			g	g	g	4															5	X		
2,481	Fraxinus pennsylvanica	red ash	21.0			f	f	f	3															4	X		
2,482	Acer negundo	Manitoba maple	18.0	14,14		g	g	g	2		x	x												3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,483	Populus tremuloides	trembling aspen	19.0			g	g	g	2																3	X		
2,484	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
2,485	Populus tremuloides	trembling aspen	16.0			g	g	g	4																5	X		
2,486	Populus tremuloides	trembling aspen	28.0			g	g	g	3																4	X		
2,487	Populus tremuloides	trembling aspen	20.0	14,10		g	g	g	3																4	X		
2,488	Fraxinus pennsylvanica	red ash	25.0	24,10		f	f	f	4																5	X		
2,489	Acer negundo	Manitoba maple	21.0			g	g	g	4																5	X		
2,490	Populus tremuloides	trembling aspen	25.0	15.0		p	p	p	5	90	x					x									6	X		
2,491	Acer negundo	Manitoba maple	46.0	18,6		p	f	f	6	60										x					7	X		
2,492	Acer negundo	Manitoba maple	27.0	23,26		g	g	g	4		x	x								x					5	X		
2,493	Fraxinus pennsylvanica	red ash	15.0			g	g	g	2																3	X		
2,494	Populus tremuloides	trembling aspen	17.0			f	f	f	4																5	X		
2,495	Fraxinus pennsylvanica	red ash	16.0	14.0		p	p	p	2	30	x	x													3	X		
2,496	Pinus strobus	white pine	33.0			g	g	g	4																5	X		
2,497	Fraxinus pennsylvanica	red ash	16.0			f	f	f	4	30															5	X		
2,498	Fraxinus pennsylvanica	red ash	13.0			f	f	f	3	30															4	X		
2,499	Acer negundo	Manitoba maple	33.0			g	g	g	4											x					5	X		
2,500	Acer negundo	Manitoba maple	28.0	12.0		g	g	g	5			x	x							x					6	X		
2,501	Thuja occidentalis	eastern white cedar	14.0	10,8		g	g	g	4																5	X		
2,502	Thuja occidentalis	eastern white cedar	14.0	12.0		g	g	g	2																3	X		
2,503	Fraxinus pennsylvanica	red ash	23.0			g	g	g	2																3	X		
2,504	Thuja occidentalis	eastern white cedar	18.0	14.0		g	g	g	4																5	X		
2,505	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,506	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
2,507	Thuja occidentalis	eastern white cedar	10.0	12,7		g	g	g	2																3	X		
2,508	Thuja occidentalis	eastern white cedar	12.0	11,8,9		g	g	g	2																3	X		
2,509	Populus tremuloides	trembling aspen	10.0			g	g	g	2																3	X		
2,510	Populus tremuloides	trembling aspen	12.0			g	g	g	2																3	X		
2,511	Populus tremuloides	trembling aspen	27.0			p	p	p	4				l,w												5	X		
2,512	Fraxinus pennsylvanica	red ash	18.0	15.0		p	p	p	3	90	x	x				x				x					4	X		
2,513	Fraxinus pennsylvanica	red ash	15.0			f	f	f	3																4	X		
2,514	Populus tremuloides	trembling aspen	18.0			g	g	g	4																5	X		
2,515	Populus tremuloides	trembling aspen	21.0			g	g	g	3								x			x					4	X		
2,516	Populus tremuloides	trembling aspen	13.0			f	f	f	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,517	Populus tremuloides	trembling aspen	17.0			f	f	f	2	30															3	X		
2,518	Populus tremuloides	trembling aspen	24.0			g	g	g	4	10															5	X		
2,519	Fraxinus pennsylvanica	red ash	11.0			f	f	f	2																3	X		
2,520	Populus tremuloides	trembling aspen	20.0			g	g	g	4																5	X		
2,521	Acer negundo	Manitoba maple	28.0			f	f	f	4				l,e							x					5	X		
2,522	Fraxinus pennsylvanica	red ash	12.0			f	f	f	2																3	X		
2,523	Populus tremuloides	trembling aspen	28.0			g	g	g	4																5	X		
2,524	Populus tremuloides	trembling aspen	24.0			g	g	g	4																5	X		
2,525	Populus tremuloides	trembling aspen	12.0			g	g	g	3																4	X		
2,526	Fraxinus pennsylvanica	red ash	34.0			f	f	f	6																7	X		
2,527	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
2,528	Populus tremuloides	trembling aspen	39.0			g	g	g	5																6	X		
2,529	Populus tremuloides	trembling aspen	33.0			f	f	f	6									x		x					7	X		
2,530	Populus tremuloides	trembling aspen	17.0			g	g	g	3																4	X		
2,531	Populus tremuloides	trembling aspen	21.0			g	g	g	3																4	X		
2,532	Fraxinus pennsylvanica	red ash	17.0	15.0		f	f	f	2	30															3	X		
2,533	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2																3	X		
2,534	Fraxinus pennsylvanica	red ash	21.0			f	f	f	4											x					5	X		
2,535	Fraxinus pennsylvanica	red ash	22.0			f	f	f	4																5	X		
2,536	Fraxinus pennsylvanica	red ash	14.0	4.0		f	f	f	2																3	X		
2,537	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
2,538	Populus tremuloides	trembling aspen	20.0			p	p	p	4	30															5	X		
2,539	Populus tremuloides	trembling aspen	29.0			g	g	g	4																5	X		
2,540	Populus tremuloides	trembling aspen	21.0			g	g	g	2																3	X		
2,541	Populus tremuloides	trembling aspen	27.0			g	g	g	4																5	X		
2,542	Fraxinus pennsylvanica	red ash	16.0			f	f	f	2	30															3	X		
2,543	Fraxinus pennsylvanica	red ash	13.0			f	f	f	2	30															3	X		
2,544	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2	30															3	X		
2,545	Fraxinus pennsylvanica	red ash	15.0			p	p	p	2											x	x				3	X		
2,546	Fraxinus pennsylvanica	red ash	17.0			p	p	p	1																2	X		
2,547	Fraxinus pennsylvanica	red ash	15.0			p	p	p	3																4	X		
2,548	Populus tremuloides	trembling aspen	28.0			g	g	g	4	30															5	X		
2,549	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3	X		
2,550	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,551	Populus tremuloides	trembling aspen	28.0			g	g	g	4																5	X		
2,552	Populus tremuloides	trembling aspen	25.0			g	g	g	4																5	X		
2,553	Fraxinus pennsylvanica	red ash	36.0			f	f	f	4	10															5	X		
2,554	Populus tremuloides	trembling aspen	27.0			f	f	f	5																6	X		
2,555	Fraxinus pennsylvanica	red ash	34.0			f	f	f	5																6	X		
2,556	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2	10															3	X		
2,557	Populus tremuloides	trembling aspen	17.0			g	g	g	2																3	X		
2,558	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
2,559	Populus tremuloides	trembling aspen	30.0			g	g	g	5																6	X		
2,560	Populus tremuloides	trembling aspen	20.0			g	g	g	4																5	X		
2,561	Populus tremuloides	trembling aspen	15.0			f	f	f	2																3	X		
2,562	Fraxinus pennsylvanica	red ash	21.0			f	f	f	3																4	X		
2,563	Fraxinus pennsylvanica	red ash	15.0			f	f	f	2	10															3	X		
2,564	Fraxinus pennsylvanica	red ash	17.0			f	f	f	3	10															4	X		
2,565	Betula papyrifera	white birch	14.0			g	g	g	2																3	X		
2,566	Populus tremuloides	trembling aspen	32.0			g	g	g	4																5	X		
2,567	Fraxinus pennsylvanica	red ash	12.0			g	g	g	2																3	X		
2,568	Populus tremuloides	trembling aspen	14.0			g	g	g	2																3	X		
2,569	Fraxinus pennsylvanica	red ash	14.0			g	g	g	2																3	X		
2,570	Fraxinus pennsylvanica	red ash	23.0	22.0		f	f	f	4	30	x	x													5	X		
2,571	Populus tremuloides	trembling aspen	15.0			g	g	g	2																3	X		
2,572	Populus tremuloides	trembling aspen	15.0			f	f	f	2																3	X		
2,573	Thuja occidentalis	eastern white cedar	12.0			g	g	g	1																2	X		
2,574	Thuja occidentalis	eastern white cedar	15.0			g	g	g	4																5	X		
2,575	Fraxinus pennsylvanica	red ash	14.0			f	f	f	2	30															3	X		
2,576	Populus tremuloides	trembling aspen	29.0			g	g	g	5																6	X		
2,577	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,578	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,579	Thuja occidentalis	eastern white cedar	18.0			g	g	g	2																3	X		
2,580	Populus tremuloides	trembling aspen	30.0			g	g	g	5																6	X		
2,581	Populus tremuloides	trembling aspen	24.0			g	g	g	4				l,n												5	X		
2,582	Populus tremuloides	trembling aspen	27.0			g	g	g	3																4	X		
2,583	Thuja occidentalis	eastern white cedar	11.0			g	g	g	1																2	X		
2,584	Thuja occidentalis	eastern white cedar	17.0			g	g	g	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,585	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,586	Fraxinus pennsylvanica	red ash	13.0			g	g	g	2																3	X		
2,587	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,588	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,589	Populus tremuloides	trembling aspen	22.0			g	g	g	4																5	X		
2,590	Populus tremuloides	trembling aspen	24.0			g	g	g	4																5	X		
2,591	Fraxinus pennsylvanica	red ash	16.0			g	g	g	4																5	X		
2,592	Thuja occidentalis	eastern white cedar	18.0	11,15,1,8,4		g	g	g	4																5	X		
2,593	Betula papyrifera	white birch	18.0	15,10		g	g	g	4																5	X		
2,594	Betula papyrifera	white birch	18.0	15.0		g	g	g	4																5	X		
2,595	Populus tremuloides	trembling aspen	29.0			g	g	g	2		x	x													3	X		
2,596	Populus tremuloides	trembling aspen	21.0			g	g	g	4																5	X		
2,597	Populus tremuloides	trembling aspen	28.0	18.0		g	g	g	3																4	X		
2,598	Populus tremuloides	trembling aspen	38.0			g	g	g	5																6	X		
2,599	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,600	Populus tremuloides	trembling aspen	30.0			g	g	g	3																4	X		
2,601	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,602	Thuja occidentalis	eastern white cedar	15.0			g	g	g	5																6	X		
2,603	Populus tremuloides	trembling aspen	19.0			g	g	g	4																5	X		
2,604	Thuja occidentalis	eastern white cedar	19.0			g	g	g	3																4	X		
2,605	Populus tremuloides	trembling aspen	22.0			g	g	g	3																4	X		
2,606	Populus tremuloides	trembling aspen	25.0			g	g	g	4																5	X		
2,607	Thuja occidentalis	eastern white cedar	12.0	11,10,5,8		g	g	g	4																5	X		
2,608	Populus tremuloides	trembling aspen	27.0			g	g	g	4																5	X		
2,609	Thuja occidentalis	eastern white cedar	15.0			g	g	g	2																3	X		
2,610	Populus tremuloides	trembling aspen	27.0			g	g	g	4																5	X		
2,611	Populus tremuloides	trembling aspen	18.0			g	g	g	3																4	X		
2,612	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,613	Populus tremuloides	trembling aspen	25.0			g	g	g	4																5	X		
2,614	Thuja occidentalis	eastern white cedar	12.0	5.0		g	g	g	2																3	X		
2,615	Populus tremuloides	trembling aspen	18.0			g	g	g	4																5	X		
2,616	Populus tremuloides	trembling aspen	26.0			g	g	g	4																5	X		
2,617	Populus tremuloides	trembling aspen	29.0			g	g	g	4																5	X		
2,618	Fraxinus pennsylvanica	red ash	20.0			g	g	g	3																4	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,619	Fraxinus pennsylvanica	red ash	27.0			f	f	f	4																5	X		
2,620	Thuja occidentalis	eastern white cedar	12.0	10,10,5,5,4		g	g	g	2																3	X		
2,621	Thuja occidentalis	eastern white cedar	10.0	8.0		g	g	g	2																3	X		
2,622	Thuja occidentalis	eastern white cedar	11.0	5.0		g	g	g	2		x	x													3	X		
2,623	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,624	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,625	Thuja occidentalis	eastern white cedar	15.0	10,14		g	g	g	3																4	X		
2,626	Thuja occidentalis	eastern white cedar	15.0	5.0		g	g	g	3																4	X		
2,627	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,628	Thuja occidentalis	eastern white cedar	10.0			g	g	g	2																3	X		
2,629	Populus tremuloides	trembling aspen	24.0			g	g	g	4																5	X		
2,630	Thuja occidentalis	eastern white cedar	18.0			g	g	g	3																4	X		
2,631	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,632	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,633	Thuja occidentalis	eastern white cedar	11.0			g	g	g	4																5	X		
2,634	Betula papyrifera	white birch	33.0			g	g	g	4																5	X		
2,635	Betula papyrifera	white birch	19.0	18.0		g	g	g	5		x	x													6	X		
2,636	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,637	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,638	Fraxinus pennsylvanica	red ash	21.0			g	g	g	4																5	X		
2,639	Fraxinus pennsylvanica	red ash	31.0			g	g	g	4																5	X		
2,640	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,641	Thuja occidentalis	eastern white cedar	13.0			g	g	g	2																3	X		
2,642	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,643	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,644	Thuja occidentalis	eastern white cedar	14.0			g	g	g	2																3	X		
2,645	Fraxinus pennsylvanica	red ash	21.0			g	g	g	3																4	X		
2,646	Fraxinus pennsylvanica	red ash	18.0			g	g	g	2																3	X		
2,647	Fraxinus pennsylvanica	red ash	31.0			g	g	g	4																5	X		
2,648	Fraxinus pennsylvanica	red ash	32.0			g	g	g	4																5	X		
2,649	Populus tremuloides	trembling aspen	17.0			g	g	g	3																4	X		
2,650	Betula papyrifera	white birch	17.0	15.0		g	g	g	2																3	X		
2,651	Betula papyrifera	white birch	22.0			g	g	g	3																4	X		
2,652	Betula papyrifera	white birch	11.0			g	g	g	2																3	X		

Project: TA8942
Client: Hatch
Collectors: LMC, TME, HMP, JPP

Date: August 21, 22, 26 and September 4, 5, and 13, 2019
Area: Town of Innisfil, Lakeshore Waste Water Treatment Plant

TAG#	Scientific Name	Common Name	DBH (cm)	Additional Stems	Estimation of DBH (x)	CONDITION																			Management			COMMENTS
						TI	CS	CV	Radial Dripline (m)	Canopy Die Back (%)	Co-dominant stem	Included Bark	Lean, Dir.	Fungus	Insects	Cavity	Rot	Wound	Frost Crack	Epicormic	EAB	Canker	Hazard	ESA	Minimum TPZ (m)	Retain	Remove	
2,653	Fraxinus pennsylvanica	red ash	23.0			g	g	g	4																5	X		
2,654	Thuja occidentalis	eastern white cedar	11.0			g	g	g	2																3	X		
2,655	Fraxinus pennsylvanica	red ash	16.0			g	g	g	2																3	X		
2,656	Betula papyrifera	white birch	23.0	21,18		g	g	g	2																3	X		
2,657	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		
2,658	Betula papyrifera	white birch	17.0			g	g	g	3																4	X		
2,659	Thuja occidentalis	eastern white cedar	12.0			g	g	g	2																3	X		