

Appendix B Environmental Context











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Project Name: Innisfil Transportation Master Plan Update

Submitted To: Town of Innisfil

Submitted By: R.J. Burnside & Associates Limited

The Town of Innisfil (Town) has initiated a Master Transportation Plan Update under the Municipal Class Environmental Assessment (EA) process to assess future land transportation needs.

As part of the Master Plan process, R.J. Burnside & Associates Limited (Burnside) completed a natural heritage information review to identify documented natural heritage features and potential constraints to transportation networks and services in the Town. Relevant federal and provincial environmental policy and regulation, municipal planning documents and available background and database information were reviewed to characterize the natural heritage features of the Town. This information was used to map the natural features of the Town.

Potential impacts to the natural heritage conditions of the Study Area will be assessed through the evaluation of the alternative solutions determined through the EA process and documented in the Master Plan document.

1.0 Natural Heritage

Environmental features, protected properties and natural features have been identified based on a review of available provincial and municipal databases, including the following existing data sources:

- Town of Innisfil Official Plan (Consolidated 2018).
- County of Simcoe Official Plan (2018).
- · Greenbelt Plan.
- Lake Simcoe Protection Plan (LSPP).
- Growth Plan for the Greater Golden Horseshoe.
- Ministry of Natural Resources and Forestry, Land Information Ontario (LIO) Make a Map: Natural Heritage Areas.
- Natural Heritage Information Centre ("NHIC") database.
- Ministry of the Environment, Conservation and Parks (MECP): Source Water Protection Information Atlas.
- Department of Fisheries and Oceans (DFO), Aquatic species at risk map.





- Nottawasaga Valley Conservation Authority (NVCA) and Lake Simcoe Region Conservation Authority (LSRCA) online mapping.
- Ontario Nature Ontario Reptile & Amphibian Atlas.
- Birds Canada Ontario Breeding Bird Atlas.

The following sections document the existing natural features of significance and their implications for the development of transportation facilities.

1.1 Protected Properties

Protected properties are properties in public ownership that are protected for the purposes of conservation and nature-based recreation. No such properties were identified within the Town.

1.2 Natural Heritage Systems

The Town of Innisfil is subject to a variety of land use plans and policies that shape how transportation systems are to be developed within, and around, natural features. The Provincial Policy Statement, Provincial Growth Plan, Greenbelt Plan, Lake Simcoe Protection Plan, Town and Regional Official Plans all include policies to protect significant natural features, including the following:

- Provincially Significant Wetlands.
- Coastal Wetlands.
- Significant Woodlands.
- Significant Valleylands.
- Significant Wildlife Habitat.
- Significant Areas of Natural and Scientific Interest (ANSIs).
- Fish Habitat.
- Habitat of Endangered and Threatened Species.

With respect to lands within the Greenbelt Plan, the following additional natural features are protected:

- All wetlands.
- All Life Science ANSIs.
- Habitat of special concern species.
- Sand barrens, savannahs and tallgrass prairies.
- Alvars.
- Permanent and intermittent streams.
- Lakes (and their littoral zones).
- Seepage areas and springs.

With respect to lands within the Lake Simcoe Protection Plan, the natural areas abutting Lake Simcoe are also protected.





Although policies exist to protect these features, not all features have been identified. For example, habitats of species at risk are not always known. However, the majority of the listed features are protected within Natural Heritage Systems identified through the various provincial plans and upper and lower tier municipal Official Plans. A Natural Heritage Systems is a network of interconnected natural features designed to identify and protect features at the landscape scale. The various Natural Heritage Systems developed under provincial and municipal plans are intended to protect the significant natural features listed above, even where all have not been specifically identified.

Figure 1 of the attached illustrates the following Natural Heritage Systems:

- Natural Heritage System and Urban River Valleys of the Provincial Greenbelt Plan.
- Natural Heritage System of the Provincial Growth Plan.
- Core Areas of the Greenlands System as mapped under Simcoe County's Official Plan.
- Lake Simcoe Protection Plan Area.

Most of the Town of Innisfil's Natural Heritage policies and mapping mirror that of the various other provincial Plans.

New and expanded infrastructure is typically permitted within designated Natural Heritage Systems and associated land use designations, in conjunction with approvals under the *Environmental Assessment Act*. Under the Greenbelt Plan, only infrastructure deemed necessary to the public interest is permitted within the Protected Countryside Area designation and only when all other alternatives have been considered. Other provincial plan and official plan policies include similar requirements.

1.3 Select Key Natural Features

Select natural features of the Natural Heritage Systems are described in the following sections where mapping exists. Other natural features may exist beyond the Natural Heritage Systems and may be identified through field studies carried out during detailed planning and design exercises.

1.3.1 Areas of Natural and Scientific Interest (ANSI)

ANSIs are areas of land and water containing unique natural landscapes or features. These features have been scientifically identified by the Province of Ontario as having life or earth science values related to protection, scientific study or education.

Only Life Science ANSIs are identified in the Town. Life science ANSIs represent biodiversity and natural landscapes. They include specific types of forests, valleys, prairies, wetlands, native plants, native animals and their supportive environments. Life science ANSIs contain relatively undisturbed vegetation and landforms and their associated species and communities. ANSI of provincial and regional significance present in the Town, include:





ANSIs - Life Science:

- Holland River Marsh (Provincial).
- DeGrassi Point Prairie Relict (Provincial).

The Natural Heritage System and ANSIs are illustrated in Figure 1 and Figure 2, respectively, of the attached.

1.3.2 Wetlands

The Province of Ontario identifies wetlands that have been evaluated using the Ontario Wetland Evaluation System as provincially significant or non-provincially significant, as well as wetlands that have not been evaluated, but have been mapped using other procedures. Wetlands are protected through policies of the various provincial plans and Official Plans in effect. Wetlands are also regulated through the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations administered by conservation Authorities.

Provincially Significant Wetlands and other wetlands have been mapped by the province and are illustrated in Figure 3 of the attached.

1.3.3 Significant Woodlands

The Town of Innisfil Significant Woodlands are identified in Figure 4 of the attached. These are defined within the Town's Official Plan as fulfilling one or more of the following criteria:

- Any woodland of 4 hectares of greater.
- Any woodland containing 1 hectare or more of naturally occurring (not planted) trees listed in Appendix 10 that meet the definition of "woodland".
- Any woodland of 1 hectare or more that contain either.
- 10 or more trees per hectare that are either greater than 100 years or ol 50 cm or more in diameters; or
- A basal area of at least 8 square metres per hectare in native trees than are 40 cm of more in diameters; or
- Any woodlands of 1 hectare or more wholly or partially within 30 cm of:
 - A significant woodland
 - A naturalized lake
 - A permanent stream
 - A significant valleyland
 - A provincially significant wetland
 - Habitat of endangered or threatened species
- Any woodland of 0.5 hectares or more containing:
 - A provincially rare treed vegetation community with an S1, S2, or S3 in its ranking by the Ministry of Natural Resources and Forestry Natural Heritage Information Centre (NHIC), or





A habitat of a woodland plant species with an S1, S2, or S3 in its ranking or an 8, 9 or 10 in its southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 mor square metres of leaf coverage.

1.3.4 Significant Valleylands

The Province of Ontario identifies Significant Valleyland as a Valleyland which is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. Significant Valleylands within the Town of Innisfil are identified as part of the Key Natural Heritage Features and Key Hydrological Features of the Town's Natural Heritage System, illustrated in Figure 5 of the attached. These are identified using criteria established by the Province within the PPS.

1.3.5 Fish Habitat

The federal *Fisheries Act, 1985, as amended in 2019,* is administered by Fisheries and Oceans Canada (DFO) and provides protection for fish and fish habitat across Canada. Section 34.4 of the Act states that:

No person shall carry on any work, undertaking or activity, other than fishing, that result in the death of fish.

Section 35 (1) of the Act states that:

No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat.

The Act defines fish habitat as waters frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas.

Fish habitat is present within the various lakes and watercourses present throughout the Town of Innisfil. Fish habitat within the Town of Innisfil is identified as part of the Key Natural Heritage Features and Key Hydrological Features of the Town's Natural Heritage System, illustrated in Figure 5 of the attached. Construction of new transportation infrastructure and improvements to existing transportation infrastructure that have the potential to impact fish or fish habitat must be constructed and operated in compliance with the federal Fisheries Act. If works will proceed below the annual high-water mark, then a Request for Project Review should be made to the Fish and Fish Habitat Protection Program. If the death of a fish by means other than fishing, or the harmful alteration, disruption or destruction of fish habitat will likely result from a project, the proponent responsible for the activities is required to obtain an Authorization from the Minister of Fisheries and Oceans Canada (DFO) as per Paragraph 34.4(2) and 35(2)(b) of the Fisheries Act.





1.3.6 Significant Wildlife Habitat

The Ministry of Natural Resources and Forestry (MNRF) has identified White-tailed Deer Overwintering located in the following natural areas:

- Lovers Creek Yard.
- Big Bay Point Yard.
- Cook's Bay.
- Cookstown Hwy 400 Yard.

The Ministry of Natural Resources and Forestry (MNRF) has identified a Waterfowl Staging Area (Staging or Migration Stopover, Diving Duck) located in Cook's Bay.

This type of habitat is protected as Significant Wildlife Habitat under the Provincial Policy Statement. Significant Wildlife Habitat within the Town of Innisfil is identified as part of the Key Natural Heritage Features and Key Hydrological Features of the Town's Natural Heritage System, illustrated in Figure 5 of the attached.

1.3.7 Habitat for Species at Risk

The Endangered Species Act, 2007 (ESA) is the provincial legislation that provides protection for Species at Risk (SAR) and their habitat.

Under the Endangered Species Act, 2007, Section 9(1):

"No person shall, (a) kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario list as an extirpated, endangered or threatened species."

Furthermore, according to Section 10(1):

"No person shall damage or destroy the habitat of, (a) a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species; or (b) a species that is listed on the Species at Risk in Ontario List as an extirpated species, if the species is prescribed by the regulations for the purpose of this clause."

Federal species at risk legislation also applies to Species at Risk (SAR) and their habitat on federal lands or where federal jurisdiction applies. There are no federal lands within the Town; however, SARA applies to aquatic species at risk in all water bodies. To ensure the protection of SAR, Section 32(1) and (2) of the SARA states,

No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species, or a threatened species





And Section 33 of the SARA states,

No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered or threatened species, or that is listed as an extirpated species if a recovery strategy has recommended reintroduction of the species into the wild in Canada.

The SAR noted in **Table B-1** and **Table B-2** have been recorded in the Town and were identified through publicly available databases as having potential to be present in Innisfil.

Table B-1: Terrestrial Species at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Amphibians			
Western Chorus Frog	Pseudacris maculate pop. 1	NAR	Threatened
(Great Lakes – St.			
Lawrence –			
Canadian Shield			
pop.)			
Birds			
Bald Eagle	Haliaeetus leucocephalus	Special Concern	NAR
Black Tern	Chlidonias niger	Special Concern	NAR
Barn Swallow	Hirundo rustica	Threatened	Threatened
Bobolink	Dolichonyx oryzivorus	Threatened	Threatened
Canada Warbler	Wilsonia canadensis	Special Concern	Threatened
Cerulean Warbler	Dendroica cerulea	Threatened	Endangered
Chimney Swift	Chaetura pelagica	Threatened	Threatened
Eastern Meadowlark	Sturnella magna	Threatened	Threatened
Eastern Wood-	Contopus virens	Special Concern	Special
Pewee			Concern
Golden Winged	Vermivora chrysoptera	Special Concern	Threatened
Warbler			
King Rail	Rallus elegans	Endangered	Endangered
Henslow's Sparrow	Ammodramus henslowii	Endangered	Endangered
Least Bittern	Ixobrychus exilis	Threatened	Threatened
Red-headed	Molonornos oruthroonholus	Special Concern	Endangered
Woodpecker	Melanerpes erythrcephalus		
Chimney Swift	Chaetura pelagica	Threatened	Threatened
Whip-poor-will	Caprimulgus vociferus	Threatened	Threatened
Wood Thrush	Hylocichla mustelina	Special Concern	Threatened
Yellow Rail	Coturnicops noveboracensis	Special Concern	Special
			Concern
Insects			_
American Bumble	Bombus pensylvanicus	N/A	SC
Bee	Dombus pensylvanicus	IN/A	
Rusty-patched	Bombus affinis	Endangered	Endangered
Bumble Bee	DOMINUS AMMINIS	Litualiyered	
Nine-Spotted Lady	Coccinella novemnotata	Endangered	Endangered
Beetle	2000mena novemnotata	Lindaligolod	





Common Name	Scientific Name	Provincial Status	Federal Status
Transverse Lady	Coccinella transversoguttata	N/A	Special
Beetle			Concern
Yellow-banded	Bombus terricola	Special Concern	Special
Bumble Bee			Concern
Butternut	Juglans cinerea	Endangered	Endangered
Reptiles			
Blanding's Turtle	Emydoidea blandingii	Threatened	Endangered
Eastern Milksnake	Lampropeltis triangulum	NAR	Special
			Concern
Midland Painted	Chrysemys picta marginata	N/A	Special
Turtle			Concern
Northern Map Turtle	Graptemys geographica	Special Concern	Special
_			Concern
Snapping Turtle	Chelydra serpentina	Special Concern	Special
			Concern

Table B-2: Aquatic Species at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Silver Lamprey (Great Lakes – Upper St. Lawrence populations)	Ichthyomyzon unicuspis pop. 1	Special Concern	Special Concern

Known SAR habitat within the Town of Innisfil is identified as part of the Key Natural Heritage Features and Key Hydrological Features of the Town's Natural Heritage System, illustrated in Figure 5 of the attached. Most of the habitats for these species are yet to be mapped. No critical aquatic habitat is identified within the Town of Innisfil.

Potential habitat of Species at Risk should be avoided where possible. Proposed transportation works would be subject to mitigation measures to avoid direct impact to SAR which may include rules in regulation, timing restrictions for the removal of vegetation, minimizing the footprint of construction, and exclusion of the construction area.

2.0 Hazard Lands

Hazard Lands of the Town of Innisfil Official Plan are those areas that include flood and erosion susceptibility areas, dynamic beach areas, unstable soils and steep slopes, organic soils or wetlands that could result in property or land that could be unsafe for development. These areas may also include environmental features such as Provincially and regionally significant wetlands watercourses and the Lake Simcoe shoreline identified by the Province of Ontario and Conservation Authorities. Permitted land uses are limited.

In the Town of Innisfil, the Lake Simcoe Region Conservation Authority (LSRCA) has jurisdiction over hazard lands within the east of the Town of Innisfil while the Nottawasaga Valley Conservation Authority (NVCA) has jurisdiction over the west side of the Town of Innisfil. A





permit may be required for transportation facilities that affect wetlands, watercourses, and other hazard lands within the regulated area of the conservation authorities.

3.0 Source Water Protection Areas

The Source Water Protection Information Atlas indicates two Source Water Protection Areas (SPA) are located within the Town of Innisfil. The Town is divided between Nottawasaga SPA and Lake Simcoe and Couchiching / Black River SPA.

3.1 Wellhead Protection Areas (WHPA)

Several Wellhead Protection Areas (WHPA) are located within the Town of Innisfil, which are illustrated in Figure 6 of the attached. One Intake Protection Zone is located on the shore of Lake Simcoe between Ninth and Seventh Line.

The Clean Water Act requires a standard 100 metre radius circle be provided around each municipal well; this is called the WHPA – A. The WHPA – B represents the 2-year time of travel. The WHPA – C represents the 5-year time of travel and the WHPA – D represents the 25-year time of travel. In situations where a WHPA was delineated before April 30, 2005, a WHPA-C1 may apply instead of a WHPA-C. A WHPA-C1 represents the 10 year time of travel. A WHPA-E refers to the vulnerable area for groundwater well supplies which are under the direct influence of surface water (GUDI). WHPA-E considers vulnerability of well water supplies with respect to transport of potential contaminants along surface water pathways that influence the GUDI well. WHPA-E is delineated following the same technical rules as an IPZ-2. Vulnerable areas are not always represented by a perfect circle – shape is a function of how water travels underground. It can be influenced by several factors such as slope of land, depth of the well, type of sediment (for example, water travels faster through sand than it does through clay). The "circles" around wellhead protection areas were drawn based on scientific research considering all of these factors. (South Georgian Bay Lake Simcoe Source Protection Region, 2019).

3.2 Significant Ground Water Recharge Area

Several areas within the Town are considered Significant Ground Water Recharge Areas which are areas on the landscape characterized by porous soils, (i.e., sand or gravel) which allow water to seep easily into the ground and flow to an aquifer. Recharge areas are considered significant when they helps maintain the water level in an aquifer that supplies a community with drinking water (South Georgian Bay Lake Simcoe Source Protection Region, 2019).

3.3 Highly Vulnerable Aquifer

Areas of Highly Vulnerable Aquifer are located within the Town of Innisfil. A Highly Vulnerable Aquifer is one that is particularly susceptible to contamination because of either its location near





the ground surface or because of the type of overlying geological materials. The aquifer vulnerability increases as the amount of protection provided by the overlying geological materials decreases (Credit Valley, Toronto and Region and Central Lake Ontario Source Protection Region, 2019).

Any future transportation projects recommended by the Transportation Master Plan update will need to consider impacts to the Source Water Protection Areas.

4.0 Cultural Heritage

Cultural heritage features, protected properties have been identified based on a review of available provincial and municipal databases, including the following existing data sources:

- Town of Innisfil Official Plan (Consolidated 2018).
- Town of Innisfil Municipal Heritage Register.
- Town of Innisfil Cookstown Heritage Conservation District Properties (Part V).
- County of Simcoe Official Plan (2018).
- Ontario Heritage Trust Ontario Heritage Act Register.

Any future transportation projects recommended by the Transportation Master Plan update will need to consider impacts to Cultural Heritage.

4.1 Heritage Designations

Heritage designation is public recognition of the heritage value of buildings, sites or cultural features in a community. The Ontario Heritage Act helps a community to either designate individual buildings (under Part IV of the Act) or several buildings as a district (under Part V of the Act). In the Town of Innisfil, there are:

- 7 designated properties (Part IV, Section 29 OHA).
- 50 listed properties (Section 27, OHA).
- 1 Heritage Conservation District, with 209 designated properties (Part V, OHA).

Innisfil's Cookstown Heritage Conservation District is also identified on the Ontario Heritage Act Register. Ten of the individually designated properties are listed on the provincial heritage registry with details of their designation status. The Town's Designated and Listed properties are shown in Figure 7 of the attached.

4.2 Innisfil's Heritage Conservation District

The Town of Innisfil has one Heritage Conservation District in the Village of Cookstown as illustrated in Figure B-1.

The Village of Cookstown Heritage Conservation District is Innisfil's only Heritage Conservation District. Settled in the mid-nineteenth century, Cookstown was originally named Perry's Corners.





The Cookstown Heritage Conservation District study area contains approximately 14 blocks which surround the Queen Street and Kind Street intersection. The historical buildings considered in this study were built in between the late 1800s and early 1900s.

Figure B-1: Cookstown Heritage Conservation District Boundary Source: Cookstown Heritage Conservation District Plan and Design Guidelines



A Heritage Conservation District designation includes buildings, streets, landscapes, and views within a specific area. By designating a Heritage Conservation District, a municipality can manage and guide future change to preserve the identity of a heritage community as outlined in Part V of the Ontario Heritage Act.

4.3 Innisfil's Cultural Heritage Landscapes

A Cultural Heritage Landscape, as defined in the Ontario Provincial Policy Statement, can include buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship.

Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the Ontario Heritage Act or have been included on federal and/or international registers, and / or protected through official plan, zoning by-law, or other land use planning mechanisms. The Town of Innisfil Official Plan indicates that they will undertake a Cultural Heritage Assessment of countryside landscapes for potential protection under the Ontario Heritage Act.





The PPS outlines the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures retention of their cultural heritage value or interest under the Ontario Heritage Act. This can be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment. Mitigation measures and/or alternative approaches can be included in these plans and assessments.

4.4 Archaeological Resources

Archaeological resources are scarce, fragile, and non-renewable and therefore must be managed in a prudent manner if they are to be conserved. Effectiveness in incorporating archaeological resources within the overall planning and development process requires a clear understanding of their physical nature, the variety of forms they may assume, and their overall significance and value to society.

Archaeological potential is defined in the Provincial Policy Statement (2020) as:

...areas with the likelihood to contain archaeological resources. Criteria to identify archaeological potential are established by the Province...

The County of Simcoe has created an Archaeological Management Plan which was adopted in 2019. In addition to this report, the County has the following supporting technical documents available for viewing:

- Thematic History of Simcoe County and Colonial Period Archeological Potential.
- Contingency Plan for the Protection of Archeological Resources in Urgent Situations.
- Histories of Indigenous Communities with Interest in Simcoe County.

The County of Simcoe has identified areas of Archaeological Potential available on their interactive Geographical Information Systems (GIS) based platform. This map is publicly available and can be used to help determine need for archaeological assessment in advance of soil disturbance.

Future transportation projects recommended in the Town of Innisfil Transportation Master Plan within and located in an area of archeological potential will require (at minimum) a Stage 1 archaeological assessment to determine if archaeological potential survives within the area. Public development projects (i.e., highway or road construction) require an archaeological assessment under the requirements of the Environmental Assessment Act or through a Class Environmental Assessment. An environmental assessment often will determine the need for an archaeological assessment, and it is completed as part of the overall environmental assessment process.













