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## List of Acronyms

<b>AADT</b> .....	Annual Average Daily Traffic Volumes
<b>AAQC</b> .....	Ambient Air Quality Criteria
<b>ANSI</b> .....	Area of Natural and Scientific Interest
<b>AOC</b> .....	Area of Concern
<b>AQ</b> .....	Air Quality
<b>BaP</b> .....	benzo(a)pyrene
<b>BMP</b> .....	Best Management Practices
<b>BRT</b> .....	Bus Rapid Transit
<b>CCME</b> .....	Canadian Council of Ministers of the Environment
<b>CDC</b> .....	Conservation Data Centre
<b>CEAA</b> .....	<i>Canadian Environmental Assessment Act</i>
<b>CEA Agency</b> .....	Canadian Environmental Assessment Agency
<b>CEAR</b> .....	Canadian Environmental Assessment Registry
<b>CHR</b> .....	Cultural Heritage Resource
<b>CLI</b> .....	Canada Land Inventory
<b>CN</b> .....	Canadian National Railway
<b>CO</b> .....	Carbon Monoxide
<b>CoC</b> .....	Chemical of Concern
<b>COSEWIC</b> .....	Committee on the Status of Endangered Wildlife in Canada
<b>COSSARO</b> .....	Committee on the Status of Species at Risk in Ontario
<b>CP Rail</b> .....	Canadian Pacific Railway
<b>CSAC</b> .....	Community Stakeholders Advisory Committee
<b>CSP</b> .....	Corrugated Steel Pipe
<b>CTA</b> .....	Canadian Transportation Agency
<b>CVS</b> .....	Commercial Vehicle Survey
<b>CWS</b> .....	Canada Wide Standard
<b>dBA</b> .....	Decibels
<b>DCR</b> .....	Design and Construction Reports
<b>DFO</b> .....	Department of Fisheries and Oceans Canada
<b>EA</b> .....	Environmental Assessment
<b>EAA</b> .....	<i>Environmental Assessment Act</i>
<b>EAAB</b> .....	Environmental Assessment and Approvals Branch
<b>EC</b> .....	Environment Canada
<b>ELC</b> .....	Ecological Land Classification
<b>EMP</b> .....	Environmental Management Plan
<b>EPA</b> .....	Environmental Protection Agency
<b>ERD</b> .....	Environmental Reference for Highway Design
<b>ESA</b> .....	<i>Endangered Species Act</i>
<b>ESA</b> .....	Environmentally Significant/Sensitive Area
<b>FA</b> .....	Federal Authority
<b>FAQ</b> .....	Frequently Asked Questions

**FNESL** ..... First Nations Engineering Services Ltd.

**GGH**..... Greater Golden Horseshoe

**GIS**..... Geographical information System

**G-Rank** ..... Global Rank

**GRT** ..... Government Review Team

**GTA** ..... Greater Toronto Area

**g/VMT** ..... Grams per Vehicle Mile Traveled

**GVWR**..... Gross Vehicle Weight Rating

**Ha** ..... Hectare

**HADD** ..... Harmful Alteration, Destruction or Disruption of Fish Habitat

**HC**..... Health Canada

**HDV** ..... Heavy Duty Vehicle

**HOV** ..... High Occupancy Vehicle

**HRFMP** ..... Humber River Fisheries Management Plan

**IBP**..... International Biological Program

**IEA**..... Individual Environmental Assessment

**INAC** ..... Indian and Northern Affairs Canada

**ITS** ..... Intelligent Transportation Systems

**Km**..... Kilometre

**L/day** ..... Litres per Day

**LDV**..... Light Duty Vehicles

**LOS** ..... Level of Service

**L-rank**..... Local Rank

**LRT**..... Light Rail Transit

**LSW**..... Locally Significant Wetland

**M**..... Metres

**MAA**..... Ministry of Aboriginal Affairs

**mags** ..... Metres Above Ground Surface

**mASL** ..... Metres Above Sea Level

**MBCA**..... *Migratory Birds Convention Act*

**mbgs** ..... Metres Below Ground Surface

**MBR**..... *Migratory Birds Regulations*

**MEI** ..... Ministry of Energy and Infrastructure

**µg/m<sup>3</sup>** ..... Micrograms per Cubic Metre

**MNR**..... Ministry of Natural Resources

**MOE**..... Ministry of the Environment

**MP** ..... Mini-piezometer

**MTC**..... Ministry of Tourism and Culture

**MTO**..... Ministry of Transportation

**NAPS**..... National Air Pollution Surveillance

**NEB** ..... National Energy Board

**NHIC**..... National Heritage Information Centre

**NO** ..... Nitric Oxide

**NO<sub>2</sub>**..... Nitrogen Dioxide

**NO<sub>x</sub>**..... Nitrogen Oxide  
**NPC** ..... Noise Pollution Control  
**NRCan**..... Natural Resources Canada  
**NRVIS**..... Natural Resource Values Information Centre  
**NSA** ..... Noise Sensitive Area  
**NSR** ..... Noise Sensitive Receptors  
**NWPA**..... *Navigable Waters Protection Act*  
**O<sub>3</sub>**..... Ozone  
**OASD** ..... Ontario Archaeological Sites Database  
**OBBA** ..... Ontario Breeding Bird Atlas  
**ODWS**..... Ontario Drinking Water Standards  
**OG** ..... Original Grade  
**OGS**..... Oil/Grit Separators  
**OGN**..... Ontario Government Notice  
**OHT** ..... Ontario Heritage Trust  
**OLA** ..... Outdoor Living Area  
**OLM**..... Ozone Limiting Method  
**OMAFRA** ..... Ontario Ministry of Agriculture, Food and Rural Affairs  
**OP**..... Official Plan  
**OPA** ..... Official Plan Amendment  
**OPG** ..... Ontario Power Generation  
**ORC**..... Ontario Realty Corporation  
**ORM** ..... Oak Ridges Moraine  
**ORMA**..... *Oak Ridges Moraine Act*  
**ORMCP** ..... Oak Ridges Moraine Conservation Plan  
**ORNAMENT** ..... *Ontario Road Noise Analysis Method for Environmental and Transportation Road Traffic Noise Model*  
**OWES**..... Ontario Wetlands Evaluation System  
**OWRA** ..... *Ontario Water Resources Act*  
**PAHs** ..... Polycyclic Aromatic Hydrocarbons  
**PCC** ..... Public Consultation Centre  
**PHF**..... Peak Hour Factor  
**PIC**..... Public Information Centre  
**PIP** ..... Proactive Involvement Plan  
**PM** ..... Particulate Matter  
**PM<sub>2.5</sub>** ..... Respirable Particulate Matter  
**PoEs**..... Pathways of Effect  
**PPS**..... Provincial Policy Statement  
**PSW**..... Provincially Significant Wetlands  
**PTTW**..... Permit To Take Water  
**PWQO** ..... Provincial Water Quality Objectives  
**RA**..... Responsible Authority  
**RAAC** ..... Review Agency Advisory Committee  
**RAG**..... Regulatory Advisory Group  
**RD**..... Recommended Design

**ROW** ..... Right of Way

**RVP** ..... Reid Vapour Pressure

**SADT** ..... Summer Average Daily Traffic

**SAR** ..... Species at Risk

**SARA**..... *Species at Risk Act*

**SOP** ..... Standard Operating Procedures

**S-ranks**..... Provincial Ranks

**SSA** ..... Stakeholder Sensitivity Analysis

**SSWH** ..... Specialized and Sensitive Wildlife Habitat

**SWHTG** ..... Significant Wildlife Habitat Technical Guide

**SWM** ..... Stormwater Management

**SWM Pond** ..... Stormwater Management Pond

**TAC** ..... Transportation Association of Canada

**TC** ..... Transport Canada

**TCB** ..... Temporary Concrete Barrier

**TDM** ..... Travel Demand Management

**TESR** ..... Transportation Environmental Study Report

**TMA** ..... Western Vaughan Transportation Management Association

**TMP** ..... Transportation Master Plan

**TMS** ..... Transit Mode Split

**TNHS** ..... Terrestrial Natural Heritage System Strategy

**TOD** ..... Transit Oriented Development

**ToR** ..... Terms of Reference

**TPN** ..... Transit Priority Network

**TPR** ..... Technically Preferred Route

**TRCA** ..... Toronto and Region Conservation Authority

**TRR** ..... Technically Recommended Route

**TSM** ..... Transportation System Management

**TSP** ..... Total suspended particulate matter

**TSS** ..... Total Suspended Solids

**TTC** ..... Toronto Transit Commission

**TTMP** ..... Transportation and Transit Master Plan

**TTS** ..... Transportation Tomorrow Survey

**UGS** ..... Urban Growth Centres

**v/c** ..... Volume/Capacity Ratio

**VCC** ..... Vaughan Corporate Centre

**VMC** ..... Vaughan Metropolitan Centre

**VOC** ..... Volatile Organic Compounds

**VOR** ..... Vehicle Occupancy Ratio

**YRT** ..... York Region Transit

**YRTP** ..... York Rapid Transit Plan

## Glossary of Terms

<b>90<sup>th</sup> Percentile</b>	A 90 <sup>th</sup> percentile value selected to represent ambient background concentrations means that the selected background concentration is greater than or equal to 90% of all of the measured values in the dataset; 10% of the measured values are higher than the selected ambient background concentration.
<b>AADT</b>	Annual average daily traffic volumes.
<b>Aboriginal</b>	Pertaining to the descendants of the original inhabitants of North America. The Canadian Constitution recognizes three groups of Aboriginal people — Indians, Métis and Inuit. These are three separate peoples with unique heritages, languages, cultural practices and spiritual beliefs. (see also First Nation).
<b>Aboriginal Community</b>	A First Nation community (also known as a “band” under the <i>Indian Act</i> ), a Métis community, or a group of other Aboriginal peoples who identify themselves as a community, such as those living in urban centres or those belonging to an indigenous Nation or tribe that encompasses more than one community (e.g., the Pottawatomi, Mississauga, Mohawk).
<b>Aboriginal Rights</b>	Rights that some Aboriginal peoples of Canada hold as a result of their ancestors' long-standing use and occupancy of the land. The rights of certain Aboriginal peoples to hunt, trap and fish on ancestral lands are examples of Aboriginal rights. Aboriginal rights vary from group to group depending on the customs, practices and traditions that have formed part of their distinctive cultures.
<b>Absolute Humidity</b>	Mass of water vapour per unit mass of dry air.
<b>Acoustic Environment</b>	The Western Vaughan Transportation Improvements Study Area consists of three acoustic environments: <ul style="list-style-type: none"> <li>• Urban areas, where the acoustic environment is dominated by man-made sounds during a 24-hour period. Included in this category are areas with heavy population concentrations, industrial or heavy commercial land uses, and areas close to provincial highways (400 and 407) and major arterial roadways (e.g., Islington, Highway 27, Rutherford Road, etc.). Under MOE terminology, these are known as “Class 1” areas.</li> <li>• Suburban / semi-rural areas, where the acoustic environment is dominated by man-made sounds during the day, but drop off in the early evening. Included in this category are areas immediately adjacent to minor arterial roadways (e.g., Huntington Road, portions of Pine Valley Drive, etc.), and areas at the edges of urban cores, and within the urban core backing onto green space. Under MOE terminology, these are known as “Class 2” areas.</li> <li>• Rural areas, where the acoustic environment is dominated by the “sounds of nature”, such as vegetation rustling in the wind, etc. These areas are well removed from major roadways and urban / suburban areas, and are concentrated to the northwest of the Study Area. Under MOE terminology, these are known as “Class 3” areas.</li> </ul>
<b>Advantage</b>	A relative term used to indicate that a particular condition is deemed to offer a benefit when compared to another condition.
<b>Adverse Effect</b>	Pursuant to the <i>Environmental Protection Act</i> one or more of the following: <ul style="list-style-type: none"> <li>• Impairment to the quality of the natural environment for any use that can be made of it;</li> <li>• Injury or damage to property or plant or animal life;</li> <li>• Harm or material discomfort to any person;</li> <li>• An adverse effect on the health of any person;</li> </ul>

- Impairment of the safety of any person;
- Rendering any property of plant or animal life unfit for human use;
- Loss of enjoyment or normal use of property; and
- Interference with normal conduct of business.

<b>Aerial Photography</b>	Aerial photography is the taking of photographs from the air with a camera mounted, or hand held, on an aircraft, helicopter, balloon, rocket, kite, skydiver or similar vehicle.
<b>Agricultural Uses</b>	The growing of crops, including nursery and horticultural crops, raising of livestock, raising of other animals for food, fur or fibre, including poultry and fish; aquaculture, apiaries, agro-forestry, maple syrup production, and associated on-farm buildings and structures, including accommodation for full time farm labour when the size and nature of the operation requires additional employment.
<b>Alluvial Deposits</b>	Soil or sediments deposited by a river or other running water. Alluvium is typically made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel.
<b>Alternative</b>	A well-defined and distinct course of action.
<b>Alternative Methods of Carrying out the Undertaking</b>	Feasible alternative ways of implementing or carrying out the preferred solution to the identified problem or opportunity.
<b>Alternatives to the Undertaking</b>	Functionally different ways of solving an identified problem or addressing an opportunity that is considered feasible, from which a preferred solution is identified.
<b>Ambient Air</b>	The air at a particular time and place outside of structures. Often used interchangeably with “outdoor air”.
<b>Anthropogenic Disturbance</b>	Disturbance caused by human activity.
<b>Anticipated Effect</b>	An effect that is deemed possible to result from the implementation of a particular alternative.
<b>Appropriate Design Standards</b>	Design Standards as defined in the Transportation Association of Canada’s Geometric Design Guide for Canadian Roads, 1999.
<b>Aquatic</b>	Refers to an environment that consists of, relates to, or is in water; or to animals and plants living or growing in, on, or near the water.
<b>Aquifer</b>	Rock or soil in a formation which is saturated and sufficiently permeable to transmit economic quantities of water to wells or springs.
<b>Aquitard</b>	Rock or soil in a formation, which is saturated but is not sufficiently permeable to transmit economic quantities of water to wells or springs.
<b>Archaeological Potential</b>	The likelihood that a given property contains archaeological resources.
<b>Archaeological Resources</b>	In the context of the draft Standards and Guidelines, objects, materials and physical features identified by licensed archaeologists during a Stage 2 archaeological assessment as possibly possessing cultural heritage value or interest. Analysis using the criteria set out in the draft Standards and Guidelines determines whether those objects, materials and physical features meet the definition of an archaeological site under the <i>Ontario Heritage Act</i> and whether Stage 3 archaeological assessment is required. In various planning and development contexts, the term may refer to any or all of archaeological potential, artifacts and archaeological sites.

<b>Archaeological Site</b>	Defined in Ontario regulation as “any property that contains an artefact or any other physical evidence of past human use or activity that is of cultural heritage value or interest.
<b>Area of Natural and Scientific Interest (ANSI)</b>	Areas of land and water containing natural landscapes or features which have been identified as having values related to natural heritage protection, scientific study, or education. Depending on the features of particular areas, they may be referred to as life science or earth science sites. These areas vary in their level of significance and their vulnerability to environmental impacts. (NEC, 2003).
<b>Artifact</b>	Defined in Ontario regulation as “any object, material or substance that is made modified, used, deposited or affected by human action and is of cultural heritage value or interest.
<b>Avoidance Measure</b>	The first priority is to prevent the occurrence of negative effects (adverse environmental effects) associated with implementing an alternative.
<b>Band</b>	A group of Aboriginal people for whose collective use and benefit lands have been set apart or money is held by the Crown, or declared to be a band for the purpose of the <i>Indian Act</i> . Each band has its own governing band council, usually consisting of one chief and several councillors. Community members choose the chief and councillors by election, or sometimes through custom. The members of a band generally share common values, traditions and practices rooted in their ancestral heritage. Today, many bands prefer to be known as First Nations.
<b>Bedrock</b>	The solid rock that underlies soil, or other surficial material.
<b>Best Management Practices (BMP)</b>	A technique or methodology that, through experience or research, has been proven to reliably lead to a desired result. After researching all known management methods, the selection and adaptation of the most suitable practices for achieving the desired outcome.
<b>Buffer</b>	Something that serves as a protective barrier; any of various devices or pieces of material for reducing shock or damage due to contact.
<b>Built Heritage Feature</b>	Built heritage features are individual, person-made or modified, parts of a cultural heritage landscape such as buildings or structures of various types, cemeteries, planting and landscaping structures, etc that contribute to the heritage character of the cultural heritage landscape. Heritage Resources in the Land Use Planning Process.
<b>Built Heritage Resources</b>	One or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the <i>Ontario Heritage Act</i> , or listed by local, provincial or federal jurisdictions.
<b>Canada Land Inventory (CLI)</b>	7 class system for rating mineral soils in Canada. Organic soils are not rated under this system.
<b>CLI Classification</b>	In the CLI system there are seven capability classes. Soils descend in quality from Class 1, which is highest, to Class 7 soils which have no agricultural capability for the common field crops. Class 1 soils have no significant limitations. Class 2 through 7 soils have one or more significant limitations, and each of these are denoted by a capability subclass.  <b>Class 1</b> Soils in this class have no significant limitations in use for crops. Soils in Class 1 are level to nearly level, deep, well to imperfectly drained and have good nutrient and water holding capacity. They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for the full range of common field crops.

- Class 2** Soils in this class have moderate limitations that reduce the choice of crops, or require moderate conservation practices. These soils are deep and may not hold moisture and nutrients as well as Class 1 soils. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a wide range of common field crops.
- Class 3** Soils in this class have moderately severe limitations that reduce the choice of crops or require special conservation practices. The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management these soils are fair to moderately high in productivity for a wide range of common field crops.
- Class 4** Soils in this class have severe limitations that restrict the choice of crops, or require special conservation practices and very careful management, or both. The severe limitations seriously affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. These soils are low to medium in productivity for a narrow to wide range of common field crops, but may have higher productivity for a specially adapted crop.
- Class 5** Soils in this class have very severe limitations that restrict their capability to producing perennial forage crops, and improvement practices are feasible. The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants and may be improved through the use of farm machinery. Feasible improvement practices may include clearing of bush, cultivation, seeding, fertilizing or water control.
- Class 6** Soils in this class are unsuited for cultivation, but are capable of use for unimproved permanent pasture. These soils may provide some sustained grazing for farm animals, but the limitations are so severe that improvement through the use of farm machinery is impractical. The terrain may be unsuitable for the use of farm machinery, or the soils may not respond to improvement, or the grazing season may be very short.
- Class 7** Soils in this class have no capability for arable culture or permanent pasture. This class includes marsh, rockland and soil on very steep slopes.

**Canadian Environmental Assessment Act (CEAA)**

The purpose of the Act is to ensure that projects are considered in a careful manner before federal authorities take action in connection with them, in order that such projects do not cause significant adverse environmental effects. In addition, the Act encourages the promotion of sustainable development in federal decision making, and public participation in the environmental assessment process.

**Canadian Environmental Assessment Registry (CEAR)**

The Canadian Environmental Assessment Registry contains information about projects undergoing environmental assessment under the *Canadian Environmental Assessment Act (CEAA)*.

**Canker**

In relation to Butternut, canker is the reason for Butternut decline and current Endangered status. Butternut canker is widespread, hypervirulent, and fatal. Canker vectors are rain, wind and insects. Typical symptoms are crown dieback, long linear fissure/cracks often with black discharge, epicormic branching, and loose/sunken areas of bark.

**Carbon Monoxide (CO)**

CO is a colourless, odourless, tasteless, and potentially poisonous gas produced primarily by incomplete combustion of fossil fuels. Exposure to high levels of CO is linked with impairment of vision, work capacity, learning ability, and performance of difficult tasks.

<b>Community Stakeholders Advisory Committee (CSAC)</b>	A CSAC was established to obtain study input from community and business leaders. The CSAC comprised 12 local residents and business owners, environmental and transportation organizations, and property owners.
<b>Comparative Evaluation</b>	A comparative evaluation was used at both the Alternative to the Undertaking and Alternative Methods of Carrying out the Undertaking stage to identify the most preferable of the short-listed alternatives during the former stage, and of the alternative segments during the latter stage. The comparison of net effects was completed using a “Reasoned Argument” or “Trade-off” method, as described in the approved ToR.
<b>Compensation Measure</b>	In situations where appropriate mitigation measures are not available, or significant net adverse effects will remain following the application of mitigation, compensation measures may be required to counterbalance the negative effect through replacement in kind, or provision of a substitute or reimbursement.
<b>Conceptual Design</b>	An early stage in the project that involves the preparation of a document containing the operational details, sketches and outline drawings and a set of design standards.
<b>Confined Aquifer</b>	An aquifer that is overlain by deposits that have significantly lower permeability (i.e., confining bed or aquitard).
<b>Confined Wells</b>	Wells that are sunk through an impermeable stratum down into an aquifer which is sandwiched between 2 impermeable strata (aquitards or aquicludes). These are generally not susceptible to surficial land use activities. These wells are usually drilled.
<b>Coniferous Forest</b>	A type of forest with mostly cone-bearing trees
<b>Conservation (of habitats)</b>	The planned management of human activities that might affect fish habitats to prevent destruction and subsequent loss of fisheries benefits.
<b>Conservation Authority</b>	A community-based environmental organization dedicated to restoring, developing and managing natural resources using the watershed as a management unit (Conservation Ontario, 2005).
<b>Consultation and Communications Plan</b>	The Consultation and Communications Plan for the Western Vaughan Transportation Improvements IEA was designed to ensure the involvement of residents, review agencies, First Nations and other stakeholders during each stage of the IEA process, in order to fulfill the IEA mandatory points of agency and public contact as required by the approved ToR.
<b>Consultant Archaeologist</b>	Defined in Ontario regulation as “an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. On Ontario, these people are also required to hold a valid Professional licence issued by the Ministry of Culture.
<b>Contact Period</b>	The time period following the date Europeans made first contact with North American Aboriginal people. In Southern Ontario, roughly after 1650; in Northern Ontario, at later dates depending on the time at which European explorers first arrived in a region.
<b>Corridor</b>	The naturally vegetated or potential revegetated areas that link or border natural areas and provide ecological functions such as habitat, passage, hydrological flow, connection or buffering from adjacent impacts.
<b>Corridor Optimization Process</b>	Determined whether all of the road and transit improvements included in Alternative 8 were necessary.
<b>COSEWIC</b>	COSEWIC (Committee on the Status of Endangered Wildlife in Canada) is a committee of experts that assesses and designates which wildlife species are in some danger of disappearing from Canada.

<b>COSEWIC status</b>	<p>Status assigned by the Committee on the Status of Endangered Wildlife in Canada:</p> <p><i>Extinct</i>.....A species that no longer exists.</p> <p><i>Extirpated</i>.....A species no longer existing in the wild in Canada, but occurring elsewhere.</p> <p>Endangered .....A species facing imminent extirpation or extinction.</p> <p><i>Threatened</i> .....A species likely to become endangered if limiting factors are not reversed.</p> <p><i>Special Concern..(formerly vulnerable)</i> A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.</p> <p><i>Not At Risk</i>.....A species that has been evaluated and found to be not at risk of extinction given the current circumstances.</p>
<b>Criteria / Criterion</b>	A set of principles or standards used to compare and judge alternatives. (plural = "criteria", singular = "criterion").
<b>Critical Habitat (SARA)</b>	"Critical habitat" means the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species.
<b>Cultural Communities</b>	In terms of vegetation, a vegetation community originating from, or maintained by, anthropogenic (human modified) influences and culturally based disturbances; often containing a large proportion of non-native species.
<b>Cultural Feature</b>	They physical remains of human alteration at a given location that cannot be removed intact and are not portable in the way that artifacts can be removed and are portable. Typically, a cultural feature must be documented in the field, although samples can be taken. Exampled include post moulds, pits, living floors, middens earthworks, and various historic structural remains and ruins.
<b>Cultural Heritage Landscape</b>	A defined geographical area of heritage significance that has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological site and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples may include, but are not limited to, heritage conservation districts designated under the <i>Ontario Heritage Act</i> , and villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trail ways and industrial complexes of cultural heritage value.
<b>Cultural Heritage Resource</b>	Any resource or feature of archaeological, historical, cultural, or traditional use significance. This may include archaeological resources, built heritage or cultural heritage landscapes. Heritage resources and features are usually identified by federal or provincial agencies, municipalities, municipal heritage committees (sic) or other equivalent heritage groups, and local and regional band councils. Some heritage resources and features are legally protected, and can be found in official sources. Some may only be inventoried or listed, either officially, or by interested stakeholders. Others have never been identified, although this does not necessarily diminish their cultural significance. Cultural heritage resources include the following....", (the text then provides definitions for Archaeological Resources, Identified Archaeological Site, Sacred and Traditional Use Sites, Cemeteries/Burial Grounds, Built Heritage Resource, and Cultural Heritage Landscape). Heritage Resources in the Land Use Planning Process.

<b>Cultural Heritage Value or Interest</b>	For the purposes of the <i>Ontario Heritage Act</i> and its regulations, archaeological resources that possess cultural heritage value or interest are protected as archaeological sites under Section 8 of the Act. Where analysis of documented artifacts and physical features at a given location meets the criteria as stated in the draft Standards and Guidelines, that location is protected as an archaeological site and further archaeological assessment may be required.
<b>Decibels</b>	A logarithmic unit of sound intensity.
<b>Deciduous Forest</b>	Forests in which the trees lose their leaves on a cyclic basis.
<b>Deep Cut</b>	A deep highway cut is defined as any excavation lower than 4.5 m below original grade.
<b>Deep Wells</b>	See Confined Wells.
<b>Detail Design</b>	The process of refining and expanding the conceptual design of the project to the extent that the design is sufficiently complete to be implemented.
<b>Development</b>	The creation of a new lot, a change in land use, or the construction of buildings and structures, any of which require approval under the <i>Planning Act</i> .
<b>Dewatering</b>	See Water Taking.
<b>DFO</b>	Acronym for the Federal Canadian Department of Fisheries and Oceans, more formally known as Fisheries and Oceans Canada. Fisheries and Oceans Canada is the lead federal government department responsible for developing and implementing policies and programs in support of Canada's economic, ecological and scientific interests in oceans and inland waters.
<b>Diagnostic Artifact</b>	An artifact that indicates, by its markings, design or material, the time period it was made, the cultural group that made it, or other data that can identify its original context.
<b>Disadvantage</b>	A relative term used to indicate that a particular condition is deemed to be unfavourable or of an inferior condition when compared to another condition.
<b>Discharge</b>	The removal of water from the saturated zone across the water table surface and the associated flow towards the water table within the saturated zone.
<b>Dispersion Coefficient</b>	Variables that describe the lateral and vertical spread of a plume.
<b>Displacement</b>	For Built Heritage and Cultural Heritage Landscapes, it refers to the displacement through removal or demolition of the cultural heritage resources and, or their setting. Guidelines on the Man-Made Heritage Component of Environmental Assessments.
<b>Disruption</b>	An action that results in a negative change in the way people undertake activities, stopping the activity or negatively changing the schedule.
<b>Disturbance</b>	An action that negatively influences people's activities or enjoyment of those activities.
<b>Drawdown</b>	A lowering of the water table of an unconfined aquifer or the potentiometric surface of a confined aquifer caused by pumping of groundwater from wells.
<b>Earth Science ANSI</b>	An ANSI that ANSIs contain important geological features.
<b>Ecological Land Classification (ELC)</b>	The system for the consistent description, identification, classification and mapping of ecological land units in Southern Ontario.

<b>Endangered Species Act (ESA)</b>	<p>The purposes of this Act are:</p> <ol style="list-style-type: none"> <li>1. To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge.</li> <li>2. To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk.</li> <li>3. To promote stewardship activities to assist in the protection and recovery of species that are at risk.</li> </ol>
<b>Enhance</b>	<p>Means as applied to the natural heritage/environment, strengthening the components of a natural area through management measures to increase stability, biodiversity and long term viability and in other respects to complement or strengthen the character of the area or site or structure.</p>
<b>Enhancement Measure</b>	<p>Wherever possible, the opportunity should be taken to enhance the positive environmental effects associated with implementing an alternative rather than simply mitigate and/or compensate.</p>
<b>Environment</b>	<p>The <i>Environmental Assessment Act</i> defines environment broadly to include:</p> <ol style="list-style-type: none"> <li>i. air, land or water;</li> <li>ii. plant or animal life, including man;</li> <li>iii. social, economic, and cultural conditions influencing the life of man or community;</li> <li>iv. any building, structure, machine or other device or thing made by man;</li> <li>v. any solid, liquid, gas, odour, heat, sound, vibration, or radiation resulting directly or indirectly from the activities of man;</li> <li>vi. any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.</li> </ol>
<b>Environmental Assessment</b>	<p>The purpose of environmental assessment (EA) is to ensure that the environmental effects of a project receive due consideration before the proponent and responsible authorities take actions in connection with the project. It is a planning process that predicts, interprets and evaluates environmental effects, and identifies mitigation and environmental protection measures to reduce, eliminate or compensate for the environmental effects associated with a proposed undertaking.</p>
<b>Environmental Assessment Act</b>	<p>Legislation that defines a decision-making process used to promote good environmental planning by assessing the potential effects of certain activities on the environment. The purpose of the <i>EA Act</i> is to provide for the:</p> <ol style="list-style-type: none"> <li>a) protection;</li> <li>b) conservation; and,</li> <li>c) wise management of Ontario's environment.</li> </ol>
<b>Environmental Effect</b>	<p>Any change, whether positive or negative, that an undertaking (project) may cause in the environment.</p>
<b>Environmental Management Plan (EMP)</b>	<p>An Environmental Management Plan (EMP) can be defined as “an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced”.</p> <p>Following IEA approval of the Preferred Undertaking, an Environmental Management Plan (EMP) will be prepared for each road/transit corridor (e.g., Major Mackenzie Drive from Highway 50 to Highway 400) to support permit and approval applications. These EMPs will detail all of the environmental commitments, monitoring requirements, and approval conditions associated with construction and operation.</p>

<b>Environmentally Significant/Sensitive Area (ESA)</b>	An Environmentally Significant/Sensitive Area is a natural area identified by a municipality or Conservation Authority as fulfilling certain criteria for ecological significance or sensitivity.
<b>Ephemeral Flow</b>	A stream that flows for short periods of time in the spring or in response to runoff events, and usually of insufficient duration to create a defined channel (e.g. field swale or gully).
<b>Erosion</b>	The gravity-driven process that moves sediments, rocks, soil, etc. and deposits them in other locations.
<b>Euro-Canadian</b>	Pertaining to archaeological resources attributable to settlers or pioneers of European origin or ethnicity.
<b>Evaluation</b>	The process that appraises the advantages and disadvantages of alternatives (see 'evaluation method').
<b>Evaluation Method</b>	A formal procedure for establishing an order of preference among alternatives.
<b>Evapotranspiration</b>	Process by which water is evaporated from soil surface and water is transpired by plants growing on that surface.
<b>Existing uses</b>	Uses established on the property regardless of the designation within the Official Plan.
<b>Factor</b>	A broader category, group or element of the environment used for classifying a given set of criteria.
<b>First Nation</b>	A term that came into common usage in the 1970s to replace the word "Indian," which some people found offensive. Although the term First Nation is widely used, no legal definition of it exists. Among its uses, the term "First Nations peoples" refers to the Indian peoples in Canada, both Status and non-Status. Some Indian peoples have also adopted the term "First Nation" to replace the word "band" in the name of their community.(see also <i>Aboriginal community, Band</i> ).
<b>Fish</b>	"includes (a) parts of fish: (b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals: and (c) the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals." ( <i>Fisheries Act, Sec. 2</i> ).
<b>Fish Habitat</b>	"Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes." ( <i>Fisheries Act, sec. 34(1)</i> ).
<b>Fisheries Act</b>	Federal legislation that deals with the management of Canada's fisheries resources and the conservation and protection of fish and fish habitat.
<b>Flat</b>	Low flowing water with a smooth unagitated surface (not as deep as a pool).
<b>Fluvial Deposits</b>	Sediments deposited by rivers. These deposits can be both coarse textured (silt, sand and gravel) or fine textured (clay and silt).
<b>Fluvial geomorphology</b>	A science that deals with the forms of natural water bodies such as rivers, lakes, estuaries, lagoons, coastal zones and seas, as well as with the processes that create and modify these forms. These processes are the erosion, transport and deposition of sediment (cobbles, gravel, sand, silt, clay).
<b>Foreshore Basinal Deposits</b>	Sediments deposited within the lower shore zone that lies between the normal high and low water marks. These deposits are usually coarse textured (silt, sand and gravel).

<b>Forest area-sensitive</b>	Area-sensitive breeding birds that require a relatively extensive forest habitat patch in which to successfully reproduce, or occur in higher densities in such patches.
<b>Forest Fragmentation</b>	Occurs when forests are cut down in a manner that leaves relatively small, isolated patches of forest known as forest fragments.
<b>Free Flow Link</b>	A straight segment of roadway having a constant width, height, traffic volume and travel speed.
<b>Fuel Volatility</b>	A measure of how easily a fuel vapourizes. If the fuel does not vapourize completely, it will not burn completely.
<b>Geographic Information System (GIS)</b>	A system for creating, storing, analyzing and managing spatial data and associated attributes.
<b>GIS Layer</b>	A spatial dataset containing a common feature type.
<b>Geology</b>	The science that deals with the history of the earth as recorded in rocks.
<b>Geotechnical Investigation</b>	The application of scientific methods and engineering principles in a study of the materials of the earth's crust for the solution to an engineering problem.
<b>Glaciolacustrine Deposits</b>	Sediments deposited into lakes that have come from glaciers. These can be both coarse textured (silt, sand and gravel) or fine textured (clay and silt).
<b>Grading</b>	Changing the ground level to a smooth horizontal or gently sloping surface.
<b>Grain size analysis</b>	Testing of a soil by use of different sized sieves to determine the percentage of coarse and fine grained material in the soil.
<b>Greenbelt Area</b>	The geographic area of the Greenbelt as defined by the Ontario Regulation 59/05 as provided by the <i>Greenbelt Act, 2005</i> .
<b>Greenbelt Plan</b>	Identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring on this landscape.
<b>Groundwater</b>	Subsurface water or water stored in the pores, cracks, and crevices in the ground below the water table; water passing through, or standing in, soil and underlying strata and free to move by gravity.
<b>Groundwater Flow</b>	The result of differences in hydraulic head or, simply stated, water table elevation from one location to other.
<b>Groundwater Discharge</b>	Discharge areas are the opposite of recharge areas. They are the locations at which groundwater leaves the aquifer and flows to the surface. Groundwater discharge occurs where the water table or potentiometric surface intersects the land surface. Where this happens, springs or seeps are found. Springs and seeps may flow into fresh water bodies, such as lakes or streams, or they may flow into saltwater bodies.
<b>Groundwater Monitor</b>	A small groundwater well designed for environmental monitoring purposes. Typically constructed using 2-inch (5.08 cm) PVC pipe. At the bottom of the well a slotted section of pipe (screen) is placed and surrounded by a coarse textured filter pack to allow natural groundwater from the surrounding geological formation of enter the well and remove fine particles.
<b>Groundwater Recharge</b>	Recharge is the process by which groundwater is replenished. A recharge area is where water from precipitation is transmitted downward to an aquifer.

<b>Growth Plan for the Greater Golden Horseshoe</b>	The geographic area of the Greater Golden Horseshoe as identified by the Ontario Regulation 416/05 as provided by the <i>Places to Grow Act</i> , 2005.
<b>Habitat</b>	The physical location or type of environment in which an organism or biological population occurs or lives, grows and carries out life processes.
<b>HADD</b>	The acronym for the Harmful Alteration, Destruction or Disruption of Fish Habitat. According to Section 35(1) of the <i>Fisheries Act</i> , no one is allowed to cause a HADD unless an authorization, according to Section 35(2) of the <i>Fisheries Act</i> , has been obtained. ‘No net loss of the productive capacity of existing fish habitat’ is the conservation goal guiding an authorization to cause a HADD.
<b>Headwater</b>	The uppermost portion of a river course close to the source.
<b>High Fill</b>	A high fill is defined as any placement of construction fill materials greater than 4.5 m above original grade.
<b>Historic period</b>	The colonial period for which historic (i.e written) records are available. (see also <i>Contact period</i> ).
<b>Hydraulic Assessment</b>	The assessment of the hydrology in the Study Area.
<b>Hydraulic Gradient</b>	The rate of change in an aquifer of total head per unit of distance of flow at a given point and in a given direction.
<b>Hydrogeologic Investigation</b>	A study involving the interpretation of hydrogeology properties within the subsurface and its relation to geology and surface water.
<b>Hydrogeology</b>	The science that deals with subsurface waters and with related geologic aspects of surface water.
<b>Hydrographic Features</b>	Surface water features including watercourses (creeks and rivers) and water bodies (lakes and ponds).
<b>Impact</b>	A change brought about by a cause or agent and reflects a change in fish and/or fish habitat that has the potential to influence the productive capacity of fish habitat (see “effect” in <i>RMF Guide</i> ).
<b>Indicator</b>	An aspect of a criterion that characterizes the potential effects on the environment.
<b>Individual Environmental Assessment (IEA)</b>	An environmental assessment requiring the submission of the Terms of Reference and Environmental Assessment for approval by the Minister of the Environment, pursuant to subsections 6(1) and 6(2) of the <i>EA Act</i> and which is not exempt from the <i>EA Act</i> .
<b>Insectivore</b>	A type of carnivore with a diet consisting mainly of insects.
<b>Intelligent Transportation Systems (ITS)</b>	ITS applications include traffic monitoring and information dissemination systems.
<b>Interior Forest Habitat</b>	The habitat found deep within woodlands, away from the influence of edge effects. The interior sections of forest, generally 100 m or more in from the forest edge, are darker, cooler and moister, and less prone to disturbances from outside of the forest (both human and environmental).
<b>Intermittent Flow</b>	A stream that flows for less than 9 consecutive months per year under average annual precipitation conditions, and are normally dry in May/June. It has a poorly defined channel.
<b>Laclustrine Deposits</b>	Sediments deposited into lakes. These deposits are usually fine textured (clay and silt).

<b>Landscape Connectivity</b>	The degree to which the landscape facilitates or impedes movement [of species, individuals and genetic material] among habitat patches. (Taylor et al. 1993). The degree to which key natural heritage features are connected to one another by links such as plant and animal movement corridors, hydrological and nutrient cycling, genetic transfer, and energy flows through food webs.” (ORMCP, 2002).
<b>Land Use</b>	The manner in which a parcel of land is used or occupied, for example: residential, commercial or industrial land uses.
<b>Level of Sensitivity</b>	A term used to characterize the degree or extent of sensitivity of a particular environmental feature or group of features to potential adverse effects. (See also <i>Sensitive/Sensitivity</i> below).
<b>Life Science ANSI</b>	An ANSI that contains representative ecological features.
<b>Lithic scatter</b>	A concentration of chert (flint) flakes, which are the by-products of stone tool manufacturing, distributed over a particular area.
<b>Locally Significant Wetland</b>	Wetlands identified as locally significant by the Ministry of Natural Resources using evaluation procedures established by the province, as amended from time to time.
<b>L/day</b>	Litres per day
<b>Major Amendment</b>	Proposed changes to the approved IEA of a much more significant nature would be categorized as major amendments.
<b>Meander Belt</b>	The corridor within which all natural adjustments in channel planform (alignment) occur.
<b>Measure</b>	A basis or standard for comparison. An expression of the potential effects associated with an indicator for a criterion in qualitative and/or quantitative terms.
<b>Midden</b>	A refuse deposit, usually spread over an area of metres to tens of metres, containing artifacts and organic remains; contrasted with refuse pit.
<b>Mini-piezometer</b>	A small groundwater monitor (see groundwater monitor) that is manually driven in a stream bed or a wetland to determine the groundwater pressure (level) below. This helps determine if groundwater is flowing into or out of the stream or wetland.
<b>Minister</b>	Ontario Minister of the Environment.
<b>Ministry of Transportation’s Environmental Guide for Noise</b>	Provides guidance on ambient sound levels within Class 1, 2 and 3 areas. In general, the following noise levels can be assumed (Leq (Day) values): Class 1 Sound Levels: ..... ≥ 55 dBA Class 2 Sound Levels: ..... ≥ 50 dBA < 55 dBA Class 3 Sound Levels: ..... ≥ 45 dBA < 50 dBA
<b>Minor Amendment</b>	Proposed changes to the approved IEA that would not alter the Preferred Undertaking significantly in terms of what would be built, where it would be built, and how it would be built would be categorized as minor amendments.
<b>Mitigation Measure</b>	Where adverse environmental effects cannot be avoided, it will be necessary to develop the appropriate measures to remove or alleviate to some degree the negative effects associated with implementing the alternative.
<b>MNR</b>	Acronym for the Ontario Ministry of Natural Resources.

<b>MOE</b>	Acronym for the Ontario Ministry of the Environment. The Ministry of the Environment has a broad mandate to provide for the protection and conservation of the natural environment of Ontario.
<b>Moisture Content</b>	The amount of moisture in a given soil mass, expressed as weight of water divided by weight of oven-dried soil, multiplied by 100 to give a percentage.
<b>Monitoring</b>	To keep track of systematically, usually for the purpose of collecting information; or to test or sample according to a schedule, typically using a system including measuring devices and standard observations.
<b>Morphology</b>	The channel's planform and bed topography as well as bed sediment composition.
<b>MP</b>	Mini-piezometer. See Mini-piezometer.
<b>Municipal Well</b>	These are typically deep, drilled wells that obtain water from an aquifer unit at a rate suitable for municipal use.
<b>Natural Chanel Design</b>	The practice used in stream realignment and restoration projects to reconstruct channels with self-sustaining hydraulic, geomorphic and ecological functions that mimic those in natural watercourses.
<b>National Heritage Information Centre (NHIC)</b>	Compiles, maintains and distributes information on natural species, plant communities and spaces of conservation concern in Ontario.
<b>Natural Environment</b>	A term that encompasses all living and non-living things occurring naturally on Earth or some region thereof.
<b>Net Effect</b>	The remaining negative or positive effect of an alternative after the application of avoidance/mitigation/compensation/enhancement measures.
<b>Net Effects Analysis</b>	The process of determining and documenting the net effects associated with each indicator for each alternative being considered.
<b>Net Gain</b>	An increase in the productive capacity of habitats for selected fisheries brought about by determined government and public efforts to conserve, restore and develop habitats.
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	<p>All combustion in air produces oxides of nitrogen (NO<sub>x</sub>), of which nitrogen dioxide (NO<sub>2</sub>) is a major component. NO<sub>2</sub> is a reddish brown gas with a pungent and irritating odour. It transforms in the air to form gaseous nitric acid and toxic organic nitrates. NO<sub>2</sub> also plays a major role in atmospheric reactions that produce ground level ozone, a major component of smog.</p> <p>It is also a precursor to nitrates, which contribute to increased respirable particle levels in the atmosphere. Exposure to high levels can irritate the lungs and lower resistance to respiratory infection. People with asthma and bronchitis have increased sensitivity.</p>
<b>No Net Loss</b>	A working principle by which Fisheries and Oceans Canada strives to balance unavoidable habitat losses with habitat replacement on a project-by project basis so that further reductions to Canada's fisheries resources due to habitat loss or damage may be prevented.
<b>Non-native</b>	A species, subspecies, or lower taxon introduced outside its normal past or present distribution; includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce.
<b>Noise Sensitive Area (NSA)</b>	Noise receptors are called NSAs in this Report.

<b>Oak Ridges Moraine (ORM)</b>	The Oak Ridges Moraine is an irregular ridge of sandy hills stretching 160 kilometres from the Trent River in the east to the Niagara Escarpment in the west.
<b>Observation Well</b>	Sometimes referred to as a monitoring well is a non-pumping well used to observe the elevation of the water table or the potentiometric surface.
<b>Official Plan</b>	The key planning instrument that outlines the long term goals and objectives of a municipality in relation to land use planning. It is a statement about where and how development should take place now and in the future. It also defines the planning policies and land use designations such as Agriculture, Rural, Settlement Areas, Industrial/Business, Natural Heritage - Provincially Significant Wetlands etc., currently in effect.
<b>Ontario Heritage Act</b>	The primary focus of the Act is the protection of heritage buildings and archaeological sites.
<b>Ontario Water Resources Act (OWRA)</b>	The purpose of the OWRA is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being.
<b>Operation and Maintenance</b>	Refers to the operation and maintenance of the transportation corridor.
<b>ORNAMENT</b>	A road traffic noise prediction model that was used to estimate a setback distance from the 400 and 407 Highways to meet 55 dBA and 50 dBA, not accounting for screening effects.
<b>Ossuary Potential Zone</b>	An area where an ossuary may be located.  Ossuary burial is a mode of corporate burial in which the remains of numerous individuals, who were formerly interred within a village, were disinterred and re-deposited into one or two mass graves. This practice occurred by the Huron-Wendat from A.D 900 to approximately 1650.
<b>Overburden</b>	Loose or consolidated material/sediment that overlies consolidated material/sediment.
<b>Particulate Matter</b>	Particulate matter is the general term used for a mixture of solid particles and liquid droplets found in the air. These particles, which come in a wide range of sizes, are emitted directly from sources or formed in the atmosphere by the transformation of gaseous emissions into secondary pollutants. Total suspended particulate matter, or TSP, refers to the fraction of PM having a diameter less than or equal to 100 microns. Inhalable particulate matter, or PM <sub>10</sub> , refers to the fraction of PM having a diameter less than or equal to 10 microns. Respirable particulate matter, or PM <sub>2.5</sub> , refers to the fraction of PM having a diameter less than or equal to 2.5 microns. The smaller the particle size, the farther the particle can penetrate into the lungs. Therefore, smaller particles pose the greatest potential for human health effects. The greatest effect on human health is from particles 10 microns or less in diameter, which can aggravate bronchitis, asthma, and other respiratory diseases. People with asthma, cardiovascular or lung disease, as well as children and elderly people, are considered to be the most sensitive to the effects of airborne PM <sub>10</sub> or PM <sub>2.5</sub> .
<b>Permeability</b>	Pertaining to the relative ease with which a porous medium can transmit a liquid under a hydraulic or potential gradient. For example, sand and gravel deposits have a high permeability and silt and clay deposits have a low permeability.
<b>Permit To Take Water (PTTW)</b>	From the <i>Ontario Water Resources Act</i> (s.34). A Permit-To-Take-Water from the Ministry of the Environment (MOE) shall be obtained for the taking of water over 50,000 L/day from any given source, whether temporary or permanent for any purpose including but not limited to: diversion, potable water supply, cleaning, flushing and dewatering during highway construction, operation and maintenance).

<b>Physiographic Region</b>	A portion of the Earth's surface with a basically common topography and morphology.
<b>Places to Grow</b>	Is the Ontario government's program to manage growth and development in Ontario in a way that supports economic prosperity, protects the environment and helps communities achieve a high quality of life. In 2005, the Province of Ontario passed the <i>Places to Grow Act</i> , which is designed to promote planning on a more regional level and slow the growth of urban sprawl. The Act was accompanied by a <i>Growth Plan for the Greater Golden Horseshoe</i> .
<b>Plant Survivorship Monitoring</b>	Conducted to ensure the success of the post-construction planting program.
<b>PM<sub>2.5</sub></b>	Acronym used to described respirable particulate matter.
<b>Pool</b>	Areas of a stream that are deep with a relatively low velocity and a smooth unagitated surface.
<b>Potential Effect</b>	An effect that is deemed possible to result from the implementation of a particular alternative.
<b>Potentiometric Surface</b>	The surface that represents the level to which water will rise in a well.
<b>Pre-contact period</b>	The time period before the date Europeans made first contact with North American Aboriginal people. In Southern Ontario, roughly before 1650; in Northern Ontario, at later dates depending on the time at which European explorers first entered an area.
<b>Private / Domestic Well</b>	These can be either shallow dug wells or deep drilled wells. These are groundwater wells used for potable water supply for residential use. Typically only productive enough to support a single family.
<b>Proponent</b>	Although the City initiated the Schedule 'C' Municipal Class EA Study and was a co-proponent with York Region during preparation of the Western Vaughan Transportation Improvements IEA ToR, the City withdrew from the project before the IEA was initiated. Therefore, York Region is the sole proponent for the Western Vaughan Transportation Improvements IEA.
<b>Protection (of habitats)</b>	Prescribing guidelines and conditions, and enforcing laws for the purpose of preventing the harmful alteration, destruction or disruption of fish habitat.
<b>Protected Heritage Property</b>	Real property designated under Parts IV, V or VI of the <i>Ontario Heritage Act</i> ; heritage conservation easement property under Parts II or IV of the <i>Ontario Heritage Act</i> ; and property that is the subject of a covenant or agreement between the owner of a property and a conservation body or level of government, registered on title and executed with the primary purpose of preserving, conserving and maintaining a cultural heritage feature or resource, or preventing its destruction, demolition or loss.
<b>Provincial Policy Statement (PPS)</b>	Is issued under the authority of Section 3 of the <i>Planning Act</i> . It provides direction on matters of provincial interest related to land use planning and development, and promotes the provincial "policy-led" planning system.

<b>Provincial Ranks (S-ranks)</b>	<p>Provincial (or Subnational) ranks are used by the 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.</p> <p><i>S1 Critically Imperiled</i> ....Critically imperiled in the nation or state/province 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 from the state/province.</p> <p><i>S2 Imperiled</i>.....Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.</p> <p><i>S3 Vulnerable</i> .....Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.</p> <p><i>S4 Apparently Secure</i> ....Uncommon but not rare; some cause for long-term concern due to declines or other factors.</p> <p><i>S5 Secure</i> .....Common, widespread, and abundant in the nation or state/province.</p>
<b>Provincial Water Quality Objectives (PWQO)</b>	<p>Provincial Water Quality Objectives (PWQO) are numerical and narrative criteria which serve as chemical and physical indicators representing a satisfactory level for surface waters (i.e. lakes and rivers) and, where it discharges to the surface, the ground water of the Province. The PWQO are set at a level of water quality which is protective of all forms of aquatic life and all aspects of the aquatic life cycles during indefinite exposure to the water. The Objectives for protection of recreational water uses are based on public health and aesthetic considerations.</p>
<b>Provincially Significant Wetlands (PSW)</b>	<p>These are wetlands evaluated as provincially significant using the Ontario Wetlands Evaluation system (OWES).</p>
<b>Public</b>	<p>Means the general public, individual members of the public who may be affected by or have an interest in a project and special interest groups.</p>
<b>Pumping Test</b>	<p>A test conducted to determine aquifer or well characteristics.</p>
<b>Purpose of the Undertaking</b>	<p>The purpose of the undertaking is to improve transportation mobility and facilitate more convenient and reliable transportation choices within the Western Vaughan Transportation Improvements Study Area as new provincially-approved growth occurs over the next 25 years.</p>
<b>Rank</b>	<p>Of a specified order or position in relation to others in a series.</p>
<b>Ranking</b>	<p>To arrange (alternatives) according to their rank.</p>
<b>Rationale</b>	<p>Explanation of the logical reasons or principles employed in consciously arriving at a decision or estimate.</p>

<b>Rationale for the Undertaking</b>	In anticipation of future population and employment growth, York Region recognizes the need to manage congestion more efficiently and sustainably, ensuring that its transportation system can accommodate new growth in all of the Region's municipalities – including the City of Vaughan. If practical solutions are not implemented, there will be several foreseeable challenges to the future operation of Western Vaughan's transportation system, including: high levels of traffic congestion; discontinuous roads; low vehicle occupancy rates; limited transit service; and heavy truck traffic. These challenges and the approved growth in population and employment are described below.
<b>Reasonable Alternative</b>	Defined for 'Alternatives to the Undertaking' to be those alternatives that can address the purpose of the undertaking. Defined for 'Alternative Methods of Carrying out the Undertaking' to be those alternative methods that can implement the preferred alternative.
<b>Reasoned Argument / Trade-off Method</b>	A comparative evaluation method based on net effects / advantages and disadvantages and explained in narrative terms (rationale). The process of examining the net effects and key trade-offs of each alternative in order to provide a clear rationale for the preferred alternative.
<b>Receptor</b>	An ecological or a man-made entity exposed to a stressor.
<b>Recharge</b>	The entry of water from the surface to the groundwater table and the associated flow away from the water table within the saturated zone.
<b>Redside Dace Recovery Strategy</b>	The strategy identifies methods to protect existing Redside Dace populations, rehabilitate habitats, collect information on the status of Redside Dace and its habitats, and increase awareness regarding the significance of the species.
<b>Regional Municipality of York</b>	York Region.
<b>Residence</b>	Place of dwelling.
<b>Residual effect</b>	The remaining negative or positive effect of an alternative after the application of avoidance/ mitigation/ compensation/ enhancement measures.
<b>Restoration (of habitats)</b>	The treatment or clean-up of fish habitat that has been altered, disrupted or degraded for the purpose of increasing its capability to sustain a productive fisheries resource.
<b>Review Agency Advisory Committee (RAAC)</b>	The RAAC was comprised of representatives from 8 agencies/corporations. RAAC meetings were held regularly to update members on the status of the project, obtain feedback on each stage of the IEA, and outline future steps in the study process.
<b>Riffle</b>	Areas of relatively shallow fast, turbulent flow where the water's surface is typically broken.
<b>Right of Way (ROW)</b>	Publicly owned land occupied by facilities such as roadways or public utilities.
<b>Riparian</b>	Relating to, living, or located on the bank of a natural watercourse (such as a river) or sometimes of a lake or a tidewater. In the ELC, refers to aquatic communities adjacent to, or associated with, a river or stream as opposed to a lake or pond (cf. lacustrine).
<b>Riparian Vegetation</b>	Plant communities along the river margins characterized by hydrophilic plants.
<b>Riparian Zone/Area</b>	The interface between land and a stream.
<b>Route Portion</b>	A distinct part or piece of the entire transportation corridor.

<b>Run</b>	Areas typically found at the head of a pool with rapidly flowing water. Similar to a riffle but greater depth. The water's surface is typically not agitated by bed material, but may be turbulent.
<b>Saturated Zone</b>	The area below the water table where all available pore space is full of water.
<b>Screening</b>	A process of applying screening criteria/criterion to alternatives and eliminating those that do not meet minimum conditions or categorical requirements from further consideration.
<b>Sensitive Receptor</b>	<p>Noise sensitive receptors in the report are called "Noise Sensitive Areas". Under current York Region policies, NSAs can include the following land uses, provided they have an Outdoor Living Area (OLA) associated with them:</p> <ul style="list-style-type: none"> <li>• Private homes (single family units and townhouses)</li> <li>• Multiple unit buildings such as apartments, provided they have a communal OLA associated with them</li> <li>• Hospitals and nursing homes for the aged, provided they have an OLA for use by patients</li> <li>• Schools, educational facilities and daycare centres where there are OLAs for students Churches and places of worship</li> </ul> <p>The following land uses are generally not considered by York Region to qualify as NSAs:</p> <ul style="list-style-type: none"> <li>• Apartment balconies</li> <li>• Cemeteries</li> <li>• Parks and picnic areas not part of a defined OLA</li> <li>• All commercial</li> <li>• All industrial</li> </ul>
<b>Sensitive/Sensitivity</b>	The quality or state of being sensitive. The state of being responsive or susceptible to external effects or agents.
<b>Sensitivity of Fish and Fish Habitat</b>	<p>a) Encompasses 'functional' aspects of habitat, or the dependencies of a particular type of habitat on underlying functional processes and characteristics such as groundwater discharge, flow and sediment transport, and water quality.</p> <p>b) Integrates habitat type with species use, that is, the level of dependence of a species on specific habitat functions.</p> <p>c) Integrates both site specific and broader ecosystem and socio-economic considerations, in considering rarity/representation and importance.</p>
<b>Settlement Area</b>	Means urban areas and rural settlement areas within municipalities (such as cities, towns, villages and hamlets) that are built up areas where development is concentrated and which have a mix of land uses and which have been designated in an official plan for development.
<b>Shallow Wells</b>	See Unconfined Wells.
<b>Short-list of Alternatives to the Undertaking</b>	Following the screening process, a list of the most promising Alternatives to the Undertaking was developed, i.e. the "short-list".
<b>Shovel test-pit survey</b>	An archaeological survey conducted by means of transects of hand-excavated test pits, each being 30 cm or more in diameter, excavated to sterile subsoil, screened through 6mm mesh, and backfilled.

<b>Smart Commute</b>	Smart Commute – North Toronto, Vaughan (NTV) is an award winning non-profit organization. Our tailored sustainable transportation programs help commuters Travel Smarter. Cleaner. Better. by providing workplace-based support, such as carpool-matching and employee vanpool programs, as well as a variety of incentives to walk, cycle and take transit.
<b>Specialized Habitat</b>	Habitat features that are required/critical to the fish for carrying out all of the life cycle functions.
<b>Species at Risk</b>	Means an extirpated, endangered or threatened species or a species of special concern ( <i>Species at Risk Act (2002) / Species at Risk Act Registry Glossary (2003)</i> ).
<b>Species at Risk Act (SARA)</b>	Canadian Federal Act to prevent Canadian indigenous species, subspecies, and distinct populations from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species, and encourage the management of other species to prevent them from becoming at risk.
<b>Species Diversity</b>	Refers to the number of different species within an assemblage, ecological community, area or sample; also known as species richness.
<b>Stakeholder Sensitivity Analysis</b>	Carried out at the onset of the project to identify and involve all affected individuals, organizations and firms as well as to identify potential issues and concerns that may arise throughout the Western Vaughan Transportation Improvements IEA.
<b>Stormwater Management</b>	Stormwater management is the management of stormwater runoff, often using water retention facilities, to provide controlled release into receiving streams.
<b>Subwatershed</b>	A subdivision of a watershed based on hydrology, generally corresponding to the area drained by a small tributary.
<b>Surface Water</b>	Water that exists above the substrate or soil surface, including runoff from precipitation events and snow melt, typically occurring in streams, creeks, rivers, lakes, ponds and wetlands.
<b>Swale</b>	A vegetated or rock lined channel to convey water.
<b>Tableland</b>	A relatively flat upland area outside of valley land.
<b>Terms of Reference (ToR)</b>	The first step in an application for approval to proceed with a project or undertaking under the <i>Environmental Assessment Act (EAA)</i> is the submission of a Terms of Reference (ToR) for the Environmental Assessment (EA). Public and agency consultation is required on the preparation and submission of the ToR to the Ministry of the Environment. Approval is required by the Minister of the Environment. If approved, the ToR provides a framework / work plan for the EA.
<b>Terrestrial</b>	Refers to an environment that is of, or on the ground, or to animals and plants living or growing on the ground (land). Specifically referring to habitats where the water table is rarely or briefly above the substrate surface and hydric soils have not developed.
<b>Thermal Monitoring</b>	Effects to the thermal character of watercourses due to short-term construction dewatering will be prevented by the implementation of mitigation measures. Thermal monitoring at short-term construction dewatering sites will include the deployment and analysis of data loggers, positioned strategically up- and down-stream of discharge locations, to record stream conditions before and during dewatering events.
<b>Threatened Species</b>	A species that is listed or categorized as a “Threatened Species” on the Ontario Ministry of Natural Resources’ official species at risk list, as updated and amended from time to time.

<b>Till</b>	Glacial drift composed of an unconsolidated, heterogeneous mixture of clay, sand, pebbles, cobbles, and boulders.
<b>TMP</b>	Acronym for Transportation Master Plan. The Regional Municipality of York's 2002 Transportation Master Plan and its more recent November 2009 update adopted by Regional Council, recommended improvements to the arterial roads within Western Vaughan as a means of improving transportation mobility.
<b>Toronto and Region Conservation Authority (TRCA)</b>	Established under the <i>Conservation Authorities Act</i> (1946), the TRCA prepares and delivers programs for the management of the renewable natural resources within watersheds in its jurisdiction.
<b>Traceability</b>	The characteristic of an evaluation process that enables its implementation to be followed with ease.
<b>Trade-offs</b>	A balancing of attributes, all of which are not attainable at the same time. Giving up of one thing in return for another.
<b>Transit Priority Network</b>	The transit priority network reflects roads where separate lanes have been identified for transit.
<b>Transportation Problems and Opportunities</b>	Problems and/or opportunities provide the basis for identifying a range of reasonable alternative solutions to the undertaking.
<b>Transportation System Management (TSM) Measures</b>	TSM measures could improve the efficiency of existing arterial roads and/or discourage the use of residential collector and local roads by long distance and through traffic. Possible measures could include intersection improvements, traffic signal co-ordination, and traffic control measures such as speed bumps.
<b>Transportation Tomorrow Survey (TTS)</b>	Provides weekday travel data for the Niagara, Hamilton, the GTA, Peterborough, Peterborough Country and Victoria Country based on 5% sample of population.
<b>Travel Demand Management (TDM)</b>	Strategies that include measures that improve the operation of the current transportation system by managing travel demands, independent of other infrastructure improvements (e.g. construction of expanding roads).
<b>Trench Plug</b>	An impermeable barrier installed along and perpendicular to buried pipeline to restrict the flow of water through the (backfilled) pipe trench
<b>Tributary</b>	A stream or river which flows into a main stem river.
<b>Unconfined Aquifer</b>	An aquifer in which there are no confining beds between the zone of saturation and the surface (commonly referred to a water table aquifer).
<b>Unconfined Wells</b>	Wells that are completed in the uppermost saturated aquifer at that location (the upper unconfined aquifer) and are not overlain by aquitard deposits. These are susceptible to surficial land use activities and are most often dug.
<b>Undertaking</b>	An enterprise or activity, or a proposal, plan or program in respect of a commercial or business enterprise or activity of a person or persons that has potential environmental effects and is carried out in accordance with the requirements of the <i>EA Act</i> .
<b>Unsaturated Zone</b>	The area above the water table where some of the available pore space is not full of water.
<b>Upland</b>	A general term for an area that is higher in elevation than the surrounding landscape (Ecological Land Classification for Southern Ontario (Ecological Land Classification for Southern Ontario [MNR, 1998]).

<b>Urbanization</b>	An increasing concentration of the population in cities and a transformation of land use to an urban pattern of organization
<b>Valleylands</b>	A natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year (Provincial Policy Statement [MMAH, 2005]).
<b>Volatile Organic Compounds</b>	<p>VOCs are defined technically as organic compounds having a saturation vapour pressure greater than 10-1 Torr at 25°C and standard atmospheric pressure. Certain VOCs warrant special concern because they are capable of being transported very long distances in the atmosphere and play an important role in the formation of ground level ozone and fine particles. Many are also toxic and/ or odourous. VOCs are emitted into the atmosphere from a variety of sources, including, vehicles, petroleum refining, solvent use (industrial and residential), and paint application.</p> <p>Formaldehyde is a colourless gas with a pungent, suffocating odour at room temperature. Formaldehyde is used mainly to produce resins. The major emission sources are power plants, manufacturing facilities, incinerators, and vehicle exhaust. Inhalation exposure to high levels of formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Formaldehyde is classified as a probable human carcinogen.</p> <p>Acetaldehyde is a colourless, flammable liquid, volatile at ambient temperature and pressure, with an irritating odour. Acetaldehyde is used commercially in a wide variety of chemical reactions including the manufacturing of acetic acid. It is both directly emitted into the atmosphere through incomplete combustion as well as formed in the atmosphere from a variety of precursors. Acetaldehyde is classified as a probable human carcinogen.</p> <p>1,3-Butadiene is a colourless gas with a mild gasoline-like odour and is used in the production of rubber and plastics. Motor vehicle exhaust is a constant source of trace levels of 1,3-butadiene. Inhalation exposure in humans at elevated levels can result in irritation of the eyes, nasal passages, throat, and lungs. 1,3-Butadiene is classified as a probable human carcinogen.</p> <p>Benzene is primarily used in the production of plastics and other chemical products, which has been linked to various types of leukemia, lymphoma, and blood diseases. Benzene is classified as a human carcinogen.</p> <p>Acrolein is manufactured as an end-use product and as an un-isolated intermediate in the production of acrylic acid. It is also a potential by product of incomplete combustion. Acrolein is not commercially produced in Canada but is imported from the United States for use mainly as a pesticide. Exposure to humans can cause eye irritation at low levels of exposure, and has effects on the respiratory system and even fatality at elevated levels of exposure.</p>
<b>Volume/capacity (v/c) Ratio</b>	<p>The v/c ratio is a measure of traffic demand on a facility (expressed as volume) compared to its traffic-carrying capacity. A v/c ratio of 0.7, for example, indicates that a traffic facility is operating at 70% of its capacity. Threshold v/c values are defined for three categories of congestion:</p> <p style="padding-left: 40px;">Uncongested ..... v/c less than 0.80; Some Congestion .... v/c between 0.80 and 0.90; and Congested ..... v/c greater than 0.90.</p>
<b>Watercourse</b>	A stream, river or channel in which a flow of water occurs, either continuously or intermittently, with some degree of regularity (Glossary of Drainage Terms [MTO, 1999]).
<b>Watercourse Crossing</b>	A culvert or bridge structure used to cross a water body (MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings [2006]).

<b>Watershed</b>	Area of land that catches rain/snow and drains or seeps into a marsh, stream, river, lake or groundwater.
<b>Water Table</b>	The upper surface of groundwater, or the level below which an unconfined aquifer is permanently saturated with water.
<b>Water Taking</b>	The withdrawal of water from a groundwater (or surface water) source.
<b>Water Well Record</b>	A record of the geology encountered during the drilling of a water well.
<b>Water Yield</b>	The withdrawal rate of water from a given well.
<b>Western Vaughan Transportation Improvements Study Area</b>	The area assessed as part of the Individual Environmental Assessment. See Figure 2-1.
<b>York Region’s Transportation Master Plan</b>	Defines a long-term transportation vision and road and transit plans to support population growth.