Appendix A
Study Design

County of Peterborough
Active Transportation Master Plan
Study Design Report

FINAL

January 13, 2017

BT Eng Project 15-041

Table of Contents

List of Figures

List of Tables

1.0 Introduction

1.1 Background

In 2014, the County of Peterborough completed an update to its Transportation Master Plan (TMP). The plan identified the promotion of cycling and walking as an important measure that increases the well-being and sustainability of a community. One of the key measures recommended in the TMP was to develop a County-wide Active Transportation Master Plan (ATMP).

The TMP developed a conceptual active transportation/cycling network for Peterborough County that identified both on-road and off-road (trail) active transportation facilities (see **Figure 1** and **Figure 2**). This was a coarse network based on the existing trails and off-road routes located in Peterborough County and the City of Peterborough. However, this plan was conceptual and will be refined in co-ordination with municipalities and stakeholders as part of this study.

In 2014, the Peterborough County-City Health Unit, GreenUP and the City of Peterborough released the "Peterborough 2014 Active Transportation Indicators Report". This comprehensive report sought to achieve the following objectives:

- Increase awareness about the impact transportation has on personal health, the health of the community, and the health of the natural environment;
- Enhance understanding regarding factors that influence levels of walking and cycling;
- Identify critical issues and trends that can inform the development of evidence-based policies;
- Establish indicators that can be used to meaningfully measure progress toward a more walkable, bikeable, and transit-friendly community; and
- Highlight successes and opportunities for future intervention.

The report provided baseline research into the current cycling and walking mode splits in Peterborough County with very detailed breakdowns by a variety of socio-economic and geographic metrics.

The ATMP planning process will consider a number of built improvements to the transportation network that may have impacts on the Natural, Social and Economic environments. As such, it is subject to the Municipal Class Environmental Assessment process (Class EA), under the Province of Ontario's Environmental Assessment Act.

This document, the initial public document for the Municipal Class EA, presents a blueprint of the Work Plan and Study Process for this pending Master Plan. It is meant to identify an initial list of issues, define the key aspects required to complete the study including the EA planning process and the anticipated schedule for completion. This report will be circulated at the initiation of the study to various stakeholders and presented to the study's Technical Advisory Committee (TAC) and the general public at the first Public Information Centre (PIC).

The ATMP will be completed as a standalone report. The final document will include a wide array of recommendations covering:

- Network Connectivity;
- Cost/Affordability;
- Maintenance;
- Safety;
- Facilities; and
- Marketing/Education

For any improvements subject to the Municipal Class EA process, the ATMP will complete Phases 1 & 2 of Class EA by establishing the need and justification for the project, considering all reasonable alternatives with acceptable effects on the natural, social and cultural environments, and proactively involving the public in defining a recommended plan for improvements.

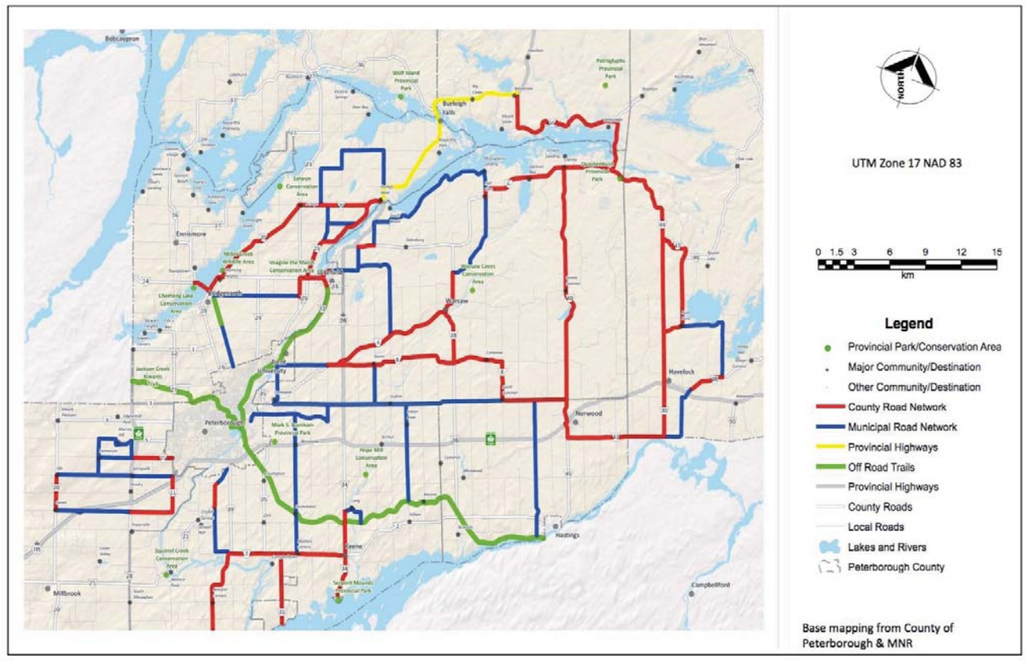

Figure 1: Conceptual Active Transportation Network from Peterborough County TMP

Peterborough Active Transportation Master Plan
County of Peterborough
Final Study Design – January 2016
Page 3

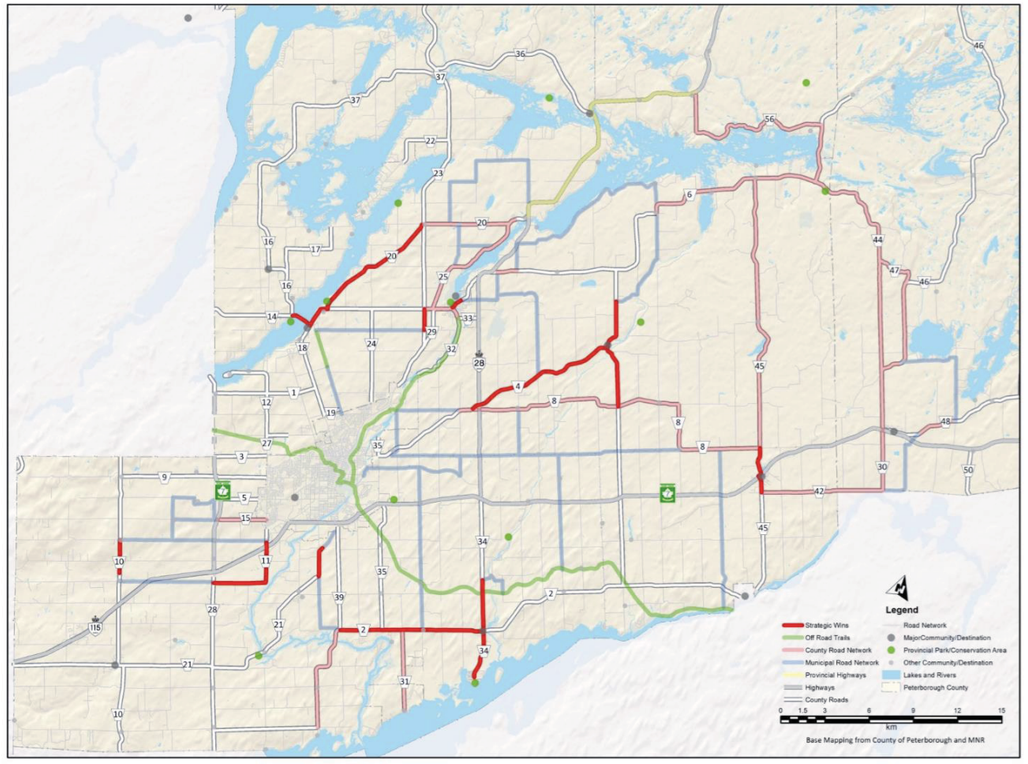

Figure 2: Identified Road Improvements from Peterborough County TMP

2.0 Study Approach

2.1 Study Purpose

Active Transportation refers to human powered or non-motorized modes of travel. Other forms of recreational activities such as; ATV's, snowmobiling, cross-country skiing and equestrian is not the focus of this study.

2.2 Need and Justification

Active Transportation provides a number of benefits to both individuals and communities over motorized forms of travel. These include:

- Decreased emissions of greenhouse gases, particulates, volatile organic chemicals, and numerous other harmful chemical pollutants;
- Increased physical activity leads to significant improvement in a number of health indicators, including decreased likelihood of chronic diseases such as Heart Disease and Stroke, Type 2 Diabetes and many forms of cancer; and
- In areas experiencing traffic congestion, increased levels of cycling and walking can reduce or eliminate the requirement for expensive and potentially environmentally damaging new or upgraded transportation facilities needed to accommodate motorized traffic.

The ATMP will identify policy and infrastructure improvements that will aim to increase the mode share of forms of Active Transportation; primarily cycling and walking throughout the County of Peterborough.

2.3 Study Issues

The ATMP will aim to address and mitigate barriers to more widespread cycling and walking throughout the County that have the potential to eliminate a motorized vehicle trip (i.e. home-based work, school and shopping trips etc.) These barriers and possible mitigation strategies include:

- Increased perception of risk when cycling vs motorized travel. Possible mitigation:
    - "Share the Road" signage and marked and published cycling routes;
    - Fully paved shoulders to better separate high speed vehicle traffic from cyclists and other vulnerable road users;
    - Safety education programs to better educate both cyclists and drivers;
    - Use of well-designed multi-use trails (preferably paved) and lower volume parallel corridors vs on-road facilities along major arterials; and
    - Winter maintenance of facilities.
- Opportunities to promote Eco-tourism and the resulting economic benefits for area businesses.
- Impacts to personal appearance following an active trip to/from work. Possible mitigation:
    - Policies to encourage employers to allow less restrictive clothing during warm days; and
    - Policies to encourage provision of shower/change facilities in workplaces.

- Risk of bicycle theft. Possible mitigation:
    - Provision of on-street well-placed lock up facilities (U-rack designs); and
    - Planning policies requiring visible, secure bicycle parking facilities.
- Potential competing interests for use of roadway shoulder areas with off-road vehicles (ORVs) and all-terrain vehicles (ATVs).

In addition to trips that would reduce or eliminate motorized vehicle trips, the ATMP will aim to increase the amount of recreational cycling, walking and other forms of active transportation. Issues to be addressed will include, but not be limited to:

- Maintenance and expansion of the existing off-road trails network;
- Marketing to on-road and off-road cycle tourists, hikers, etc.;
- Providing adequate and safe parking/vehicle access to trailheads at intersections with roadways;
- Ensuring adequate guide signage on off-road trail facilities; and
- Ensuring trail map integration with County website, Ontario Trails Alliance and online mapping providers such as Google Maps, Apple Maps, Bing etc.

Where facility improvements are considered, the ATMP will address any impacts to:

- Adjacent natural terrestrial and aquatic environments;
- Archeological potential;
- First Nations;
- Businesses;
- Emergency Response; and
- Adjacent and intersecting motorized traffic.

The ATMP document will present a "basket of solutions" intended to increase the levels of walking, cycling and other non-motorized human powered forms of transportation.

3.0 Study Process

3.1 Public Consultation Approach

Several techniques to proactively involve the public will be used. Our work program proposes the following key elements:

- Preparation of this Study Design Report that documents our consultation plan, technical work plan and study schedule.
- Advertise the commencement of the study and request members of the public register for consideration to be a member at large on the Advisory Committee (members of the public can review the Study Design to determine their interest (or non interest) in participating on the Advisory Committee).
- An Advisory Committee and Agency Community Café / focus group workshop.
- Consultation and communication with external agencies.
- A Value Planning workshop with members of the Technical Advisory Committee.
- Public Information Centre (PIC) No. 1 to introduce the Study Design and seek public/agency input.
- A travelling roadshow of an estimated 4 information sessions at community events such as fairs, festivals and/or farmers markets.
- The use of Social Media (see section 4.1.1).
- A public opinion survey to be collected at the information sessions.
- Conduct Public Information Centre (PIC) No. 2 to present a course screening of alternatives and a preliminary prioritization of proposed policies and improvements.
- An Advisory Committee workshop to review the public input for the proposed plan and to finalize the prioritization of recommendations.
- Advertise a Notice of Completion and posting of the ATMP report for public review.
- Public presentations to Councils to present and seek endorsement of the study recommendations.

3.1.1 Social Media Channels and Website

Throughout the study, a project website and social media channels will be maintained.

The project website will serve as the main online repository for content as the project proceeds. A project Twitter account, Facebook page and Google+ page will be developed and monitored. These channels will be leveraged to further engage all users of the transportation network in discussion as the project proceeds. The hashtag #PtboCoATMP will be used on all social media posts to facilitate social media searches for any comments and information pertaining to the ATMP.

3.2 Work Program

The following sections summarize major elements of our technical work program and include the following:

Phase 1 - Step 1 Data Collection

Task 1: Project Start-Up

Upon initiation of the project, study scope, schedule, meeting dates and the role of the Advisory Committee will be confirmed. The Advisory Committee will provide guidance into the technical elements of the study including the study issues, data collection and prioritization of alternative projects, policies and transportation strategies.

Task 2: Information Gathering

The second task involves the collection and organization of the data necessary for the analysis and evaluation of transportation projects/strategies. Sources of information and activities may include:

- Assembly and preliminary review of study materials;
- Obtain digital mapping, photographs and associated drawings;
- Field reviews of key corridors; and
- Collect County and municipal Official Plans and Transportation Master Plans, and other supporting documentation

Task 3: Study Design (this Report)

The Study Design allows the early identification of the major issues and concerns, and in addition, recognizes areas of consensus or agreement.

Phase 1 Step 2 – Identify Problems and Opportunities

Task 4: Advisory Committee Workshop / Community Café

- Confirmation of existing constraints;
- Documentation of existing profile of active transportation users;
- Define deficiencies (existing /future operational problems) within the current network; and
- Generation of operational improvement alternatives or strategies.

Task 5: Environmental Review

The environmental review will undertake a high level identification of environmental influences that should be considered when evaluating choices for future transportation decisions.

Output:

- Technical memorandum on environmental issues related to Peterborough County transportation decisions including: sustainability, maintenance, and others. This deliverable will be produced early in the study to allow its use and public review as a reference document for subsequent decision-making.

Task 6: Development of Network Improvements

The assessment of active transportation network requirements will be carried out to ensure the development of an integrated multi-modal plan. The work plan will include:

- Review/update the inventory of existing pedestrian & cycling facilities based on information provided by the County
- Identify community destinations to be served by the pedestrian/cycling network
- Identify existing and planned active transportation routes in neighbouring jurisdictions where connections to the County would be desirable from a route continuity perspective
- Potential opportunity to upgrade some snowmobile trails for use as multi-use pathways or hiking trails during summer months
- Review background reports and any existing plans/ policies related to active transportation
- Obtain input from County staff regarding known issues/ public complaints
- Assess the cost/benefits of life cycle costs (collisions, maintenance and capital costs of paving shoulders to assess stepped levels where the County standard will propose fully paved shoulders)
- Identify a policy for “no”, 1 or 2 sidewalks on County Roads based on vehicular and pedestrian demand (considering special

land use activity such as schools, special needs populations, and residential land uses for the elderly)

Task 7: Evaluate Connectivity with Area Municipalities

The County of Peterborough does not exist in isolation; connections to facilities in the City of Peterborough, Municipality of Trent Lakes , the Townships, Durham Region, Northumberland County, Hastings County, Haliburton County and Victoria County are essential to support the movement of people using active transportation into and out of the County. In developing the ATMP, such linkages will be reviewed from a multi-modal perspective, taking into account any network improvements being planned by other jurisdictions.

Output:

- Identification of key connectivity requirements and potential projects considering future projects in area municipalities (road and transit projects)
- Consider system connectivity within the County

Task 8: Best Practises Review and Policy Development

This task will complete a review of best practises considering policies currently being used by other counties or cities. This review will be undertaken by completing a survey of best practises. Some of the best practises will relate to:

- Active transportation policy for area roads and potential classifications
- Traffic signage and markings
- Route designation
- Environmental protection
- Paved shoulders
- Bicycle facilities
- Sidewalks
- Multi-use trails
- Accessibility standards

Output:

- Transportation policies and practises (to be developed) to support the long term TMP vision and best practises of other jurisdictions
- Defining a sustainable and affordable policy of asset preservation following best practises of other transportation authorities
- Recommendations for implementation (action plan of next steps to implement these recommendations)

Task 9: Development, Analysis and Prioritization of Candidate Roadway Projects and Strategies

Task 9.1 Development of candidate improvement projects, programs and policies

The candidate alternatives will be generated through the technical analysis and discussions with the County, Advisory Committee, agencies and the general public. The list of candidate projects, programs, policies and strategies will be confirmed with the public, as required as part of the EA process, including the "Do Nothing" option. The forecast needs of the system (short term and long term) will be prioritized. This will include traffic operations, safety, illumination, active transportation, asset management and preservation as well as level of service standards (considering affordability constraints).

Candidate improvements may include:

- Share the Road and route signage and markings
- Traffic control measures including audible signals

- Road widening or contractions
- Multi-use pathways
- Bike lanes, wider shared lanes or paved shoulders
- New sidewalks or recreational pedestrian links
- Consideration of the County's Road Maintenance Program to coordinate implementation of potential improvements with ongoing maintenance.

Task 9.2 Prioritization of Candidate Alternatives

This study will include a systematic, traceable analysis and evaluation of the active transportation needs in the County, (based on the generation, analysis and evaluation of candidate alternative projects or strategies). It will include input received as part of the public consultation program in the development of an ATMP.

The prioritization will include the affordability of the future projects/ strategies and conformance/ integration with the County's Transportation Master Plan. A traceable evaluation process will be used when considering alternatives, including the use of sensitivity testing exercises. The Advisory Committee will participate in weighting exercises to provide direct input into the decision-making process.

The ability to implement future projects in the County will be constrained by funding. A key component of the prioritization of projects will be the evaluation of these options and the long term life cycle cost to construct and maintain this infrastructure.

Output:

- Define a long term vision for Active Transportation within the County of Peterborough
- List of capital need and priority of projects by planning horizon short term (0-5 years), medium term (5-10 years), and long term (10-20 years)
- Financial Plan (order of magnitude) of costs of the plan per year in current dollars
- Develop a financial strategy that matches the plan
- Identify potential sources of funding or partnering or alternative delivery methods.

Task 10: PIC's

The initial Public Information Centre (PIC) will introduce the project and present the Study Design. A series of information sessions at fairs, shopping malls or other community events will be used to collect public opinion surveys while presenting the long list of alternatives, traffic and safety analysis, and coarse screening of alternatives. PIC No. 2 will present the analysis and evaluation and recommended priorities of projects, transportation policies and strategies to carry forward. An evaluation of project priorities will be completed as part of an Advisory Committee Workshop / Focus Group Meeting considering the input from the public and agencies.

The PIC's will include graphics and text boards to describe the process and opportunities for the public to provide comment.

Task 11: Preparation of Active Transportation Master Plan Report

The preparation of the draft and final active transportation planning reports will meet the requirements of the Class EA. The report will document the study methodology, findings,

public involvement and recommendations. A draft version will be submitted to the County for review prior to the preparation of the final document.

4.0 Project Schedule

A proposed Project Schedule is included on the following page in **Table 1**.

Table 1: Preliminary Study Schedule Summary

Task	Date
Project Start-Up Meeting	January 2016
Study Design	January 2016
Study Commencement Notice	January 2016
Community Café	February/March 2016
Information Gathering	January – March 2016
Value Planning Workshop	February/March 2016
Environmental Review	March – April 2016
Development of Network Improvements	February – April 2016
Evaluate Connectivity with Area Municipalities	February – April 2016
Best Practices Review and Policy Development	February – April 2016
Submit Coarse Screening of Options	April 2016
Public Information Centre (PIC) No. 1	April 2016
Public Advisory Committee Meeting	April 2016
Information Sessions	April – July 2016
Public Advisory Committee Workshop	August 2016
Refinement to Development, Analysis and Prioritization of Candidate Roadway Projects and Strategies	August-September 2016
Public Information Centre (PIC) No. 2	September 2016
Refinements to Policies and Preferred Network	September 2016
Draft Active Transportation Master Plan	October 2016
Final ATMP submission	November 2016
Public Review Period	December 2016

Glossary of Terms

• **AADT**	Annual Average Daily Traffic – the average 24-hour, two-way traffic per day for the period from January 1st to December 31st.
• **Alignment**	The vertical and horizontal position of a road.
• **Alternative**	Well-defined and distinct course of action that fulfils a given set of requirements. The EA Act distinguishes between alternatives to the undertaking and alternative methods of carrying out the undertaking.
• **Alternative Planning Solutions**	Alternative ways of solving problems or meeting demand (Alternatives to the Undertaking).
• **Alternative Design Concepts**	Alternative ways of solving a documented transportation deficiency or taking advantage of an opportunity. (Alternative methods of carrying out the undertaking).
• **Alternative Project**	Alternative Planning Solution, see above.
• **ANSI**	Area of Natural or Scientific Interest
• **Berm**	Earth landform used to screen areas.
• **BMP**	Best management practice.
• **Bump-Up**	The act of requesting that an environmental assessment initiated as a class EA be required to follow the individual EA process. The change is a result of a decision by the proponent or by the Minister of Environment to require that an individual environmental assessment be conducted.
• **Bypass**	A form of realignment in which the route is intended to go around a particular feature or collection of features.
• **Canadian Environmental Assessment Act (CEAA)**	The CEAA applies to projects for which the federal government holds decision-making authority. It is legislation that identifies the responsibilities and procedures for the environmental assessment.

• **Class Environmental Assessment Document**	An individual environmental report documenting a planning process which is formally submitted under the EA Act. Once the Class EA document is approved, projects covered by the class can be implemented without having to seek further approvals under the EA Act provided the Class EA process is followed.
• **Class Environmental Assessment Process**	A planning process established for a group of projects in order to ensure compliance with the Environmental Assessment (EA) Act. The EA Act, in Section 13 makes provision for the establishment of Class Environmental Assessments.
• **Compensation**	The replacement of natural habitat lost through implementation of a project, where implementation techniques and other measures could not alleviate the effects.
• **Consortium**	A group of businesses or organizations allied to take on a project.
• **Corridor**	A band of variable width between two locations. In transportation studies a corridor is a defined area where a new or improved transportation facility might be located.
• **Criterion**	Explicit feature or consideration used for comparison of alternatives.
• **Cumulative Effects Assessment**	Cumulative Effects Assessment assesses the interaction and combination of the residual environmental effects of the project during its construction and operational phases on measures to prevent or lessen the predicted impacts with the same environmental effects from other past, present, and reasonably foreseeable future projects and activities.
• **Decibel (dB)**	A logarithmic unit of measure used for expressing level of sound.
• **dBA**	'A' weighted sound level; the human ear cannot hear the very high and the very low sound frequencies as well as the mid-frequencies of sound, and hence the predicted sound levels, measured in dBA, are a reasonable accurate approximation of sound levels heard by the human ear.

• **Detail Design**	The final stage in the design process in which the engineering and environmental components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared, and contract documents and drawings are produced.
• **DFO**	Department of Fisheries and Oceans.
• **EA**	Environmental Assessment
• **EA Act**	Ontario Environmental Assessment Act (as amended by S.O. 1996 C.27), RSO 1980.
• **Environment**	• Air, land or water, • Plant and animal life, including human life, • The social, economic and cultural conditions that influence the life of humans or a community, • Any building structure, machine or other device or thing made by humans, • Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or • Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario. •
• **Environmental Effect**	A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects.
• **Environmentally Sensitive Areas (ESA's)**	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.
• **Equivalent Sound Level (Leq)**	The level of a continuous sound having the same energy as a fluctuating sound in a given time period. In this report Leq refers to 24-hour, 16 or 18-hour averages.
• **ESR**	Environmental Study Report. The final documentation for Schedule C project, defining the project, consultation process, preferred solution and mitigation measures.

• **Evaluation**	The outcome of a process that appraises the advantages and disadvantages of alternatives.
• **Evaluation Process**	The process involving the identification of criteria, rating of predicted impacts, assignment of weights to criteria, and aggregation of weights, rates and criteria to produce an ordering of alternatives.
• **External Agencies**	Include Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
• **General Arrangement**	Structural plan of the bridge and proposed works including elevations and cross-sectional views of the bridge.
• **GRCA**	Grand River Conservation Authority.
• **Factor**	A category of sub-factors.
• **HADD**	Harmful Alternation, Disturbance or Destruction of fish habitat.
• **Harmonized EA Process**	Harmonized planning process for this project that will meet both the Provincial and Federal EA requirements.
• **Individual Environmental Assessment**	An environmental Assessment requiring the submission of a document for approval by the Minister, pursuant to the EA Act and which is neither exempt from the EA Act nor covered by a Class EA approval.
• **Mitigating Measure**	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
• **Mitigation**	Taking actions that either remove or alleviate to some degree the negative impacts associated with the implementation of alternatives.
• **MNRF**	Ministry of Natural Resources and Forestry.
• **MOECC**	Ministry of the Environment and Climate Change.
• **MTCS**	Ministry of Culture, Tourism and Sport.

• **MTO**	Ministry of Transportation Ontario.
• **Noise Attenuation**	A mitigation measure used to lessen the intensity of the noise level (dBA) where the noise level is increased in a noise sensitive area greater than 5 dBA 10 years after completion.
• **NSA**	Noise Sensitive Area is a noise sensitive land use, which has an outdoor living area associated with the residential unit.
• **OLA**	Outdoor Living Area is the part of an outdoor amenity area provided for the quiet enjoyment of the outdoor environment.
• **ORCA**	Otonobee Region Conservation Authority
• **Planning Alternatives**	Planning alternatives are "alternative methods" under the EA Act. Identification of significant transportation engineering opportunities while protecting significant environmental features as much as possible.
• **Planning Solutions**	That part of the planning and design process where alternatives to the undertaking and alternative routes are identified and assessed. Also described as "Alternative Project" under the federal EA Act.
• **PIC**	Public Information Centre
• **Prime Agricultural Areas**	Prime agricultural areas as defined in municipal official plans and other government policy sources.
• **Project**	A specific undertaking planned and implemented in accordance with the Class EA including all those activities necessary to solve a specific problem.
• **Project File**	The final product of a Schedule B project. This is a completion of all data/reports produced for the project.
• **Proponent**	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management, or control of an undertaking.
• **Public**	Includes the general public, interest groups, associates, community groups, and individuals, including property owners.

• **Realignment**	Replacement or upgrading of an existing roadway on a new or revised alignment.
• **Recommended Plan**	That part of the planning and design process, during which various alternative solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements of lands and rights-of-way are satisfactorily identified, and that the basic design criteria or features to be contained in the design, have been fully recognized and documented in sufficient graphic detail to ensure their feasibility.
• **Route Alternatives**	Location alternatives within a corridor.
• **SADT**	Summer Average Daily Traffic – the average 24-hour, two-way traffic for the period from July 1st to August 31st including weekends.
• **Screening**	Process of eliminating alternatives from further consideration, which do not meet minimum conditions or categorical requirements.
• **Steering Committee**	The Steering Committee will include the County and Consultant. It will act as the decision-making body for the study recommendations.
• **Sub-factor**	A single criterion used for the evaluation. Each sub-factor is grouped under one of the factors.
• **Traceability**	Characteristics of an evaluation process which enables its development and implementation to be followed with ease.
• **Undertaking**	In keeping with the definition of the Environmental Assessment Act, a project or activity subject to an Environmental Assessment.