

City of Oshawa
Windfields Drive Connection
Municipal Class Environmental Assessment
Draft Study Design Report



June 27, 2019

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1.0 Study Introduction

The City of Oshawa (City) has initiated a Harmonized Category B Public Work Class Environmental Assessment (EA) / Schedule B Municipal Class EA Study for the new Windfields Connection from Windfields Farm Drive West to Winchester Road West. The public consultation and decision-making will meet the requirements of either Class EA should both apply to the project. The two Class EA's are being considered because the road will be a municipal street (Municipal Class EA) and is expected to cross Ontario Hydro One property (which may trigger the Infrastructure Ontario Class EA). Should the Ontario Hydro lands be leased for the crossing then the requirement to follow the Infrastructure Ontario (IO) Class EA may not apply.

The City's Integrated Transportation Master Plan (ITMP) identified a new collector road for construction by 2023 to service the new Windfields subdivision. The Study will consider a range of alternatives including roadway alignment, cross-section, intersections, and active transportation. The EA Study will be documented in a Harmonized Project File Report which will present the recommended roadway improvements considering the traffic demand in the 20-year planning horizon.

The proposed roadway corridor may require the acquisition of land parcels owned by the Ministry of Transportation (Highway 407 right-of-way) and Infrastructure Ontario (on behalf of Hydro One). This Study Design Report, the initial public document for the Municipal Class EA Study, presents a description of the work plan, alternatives, coarse screening of alternatives, consultation plan and overall study process. The draft Study Design Report will be circulated at the initiation of the study to various agencies and to the Technical Advisory Committee (TAC), and will be available to the general public on the City's website. This Study Design document will scope the alternatives under investigation and the scope of the environmental review.

Study Area

The Study Area is located within in the City of Oshawa, as illustrated in **Figure 1**. Environmental inventories will be undertaken within and adjacent to this Study Area.

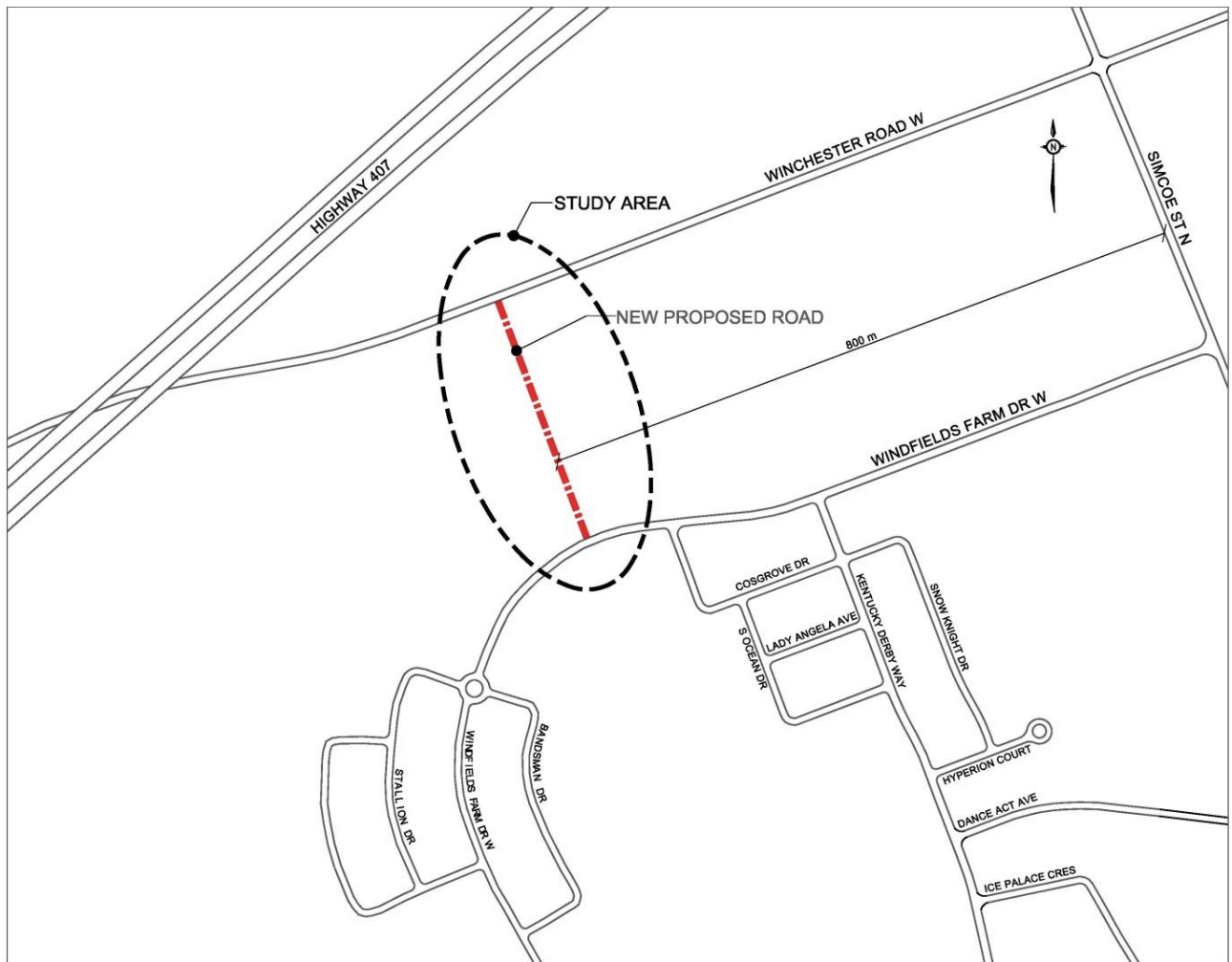


Figure 1: Study Area

2.0 Study Approach

This Study will be completed as a Harmonized Class EA, following the Infrastructure Ontario *Public Work Class Environmental Assessment* (2012) and the *Municipal Class Environmental Assessment* (2015).

2.1 Guiding Principles

The Study approach will involve the following Ministry of the Environment, Conservation and Parks (MECP) guiding principles for EA studies:

- Consider all reasonable alternatives;
- Provide a comprehensive assessment of the environment; and
- Provide a clear and concise documentation of the decision-making process and the public consultation program.

2.2 Environmental Assessment Act Requirements

This Study is being initiated as a Category B (IO Class EA)/Schedule B (Municipal Class EA) study, based on the range of anticipated effects and capital cost of the study.

This Study will include one Public Information Centre (PIC) and conclude with the preparation of a Project File Report. The public will be provided with a 30-day review period of the Project File Report at the Study conclusion. This Study Design is being made available to the public as additional public consultation within the Municipal Class EA process, as illustrated in **Figure 2**. The Study Design will provide the public and agencies an early opportunity to comment on the proposed approach for the Study.

2.3 EA Phases

The Municipal Class EA Process is illustrated in **Figure 2** and the Public Work Class EA Process is illustrated in

Figure 3.

The following is the breakdown of tasks for this Category B/Schedule B project:

Phase 1: Identify the Problem

Phase 2: Alternative Solutions

Phase 3: Alternative Design Concepts for Preferred Solution (does not apply for a Schedule B study)

Phase 4: Environmental Study Report (does not apply for a Schedule B study)

Phase 5: Implementation (Construction to follow)

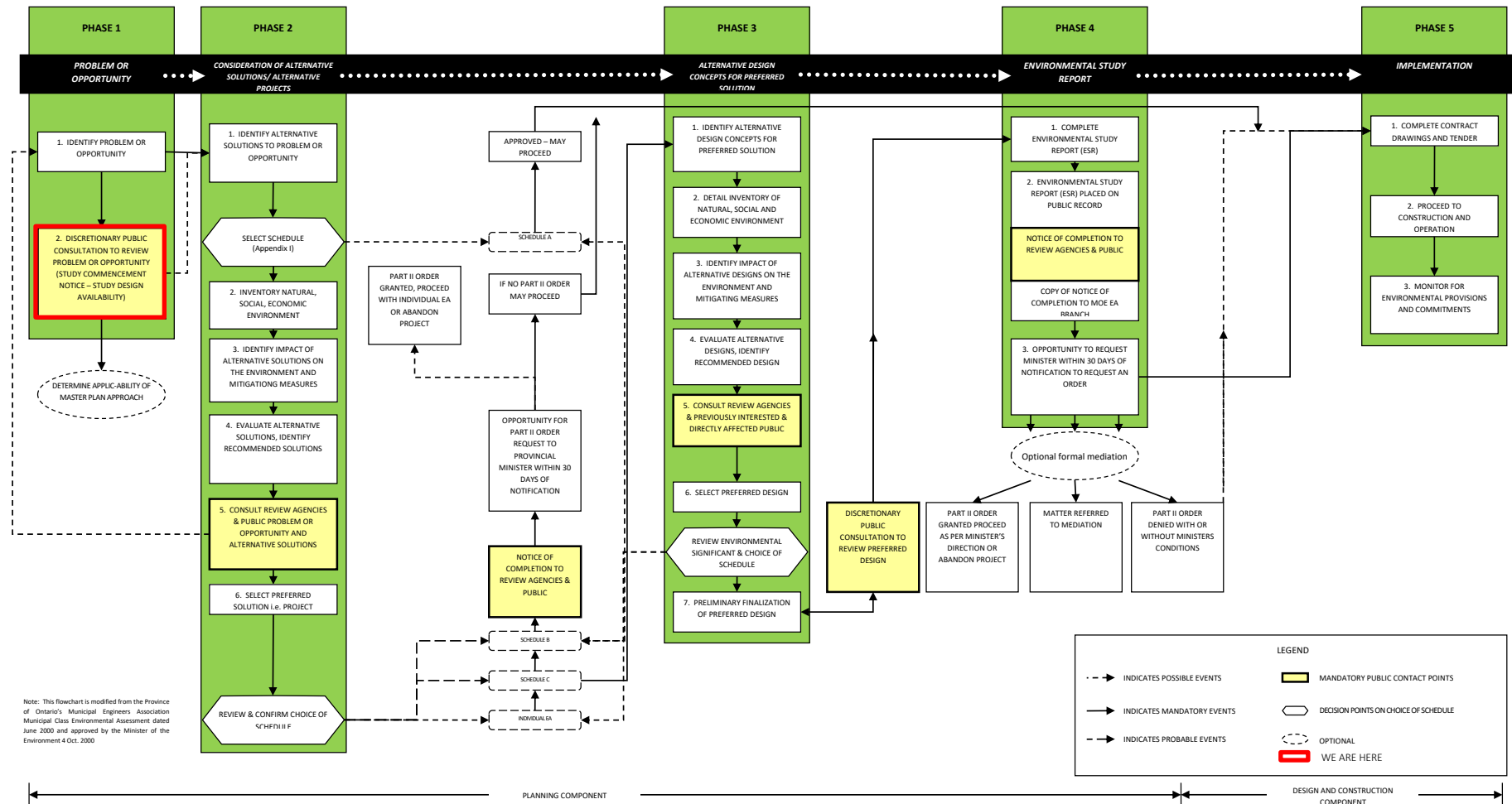


Figure 2: Municipal Class EA Process

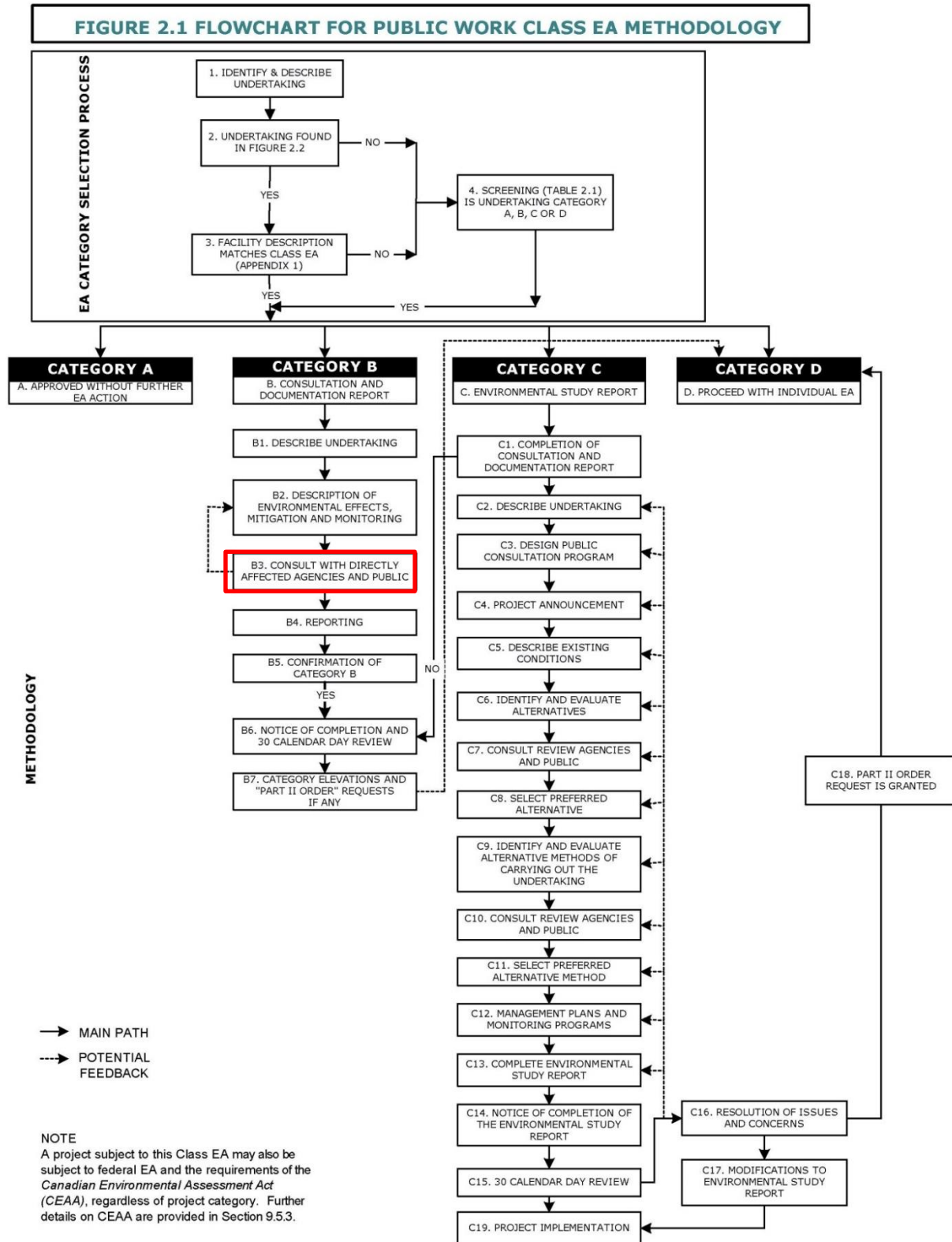


Figure 3: Public Work Class EA Process

3.0 Study Process

3.1 Public Consultation Approach

The study will use several techniques to proactively involve the public including one Public Information Centre (PIC) as well as meetings with external agencies. Meetings may be organized with the stakeholders including adjacent land owners, MECP, Ministry of Tourism, Culture and Sport (MTCS), Ministry of Natural Resources and Forestry (MNRF), Central Lake Ontario Conservation Authority (CLOCA), and other affected agencies. Meetings, if required, will also be held with Indigenous Peoples communities (including Alderville First Nation, Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation, and Metis Nation of Ontario Peterborough and District Wapiti Métis Council) who are rights holders. These meetings will be in addition to the progress meetings with the Technical Advisory Committee. These meetings will include representatives from the City of Oshawa.

The use of separate meetings with interest groups will ensure a high level of communication with the community regarding potential issues and the assessment of alternatives.

The initial distribution of the draft Study Design is to present the scope of the project, environmental and consultation work plans, alternatives and any coarse screening of these alternatives.

One PIC will be held in the fall of 2019 to present: the Final Study Design; study goals; problem and opportunity statement; environmental inventories; traffic analysis; assessment of Planning Solutions; and the Technically Preferred Alternative (TPA) for improvements. The PIC will be an integral component of the study - seeking input and comments from the public, stakeholders and Indigenous Communities.

With respect to public involvement, the work program will have the following key elements:

- Study Commencement Notice and PIC Notices will be published in the local newspaper(s) advising of the availability of the Draft Study design for review and comments.
- Maintaining and updating a Study mailing list.
- Public review of the draft Study Design Report, available on the City's website.
- The PIC will present the project Problem and Opportunity Statement, environmental inventories, alternatives and the Technically Preferred Alternative (TPA) for the corridor improvements. The Consultant and City staff will be available to answer any questions or concerns during the PIC.
- Public 30-day review of the Harmonized Project File Report.

3.2 Work Program

The major elements of the technical work program include the following:

Task 1: Project Start-Up and Background Information Review

The Technical Advisory Committee (TAC) will provide direction regarding the technical elements of the study including the study issues, data collection, and analysis of alternatives. A study mailing list will be maintained throughout the project for agencies, stakeholders, Indigenous Peoples communities and the public. The Notice of Study Commencement will be prepared and placed in the local newspaper(s) and on the City's website, and will be provided to MECP.

The collection and organization of the data necessary for the analysis, evaluation and design activities will include:

- Assembly and review of study materials;
- Field reviews to assess aquatic and terrestrial habitat, general Species at Risk (SAR) inventories, and the collection of photographs to maintain a visual record of existing conditions;
- Collect traffic and land use reports
- Review the Official Plan, relevant Official Plan Amendments and Secondary Plans;
- Review the Integrated Transportation Master Plan;
- Gather existing natural/social environmental inventories and stormwater reports; and
- Review of existing and projected traffic volumes and collision data as identified in any area traffic studies.

Task 2: Study Design and Value Planning Workshop

The Study Design describes the intended approach for completing the EA assignment.

This document will help establish the foundation for all of the environmental planning, public consultation processes and Indigenous Peoples engagement. This document will be posted on the City website and sent to external agencies for public review and comment. The Study Design allows the early identification of the major issues and concerns, and in addition, recognizes areas of consensus or agreement. It defines the Problem Statement, need and justification for the project and assessment of planning solutions. The preliminary identification and assessment of Planning Solutions/Alternatives to the Undertaking in the Study Area will be presented for public/agency review and comment. The Study Design will describe the process of the project as a harmonized Public Works Category B project and a Municipal Schedule B project. The Study Design will be finalized following the first PIC.

Task 3: Natural, Social and Economic Environment Inventories

Terrestrial Environment: A natural habitat field review will be completed to inventory the flora, fauna and aquatic habitat within the project limits. The scope of work includes:

- A desktop review of all known natural environment information, including:
 - The Natural Heritage Information Centre (NHIC) online database;
 - Atlas of the Breeding Birds of Ontario;
 - Municipal Official Plans;
 - Ontario Nature Reptile and Amphibian Atlas; and
 - GIS layers available through Land Information Ontario.
- Consultation with applicable agencies, including the MNRF, MECP and CLOCA;
- Field investigations to include the following:
 - Spring Survey – document spring conditions; including flora and fauna surveys within the proposed study area with emphasis on rare species or species at risk;
 - Summer Survey – document summer growing season including delineation of any natural features (i.e. wetlands), completion of Ecological Land Classification for all vegetation communities, and flora and fauna surveys within proposed study area with emphasis on rare species or species at risk;
- Providing mapping on all natural environment features and existing conditions in the study area; and
- Natural Environment Assessment Report.

Stage 1 Archaeological Assessment: The objectives of a Stage 1 archaeological background study are to develop an inventory of archaeological resources in the proposed area, to determine the presence of any archaeological sites in the area, and to recommend appropriate strategies for future planning consideration. This will be accomplished by conducting detailed documentary research of the land use, archaeological history, and present condition of the property. This information will be gathered by reviewing the National Archaeological Site Registration Database. The data gathered will advise of the location, type, and significance of registered archaeological sites for a typical radius of one kilometre around the subject property. Reviewing the registered archaeological site database will identify significant heritage resources on or adjacent to the study area, and will summarize the form and extent of previous cultural heritage investigations undertaken within the general project vicinity.

Task 5: Transportation Analysis and Intersection Control Analysis

The transportation analysis will involve the following key tasks:

- An initial review of the previous traffic studies/modelling activities (if available);

- Documentation of the profile of existing road users on Windfields Farm Drive and Winchester Road including all modes of travel (vehicular, bicycles, pedestrians and emergency services) to determine an appropriate level of service for the future corridor;
- Analysis of forecast traffic demands and future projections, and identification of level of service/forecasting and collision analysis for roadway links and intersections (building and documenting on previous forecasts) for land use development;
- Design Criteria required; and
- Assessment of performance for each alternative (traffic operation and safety) at the Regional Road (Winchester Road).

This task will also include the intersection control analysis of conventional signalized or roundabout intersections.

Task 6: Technical Investigations

Stormwater Management (SMW): The drainage and SWM design criteria will be confirmed with the City. Hydrologic calculations will be performed to determine the flows for the 5 to 100 year return period rainfall events and to establish the capacities of the existing system. This may rely on previous storm sewer designs for the overall subdivision.

As the various alternatives are developed, the corresponding drainage and storm water design will be developed and detailed in a SWM plan, sufficient to permit identification of constraints and prepare preliminary cost estimates. A Stormwater Management Report will be completed and will address the following:

- Stormwater quality management
- Stormwater quantity management
- Drainage of road and right-of-way
- External drainage

The SWM design will provide the general drainage requirements and drainage area plans, the drainage system alternatives, location of proposed transverse culverts, and the location of the outlet.

The Drainage and Stormwater Management Report will include the following:

- Description of the existing drainage system, its outlet and previous stormwater designs for the overall subdivision.
- Hydraulic capacity of the outlet and description of any drainage constraints
- Description of alternative road drainage, transverse drainage crossings, and stormwater management methods
- Description, including preliminary design drawings, of the recommended drainage and stormwater management strategy

- Preliminary design of the drainage and stormwater management works
- Identification of potential erosion areas and recommended remedial works.

The report will be prepared in a format that will permit its use to satisfy the requirements of the Category B Public Work Environmental Assessment required for the acquisition of the road allowance property (if not secured by easement).

Phase I Environmental Site Assessment: The Phase One ESA will be completed consistent with Ontario Regulation (O. Reg.) 153/04. The Phase One ESA will include the following activities:

- Document review of historical information regarding previous and current land uses and review of documents available from regulatory agencies;
- Site Reconnaissance, including an on-site records review;
- Personnel Interviews; and
- Reporting.

The results of the information review and site inspection will be presented in a Phase I ESA report, which will include recommendations for a Phase II ESA, if required.

Geotechnical: The following tasks will be completed as part of the geotechnical investigations:

- Utility locates, permits and desktop study;
- Borehole Investigation: a total of four (4) boreholes will be advanced using a track-mounted drill rig with solid stem auger and standard penetration test (SPT) capabilities. Boreholes are tentatively planned to be spaced approximately 50 m apart in alternating lanes of the road footprint. All boreholes will be advanced to a minimum target depth of 5.0 metres below ground surface (mbgs). SPTs will be performed and recorded every 0.75 m to determine the relative consistency of the material. All boreholes will be advanced to the target depth or until practical refusal. All boreholes will be checked for groundwater and caving prior to backfilling. Where applicable, the depth to groundwater and caving will be recorded. Upon completion, all boreholes will be backfilled and the property will be reinstated to pre-existing conditions. Excess cuttings generated will be put back into the borehole annulus or left on site off the road. Two (2) boreholes will be installed with a standpipe piezometer to monitor the long term groundwater level at the Site.
- Soil Testing; and
- Engineering Analysis and Report.

Utility Relocations: The design will be coordinated with utility companies to determine location and if relocation will be required. A utility composite plan will be prepared.

Task 7: Development, Analysis and Evaluation of Preliminary Design Alternatives

Preliminary Design Alternatives will include but not be limited to the following:

- Alignment Alternatives
- Cross Section Alternatives
- Intersection Alternatives (conventional signalized or roundabout)
- Stormwater Alternatives
- Active Transportation Alternatives (MUP, bike lanes, raised cycle tracks, and sidewalks widths of 1.8 m, 2.0 m and 2.4 m from the range identified by the Transportation Association of Canada)

Task 8: Public Information Centre

The public event will be held as a PIC for the public and stakeholders to attend. This format will allow open discussion with stakeholders as an event before the study presents any conclusions. The PIC will present the Problem Statement, Draft Study Design, Assessment of Planning Solutions and Preliminary Design Alternatives. This will be used as input to finalize the Study Design.

The PIC will include coloured graphics and text boards to describe the process and opportunities for the public to provide comment. In addition, an initial viewing and briefing of the materials for elected officials and external agencies (afternoon) will be held before opening the meeting to the public (evening). A Notice for the PIC will be prepared to place in the local newspaper and on the City's website and letters will be sent to the mailing list.

Task 9: Harmonized Public Works (Category B)/Municipal (Schedule B) EA Report

The preparation of the draft and final harmonized report will follow the format and content for a Category B Public Works Class EA Study (accepted by the Ministry of Infrastructure Ontario and Infrastructure Ontario) and Schedule B Municipal Class EA Study (accepted by MECP). The Project File will document the study methodology, findings, public involvement and recommendations.

Task 10: Public Review of Project File Report

A Notice of Study Completion will be prepared to be placed in the local newspaper and on the City website. The public will be notified of the availability of the Project File Report for review. Individual letters (or emails) will be sent to persons/ organizations on the contact and distribution lists maintained throughout the course of the Study. The Project File Report will be made available at a convenient location for the public review.

Task 11: Preliminary Design of Preferred Alternative

Drawings will be prepared at 1:500 (horizontal) and 1:50 (vertical) scale.

Expanding on individual property requirements developed during the preliminary design, finalized property impacts will be confirmed and Property Access/Easement Plans prepared.

3.3 Study Schedule

A draft schedule for this Study is shown in **Table 1**.

Table 1: Draft Study Schedule

Tasks	Dates
Project Start-Up Meeting	June 2019
Study Commencement Notice	June 2019
Draft Study Design	June 2019
Consultation Program	June-February 2019
Information Gathering	June 2019
Environmental Review	Summer/Fall 2019
Technical Investigations	Summer/Fall 2010
Analysis and Evaluation of Alternatives	Fall 2019
PIC No. 1	Fall 2019
Preparation of Project File	Fall 2019/Winter 2020
Public Review of Project File	Winter 2020

4.0 Design Criteria

The following design criteria will be considered as the standards for all alternatives to be carried forward:

- Lanes and shoulders shall meet Transportation Association of Canada standards;
- Sidewalk shall meet City of Oshawa standards (1.5 m minimum width);
- Multi-Use Pathways width = 3.0 m
- Design year for traffic will be the 20 year planning horizon (year 2040).
- Street right-of-way width = 26 m (Collector Road Standard)

5.0 Development of Alternatives and Coarse Screening

All reasonable alternatives will be considered in this EA Study. Alternatives proposed to be screened out from further consideration are discussed in this section of the Study Design. The groups of alternatives include:

Cross Section Alternatives:

- (Do Nothing) – not recommended to be carried forward
- 2-lane cross section
- 4-lane Urban cross section (undivided and divided) – not recommended to be carried forward

The rationale for not carrying forward the Do Nothing Alternative is that the size of the Windfields Subdivision has planned based on having connections to both Winchester Road and Simcoe Street. This provides two access points to the community for emergency services, reduces the transportation demand on either arterial roadway and provides active transportation links to both arterial roadways to reduce cycling and walking distances. Based on the previous subdivision planning for the link, it is not recommended that the Do Nothing alternative be carried forward.

The forecast traffic demand is consistent with a 2-lane collector roadway (3000-10,000 AADT) and as such 4-lane alternatives are not recommended to be carried forward.

All new cross sections will reflect the urban environment and will provide for disabled vehicles in the right curb lane. No rural alternatives with shoulders are being considered. All alternatives will be based on an urban cross section with active transportation provided on each side of the street.

Intersection Alternatives:

Three intersection designs can be considered for this corridor:

- Conventional Stop-controlled
- Signalized
- Roundabout

Alignment Alternatives

Two horizontal alignments have been considered:

- Alignment to the east of the existing hydro towers
- Alignment to the west of the existing hydro towers

Based on the previous subdivision planning which has defined the southern intersection location on Windfields Drive West, only the alignment east of the towers is recommended to be carried forward. At this stage of the Study, there does not appear to be any constraint that would require a west alignment to be considered. Should the environmental inventories identify any significant constraints in this corridor this recommendation may be revisited.

The road alignment will have to address Ontario Hydro requirements for lateral separation to existing towers and vertical clearance requirements under the Hydro One lines based on the voltage of each line.

Active Transportation Alternatives:

- Sidewalks (consider width based on pedestrian demand and accessibility for our aging society and disabled individuals)
- Multi-use pathway

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.
• 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.
• 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.
• 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.
• 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	<ul style="list-style-type: none"> • 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

	<ul style="list-style-type: none"> Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.
<ul style="list-style-type: none"> Environmental Effect 	A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects.
<ul style="list-style-type: none"> ESR 	Environmental Study Report. The final documentation for Schedule C project, defining the project, consultation process, preferred solution and mitigation measures.
<ul style="list-style-type: none"> Evaluation 	The outcome of a process that appraises the advantages and disadvantages of alternatives.
<ul style="list-style-type: none"> 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.
<ul style="list-style-type: none"> External Agencies 	Include Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
<ul style="list-style-type: none"> Factor 	A category of sub-factors.
<ul style="list-style-type: none"> General Arrangement 	Structural plan of the bridge and proposed works including elevations and cross-sectional views of the bridge.
<ul style="list-style-type: none"> 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.
<ul style="list-style-type: none"> MECP 	Ministry of the Environment, Conservation and Parks.
<ul style="list-style-type: none"> Mitigating Measure 	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
<ul style="list-style-type: none"> 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.
• MTCS	Ministry of Culture, Tourism and Sport.
• MTO	Ministry of Transportation Ontario.
• PIC	Public Information Centre.
• 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.
• 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 documentation for Schedule B project, defining the project, consultation process, preferred solution and mitigation measures.
• 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.

• Screening	Process of eliminating alternatives from further consideration, which do not meet minimum conditions or categorical requirements.
• Sub-factor	A single criterion used for the evaluation. Each sub-factor is grouped under one of the factors.
• Technical Advisory Committee	The Advisory Committee will include the City and Consultant. It will act as the decision-making body for the study recommendations.
• TIS	Traffic Impact Study
• TMP	Transportation Master Plan
• 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.