



INTERIM ENVIRONMENTAL IMPACT STUDY GUIDELINE

FOR THE IMPLEMENTATION OF S. 28 OF THE CONSERVATION AUTHORITIES ACT AND O. REG. 155/06



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Introduction

The Environmental Impact Study (EIS) Guideline is intended to provide guidance for implementing the Niagara Peninsula Conservation Authority's (NPCA) policies in relation to Ontario Regulation 155/06 and the Conservations Authorities Act.

How to use this Guideline

This EIS Guideline is intended to provide direction to landowners considering **development** or **site alteration** in or near NPCA regulated features and areas and EIS practitioners to determine when an EIS is required and the procedure for completing an EIS in support of an NPCA work permit. The Guideline also helps explain roles and responsibilities of the NPCA in relation to the EIS process and provides tools for improving the process and considering options for study avoidance, where appropriate. A brief summary of the intended purpose of each major section is provided below as a quick reference guide in using this document.

Section 1 | EIS Primer. This section contains a high-level, plain language overview of what an EIS is, why and when they are needed, roles and responsibilities of parties, who prepares them, and how they fit into the NPCA work permit process.

Section 2 | EIS Process. This section provides an overview of the EIS process and explains the various steps and tools used with each.

Section 3 | EIS Content. This section provides direction on the technical content and approach to completing an EIS, including minimum submission requirements for a complete EIS.

Terms identified in this document have been bolded (see Appendix A – Definitions).

1.0 Environmental Impact Study Primer

1.1 What is an EIS?

An Environmental Impact Study (EIS) is a tool for objectively assessing the environmental impacts of a proposed **development** or **site alteration** under s. 28 of the Conservation Authorities Act and NPCA's implementing regulation O. Reg. 155/06. An EIS is required where **development** or **site alteration** is proposed wholly or partially within, or adjacent to, a feature or area regulated by the NPCA such as **wetlands**, **watercourses** and hazard lands.

Within the context of the NPCA's regulatory framework, an EIS is a process that addresses the potential impact of **development** and/or **site alteration** on NPCA regulated features or areas including **wetlands**, **watercourses** and hazardous sites. The EIS documents the existing conditions of the NPCA's regulated feature(s) and functions on and around the site of such projects, identifies the potential impacts associated with the project, and recommends ways to avoid (preferred) or mitigate (where they cannot be avoided) negative impacts. Wherever possible, an EIS also identifies opportunities to restore or enhance natural features and functions to increase the resiliency of the natural environment within the Niagara Peninsula **watershed**. An EIS may also be used to inform refinements to portions of NPCA regulation mapping as it enables site level delineation of features, functions and areas on the ground. This can lead to boundary adjustments, and additions of any areas containing features or areas that may not have been captured in coarse-scale mapping (e.g., a previously unmapped **wetland** area).

1.2 Impact Studies: Terminology and a One-Study Approach

Terminology associated with EIS's varies across jurisdictions, plans or planning process scales; however, the basic approach and purpose of the impact assessment remains relatively consistent regardless of variation of terminology. Examples of terminology that refers to an Environmental Impact Study may include Environmental Impact Assessment, Natural Heritage Evaluation, Natural Heritage Study. Although guidelines, study requirements and approaches may differ slightly, the similarities across these study requirements can support a 'One-Study' approach to assessing environmental impacts within the NPCA's jurisdiction. The guidance provided herein will be applicable in supporting a 'One-Study' approach for a proposed **development** or **site alteration** that requires an NPCA work permit application.

The goal of the 'One Study' approach is to encourage all agencies to address their environmental study requirements through the identification of a suitable scope of work and reporting requirements as part of an EIS in the Niagara Peninsula **watershed**, to the extent this is feasible where Planning Act or Niagara

Escarpment Planning and Development Act approvals are required in addition to an NPCA work permit. The NPCA in partnership with municipal partners can guide applicants in identifying a single scope of work for EIS studies where the requirement for multiple studies applies. It is important to note that while the NPCA is not the approval authority for a Planning Act application or Niagara Escarpment (NEC) Development Permit, the NPCA still has a Regulatory role following these processes. If an applicant does not address NPCA concerns during the Planning Act/NEC Development Permit process, they run the risk of the NPCA not being able to support a work permit.

This guideline document outlines the NPCA's EIS requirements for s. 28 work permit applications. It is important to note that if other agency approvals are required, the applicant is advised to contact the relevant agency. Appendix B includes a list for a list agency contacts to assist applicants with obtaining required information if needed.

1.3 Why is an EIS needed?

The purpose of an EIS is to evaluate whether a proposed **development** or **site alteration** will result in no negative impact(s) to that portion of the regulated feature or area affected by the **development** or **site alteration**. The EIS does this by identifying components of the regulated features or areas including natural hazards, with the associated hydrology and ecological functions and assessing the potential environmental impacts, requirements for impact avoidance and mitigation measures, and opportunities for restoration or **enhancement**. Through Section 28 of the Conservation Authorities Act, conservation authorities have the power to prohibit, regulate or require permission for **development**, where the following five tests may be affected by the **development**: a) Flooding; b) Erosion; c) **Dynamic Beaches**; d) **Pollution**; and, e) the **Conservation of Land**.

1.4 When is an EIS required?

An EIS may be required where **development** or **site alteration** is proposed wholly or partially within, or adjacent to, an NPCA regulated feature or area as defined in the Conservation Authorities Act and associated regulations, and where in the opinion of NPCA staff, the proposed **development** has potential to impact natural and/or hydrological features and functions (i.e. **conservation of land**, interference with a **watercourse** or **wetland**, control of **pollution**, etc.). Section 12.4.4 of NPCA's policy document provides general direction for undertaking an EIS. In general, an EIS may be requested to address forms of **development** which have unknown risks or impacts, or where mitigation measures may be required to reduce the potential for risks and impacts related to the natural hazard, the proposed **development** and the five tests (flooding, erosion, **dynamic beaches**, **pollution**, and **conservation of land**).

Further, an EIS may be required as part of an NPCA Permit application or it may be submitted as part of a Planning Act application (e.g. Official Plan Amendment, Zoning By-law Amendment, Plan of Subdivision, etc.). Where an EIS is also required for a Planning Act application, there may be additional scoping requirements from other agencies (e.g. local/upper tier municipality) for other natural heritage features such as significant woodlands, significant **wildlife habitat**, species at risk, etc. It is important that an EIS addresses the requirements of all agencies involved.

Table 1 illustrates when an EIS may be required by the NPCA for a s. 28 work permit. It should be noted that where requirements differ, the most restrictive provisions apply. Should the policies or regulations change, those changes will replace the requirements set out in Table 1. Pre-consultation will be directed at ensuring that the various regulatory and approval requirements are addressed in an integrated and coordinated manner to avoid duplication or conflict.

Table 1: EIS Requirements

NPCA Regulated Feature	Is an EIS Required?	
	Development within NPCA Regulated Feature	Development within area of interference of an NPCA Regulated Feature
Provincially Significant Wetland	EIS required	EIS may be required for development within 120 meters
Wetland >2 ha. in size	EIS may be required	EIS may be required for development within 120 meters
Wetlands < 2 ha. in size	EIS may be required	EIS may be required for development within 30 meters
Watercourses	EIS may be required	EIS may be required for interference within existing channel
Hazardous Sites (Dunes, karst, dynamic beaches , slopes etc.)	EIS may be required	EIS may be required within 50 metres of the hazard
Valley Lands	EIS may be required	EIS may be required within 15 metres of the stable top of slope

1.5 Scope of an EIS

The study requirements of the EIS are determined through scoping. The scoping is based on the scale and complexity of the proposed work, the regulated feature(s) and **ecological function(s)** known to be present or potentially present, and the magnitude of the anticipated impacts associated with the proposed **development** or **site alteration**. An EIS may need input from other studies required as part of the application such as a geotechnical study, fluvial geomorphology assessment, hydrogeological study, coastal engineering report, stormwater management plan, **water balance** study, etc. It is important that the appropriate components of each study be integrated through the EIS, and vice versa, to ensure consistency of recommendations and mitigation measures.

1.6 Role of Applicant and Who Prepares an EIS?

1.6.1 What is the role of the Applicant?

The applicant has an important role throughout the EIS process to:

- Liaise and engage with the NPCA and / or other relevant agencies, as early as possible and as appropriate from project screening, pre-consultation through to EIS approval;
- Arrange for the completion of the EIS, which will generally include engaging consultant(s) with expertise in coordinating and/or conducting EISs, as appropriate for the scope and scale of the proposed **development** or **site alteration**; and
- Become familiar with the EIS process and understand the key steps and components of an EIS.

Applicants should also be aware of the following when engaging in the EIS process:

- Terms of Reference (TOR) for the EIS must be approved by NPCA staff prior to proceeding with the study to ensure scope of work to be completed is understood and agreed upon;
- Time required to prepare an EIS may be dependent, in part, upon the field data collection required. Different field studies have different 'field seasons' or periods in which the data must be collected (e.g., breeding bird data must be collected during the breeding bird season);
- Review of an EIS is generally an iterative process requiring more than one submission to incorporate any recommended amendments to plans or studies (e.g., opportunities to avoid impact through design alterations), and ensure that the EIS is complete and appropriate information and analyses have been completed to the satisfaction of the NPCA.

1.6.2 Who Prepares an EIS?

An EIS is to be prepared by a professional or team of professionals with relevant and applied expertise in environmental impact assessment studies. An EIS will be led by, or include substantive contributions by ecologists, biologists or comparable professionals. Components of the EIS or additional studies integrated into the EIS will be completed by a professional or team of professionals who have the appropriate knowledge and applied experience in the relevant disciplines for the required study component(s) (e.g., a hydrogeologist, fluvial geomorphologist, etc.). All EIS practitioners shall be retained at the expense of the applicant.

Individuals with alternative titles to those provided within this Guideline, who have the appropriate qualifications and experience to complete a study component, may be engaged as appropriate. Curriculum Vitae are to be provided within the EIS appendices to allow NPCA staff to verify the qualifications of persons who are involved in carrying out an EIS, such as educational qualifications, experience, and special certifications (e.g. Ecological Land Classification, Ontario Wetland Evaluation System, electro-fishing, etc.).

Some examples of study components and appropriate professionals are provided below:

- Biophysical Inventories shall be conducted by individuals with applied experience in natural heritage / biological inventories appropriate for the features and function in the study area. This may include ecologist(s) or biologist(s) specializing in one or more area (e.g., aquatic, fish & fish habitat, terrestrial, botany, wildlife, Species at Risk).
- **Wetland** or Site Water Balance(s) / Hydrogeological Studies / Surface Water Studies shall be conducted by individuals with applied experience in water resource engineering, hydrology, or hydrogeology, as appropriate for the specific work to be completed. **Wetland water balances** generally require input from an ecologist / biologist (or comparable) in addition to those disciplines listed above as it considers the form, function and requirements of the **wetland** and its hydrologic requirements for persistence on the landscape, as changes to the **wetland's** hydrology can have negative impacts on the ecology of the **wetland**.
- Landform and Fluvial Geomorphology Studies shall be conducted by individuals with training and experience in geomorphology, fluvial geomorphology or comparable knowledge / experience and as appropriate for the specific requirements of the work to be completed.

It is important that the study components be integrated through with the EIS; this allows for cumulative and interconnected impacts on the natural environment to be considered holistically.

2.0 EIS Process

2.1 Step 1 | Project Screening

Appendix C includes an illustration of the EIS process. The first step is determining whether an EIS is required. Project screening should occur through pre-consultation with NPCA staff for a permit application or when Planning Act application involves regulated features or areas. Where an NEC **development** permit application involves regulated features or areas, NPCA staff will screen the project at the time of receiving the initial application submission (Figure 1).

Projects may not be required to proceed past Step 1: Project Screening. It is through this initial step that EIS triggers are assessed. To avoid triggers, project exemptions and opportunities to waive the EIS requirement are considered.

There are some instances where minor **site alterations** do not require NPCA work permits and therefore are exempt from the EIS process. For example: non-structural agricultural activities (cropping, tilling, fence row clearing, etc.), landscaping and placement of **fill** not in excess of 50 cubic meters. For additional information on NPCA work permits please review the NPCA's Policy Document for the administration of Ontario Regulation 155/06 (May 2020 consolidation) which may be updated from time to time.

Note: proceeding through the EIS process does not indicate, imply, or guarantee that a project will be supported and / or approved. Projects with high risk of not being supported will be identified through Project Screening (Figure 1) and discussed with the applicant.

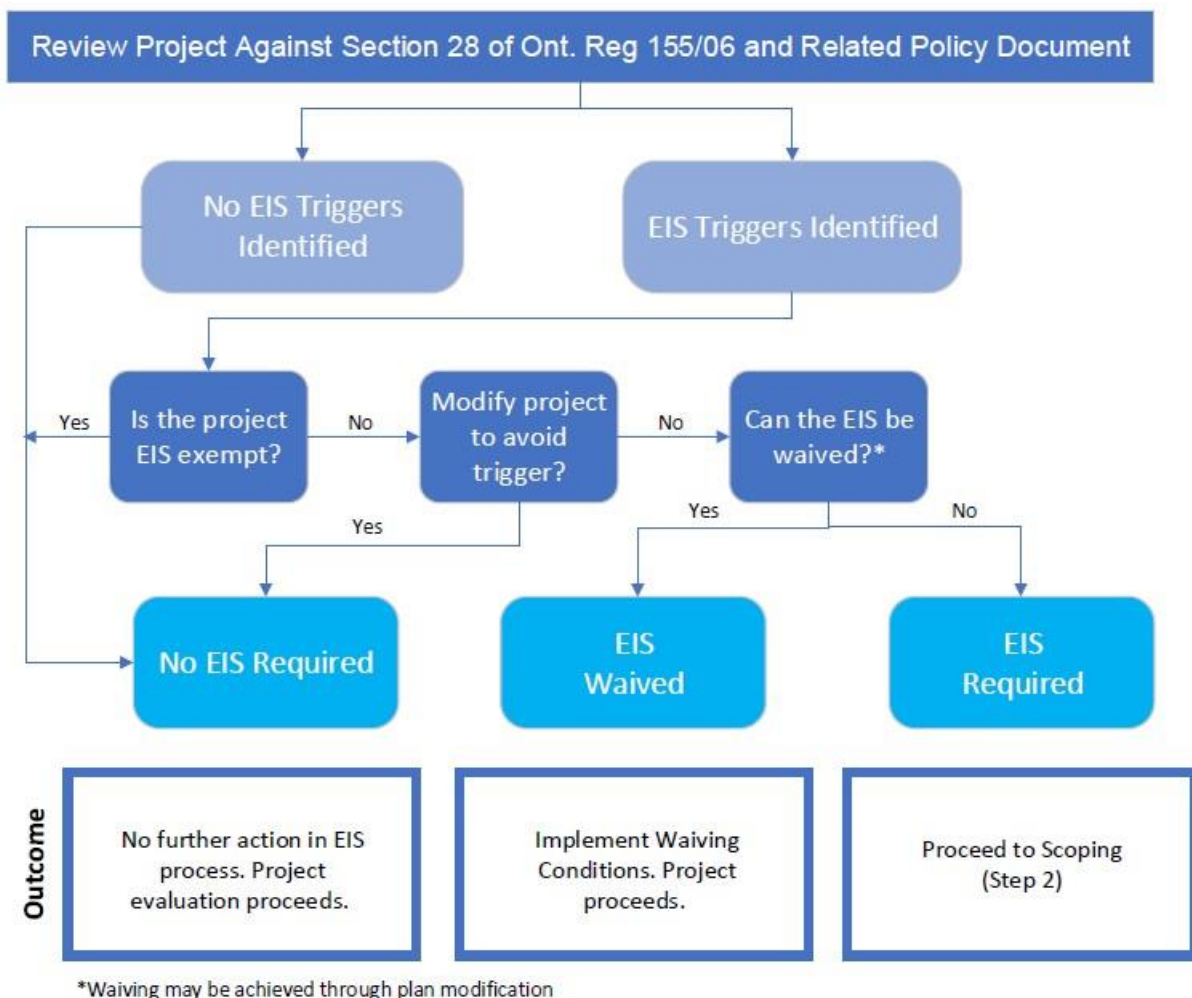


Figure 1: Project Screening Process

2.1.1. EIS Triggers

Where pre-consultation is required for **development** and **site alteration**, this may occur in consultation with the applicable municipality, the NEC and/or other applicable agencies. The NPCA screens the project against NPCA policies to determine if an EIS is triggered and, if triggered, whether the project is exempt from the EIS requirement. NPCA policies require that projects which propose to alter or interfere with an NPCA regulated feature will not have a negative impact on the ecological and/or hydrological function.

Notwithstanding the above triggers NPCA staff will evaluate each individual application to determine whether an EIS is required which includes consideration of: the nature of the proposed **development /site alteration**, adjacent land use(s), the extent of existing natural **buffer**, the existing condition of the feature, other **ecological function** considerations specific to the feature.

2.1.2 EIS Exemptions and Waiving

There are some instances where an EIS is not required as previous work may have been completed that adequately addresses the impacts associated with a project. A project may be exempt from the requirement of an EIS if it meets the following:

- Has been subject to the completion of an Environmental Assessment under the Ontario Environmental Assessment Act;
- Has been subject to the completion of an Environmental Assessment under the Canadian Environmental Assessment Act;
- Is work being conducted under the Drainage Act; and
- As determined through the Memorandum of Understanding between Conservation Ontario and Hydro One Networks Inc.

If an EIS is triggered and the project is not exempt, opportunities to avoid or waive may be considered. EIS avoidance may be possible if an applicant modifies their proposal to avoid an EIS in consideration of the above trigger policies. EIS waiving may be possible if the impacts of the proposed works are minor in nature and can be addressed through appropriate mitigation measures and best management practices.

A **development** or **site alteration** with no or very low risk of impact to the Regulated feature may be suitable for waiving of the EIS requirement as the impacts of the proposed works are likely minor and are readily mitigated through standard best management practices and conditions in an NPCA Permit. Where it is the opinion of NPCA staff, and supported with justification from staff, that the project meets the no negative impact test, the EIS requirement may be waived. Conditions may be identified for the permit and form a requirement of the waiving (e.g. mitigation measures, site plan changes, etc.).

As part of developing a Procedural Manual for the implementation of NPCA's policies, a formal waiving tool will be developed with input from municipal partners, other stakeholders, and community members.

2.1.3 Supporting Materials and Information

The following information may be required to screen the property and assess if an EIS could be waived:

- A description of the proposed project (**development** or **site alteration**), including the nature and scale of the proposed **development** or **site alteration**. For agricultural projects, the intended proposed use shall be identified.
- An accurate site plan, drawn to scale, including dimensions and distances from the Regulated feature that shows the following:

- o Location and extent of the **development** or **site alteration**, including any **building**, grading, underground servicing, required site works (fencing, sidewalks, lighting) etc.;
- o Material storage or staging areas;
- o Roads, driveways, and parking areas;
- o Amenity areas;
- o Wells and septic systems (current and proposed locations if applicable); and,
- o Stormwater management facilities, including any outlets.

A site visit with NPCA staff, the applicant and their consultant will be required, unless it is determined by NPCA staff that a site visit is not warranted.

2.2 Step 2 | Scoping the EIS and Terms of Reference Approval

2.2.1 EIS Scoping

Scoping establishes the extent of work required for an EIS. Scoping occurs upon confirmation that an EIS is required and is concluded with the preparation of an approved Terms of Reference (TOR).

The scope of the EIS will depend on the scope and scale of the proposal, its relationship to adjacent land uses, and the proposed works. The scope will be established on a site-by-site basis to identify the appropriate study requirements to address the potential impacts of the proposed **development** or **site alteration**. Smaller scale **development** or **site alteration** proposals will be appropriately scoped to avoid placing an undue burden on the applicant.

The Scoping and Terms of Reference Checklist (Appendix D) is coordinated by NPCA staff with input from other agencies, as appropriate. This checklist is used to document and provide initial direction with respect to the scope and scale of the EIS and is used by the applicant to inform the preparation of the TOR.

During the completion of the EIS, features and / or functions unanticipated during the scoping exercise may be identified. If this occurs, the applicant shall contact the NPCA and other review agencies as applicable, as soon as possible to discuss potential policy implications and determine if additional studies may be required.

A site visit may be required to facilitate scoping of the EIS.

2.2.2 Submission and Approval of Terms of Reference

Based on the Scoping and Terms of Reference Checklist (Appendix D) and in the context of the regulated features and their functions present and the proposed project, the applicant will submit a draft Terms of

Reference (TOR) for the EIS to the NPCA. Collection and detailed review of available background and secondary source information by the qualified professional preparing the TOR shall be completed to support the development of the TOR. The NPCA will review the TOR with other involved agencies, as appropriate, and identify any modifications required. Iterative submission and review of the draft TOR may be necessary to achieve a TOR that is acceptable to all parties. The NPCA, in coordination with other applicable agencies, as established through the One-Study process, will provide final approval of the TOR for the EIS. Upon approval, the applicant may formally proceed to undertake the EIS.

Most EISs will require season-specific field studies (e.g., amphibian or breeding bird surveys). Where timing of the TOR approval process could result in missing a field season, delaying the project schedule, the applicant may choose to conduct these studies adhering to accepted field methods and survey periods prior to receiving final approval of the TOR. The applicant shall confirm the proposed surveys and methods with the appropriate agency in advance of undertaking them.

2.3 Step 3 | Information Gathering and Draft EIS Preparation

Following the approval of the TOR, the information gathering phase is initiated. The information gathering phase includes further review and additional collection of background and secondary information sources where additional sources are identified, undertaking the field program, completion and review of studies that inform the EIS (e.g., stormwater, hydrogeological, etc.). Completion of analyses (e.g., significance assessments) will generally occur during and after completion of the information gathering phase, as appropriate.

When all data collection and analysis is completed, the draft EIS shall be prepared by the applicant in accordance with the approved TOR. The EIS will be considered draft until the NPCA and other relevant agencies' comments through the One-Study approach have been addressed to the satisfaction of the agencies (as applicable).

The NPCA has open data that may benefit background data collection to be completed during the EIS process. Please see NPCA's open data portal available at: <https://gis-npca-camaps.opendata.arcgis.com/>.

2.4 Step 4 | Draft EIS Submission

The EIS shall be submitted as part of a complete application for an NPCA Permit, or in the case of the One-Study approach circulated by the municipality for a Planning Act application or circulated by the NEC for a Development Permit. The NPCA will use the EIS Submission Checklist (Appendix D) to confirm that the EIS meets submission requirements and has been prepared in accordance with an approved TOR. If the submitted

draft EIS does not meet the submission standards or was not prepared in accordance with the approved TOR, the NPCA may return the submission to the applicant. The identified deficiencies must be addressed, and the EIS re-submitted prior to the initiation of the NPCA's review process.

For an NPCA Permit application, the NPCA will coordinate review of, and comment on, the EIS and will liaise with the applicant and their consultant team. Commenting agencies in conjunction with the NPCA, if applicable, will consider how the EIS demonstrates compliance with applicable Federal, Provincial, and municipal policy and legislation related to environmental protection.

The NPCA or other planning approval authorities / agencies through the One-Study approach may require that the applicant attend a meeting to discuss the EIS.

Review of the EIS is often an iterative process. Based on the nature and extent of comments, a resubmission(s) of the EIS, addenda, or alterations to the site plan may be required to address key issues and comments identified by the NPCA. Ensuring a complete and high-quality draft EIS will assist in reducing the total review process timeline.

As part of the Draft EIS submission, please ensure that all survey data sheets, and representative soil samples are included for the study area.

2.4.1 Comment and Response

A Comment and Response Matrix is provided in Appendix F. The applicant is encouraged to use this matrix, or a similar comment matrix to help manage the review process.

Applicants are required to provide a cover letter documenting how agency comments on the EIS have been addressed. The Comment and Response Matrix, or a comparable comment response matrix, is to be used to track comment responses.

2.5 Step 5 | Final EIS & Data Package Submission

The EIS is considered final when all substantive and technical comments have been addressed to the satisfaction of the NPCA, and other relevant agencies through the One-Study approach. The NPCA, in consultation with the other relevant agencies, will provide approval of the EIS to the applicant.

The NPCA will consider the final EIS in making a decision on the NPCA work permit application. It is important to note that an approved EIS does not guarantee the approval of an NPCA work permit application. It should

also be noted that entering the EIS process does not imply or guarantee that an EIS will be approved, or a project supported.

The applicant is required to submit a data package upon approval of the EIS, which includes:

- The approved EIS report with any associated addenda;
- A revised **development** or **site alteration** proposal (if required) and/or a table that identifies how the final EIS recommendations will be implemented;
- GIS data package; ESRI format for mapping
- Survey results tables; and
- Survey Datasheets.

The Final EIS Submission Package Checklist (Appendix G) outlines the requirements of the final EIS and data package to be submitted by applicants. A complete data package must be provided for the final submission of the EIS to be considered complete. Data submitted with a Final EIS may be utilized to update publicly available NPCA regulatory screening information.

3.0 Contents of an Environmental Impact Study

The following sections outline the structure and content of a typical EIS. This outline shall be interpreted as the minimum standard for content in an EIS. The actual fieldwork, supporting studies and content required for an EIS will be determined on a case-by-case basis through scoping and confirmed through the approval of the Terms of Reference (TOR) for the EIS.

3.1 Introduction

The introduction to the EIS shall:

- Briefly describe the site location, existing land uses on the site and surrounding area;
- Briefly describe the proposed **development** or **site alteration**;
- Define the study area boundary and the rationale for the extent of the study;
- Identify why an EIS is required for the proposed **development** or **site alteration** (i.e. the NPCA policy requirement and the portion of the regulated feature(s) triggering the EIS); and
- Describe the scoped issues and tasks required for the EIS based on the approved TOR and if applicable, a description of any previous pre-consultation meetings, agency meetings or site visits (the approved TOR shall be included as an appendix to the EIS).

3.2 Policy Context

Briefly describe the legislative and regulatory context for the proposed project, if applicable:

- Clearly identify current NPCA Regulations and Policies, Provincial legislation, regulations, plans and policies which apply to the subject site, such as but not limited to:
- Ontario Regulation 155/06, as amended from time to time;
- NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act, as amended from time to time;
- Federal Fisheries Act, 1985, and associated regulations;
- Federal Species at Risk Act, 2002, and associated regulations and recovery documents;
- Provincial Endangered Species Act, 2007, and associated regulations, recovery strategies and government response statements;
- Provincial Policy Statement (2020);
- List of consultation undertaken as part of the project:
 - o Agencies (e.g. MECP, NEC, NDMNRF, DFO etc.); and,
 - o Public or stakeholder groups (if any) (record of consultation shall be included as an appendix to the EIS).

If the EIS is subject to the One-Study approach, other relevant agencies may have additional requirements related to policy context, such as Provincial Plans and municipal policies. It is important to provide an adequate description of the proposed **development** or **site alteration** to facilitate review of the EIS and decision making on the outcomes of the EIS by the NPCA.

In the context of the study area, a description of the proposed **development** or **site alteration**, shall be provided including:

- Overview / summary of any iterative design process(es) up to and including alternative proposals considered that demonstrate efforts to avoid or minimize impacts. Rationale for the chosen option shall be provided.
- The proposed site plan accurately overlaid (i.e. georeferenced, NAD 83, Zone 17N) on recent aerial photography (orthoimagery) of the subject property. This should show (as applicable to the project):
 - o Subject lands boundary / property limit;
 - o **Development** or **site alteration** footprint (limits of grading or other works);
 - o Lot lines / fabric;
 - o Roads (new or improvements to existing);
 - o Servicing (e.g., easements, alignments, etc.);

- o Stormwater facilities and outlets;
- o Land use(s) (e.g., low, medium, high density residential, commercial, etc.);
- o Open space and parks;
- o Trails;
- o Proposed **buffers**, and/or **enhancement** areas
- o Setbacks (e.g., from Top of Bank)
- o NPCA regulated features (e.g. **wetlands**, **watercourses**, valley lands, etc).
- o Other features or areas to be retained, as applicable.
- Phasing and timing of **development** or **site alteration** (if any / known);
- Relevant information integrated from other studies in describing the proposed **development** or **site alteration**, as appropriate.

3.4 Biophysical Inventory

The biophysical inventory shall include a thorough description of existing conditions in the study area based on background information and field surveys including:

- a) The existing conditions described shall include, but not necessarily be limited to:
 - Summary of surveys conducted: Survey type, date(s), start / finish time, weather conditions (as applicable), surveyors (personnel involved in undertaking field work);
 - Physiography (topography, soils, bedrock);
 - **Surface water** and **ground water features**;
 - Fish and aquatic habitat;
 - Vegetation (vegetation communities, vegetation inventory, provincially, regionally, and locally rare plant species);
 - Wildlife (e.g. breeding birds, amphibians, reptiles, and other wildlife);
 - Significant wildlife habitat (to be screened for using the appropriate MNRF criteria schedules);
 - *Species at Risk (SAR) and SAR habitat;
 - **Wetlands**;
 - **Valleylands**;
 - **Watercourses**;
 - Floodplains;
 - Ground water recharge/discharge areas;
 - Headwater Drainage Feature Assessment;
 - Feature Based Water Balance Risk Evaluation; and,

- Feature Based Water Balance Study.

*Consultation with MECP may be required with respect to survey methods, species presence / absence determinations, habitat delineation, potential impacts and any resultant mitigation, registration, authorization or permitting under the ESA (2007) and amendments or successor legislation. Any applicable correspondence with MECP shall be appended to the EIS.

***Wetlands** that are connected downstream through surface flow are considered to be **headwater drainage features** for the purposes of this Guideline.

It is important to note that the definition of **hydrologic function** includes “water’s interaction with the environment including its relation to living things” (PPS, 2020). Unpredictable changes in water levels or wide variations in water levels can have negative impacts to the flora and fauna within a regulated feature. Therefore, the assessment of **hydrologic function** must include an ecological component as it relates to its reliance on hydrology.

Please refer to Appendix H for general field survey requirements and timelines.

- b) The biophysical inventory shall include all regulated features and functions present on the subject property, adjacent lands and within areas as defined by the agreed upon boundary of the study area(s) as determined through the TOR. Data sources (i.e., data from agencies and previous studies vs. data collected in the field) should be clearly indicated.
- c) Clearly identify known existing features (e.g. **wetlands**, **watercourses**, flood plain etc)
- d) Integrate relevant information from other studies (e.g., geotechnical, geomorphological, **water balance** etc.), as appropriate.
- e) Prepare report figures that clearly and accurately show the location of natural features and, where possible, natural functions, overlaid on recent aerial photography (or satellite imagery) of the subject property.

Note: Data tables in excel format and ESRI compatible GIS files are to be submitted as part of the final EIS submission package. Refer to the Final EIS Submission Checklist (Appendix G) for submission requirements. Provision of this information may be a condition of approval.

There are many **wetland** functions that can be identified at different scales, and that can be lumped or separated out depending on the approach taken. Table 3 lists examples of hydrologic and ecological **wetland** functions.

Table 2: Wetland Function Examples

Broad Function Type	Broad Functional Group	Functions
Hydrologic	Water Regime	- Erosion control - Contribution to groundwater discharge - Contribution to groundwater recharge - Maintenance of local water balance - Conveyance and flood attenuation function - Contribution to living things
	Biogeochemical	- Carbon/organic sequestration and storage - Nutrient and organic export - Water quality functions (including excess nutrient and other contaminant removal) - Contribution to living things
Ecological	Habitat for Flora and Fauna and Biological Productivity	- Habitat for flora and fauna that contribute to biodiversity and ecological integrity, including but not limited to; - Breeding bird habitat for area-sensitive species - Breeding habitat for amphibians - Breeding habitat for colonial species - Winter wildlife habitat - Habitat for concentrations of migratory species - Habitat for vegetation communities of interest - Fish and fish habitat - Areas with diverse vegetation communities - Serving to promote ecological connectivity; - Provisions of significant habitats (including species of concern) and significant communities within the watershed.

3.5 Biophysical Analysis of Opportunities and Constraints

The biophysical analysis shall identify regulated features and functions present on the subject site and identify constraints and **enhancement** opportunities. The biophysical analysis shall, at a minimum:

- Assess the form, and function of regulated feature found on the subject property and within the study area that may influence the proposed **development** or **site alteration**. Assessment of form and function is to be done in accordance with applicable provincial guidance documents, or other relevant policies, guidelines, or guidance documents, as applicable (e.g. Ontario Wetland Evaluation System);
- Delineate the precise boundaries of NPCA regulated features (e.g. **wetland** staking). Feature limits will generally be flagged or staked and confirmed in the field and surveyed to a sub-meter level of accuracy. Digital dataset(s) (i.e. georeferenced GIS dataset(s), NAD83, UTM Zone 17N) of the confirmed features are to be provided to the NPCA and other agencies as appropriate as part of the final EIS submission package. Delineation of all **wetland** boundaries is to be completed using protocols

and methodologies as identified in the Ontario Wetland Evaluation System (OWES) for Southern Ontario.

Please note that all revisions to **evaluated wetland** boundaries, or changes in **wetland** significance require an audit, including review and approval by the MNMNR prior to submission of the EIS.

- c) Apply a **systems approach** that considers the form and function(s) of regulated features, the importance of protecting and enhancing ecological features, ecological functions and ecological interactions in the environment including:
 - i. Identification of constraints; with associated mapping;
 - ii. Identification of **enhancement** opportunities; with associated mapping and,
 - iii. Assessment and recommendation of appropriate **buffers**, and where appropriate **enhancement** areas, with associated mapping.
- d) Prepare figure(s) showing constraints to **development** or **site alteration** based on the results of the Biophysical Inventory and Biophysical Analysis. These figures must establish the boundary of regulated features and identify other areas for protection and restoration that collectively provide long term protection of natural habitats and native biodiversity.
- e) Outcomes from consultation(s) and/or processes with agencies (e.g., DFO, MECP, MNMNR, and the NPCA) should be discussed here. A record of consultation shall be provided as an appendix to the EIS.

Enhancements are identified as opportunities that go beyond mitigating impacts, contributing to the long-term protection of the natural features. **Enhancement** opportunities have the objective of increasing the ecological integrity and resilience of existing natural features and functions of the regulated features.

Enhancement opportunities can range in scope and scale and may include, for example:

- Enhanced **buffer** design(s) that support existing or increase habitat features and/or diversity;
- Areas for **enhancement** / restoration (from small to large) that:
 - o Support or increase habitat features and/or diversity;
 - o Connect or join fragmented natural features to form larger contiguous areas in order to create and improve habitat; and
 - o Reduce edge-to-interior ratio of natural features;
- Activities that assist in removal and management of invasive species;
- Protection and restoration of water catchment areas for **wetlands**;
- Moving existing **infrastructure**, trails, etc. to reduce existing impacts and risks. For new or expanded areas where the applicant has demonstrated no negative impact to the feature(s)' form and function,

NPCA may consider a “net environmental gain” approach to the preservation and **enhancement** of the natural features, based on the principles outlined in NPCA policy 8.2.5, Wetland Conservation and 9.2.7, Conservation and Restoration Projects.

3.5.1 Identification of Opportunities and Constraints

Opportunities and constraints of NPCA regulated features must be identified for the subject site and shall include at a minimum:

- Discuss and depict regulated feature Opportunities and Constraints.
- Identify all the constraints to potential **development** or **site alteration** related to NPCA regulated features and areas identified for protection, as well as natural hazards, including their respective constraints and setbacks.
- Identify opportunities for **development** or **site alteration** on the subject property that work within the limitations of the site-specific constraints.
- Identify opportunities for restoration, **enhancement** and/or stewardship opportunities.
- Depict constraints and opportunities in a Figure.
- Include an environmental policy analysis confirming how the proposal meets (or does not meet) the applicable policies and legislation as described in the Policy Context section.

3.6 Impact Assessment and Mitigation

The impact assessment, identification of mitigation strategies and consideration of **cumulative impacts** are interrelated. As such, it is recommended that these be considered as linked components with descriptions and / or key outcomes presented in a table presenting all three components. The Impact Assessment, Mitigation Measures and Cumulative Impacts Table contained in Appendix F provides an example template. Note that detailed descriptions of some items that will be repeated through the table (e.g., mitigation measures) may be best described in text and listed in the table to reduce total length and improve readability.

3.6.1 Impact Assessment

The impact assessment section is intended to predict, based on best available information, the environmental consequences (positive or negative) that may result from the proposed **development** or **site alteration**. This is undertaken based on the understanding of the natural environment and the proposed **development** or **site alteration** developed through the preceding sections. The EIS must consider the impacts in the context of the sensitivity of natural features and functions present.

Impacts are to be quantified wherever possible (e.g., area(s) of vegetation removed by vegetation type and / or feature). This may include integration of data and analyses from other reports to inform the assessment of ecological / environmental impacts (e.g., pre- and post- **water balance** for the subject property, **wetland(s)**, or **watercourse(s)**). All conclusions (impact or 'no impact') shall be science-based and defensible, and include evidence to support the conclusion (e.g., empirical evidence, references, etc.).

As noted, a table format is the preferred approach for the impact assessment and is to be paired with figure(s) that overlay the proposed **development** or **site alteration** on the outcomes of the biophysical inventory and analyses to facilitate the assessment and analysis. The impact assessment is to address the following minimum requirements:

- a. All NPCA regulated features, functions and areas are listed and assessed for anticipated and potential impact(s);
- b. Identify all anticipated and potential impacts (a list of potential environmental impacts is contained in Appendix E). The impacts shall consider, at a minimum, the following activities and aspects of **development** or **site alteration**, where applicable:
 - Earth works, grade alterations, stockpiling;
 - Equipment storage, maintenance and refueling;
 - Servicing (linear **infrastructure** alignments, features crossings, maintenance, etc.);
 - Stormwater management, including pond locations, thermal impacts, outlets, and maintenance;
 - **Buffer** and linkage widths (in meters) and area of Enhancement Areas (in hectares) should be indicated on the plan;
 - Roads and transportation, including temporary construction access and **watercourse** crossings and permanent **infrastructure**, maintenance, and use impacts;
 - Form, type and density of proposed **development** including lot limits and layouts, trails and recreation, parks, open space.
- c. Impacts are to be assessed in terms of:
 - Likelihood of occurrence;
 - Magnitude;
 - Geographic extent;
 - Timing (e.g., during sensitive biological periods / cycles); and
 - Duration.

d. Impacts are to be identified in the following categories:

- **Direct;**
- **Indirect** (including induced); and
- **Cumulative.**

3.6.2 Mitigation

It is anticipated that opportunities to avoid (preferred) or minimize impacts have been explored and integrated, where feasible, in the preferred / proposed design. The remaining impacts (i.e. those presented in the impact assessment section will be addressed through mitigation (least preferred). Mitigation strategies are intended to address or minimize the anticipated and potential impacts such that there is no negative impact to the regulated feature resulting from the **development** or **site alteration**.

The EIS shall present the overall mitigation strategy, as applicable, and describe each recommended mitigation measure (e.g. Low Impact Development). The anticipated efficacy of the mitigation strategy and individual mitigation measure(s) in maintaining the features (form) and function of natural features and in reducing or eliminating potential impacts from the anticipated **development** or **site alteration**. Where appropriate (e.g., for non-standard approaches), figures and diagrams that illustrate proposed mitigation measures and detailed methods that provide direction for implementation are to be included. As new strategies and methods for the mitigation of **development** or **site alteration** impacts can be expected to continuously emerge, applicants should refer to and cite current and / or emerging approaches, best practices, etc. Efficacy and/or examples of successful use of proposed measures is to be explored where there is not a currently accepted 'best practice'.

It is recommended that proposed mitigation measures be documented in table format with anticipated and potential impacts to facilitate review of how the proposed mitigation will address identified impacts.

3.7 Monitoring Plan

A monitoring plan, where required, is intended to assess the implementation and efficacy of mitigation measures. The requirement for and preliminary scope of a monitoring plan is established through 'Scoping the EIS'. This preliminary scope may need to be revised to reflect the information presented in the EIS (i.e., feature sensitivity and significance, impact assessment, mitigation and **cumulative impacts**). The scope and extent of the monitoring plan should be prepared in consultation with NPCA and other agencies, as appropriate.

Generally, the monitoring plan will include three phases for the project: pre-construction (i.e., pre-**development**), during-construction and post-construction. It should include an environmental inspection plan to be conducted through all phases of **development** or **site alteration** outlining what is to be monitored, the

frequency of monitoring, a reporting schedule and protocols that will ensure protection of natural features and functions, ceasing works temporarily until suitable mitigation measures are identified and implemented, rectifying the causes of environmental damage, and restoring areas that have been impacted by construction activities. The EIS should identify how the monitoring plan will be implemented (e.g. through site plan control, conditions of planning approval or regulations by the approval authority, etc.) and detail any securities requirements or other measures needed to guarantee mitigation measures are successfully implemented.

An example of a post-construction monitoring plan timeline may look like the follis provided below:

Table 3: Example Post-Construction Vegetation Monitoring Plan Timeline

Component	Timing	Frequency
Vegetation – ELC, Canopy Health	May 1 to October 1 (3-seasons)	Years 1, 3 and 5
Invasive Plant Species	Twice during growing season in retained and created features	Years 1, 3 and 5
Planted Vegetation – Growth Rate	Summer (one season)	Years 1, 3 and 5
Planted Vegetation - Survivorship	Summer (one season)	Years 1, 2, 3 and 5
Planted Vegetation - Performance	Summer (one season)	Years 1, 3 and 5
Planted Vegetation - Cover	Summer (one season)	Years 1, 3 and 5
Planted Vegetation – Node Coverage	Summer (one season)	Years 1, 3 and 5

3.8 Conclusions and Recommendations

The key findings of the report including biophysical inventory and analysis, assessment of impacts, impact avoidance measures, mitigation measures and opportunities for environmental **enhancements** shall be summarized. A summary table documenting all mitigation measures, **enhancement** opportunities, and monitoring requirements to be implemented through the proposed **development** and **site alteration** and detailing the timing for their implementation should be included. As applicable, recommended conditions of approval to ensure successful implementation should be identified.

The conclusions should include a final recommendation to support / not support the **development** or **site alteration** proposal based on the results of the study and identify mechanisms that the recommendations of the EIS will be implemented to achieve no negative impact to the regulated features and areas in accordance with the O. Reg 155/06.

3.9 References

A list of all relevant references, background information sources, etc. used in the preparation of the EIS shall be included in the report.

3.10 Appendices and Supporting Material Requirements

The EIS will include numerous appendices and some supporting materials will be required as part of the submission. Below is a list of the minimum requirements for all submissions (i.e., initial through to final):

- Approved Terms of Reference (TOR)
- Record of Consultation
- Data Tables (field surveys / biophysical inventory)
- Figures
- Supporting Materials (as appropriate) Final Submission
- ESRI compatible GIS files (NAD 83, UTM Zone 17T) of all relevant natural heritage data (e.g., feature and area boundaries, significant species locations, etc.); and
- Digital copies of data tables (i.e., inventory results) in .xls or .csv format.

Note that items other than those listed may be included as appendices to streamline the main body text, where appropriate. For example, an impact assessment, mitigation and **cumulative impacts** table may be included in the body of the report, or as an appendix.

Appendices and supporting materials required as part of a submission package for draft submissions (initial and any re-submissions required) are provided in the EIS Submission Package Checklist (Appendix G).

References

This guideline was developed referencing the following best management practice and technical guidance documents:

EIS Guideline References

1. Beacon Environmental, December 2010 Environmental, Recommendations for Conducting Wetland Environmental Impact
2. Halton Region Environmental Impact Assessment (EIA) Guideline (2020): <https://www.halton.ca/The-Region/Regional-Planning/Regional-Plans,-Strategies-and-Studies/Environmental-Impact-Assessment-Guide-Update>
3. Hamilton EIS Guidelines: <https://www.hamilton.ca/sites/default/files/media/browser/2015-05-31/eis-guidelines-2015>
4. Niagara Region EIS Guidelines: <https://www.niagararegion.ca/culture-and-environment/pdf/environmental-impact-study-guidelines.pdf>

Technical and Policy Guidance Documents

1. Environmental Guide for Fisheries, April 2020; Ministry of Transportation of Ontario.
2. Erosion and Sediment Control Guide for Urban Construction, Toronto and Region Conservation Authority, 2019. 236 pp.
3. Fisheries and Oceans Canada (DFO) Aquatic Species at Risk (SAR) Mapping: <https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>
4. Land Information Ontario (LIO) Aquatic Resources Areas and Watercourse Data: <https://data.ontario.ca/>
5. Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig, and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch.
6. Lee, H.T., May 2008. Southern Ontario Ecological Land Classification: Vegetation Type List. Ontario Ministry of Natural Resources. London, ON. 35 pp.
7. Niagara Peninsula Conservation Authority, Lake Ontario Shoreline Management Plan Update, 2009. 69 pp.

8. Niagara Peninsula Conservation Authority. 2010. Natural Areas Inventory, Volume 1 and 2.
9. Niagara Peninsula Conservation Authority, Lake Erie Shoreline Management Plan Update. 2010. 93 pp.
10. Niagara Peninsula Conservation Authority, A Guide to Celebrate Niagara Peninsula's Native Plants (Sixth Edition), 2014.
11. Niagara Peninsula Conservation Authority. September 2018. NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act.
12. Oldham, Michael J. 2017. List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E). Carolinian Canada and Ontario Ministry of Natural Resources and Forestry. Peterborough, ON. 132 pp.
13. Ontario Ministry of Municipal Affairs and Housing. Provincial Policy Statement, 2020.
14. Ontario Ministry of Natural Resources. March, 2010. Natural Heritage Reference Manual for the Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.
15. Ontario Ministry of Natural Resources and Forestry. 2014. Significant Wildlife Habitat Mitigation Support Tool. MNRF, Peterborough, Ontario.
16. Ontario Ministry of Natural Resources and Forestry. 2014. Ontario Wetland Evaluation System, Southern Manual. Third Edition (Version 3.3).
17. Ontario Ministry of Natural Resources and Forestry. January, 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. 40 pp.
18. Ontario Regulation 155/06. 2018. Niagara Peninsula Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.
19. Stanfield, Les. 2017. Ontario Stream Assessment Protocol (Version 10).
20. Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC). 2014. Evaluation, Classification and Management of Headwater Drainage Features Guidelines. Available from <https://trca.on.ca/dotAsset/180724.pdf>
21. Wetland Water Balance Risk Evaluation (TRCA, 2017). Available from https://trca.ca/app/uploads/2017/12/WetlandWaterBalanceRiskEvaluation_Nov2017.pdf
22. Wetland Water Balance Modelling Guidance Document, Toronto and Region Conservation Authority, 2020. Available from https://sustainabletechnologies.ca/app/uploads/2021/10/TRCA-Wetland-Modelling-Guidance-Document-August_2020-Final_.pdf
23. Wetland Water Balance Monitoring Protocol, Toronto and Region Conservation Authority, 2016. Available from <https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2016/08/17180016/TRCA-Wetland-Water-Balance-Monitoring-Protocol-1.pdf>

List of Appendices to EIS Guideline

Appendix A: Definitions

Appendix B: Contact Information for Other Relevant Agencies

Appendix C: EIS Process Diagram

Appendix D: EIS Scoping and Terms of Reference Checklist

Appendix E: EIS Impact Assessment, Mitigation Measures and Cumulative Impacts Template

Appendix F: EIS Comment Response Matrix Template

Appendix G: EIS Submission Package Checklist

Appendix H: General Field Survey Requirements

Appendix A: Definitions

AREA OF INTERFERENCE¹⁰ means the areas adjacent to wetlands where development could impact the hydrologic function of the wetland are referred to as areas of interference. The areas of interference are considered to be a regulated area under the Ontario Regulation 155/06. The area of interference differs, depending on the classification of the wetland:

- a) For Provincially Significant Wetlands or wetlands greater than 2 hectares, the area of interference can be up to 120 meters from the boundary of the wetland.
- b) For wetlands less than 2 hectares the area of interference is 30 meters.

BUFFER⁵ means a naturally vegetated area of land located adjacent to regulated features and bordering lands that are subject to development or site alteration.

BUILDING¹⁰ means any structure used for the shelter or accommodation of persons, animals, goods or chattels or equipment, having a roof which is supported by columns or wall and including any tents or awnings which are situated on private property.

CONSERVATION OF LAND¹⁰ means the protection, management, or restoration of lands within the watershed ecosystem for the purpose of maintaining or enhancing the natural features and hydrologic and ecological functions within the watershed.

CUMULATIVE IMPACT⁵ means the effect on the physical and natural resources resulting from the incremental activities of development over a period of time and over an area.

DEVELOPMENT¹⁰ means:

- a) the construction, Reconstruction, erection or placing of a Building or Structure of any kind; or
- b) any change to a Building or Structure that would have the effect of altering the use or potential use of the Building or Structure, increasing the size of the Building or Structure, or increasing the number of dwelling units in the Building or Structure; or
- c) site grading; or
- d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

DIRECT IMPACTS⁵ means impacts that occur through direct interaction of development or site alteration and/or its associated activities with features and / or functions of the natural environment.

DYNAMIC BEACH¹⁰ means an area of inherently unstable accumulations of shoreline sediment along the Great Lakes-St. Lawrence River system and large inland lakes, as identified by provincial standards, as amended from

time to time. The dynamic beach hazard limit consists of the flooding hazard limit plus a 30 m dynamic beach allowance.

ECOLOGICAL FUNCTION² means the natural processes, products or services that living and nonliving environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions.

ENHANCEMENTS⁵ means ecologically supporting areas adjacent to regulated features and/or measures internal to the features that increase the ecological resilience and function of individual features or groups of features.

EVALUATED WETLAND⁵ means a wetland that has been evaluated using the criteria outlined in the most recent Ontario Wetland Evaluation System Manual (2014), as updated from time to time.

FILL¹⁰ means a form of development under the Conservation Authorities Act and includes earth, sand, gravel, rubble, rubbish, garbage, or any other matter whether similar to or different from any of the aforementioned materials, whether originating on the site or elsewhere, used or capable of being used to raise, lower, or in any way effect the existing grade (does not include herbaceous or woody plant material).

FIVE TESTS¹⁰ means the five tests of Subsection 3(1) of Ontario Regulation 155/06 and includes the control of flooding, erosion, dynamic beaches, pollution, and conservation of land.

FLOOD PLAIN² means, for river, stream, and small inland lake systems, the area, usually lowlands adjoining a watercourse which has been or may be subject to flooding hazards and is based on an analysis of precipitation, snow melt, or a combination thereof, having a return period of 100 years on average, or having a 1% chance of occurring or being exceeded in any given year.

GROUND WATER FEATURE² means water-related features in the earth's subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrogeologic investigations.

HEADWATER DRAINAGE FEATURE⁹ means non-permanently flowing drainage features that may not have defined bed or banks; they are first-order and zero-order intermittent and ephemeral channels, swales and connected headwater wetlands, but do not include rills or furrows.

HYDROLOGIC FUNCTION² means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things.

INDIRECT IMPACTS⁵ means impacts that are not directly associated with the development or site alteration activity, but generate impacts through or as a result of growth-related changes associated with the activity.

INFRASTRUCTURE² means physical structures (facilities and corridors) that form the foundation for development. Infrastructure includes: sewage and water systems, septage treatment systems, stormwater management systems, waste management systems, electricity generation facilities, electricity transmission and distribution systems, communications/telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.

PROVINCIALY SIGNIFICANT WETLAND¹⁰ means wetlands so classified by the Ministry of Northern Development, Mines, Natural Resources and Forestry based on the Ontario Wetland Evaluation System 2014 Southern Manual, as amended from time to time.

POLLUTION¹⁰ means any deleterious physical substance or other contaminant that has the potential to be generated by development in an area to which a regulation made under Section 28 of the Conservation Authority Act applies.

SITE ALTERATION² means activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site.

SURFACE WATER FEATURE² means water-related features on the earth's surface, including headwaters, rivers, stream channels, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics.

SYSTEMS APPROACH⁵ means a comprehensive approach to natural heritage system planning that considers the importance of maintaining and protecting ecological features and functions of the environment and ecological interactions that occur over varying scales of time and space.

VALLEYLANDS¹⁰ means 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.

WATER BALANCE⁸ means the accounting of the inflows and outflows of water in a system, which are attributed to the various components of the hydrological cycle.

WATERCOURSE¹⁰ means an identifiable depression in the ground in which a flow of water regularly or continuously occurs.

WATERSHED¹⁰ means an area that is drained by a river and its tributaries.

WETLAND¹⁰ means land that:

- a) is seasonally or permanently covered by shallow water or has a water table close to or at its surface,
- b) directly contributes to the hydrological function of a watershed through connection with a surface watercourse,
- c) has hydric soils, the formation of which has been caused by the presence of abundant water, and
- d) has vegetation dominated by hydrophytic plants or water tolerant plants, the dominance of which has been favoured by the presence of abundant water and no longer exhibits wetland characteristics referred to in clause c) or d).

WILDLIFE HABITAT² means areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species.

Definition Sources:

² Provincial Policy Statement (2014) 3 Greenbelt Plan (2017)

⁵ Prepared for the purpose of this Guideline (based on various source documents)

⁷ TRCA 2017: Wetland Water Balance Risk Evaluation

https://trca.ca/app/uploads/2017/12/WetlandWaterBalanceRiskEvaluation_Nov2017.pdf

⁸ TRCA 2016: Wetland Water Balance Monitoring Protocol

<https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2016/08/17180016/TRCA-Wetland-Water-Balance-Monitoring-Protocol-1.pdf>

⁹ CVC and TRCA 2014: Evaluation, Classification and Management of Headwater Drainage Features Guidelines

<https://cvc.ca/wp-content/uploads/2021/06/HDFA-final.pdf>

¹⁰ NPCA 2018: NPCA Policy Document: Policies for the Administration of Ontario Regulations 155/06 and The Planning Act, <https://npca.ca/images/uploads/common/LandUsePlanning.pdf>

Appendix B: Contact Information for Other Relevant Agencies

Niagara Region

Planning and Development Services
1815 Sir Isaac Brock Way
P.O. Box 1042
Thorold, ON L2V 4T7
Canada
Tel: **905-980-6000**

City of Hamilton (Hamilton City Hall)

City Planning

71 Main Street West
Hamilton, Ontario
L8P 4Y5
Tel: 905-546-2489

Haldimand County

Planning Services
53 Thorburn Street South
Cayuga, Ontario
Canada, N0A 1E0
Tel: 905-318-5932

Ministry of Northern Development, Mines, Natural Resources and Forestry (Guelph District, Vineland Field Office)

4890 Victoria Ave N, PO Box 5000,
Vineland, ON L0R 2E0
Tel: 905-562-4147

Department of Fisheries and Oceans

(Regional Office Central and Arctic)
520 Exmouth St
Sarnia ON N7T 8B1
Toll-free: 1-866-290-3731
Telephone: 519-383-1809

Environment Canada (Ontario Office)

4905 Dufferin Street
Toronto, Ontario
M3H 5T4
Tel: 416-739-4826

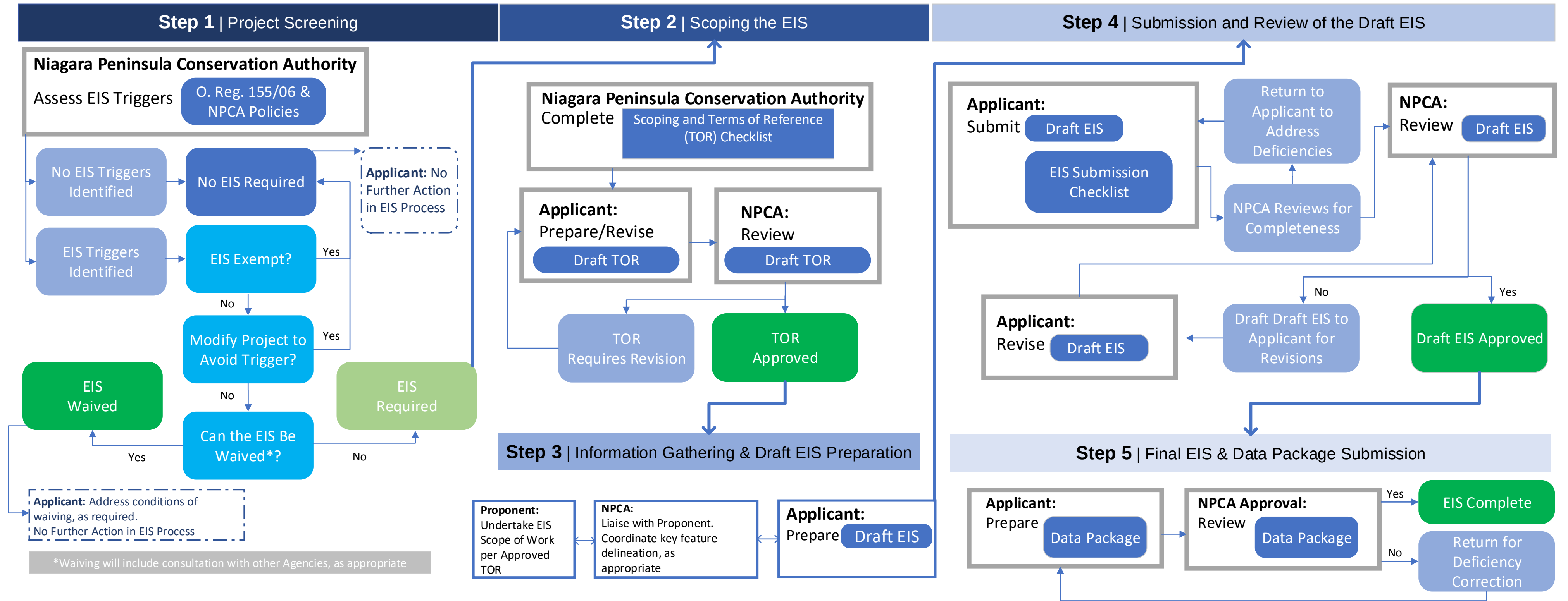
Niagara Escarpment Commission

232 Guelph Street
Georgetown, Ontario
L7G 4B1
Tel: 905-877-5191

Ministry of Environment, Conservation and Parks

SAROntario@ontario.ca
Tel: 416-325-4000 (general inquiries)

Appendix C: EIS Process Diagram



Appendix D: EIS Scoping and Terms of Reference Checklist

The **Scoping Checklist** provides a brief summary of components to be considered in the preparation of an EIS Terms of Reference. Scoping is to be completed in consideration of the following:

- Scope and scale of the proposed *development* or *site alteration*;
- Scope and scale of potential impacts resulting from the proposed *development* or *site alteration*;
- Sensitivity or complexity of the features on or adjacent to the proposed project to proposed development and site alteration, and specific impacts associated with the proposed project;
- Surrounding land use context (e.g., existing *development*);

Depending on the items above, not all elements listed below will necessarily be required. Large projects, those with a higher risk of potential impact, and those with complex natural heritage features and functions will generally require a more comprehensive set of assessments, analyses, etc. Smaller scale projects with lower potential impacts and where natural heritage features and functions are less complex are suitable for a scoped EIS and a greater number of items may be 'scoped out' (i.e., not required). In all cases, some items listed below may not be required depending on the specific site conditions and project.

Part 1 – Project Information

1-A | General Information

Project Name:

Applicant:

Primary Contact:

Contact Information:

Project Location: (Street Address or Lot and Concession):

Consultant:

Consultant Lead Contact Information:

NPCA File Number:

Other Agency File Number (if applicable):

1-B | Project Type

- ☐ Accessory Structures (e.g. in ground pools, decks, docks, gazebos)
- ☐ Buildings: New Construction, reconstruction, redevelopment, additions (less than 1000 square feet)
- ☐ Buildings: New Construction, reconstruction, redevelopment, additions (greater than or equal to 1000 square feet)
- ☐ Building: Addition to existing dwelling
- ☐ Septic System or other service
- ☐ Other development or site alteration
- ☐ Subdivision
- ☐ Commercial/Industrial
- ☐ Lot Severance for single detached dwelling on an existing lot
- ☐ Other: _____

Part 2 – Scoping of Inventories and Delineations

This section provides general guidance on what types of field inventories and feature delineations are anticipated to be required for the EIS. The applicant (or consultant) is to provide detailed description(s) of the proposed approach (survey type, specific methods, seasons, etc.), rationale and locations for surveys as part of a Draft Terms of Reference.

This section includes scoping of the project area and if applicable, the adjacent lands.

☐	Species at Risk ☐ Screening Assessment¹ ☐ Targeted surveys are anticipated to be required. To be confirmed through Screening Assessment and/or in consultation with MECP, as appropriate ☐ All of the above
☐	Significant Wildlife Habitat

¹ The Terms of Reference (TOR) is to include a preliminary Species at Risk (SAR) screening assessment to identify if any SAR have potential to occur within or adjacent to the study area within a distance appropriate to determine impacts to the species or influence of species presence on the proposed *development* or *site alteration*. This may include species listed Provincially (ESA 2007) or federally (SARA 2004), as applicable to the species type and project.

	☐ Screening Assessment ² ☐ Field program to address assessment of Significant Wildlife Habitat, as appropriate ☐ All of the above
☐	Terrestrial ☐ Ecological Land Classification (ELC) ³ ☐ Botanical Inventory ☐ Avifauna (Birds) ☐ In-field Habitat Assessment ☐ Incidental/ General Observations ⁴ ☐ Detailed or Targeted Survey(s) ☐ Herpetofauna (Amphibians and Reptiles) ☐ In-field Habitat Assessment ☐ Incidental/ General Observations ⁵ ☐ Detailed or Targeted Survey(s) ☐ Mammals ☐ In-field Habitat Assessment ☐ Incidental/ General Observations ☐ Detailed or Targeted Survey(s) ☐ Terrestrial Crustaceans (e.g., chimney crawfish) ☐ In-field Habitat Assessment ☐ Incidental/ General Observations ☐ Detailed or Targeted Survey(s)

² A Screening Assessment for *Significant Wildlife Habitat* (SWH) includes a desktop and secondary-source level assessment of habitats present against criteria for SWH in the applicable Ecoregion Criteria Schedule for the Project. This assessment approach is suitable for identifying most candidate habitat areas (e.g., by vegetation community); for most SWH types this approach is not enough to confirm presence or absence. Where candidate areas may be impacted, additional field surveys to confirm will be required.

³ Ecological Land Classification codes should follow the ELC Second Approximation (Lee 2008). Each ELC polygon requires representative soil sample(s).

⁴ This survey approach should be limited to only those projects with low risk of impact to this species group and where the potential presence of Species at Risk or *Significant Wildlife Habitat* is very low.

⁵ This survey approach should be limited to only those projects with low risk of impact to this species group and where the potential presence of Species at Risk or *Significant Wildlife Habitat* is very low.

☐	☐ Insects ☐ In-field Habitat Assessment ☐ Incidental/ General Observations ☐ Detailed or Targeted Survey(s) Aquatic ☐ In-field Habitat Assessment/ General Assessment ☐ Incidental/ General Observations ☐ Detailed or Targeted Survey(s)
☐	Delineation of Features⁶ ☐ Wetland^{7*} ☐ Riverine Flood Hazard/ Erosion Hazard ☐ Floodplain ☐ Hazard Land ☐ Watercourse ☐ Shoreline Flood and Erosion Hazard *At this time, the NPCA is requesting consultants to pre-stake the feature prior to NPCA conducting a site visit. NOTES:

⁶ Where Species at Risk are found to occur, delineation of habitat will also be required, but cannot be known at the scoping stage. Delineation of habitat is to be done in consultation with, or be approved by the MECP, as appropriate.

⁷ Any changes to provincially evaluated wetlands must be reviewed and approved by the NDMNRF prior to inclusion within the EIS and correspondence from the NDMNRF appended to the EIS.

Part 3- Other Studies⁸

☐	Geotechnical ☐ Secondary Source ☐ Study Required
☐	Hydrogeological ☐ Secondary Source ☐ Study Required
☐	Geomorphological ☐ Secondary Source ☐ Study Required
☐	Surface Water (e.g. hydrologic review, fluvial geomorphology) ☐ Secondary Source ☐ Study Required
☐	Natural Hazard(s) ☐ Secondary Source ☐ Study Required
☐	Wetland Water Balance (Risk Evaluation)⁹
☐	Other (Specify) _____

⁸ These studies are generally prepared as stand-alone reports. Relevant information on the interaction of these processes and functions with natural heritage features and functions is to be addressed in the EIS. It is strongly encouraged that the programs for these studies be integrated with the EIS Terms of Reference to ensure information appropriate to information the EIS is collected. This includes slopes, valleylands, dunes, karst formations etc.

⁹ This study will determine the need for further wetland hydrologic monitoring.

Part 4- Terms of Reference Requirements

☐ Introduction

- ☐ Description of Subject Property
- ☐ Description
 - ☐ Of proposed development or site alteration
- ☐ Description of known site history pertinent to the EIS (e.g., former land use(s), grading, filling)
- ☐ Description of landscape context
- ☐ **Map:** location of subject property, orthophotography base.

☐ Policy Context

- ☐ Legislative, regulatory and policies applicable to the property and the proposed development or site alteration
- ☐ Current land use designation and zoning
- ☐ Proposed land use designation and zoning to support proposed development if a *Planning Act* application is also required.

☐ Background Review

- ☐ List relevant natural heritage and hazard information secondary sources (e.g., species atlases, databases);
- ☐ List relevant existing studies, plans etc. (if/ as available)
- ☐ **Map:** location of subject property, orthophotography base.

☐ Biophysical Inventory

- ☐ Define and provide rationale for study area
- ☐ Detailed study approach and methods for all identified inventories and delineations identified in **Part 2**. Where there is rationale to exclude a specific feature or area
- ☐ From assessment, provide rationale for consideration. Appropriate justification /rationale for single-season or multi-season surveys shall be provided (e.g.,vegetation community / ELC, wetland delineation, etc.)
- ☐ Map: location of proposed surveys, subject property, proposed study area, orthophotography base.

☐ **Biophysical Analysis**

Describe the general approach and anticipated approach and/or method(s) of analyses for the following:

- ☐ Species at Risk: Preliminary screening assessment to be provided as part of the TOR. This will inform the field program staff.
- ☐ Significant Wildlife Habitat: Preliminary screening assessment to be provided as part of the TOR. This will inform the field program staff.
- ☐ Evaluation of regulated features and/or areas within the study area against appropriate policies and guidelines.¹⁰
- ☐ Enhancement Area(s)
- ☐ Natural Hazard within the study area
- ☐ Buffer recommendations

☐ **Alternative Assessment**

Outline approach to identifying or assessing alternatives to avoid or minimize impacts.

☐ **Impact Assessment**

Confirm scope includes an impact assessment that will consider direct, indirect and cumulative impacts and provide general approach to impact assessment.

☐ **Mitigation**

Confirm scope includes identification of mitigation measures that effectively address anticipated impacts resulting from the proposed development or site alteration. Mitigation isto include recommendations for enhancement or restoration.

☐ **Monitoring Program**

If a monitoring program may be required, confirm that consideration and recommendationsfor a monitoring plan (or rationale that one is not required) will be included in the EIS.

☐ **Recommendations and Conclusions**

Confirm that recommendations and conclusions with respect to the 'no negative impact' or 'interference with' tests be included in the EIS.

¹⁰ This may include provincial, federal legislation, policies, plans and guidance documents, as appropriate and applicable to the study area, project type, species and features.

☐ **Maps and Figures**

Outline anticipated maps and figures to be prepared for and included in the EIS to document and support assessment(s), recommendations, and conclusions.

☐ **Field Notes / Data Sheets**

Field notes / data sheets are required to be appended to the completed EIS. Please ensure that soil data is included with the appended data.

Note: Maps / figures may be combined for ease of production and review. The maps / figures listed are provided to illustrate the information that is to be included as part of the TOR submission.

CHECKLIST COMPLETION RECORD

A record of the individuals who complete the checklist is provided below.

COMPLETED BY:	
Name:	Name:
Position:	Position:
Agency:	Agency:
Contact Information:	Contact Information:
Date:	Date:

Appendix E: EIS Impact Assessment, Mitigation Measures and Cumulative Impacts Template

The **Impact Assessment, Mitigation Measures and Cumulative Impacts Table** provides a composite table of impacts, mitigation and cumulative impacts. Providing this information in table format facilitates review and clearly presents these key components of the EIS in supporting and assessing conclusions of ‘no negative impact’. Detailed descriptions of some components that will be repeated throughout the table (e.g., mitigation measures) should be provided in text so that lists can be used in the table to reduce overall table length and improve readability.

Impact	Development / Site alteration Activity or Condition Creating the Impact	Description of Impacts by Feature and/or Function	Mitigation Measures	Efficacy
List each impact type / category in a separate row. e.g., vegetation removal, changes to surface drainage, etc.	List the activities, conditions or components of the development or site alteration that will or have potential to result in the impact identified in the first column. e.g., clearing, grading, creation of impermeable surfaces, etc.	Describe the potential impact to the feature(s) and / or function(s) using the following categories: • Direct • Indirect (including Induced) • Cumulative	List recommended mitigation strategies to address impacts.	Assess efficacy of the mitigation measures / strategy in addressing the impact(s) described in the third column.

Appendix F: EIS Comment Response Matrix Template

ENVIRONMENTAL IMPACT STUDY – CONSOLIDATED COMMENTING & RESPONSE TABLE	
PROJECT NAME:	PROPONENT:
PROJECT NUMBER / REFERENCE:	PROJECT TYPE: [Development / Site Alteration / Agricultural]
SUBMISSION INFORMATION	REVIEW AGENCY INFORMATION
EIS PREPARED BY:	
1 ST SUBMISSION DATE:	[AGENCY] [commenting / lead staff member]
2 ND SUBMISSION DATE:	[AGENCY] [commenting / lead staff member]
3 RD SUBMISSION DATE:	[AGENCY] [commenting / lead staff member]

COMMENT #	SECTION	SUB-SECTION	ADDITIONAL REFERENCE	COMMENTING AGENCY	COMMENT	RESPONSE / ACTION TAKEN	RESOLUTION / OUTSTANDING CONCERN	RESPONSE / ACTION TAKEN	RESOLUTION / OUTSTANDING CONCERN
SECTION [#, TITLE]									

Appendix G: EIS Submission Checklist

The EIS shall be submitted as part of a complete application. The applicant's consultant will use the **EIS Submission Checklist** to confirm that the EIS meets submission requirements and has been prepared in accordance with an approved TOR. The NPCA will review the submission and checklist to confirm it satisfactorily meets submission requirements. If the submitted EIS does not meet the submission standards or was not prepared in accordance with the approved TOR, the NPCA may return the submission. The identified deficiencies must be addressed, and the EIS re-submitted prior to the initiation of the review process.

Applicant: _____ Consultant: _____
 Phone: _____ Phone: _____
 Email: _____ Email: _____
 Address: _____ Address: _____

Development or Site Alteration Application Property Address:

Complete Application Verification Checklist

(For Use by the NPCA)

- ☐ 8 ½ by 11 paper (maps, figures and appendices may be on 11 by 17), double sided in a standard font of reasonable size
- ☐ A title page that includes: the name of the applicant, address of the subject property, lists the author(s) of the report, the consulting firm(s) and the date the report was completed
- ☐ Copy of approved Terms of Reference appended to EIS
- ☐ Digital copy of report, data and shapefiles
- ☐ Complete EIS Submission Checklist completed and signed by applicant (or delegate)

EIS Submission:

- ☐ Accept
- ☐ Return (if submission is returned, please provide written justification to proponent and request submission)

Signature: _____ Date: _____

EIS Completion Checklist (For Use by Applicant / EIS Consultant)

Reporting Standard

- ☐ 8 ½ by 11 paper (maps, figures and appendices may be on 11 by 17), double sided in a standard font of reasonable size.
- ☐ A title page that includes: the name of the applicant, address of the subject property, lists the author(s) of the report, the consulting firm(s) and the date the report was completed.
- ☐ Provide contact information for the consulting company/principal author of the report.
- ☐ Digital copy of report, data and shapefiles.

Content

The following is a checklist of all the potential sections that may need to be addressed as part of an EIS. This checklist shall be used in the context of the approved EIS Terms of Reference. In the notes section below to describe why a piece was not included, such as it not being required in the Terms of Reference.

Date of approved Terms of Reference: _____

Introduction

- ☐ Descriptions of the subject property (natural features and areas, land cover, existing hard surfaces or buildings).
- ☐ Descriptions of the type and scale of the development or site alteration proposal (including any required servicing, infrastructure upgrades or stormwater facilities, existing or proposed trails).
- ☐ Description of the historical and present use of the subject property.
- ☐ Description of the site context/study area and the subject property's relationship to the surrounding landscape.
- ☐ Identification of why the EIS is required for the proposed development or site alteration.
- ☐ Map(s) of the development or site alteration location, subject property and study area.
 - Orthographic map with known natural heritage features/ areas overlaid.

Policy Context

- ☐ Identify the current land use designations and zoning for the subject property and for the adjacent lands.
- ☐ Identify the type of required applications / permits.

- ☐ Map(s) of the development or site alteration location and extent of area to be studied including clear identification / delineation of NPCA regulated features.
- ☐ Identify environmental legislative, regulatory and policy requirements that may affect the development or site alteration proposal, including clauses relevant to the proposal.

Summary of Data Collection Approaches and Methods

- ☐ Identify relevant information from existing studies, plans, databases and other sources to be analyzed as part of the EIS.
- ☐ Summarize data collection methods, including detailed description of field methods and analytical methods utilized in the characterization of the study area.

Biophysical Inventory

- ☐ Describe the study methods for regulated features and areas, wildlife, wildlife habitat and Species at Risk in detail (including time of year, level of search effort, etc.) as well as for delineating feature boundaries.
- ☐ Identify and describe all known or candidate regulated features and areas within the study area and specify their boundaries.
- ☐ Characterize the existing conditions of the following based on the accumulated data:
 - Geology and soils
 - Hydrology and hydrogeology
 - Aquatic and fish habitat
 - Terrestrial and wetland vegetation
 - Wildlife
 - Natural hazards
- ☐ Include map(s) showing locations for field studies (study area boundary, plots, stations, transect(s)), regulated features and areas (including their limits), etc.
- ☐ Include completed SAR Screening Table as an appendix. Include completed significant wildlife habitat Screening Table as an appendix.

Data Analysis

Regulated Features and Areas, and Natural Hazard Assessment

- ☐ Assess the various NPCA regulated features and areas against the appropriate policies and guidelines to determine significance.
- ☐ Assess the various NPCA regulated features and areas against the appropriate policies and guidelines related to natural hazards.
- ☐ Include an assessment of appropriate buffers and/or setbacks.

Opportunities and Constraints

- ☐ Discuss and depict Regulated Features and Areas, and Natural Hazard Opportunities and Constraints.
- ☐ Identify all of the constraints to potential development or site alteration related to regulated features and areas identified for protection, as well as natural hazards, including their respective buffers and setbacks.
- ☐ Identify opportunities for development or site alteration on the subject property that work within the limitations of the site-specific constraints.
- ☐ Identify opportunities for restoration and enhancement opportunities.
- ☐ Depict constraints and opportunities in a Figure.
- ☐ Environmental Policy Analysis.
- ☐ Include an environmental policy analysis confirming how the proposal meets (or does not meet) the applicable policies and legislation as described in the Policy Context section (see above).

Impact Analysis and Mitigation

- ☐ Detailed description of the proposed development or site alteration as it relates to potential impacts to the NPCA regulated features and areas identified for protection, and/or their ecological functions. Consider elements such as: built form, grading, stormwater management, servicing, trails and post-development use of the land.
- ☐ Include a water balance (or appended/cross reference to a supporting study) with a supporting impact analysis in the EIS when addressing hydrological impacts.
- ☐ Include an impact assessment that considers both short-term and long-term impacts, including:
 - Direct Impacts
 - Indirect Impacts (including induced)
 - Cumulative Impacts

*It is recommended to use a table format to summarize the impact analysis section.

- ☐ The Evaluation of Alternative Options/Measures describes how impacts can be mitigated through use of Best Management Practices, and innovative measures. The iterative process undertaken by the design team is included in this section.
- ☐ Summarize preferred alternative(s) for the proposal.
- ☐ Recommend Mitigation Measures (including avoidance, enhancement, and restoration).

Monitoring

- ☐ Include a Monitoring Plan for performance and effectiveness of mitigation measures. Consider whether adequate baseline information has been collected and provide recommended time frame for monitoring program.

Recommendations and Conclusion

- ☐ Recommendations and Concluding Statement.

Appendices and attachments

- ☐ EIS Terms of Reference and approval
- ☐ Mapping and figures
- ☐ Species lists
- ☐ Field survey data sheets
- ☐ Additional technical studies, as applicable

Files and Permissions

- ☐ Digital copy of EIS and appendices are provided in PDF or Word format
- ☐ If available at time of submission, species data provided as an excel file
- ☐ If available at time of submission, GIS shapefiles provided in ESRI Compatible Format**

I _____, agent for _____, confirm that the attached Environmental Impact Study (EIS) addresses the scope of work outlined in the approved Terms of Reference, contains the above study requirements and has been completed in accordance with the NPCA's EIS Guideline.

Signature: _____ Date: _____

Appendix H: General Field Survey Requirements

Survey	Optimal Inventory Period	Methodology and Protocols
Ecological Land Classification (ELC)	May to September	ELC System for Southern Ontario First Approximation (Lee et al., 1999) or as updated from time to time.
Wetland Evaluation and Delineation (OWES)	- Evaluation: variety of seasons to ensure the full evaluation occurs as per OWES. - Delineation: May to September	Ontario Wetland Evaluation System (OWES) four Southern Ontario (3rd Edition, 2014) or as updated from time to time.
Vegetation Inventory	- Spring: May to early June - Summer: mid-June to August - Fall: September to October	Full vegetation species list to be provided, can be combined with ELC and/or OWES as appropriate.
Birds	- Breeding birds: May 24 to July 10 - Marsh birds: April to July (species dependent) - Migrants and overwintering birds: species and site specific - Owls: November to April (species specific)	- Ontario Breeding Bird Atlas protocols - Marsh Monitoring Program protocols - Area searches and wandering transects
Amphibians	- Early spring to summer - Active Visual Encounter Surveys (VES) on rainy late March – early April nights	- Bird Studies Canada Great Lakes Marsh Monitoring Program (3 separate spring/early summer seasonal survey timing windows). - Active VES for salamanders
Reptiles	- April to June - Late Summer/Fall for migration or congregating species - Weather dependent	- Species and habitat dependent - May include cover board surveys, spring emergence surveys, basking surveys etc. - Consultation recommended ahead of work.
Bats	- During leaf off season for cavity tree surveys - Extent of acoustic monitoring to be determined through consultation with review agencies	- Species and habitat dependent - MNRF guidelines where applicable
Fish Survey and Fish Habitat	- Late Spring to June for intermittent watercourses - June – early September for residents	Using Ontario Stream Assessment Protocol (OSAP Section 3)
Drainage Patterns, Headwater Drainage Features and Watercourses	- Multiple assessments: spring freshet/rain events, late April-May, July-August - Aquatic habitat assessment in late April-May	- OSAP - Evaluation, Classification and Management of Headwater Drainage Features, prepared by CVC/TRCA (2014) - Ministry of Transportation Environmental Guide for Fisheries

Please note that the methodologies and protocols described in Appendix H are not an exhaustive list and alternative methodologies and protocols may be proposed by the applicant or identified by review agencies on a site-specific basis or as a result of the initial inventory results.

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