

PUBLIC ADVISORY COMMITTEE
Thursday, June 2, 2022
5:00 PM
ONLINE VIDEO CONFERENCE

A G E N D A

Anyone interested in joining the meeting as a guest may do so using the link below:

<https://npca.webex.com/npca/j.php?MTID=mad21a3cf92dfaab85af0321e38878ccc>

CALL TO ORDER – ROLL CALL

The Niagara Peninsula watershed is situated within the traditional territory of the Haudenosaunee, Attiowonderonk (Neutral), and the Anishinaabeg, including the Mississaugas of the Credit—many of whom continue to live and work here today. This territory is covered by the Upper Canada Treaties (No. 3, 4, and 381) and is within the land protected by the Dish with One Spoon Wampum agreement. Today, the watershed is home to many First Nations, Métis, and Inuit peoples. Through the 2021-2031 Strategic Plan, we re-confirm our commitment to shared stewardship of natural resources and deep appreciation of Indigenous culture and history in the watershed.

- 1. APPROVAL OF AGENDA**
- 2. DECLARATIONS OF CONFLICT OF INTEREST**
- 3. APPROVAL OF MINUTES**

- a) Minutes of the Public Advisory Committee meeting dated Thursday, February 24, 2022 (For approval)

Page #1

- 4. CORRESPONDENCE**
- 5. PRESENTATIONS**

- a) PowerPoint Presentation RE: Collaborative Efforts Toward A Healthier Niagara River: Progress Update by Natalie Green, NPCA Manager, Climate Change and Special Projects (For Receipt)

Page #5

- b) PowerPoint Presentation RE: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act, (May 1, 2020 Consolidation) Phase 2 Policy Review Interim s. 28 EIS Guideline and Wetlands Procedure Document by Leilani Lee-Yates, NPCA Director, Watershed Management (For Receipt – to be provided under separate cover)
(This presentation is in conjunction with agenda items 7. a) and b) being Report No. FA-20-22 RE: NPCA Draft Interim Section 28 Environmental Impact Study Guideline and Report No. FA-21-22 RE: NPCA Draft Interim Wetlands Procedure Document)

6. DELEGATIONS

7. CONSENT ITEMS

- a) Report No. FA-20-22 RE: NPCA Draft Interim Section 28 Environmental Impact Study Guideline (For receipt)

Page # 18

- b) Report No. FA-21-22 RE: NPCA Draft Interim Wetlands Procedure Document (For receipt)

Page # 73

8. DISCUSSION ITEMS

9. COMMITTEE REPORTS

- a) Minutes of the Watershed Floodplain Sub-Committee Meeting dated May 26, 2022 (For approval)

Page # 100

10. NEW BUSINESS

- a) C.A.O. Update (Verbal) (For receipt)
- b) Members' Updates (Verbal) – Information / Issues / Items of Interest (For receipt)

11. ADJOURNMENT



**PUBLIC ADVISORY COMMITTEE
ONLINE VIDEO CONFERENCE
MEETING MINUTES**

**Thursday, February 24, 2022
5:00 p.m.**

MEMBERS PRESENT:

J. Oblak (Committee Chair)
C. Ecker-Flagg
R. Foster, NPCA Chair
E. Furney
K. Huxley
M. Kauzlaric
D. Kelly
H. Korosis
J. Musso
J. Schonberger
D. Speranzini

MEMBERS ABSENT:

J. Ariens
N. Seniuk

STAFF PRESENT:

C. Sharma, C.A.O. / Secretary – Treasurer
G. Bivol, Clerk
D. Deluce, Senior Manager, Planning and Regulations
R. Hull, Manager, Strategic Business Planning and Public Relations
L. Lee-Yates, Director, Watershed Management
E. Navarro, Communications Specialist
A. Powell, Manager, Conservation Area Services
K. Royer, Coordinator, Community Outreach

Chair Oblak called the meeting to order at 5:02 p.m.. Member Cindilee Ecker-Flagg offered an opening statement acknowledging the spirit of co-operation achieved with the Committee.

1. APPROVAL OF AGENDA

Recommendation No. PAC-01-2022

Moved by Member Kelly

Seconded by Member Speranzini

THAT the agenda for the February 24, 2021 NPCA Public Advisory Committee meeting **BE ADOPTED** as amended with the addition of an agenda item 10. c) Flood Advisory Notification Comment.

CARRIED

2. DECLARATIONS OF CONFLICT OF INTEREST

Member Speranzini stated for the record that her opinions as expressed are her own and not that of her employer.

3. APPROVAL OF MINUTES

- a) Minutes of the Public Advisory Committee Meeting dated November 25, 2021

Recommendation No. PAC-02-2022

Moved by Member Speranzini

Seconded by Member Kauzlaric

THAT the minutes of the NPCA Public Advisory Committee meeting dated November 25, 2021 **BE APPROVED**.

CARRIED

4. CORRESPONDENCE

None

5. PRESENTATIONS

- a) Project Introduction: Planning Policy Review by David Deluce, NPCA Senior Manager, Planning and Regulations – Mr. Deluce presented via PowerPoint. Leilani Lee-Yates, Director of Watershed Management spoke. Discussion ensued.

Recommendation No. PAC-03-2022

Moved by Member Furney

Seconded by Member Huxley

THAT the PowerPoint presentation by David Deluce, NPCA Senior Manager, Planning and Regulations RE: Planning Policy Review **BE RECEIVED**.

CARRIED

- b) Introduction of the NPCA Chair – Committee Chair Oblak called for comments from the new NPCA Chair, Rob Foster. Chair Foster introduced himself to the members before leaving the proceedings to tend to a prior engagement.

6. DELEGATIONS

None

7. CONSENT ITEMS

- a) Report No. FA-68-21 RE: NPCA Transition Plan in Accordance with Section 21.1.4 of the

Conservation Authorities Act - Chandra Sharma, C.A.O. / Secretary - Treasurer offered background and presented the report. Discussion ensued.

Recommendation No. PAC-04-2022

Moved by Member Ecker-Flagg

Seconded by Member Musso

THAT NPCA Report No. FA-68-21 RE: NPCA Transition Plan in Accordance with Section 21.1.4 of the *Conservation Authorities Act* **BE RECEIVED**.

CARRIED

- b) Report No. FA-03-22 RE: Conservation Authorities Act – Update on Inventory of Programs/Services - Chandra Sharma, C.A.O. presented. Discussion ensued.

Recommendation No. PAC-05-2022

Moved by Member Korosis

Seconded by Member Schonberger

THAT NPCA Report No. FA-03-22 RE: Conservation Authorities Act – Update on Inventory of Programs/Services **BE RECEIVED**.

CARRIED

- c) Report No. PAC-01-22 RE: Update on 2022 NPCA Events and Programs

Alicia Powell, NPCA Manager of Conservation Area Services spoke to the report.

Recommendation No. PAC-06-2022

Moved by Member Huxley

Seconded by Member Kelly

THAT NPCA Report No. PAC-01-22 RE: Update on 2022 NPCA Events and Programs **BE RECEIVED**.

CARRIED

8. DISCUSSION ITEMS

- a) Climate Change Verbal Update by the Chandra Sharma, NPCA C.A.O. – Ms. Sharma spoke on opportunities and future initiatives for the NPCA to combat climate change.

Recommendation No. PAC-07-2022

Moved by Member Furney

Seconded by Member Speranzini

THAT the verbal update on Climate Change by Chandra Sharma, NPCA C.A.O. **BE RECEIVED**.

CARRIED

9. COMMITTEE REPORTS

None

10. NEW BUSINESS

- a) C.A.O. Update (Verbal) – Ms. Sharma spoke about funding approvals recently received by the NPCA, the NPCA Annual Report and the outreach for Board Members for the Niagara Peninsula Conservation Foundation.

Recommendation No. PAC-08-2022

Moved by Member Huxley

Seconded by Member Furney

THAT the verbal update from Chandra Sharma, NPCA C.A.O. **BE RECEIVED.**

CARRIED

- b) Members' Updates (Verbal) – Information / Issues / Items of Interest – Chair Oblak spoke on options for an informal outdoor gathering of the Committee in the coming months.

Recommendation No. PAC-09-2022

Moved by Member Huxley

Seconded by Member Ecker-Flagg

THAT the Members' Updates for Information / Issues / Items of Interest **BE RECEIVED.**

CARRIED

- c) Flood Advisory Notification Comment – The Chair noted that Members were now receiving notification of flood advisories but could opt out by notifying NPCA staff.

11. ADJOURNMENT

Resolution No. PAC-10-2022

Moved by Member Musso

Seconded by Member Korosis

THAT this meeting of the NPCA Public Advisory Committee **BE ADJOURNED** at 6:24 p.m..

CARRIED

Jackie Oblak
Public Advisory Committee Chair

Chandra Sharma
Chief Administrative Officer / Secretary –
Treasurer

Collaborative Efforts Toward A Healthier Niagara River: Progress Update

Natalie Green, M.Sc., PMP

June 2, 2022

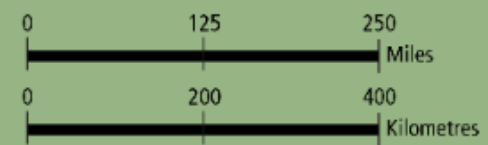
Canada

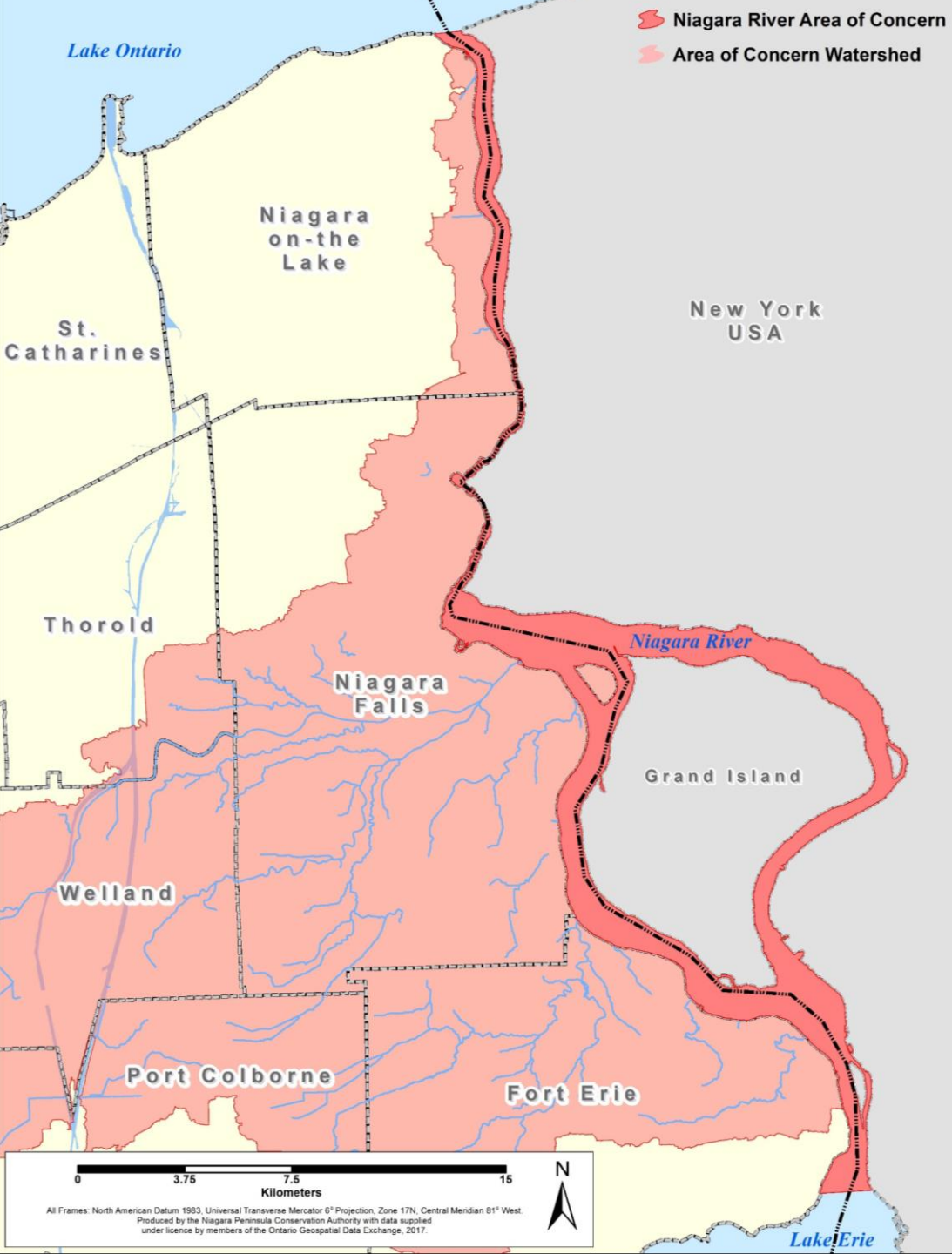
Legend

- Canadian AOCs
- ★ Delisted Canadian AOCs
- ▲ Canadian Areas in Recovery
- ◆ Binational AOCs
- U.S. AOCs
- ★ Delisted U.S. AOCs



U. S. A.





NIAGARA RIVER AREA OF CONCERN

- The 58 km connecting channel flowing from Lake Erie to Lake Ontario;
- Main issues: water quality & habitat loss
- One of 5 binational Great Lakes Areas of Concern
- A remedial action plan guides local efforts on each side of the river



The Remedial Action Plan (RAP) is a locally-driven initiative to restore and protect water quality and ecosystem health in an Area of Concern.

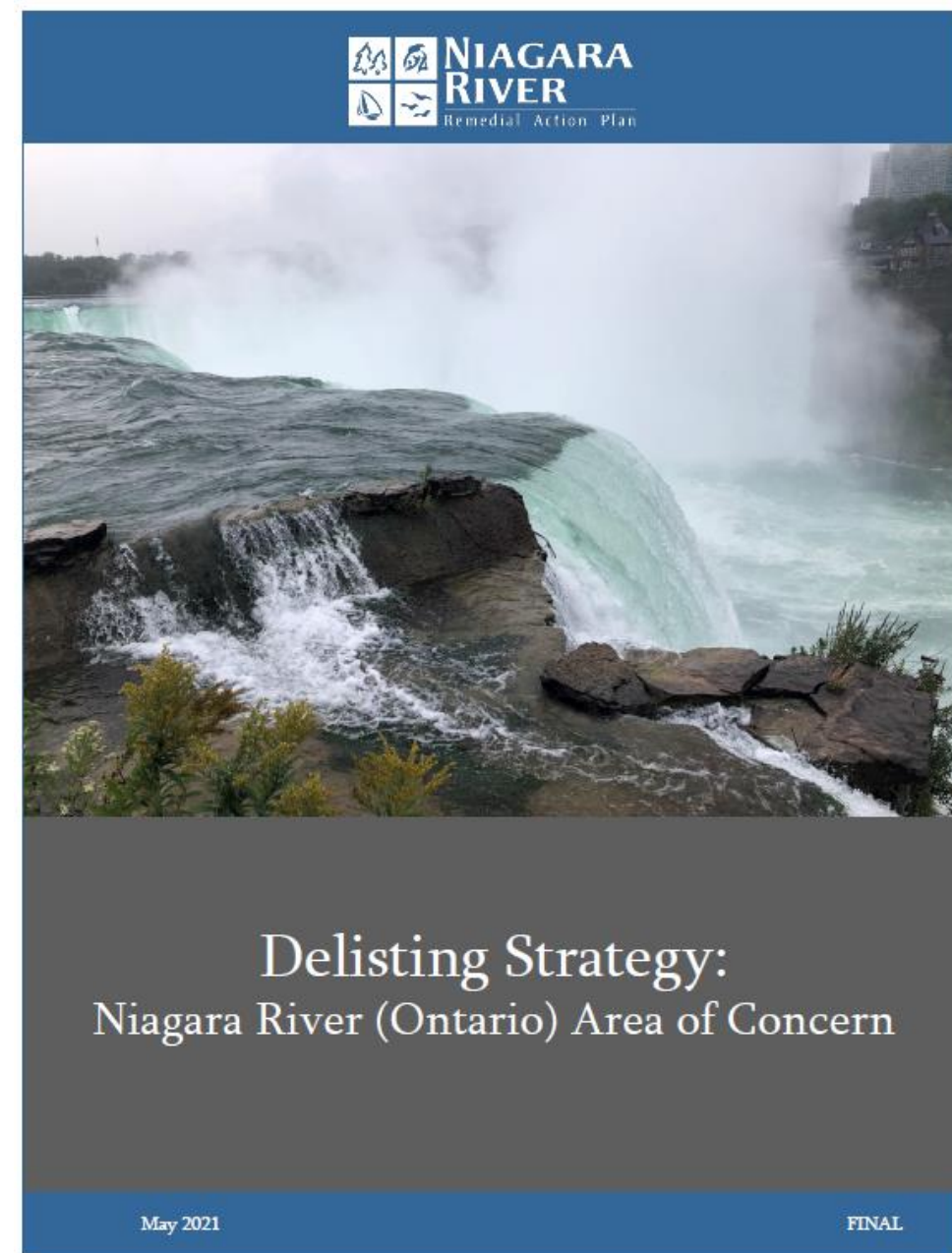
We're working together with many groups to improve 5 remaining environmental challenges in the Niagara River.



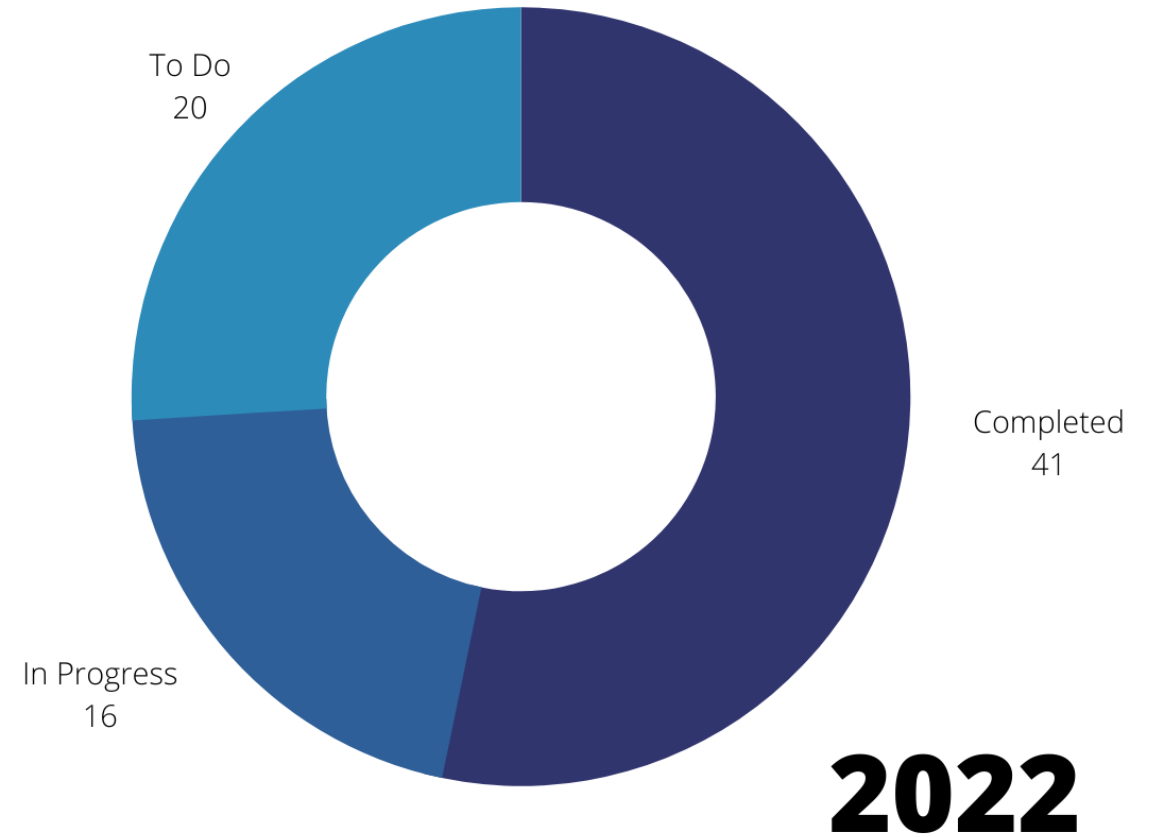
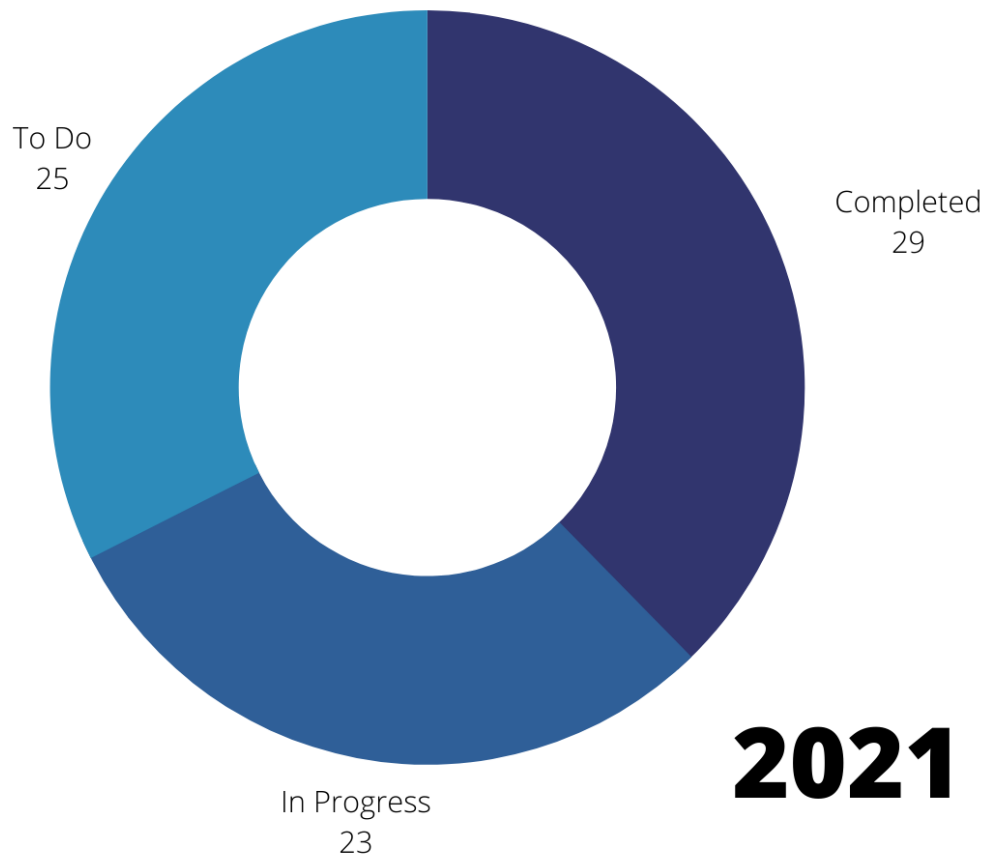
Delisting Strategy: 2019-2023

Purpose:

- provide summary of information about remaining challenges
- guidance on removal of challenges through the specific delisting criteria
- identify remaining priority actions for each of the remaining challenges

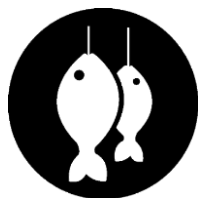


A total of 77 remaining actions were identified (including BUI assessments).



Currently, 57 actions (74%) are completed or in progress.

BENEFICIAL USE IMPAIRMENTS



Restrictions on
Fish Consumption



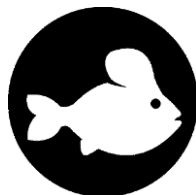
Eutrophication
or Undesirable
Algae



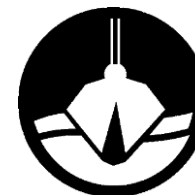
Restrictions on
Drinking Water
Consumption



Degradation of
Fish & Wildlife
Populations



Fish Tumours



Restrictions on
Dredging



Degradation of
Benthos



Degradation of
Plankton
Populations



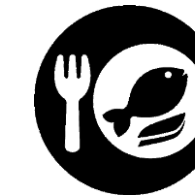
Degradation of
Aesthetics



Beach Closings



Added Costs to
Agriculture or
Industry



Tainting of Fish
Flavour



Loss of Fish &
Wildlife Habitat



Bird or Animal
Deformities/
Reproduction Problems

TRACKING PROGRESS WITH BUIs



1993



2022



SPOTLIGHT: HABITAT





www.ourniagarariver.ca/binational-habitat

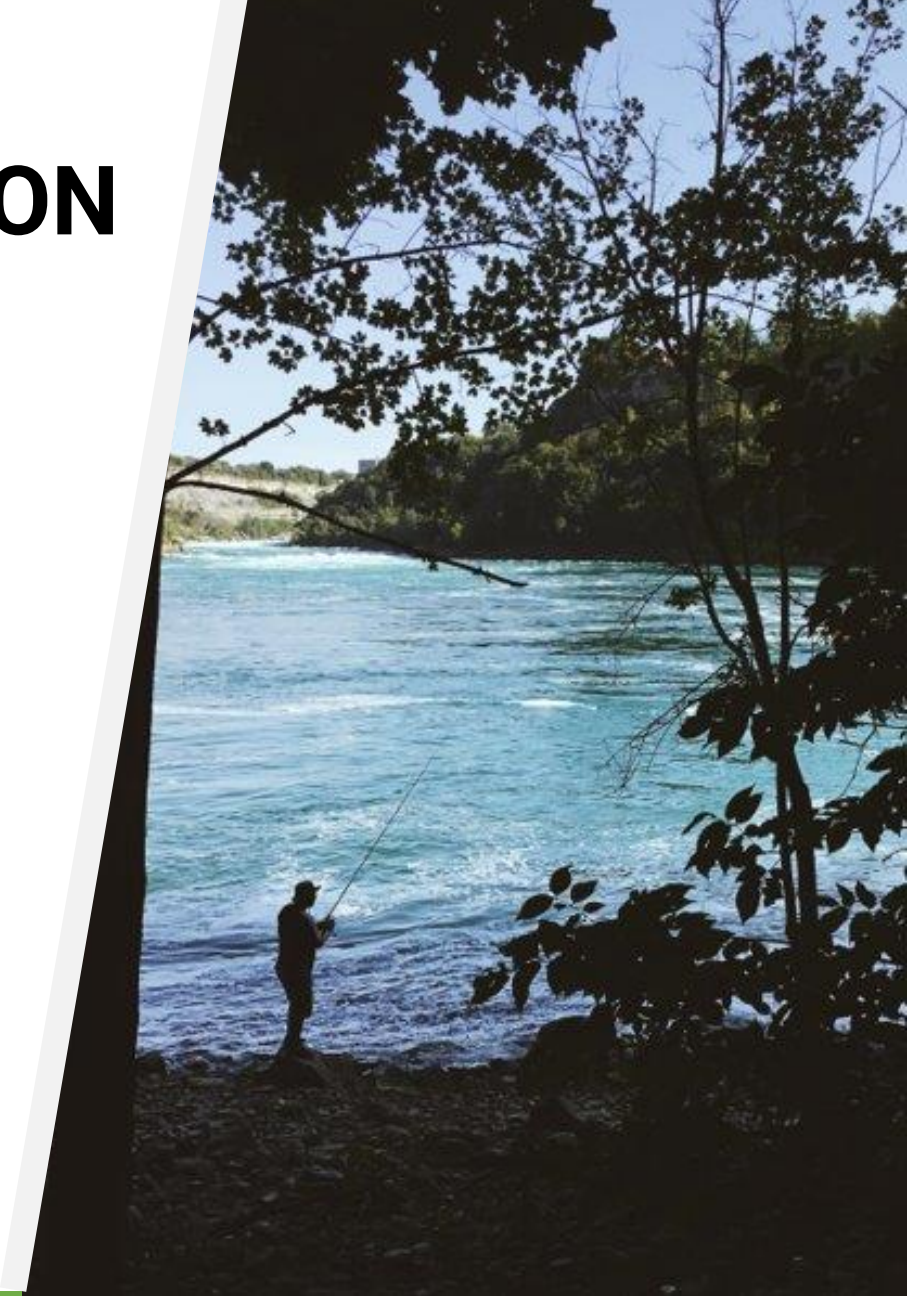
Niagara River habitat highlights!

- 7 coastal wetlands created (>7.5 acres) 2016-present
- 80% of Canadian side vegetated
- 26 sites identified for riparian restoration (58% completed)
- >30,000 native plants installed
- 1,580 m of shoreline restored
- LOTS of POSITIVE feedback!



SPOTLIGHT: FISH CONSUMPTION


- Two years of sampling through online & in-person surveys
- Targeted mailout, posters, events, social media
- Incentive for completion
- Outreach / Education
- Engagement with local First Nation community
- Métis Nation of Ontario surveys (in progress)





NEXT STEPS

- **Beach closings**
 - Engagements completed
 - Assessment to be submitted to Canada and Ontario
- **Fish and wildlife populations**
 - Assessment in progress
 - Engagements planned for winter 2022
- **Habitat**
 - Riparian plantings in progress
 - 1 more wetland to be completed in summer
 - Assessment planned for winter 2022
- **Benthos (sediment contamination)**
 - Monitoring in progress
- **Fish consumption**
 - Survey results to be synthesized in 2023



Thank you!

Questions?

Natalie Green
ngreen@npca.ca



Report To: Board of Directors

Subject: NPCA Draft Interim Section 28 Environmental Impact Study Guideline

Report No: FA-20-22

Date: May 20, 2022

Recommendation:

1. **THAT** Report No. FA-20-22 RE: NPCA Draft Interim Section 28 Environmental Impact Study Guideline **BE RECEIVED**.
2. **AND FURTHER THAT** Appendix I to Report No. FA-20-22 RE: NPCA Draft Interim Section 28 Environmental Impact Study Guideline titled, "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06", prepared by NPCA staff and dated May 16, 2022, **BE APPROVED**.

Purpose:

The purpose of this report is to provide an overview of the "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06", for the approval of the Board of Directors.

Background:

Through Phase 1 of the NPCA Policy Review and Procedural Manual Project, the immediate need for technical guidance related to Environmental Impact Studies interim to the completion of the Procedural Manual was identified. On March 25, 2022, the NPCA Board of Directors approved staff report (FA-10-22) with the recommendation to prepare, a Section 28 Environmental Impact Study (EIS) Guideline interim to the final planning and permitting Procedural Manual being completed by the end of 2022. Staff committed to presenting the draft interim Guideline to the Governance Committee in May 2022. Input and feedback on the draft Interim Section 28 EIS Guideline was received from the Governance Committee on May 12, 2022, with direction for staff to present the document to the Board of Directors for approval.

The implementation of the NPCA Policy Document requires in many cases the completion of an EIS to assess the impact of proposed development and site alteration on regulated features and their functions and identify the mitigative response to those impacts. The interim Guideline provides clarity to landowners, applicants, and consultants regarding the NPCA's expectations and requirements for completing an EIS in support of a Section 28 work permit application.

Discussion:

A team of Planning and Development staff comprising senior staff and subject matter experts in planning and ecology undertook a jurisdictional review of other conservation authorities and municipalities to identify best practices for undertaking an EIS, including tools such as checklists and templates. The team also undertook an internal audit of the current NPCA process and practices for scoping and reviewing an EIS in support of an NPCA work permit. The result is a detailed Guideline intended to provide direction to landowners considering development and site alteration in or near NPCA regulated features and areas to determine when an EIS is required and the procedure for completing an EIS in support of an NPCA work permit. The Guideline also serves to explain the roles and responsibilities of the NPCA in relation to the EIS process and provides tools for improving the process.

The draft interim Section 28 EIS Guideline is presented in three sections. Section 1 is the EIS Primer, which contains a high-level, plain language overview of what an EIS is, why and when they are needed, roles and responsibilities of parties involved in an EIS, which professionals should complete them and how they fit into the NPCA work permit process. Section 2 describes the EIS Process and explains the various steps and tools used within each step. Finally, Section 3 specifies the EIS Content and provides directions on the technical content and approach to completing an EIS, including minimum submission requirements for a complete EIS. The Guideline also includes several appendices that further clarify the EIS process and tools for NPCA staff and the applicant to use that aim to streamline the preparation and review of the EIS while ensuring requirements are met for every EIS submitted in support of an NPCA work permit.

It is recognized that an EIS required for an NPCA work permit may also be required by other approval agencies, such as municipalities if there are associated *Planning Act* applications or the Niagara Escarpment Commission (NEC) for Development Permits. When there are other approvals and agencies requiring an EIS, the draft interim Section 28 EIS Guideline promotes a “One-Study” approach to encourage all agencies to address their environmental study requirements through the identification of a suitable scope of work and report requirements to the extent feasible. While the NPCA is not the approval authority for a *Planning Act* or NEC Development Permit, the NPCA still has a Regulatory role when development is proposed in regulated areas. Staff anticipate that the applicant adequately addresses NPCA concerns during the *Planning Act* or NEC Development Permit process proactively to ensure a streamlined and timely work permit.

Conclusion:

The “Niagara Peninsula Conservation Authority (NPCA) Draft Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06”, attached as Appendix 1, provides technical guidance for the completion and review of an EIS required for an NPCA work permit until such time that new NPCA policies and a Procedural Manual are completed as part of the Phase 2 Policy Review work that is currently underway.

Financial Implications:

There are no financial implications to this report.

Links to Policy/Strategic Plan:

The draft interim Section 28 EIS Guideline supports the implementation of the NPCA Policy Document where the completion of an EIS is required to assess the impact of proposed development and site alteration on regulated features and their functions and identify the mitigative response to those impacts. The Guideline also aligns with the NPCA's 10-year Strategic Plan goals to protect people and properties from natural hazards and climate impact, and maintain a high standard of client services, tools and procedures for NPCA work permits.

Related Reports and Appendices:

Appendix 1: "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06", prepared by NPCA staff and dated May 16, 2022.

Authored by:

Original Signed by:

Leilani Lee-Yates, MCIP, RPP
Director, Planning and Development

Submitted by:

Original Signed by:

Chandra Sharma, MCIP, RPP
Chief Administrative Officer/Secretary-Treasurer



NIAGARA PENINSULA CONSERVATION AUTHORITY (NPCA)

DRAFT INTERIM ENVIRONMENTAL IMPACT STUDY GUIDELINE

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

MAY 16, 2022

Table of Contents

Introduction	3
How to use this Guideline	3
1.0 Environmental Impact Study Primer	3
1.1 What is an EIS	3
1.2 Impact Studies: Terminology and a One-Study Approach	4
1.3 Why is an EIS needed?	4
1.4 When is an EIS required?	5
1.5 Scope of an EIS	6
1.6 Role of Applicant and Who Prepares an EIS?	6
1.6.1 What is the role of the Applicant?	6
1.6.2 Who Prepares an EIS?	7
2.0 EIS Process	8
2.1 Step 1 Project Screening	8
2.1.1. EIS Triggers	9
2.1.2 EIS Exemptions and Waiving	10
2.1.3 Supporting Materials and Information	10
2.2 Step 2 Scoping the EIS and Terms of Reference Approval	11
2.2.1 EIS Scoping	11
2.2.2 Submission and Approval of Terms of Reference	11
2.3 Step 3 Information Gathering and Draft EIS Preparation	12
2.4 Step 4 Draft EIS Submission	12
2.4.1 Comment and Response	13
2.5 Step 5 Final EIS & Data Package Submission	13
3.0 Contents of an Environmental Impact Study	14
3.1 Introduction	14
3.2 Policy Context	14
3.3 Summary of Data Collection Approaches and Methods	16
3.4 Biophysical Inventory	16
3.5 Biophysical Analysis of Opportunities and Constraints	18
3.5.1 Identification of Opportunities and Constraints	20
3.6 Impact Assessment and Mitigation	20

3.6.1 Impact Assessment	20
3.6.2 Mitigation	22
3.7 Monitoring Plan	22
3.8 Conclusions and Recommendations	23
3.9 References	23
3.10 Appendices and Supporting Material Requirements.....	24
List of Appendices to EIS Guideline	25
Appendix A: Definitions	25
Appendix B: Contact Information for Other Relevant Agencies.....	25
Appendix C: EIS Process Diagram.....	25
Appendix D: EIS Scoping and Terms of Reference Checklist.....	25
Appendix E: EIS Impact Assessment, Mitigation Measures and Cumulative Impacts Template.....	25
Appendix F: EIS Comment Response Matrix Template	25
Appendix G: EIS Submission Package Checklist	25
Appendix H: General Field Survey Requirements.....	25
References.....	26

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

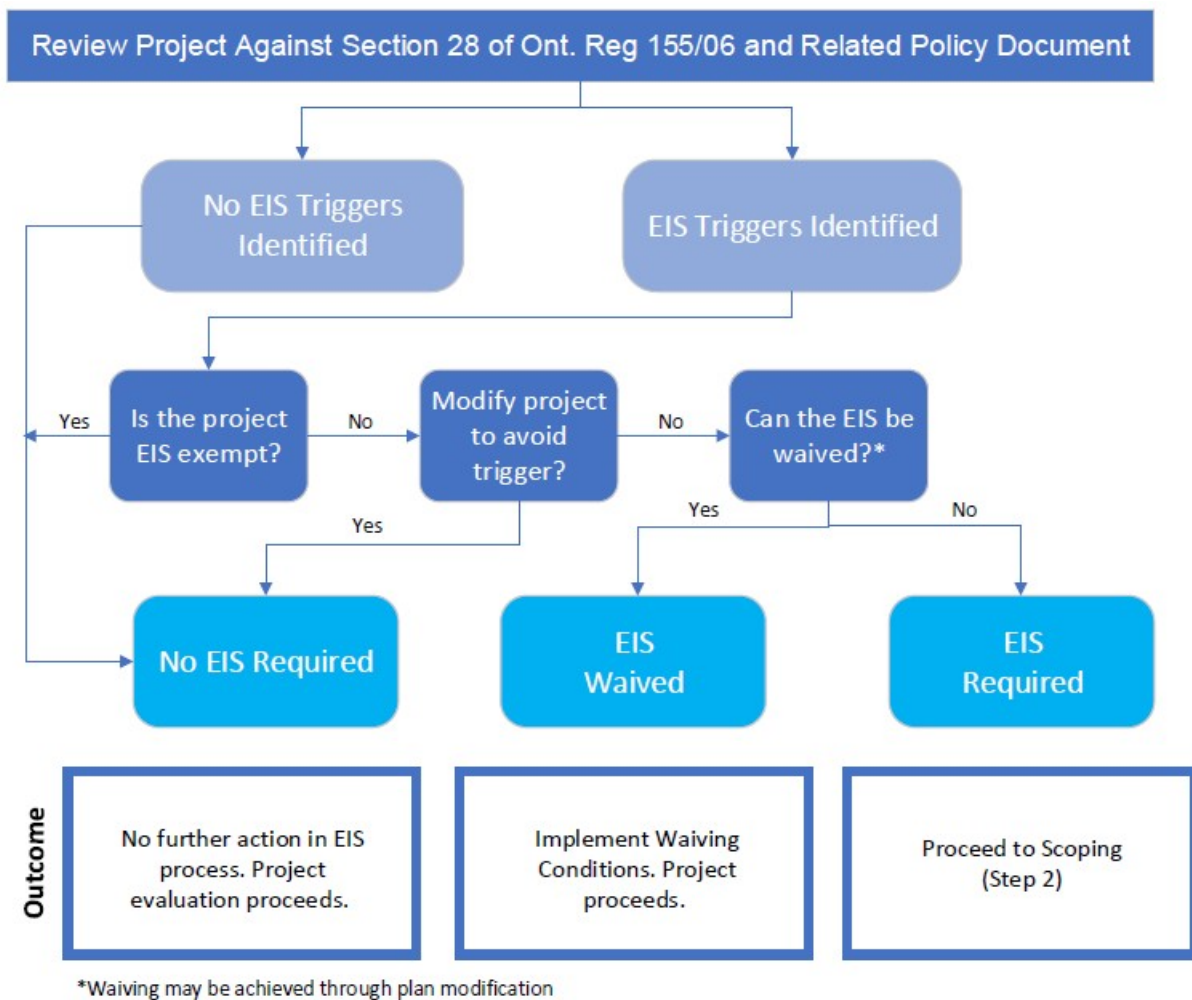
Appendix C includes an illustration of the EIS process. The first step is determining whether an EIS is required. Project screening should occur through pre-consultation with NPCA staff for a permit application or when *Planning Act* application involves regulated features or areas. Where an NEC **development** 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:

- Location and extent of the **development** or **site alteration**, including any **building**, grading, underground servicing, required site works (fencing, sidewalks, lighting) etc.;
- Material storage or staging areas;
- Roads, driveways, and parking areas;
- Amenity areas;
- Wells and septic systems (current and proposed locations if applicable); and,
- 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:
 - Agencies (e.g. MECP, NEC, NDMNRF, DFO etc.); and,
 - 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):
 - Subject lands boundary / property limit;
 - **Development** or **site alteration** footprint (limits of grading or other works);
 - Lot lines / fabric;
 - Roads (new or improvements to existing);
 - Servicing (e.g., easements, alignments, etc.);
 - Stormwater facilities and outlets;
 - Land use(s) (e.g., low, medium, high density residential, commercial, etc.);
 - Open space and parks;
 - Trails;
 - Proposed **buffers**, and/or **enhancement** areas
 - Setbacks (e.g., from Top of Bank)
 - NPCA regulated features (e.g. **wetlands**, **watercourses**, valley lands, etc).
 - 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.

3.3 Summary of Data Collection Approaches and Methods

Describe the methodology through which information about the biophysical attributes of the study area was obtained. This shall include:

- Identify all applicable guidelines and technical documents used to inform the EIS, including, but not limited to:
 - Natural Heritage Reference Manual Second Edition (Ministry of Natural Resources and Forestry, OMNR 2010);
 - Significant Wildlife Habitat Technical Guide (OMNR 2000);
 - Significant Wildlife Habitat Mitigation Support Tool (2014); and,
 - Significant Wildlife Habitat Ecoregion Criteria Schedules (MNRF 2015).
- Background Review:
 - List relevant natural heritage information secondary sources (e.g., species atlases, databases)
 - List relevant existing studies, plans, etc., (as applicable); and
 - Identify data gaps.
- Field Surveys and Analysis:
 - Provide a detailed description of field methods used (e.g. survey protocols, classification systems, species checklists, etc.); and
 - List and describe analysis methods used (e.g., method of assessing **watercourse** function, **wetland** significance etc.).

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 3: Wetland Function examples

Broad Function Type	Broad Functional Group	Functions
Hydrologic	Water Regime	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Habitat for flora and fauna that contribute to biodiversity and ecological integrity, including but not limited to; <ul style="list-style-type: none"> ○ 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 MNDMNRF 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, MNDMNRF, 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:
 - Support or increase habitat features and/or diversity;
 - Connect or join fragmented natural features to form larger contiguous areas in order to create and improve habitat; and
 - 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 4: 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).

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

DRAFT

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.

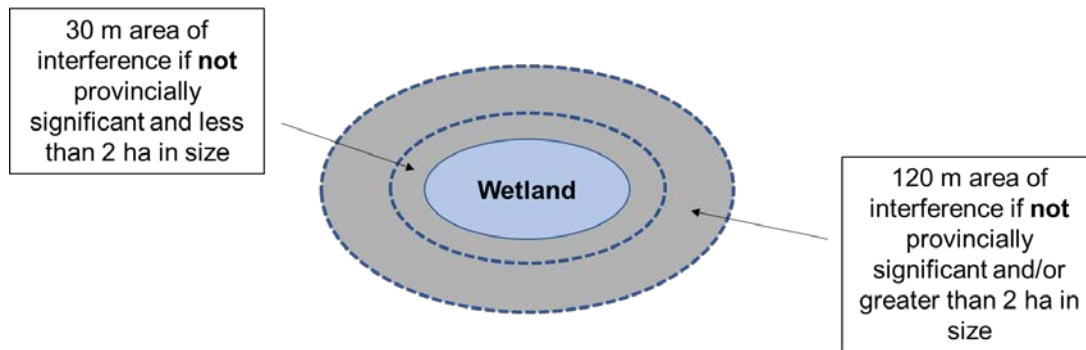
10. Niagara Peninsula Conservation Authority, A Guide to Celebrate Niagara Peninsula's Native Plants (Sixth Edition), 2014.
11. Niagara Peninsula Conservation Authority. September 2018. NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the *Planning Act*.
12. Oldham, 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-Documents-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>

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

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

- 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.

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

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, s and no longer exhibits a 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

⁸TRCA 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 Approval Authorities and 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)

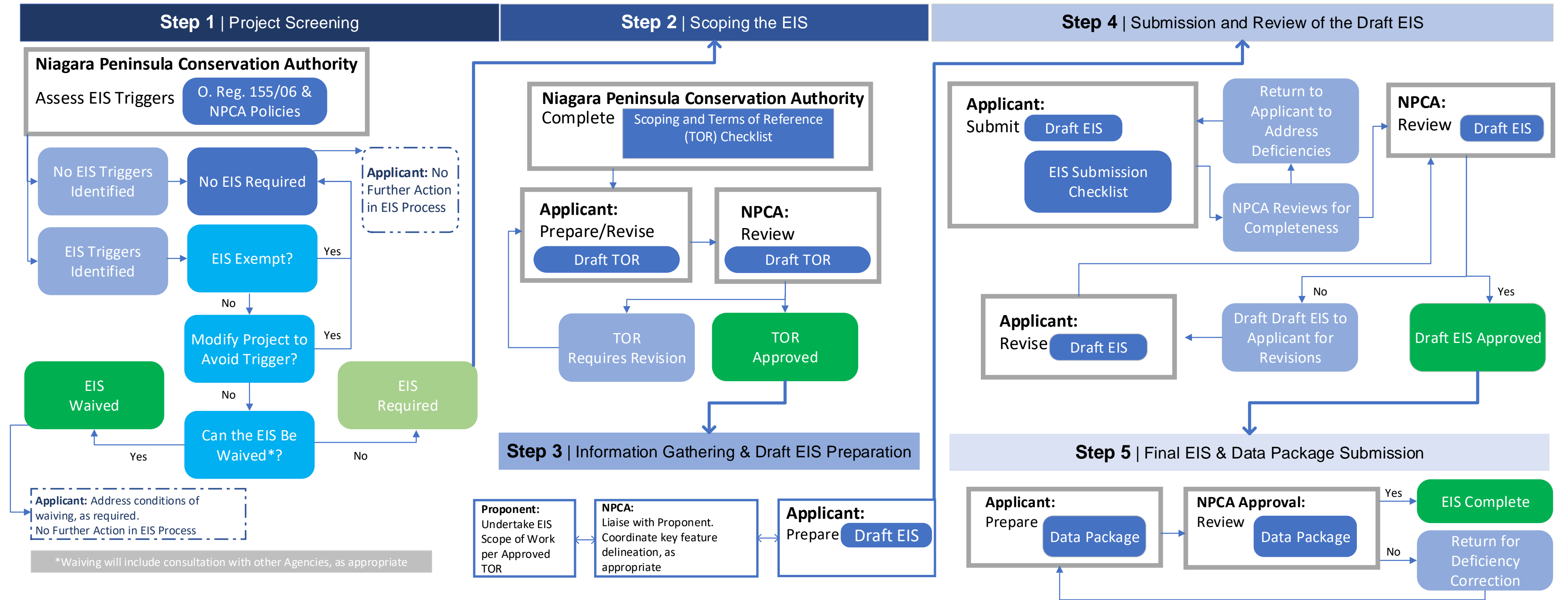
4905 Dufferin Street
Toronto, Ontario
M3H 5T4
Tel: 416-739-4826

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 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): _____

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

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.

<input type="checkbox"/>	Species at Risk <ul style="list-style-type: none"> <input type="checkbox"/> Screening Assessment¹ <input type="checkbox"/> Targeted surveys are anticipated to be required. To be confirmed through Screening Assessment and/or in consultation with MECP, as appropriate <input type="checkbox"/> All of the above
<input type="checkbox"/>	Significant Wildlife Habitat <ul style="list-style-type: none"> <input type="checkbox"/> Screening Assessment² <input type="checkbox"/> Field program to address assessment of Significant Wildlife Habitat, as appropriate

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.

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.

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

	<input type="checkbox"/> All of the above
<input type="checkbox"/>	Terrestrial <ul style="list-style-type: none"> <input type="checkbox"/> Ecological Land Classification (ELC)³ <input type="checkbox"/> Botanical Inventory <input type="checkbox"/> Avifauna (Birds) <ul style="list-style-type: none"> <input type="checkbox"/> In-field Habitat Assessment <input type="checkbox"/> Incidental/ General Observations⁴ <input type="checkbox"/> Detailed or Targeted Survey(s) <input type="checkbox"/> Herpetofauna (Amphibians and Reptiles) <ul style="list-style-type: none"> <input type="checkbox"/> In-field Habitat Assessment <input type="checkbox"/> Incidental/ General Observations⁵ <input type="checkbox"/> Detailed or Targeted Survey(s) <input type="checkbox"/> Mammals <ul style="list-style-type: none"> <input type="checkbox"/> In-field Habitat Assessment <input type="checkbox"/> Incidental/ General Observations <input type="checkbox"/> Detailed or Targeted Survey(s) <input type="checkbox"/> Terrestrial Crustaceans (e.g., chimney crawfish) <ul style="list-style-type: none"> <input type="checkbox"/> In-field Habitat Assessment <input type="checkbox"/> Incidental/ General Observations <input type="checkbox"/> Detailed or Targeted Survey(s) <input type="checkbox"/> Insects <ul style="list-style-type: none"> <input type="checkbox"/> In-field Habitat Assessment <input type="checkbox"/> Incidental/ General Observations <input type="checkbox"/> Detailed or Targeted Survey(s) <input type="checkbox"/> Aquatic <ul style="list-style-type: none"> <input type="checkbox"/> In-field Habitat Assessment/ General Assessment <input type="checkbox"/> Incidental/ General Observations <input type="checkbox"/> Detailed or Targeted Survey(s)

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.

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

<input type="checkbox"/>	<p>Delineation of Features⁶</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland^{7*} <input type="checkbox"/> Riverine Flood Hazard/ Erosion Hazard <input type="checkbox"/> Floodplain <input type="checkbox"/> Hazard Land <input type="checkbox"/> Watercourse <input type="checkbox"/> Shoreline Flood and Erosion Hazard <p>*At this time, the NPCA is requesting consultants to pre-stake the feature prior to NPCA conducting a site visit.</p> <p>NOTES:</p>
--------------------------	---

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

<input type="checkbox"/>	Geotechnical <input type="checkbox"/> Secondary Source <input type="checkbox"/> Study Required
<input type="checkbox"/>	Hydrogeological <input type="checkbox"/> Secondary Source <input type="checkbox"/> Study Required
<input type="checkbox"/>	Geomorphological <input type="checkbox"/> Secondary Source <input type="checkbox"/> Study Required
<input type="checkbox"/>	Surface Water (e.g. hydrologic review, fluvial geomorphology) <input type="checkbox"/> Secondary Source <input type="checkbox"/> Study Required
<input type="checkbox"/>	Natural Hazard(s) <input type="checkbox"/> Secondary Source <input type="checkbox"/> Study Required
<input type="checkbox"/>	Wetland Water Balance (Risk Evaluation) ⁹
<input type="checkbox"/>	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:

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

- ☐ Species at Risk: Preliminary screening assessment to be provided as part of the TOR. This will inform the field program.
- ☐ Significant Wildlife Habitat: Preliminary screening assessment to be provided as part of the TOR. This will inform the field program.
- ☐ 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 is to include recommendations for enhancement or restoration.

- ☐ Monitoring Program
If a monitoring program may be required, confirm that consideration and recommendations for 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.

- ☐ 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.

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.

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

Impact Assessment, Mitigation Measures and Cumulative Impacts Table (Example 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
<p><i>List each impact type / category in a separate row.</i></p> <p>e.g., vegetation removal, changes to surface drainage, etc.</p>	<p><i>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.</i></p> <p>e.g., clearing, grading, creation of impermeable surfaces, etc.</p>	<p><i>Describe the potential impact to the feature(s) and / or function(s) using the following categories:</i></p> <ul style="list-style-type: none"> • Direct • Indirect (including Induced) • Cumulative 	<p><i>List recommended mitigation strategies to address impacts.</i></p>	<p><i>Assess efficacy of the mitigation measures / strategy in addressing the impact(s) described in the third column.</i></p>

Appendix F

EIS Comment Response Matrix Template

ENVIRONMENTAL IMPACT STUDY – CONSOLIDATED COMMENTING & RESPONSE TABLE	
PROJECT NAME:	PROPOSER:
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/principle 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 and 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).

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

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**

**Permission is given to the Niagara Peninsula Conservation Authority to utilize the data collected from this study.

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)	<ul style="list-style-type: none"> May to September 	<ul style="list-style-type: none"> ELC System for Southern Ontario First Approximation (Lee et al., 1999) or as updated from time to time.
Wetland Evaluation and Delineation (OWES)	<ul style="list-style-type: none"> Evaluation: variety of seasons to ensure the full evaluation occurs as per OWES. Delineation: May to September 	<ul style="list-style-type: none"> Ontario Wetland Evaluation System (OWES) four Southern Ontario (3rd Edition, 2014) or as updated from time to time.
Vegetation Inventory	<ul style="list-style-type: none"> Spring: May to early June Summer: mid-June to August Fall: September to October 	<ul style="list-style-type: none"> Full vegetation species list to be provided, can be combined with ELC and/or OWES as appropriate.
Birds	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> Ontario Breeding Bird Atlas protocols Marsh Monitoring Program protocols Area searches and wandering transects
Amphibians	<ul style="list-style-type: none"> Early spring to summer Active Visual Encounter Surveys (VES) on rainy late March – early April nights 	<ul style="list-style-type: none"> Bird Studies Canada Great Lakes Marsh Monitoring Program (3 separate spring/early summer seasonal survey timing windows). Active VES for salamanders

NPCA Interim Environmental Impact Study Guideline for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06

Reptiles	<ul style="list-style-type: none"> • April to June • Late Summer/Fall for migration or congregating species • Weather dependent 	<ul style="list-style-type: none"> • Species and habitat dependent • May include cover board surveys, spring emergence surveys, basking surveys etc. • Consultation recommended ahead of work.
Bats	<ul style="list-style-type: none"> • During leaf off season for cavity tree surveys • Extent of acoustic monitoring to be determined through consultation with review agencies 	<ul style="list-style-type: none"> • Species and habitat dependent • MNRF guidelines where applicable
Fish Survey and Fish Habitat	<ul style="list-style-type: none"> • Late Spring to June for intermittent watercourses • June – early September for residents 	<ul style="list-style-type: none"> • Using Ontario Stream Assessment Protocol (OSAP Section 3)
Drainage Patterns, Headwater Drainage Features and Watercourses	<ul style="list-style-type: none"> • Multiple assessments: spring freshet/rain events, late April-May, July-August • Aquatic habitat assessment in late April-May 	<ul style="list-style-type: none"> • 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.

Report To: Board of Directors

Subject: NPCA Draft Interim Wetlands Procedure Document

Report No: FA-21-22

Date: May 20, 2022

Recommendation:

1. **THAT** Report No. FA-21-22 RE: NPCA Draft Interim Wetlands Procedure Document **BE RECEIVED.**
2. **AND FURTHER THAT** Appendix 1 attached to Report No. FA-21-22 RE: NPCA Draft Interim Wetlands Procedure Document titled, "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Wetlands Procedure Document for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06", prepared by NPCA staff and dated May 16, 2022, **BE APPROVED.**

Purpose:

The purpose of this report is to seek approval of the "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Wetlands Procedure Document for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06".

Background:

On March 25, 2022, the NPCA Board of Directors approved staff's report on the Phase 1 Policy Review and Procedural Manual Project (FA-10-22). Through Phase 1 of the NPCA Policy Review and Procedural Manual Project, the immediate need for technical guidance related to procedures for implementing NPCA's wetlands policies interim to the completion of the Procedural Manual was identified, and staff committed to presenting the draft interim Wetlands Procedure Document to the Governance Committee in May 2022. Input and feedback on the draft Interim Wetlands Procedure Document was received from the Governance Committee on May 12, 2022, with direction for staff to take the document to the Board of Directors for approval. The Procedure Document outlines the process and study requirements for the identification, evaluation, study, protection and enhancement of regulated wetlands. Further, the document will provide clarity and certainty for landowners, applicants, and consultants to understand NPCA's expectations and study requirements when proposed development or site alteration affects regulated wetlands. Establishing this interim document does not limit the ability of NPCA staff or the Board of Directors to review and amend NPCA's Policy Document policies related to wetlands, as determined through the Phase 2 Policy Review and Procedural Manual Project.

Discussion:

A team of Planning and Development staff comprising senior staff and subject matter experts in planning and ecology undertook a review of technical guidance documents and best practices for the identification, mapping and evaluation of wetlands under Section 28 of the *Conservation Authorities Act*. The team also undertook an internal audit of the current NPCA process and practices for implementing NPCA's wetland policies. The result is a detailed Procedure Document intended to provide NPCA staff, the Board of Directors, municipal staff, developers and the public with the specifications and references with which the NPCA will further the conservation, restoration and management of wetlands within its jurisdiction through NPCA work permits.

The draft interim Wetlands Procedure Document describes the mandate of the NPCA and legislative framework that guides NPCA's decision making with respect to proposed development and site alteration within and near wetlands. The Procedure Document also provides a summary of the types of wetlands and their importance for maintaining ecological and hydrological functions within the watershed. The differences between Evaluated Wetlands (i.e., Provincially Significant and Non-Provincially Significant as determined by the Province) and Unevaluated Wetlands is described, including information on the Ontario Wetlands Evaluation System (OWES) that the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR) uses to evaluate wetlands. The processes to identify the presence of wetlands in a study area, delineate wetland boundaries in the field, mapping and refining wetland boundaries is described. Opportunities for restoration and enhancement through NPCA work permit approvals is also encouraged. It is important to note that the draft interim Wetlands Procedure Document is to be read in conjunction with the draft interim Section 28 Environmental Impact Study (EIS) Guideline, which provides guidance for assessing impacts and mitigative responses for development affecting regulated wetlands.

The draft interim Wetlands Procedure Document includes a section that aims to clarify the intent and use of policy 8.2.2.8, Wetland Reconfiguration and Compensation for Non-Provincially Significant Wetlands. This particular policy has carried over from the previous NPCA planning and permitting policy documents and is being reviewed through the Phase 2 Policy Review work. Until such time that the Phase 2 work is completed at the end of 2022, there is a need to clarify and document NPCA's expectations and requirements for satisfying the various tests of the current wetland reconfiguration and compensation policy. This is necessary to guide decisions for Non-Provincially Significant Wetlands, including situations where a Minister's Zoning Order is issued that affects regulated wetlands.

It is important to note that policy 8.2.2.8 does not apply to Provincially Significant Wetlands, is only considered where no reasonable alternative exists to locate a proposed development, site alteration or activity outside of a Non-Provincially Significant Wetland, and when the policy is implemented, NPCA staff aim to achieve a net gain to the natural system functions. Any situation where, in staff's opinion, and based on appropriate environmental studies, no reasonable alternative exists, Policy 8.2.2.8 will only be applied based on the requirements identified in the Procedure Document, and work permits will include site-specific conditions such as a security deposit from the applicant to ensure the works are carried out in accordance with an approved EIS and restoration agreement.

Conclusion:

The "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Wetlands Procedure Document for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06",

attached as Appendix 1, provides clarity and certainty for landowners, applicants, and consultants to understand NPCA's expectations and study requirements when proposed development or site alteration affects regulated wetlands.

Financial Implications:

There are no financial implications to this report.

Links to Policy/Strategic Plan:

The draft interim Wetlands Procedure Document guides the implementation of the NPCA Policy Document where a proposed NPCA work permit affects regulated wetlands. The Guideline also aligns with the NPCA's 10-year Strategic Plan goals to protect people and properties from natural hazards and climate impact, and maintain a high standard of client services, tools and procedures for NPCA work permits.

Related Reports and Appendices:

Appendix 1: "Niagara Peninsula Conservation Authority (NPCA) Draft Interim Wetlands Procedure Document for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06", prepared by NPCA staff and dated May 16, 2022.

Authored by:

Original Signed by:

Leilani Lee-Yates, MCIP, RPP
Director, Planning and Development

Submitted by:

Original Signed by:

Chandra Sharma, MCIP, RPP
Chief Administrative Officer/Secretary-Treasurer



NIAGARA PENINSULA CONSERVATION AUTHORITY (NPCA)

DRAFT INTERIM WETLANDS PROCEDURE DOCUMENT

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

MAY 16, 2022

Table of Contents

1.0 Introduction and Preamble	3
2.0 Definitions	3
3.0 Mandate of the NPCA Regarding Wetlands.....	5
4.0 Legislation – The Conservation Authorities Act and Ontario Regulation 155/06.....	6
4.1 Exceptions	6
4.2 Natural Hazards.....	6
5.0 Types of Wetlands.....	6
6.0 Importance of Wetlands	6
7.0 Wetlands and Areas of Interference Functions	7
8.0 Development and Interference.....	9
9.0 Wetland Boundary Delineation	11
10.0 Development within the Wetland Boundary.....	11
11.0 Rationale of Provincially Significant Wetland Scoring Criteria	12
12.0 Evaluated Wetlands	12
12.1 Current Process to Map and Refine Evaluated Wetlands.....	13
13.0 Unevaluated Wetlands	14
13.1 Steps to Determine the Presence of Wetlands within the Project Study Area	15
14.0 Constraints and Opportunities.....	16
15.0 Wetland Reconfiguration and Compensation	17
16.0 Conclusion.....	19
Appendix A- Types of Wetlands.....	21
References	24

1.0 Introduction and Preamble

This document presents the Niagara Peninsula Conservation Authority's (NPCA) implementation procedure for those parts of Section 28 of Ontario's *Conservation Authorities Act* and the "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation", (Ontario Regulation 155/06 [O. Reg. 155/06]) that pertain to wetlands. Additionally, the NPCA is completing a review and policies for the administration of Ontario Regulation 155/06. On March 18, 2022, Report FA-10-22 was received by the NPCA's Board of Directors. The purpose of Report FA-10-22 was to provide the Board with an overview of the completed Phase 1 review of the "NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act" (May 1, 2020, consolidation), and the Phase 2 workplan for completing the updated Policy Document and new Procedural Manual. The report identified immediate technical analysis required to support policy development in Phase 2, and the need to develop interim guidance documents until such time as the Procedural Manual is approved, including creation of an interim Wetlands Procedure Document.

Interim to the completion of the Procedural Manual, staff have identified the need to develop a Wetlands Procedure Document that will outline the process and study requirements for the identification, evaluation, study, protection and enhancement of regulated wetlands. This interim document is to be read in conjunction with the NPCA Interim Section 28 Environmental Impact Study Guideline (May 9, 2022).

This document is intended to provide NPCA staff, the Board of Directors, municipal staff, developers and the public with the specifications and references with which the Authority will further the conservation, restoration and management of wetlands within its jurisdiction through NPCA work permits. Although this document speaks specifically to wetlands as features, readers should be aware that wetlands are associated with other hazards, such as flooding and hazardous (unstable) soils. These hazards are also regulated by Ontario Regulation 155/06 and their review will be incorporated into the decision making of NPCA.

If you are considering developing in an area that may contain wetlands, it is highly recommended that you visit NPCA's Planning and Permitting website at: <https://npca.ca/services/permits>, and contact the NPCA Watershed Planner identified as overseeing files within your municipality. NPCA staff will be able to assist you with your proposed project and the use of this document.

2.0 Definitions

The following definitions will be used for the purpose of this procedural manual.

Area of Interference (other areas):

- a) 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: For Provincially Significant Wetlands or wetlands greater than 2 hectares, the area of interference can be up to 120 metres from the boundary of the wetland.

- b) For wetlands less than 2 hectares the area of interference is 30 metres

Buffer:

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

Conservation of Land:

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.

Dynamic Beach:

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.

(Erosion) Hazard:

Means the loss of land, due to human or natural processes, that poses a threat to life and property. The erosion hazard limit is determined using considerations that include the 100-year erosion rate (the average annual rate of recession extended over a one hundred year time span), an allowance for slope stability, and an erosion/erosion access allowance.

Five Tests:

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.

(Flooding) Hazard:

Means the inundation, under the conditions specific below, of areas adjacent to a shoreline or a river or stream systems and not ordinarily covered by water:

- a) Along the shorelines of the Great Lakes-St. Lawrence River System and large inland lake, the flooding hazard limit is based on the one hundred year flood level plus an allowance for wave uprush and other water related hazards;
- b) Along river, stream and small inland lake systems, the flooding hazard limit is defined as the one hundred year flood.

Hydrologic Function:

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. The Southern Ontario Wetland Evaluation System (OWES) states "it must be

recognized that many non-hydrological functions of a wetland depend, in part on the wetland's hydrological setting and that changes in the basin beyond the boundaries of the wetland could have an effect on the ecological value of the wetland".

Pollution:

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 Authorities Act* applies.

Wetlands:

The *Conservation Authorities Act* defines a wetland as an area 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,

but does not include periodically soaked or wet land that is used for agricultural purposes and no longer exhibits a wetland characteristic referred to in clause c) or d).

3.0 Mandate of the NPCA Regarding Wetlands

The mandate of the NPCA relative to wetlands emerges from the following legislative sources:

- i) The Authority's legislated responsibilities under the *Conservation Authorities Act* R.S.O. and Regulations there to;
- ii) The Authority's responsibilities to represent Provincial interests regarding Natural Hazards as outlined in the Provincial Policy Statement, 2020, and further, as a responsibility delegated to the CA by the Ministry of Environment, Parks and Conservation (MECP);
- iii) Being a "public body" under the Ontario *Planning Act*, the NPCA is to be notified of specified planning and development applications and proposals, and the Authority may comment on these relative to its mandate.

Through s. 28 of the *Conservation Authorities Act*, Conservation Authorities regulate development and activities in or adjacent to river or stream valleys, Great Lakes and inland lakes shorelines, floodplains, watercourses, hazardous lands and wetlands. They do so to ensure that flooding, erosion, dynamic beaches, pollution or the conservation of land are not affected (the five tests). They also regulate the straightening, changing, diverting or interfering in any way with the existing

channel of a river, creek, stream, watercourse or for changing or interfering in any way with a wetland.

4.0 Legislation – The Conservation Authorities Act and Ontario Regulation 155/06

Section 28 of Ontario's *Conservation Authorities Act* establishes an Authority's jurisdiction over wetlands, as defined in the Act, within its regulatory watershed. Section 21.1 (1) 1. of the Act further establishes the "mandatory programs and services that are required by regulation". Sections 2 (1)(d) and (e) and 5 of Ontario Regulation 155/06 thus prohibit development in and around and change or interference in any way with a wetland. Sections 2 (2) and 2 (3) provide for regulatory limits and related mapping products. Lastly, Sections 3 and 4, and 6 through 8 then establish the conditions that must be met such that the NPCA may temporarily or permanently grant permission to develop in or alter a wetland.

4.1 Exceptions

Section 28 (10) and (11) provides for general exceptions to the provisions of the NPCA's regulation. Therefore, Ontario Regulation 155/06 does not apply to: the use of water for domestic or livestock purposes; the rightful use of water for municipal purposes; the functions of any board or commission of the provincial government; nor does it apply to the rights and powers under the *Electricity Act* and the *Public Utilities Act*. Permission is also not required by the Authority for activities approved under Ontario's *Aggregate Resources Act*.

4.2 Natural Hazards

Where additional hazards exist on a site such as flood hazards or unstable soil or slope hazards, other applicable policies ("NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act", Niagara Peninsula Conservation Authority, 2018, as amended) shall also be addressed. The contents of this wetland policy document shall be interpreted in direct reference to and aligned with the contents of the NPCA's above noted primary policy document.

5.0 Types of Wetlands

As defined by the Province of Ontario under the Ontario Wetland Evaluation System (OWES), there are four types of wetlands, which include bogs, fens, swamps and marshes. Within the NPCA's watershed swamps are the most common, generally characterized as slough forest swamps. Further description of these four wetlands can be found in Appendix A.

6.0 Importance of Wetlands

Wetlands are an essential natural resource. In Southern Ontario, wetlands are an integral component of the ecology. They are amongst the most biologically diverse ecosystems on Earth.

“Wetlands provide functions that have both ecosystem and human values. From an ecosystem perspective these include primary production, sustaining biodiversity, wildlife habitat, habitat for species at risk, maintenance of natural cycles (carbon, water) and food chains. From a human perspective, wetlands provide social and economic values such as flood attenuation, recreation opportunities, production of valuable products, improvement of water quality and educational benefits.” (source: Draft: Guidelines to Support Conservation Authority Administration of the “Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation” MNR/Conservation Ontario Section 28 Peer Review and Implementation Committee, April 21, 2008)

Wetlands can have a wide range of functions, including moderation of water flow by absorbing significant amounts of surface runoff and then:

- i. Either slowly releasing it, even significantly later during drier periods; and,
- ii. Transferring water into the groundwater system.

Wetlands contribute to the maintenance of water quality by filtering and capturing pollutants, sediments, soil-bound nutrients, etc. Wetlands, in the Southern Ontario context, are a significant support for flora and fauna (plants, trees, fish and wildlife).

Wetlands are vital to the health of the environment and crucial for maintaining the diversity of animal and vegetation species. Wetlands contribute to economic, cultural and social well-being by ensuring a healthy environment and providing people the opportunity to enjoy and appreciate its qualities.

The appropriate maintenance and management of wetlands will contribute to community sustainability into the future. Sound wetland management leads to a healthy environment, and healthy communities.

Wetlands can only be appropriately managed through awareness, political resolve and the collective, cooperative efforts of public agencies, private sector interests and residents. The effective management of wetlands requires a shared responsibility among all of the communities and constituents within the Niagara Peninsula Conservation Authority’s jurisdictional area.

7.0 Wetlands and Areas of Interference Functions

Wetlands retain waters during periods of high-water levels or peak flows (i.e., spring freshet and storm events) allowing the water to be slowly released into the watercourse, infiltrate into the ground, and evaporate. As well, wetlands within the floodplain of a watercourse provide an area for the storage of flood waters and reduce the energy associated with the flood waters. Table 1 provides wetland function examples.

Table 1: Wetland function examples

Broad Function Type	Broad Functional Group	Functions
Hydrologic	Water Regime	<ul style="list-style-type: none"> • Erosion control • Contribution to ground water discharge • Contribution to groundwater recharge • Maintenance of local water balance • Conveyance and flood attenuation function • Contribution to living things
	Biogeochemical	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Habitat for flora and fauna that contribute to biodiversity and ecological integrity, including but not limited to; <ul style="list-style-type: none"> ○ 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.

In addition, wetlands retain and modify nutrients, chemicals and silt in surface and groundwater thereby improving water quality. This occurs temporarily in the plants of the wetland but long term in the organic soils.

Wetlands provide a variety of hydrologic functions. Over 60 potential hydrological functions such as flood water attenuation and groundwater recharge were identified for wetlands when the MNDMNRF was developing the OWES. Confirmation of many of these functions requires hydrological experts and field studies by qualified hydrologists.

Upon creating the OWES a final analysis determined that five hydrological functions were selected for inclusion in the OWES evaluation based on the general agreement on the nature of the function, the importance of each function, and the relative ease of assessment of the function by non-hydrologists.

The functions selected are:

- (1) flood attenuation
- (2) the retention and modification of nutrients and other elements in surface water and via groundwater discharge– i.e. water quality improvements;
- (3) the long-term storage of atmospheric carbon

- (4) shoreline erosion control and
- (5) groundwater recharge.

8.0 Development and Interference

There are three ways in which Ontario Regulation 155/06 addresses wetlands and areas of interference (Figure 1):

- 1) Development within the wetland boundary (section 2.1 (d) of the Regulation):

To be regulated, the activity must meet the definition of development. Applications for development must be assessed with respect to the five “tests” outlined in the *Conservation Authorities Act* (control of flooding, erosion, pollution, dynamic beaches and the conservation of land). Generally, an Environmental Impact Study (EIS) is required to ensure there will be no adverse impact on the hydrologic and ecological features and functions of the wetland.

- 2) Development within the “area of interference” (section 2.1 of the Regulation):

To be regulated, the activity must meet the definition of development and be assessed with regard to interference with the hydrologic function of the adjacent wetland, including areas within 120 m of a Provincially Significant Wetland (PSW) and wetlands greater than 2 hectares in size, and 30 m from a wetland less than 2 hectares in size. Hydrologic functions include both water regime and biogeochemical processes. If a measurable hydrologic impact to the wetland is predicted then the development must be assessed with respect to the five “tests” outlined in the *Conservation Authorities Act* (control of flooding, erosion, pollution, dynamic beaches and the conservation of land). Although not illustrated in Figure 1, Regulated areas can extend beyond the 120m and 30m distances if the activity is deemed to have a measurable impact on the hydrologic function of the wetland.

- 3) Interference with wetlands (section 5 of the Regulation):

To be regulated, the activity must occur within the wetland boundary and must constitute interference in any way with the wetland. An example of an activity that does not strictly meet the definition of “development” and could represent interference is vegetation removal. Interference is interpreted as any anthropogenic act or instance which hinders, disrupts, degrades or impedes in any way the natural features or hydrological and ecological functions of a wetland.

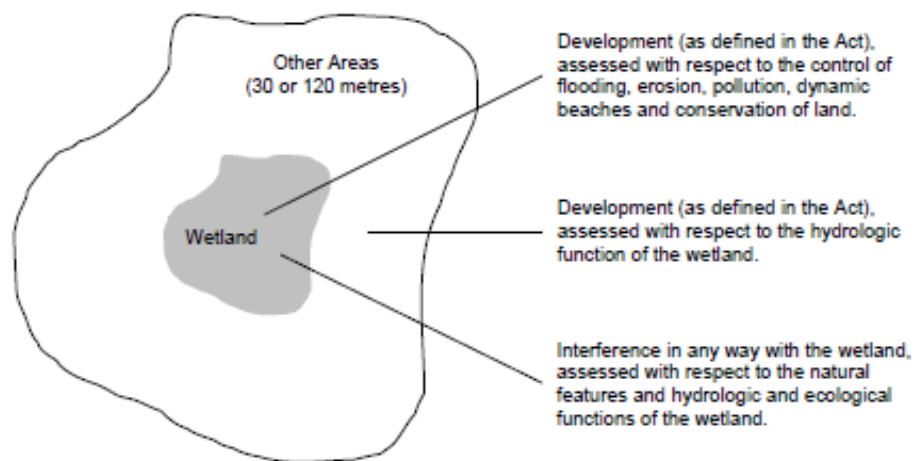


Figure 1- Three Ways through which the *Conservation Authorities Act* and individual Conservation Authority Regulations Address Wetlands and Other Areas (i.e. Areas of Interference), (Source: Guidelines to Support Conservation Authority Administration of the “Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation”, Ministry of Natural Resources/Conservation Ontario, April 21, 2008)

Removal, filling, dredging, or changing the hydrologic regime of wetlands (e.g., ponds or drains) can result in reducing the capacity of wetlands to retain water. This can result in higher flows in watercourses with resulting increases in flooding and erosion. As well, with no ability to retain water, the ability to recharge the aquifer is reduced, and the hydrologic cycle is modified.

Development in wetlands has the potential to interfere with many of the natural features or ecological functions of wetlands. Development may remove or impact wildlife species and their habitat, degrade or remove natural vegetation communities and impair water quality and quantity in both surface and groundwater. As a result, development within wetlands can impact conservation of land.

Many wetlands form on organic soils and, as a result, when reviewing development within a wetland, the soil composition should be reviewed. Where the soils are organic, Section 7 of the NPCA Policy Document, which deals with hazardous lands, should also be reviewed and considered in the decision making. Pollution from development (e.g., sedimentation) has the potential to interfere with the wetland. Any runoff to a wetland must demonstrate no negative impact to the feature and function.

When reviewing an application with respect to interference or development related to a PSW, the evaluation done under the OWES may be used as an information resource, because it identifies the features and functions of the wetland. It should be noted that when reviewing applications with respect to development under the regulation, the significance of the wetland as determined by the OWES is not a reason to deny or approve the application. The application must be reviewed with respect to the five tests: control of flooding, erosion, pollution, dynamic beaches or the conservation of land. Many individual and cumulative hydrologic impacts to a wetland commonly occur within the catchment area of the wetland. It is important to consider the linkages between

small wetlands and headwater areas, impacts of stormwater, and upstream constrictions to flow. Impacts to the hydrologic function of a wetland due to development within the “area of interference” may also result from changes in imperviousness/infiltration due to a removal or change in vegetation, soil compaction during construction, disruption, or alteration of groundwater flow paths due to underground construction, etc.

As part of the review of an application, the NPCA may request an EIS to address potential impacts to a wetland. An EIS is a mechanism for assessing impacts to determine the suitability of a proposal and the minimum buffer from development to ensure no negative impact on the wetland. The submission of an EIS does not guarantee approval of the works. An EIS must be carried out by a qualified professional, with recognized expertise in the appropriate area of concern and shall be prepared using established procedures and recognized methodologies to the satisfaction of NPCA. Please refer to the NPCA’s Interim EIS Guidelines for the Implementation of s. 28 of the Conservation Authorities Act and Ontario Regulation 155/06 (May 9, 2022) for more details on standard EIS requirements related to wetlands.

9.0 Wetland Boundary Delineation

As per NPCA Policy, Section 8.1.3.1, wetland boundaries are often found in areas of gradual ecological change, where changes in soil moisture results in transitions from upland to wetland plant species. The wetland boundary is established where 50% of the plant community consists of upland plant species (i.e. the percentage of area covered by upland plant species, not to the number of different upland plant species). Topography and soil data also provides guidance for where the wetland boundary should be drawn. Wetland boundary mapping is typically generalized from aerial imagery and other secondary source materials. Field visits by qualified biologists are required to accurately define the wetland boundary for development purposes. In cases where vegetation cannot be used for interpretation, such as instances where vegetation has recently been removed, soil sampling will be used to help determine boundaries.

10.0 Development within the Wetland Boundary

The *Conservation Authorities Act* defines development as: (a) the construction, reconstruction, erection or placing of a building or structure of any kind, (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, (c) site grading, or (d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

Development within a wetland is prohibited unless in the opinion of the conservation authority, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land (also known as the ‘five tests’) will not be affected by the development.

It should be noted that when reviewing an application for ‘development’ under the Regulation, the significance of the wetland as determined by the OWES is not a reason to deny or approve an application. The application must be reviewed against the ‘five tests’.

11.0 Rationale of Provincially Significant Wetland Scoring Criteria

To aid in identifying those wetlands that have value at a provincial scale, MNDMNRF has developed, and administers, the OWES. OWES is a science-based ranking system that provides a standardized approach to determining the relative value of wetlands.

High value wetlands are considered to be provincially significant and commonly are referred to as "Provincially Significant Wetlands" (PSW). The OWES consists of the ministry's technical manual that is used to evaluate the significance of wetlands, for land use planning purposes.

The methodology outlined in the OWES are the "evaluation procedures" referred to in Ontario's Provincial Policy Statement (PPS, 2020), issued under the authority of the *Planning Act*.

12.0 Evaluated Wetlands

NPCA Policy Section 8.1.2.1, Provincially Significant Wetlands

The majority of identified wetlands within the NPCA's watershed are classified as Provincially Significant Wetlands (PSWs). PSWs are wetlands which have been identified by the Province of Ontario using evaluation methodology established by the Province. PSWs are determined by a science-based ranking system known as the Ontario Wetland Evaluation System (OWES). This methodology features a standardized method of assessing wetland functions and societal values, which enables the Province to rank wetlands relative to one another. This information is provided to Conservation Authorities and municipalities to support decision-making. A wetland that has been evaluated using the criteria outlined in the OWES is known as an evaluated wetland. Refer to the OWES manual for additional details on the criteria for classifying wetlands.

NPCA Policy Section 8.1.2.2, Non-Provincially Significant Wetlands

The term non-provincially significant wetland is used to describe any evaluated wetland which does not meet the score to be considered Provincially Significant.

Evaluated **Provincially Significant Wetland (PSW)** are wetlands which have been evaluated, using evaluation procedures established by the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF). Those wetlands that are identified by the MNDMNRF as a PSW will be classified under NPCA Policy as PSW and will be subject to the relevant Regulations and Policies under Ontario Regulation 155/06, and policies as established by the Province under the PPS, 2020 and this procedure.

The OWES scores wetlands based on four principal components: Biological, Social, Hydrological, and Special Features. Each component can receive a maximum score of 250 points, for a maximum score for any wetland of 1000 points. In order for a wetland to be considered Provincially Significant an overall score of 600 points is required. Alternatively, a wetland which scores 200 points for either the Biological or Special Features component is considered Provincially Significant.

In Southern Ontario, a PSW is any wetland that:

1. Achieves a total score of 600 or more points, or
2. Achieves a score of 200 or more points in either the Biological component or the Special Features component.

Wetlands which have been evaluated, using evaluation procedures established by the MNDMNRF, and determined by the MNDMNRF as not meeting the criteria of a PSW are classified as Non-PSW (also known as Locally Significant Wetlands (LSW)) and will be subject to the relevant Regulations, Policies and Guidelines under Ontario Regulation 155/06 and this procedure.

In Southern Ontario, an evaluated **Non-Provincially Significant Wetland** is any wetland that scores below the threshold considered Provincially Significant, therefore, categorized as non-provincially significant wetlands, in recognition of the value which all wetlands provide.

Although, the OWES for southern Ontario is designed to identify important wetlands on a provincial scale, all wetlands have value, both to society and intrinsically.

Other wetlands such as non-provincially significant wetlands are significant on a local scale and may be protected. These wetlands can include: (a) evaluated wetlands that have been identified as not provincially significant; and (b) partially evaluated and unevaluated wetlands that have been confirmed as wetland habitat and mapped using the ground-based OWES methodology or interpretations of remote-sensed imagery.

12.1 Current Process to Map and Refine Evaluated Wetlands

Mapping

The Province of Ontario, through the MNDMNRF has identified, evaluated wetlands using OWES. Updated mapping can be found online via open data through the Land Information Ontario (LIO) website. LIO helps public and private organizations and individuals find, access and share geographic data. LIO also coordinates the collection of aerial photography for Ontario. It is noted that wetland files are open files and can be updated from time to time as new information becomes available.

Evaluated Wetland Boundary Refinement

Evaluated wetland boundary refinement requests are audited and approved by MNDMNRF. An example of a boundary refinement may include data gathered from site-specific field investigation by conservation authority staff or other qualified professionals. These are typically minor modifications. Examples might include a minor wetland boundary modification of a few square meters within a specific area of the property. These modifications generally relate to individual properties (although the regulation limit may impact several properties) and are identified as a result of the NPCA work permit (or municipal plan review) process. All evaluated wetland boundary revisions are subject to the MNDMNRF's review and approval of the OWES re-evaluation report.

It is required that the landowner retains the services of a third-party consultant qualified to undertake a re-evaluation of the current wetland boundary utilizing the OWES and that, the report

shall be submitted to the satisfaction of the MNDMNRF. The applicant should submit the report to MNDMNRF in accordance with provincial technical requirements.

Once the refinement has been audited, reviewed and approved by the MNDMNRF, NPCA staff will determine if the NPCA is able to support the revision of the wetland boundary refinement (if it is recommended) through internal NPCA consultation which may or may not include additional technical review and site inspections of the property.

If the refinement is approved by MNDMNRF, MNDMNRF mapping of evaluated wetland boundaries are revised and associated NPCA Regulatory Mapping is updated (NPCA internal layer and provincial OWES LIO layer). Then NPCA Planning or Permitting files involving the subject property move forward based on the revised wetland boundaries.

Please note that EISs may be submitted with a revised boundary which is under review by the MNDMNRF, however, NPCA Planning and/or permit approvals can only proceed following confirmation that the MNDMNRF is in support of proposed boundary refinements.

13.0 Unevaluated Wetlands

NPCA Policy, Section 8.1.2.3, Unevaluated Wetlands

Some wetlands within the watershed have not been evaluated and delineated under the OWES. In those instances, the following policies apply:

- a) Prior to development or site alteration on a property with an unevaluated wetland, a wetland evaluation shall be required prior to completion of an EIS if required, or the approval process, and approved by the MNDMNRF.
- b) Exceptions to (a) may be considered in cases where an appropriate natural buffer (as determined by the NPCA) is proposed between the NPCA staked wetland boundary and all site alteration and development (including grading), or small scale non-permanent development (such as small backyard sheds not requiring planning approval) which in the opinion of NPCA will have no negative impact on the ecological and hydrologic function of the wetland. These cases will only be considered for small-scale development through the work permit process, or through some minor variances where an appropriate buffer is maintained.
- c) Areas identified through natural areas inventories, EIS's or similar as Ecological Land Classification MAM, MAS, MAX, SWD, SWT, SWX, SAS, SAF, OAO, OAW, or other potential wetland indicator classifications shall identify the area as a potential unevaluated wetland subject to these policies.

Unevaluated wetlands are those that have not been evaluated using evaluation procedures established in the OWES. These wetlands could be mapped or unmapped and will be subject to NPCA Policies and this procedure. Please note that while not all wetlands within the NPCA's jurisdiction have been evaluated, all wetlands which meet the definition of a wetland under the *Conservation Authorities Act* are considered regulated features by the NPCA, until such time they have been evaluated, using evaluation procedures established by the MNDMNRF, at which time

they will be managed in accordance with the policies and requirements relevant to their designated classification if applicable.

Unevaluated wetlands may be identified through review of available information such as Land Information Ontario (LIO), Ecological Land Classification (ELC), Environmentally Sensitive Areas (ESA) as identified by the Province, NPCA's Natural Areas Inventory (NAI), aerial photography interpretation, or site visits by qualified professionals. Additionally, mapping of unevaluated wetlands may be available from the Province of Ontario through projects such as the Great Lakes Shoreline Ecosystem (GLSE) project.

To collect appropriate data on the unevaluated wetland, an OWES evaluation may be required to define, identify and measure the wetland functions and values. This evaluation should be completed during the active growing season (May to October).

In order for an unevaluated wetland to be regulated by the NPCA it must meet the definition of a wetland as defined in the *Conservation Authorities Act*. Sufficient information must be collected by a qualified professional to demonstrate that the four components of the definition are met. Where a surface water connection between a wetland and surface watercourse is not apparent, it is assumed that a groundwater connection exists between them, unless there is information provided by the applicant and/or their consultant to the contrary.

The NPCA has several on-line reference materials and open data sources, to assist with determining if an area has unevaluated wetland, including:

- NPCA Explore Our Data Inventory: <https://gis-npca-camaps.opendata.arcgis.com/>
- Natural Areas Inventory Vol 1: https://npca.ca/images/uploads/board_files/NAI-Vol-1.pdf
- Natural Areas Inventory Vol 2: <https://npca.ca/images/uploads/common/NAI-Vol-2.pdf>
- ELC Community Class Service:
<https://gis-npca-camaps.opendata.arcgis.com/datasets/camaps::elc-community-class-series-1/explore>

13.1 Steps to Determine the Presence of Wetlands within the Project Study Area

The NPCA requires the following steps to be taken to determine if there is a wetland within the project study area.

1. NPCA staff identify the presence of an unevaluated wetland through background information review, air photo interpretation and/or a site visit.
2. NPCA staff identify the wetlands to the applicant and may require that they retain a qualified professional to delineate/verify wetlands, which may require additional studies that will be scoped in consultation with the NPCA.
3. NPCA staff determine if a wetland evaluation is required based on available information (size, proximity to evaluated wetlands, known or assumed functions, etc.):
 - a. Yes – an OWES Evaluation is required
 - b. Yes – a scoped evaluation to complex the wetland is required (i.e., the unevaluated wetland is within 750 M of an evaluated wetland)
 - c. No – Proceed to consult with NPCA staff to complete a constraints analysis.

4. If a wetland evaluation is required consultation with the MNDMNRF is necessary to determine their requirements.
5. Following MNDMNRF wetland evaluation and approval, NPCA mapping is updated (NPCA internal layer and provincial OWES LIO layer)

Please note that if MNDMNRF decides that an evaluation is not required, the NPCA may still require further details and studies to address Ontario Regulation 155/06 and related policies.

14.0 Constraints and Opportunities

As part of an EIS, the biophysical analysis shall identify the significance of regulated features and areas, and their functions present in the study area and identify constraints and enhancement opportunities. Constraints within the study area may affect the developable area on the property. 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 regulated features and areas and their associated functions. Enhancement opportunities can range in scope and scale. Opportunities and constraints of NPCA regulated features must be identified for the subject site. Please refer to Section 3.5 of the NPCA's Interim Section EIS Guideline (May 9, 2022) for further details.

15.0 Wetland Reconfiguration and Compensation

NPCA Policy, Section 8.2.2.8, Wetland Reconfiguration and Compensation for Non-Provincially Significant Wetlands

Where no reasonable alternative exists to locate a proposed development, site alteration or other activity outside of a non-provincially significant wetland (or adjacent land), the NPCA may require that an area of wetland be created to offset the disturbance that is greater than (in area and function) the area of wetland and adjacent land being disturbed. Any required wetland creation should be located in proximity to the area disturbed (at a minimum within the same watershed) or in an area to be determined by the Authority. All wetlands created under this policy will be added to the NPCA regulated area and identified on appropriate screening maps. The Authority may permit the reconfiguration of wetland boundaries provided:

- a) The wetland has been evaluated in accordance with OWES Protocol and approved by the MNDMNRF;
- b) The wetland (as evaluated in (a) above) is not a Provincially Significant Wetland under the OWES Protocol to the satisfaction of the MNDMNRF;
- c) The reconfigured wetland and proposed development will not have a negative impact on any species of concern, significant habitat types or species at risk;
- d) The reconfigured wetland and proposed development will not have a negative impact on the hydrological or ecological function of the wetland;
- e) A restoration plan for the reconfigured wetland is provided for review and approval;
- f) A multi-year monitoring program is required (minimum five years) to ensure the long-term establishment of the reconfigured wetland;
- g) A security deposit in an amount approved by the NPCA to establish the reconfigured wetland and ensure its establishment;
- h) An EIS is provided for review and approval to demonstrate conformity with Section 8.2.2.8;
- i) The applicant is required to enter into a restoration agreement with the NPCA that will be registered on the title of the property containing the reconfigured wetland that will provide the necessary details to implement Section 8.2.2.8; and
- j) Additional information, such as an EIS, hydrologic study, restoration plan and or other studies as required depending on site-specific characteristics.

Under current NPCA policy, Wetland Reconfiguration and Compensation for Non-Provincially Significant Wetlands is only considered where no reasonable alternative exists to locate a proposed development, site alteration or activity outside of a Non-Provincially Significant Wetland, and when the policy is implemented, NPCA staff aim to achieve a net gain to the natural system functions.

The following requirements must be submitted as part of an EIS to the satisfaction of NPCA staff in order for staff to consider a proposal for the reconfiguration or compensation of a non-provincially significant wetland, in accordance with NPCA Policy, Section 8.2.2.8: Please also refer to the Interim Section 28 EIS Guideline (May 9, 2022), for additional study and reporting requirements.

1. The geographic coordinates of the location where measures to compensate are proposed.
2. A small-scale site plan identifying the general location and boundaries of the location where the measures are proposed to be implemented.
3. Demonstration (conceptually) that the created wetland habitat will provide the same or greater capacity to produce the form and function of the wetland(s) to be relocated.
4. A detailed description of the compensation design and explanation of how those design measures will meet their objectives.
5. Detailed planting/restoration plans which include native species suitable for the ecosystem to be created, inclusion of habitat features (large woody debris, nesting boxes, etc.), native seed mix, identification of proposed planting density. Proposed methods must be based on best available practices with references to these standards and practices.
6. Compensation area(s) must be shown to be wetland creation (i.e., what was dry and upland is created into wetland and not enhancement of existing wetlands).
7. Grading/Engineering Plans/Erosion and Sediment Control Plans (Detail Design Drawing Packages indicating staging, sequencing, type and placement of controls during all phases of work).
8. Demonstrated long-term sustainable hydrologic inputs to the compensatory wetland(s) to ensure that the wetland(s) are viable and self-sustained given the current and future anticipated landscape.
9. A detailed description of the monitoring measures and targets that will be put in place to assess the effectiveness of the selected wetland design measures. The monitoring plan must include:
 - A. Targets and objectives shall be established to be met within the monitoring plan and agreed to by NPCA staff. The targets and objectives should be based on ecological and hydrological outcomes.
 - B. Anticipated risks must be accounted for with associated remedial management actions that shall be implemented if triggered.
 - C. Methods used to monitor, detect changes and trends are required to be identified and meet the satisfaction of NPCA staff.
10. A description of the contingency measures and associated monitoring measures that will be put into place if the selected wetland design measures are not successful in meeting their objectives. This should include a monitoring plan that has, for example; five years of monitoring data that spans over a minimum of 10 years to show progressive and measurable success towards established objectives and targets. Monitoring reports including recommended and implemented actions should be submitted as agreed upon by the NPCA and to the satisfaction of NPCA based on fulfilling the Reconfiguration and Compensation Plan.

11. A detailed description of any anticipated adverse effects that could result from the implementation of the Reconfiguration and Compensation Plan. Any activity that requires permitting/authorization from NPCA and any other relevant agency must be included in the Plan.
12. The timeline for the implementation of the Reconfiguration and Compensation Plan.
13. Reasonably accurate estimate(s) of the cost of implementing each element of the Reconfiguration and Compensation plan.
14. If the implementation of the Plan requires access to lands, water sources or waterbodies that are not owned by the applicant, a description of the steps proposed to be undertaken to obtain the authorization(s) required for the applicant, to access the lands, water sources or waterbodies in question is required. It is the applicant's responsibility to provide this information with their application and to secure the necessary approval before the Reconfiguration and Compensation Plan is implemented.
15. Time lags between the adverse effects to the wetland(s) in question resulting from the proposed work and the benefits from the proposed wetland design measures – ranging from months to even years – may contribute to loss of contributing functions (e.g., hydraulic and ecologic). **Time lags should be avoided where possible by implementing the wetland design measures prior to carrying on the work that negatively affects or alters wetlands.** In exceptional circumstances when a time delay is unavoidable, NPCA will require the Reconfiguration and Compensation Plan to include measures that account for the time delay to make up for the lost wetlands and their functions. This generally will necessitate a greater replacement ratio of wetlands (e.g., for every unit of wetland destroyed, numerous units may be required as compensation. This ratio will be determined by NPCA staff).

Proposals for wetland reconfiguration or compensation will only proceed to an NPCA work permit if all the requirements noted in this section are provided to the satisfaction of NPCA staff. In some cases, NPCA staff may require additional information or technical study requirements based on the non-provincially significant wetland and study area characteristics. NPCA work permits are subject to conditions that may be imposed by NPCA staff, including a security deposit from the applicant to ensure the works are carried out in accordance with the approved EIS and restoration agreement.

16.0 Conclusion

The "Interim Wetland Procedure Document for the Implementation of s. 28 of the Conservation Authorities Act and O. Reg. 155/06" presents the NPCA's implementation procedure for those parts of s. 28 of Ontario's *Conservation Authorities Act* and the "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation", (Ontario Regulation 155/06) that pertain to wetlands.

The NPCA is completing a review and policies for the administration of Ontario Regulation 155/06. This document will guide staff's implementation of our current policies until such time that the NPCA Policy Document is updated, and the new Procedural Manual is approved. As part of the

NPCA's policy review and Procedural Manual development, staff will continue to consult with stakeholders, partner municipalities and members of the public on the gaps to wetland policies identified through the Phase 1 policy review work. A final wetland procedure document will be included in the new NPCA Procedural Manual.

DRAFT

Appendix A- Types of Wetlands

Bogs

Bogs are peat-covered areas or peat-filled depressions with a high-water table and a surface carpet of mosses, chiefly *Sphagnum*. The water table is at or near the surface in the spring, and slightly below during the remainder of the year. The mosses often form raised hummocks, separated by low, wet interstices. The bog surface is often raised, or, if flat or level with the surrounding wetlands, it is virtually isolated from mineral soil waters. Hence, the surface bog water and peat are strongly acidic and upper peat layers are extremely deficient in mineral nutrients. Peat is usually formed in situ under conditions of closed drainage and low oxygen levels.

Bogs may be treed or treeless but the tree cover does not exceed 25% and consists largely of black spruce (*Picea mariana*). Tamarack (*Larix laricina*) may be present but only in small numbers and usually only near the edge. For the OWES purposes, bogs may support more than 25% cover of live tall shrubs, typically stunted black spruce. Bogs are frequently characterized by a layer of ericaceous shrubs such as leatherleaf (*Chamaedaphne calyculata*). Although bogs are usually covered with *Sphagnum*, they also can support sedges such as few flowered sedge (*Carex oligosperma*) among others.

The following criteria can assist evaluators in the identification of a bog. They are listed in order of importance. If all the first 5 criteria are not met, then it is not likely that the wetland is a bog.

1. Raised peat hummocks are present.
2. The wetland is ombrotrophic, (i.e., dependent on atmospheric moisture for its nutrients)
3. There is low plant diversity (usually less than 14 species of vascular plants)
4. Few or no fen indicator plant species are present
5. Few or no tamaracks (*Larix laricina*) or eastern white cedar are present.
6. Low pH (often less than 4.7)¹
7. Tree cover does not exceed 25 %²

Fens

Fens are peatlands characterized by surface layers of poorly to moderately decomposed peat, often with well-decomposed peat near the base. Fen peats generally consist of mosses and sedges. *Sphagnum*, if present, is usually composed of different *Sphagnum* species than occur in bogs. There are two main fen types: nutrient rich fens typically are fed by groundwater and have a high pH. Nutrient-poor fens, such as those in moraine dominated landscapes, can occur in isolated depressions with less groundwater inputs and a lower pH (but not as low as in bogs). Nutrient-poor fens usually develop in situations of restricted drainage where oxygen saturation is relatively low and mineral supply is restricted. Usually very slow internal drainage occurs through seepage down very low gradient slopes, although sheet surface flow may occur during spring melt or periods of heavy precipitation or if a major local or regional aquifer discharges into the wetland. Rich fens can develop directly on limestone rock where minerotrophic waters are emerging through constant groundwater discharge.

Fens have a higher diversity of plants compared to bogs which typically have less than 14 species of vascular plants. The presence of fen indicator species is a key to identifying this wetland type. For example, several moss species with narrow pH tolerances are common in fens and, if the

evaluator is able to identify them, can be used as fen indicators. Sphagnum species may form a mat in poor fens, however they can be absent from rich fens. Fens can be dominated by sedges and grasses, especially in rich fens. Low shrubs, e.g., sweet gale (*Myrica gale*) or ericaceous species can occur with the latter particularly common as a low shrub layer in poor fens. Sometimes there is a tall shrub layer that can exceed 25% cover, and this often includes stunted tamarack (*Larix laricina*) and eastern white cedar. There can be a sparse layer of trees, often of tamarack or eastern white cedar (*Thuja occidentalis*) and, in poor fens also black spruce (*Picea mariana*). **Live tree cover can't exceed 25%. if live tree cover is greater than 25% then the area must be identified as a swamp even if fen indicator species are present.**

“Peatland” is a general term for all types of peat-covered lands. Peat is defined as partially decomposed plant material that accumulates under saturated soil conditions.

Peatlands develop via an interaction of climate, hydrology, topography, chemistry and vegetation succession. A common method of describing peatlands is based on the degree to which the peatland receives groundwater as compared to only precipitation (Mitsch and Gosselink 2000):

1. **Rich fens**, also known as minerotrophic peatlands, are true fens that receive water that has passed through mineral soil and typically have a high groundwater level and occupy a low point or relief in a basin.
2. **Poor fens**, also known as mesotrophic peatlands, are intermediate between mineral-nourished (minerotrophic) and precipitation-dominated (ombrotrophic) peatlands.
3. **True raised bogs**, also known as ombrotrophic peatlands, have developed peat layers higher than their surroundings and receive nutrients and other minerals exclusively by precipitation.
4. **Kettle Peatlands** “Kettle” landforms are depressions in the landscape, e.g., topographic low areas on bedrock. In many cases, they have been formed as a result of glacial activity. Large blocks of ice broke off the edge of retreating ice lobes during the last glaciation and became covered by glacial outwash. When the ice melted, kettle holes were left in the outwash plains. Many of these depressions became small lakes or ponds with limited outflow but many others have filled in with peat deposits and peatland vegetation. They are referred to as “kettle peatlands”.
5. In southern Ontario kettle peatlands are commonly found within features such as the Oak Ridges Moraine, Galt Paris Moraine and the Niagara Escarpment. Most are situated over calcareous materials and can range from rich to intermediate-poor fens.

Swamps

Swamps are wooded wetlands with 25% cover or more of trees or tall shrubs (see below for exceptions to the 25% woody vegetation rule).

In swamps, standing to gently flowing waters occur seasonally or persist for long periods on the surface. Frequently there is an abundance of pools and channels indicating subsurface water flow. The substrate is usually continuously waterlogged. Waters are circumneutral to moderately acid in reaction and show little deficiency in oxygen or in mineral nutrients. The vegetation cover may consist of coniferous and/or deciduous trees, tall shrubs, herbs and mosses. Many swamps are characteristically flooded in spring, with dry relict pools apparent later in the season. There is usually no deep accumulation of peat.

Swamps include both forest swamps (having mature trees) and thicket swamps (or shrub carrs). Thicket swamps are characterized by thick growths of tall shrubs such as willow species, red-osier dogwood, buttonbush and speckled alder. Both forest and thicket swamps have similar characteristics of water levels and chemistry. Both are assessed as “swamp” wetland type, but can be distinguished by the predominance of either “tree” or “shrub” form. Silver maple, hybrid soft maple, white elm, black/green ash and yellow birch are among the best indicators of a deciduous swamp while white cedar, eastern hemlock, tamarack and black spruce indicate conifer swamps. White cedar, eastern hemlock and yellow birch, however, also grow well in upland sites.

Marsh (includes Open Water Marshes)

Marshes are wet areas periodically inundated with standing or slowly moving water, and/or permanently inundated areas characterized by robust emergents, and to a lesser extent, anchored floating plants and submergents. Surface water levels may fluctuate seasonally, with declining levels exposing drawdown zones of matted vegetation or mud flats. Water remains within the rooting zone of plants during at least part of the growing season. The substratum usually consists of mineral or organic soils with a high mineral content, but in some marshes there may be as much as 2 m of peat accumulation. Waters are usually circumneutral to slightly alkaline and there is relatively high oxygen saturation. Marshes characteristically show zones or mosaics of vegetation, frequently interspersed with channels or pools of deep or shallow open water. They include open expanses of standing or flowing water which are variously called ponds, shallow lakes, oxbows, reaches or impoundments. Marshes may be bordered by peripheral bands of trees and shrubs but the predominant vegetation consists of a variety of emergent non-woody plants such as rushes, cattails, bulrushes, sedges, grasses and herbs. Low shrubs such as sweet gale, red-osier dogwood, waterwillow, and winterberry may also occur. Where open water areas occur, a variety of submerged or floating plants flourish, such as stonewort (*Chara*), pondweeds, water-milfoils, waterweeds, bladderworts, coontails, tape-grass, water lilies, duckweeds and watermeals.

References

1. Beacon Environmental, December 2010. Recommendations for Conducting Wetland Environmental Impact Studies (EIS) for Section 28 Regulations Permissions.
2. Cataraqui Region Conservation Authority, Guidelines for Implementing Ontario Regulation 148/06: Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses.
3. Conservation Ontario and MNR, October 2005. Guidelines for developing Schedules of Regulated Areas.
4. Conservation Sudbury, 2021. Direction on the Administration of Ontario Regulations 156/06 – Wetlands.
5. Credit Valley Conservation, December 2011. Planning and Development Administrative Procedural Manual: https://cvc.ca/wp-content/uploads/2012/04/CVC-Procedural-Manual-final_Dec_2011.pdf
6. Halton Region Environmental Impact Assessment (EIA) Guideline (2020)
7. 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.
8. Lee, H.T., May, 2008. Southern Ontario Ecological Land Classification: Vegetation Type List. Ontario Ministry of Natural Resources. London, ON. 35 pp.
9. Niagara Peninsula Conservation Authority. September 2018. NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and The Planning Act.
10. Ontario Ministry of Municipal Affairs and Housing. Provincial Policy Statement, 2020.
11. 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.
12. Ontario Ministry of Natural Resources and Forestry. 2014. Significant Wildlife Habitat Mitigation Support Tool. MNRF, Peterborough, Ontario.
13. Ontario Ministry of Natural Resources and Forestry. 2014. Ontario Wetland Evaluation System, Southern Manual. Third Edition (Version 3.3).
14. Ontario Ministry of Natural Resources and Forestry. January, 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. 40 pp.
15. Ontario Regulation 155/06. 2018. Niagara Peninsula Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.
16. Rideau Valley Conservation Authority, 2018. Regulations of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 174/06 Under Section 28 of the Conservation Authorities Act, R.S.O. 1990



**WATERSHED FLOODPLAIN SUB-COMMITTEE
ONLINE VIDEO CONFERENCE
MEETING MINUTES**

**Thursday, May 26, 2022
5:00 p.m.**

MEMBERS PRESENT:	J. Oblak (Sub-Committee Chair) R. Foster, NPCA Board Chair (departed at 5:27 p.m.) E. Furney D. Kelly (departed 6:04 p.m.) J. Schonberger D. Speranzini
MEMBERS ABSENT:	H. Korosis
STAFF PRESENT:	G. Bivol, Clerk R. Hull, Manager, Strategic Business Planning and Public Relations L. Lee-Yates, Director, Watershed Management S. Miller, Senior Manager, Water Resources K. Royer, Coordinator, Community Outreach G. Shaule, Administrative Assistant
OTHERS PRESENT:	L. Aarts, Welland River Floodplain Association J. Hellinga, NPCA Board B. Lepard, Welland River Floodplain Association S. Van Haren, WSP Global Inc A. Zhuge, WSP Global Inc.

The Committee Chair called the meeting to order at 5:08 p.m..

1. APPROVAL OF AGENDA

Recommendation No. WFSC-01-2022

Moved by Erika Furney

Seconded by Donna Speranzini

THAT the agenda for May 26th, 2022 NPCA Watershed Floodplain Sub-Committee meeting **BE ADOPTED** with an amendment to permit a delegation as agenda item 6.a) from Len Aarts, Welland River Floodplain Association RE: Beaver Creek and Big Forks Creek Draft Hydrologic Analysis.

CARRIED

2. DECLARATIONS OF CONFLICT OF INTEREST

Member Speranzini stated for the record that her opinions as expressed are her own and not that of her employer.

3. APPROVAL OF MINUTES

None

4. CORRESPONDENCE

None

5. PRESENTATIONS

- a) Presentation by Albert Zhuge and Steve Van Haren, WSP Global Inc. RE: Summary of the Beaver Creek and Big Forks Creek Draft Hydrologic Analysis – Steve Miller, NPCA Senior Manager, Water Resources introduced Mr. Van Haren who presented via PowerPoint. Participants posed questions.

Recommendation No. WFSC-02-2022

Moved by Dion Kelly

Seconded by Joseph Schonberger

THAT the PowerPoint presentation by WSP RE: Summary of the Beaver Creek and Big Forks Creek draft Hydrologic Analysis **BE RECEIVED.**

CARRIED

- b) Presentation by Steve Miller, Senior Manager, Water Resources RE: Floodplain Mapping Public Engagement Session #2 Media Campaign – Mr. Miller presented and discussion ensued.

Recommendation No. WFSC-03-2022

Moved by Donna Speranzini

Seconded by Erika Furney

THAT the presentation by Steve Miller, Senior Manager, Water Resources RE: Floodplain Mapping Public Engagement Session #2 Media Campaign **BE RECEIVED.**

CARRIED

6. DELEGATIONS

- a) Len Aarts, Welland River Floodplain Association RE: Beaver Creek and Big Forks Creek Draft Hydrologic Analysis – Mr. Aarts and Mr. Bev Lepard spoke on the history of their association and past mapping of watercourses in NPCA jurisdiction. They emphasized the importance of public consultation, in-person public sessions, the value of the information

session postcard distribution and they endorsed gathering and researching all available data.

7. CONSENT ITEMS

None

8. DISCUSSION ITEMS

- a) Recommendation to Endorse the Media Campaign – Mr. Miller sought the Sub-Committee's endorsement of the media campaign outlined in his presentation.

Recommendation No. WFSC-04-2022

Moved by Joe Schonberger

Seconded by Donna Speranzini

THAT the Watershed Floodplain Sub-Committee **ENDORSE** the media campaign for the second Public Engagement Session of the Big Forks Creek and Beaver Creek Floodplain Mapping Project as described in the presentation by Steve Miller, Senior Manager, Water Resources.

CARRIED

9. COMMITTEE REPORTS

None

10. NEW BUSINESS

None

11. ADJOURNMENT

Recommendation No. WFSC-05-2022

Moved by Joe Schonberger

Seconded by Erika Furney

THAT the Watershed Floodplain Sub-Committee **BE ADJOURNED** at: 6:11 p.m..

CARRIED

Jackie Oblak,
Watershed Floodplain Sub-Committee
Committee Chair

Chandra Sharma, MCIP, RPP
Chief Administrative Officer / Secretary –
Treasurer