NPCA POLICY DOCUMENT:

Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority

April 15, 2024

Niagara Peninsula CONSERVATION
nature for all

www.npca.ca

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ADOPTION AND DOCUMENT REVISIONS

On November 4, 2022, the NPCA Board of Directors approved the NPCA Policy Document: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority, and the NPCA Procedural Manual, as per the following resolutions:

Resolution No. FA-104-2022
Moved by Member Beattie
Seconded by Member Clark

THAT Section 8.2.3.1 RE: Buffers to Wetlands from the NPCA Policy Document: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority **BE REFFERED** to staff and to the Governance Committee for discussion.

CARRIED

Resolution No. FA-105-2022
Moved by Member Feor
Seconded by Member Kawal

1. **THAT** Report No. FA-44-22 RE: NPCA Policy Document: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority, and NPCA Planning and Permitting Procedural Manual **BE RECEIVED** as amended save and except Section 8.2.3.1 RE: Buffers to Wetlands.
2. **THAT** the NPCA Policy Document: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority, and NPCA Planning and Permitting Procedural Manual **BE APPROVED** as amended save and except Section 8.2.3.1 RE: Buffers to Wetlands.
3. **THAT** NPCA staff **COMPLETE** any final edits and publication of the NPCA Policy: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority Document, and NPCA Procedural Manual for Planning and Permitting.
4. **THAT** NPCA staff **BE AUTHORIZED** to maintain and update the NPCA Planning and Permitting Procedural Manual as needed to reflect evolving best practices and technical guidance documents issued from Provincial Ministries.
5. **THAT** a copy of the Board of Directors' decision and Report No. FA-44-22 RE: NPCA Policy Document: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority, and NPCA Planning and Permitting Procedural Manual **BE CIRCULATED** to the City of Hamilton, Haldimand County, Niagara Region and the lower-tier municipalities.
6. **THAT** a notice of the Board of Directors' decision, and NPCA Policy: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority Document, and NPCA Procedural Manual for Planning and Permitting **BE POSTED** on the NPCA's website and on the NPCA's social media sites.
7. **AND THAT** the stakeholders who were involved in the policy review process **BE NOTIFIED** of the Board of Directors' decision.

CARRIED

Final edits were made to the NPCA Policy Document and came into effect on November 16, 2022.

Revision	Date	Description of Changes	Report #
1	November 18, 2022	Section 8.2.3.1 approved by Board of Directors	Recommendation No. GC-37-2022
2	April 15, 2024	Housekeeping Amendments to bring the policies into conformity with amendments to the *Conservation Authorities Act* and Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits that come into force on April 1, 2024	Recommendation No. FA-19-2024

ACRONYMS AND ABBREVIATIONS

DART	Drainage Act and Section 28 Regulations Team
EA	Environmental Assessment
GSC	Geodetic Survey of Canada (datum)
HEC-RAS	Hydrologic Engineering Centers River Analysis System
IWM	Integrated Watershed Management
PPS	Provincial Policy Statement
PSW	Provincially Significant Wetland
NPCA	Niagara Peninsula Conservation Authority
MNRF	Ministry of Natural Resources and Forestry
MOU	Memorandum of Understanding
RAP	Remedial Action Plan

LAND ACKNOWLEDGEMENT

The Niagara Peninsula watershed is situated within the traditional territory of the Haudenosaunee, Attiwonderonk (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, Metis and Inuit peoples.

Through this Policy Document (and accompanying Procedural Manual), NPCA re-confirms its commitment to shared stewardship of natural resources, and a deep appreciation of Indigenous culture and history in the watershed.

PART A: WATERSHED CONTEXT

1.0 INTRODUCTION

1.1 About the Niagara Peninsula Conservation Authority (NPCA)

The Niagara Peninsula Conservation Authority (NPCA) is a community-based natural resource management agency that protects, enhances, and sustains healthy *watersheds*. With over 60 years of experience, the NPCA offers *watershed* programs and services that focus on flood and hazard management, source water protection, species protection, ecosystem restoration, community stewardship, and land management. The NPCA is one of 36 Conservation Authorities in the Province of Ontario and manages 41 Conservation Areas within the Niagara Peninsula *watershed* held in public trust for recreation, heritage preservation, conservation, and education.

1.2 Purpose of this Document

The NPCA was formed in 1959 under the authority of the Conservation Authorities Act, and is responsible for undertaking a variety of responsibilities under the Act. As one of 36 conservation authorities across the Province, the NPCA's mandate is to establish and undertake programs designed to further the conservation, restoration, *development* and management of natural resources across the *watershed*.

At the December 17, 2020, NPCA Board of Directors Meeting, NPCA staff were authorized the commence a review and update of NPCA's planning and permitting policies, known as "NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act" (May 1, 2020). The former policy document was originally approved September 2018 and took effect November 1, 2018. The document was subsequently amended in June 2019 to add lot creation policies and to incorporate housekeeping amendments to the Valleyland policies, and was amended again in May 2020 to remove the section dealing with policy variances.

There were several areas within the former NPCA policy document that required updating based on change of corporate direction through the Strategic Plan 2021-2031, on-going partner municipal Official Plan Reviews, Provincial legislation, including changes to the Provincial Policy Statement (PPS), 2020 and the Conservation Authorities Act and related Regulations. It is the combination of these factors that resulted in NPCA staff preparing a full review of the document.

The update to the policy document was undertaken in a manner consistent with the, "Policies and Procedures for Conservation Authority Plan Review and Permitting Activities" (Ontario Ministry of Natural Resources, 2010) and the NPCA Strategic Plan.

The NPCA Policy Document is a compendium of NPCA's official "opinion" for the purposes of applying Subsection 3(1) of Ontario Regulation 41/24. NPCA staff rely on the policies contained in this Policy Document, as does the NPCA Board and those who are seeking a permit from NPCA or looking for a recommendation from NPCA in the case of Planning Act applications that are approved by *watershed* municipalities and approval authorities.

In addition to updating the policies, NPCA has also taken the opportunity to develop a Procedural Manual to explain application processes and policy implementation. The NPCA Procedural Manual aids landowners, developers, consultants, and other stakeholders who are interested in obtaining comments and/or approvals from the NPCA. Additionally, it is intended to improve clarity and transparency around NPCA's administrative review procedures and technical submission requirements. The manual assists applicants in better understanding NPCA's relationship with municipal planning approvals, as well as NPCA's permitting approval processes.

The policies within this document have been prepared under authority of several acts, including but not limited to, the Conservation Authorities Act, Ontario Regulation 41/24 and the Planning Act. Modifications to the policies require Board approval. Modifications to Chapter 1 and the Appendices do not require Board approval, as the content of these sections are provided for context purposes.

This document provides the principles, objectives, and policies for the administration of the NPCA's mandate under Ontario Regulation 41/24, as well as its legislated and delegated roles and responsibilities within the planning and approvals process. The NPCA Policy Document and accompanying Procedural Manual serves many uses and users:

- Provides direction to NPCA staff who will receive, review and evaluate development applications against the policies contained within the document;
- Provides guidance and clarity to *watershed* municipalities who may take these policies and incorporate them further in their planning review functions and in Official Planning documents;
- Provides guidance and direction to landowners who will utilize these policies in preparing applications for Section 28.1 permits and/or proposals for approval under the Planning Act;
- Provides guidance and direction to the development community (applicants and their agents) who will utilize these policies in preparing their proposals for consultation, review and approval;
- Will instill confidence among Provincial partners that matters of stated Provincial interest have been accurately interpreted and are being applied appropriately; and finally
- Will help other municipal, provincial and federal agencies coordinate the administration of their own jurisdiction and policies with those of NPCA.

1.3 A Note About Language

The following document uses very specific language and terminology. When reading this document, be advised of the following:

- The terms “shall” and “will” are used to describe instances where a policy is to be applied so as to fulfill a specific legislative obligation. The use of these two terms means that there is limited flexibility (unless otherwise stated) as to the policy’s application.
- The terms “may” and “should” are used to describe instances where a policy is to be applied to fulfill a specific legislative objective. The use of these two terms means that there is a greater degree of flexibility as to the application of the policy.

1.4 Document Structure and Organization

This Policy Document has been divided into parts, as follows:

- **Part A:** *Watershed* Context
    - **Chapter 1:** Introduction

      Provides an introduction, *watershed* context, direction from the NPCA 10-year Strategic Plan, a summary of roles and responsibilities of the NPCA and the Legislative Framework affecting NPCA’s plan review and permitting functions.
- **Part B:** Environmental Planning
    - **Chapter 2:** Environmental Planning Areas of Interest

      Contains policies related to the NPCA’s role and responsibilities related to the review of applications under the Planning Act and other legislation.
- **Part C:** Policies for the Administration of Ontario Regulation 41/24
    - Provides detailed policies for shoreline hazards, river or stream valleys, *hazardous lands*, *watercourses*, *wetlands* and other areas where *development* could interfere with the *hydrologic function* of a *wetland*
- **Definitions:** Includes definitions of terms used in the document.

- **Appendix A:** Conservation Authorities Act, Ontario Regulation 686/21, Mandatory Programs and Services

- **Appendix B:** Conservation Authorities Act, Ontario Regulation 41/24.

- **Appendix C:** NPCA Administrative By-law, Appendix 3 – Hearing Procedures, being hearing guidelines to provide a step-by-step process to conducting hearings required under the Conservation Authorities Act.

This document is more than a set of individual policies and is intended to be read in its entirety and all relevant policies are to be applied to each situation. While specific sections and policies may reference others or only apply under certain circumstances, this should not take away from the need to read the document as a whole.

The preambles to policy sections provide an overview of the rationale for the policies. The principles, goals and objectives of the NPCA Policy Document reflect the intent of the policies, and accordingly, should be considered in any interpretation of the policies. Textboxes, photos and illustrations are provided throughout the document for information only and do not constitute policy.

The definitions of *development* and *development activity* as used in this document pertain to the particular legislative act which is being applied. When issuing a work permit under the Conservation Authorities Act, staff would use the definition from the Conservation Authorities Act. When providing comments to a municipality on a municipal planning matter, staff would refer to the definition of *development* provided in the PPS, 2020. Please refer to the Definitions/Glossary for these definitions.

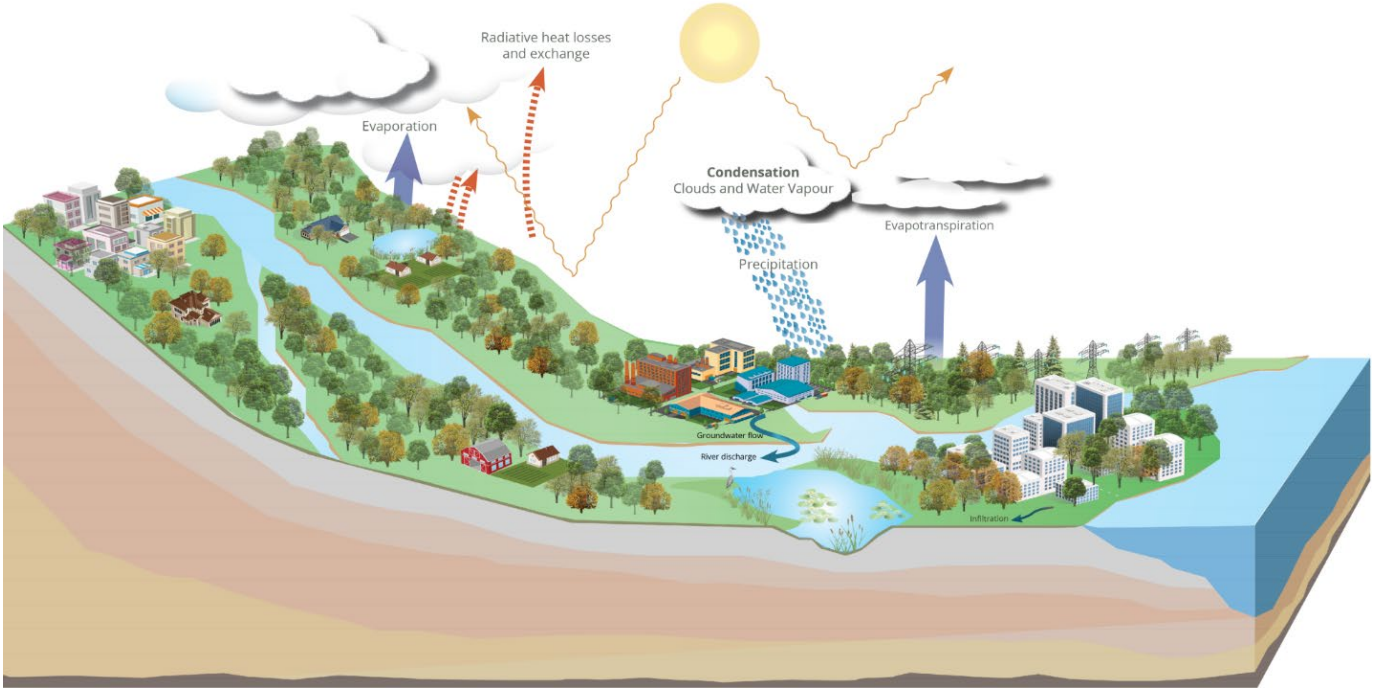
The policies of this Document are based on provincial legislation, policies, plans and guidelines. In cases where there is a conflict between a policy within this Document and a *provincial plan*, the more restrictive policy/standard should apply.

It should be stated that other legislation, regulations and/or approvals may apply to development proposals reviewed under the NPCA Policy Document. Review under this document does not address the approval requirements of other potentially affected agencies.

1.5 The Niagara Peninsula – A Natural Treasure

A *watershed* is the land that drains into a particular *watercourse* such as a stream, river, lake. Gravity and the land's topography (the high and low areas) move water, rain, and snowmelt across the landscape from one area to another. Figure 1.1 below provides a simple illustration showing the different elements within a *watershed* function.

Figure 1.1 – Watershed Diagram



The Niagara Peninsula Conservation Authority's *watershed* area encompasses 2,424 km^2, including the entire regional municipality of Niagara, and portions of the City of Hamilton (21%) and Haldimand County (25%). Since time immemorial, this area has been the home to Indigenous peoples – a place for sharing, trading, hunting, gathering, stewardship, and friendship. Currently, the *watershed* supports a population of approximately 520,000 people. Figure 1.2 shows the limits of the Niagara Peninsula *watershed*.

Figure 1.2 – NPCA Watershed

The Niagara Peninsula *watershed* is a natural treasure of distinct cultural, geological, hydrological, and biological aspects not found elsewhere in North America. It is part of the Carolinian life zone – the most biodiverse and threatened ecoregion in Canada. The Niagara Peninsula *watershed* boasts approximately 30% natural cover that provides critical habitat such as forested woodlots, slough forests, alvars, and *coastal wetlands* that support rich biodiversity, including rare plants and animals.

The *watershed* is uniquely situated between two Great Lakes, with the Niagara River as a boundary shared with the United States of America. As a result, the *watershed* area includes several notable natural features such as the Niagara Escarpment Biosphere Reserve, the Niagara Falls, Wainfleet Bog, Ball's Falls, Willoughby Marsh, and other *significant* landforms such as the Fonthill Kame ice contact-delta complex. The unique microclimate created by the Niagara Escarpment and rich soils supports one of Ontario's most productive agriculture systems, including vineyards, tender fruit orchards, livestock, and various specialty crops (greenhouses for flowers, vegetables, sod farms, and mushroom farms).

These important *watershed* features provide life-sustaining benefits for all and many opportunities to discover nature and culture.

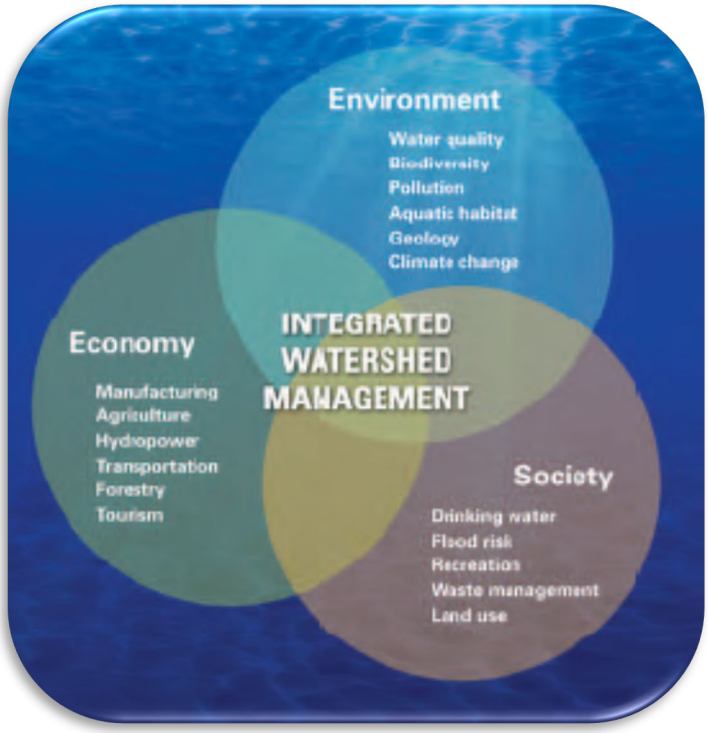
1.6 Integrated Watershed Management

The NPCA has adopted an Integrated *Watershed* Management (IWM) approach to *watershed* planning. The IWM approach recognizes that water is a valuable resource which should be managed in a sustainable manner. Conservation Ontario defines IWM as "the process of managing human activities and natural resources on a *watershed* basis, taking into account social, economic, and environmental issues, as well as community interests in order to manage water resources sustainably" (Conservation Ontario, 2012).

IWM is the process of managing human activities and natural resources in an area defined by *watershed* boundaries. It is an evolving and continuous process through which decisions are made for the sustainable use, *development*, restoration and protection of ecosystem features, functions and linkages. IWM serves to assess *watershed* functions and the potential impacts from change in order to ensure sustainability. The *watershed* unit provides context so that we can understand how impacts are felt and how they can accumulate.

For the NPCA, this means adopting the IWM lens when carrying out the responsibilities of Regulatory Authority, Delegated Provincial Interest, Public Body, Resource Management Agency, Service Provider, and Landowner. IWM helps us to focus on priorities and link strategies and actions leading to smarter, science-based decisions that ensure a long and healthy future.

Figure 1.3 – Integrated Watershed Management



Source: Conservation Ontario, Integrated Watershed Management, Navigating Ontario's Future, Summary Report, 2010

1.7 Nature for All

In 2020, the NPCA Board of Directors approved launching a staff-led process to create a new strategic plan that would guide the NPCA for the next ten years while reflecting its mandate as per the Conservation Authorities Act and fulfill its important role within the community. The NPCA Strategic Plan (2021-2031) is a critical milestone in NPCA's transformation. The plan reaffirms NPCA's commitment to the mandate of conservation authorities and charts the course for the next generation of work to address the evolving issues of *climate change*, growth, and the need for *green infrastructure*.

This plan is guided by principles based on a conservation-first and ecosystem philosophy, collaboration ethics, and an importance of innovation rooted in science. Through six overarching strategic priorities, twenty-one specific goals, and measurable actions, the plan charts the course for future actions and collective outcomes. Collectively, the strategic priorities guide NPCA's actions toward a vision of the Niagara Peninsula *watershed* with robust nature, thriving agriculture, and resilient urban areas vital to the health and well-being of our residents.

1.7.1 Vision

Nature for all.

We envision a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

1.7.2 Mission

To create a common ground for conservation-inspired action and accountability to nature.

1.7.3 Guiding Principles

Watersheds **transcend municipal boundaries.** We are committed to working with the *watershed* community to support and create climate-resilient and connected natural systems.

Natural *green infrastructure* is critical to life. Our day-to-day work conserves and restores our communities' integral ecological, socio-economic, public safety, and health services.

Diverse experiences and ideas lead to better and stronger collective impact and outcomes. We seek to exemplify inclusion and equity through meaningful engagement and collaboration.

Innovation requires learning from each other and the past. As a result, we are progressive, resilient, adaptable, and strive for continuous improvement to remain a trusted and valued partner.

These principles guide NPCA staff in implementing the NPCA Policy Document.

1.7.4 Goals and Objectives

The NPCA is committed to undertaking specific goals and actions with its partners and communities to achieve a thriving environment that sustains life for future generations.

Table 1.1: NPCA 10-Year Strategic Plan Goals and Objectives

Goal	Objective
Goal 1: Healthy and Climate Resilient *Watersheds*	Improving nature for the betterment of life across the *watershed*.
Goal 2: Supporting Sustainable Growth	Helping to create resilient communities through land-use planning and the use of sustainable technologies, to prepare for a changing climate and related environmental challenges.
Goal 3: Connecting People to Nature	Improving access to and connections with nature for the health and well-being of all people.
Goal 4: Partner of Choice	Strengthening our relationships with stakeholders, partners, the *watershed* community, and Indigenous peoples toward shared stewardship, knowledge exchange, and collective impact.
Goal 5: Organizational Excellence	Striving for excellence through high service delivery standards and accountability to the environment and its people.
Goal 6: Financial Sustainability	Ensuring a financially stable and sustainable organization and continued service-delivery through innovative business models, diverse funding sources, and best practices.

The NPCA Policy Document together with the Procedural Manual will support NPCA in achieving a number of key goals, including the following:

- **Goal 1.2:** Protect people and properties from natural hazards and climate impacts.
- **Goal 2.1:** Maintain a high standard of client services, tools, and procedures for planning review and permits.
- **Goal 2.2:** Lead an integrated *watershed* management approach to support planning and policy for protecting and enhancing *watersheds*.
- **Goal 2.3:** Lead the implementation of sustainable technologies and *green infrastructure* best practices for climate resilience and sustainability.

1.8 Role of the NPCA

As a corporate body created through provincial legislation as well as a registered charitable organization with several different functions, the NPCA's roles can be broadly categorized as follows:

- **Regulatory Authority**: Sections 28 and 28.1 of the Conservation Authorities Act empowers conservation authorities to prohibit, restrict, regulate or give permission for certain *activities* in and adjacent to *watercourses*, *valleylands*, *wetlands*, shorelines and other *hazardous lands*. In administering NPCA's Sections 28 and 28.1 regulation (O. Reg. 41/24), NPCA is the approval authority for permits under this regulation. In NPCA's review of applications under the Planning Act, NPCA staff ensure that proponents and the provincial or municipal planning authorities are aware of the Section 28.1 regulation and requirements under the Conservation Authorities Act, and assist in the coordination of these applications to eliminate unnecessary delay, duplication, or conflict in the process.

- **Delegated Provincial Interest**: The NPCA has a delegated responsibility under regulation 686/21in representing the provincial interest on natural hazards, other than those policies related to *hazardous forest types for wildfire*, encompassed in Section 3.1 of the PPS, 2020. This delegation requires NPCA to review and provide comments on municipal policy documents (e.g., Official Plans and comprehensive zoning by-laws) and applications submitted pursuant to the Planning Act as part of the Provincial One-Window Plan Review Service.

- **Public Body:** Pursuant to the Planning Act, NPCA is a "public body", and therefore where it has an interest, must be notified of municipal policy documents and planning and *development* applications under the Act. NPCA comments according to its Board-approved policies and as a *watershed* resource management agency to the municipality/planning approval authority on these documents and applications. The NPCA is also public commenting body pursuant to the federal and provincial Environmental Assessment (EA) Acts. NPCA reviews and comments on EAs that occur within NPCA's regulatory jurisdiction. Proponents of an EA are required to identify and consult with government agencies, including conservation authorities if the proposed project has the potential to affect an item related to the conservation authority's interest. In NPCA's review of applications under the Planning Act and Environmental Assessment Acts, NPCA staff will ensure that proponents and the provincial or municipal planning authorities are aware of the Section 28.1 regulation and requirements under the Conservation Authorities Act, and assist in the coordination of these applications to eliminate unnecessary delay, duplication, or conflict in the process.

- **Resource Management Agency:** In accordance with Section 20 and 21 of the Conservation Authorities Act and associated regulations, conservation authorities are local *watershed*-based natural resource management agencies that develop programs and services that reflect local resource management needs within its jurisdiction. Such programs, services and/or policies (e.g., *watershed* plans, management plans, and NPCA Policy Document) are approved by the NPCA Board of Directors and may be funded from a variety of sources including municipal levies, fees for services through agreements, provincial and/or federal grants, self-generated revenue or cost apportionment agreements with partner municipalities.

- **Service Provider:** Conservation authorities may enter into agreements with other levels of government to undertake regulatory or approval responsibilities and/or reviews. The provision of planning advisory services to municipalities is implemented through service agreements or MOUs with participating municipalities as part of a conservation authority's approved program activity. In this respect, the conservation authority is essentially acting as a technical advisory to municipalities. The agreements cover the conservation authority's areas of technical expertise such as watershed science, and natural hazards.

- **Landowner:** Occasionally conservation authorities become involved in the planning process as a proponent or landowner. Where there is a real or perceived conflict of interest between the role of the conservation authority as a proponent or landowner and the role of the conservation authority as a commenting agency, conservation authorities may request the planning authority to implement alternate review mechanisms to address the conservation authority's commenting responsibilities. Additionally, conservation authorities ensure that any comments provided as a landowner are separate from comments provided under a technical, advisory, and/or regulatory role.

Table 1.2 lists various legislation, programs, plans and policies affecting the NPCA's jurisdiction and the roles of the implementing agencies. This table is a simplistic summary of various statutes, plans and programs and may not be exhaustive, and should not be relied upon for legal or professional advice in connection with any particular matter.

Table 1.2: Legislation, programs and policies affecting NPCA's jurisdiction, and roles of agencies

	Lead Agency	Supporting Agency
Federal		
Fisheries Act (2013)	Fisheries and Oceans Canada (DFO)	NPCA may direct proponents to consult with DFO as a courtesy and provides advice that in-waters works should be outside the *fish* spawning season. However, it is the responsibility of the proponent to ensure compliance with the Act.
Navigation Protection Act (1985)	Transport Canada	NPCA directs proponents to Transport Canada when reviewing a watercourse crossing in navigable waters
Migratory Birds Convention Act (1994)	Environment Canada	NPCA provides advice to proponents that the removal or pruning of trees should take place outside the nesting season, however, it is the responsibility of the proponent to ensure compliance with the Act
Species at Risk Act (2002)	Environment Canada, Parks Canada and Fisheries and Oceans Canada	NPCA may direct proponents to the applicable federal authority as a courtesy
Impact Assessment Act (2012)	Impact Assessment Agency of Canada or lead regulatory authority	NPCA provides comments and technical clearance related to policies and regulation
Niagara River Remedial Action Plan Program	Environment and *Climate Change* Canada, Ontario Ministry of the Environment, Conservation and Parks, Ontario Ministry of Natural Resources and Forestry, and NPCA as the lead coordinating agency since 1999	
Provincial		
Planning Act (1990)	Municipalities are approval authorities	NPCA is a commenting agency and helps to ensure decisions are consistent with the natural hazards policies in the PPS, 2020, but not *hazardous forest types for wildland fire*, and where applicable, conform with any natural hazards policies included in a *provincial plan*, but not *hazardous forest types for wildland fire*
Provincial Policy Statement (2020)	Ministry of Municipal Affairs and House; municipal planning decisions must be consistent	NPCA has a delegated responsibility in representing the provincial interest on natural

	Lead Agency	Supporting Agency
	with matters of provincial interest outlined in the PPS, 2020	hazards, other than those policies related to *hazardous forest types for wildfire*, encompassed in Section 3.1 of the PPS, 2020
Conservation Authorities Act (1990) and Regulations	Conservation Authorities	Many *watershed* partners
Environmental Assessment Act (1990)	Ministry of the Environment, Conservation and Parks	NPCA is a commenting agency
Greenbelt Act and Plan (2017)	Municipalities	NPCA is a commenting agency
Places to Grow Act (date) and Plan (date)	Municipalities	NPCA is a commenting agency
Niagara Escarpment Planning and Development Act and Plan (1990)	Niagara Escarpment Commission	NPCA is a commenting agency; municipalities are a commenting agency
Ontario Water Resources Act (1990) – Section 34 Permits to Take Water; Section 53 – Environmental Compliance Approvals for *Stormwater Management* Facilities	Ministry of the Environment, Conservation and Parks	NPCA is a commenting agency where appropriate
Endangered Species Act (2007)	Ministry of the Environment, Conservation and Parks (MECP)	NPCA may direct proponents to MNRF (NPCA may provide data to the Province if available)
Clean Water Act (2006)	Ministry of the Environment, Conservation and Parks (MECP)	Municipalities and NPCA
Building Code Act (1992)	Municipalities	Ontario Regulation 41/24 permits are applicable law. NPCA either issues a permit or provides a letter of clearance
Ontario Heritage Act	Municipalities; NPCA for projects on NPCA-owned lands to ensure archaeological assessments are conducted in consultation with indigenous communities	
Municipal		
Upper-tier, Single-Tier and Local Municipal Official Plans, Secondary Plans, Zoning By-laws, Site Plan Control By-laws, Tree By-laws, *Site Alteration* By-laws, and any other land use plans, policies and guidelines	Upper-tier, Single-Tier and Local Municipalities	NPCA provides input to the development of these municipal policies, plans and by-laws, and provides comments to municipalities in their application
Niagara Peninsula Conservation Authority (NPCA)		
Ontario Regulation 41/24 – Prohibited Activities, Exemptions and Permits	NPCA	

	Lead Agency	Supporting Agency
NPCA Policy Document and Procedural Manual	NPCA	Municipalities and *watershed* partners provide input to the development of these policies and procedures
Watershed Plans	Municipalities undertake watershed or sub-watershed studies to inform land use planning and growth area planning; NPCA undertakes watershed or sub-watershed studies to support its *watershed* resource management mandate	Many *watershed* partners
Lake Ontario and Lake Erie Shoreline Management Plans	Ministry of Natural Resources and Forestry; NPCA	
Conservation Area Management Plans	NPCA	
Land Securement Strategy and Policy	NPCA	Many *watershed* partners

1.9 Legislative Framework

1.9.1 The Conservation Authorities Act

Conservation Authorities are governed by the Conservation Authorities Act which is administered by the Ministry of Natural Resources and Forestry (MNRF). The Conservation Authorities Act assigns responsibility to all Conservation Authorities across Ontario.

Section 20(1) of the Conservation Authorities Act states the objects of an authority in the area over which it has jurisdiction:

a) the mandatory programs and services required under section 21.1;
b) any municipal programs or services that may be provided under section 21.1.1; and
c) any other programs or services that may be provided under section 21.1.2.

The NPCA's planning and *development* review services relate to mandatory programs and services determined through regulation.

1.9.1.1 Mandatory Programs and Services

Section 21.1 (1) of the Conservation Authorities Act states that a conservation authority shall provide the following programs or services within its area of jurisdiction:

1) Programs or services that meet any of the following descriptions and that have been prescribed by the regulations:

    i. Programs and services related to the risk of *natural hazards*.

ii. Programs and services related to the conservation and management of lands owned or controlled by the authority, including any interests in land registered on title.
iii. Programs and services related to the authority's duties, functions and responsibilities as a source protection authority under the Clean Water Act, 2006.
iv. Programs and services related to the authority's duties, functions and responsibilities under an Act prescribed by the regulations.

2) Other programs and services that have been prescribed by the regulations.

Ontario Regulation 686/21, Mandatory Programs and Services (Appendix B), identifies the programs and services the conservation authorities are required to provide under Section 21.1 of the Conservation Authorities Act. Section 6 (1) of the regulation states that a conservation authority shall provide programs and services to enable the authority to review proposals made under the following Acts for the purpose of commenting on the risks related to natural hazards arising from the proposal where the authority considers it advisable:

1) The Aggregate Resources Act
2) The Drainage Act
3) The Environmental Assessment Act
4) The Niagara Escarpment Planning and Development Act

Section 7(1) of the regulation states that when a conservation authority is reviewing an application under the Planning Act as part of their Delegated Provincial Interest and Public Body roles, a conservation authority shall provide programs and services to ensure the authority satisfies the functions and responsibilities set out in the regulation for the purpose of helping to ensure that the decisions are:

a) consistent with the natural hazards policies in the policy statements issued under section 3 of the Planning Act, but not including those policies related to *hazardous forest types for wildland fire*; and

b) where applicable, conform with any natural hazards policies included in a *provincial plan* as defined in section 1 of the Planning Act, but not including those policies related to *hazardous forest types for wildland fire*.

The functions and responsibilities of the conservation authority prescribed by regulation are:

1) Reviewing applications or other matters under the Planning Act and, where the authority considers it advisable, providing comments, technical support or information to the responsible planning authority.

2) When requested to by the Ministry of Municipal Affairs and Housing, providing comments directly to the Ministry within the timeframes requested by the Ministry on applications or other matters under the Planning Act.

3) When requested to by a municipality or planning board, providing advice, technical support, training and any information the municipality or planning board requires.

4) Apprising the Ministry of Municipal Affairs and Housing of any applications or matters under the Planning Act where the authority is of the opinion that there is an application or other matter that should be brought to the attention of the Government of Ontario.

5) Providing technical input into and participating in provincial review of applications for approval of a "*Special Policy Area*" within the meaning of the PPS, 2020 issued under section 3 of the Planning Act.

6) When requested to by the Ministry of Municipal Affairs and Housing, providing support to the Ministry in appeals on applications or other matters under the Planning Act on behalf of the Province at the Ontario Land Tribunal.

7) Undertaking an appeal to the Ontario Land Tribunal of a decision under the Planning Act as a public body in accordance with that Act if,

    i. the appeal relates to consistency with the PPS, 2020, and *Provincial Plan* natural hazard policies, other than *hazardous forest types for wildland fire*, and
    ii. the authority considers it advisable.

Further, a conservation authority shall provide programs and services to ensure that the authority satisfies its duties, functions and responsibilities to administer and enforce the provisions of Parts VI and VII of the Act and any regulations made under those Parts.

The NPCA Policy Document, Procedural Manual, and the authority's plan review and permitting services are mandated programs and services to enable the authority to review proposals made under the relevant Acts for the purpose of commenting on the risks related to natural hazards, other than *hazardous forest types for wildland fire*, where the authority considers it advisable.

1.9.1.2 Municipal Programs and Services

Section 21.1.1 (1) of the Conservation Authorities Act states that a conservation authority may provide, within its area of jurisdiction, municipal programs and services that it agrees to provide on behalf of a municipality situated in whole or in part within its area of jurisdiction under a MOU, or such other agreement.

Furthermore, programs and services that an authority agrees to provide on behalf of a municipality shall be provided in accordance with:

a) the terms and conditions set out in the MOU or agreement; and

b) such standards and requirements as may be prescribed.

Section 21.1.1(1.1) of the Conservation Authorities Act states that a conservation authority shall not provide under subsection (1), within its area of jurisdiction, a municipal program or service related to reviewing and commenting on a proposal, application or other matter made under a prescribed Act. Ontario Regulation 596/22 was made on January 1, 2023 and prescribed the following Acts:

a) The Aggregate resources Act
b) The Condominium Act, 1998
c) The Drainage Act
d) The Endangered Species Act
e) The Environmental Assessment Act
f) The Environmental Protection Act
g) The Niagara Escarpment Planning and Development Act
h) The Ontario Heritage Act
i) The Ontario Water Resources Act
j) The Planning Act

This has served to streamline the focus of conservation authorities to natural hazard review only. Other areas of environmental review (e.g. natural heritage, fish habitat, groundwater quantity/quality, etc.) are the responsibility of municipalities.

1.9.1.3 Regulations of the Conservation Authority

Section 28 of the Conservation Authorities Act sets out the prohibited activities in areas under the jurisdiction of a conservation authority:

a) Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.
b) Development activities in areas that are within the authority's area of jurisdiction and are,
    a. hazardous lands
    b. wetlands
    c. river or stream valleys the limits of which shall be determined in accordance with the regulations
    d. areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or

e. other areas in which development should be prohibited or regulated, as may be determined by the regulations.

Under the provisions of Section 28.1 of the Conservation Authorities Act, NPCA administers Ontario Regulation 41/24, Prohibited Activities, Exemptions and Permits(O. Reg 41/24). Section 28.1(1) of the Conservation Authorities Act goes on to state that a conservation authority may issue a permit to a person to engage in an activity specified in the permit that would otherwise be prohibited by section 28, if, in the opinion of the authority:

a) the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock;
b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property; and
c) any other requirements that may be prescribed by the regulations are met.

Item 28.1(1)(a) noted above is of particular importance, as it highlights the ***Five Tests*** for development proposed within an area regulated by a conservation authority. Through Section 28 (1)(c), conservation authorities have the power to prohibit, regulate or require permission for development, where the following elements may be affected by the development:

a) *Flooding*;

b) *Erosion*;

c) *Dynamic beaches*;

d) *Unstable Soil*; and,

e) Bedrock.

1.9.1.4 Minister's Zoning Order & Permit Implications

Amendments to the Conservation Authorities Act in 2022 included a section relating to Minister's Zoning Orders (MZOs). Section 28.1.2 of the amended Conservation Authorities Act applies to a development project that has been authorized by a MZO under the Planning Act, within an area regulated under Part VI of the Conservation Authorities Act, outside of the Greenbelt Plan Area. Should the MZO be approved by the Province, the provisions of this new Section of the Conservation Authorities Act would apply and are summarized as follows:

- Conservation authorities shall issue a permit.

- Conservation authorities may only impose conditions to the permit, including conditions to mitigate:
    - Any effects the development project is likely to have on the control of flooding, erosion, *dynamic beaches* or *unstable soil* or bedrock.
    - Any conditions or circumstances created by the development project that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property.
    - Any other matters that may be prescribed by the regulation.
- An applicant has the right to a Hearing before the Authority (Board) if there is an objection to the permit conditions being imposed by the conservation authority. The NPCA's Section 28 Hearing Guidelines (Appendix E) were updated to include provisions for MZOs.
- If the applicant still objects to conditions following a decision of the Hearing Board, the applicant has the option to either request a Minister's review or appeal to the Ontario Land Tribunal (OLT).
- All MZO-related conservation authority permits must have an agreement with the permittee (can include all parties, e.g., municipalities, on consent with applicant).
- The agreement shall set out actions that the holder of the permission must complete or satisfy to protect and/or compensate for ecological impacts (where applicable), and any other impacts that may result from the development project.
- The agreement must be executed before works commence on the site. Some enforcement provisions through court proceedings are in effect for MZO permits in accordance with Section 28.0.1 of the Conservation Authorities Act.

The MZO process is challenging in that studies that would usually be prepared in advance of the approval authority making a decision (e.g. Environmental Impact Study, servicing studies, transportation studies, etc.) are finalized after the MZO is approved. Although this means the *development activity* is approved in-principle, detailed studies are still required to address site design matters and to mitigate *negative impacts* to environmental features. Therefore, the NPCA's comments from a Regulatory Authority and Public Body perspective must focus on ensuring the appropriate studies will be completed as part of the NPCA Permit process through applying the appropriate conditions to the permit.

1.9.2 The Planning Act

The purpose of the Planning Act is to promote sustainable economic development in a healthy natural environment through a policy-led system whose processes are fair, open, cooperative and efficient. The Planning Act provides the basis for land use planning in Ontario, identifying tools for managing how, where and when land use change occurs. The Planning Act is designed to recognize the decision-making authority and accountability of municipal councils in planning. Municipalities are responsible for preparing Official Plans and Zoning by-laws and are also responsible for approving new *development*. Within this system, the Province's principal tool for ensuring that matters of provincial interests are implemented across the Province is the PPS, 2020.

As noted in the Conservation Authorities Act section of this Chapter, the role of the NPCA as having Delegated Provincial Interest in natural hazards, and as a Public Body in reviewing Planning Act applications is specified in Section 7(1) of Ontario Regulation 686/21, Mandatory Programs and Services (Appendix B). The NPCA must provide plan review services for the purposes of helping to ensure that decisions are,

- consistent with the *natural hazards* policies in the policy statements issued under section 3 of the Planning Act, but not including those policies related to *hazardous forest types for wildland fire*; and
- where applicable, conform with any *natural hazards* policies included in a *provincial plan* as defined in section 1 of the Planning Act, but not including those policies related to *hazardous forest types for wildland fire*.

1.9.3 The Provincial Policy Statement

The Provincial Policy Statement (PPS), 2020 provides policy direction on matters of provincial interest related to land use planning and *development*. As a key part of Ontario's policy-led planning system, the PPS, 2020 sets the policy foundation for regulating the *development* and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians.

The PPS, 2020 provides for appropriate *development* while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. It also supports improved land use planning and management, which contributes to a more effective and efficient land use planning system.

The policies of the PPS, 2020 may be complemented by *provincial plans* or by locally-generated policies regarding matters of municipal interest. *Provincial plans* and municipal official plans provide a framework for comprehensive, integrated, place-based and long-term planning that supports and integrates the principles of strong communities, a clean and healthy environment and economic growth, for the long term.

The Planning Act requires that decisions affecting planning matters "shall be consistent with" the PPS, 2020. Comments, submissions or advice that affect a planning matter that are provided by the council of a municipality, a local board, a planning board, a minister or ministry, board, commission or agency of the government "shall be consistent with" the PPS, 2020. As such, any comments provided by the NPCA need to be consistent with the PPS, 2020.

1.9.4 The Aggregate Resources Act

The purposes of the Aggregate Resources Act are to provide for the management of the aggregate resources of Ontario; to control and regulate aggregate operations on crown and private lands; to require the rehabilitation of land from which aggregate has been excavated; and to minimize adverse impact on the environment in respect of aggregate operation.

Under the Conservation Authorities Act Section 28 (2), areas licensed for aggregate extraction under the Aggregate resources Act are exempt from conservation authority permitting activities. However, conservation authorities may bring local environmental and *watershed* knowledge into the application review process. Conservation Authorities are afforded an opportunity to review and provide comments directly, or through their participating municipalities, to MNRF on applications submitted under the Aggregate Resources Act, during the application review and consultation process. MNRF is the approval authority for license applications submitted pursuant to the Aggregate Resources Act, whereas municipalities are the approval authorities with respect to applications submitted pursuant to the Planning Act. As with other applications submitted pursuant to the Planning Act, conservation authorities review Official Plan Amendments, Zoning Bylaw Amendments and other applications for proposed new or expanded aggregate operations submitted pursuant to the Planning Act as a Public Body, Regulatory Authority and through its Delegated Provincial Interest role to provide comments in an advisory capacity to municipalities making decisions on Planning Act applications.

For proposed *mineral aggregate operation* applications under the Aggregates Resources Act and Planning Act within NPCA's jurisdiction, NPCA may participate on a Joint Agency Review Team (JART) in an effort to streamline the review of applications. The JART is a team of professional staff from the public agencies responsible for coordinating the technical review of matters related to the processing of a *mineral aggregate operation* application. Given the large amount of studies and information circulated to agencies during the process, it is a best practice to establish a JART comprised of staff from the Upper-tier or Single-Tier municipality, local municipality and the NPCA. A multi-partner MOU is executed to facilitate this process.

The purpose of JART is to have a sharing of information, resources, and expertise so that the application and the associated studies are reviewed in a streamlined and coordinated manner. Staff from interested provincial

ministries would be engaged through the JART process as well. The JART does not make a recommendation on the application, rather the JART works to:

- ensure that the required range of studies and work is completed by the applicant;
- ensure that the studies are sufficient in terms of their technical content;
- review of the studies and work of the applicant either by technical staff or by peer reviewers;
- ensure a coordinated public and stakeholder consultation and engagement process; and
- prepare a technical JART report on the application once all reviews are complete.

The technical JART report is then used independently by staff at each agency as the technical basis to develop a recommendation report, which is then considered by the decision-makers at each individual agency.

1.9.5 The Drainage Act

In the NPCA *watershed*, *municipal drains* are important components of drainage *infrastructure* most often associated with the rural and agricultural areas. Many of these *municipal drains* are also considered *watercourses* as defined by the Conservation Authorities Act. Under the Drainage Act, municipalities are responsible for the maintenance, repair and improvement of existing *municipal drains*, as well as coordinating the process of implementing new *municipal drains*. In 2008 an inter-agency Drainage Act and Section 28 Regulations Team (DART) was established by the MNRF and the Ministry of Agriculture, Food and Rural Affairs (OMAFRA). The DART consists of representatives from the MNRF, OMAFRA, Conservation Ontario, conservation authorities, the Drainage Superintendent's Association of Ontario and other regulatory agencies and drainage interests. This DART developed and implemented the Drainage Act and Conservation Authorities Act protocol for municipalities and regulatory agencies including the Federal Department of Fisheries and Oceans (DFO). This protocol outlines the procedures and Standard Compliance Requirements for maintenance and repair *activities* on existing *municipal drains* outside of and within NPCA regulation limits such as *wetlands*, including when additional review and approvals may be needed from the conservation authority.

1.9.6 Environmental Assessment Acts

1.9.6.1 Ontario Environmental Assessment Act

The purpose of the Environmental Assessment Act is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment. The Act applies to provincial ministries and agencies, municipalities such as towns, cities, and counties, as well as public bodies such as conservation authorities for *infrastructure* projects such as (but not limited to):

- Public roads and highways;
- Transit projects;

- Waste management projects;
- Water and wastewater works;
- Resource management; and,
- Flood protection projects.

Conservation authorities review and comment on Class and Individual Environmental Assessments that occur within their jurisdiction under the Environmental Assessment Act. Conservation Authorities bring local environmental and *watershed* knowledge into the review and assessment process. It is a requirement for proponents to identify and consult with government agencies and may include conservation authorities if the proposed project may have an impact on an item related to the conservation authority's areas of interest (e.g., Regulatory Authority or Service Provider). The NPCA is responsible as a Public Body and Regulatory Authority for commenting on *infrastructure* projects within the *watershed* led by public or private sector proponents.

The NPCA is also responsible for adhering to the Act when it acts as the proponent under the Act (e.g., undertaking flood protection projects). When acting as a proponent for certain types of projects, the NPCA is subject to Conservation Ontario's Class Environmental Assessment for Remedial Flood and Erosion Control Projects. This Class Environmental Assessment sets out procedures and environmental planning principles for Conservation Authorities to follow, plan, design, evaluate, implement and monitor a remedial flood and erosion control project so that environmental effects are considered as required under the Environmental Assessment Act. Approval of this Class Environmental Assessment allows conservation authorities to undertake these projects without applying for formal approval under the Environmental Assessment Act, on the condition that the planning and design process outlined in the Class Environmental Assessment is followed and that all other necessary federal and provincial approvals are obtained.

1.9.6.2 Impact Assessment Act

The Impact Assessment Act (IAA 2012) is generally similar to the Ontario Environmental Assessment Act, focusing on potentially adverse environmental effects within federal jurisdiction, including:

- *Fish* and *fish habitat*;
- Other aquatic species;
- Migratory birds;
- Federal lands;
- Effects that cross provincial or international boundaries;
- Effects that impact on Indigenous peoples, such as their use of lands and resources for traditional purposes; and,
- Changes to the environment that are directly linked to or necessarily incidental to any federal decisions about a project.

Where Federal Impact Assessments are undertaken within the Niagara Peninsula *watershed*, the NPCA provides comments as a Public Body and Regulatory Authority through the Impact Assessment Act process.

1.9.7 Provincial Plans

1.9.7.1 The Niagara Escarpment Plan

The Niagara Escarpment Plan (2017) was created to protect and preserve the Niagara Escarpment, one of eighteen (18) UNESCO World Biosphere Reserves in Canada. The Plan was prepared under the authority of the Niagara Escarpment Planning and Development Act (1990) and includes policies for seven designations within the Escarpment: Natural, Protection, Rural, Recreation, Urban, Minor Urban and Mineral Resource Extraction. The Niagara Escarpment Commission is responsible for regulating *development* in the Plan Area, which skirts the northern portion of the NPCA's *watershed*. The NPCA is responsible for reviewing and providing comments on Niagara Escarpment Plan Amendments and Development Permits which fall within the Plan Area and the NPCA's regulation also apply within the Niagara Escarpment Plan Area[1]. It is important to note that where an NPCA permit is required within the Niagara Escarpment Plan Area of Development Control, the NPCA cannot issue its Section 28.1 permit unless the proposed *development activity* is exempt under the Niagara Escarpment Planning and Development Act regulations, or a Niagara Escarpment Plan Development Permit has been issued and NPCA's decision is consistent with the Development Permit.

1.9.7.2 Greenbelt Plan

The Greenbelt Plan (2017) provides a policy framework for protecting the natural and agricultural systems in the Greater Golden Horseshoe by identifying where urbanization should not occur. The Greenbelt Plan was prepared under the authority of the Greenbelt Act, which designates the Greenbelt Area that the Plan applies to and lays out the key components and objectives for the Greenbelt area as described in the Plan. The Greenbelt Plan lays out a strategy and policies for protecting natural and agricultural resources and framework builds on the framework established in the PPS (and other *provincial plans* such as the Oak Ridges Moraine Plan and the Niagara Escarpment Plan).

The Greenbelt Plan is of particular relevance as the northern portion of the NPCA's *watershed* falls within the limits of the Plan Area. The Plan is intended to be read and applied in conjunction with a range of other applicable plans, policies and legislation, including regulations under the Conservation Authorities Act. In instances where there is a conflict between a particular policy in the Greenbelt Plan and a policy in the NPCA's Policy Document, the Greenbelt Plan states that the more restrictive policy shall apply.

[1] Note that the NEC does not maintain specific EIS guidelines and accordingly relies on NPCA and municipal EIS guidelines when reviewing NEC permits.

1.9.7.3 A Place to Grow: Growth Plan for the Greater Golden Horseshoe

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020) provides a strategic, long-range growth management framework for the Greater Golden Horseshoe area. The Growth Plan supports Ontario's vision of building stronger, more efficient, prosperous communities through appropriate growth management. Similar to the PPS, 2020, the guiding principles of the Growth Plan are focused on achieving complete communities, stimulating economic growth, prioritizing *intensification* and higher densities to optimize *infrastructure* investments, and mitigating the adverse impacts of *climate change*.

Like other *provincial plans*, the Growth Plan builds upon the policy foundation provided by the PPS, 2020, and provides additional and more specific land use planning policies to address issues facing specific geographic areas in Ontario. As provided for in the Places to Grow Act, 2005, the Growth Plan prevails where there is a conflict between the Plan and the PPS, 2020. The only exception is where the conflict is between policies relating to the natural environment or human health (e.g., *natural hazards*). In that case, the direction that provides more protection to the natural environment or human health prevails. Further, where there is a conflict between the Greenbelt or Niagara Escarpment Plans and the Growth Plan regarding the natural environment or human health (e.g., *natural hazards*), the direction that provides more protection to the natural environment or human health prevails.

Municipalities are required to bring their Official Plans in conformity with the Growth Plan. Where there are more restrictive *Provincial Plan* or Official Plan policies, the more restrictive policies take precedence when NPCA is reviewing planning applications as a Public Body and through its Delegated Provincial Interest role.

1.9.8 Regional and Local Plans

The NPCA takes on an advisory role in interacting with Upper and Lower-Tier municipal policies and plans that apply within their *watershed*, providing input on the *development* of these land use planning tools and their application. The types of local municipal and Regional plans that apply within the NPCA jurisdiction include Regional, Single-tier and local Official Plans, Zoning By-Laws, Site Plan Control, strategic plans, secondary plans, *watershed*/sub-watershed studies and municipal *development* and design guidelines.

NPCA also collaborates with municipalities to recommend policies and provisions for inclusion into Official Plan policies related to *natural hazards* and *watershed*-based resource management. In carrying out their delegated responsibilities, conservation authorities should identify natural hazard lands for protection in Official Plans and comprehensive zoning by-laws. This will ensure that *development* is directed away from areas of natural hazards where there is an unacceptable risk to public health or safety or of property damage. The understanding by all parties as to the establishment of the "principle of *development*" through the Official Plan policies allows the

NPCA to focus on technical requirements and site constraints at the Conservation Authorities Act Section 28.1 permitting review process.

PART B: ENVIRONMENTAL PLANNING

2.0 ENVIRONMENTAL PLANNING AREAS OF INTEREST

2.1 Introduction

Through its various roles and responsibilities, NPCA provides comments on proposed *development* and *infrastructure* projects within its *watershed*. NPCA will aim to coordinate their reviews of Planning Act applications with permit requirements to streamline comments and approvals.

In some cases, *provincial plan* requirements may exceed NPCA regulatory requirements, and such greater requirements take precedence. For example, the *provincial plans* may have greater requirements for vegetation *buffers* or more restrictions on the uses permitted than the conservation authority regulatory requirements.

In participating in the review of *development* applications under the Planning Act, NPCA will:

- ensure that the applicant and municipal planning authority are aware of the Section 28 regulations and requirements under the Conservation Authorities Act, and
- assist in the coordination of applications under the Planning Act and the Conservation Authorities Act to eliminate unnecessary delay or duplication in the process.

The "principle of *development*" is established through Planning Act approval processes, whereas the Conservation Authority Act permitting process provides for technical implementation of matters pursuant to Part VI of the Conservation Authorities Act. NPCA will ensure that concerns it may have regarding the establishment of the "principle of *development*" are conveyed to the municipality/planning approval authority during the preparation of a municipal Official Plan, secondary plan or Official Plan amendment, or during the Planning Act approvals process.

The policies contained in this chapter:

1) Pertain to NPCA's mandated Delegated Provincial Interest and Public Body roles under the Conservation Authorities Act and Ontario Regulation 686/21, including prescribed functions and responsibilities, to help ensure that decisions by planning authorities under the Planning Act are:

    a) consistent with the natural hazards policies in the policy statements issued under section 3 of the Planning Act, but not including those policies related to *hazardous forest types for wildland fire*; and

b) where applicable, conform with any natural hazards policies included in a *provincial plan* as defined in section 1 of the Planning Act, but not including those policies related to *hazardous forest types for wildland fire*;

2) Guide the NPCA's review of proposals made under the Aggregate Resources Act, Drainage Act, Environmental Assessment Act and Niagara Escarpment Planning and Development Act for the purpose of commenting on the risks related to *natural hazards* arising from the proposal where the authority considers it advisable; and

3) Guide the NPCA in providing input to and supporting the *watershed* and sub-*watershed* planning efforts of municipalities that are required by the PPS, 2020 and *provincial plans*.

For the purpose of implementing the policies within this chapter, the definition of *development* and *infrastructure* contained in the PPS, 2020 and applicable *provincial plans* apply when NPCA is providing plan review comments.

Development **(Provincial Policy Statement, 2020):** means the creation of a new lot, a change in land use, or the construction of *buildings* and structures requiring approval under the Planning Act, but does not include:

a) activities that create or maintain *infrastructure* authorized under an environmental assessment process;
b) works subject to the *Drainage Act*; or
c) for the purposes of policy 2.1.4(a), underground or surface mining of *minerals* or advanced exploration on mining lands in *significant areas of mineral potential* in Ecoregion 5E, where advanced exploration has the same meaning as under the *Mining Act*. Instead, those matters shall be subject to policy 2.1.5(a).

Infrastructure (Provincial Policy Statement, 2020): 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.

2.1.1 Goal

To fulfill NPCA's legislated plan review roles and responsibilities and help to inform *development* and *infrastructure* that aspires to achieve NPCA's vision of a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

2.1.2 General Objectives

It is the objectives of the NPCA:

a) To minimize the potential for loss of life, property damage and social disruption and to create a safer and healthier environment for everyone who lives in the *watershed*.

b) To reduce the need for public and private expenditures for emergency operations, evacuation, and restoration of properties which may be impacted by *natural hazards*.

c) To increase public awareness about the potential risks to *development* as a result of the physical conditions associated with hazardous areas.

2.1.3 General Policies

It is the policy of the NPCA:

a) That NPCA comments and recommendations for plan review be in accordance with the policies of this document.

b) To be consistent with MNRF's "Policies and Procedures for Conservation Authority Plan Review and Permitting Activities" (2010) and the NPCA Procedural Manual, and to make clear in plan review comments which role NPCA is representing (e.g., Regulatory Authority, Delegated Provincial Interest, Public Body, etc.).

c) That NPCA comments and recommendations for plan review fulfill NPCA's delegated responsibility for representing the provincial interest on natural hazards, other than *hazardous forest types for wildland fire*.

d) That NPCA comments and recommendations for plan review fulfill NPCA's mandated responsibility to review proposals made under the Aggregate Resources Act, Drainage Act, Environmental Assessment Act and Niagara Escarpment Act for the purpose of commenting on the risks related to natural hazards arising from the proposal where the authority considers it advisable.

e) To coordinate the review of applications and proposals with municipal partners, applicants and where appropriate provincial ministries to facilitate strategic and sustainable design, including the consideration of *cumulative impacts*.

f) To recommend that applications and proposals received through plan review include the appropriate technical reports to assess consistency with the policies in this document, in accordance with section 3.7 and the NPCA Procedural Manual.

g) To provide technical guidance for the determination of the limits to regulated features and areas including associated buffers and structural setbacks to regulated features and areas in accordance with Chapters 3-10 and the NPCA Procedural Manual.

h) That NPCA watershed plans, technical data, lakeshore management plans, conservation area management plans and other technical documents be used, as appropriate, to guide and inform plan review.

2.2 Watershed and Sub-watershed Planning

Within Provincial planning documents, such as the PPS, 2020 and the Growth Plan, there is an increased emphasis on the need for *watershed* planning to inform land use planning. Through their Official Plan conformity exercises, the Upper-Tier and Single-Tier municipalities within the NPCA *watershed* have developed policies that require certain land use planning decisions be informed by watershed or sub-watershed planning. *Watershed* planning is also required to inform municipal decisions regarding growth and *infrastructure*.

As a Resource Management Agency, the NPCA is committed through the NPCA's 10-Year Strategic Plan to implement a proactive sub-watershed work program to complement and inform the quaternary and sub-watershed planning for growth areas within the NPCA jurisdiction within Niagara Region, and support municipal partners with watershed data collection and analysis to understand *cumulative impacts*.

A ***watershed*** is an area of land from which surface runoff (water, sediments, nutrients and contaminants) drain into a common water body, such as the Mill Creek, Elsie Creek which are tributaries to the Welland River. *Watersheds* include all water and water-dependent features such as *wetlands*, forests, urban areas, and agriculture.

A ***watershed*** **plan or sub-*watershed* plan** is a proactive document created cooperatively by government agencies and the community to manage the water, land/water interactions, aquatic life and aquatic resources within a particular *watershed* to protect the health of the ecosystem as land uses change. *Watershed* and sub-*watershed* plans provide specific direction for the overall water and resource management of specific creek systems.

The following NPCA watershed and sub-watershed plans should be considered when reviewing planning act applications and, where appropriate, work permit approvals:

a) 12 Mile Creek *Watershed* Plan
b) 15-16-18 Mile Creek *Watershed* Plan
c) 20 Mile Creek *Watershed* Plan
d) Central Welland River *Watershed* Plan
e) Fort Erie Creeks *Watershed* Plan
f) Lake Erie North Shore *Watershed* Plan
g) NOTL *Watershed* Plan
h) One Mile Creek *Watershed* Plan
i) South Niagara Falls *Watershed* Plan
j) Upper Welland River *Watershed* Plan
k) Port Robinson West Sub-*watershed* Plan

2.2.2 Objective

It is the objective of the *Watershed* and Sub-*watershed* Planning policies to:

a) Guide the NPCA in working collaboratively with municipalities in the development of municipally-led *watershed* and sub-*watershed* studies and plans, and support their efforts through a proactive and complementary sub-*watershed* resource management work program.

2.2.3 Policies

It is the policy of the NPCA:

a) To support municipalities in protecting, improving or restoring the *quality and quantity of water* by using the *watershed* as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering *cumulative impacts* of *development*.

b) To establish a proactive sub-*watershed* work program to complement and inform the quaternary and sub-*watershed* planning for growth areas within the NPCA jurisdiction within Niagara Region.

c) To support municipal partners with *watershed* data collection and analysis to understand *cumulative impacts*.

d) To develop a *watershed* natural system comprising water resources, natural features and areas, *natural hazards*, and restoration areas of potential natural cover and *buffers* that complements municipal natural heritage and environmental systems and supports the protection and enhancement of NPCA's *watershed*.

e) That NPCA *watershed* plans be used, as appropriate, to guide and inform plan review.

f) To recommend to approval authorities that proposals for *development* and *infrastructure* be considered for the *cumulative impacts* on the *watershed* natural system as early in the planning and *development* process as possible.

2.3 Natural Hazards

Ontario's long-term prosperity, environmental health and social well-being depend on reducing the potential for public cost or risk to Ontario's residents from natural hazards.

These policies apply to all *hazardous lands* and *hazardous sites*. While all policies in this section should be read comprehensively, they have a distinct connection with the other policies in Chapter 3-10, Policies for the Administration of Ontario Regulation 41/24. As such these policies should be read in conjunction with those applicable policies when providing comments on proposed *development* and *infrastructure*.

2.3.1 Objectives

It is the objectives of the Natural Hazard policies to:

a) Ensure *development* and *infrastructure* shall be directed away from areas of natural hazards where there is an unacceptable risk to public health or safety or of property damage, and not create new or aggravate existing hazards.

b) Mitigate potential risk to public health or safety or of property damage from natural hazards, including the risks that may be associated with the *impacts of a changing climate*, which will require the Province, planning authorities, and conservation authorities to work together.

2.3.2 Policies

It is the policy of the NPCA to:

1) Ensure that decisions by planning authorities under the Planning Act and other provincial legislation:

a) Generally direct *development*, in accordance with guidance developed by the Province (as amended from time to time), to areas outside of:
   i. *hazardous lands* adjacent to the shorelines of the *Great Lakes – St. Lawrence River System* and *large inland lakes* which are impacted by *flooding hazards*, *erosion hazards* and/or *dynamic beach hazards*;
   ii. *hazardous lands* adjacent to *river, stream and small inland lake systems* which are impacted by *flooding hazards* and/or *erosion hazards*; and
   iii. *hazardous sites*.

b) Shall not permit *development* and *site alteration* within:
   i. the *dynamic beach hazard*;
   ii. defined portions of the *flooding hazard* along the Niagara River;
   iii. areas that would be rendered inaccessible to people and vehicles during times of *flooding hazards*, *erosion hazards* and/or *dynamic beach hazards*, unless it has been demonstrated that the site has *safe access* appropriate for the nature of the *development* and the natural hazard; and
   iv. a *floodway* regardless of whether the area of inundation contains high points of land not subject to flooding.

c) Shall prepare for the *impacts of a changing climate* that may increase the risk associated with *natural hazards*.

d) Only Permit *development* and *site alteration* in certain areas associated with the *flooding hazard* along *river, stream and small inland lake systems*:
   i. in those exceptional situations where a *Special Policy Area* has been approved. The designation of a *Special Policy Area*, and any change or modification to the official plan policies, land use designations or boundaries applying to *Special Policy Area* lands, must be approved by the Ministers of Municipal Affairs and Housing and Natural Resources and Forestry prior to the approval authority approving such changes or modifications. In the case of the NPCA *watershed*, there is a *Special Policy Area* located in the Town of Fort Erie known as the Fort Erie Industrial Park *Special Policy Area*; or

ii. where the *development* is limited to uses which by their nature must locate within the *floodway*, including flood and/or erosion control works or minor additions or passive non-structural uses which do not affect flood flows.

e) Shall not permit *development* to locate in *hazardous lands* and *hazardous sites* where the use is:
   i. an *institutional use* including hospitals, long-term care homes, retirement homes, pre-schools, school nurseries, day cares and schools;
   ii. an *essential emergency service* such as that provided by fire, police and ambulance stations and electrical substations; or
   iii. uses associated with the disposal, manufacture, treatment or storage of *hazardous substances*.

2) Review and assess planning applications for direct or indirect effects of the *development* on the function of *wetlands* related to *natural hazard* management.

3) Work with municipal *watershed* partners to include natural hazard areas within appropriate Official Plan and zoning by-law designations to ensure no new *development* or *site alteration* occurs that would be contrary to Provincial or NPCA policy.

4) Through the review of planning applications, staff will work with the applicant and *watershed* municipalities to ensure no new *development*, including lot creation, or *site alteration* is permitted within the flooding and *erosion hazard* limits, that would be contrary to the PPS, 2020 and/or NPCA regulatory policies contained in Chapters 3-10.

2.4 Lot Creation

2.4.1 Objectives

It is the objectives of the lot creation policies to:

a) Generally direct the creation of lots away from natural hazards. This preventative approach supports provincial and municipal financial well-being over the long term, protects public health and safety, and minimizes cost, risk and social disruption.
b) Direct the creation of lots away from *wetlands*, *watercourses* and *valleylands*.

2.4.2 Policies

It is the policies of the NPCA to:

a) **Lot creation in river and stream flood hazards** - The NPCA will not support lot creation in flood hazards. Lot additions and boundary adjustments may be supported where it has been demonstrated that there is sufficient room outside of the flood hazard to accommodate a *building* envelope, including space for servicing and amenities.

b) **Lot creation in shoreline hazard areas** - Lot creation may be permitted in those portions of the shoreline hazard area where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:

   i. *development* and *site alteration* is carried out in accordance with *floodproofing standards*, *protection works standards*, and *access standards*;
   ii. vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
   iii. new hazards are not created and existing hazards are not aggravated; and
   iv. no adverse environmental impacts will result.

c) **Lot creation in *valleylands*** - Lots created through Consent are to be *setback* from the long-term stable top of slope in accordance with Section 5.2. Lots created through Plan of Subdivision are to maintain a minimum *setback* of 7.5 metres from the long-term stable top of slope.

d) **Lot creation in *Hazardous sites*** - Lot creation may be permitted in those portions of *hazardous lands* and *hazardous sites* where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:

   i. *development* and *site alteration* is carried out in accordance with *floodproofing standards*, *protection works standards*, and *access standards*;
   ii. vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
   iii. new hazards are not created and existing hazards are not aggravated; and
   iv. no adverse environmental impacts will result.

e) **Lot creation within 30 metres of a *wetland*** - Lot creation will not be permitted within 30 metres of a PSW. However, lot creation may be permitted less than 30 metres of a Non-PSW in accordance with policies of section 8.2.3. On a case-by-case basis, lot creation within 30 metres of a PSW or Non-PSW may be permitted where the lot to be created is for a surplus farm dwelling or other existing *building*, and the lot lines are based on existing site disturbances and an EIS in accordance with the NPCA Procedural Manual.

2.5 Environmental Assessments

While crossing of the *watershed* natural system can be disruptive to the NPCA *watershed*, connections for roads, public transit, water, storm and sanitary sewers, utilities and other types of *infrastructure* are a necessity in an urbanizing region. NPCA's *infrastructure* policies seek to first avoid, then mitigate, remediate natural hazards where possible, and where appropriate, compensate for the impacts of *infrastructure* on the *watershed* natural system.

For public *infrastructure* and large private *infrastructure* projects, Ontario's Environmental Assessment Act is the principal review mechanism. Given then NPCA is a commenting agency under both the Planning Act and Environmental Assessment Act processes, the NPCA has the opportunity to review many types of *infrastructure* proposals from both public and private proponents. This is important for consideration of the *cumulative impacts* that come from multiple *infrastructure* projects being proposed in the NPCA *watersheds*. Further, where exposed at-risk *infrastructure* is proposed for replacement, repair or expansion, the NPCA works with the proponents to improve conditions through adapting and retrofitting *infrastructure* and remediating hazards, that reduces the risk to public safety and enhances the long-term functioning *infrastructure*.

2.5.1 Objectives

It is the objectives of the environmental assessments policies to:

a) Guide NPCA in coordinating with municipalities and proponents to find mechanisms for avoiding, mitigating, remediating, and where appropriate, compensating for the *cumulative impacts* of *infrastructure*;
b) Guide NPCA in assisting in the coordination of various *infrastructure* projects by different proponents for consideration of *cumulative impacts*;
c) Guide NPCA to coordinate with municipalities and proponents to identify opportunities for implementing adaptive management in *infrastructure* projects; and
d) Guide NPCA to work with municipalities and proponents to achieve natural heritage restoration and natural hazard remediation through the planning and design of new, replacement, or expanded infrastructure.

2.5.2 Policies

It is the policies of the NPCA:

a) That locating *infrastructure* within NPCA regulated features and areas be avoided.

b) That baseline environmental conditions be established early in the planning stages of municipal Master Plans (e.g., Transportation and Servicing), the *environmental assessment* process, or equivalent planning process.

c) That the conditions established through policy 2.5.2 b) be used to make informed decisions among alternatives, with preference given to alternative(s) using siting, design, and construction technologies that avoid or minimize impacts to the *watershed* natural system.

d) That *infrastructure* not create new natural hazards or aggravate existing natural hazards.

e) That where natural hazards exist, *infrastructure* consider options for remediation.

f) That where *infrastructure* is permitted within *valley or stream corridors, wetlands,* and/or *hazardous lands* or *hazardous sites,* an environmental monitoring and contingency plan in accordance with NPCA policies and Procedural Manual, may be required to address potential emergencies during construction and operation.

g) That the aggregate number of *infrastructure* projects within or crossing the *watershed* natural system (within the context of a sub-*watershed* or Lake Ontario, Lake Erie and Niagara River reach) be minimized.

h) That the co-location of utilities, or common utility corridors, be considered, where they can facilitate the safe integration of utilities to minimize disturbance from multiple *infrastructure* projects in the same area.

i) To recommend that when *infrastructure* cannot protect a regulated feature, or part of a regulated feature, compensation for loss of ecosystem services be provided.

j) To recommend that the decision to pursue compensation referred to in policy 2.5.2 j) be subject to:
   i. all efforts to protect the feature being exhausted first;
   ii. the feature is not protected by any other applicable federal, provincial or municipal requirement(s); and
   iii. it taking place in consultation with the municipality or the proponent.

Compensation should:

- Only be considered once the Protection Hierarchy has been applied – avoid/minimize/mitigate first;
- Where feasible, take place in proximity to where the loss occurs or within the same watershed/sub-watershed;
- Be informed by current knowledge of NPCA's ecosystems and *watershed* strategies and any applicable municipal strategies;
- Strive for ecological net gain;
- Be carried out in a transparent and timely manner;
- Be based on an adaptive management approach incorporating monitoring and evaluation, where appropriate.

2.6 Municipal Drains

Municipal drains are an important piece of *infrastructure* for rural and agricultural land management, providing drainage systems which manage the impacts of flooding. *Municipal Drains* are created under the Drainage Act and municipalities are required to maintain and repair existing *municipal drains* and also make decisions for applications for new drains. Generally, *municipal drains* are considered *watercourses* as defined under the Conservation Authorities Act.

2.6.1 Objectives

It is the objectives of the *municipal drains* policies to:

a) Ensure that maintenance of existing *municipal drains* is undertaken in conformity with the Conservation Authorities Act and provincial standards, and that, where applicable, the *Five Tests* under the Act are met;

b) Provide guidance for evaluating the impacts of new *municipal drains*;

c) Promote coordination and collaboration with municipal partners and provincial agencies.

2.6.2 Policies

It is the policies of the NPCA to:

a) Maintenance Policies Approved by MNRF/OMAFRA/CA:

The Province provides direction for municipalities and conservation authorities to guide decision-making and approvals process for *municipal drains*. When making decisions related to *municipal drains* which fall within the NPCA's regulated areas, the NPCA will follow the Drainage Act and Conservation Authorities Act Protocol (DART Protocol). In the absence of any approved protocols, the normal Conservation Authorities Act permitting process shall apply.

b) *Municipal Drainage Activities* not subject to a Work Permit from the NPCA:

Standard compliance elements are required for the following *activities*, as outlined in the Province's Drainage Act and Conservation Authorities Act Protocol. Provided these works are conducted in accordance with the mitigation requirements of the DART Protocol, a work permit will not be required by the NPCA for:

i. Brushing bank slope;
ii. Brushing *top of bank*;
iii. Debris removal and beaver dam removal;
iv. Spot clean-out;
v. Culvert replacement;
vi. Bank repair or stabilization and pipe outlet repair;
vii. Dyke maintenance and repair;
viii. Water control *structure* maintenance and repair;
ix. Pump station maintenance and repair;
x. Bottom only cleanout (outside of regulated *wetland* limits);
xi. Bottom cleanout plus one bank slope (outside of regulated *wetland* limits); and,
xii. Full cleanout (outside of regulated *wetland* limits).

c) *Municipal Drainage Activities* subject to a Work Permit from the NPCA:

Any proposed maintenance within a *wetland* or *wetland* boundary shall be submitted to the NPCA for review and may require a work permit.

d) New *Municipal Drains*, Extensions and Alterations:

As per the Drainage Act, any works (physical or adjustment of the assessment schedule) proposed on a *municipal drain* shall be submitted to the conservation authority for review. New drains or extensions/alterations to the original engineer's report may require an NPCA Work Permit depending on location and any potential impacts under the *Five Tests* of the Conservation Authorities Act. Depending on the scope, nature and location of the work proposed, the NPCA may request an environmental appraisal (i.e. EIS) as per the Drainage Act review process.

2.7 Mineral Aggregates Resources

Under the Conservation Authorities Act Section 28 (2), areas licensed for aggregate extraction under the Aggregate Resources Act are exempt from conservation authority permitting *activities*. However, conservation authorities may bring local environmental and *watershed* knowledge into the application review process. Conservation Authorities are afforded an opportunity to review and provide comments directly, or through their participating municipalities, to MNRF on applications submitted under the Aggregate Resources Act, during the application review and consultation process.

2.7.1 Objectives

It is the objectives of the *mineral aggregate resources* policies to:

a) Provide guidance for commenting on Planning Act and Licence applications associated with an Aggregate Resources Act Licence application.

2.7.2 Policies

It is the policy of the NPCA:

a) Where appropriate, participate on Joint Application Review Team (JART) committees with municipalities for the review of Planning Act applications associated with an Aggregate Resources Act Licence application to:
   i. ensure that the required range of studies and work is completed by the applicant;
   ii. ensure that the studies are sufficient in terms of their technical content;
   iii. review of the studies and work of the applicant either by technical staff or by peer reviewers;
   iv. ensure a coordinated public and stakeholder consultation and engagement process.

b) That baseline environmental conditions be established early in the planning process to be used to make informed decisions that aim to avoid or minimize risks related to natural hazards.

c) That the mineral aggregate extraction does not create new natural hazards or aggravate existing natural hazards.

d) That the extraction phasing plans and rehabilitation plans be designed to minimize and mitigate risks related to natural hazards, and rehabilitate the extraction areas as early as possible in the lifetime of the operation.

e) While a permit from the NPCA is not required for *mineral aggregate operations*, the NPCA will use the policies of the NPCA Policy Document and Procedural Manual to guide the scoping of study requirements and recommendations on Planning Act applications.

f) That the JART technical report will be used by NPCA as the technical basis to develop recommendations on the Planning Act applications.

2.8 Niagara Escarpment Commission Development Permits

The Niagara Escarpment Commission is responsible for regulating *development* in the Niagara Escarpment Plan Area, which skirts the northern portion of the NPCA's *watershed*. The NPCA is responsible for reviewing and providing comments on Niagara Escarpment Plan Amendments and *Development* Permits which fall within the Plan Area and the NPCA's regulations also apply within the Niagara Escarpment Plan Area[2].

2.8.1 Objectives

It is the objectives of the Niagara Escarpment Commission *Development* Permit policies to:

a) Guide the NPCA is reviewing and providing comments on Niagara Escarpment Commission Development Permit applications.

[2] Note that the NEC does not maintain specific EIS guidelines and accordingly relies on NPCA and municipal EIS guidelines when reviewing NEC permits.

2.8.2 Policies

It is the policy of the NPCA:

a) To work collaboratively with the Niagara Escarpment Commission when providing technical advice on study and plan requirements (e.g., EIS, floodplain analysis, geotechnical analysis) in accordance with the policies of this document and the NPCA Procedural Manual.

b) To seek interpretation and guidance on the Niagara Escarpment Plan policies from Niagara Escarpment staff to inform NPCA's review of Niagara Escarpment Commission Development Permits.

c) Where an NPCA permit is also required within the Niagara Escarpment Plan Area of Development Control, the NPCA will not issue its Section 28.1 permit unless the proposed development is exempt under the Niagara Escarpment Planning and Development Act regulations, or a Niagara Escarpment Plan *Development* Permit has been issued and NPCA's decision is consistent with the Development Permit.

d) To consult with the Niagara Escarpment Commission staff for works proposed on NPCA-owned lands to determine Development Permit application needs.

e) Where NPCA has submitted a Development Permit application to the Niagara Escarpment Commission for works on NPCA-owned land, NPCA staff will review the Development Permit objectively and in accordance with the policies in this document and the NPCA Procedural Manual.

2.9 Climate Change

Climate change refers to "changes in long-term weather patterns caused by natural phenomena and human *activities* that alter the chemical composition of the atmosphere through the build-up of greenhouse gases which trap heat and reflect it back to the earth's surface" (Government of Canada, 2013). *Climate change* impacts have the potential to be wide-reaching, affecting ecosystems, agriculture, *infrastructure*, water supply, energy, transportation systems, tourism and *recreation*, human health and well-being, and ultimately the economy. The Government of Ontario, through the PPS, 2020 directs planning authorities to consider the impacts of *climate change* and the NPCA has a role to play in implementing provincial policy on this matter.

Adaptation efforts minimize the level of damage, hazard and risks associated with *climate change*, while also recognizing new opportunities presented with our changing climate (Conservation Ontario, 2015), including: flood management programs, ecosystem enhancements, water quality and quantity, municipal plan

review/input, local *climate change* monitoring and modelling, information management, *green infrastructure/stormwater management*, low water, carbon and water trading and offsets.

Mitigation efforts are focused on reducing greenhouse gas emissions and other causes that adversely and rapidly influence weather patterns and climatic conditions (Conservation Ontario, 2015). They include: green *building* technologies and retrofits (e.g., LEED), energy conservation, renewable energy, reforestation, carbon sequestration (e.g., *wetlands*), low impact *development* and sustainable transportation.

A number of the NPCA's current policies and programs help to mitigate the impacts of *climate change* and also assist with adaptation. The NPCA will continue to undertake programs and initiatives which assist with adaptation and mitigation, and participate, coordinate and collaborate with municipal partners and other agencies in addressing the impacts of *climate change*.

2.9.1 Objectives

It is the objectives of the *climate change* policies to:

a) Provide guidance for NPCA to be a leader in *climate change* research and analysis to support municipal and *watershed* partner policies, plans and programs to assess, mitigate and adapt to the *impacts of a changing climate* in the NPCA *watersheds*.

2.9.2 Policies

It is the policy of the NPCA to:

a) Support evidence-based decision-making for climate-resilient *watersheds* and shorelines.

b) Support decision makers and municipal partners with *watershed* data collection and analysis to understand *cumulative impacts*.

c) Develop a solid understanding of climate impacts and risks on NPCA *watersheds*.

d) Complete and maintain updated floodplain and regulation mapping within the *watershed*.

e) Update shoreline management plans with a climate resilience lens.

f) Support municipalities and the *development* sector to implement smart growth principles (e.g., preserve *open space*, farmland, natural areas, reduce urban sprawl).

g) Lead a proactive research agenda to determine *cumulative watershed impacts* and applied solutions from extreme weather and land-use changes.

h) Advance the implementation of *green infrastructure* best practices in future *development* proposals and through NPCA's demonstration projects to minimize impacts to the *watershed*.

i) Engage municipalities, the *development* community, and other private landowners in implementing *green infrastructure* and sustainability best practices and actions.

j) Identify opportunities for brownfields to enhance *green infrastructure* or innovative planning for in-fill *development*.

2.10 Natural Heritage

Municipalities are responsible for developing and implementing Official Plan policies and Zoning By-laws to identify, protect and enhance natural heritage systems to be consistent with the PPS, 2020 and to conform to *provincial plans* (e.g., Growth Plan and Greenbelt Plan). *Wetlands* are features that are both identified and protected through municipal Official Plan policies as natural heritage, and regulated features and areas under NPCA's Ontario Regulation 41/24. Where *wetlands* are regulated by the NPCA as per the definition in the Conservation Authorities Act the policies in this document and NPCA Procedural Manual apply.

***Wetlands* (Provincial Policy Statement (2020)):** means lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of *wetlands* are swamps, marshes, bogs and fens.

Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit *wetland* characteristics are not considered to be wetlands for the purposes of this definition.

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).

2.11 Stormwater Management Review

Water is essential for all life. Clean and abundant water is necessary to maintain the health of our natural environment, and ultimately the residents who live there. Managing the hydrologic cycle, or the water balance, through Stormwater Management (SWM) is a vital practice in planning and designing more robust and more resilient sustainable communities. The "NPCA's Stormwater Management Policies and Guidelines", 2010, is intended to provide a long-term plan to guide the safe and effective management of runoff in urban and urbanizing areas, while sustaining the health of local rivers and streams. The NPCA SWM Policies and Guidelines provide SWM, erosion and sediment control policies and criteria for existing and proposed development in the NPCA watershed. The SWM Policies and Guidelines document is meant to be used as a companion to local municipal SWM policies and guidelines. It is not meant to supersede local municipal criteria, and rather, the intent is to provide a consistent approach to SWM planning for all municipalities within the NPCA watershed.

2.11.1 Objectives

It is the objective of the stormwater management review policies to:

a) Support the municipalities in their review of a *development* proposal in accordance with the applicable municipal SWM criteria and guidelines for water quantity, water quality, erosion control, and site water balance for groundwater recharge as demonstrated through technical reports (e.g. SWM report).

2.11.12 Policies

It is the policy of the NPCA:

a) To provide comments, technical support or information related to natural hazards arising from the SWM for a proposed *development*, such as mitigating potential downstream flooding and erosion impacts.

b) To support the use of Low Impact Development (LID), *green infrastructure* and sustainable technologies to achieve the SWM criteria required for a proposed *development*.

2.12 Minister's Zoning Order

Section 28.1.2 of the Conservation Authorities Act applies to a *development* project that has been authorized by a MZO under the Planning Act, within an area regulated under Section 28(1) of the Conservation Authorities Act, outside of the Greenbelt Plan Area.

2.12.1 Objectives

It is the objective of the Minister's Zoning Order policies to:

a) Guide NPCA in providing comments on a municipal request for a Minister's Zoning Order under the Planning Act and in accordance with the policies of the Conservation Authorities Act.

2.12.2 Policies

It is the policy of the NPCA:

a) To participate in pre-consultation meetings with the municipalities when a request for a Minister's Zoning Order is proposed to identify NPCA's interests and potential implications with NPCA's policies and regulation.

b) To coordinate with municipalities to identify the technical studies, reports and plans required as conditions of the Minister's Zoning Order and NPCA's Section 28.1 permit.

c) NPCA may only impose conditions to the permit, including conditions to mitigate:
   i. Any effects the *development* project is likely to have on the control of *flooding*, *erosion*, *dynamic beaches or unstable soils or bedrock*.
   ii. Any conditions or circumstances created by the *development* project that, in the event of a *natural hazard*, might jeopardize the health or safety of persons or result in the damage or destruction of property.
   iii. Any other matters that may be prescribed by the regulation.

d) Require that the applicant submits a complete Section 28.1.2 permit application, with the required supporting documentation for any work in an NPCA-Regulated area. Approval of a Minister's Zoning Order does not constitute approval under the Conservation Authorities Act.

e) Requests for a hearing under s. 28.1.2 of the Conservation Authorities Act will follow the NPCA Hearing Procedures (Appendix E).

2.13 Land Securement

The NPCA has an increasingly important role in the securement of lands for the purpose of conservation and restoration of natural areas. The Conservation Authorities Act provides guidance on the governance and purpose of conservation authorities, including the powers to acquire by purchase, lease or otherwise any land that it may require, and to sell, lease or otherwise dispose of land. The NPCA has a Land Securement Strategy that provides the framework for the NPCA to secure public greenspace effectively using established best practices, sound decision-making, sustainable and innovative financial models, and collaboration.

Municipal Official Plans may contain a provision which requires the dedication of environmentally protected lands to a public authority as part of the *development* process. Implemented through the conditions of draft approval for the subdivision, these lands are generally those associated with a riverine valley system and include the hazard lands associated with that system and the associated access allowances. Further, environmental lands may contain a *wetland* feature and associated *buffers*.

2.13.1 Objectives

It is the objective of the land securement policies to:

a) Guide the NPCA in partnership with *watershed* municipalities in the securement of environmental lands through Planning Act approvals.

2.13.2 Policies

It is the policy of NPCA:

a) To work with its *watershed* municipalities early in the plan review process to identify opportunities for land securement and determine the appropriate public agency to take ownership of the environmental lands.

b) That NPCA will consider taking ownership of environmental lands through gratuitous dedication, if lands meet the criteria within NPCA's Land Securement Strategy and policies.

c) That NPCA will recommend to municipalities, through the provision of conditions of draft plan approval, that environmental lands be conveyed to the NPCA through a gratuitous dedication, and shall be

dedicated free and clear of all encumbrances and an easement(s) for access to these lands may be required. The donor of the property may also be required to pay a stewardship fee, to help cover costs associated with the long-term maintenance of the lands, which may include such things as:

i. Land management planning;
ii. Research and monitoring;
iii. Land operations; or
iv. Land administration

d) That prior to the close of a transfer of lands to the NPCA, NPCA will potentially require a number of legal and/or administrative items to be completed to ensure due diligence related to site conditions and any associates risks.

e) Arrangements for the conveyance of environmental lands to the NPCA shall be undertaken before or concurrent with the approval of *development* applications through the *development* approval process.

PART C: NPCA PERMITTING & ADMINISTRATION OF ONTARIO REGULATION 41/24

3.0 General Policies – Ontario Regulation 41/24

3.1 Regulated Areas

Through Part VI of the Conservation Authorities Act and Ontario Regulation 41/24 the NPCA has the authority to regulate, prohibit or require the authority's permission for *development activities* within its regulated areas. The NPCA's regulated areas are comprised of the following:

a) Lands adjacent to or close to the shoreline of the *Great Lakes-St. Lawrence River System* that may be affected by flooding, erosion or *dynamic beaches include the area starting from the furthest offshore extent of the authority's boundary to the furthest of the following distances with an additional 15 metres allowance inland:*
   i. The 100-year flood levels, plus the appropriate allowance for wave uprush, and, if necessary, for other water-related hazards, including ship-generated waves, ice piling and ice jamming;
   ii. The predicted long-term stable slope projected from the existing stable toe of the slope or from the predicted location of the toe of slope as the location may have shifted as a results of shoreline erosion over a 100-year period; and
   iii. Where a dynamic beach is associated with the waterfront lands, an allowance of 30 metres inland to accommodate dynamic beach movement.
b) River or stream valleys that have depressional features associated with a river or stream, whether or not they contain a *watercourse*, the limits of which are determined as follows:
   i. Where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus 15 metres, to a similar point on the opposite side;
   ii. Where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope, or if the toe of the slop is unstable, from the predicted location of the toe of the slope as results of stream erosion over a projected 100-year period, plus 15 metres, to a similar point on the opposite side;
   iii. Where the river or stream valley is not apparent, the valley extends to the furthest of the following distances:
      A. The distance from a point outside the edge of the maximum extent of the floodplain under the applicable flood event standard to the similar point on the opposite side; and
      B. The distance from the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard to a similar point on the opposite side.
c) *hazardous lands*;
d) *watercourses*;
e) *wetlands*; and

f) other areas within 30 metres of a *wetland*.

3.2 Detailed Mapping of Regulated Areas

Detailed mapping of the limits of the NPCA's regulated areas is available on-line and can also be viewed at the offices of the NPCA. Where there is a discrepancy between the NPCA's mapping and the descriptions provided in Ontario Regulation 41/24, the text description within the Regulation prevails. From time to time the NPCA will update its mapping to reflect changes in legislation and/or the best available information. When undertaking comprehensive updates to Regulated Area mapping the NPCA will engage municipalities, agencies and stakeholders in the process.

It is not necessary to map a feature before it can be regulated. The legal basis for delineating *regulated areas* is defined in the text of the *Regulation*. While the *Regulation* makes reference to the maps prepared by NPCA to provide a visual representation of the approximate regulation limits, and may be updated from time to time to reflect new technical information, the text of the *Regulation* prevails over the illustrative mapping. The mapping serves as a screening tool for the administration of the *Regulation*. Site investigations and detailed studies requested at the time of an application may further refine or delineate the *regulated areas*.

3.3 Regulated Activities

Unless otherwise stated in this document, no *development activity* shall be undertaken within an NPCA Regulated area without permission from the NPCA.

As per Subsection 1(1) of Ontario Regulation 41/24, *development activity* means:

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.

The definition of *development* under the Provincial Policy Statement, 2020, is distinctly different from the definition of *development activity* under the Conservation Authorities Act. Please refer to the Glossary for the two definitions.

3.3.1 Typical Activities Subject to an NPCA Work Permit

The following lists some of the typical forms of *development activities* which require an NPCA Permit from the NPCA:

a) Construction of *buildings*, *building* additions and *structures* including modification or *reconstruction* of foundations which support existing *buildings*, regardless of size, other than those listed in Section 3.5.4;
b) breakwalls, revetments, rubble groynes and jetties;
c) headland beach system and artificial nourishment (beach, berm or dune);
d) docks, other than those listed in Section 3.5.4;
e) stairs, decks, gazebos;
f) boat ramps, boat storage *structures*;
g) dredging;
h) swimming pools;
i) temporary or permanent placement of *fill*, grading, removal of *fill*, or *site alteration*;
j) retaining walls;
k) trailers and mobile homes;
l) *municipal drains* in accordance with the DART protocol; and
m) certain forms of *infrastructure*, such as but not limited, bridges, crossings, roads and other types of *infrastructure* which have received an approval under the Environmental Assessment Act or Planning Act.

The above-noted list is not considered to be exhaustive and is provided for explanatory purposes only. Note that works associated with a demolition permit under the Building Code may require permission from the NPCA where the works constitute a *development activity*.

3.3.2 Relationship to Planning Act and Niagara Escarpment Planning and Development Act

Any approvals required under the Planning Act or the Niagara Escarpment Planning and Development Act must be obtained before the NPCA can grant permission for a *development activity* in a Regulated Area. NPCA will not issue its Section 28.1 permit unless the proposed *development activity* is exempt under the Niagara Escarpment Planning and Development Act regulations, or a Niagara Escarpment Plan Development Permit has been issued and NPCA's decision is consistent with the Development Permit.

3.4 Regulation Tests

An NPCA Permit may be granted if in the opinion of the NPCA that:

a) the *development activity* is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock;

b) the *development activity* is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property; and
c) any other requirements that may be prescribed by the regulations are met.

An NPCA Permit to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream, *watercourse* or *wetland* may be issued if it meets the policies of Chapters 8 and 9 and the *Five Tests* described above.

3.5 Development Activities Which Do Not Require an NPCA Permit

The following activities require permission (e.g. clearance letter) from the NPCA but do not require an NPCA Work Permit.

3.5.1 Agricultural Lands within the NPCA's Regulated Areas

Agricultural *activities* within regulated areas generally do not require an NPCA Permit. The following *activities* are not considered *development* and do not require a work permit unless they would interfere with a watercourse or *wetland*:

a) Non-structural *activities* associated with an existing agricultural use, such as cropping, livestock management, tilling, fence row clearing;
b) Non-structural *activities* that would not result in alterations to the existing grade such as gardens, landscaping, shrub/tree planting, nurseries, woodlot management;
c) Routine maintenance and/or upkeep of existing agricultural *buildings* or *structures* which do not change the existing footprint, square footage, height and/or use. This could include, but is not limited to, window or roof repair, siding, etc.

Certain forms of *agricultural uses* and *agriculture-related uses* may require a work permit from the NPCA, depending on the nature of the application and any considerations related to the *Five Tests* under the Conservation Authorities Act. Note that agricultural *activities* which require a Building Permit from a local municipality may also require an NPCA Permit (where the proposed developed is within an area regulated by the NPCA).

3.5.2 Landscaping

Generally, an NPCA Permit is not required for the addition of top soil to lawns or the augmentation of soil mixtures for landscaping purposes, to a maximum thickness of 50 mm. The raising of grades to allow for changing the landscape characteristics of a property is considered *development*.

3.5.3 Works Undertaken by Provincial or Federal Government

Any work undertaken by a board or commission (e.g. Niagara Parks Commission) that is performing its functions for or on behalf of the Province of Ontario or the Government of Canada does not require a Permit from the NPCA.

3.5.4 Activities Described in Section 5 of Ontario Regulation 41/24

The following development activities are identified in Section 5 of Ontario Regulation 41/24 and do not require an NPCA Work Permit:

1. the construction, reconstruction, erection or placement of,
    a. a seasonal or floating dock that,
        i. is 10 square metres or less,
        ii. does not require permanent support structures, and
        iii. can be removed in the event of flooding,
    b. a rail, chain-link or panelled fence with a minimum of 75 millimetres of width between panels, that is not within a wetland or watercourse,
    c. agricultural in-field erosion control structures that are not within and that do not have any outlet of water directed or connected to a watercourse, wetland or river or stream valley,
    d. a non-habitable accessory building or structure that,
        i. is incidental or subordinate to the principal building or structure,
        ii. is 15 square metres or less, and
        iii. is not within a wetland or watercourse, or
    e. an unenclosed detached deck or patio that is 15 square metres or less, is not placed within a watercourse or wetland and does not utilize any method of cantilevering;
2. the installation of new tile drains that are not within a wetland or watercourse, within 30 metres of a wetland or within 15 metres of a watercourse, and that have an outlet of water that is not directed or connected to a watercourse, wetland or river or stream valley, or the maintenance or repair of existing tile drains;
3. the installation, maintenance or repair of a pond for watering livestock that is not connected to or within a watercourse or wetland, within 15 metres of a wetland or a watercourse, and where no excavated material is deposited within an area where subsection 28 (1) of the Act applies;
4. the maintenance or repair of a driveway or private lane that is outside of a wetland or the maintenance or repair of a public road, provided that the driveway or road is not extended or widened and the elevation, bedding materials and existing culverts are not altered;

5. the maintenance or repair of municipal drains as described in, and conducted in accordance with the mitigation requirements set out in the Drainage Act and the Conservation Authorities Act Protocol (DART Protocol), approved by the Minister and available on a government of Ontario website, as it may be amended from time to time; and
6. the reconstruction of a non-habitable garage with no basement, if the reconstruction does not exceed the existing footprint of the garage and does not allow for a change in the potential use of the garage to create a habitable space.

3.6 Extensions and Renewals of NPCA Permits

1) Where an NPCA Permit has expired and the Permittee has applied to renew their NPCA Permit, the renewal application will be reviewed in accordance with these policies.
2) Where a Permittee is requesting an extension to an NPCA Permit:
    a) The request must meet the requirements of Ontario Regulation 41/24.
    b) The requested extension will be reviewed in accordance with the NPCA Policies in effect at the time the NPCA Permit was first approved.

3.6.1 Use of Native Plant Species

The NPCA recognizes the importance of a natural approach to landscaping through the use of native, non-invasive and locally appropriate species. Some Planning Act applications and NPCA Permits may require re-vegetation and enhancement of disturbed areas and in these instances, the NPCA will encourage re-vegetation plans and landscaping projects to include an appropriate mix of native, non-invasive and locally appropriate plantings in accordance with the NPCA Procedural Manual.

3.7 General Regulation Policies

The following general policies apply to all regulated areas.

1) In support of an application for *development activity* within a regulated area or upon reviewing an application under the Planning Act (or other relevant piece of legislation), the NPCA may request any of the following supporting studies or plans be completed to clarify the impacts of proposed *development* and demonstrate conformity with NPCA Policies and Ontario Regulation 41/24:
    a) Environmental Impact Study
    b) water balance;
    c) geotechnical study;
    d) *flood plain mapping*;

e) hydraulic analysis;
f) coastal study;
g) *stormwater management* plans;
h) hydrological study;
i) erosion and sediment control plans;
j) landscaping plans; and
k) other supporting studies, as required.

2) Anywhere in this document that requires a technical study, it is understood that the study is to be undertaken by qualified professional in accordance with applicable NPCA Guidelines and Procedural Manual, and is to be completed to the satisfaction of the NPCA.

3) Where there may be a higher level of risk to public health, safety or property damage from a natural hazard, a proponent may be required to assess how those risks may be affected by climate change, and how those risks should be managed and mitigated.

4) Any *development activity* associated with a capital project and/or maintenance conducted by the NPCA within a Regulated Area on NPCA-owned lands shall comply with the policies of this document. An internal clearance form shall be obtained before commencing any work.

5) Where a regulated area pertains to more than one natural hazard (e.g., lands susceptible to flooding that are part of a *wetland*), policies will be applied jointly, and where applicable, the more restrictive policies will apply.

6) Wherever possible, *development activities* must not preclude access for emergency works and maintenance to *erosion hazards*.

7) Applications related to existing *development activity* that is susceptible to natural hazards must demonstrate that there is no increase in risk to public safety or property damage and no new hazards are created;

8) *Development activities* should only be considered within a natural hazard if there is no other feasible location outside of the natural hazard.

9) In addition to the policies relating to any specific feature, where the placement of *fill* greater than 250 m^3 is proposed, the following additional policies apply:

a) The *fill* is *inert* and meets appropriate provincial standards, including any regulations under the Environmental Protection Act;
b) the placement of *fill* shall not interfere with a *watercourse* or *wetland*;
c) the placement of *fill* shall not adversely affect the control of flooding, erosion and *dynamic beaches*;
d) there are no impacts on the control of *unstable soils or bedrock*;
e) the placement of *fill* satisfies the requirements and standards of Municipal By-Laws;
f) the placement of *fill* may be seasonally restricted;
g) the risk to public safety is not increased;
h) there are no adverse impacts on groundwater quality, quantity, flow or functions (recharge or discharge);
i) a *setback* of 30 metres from PSWs and all other *wetlands* is maintained;
j) the site is graded during the *fill* operation and stabilized as soon as possible subsequent to *fill* placement and final grading; and
k) The placement of *large fill* may require the following studies, subject to scoping during the pre-consultation process and in accordance with the NPCA Procedural Manual:
    i. Environmental impact study;
    ii. hydrogeological study;
    iii. geotechnical study;
    iv. hydraulic analysis;
    v. *stormwater management* plan; and
    vi. other supporting studies as required.

4.0 GREAT LAKES AND NIAGARA RIVER SHORELINE HAZARD

4.1 Shoreline Hazards

The shorelines along Lake Ontario, Lake Erie and the Niagara River are dynamic places, as they are in a state of constant flux. Shoreline areas are made up of an accumulation of detritus material such as sediment that is continually being transported and deposited by wave action, currents and wind. The composition of sediments varies from clay and silt to sand and gravel, to cobbles or even boulders. As a result, shorelines are constantly being shaped and re-shaped. These changes can range from a period of a few hours to days or even years and decades in response to the changes in waves, winds, water levels currents and the movement and accumulation of ice. The NPCA is responsible for regulating *development activities* within the Lake Ontario, Lake Erie and Niagara River shoreline hazard areas to minimize risks to life, property damage, social disruption and adverse environmental impacts. The shoreline hazard area includes the following natural hazards:

a) Shoreline *flooding hazard*;
b) Shoreline erosion and slope stability hazard; and,
c) *Dynamic beach hazard*.

4.1.1 Niagara River

The Niagara River is considered a Connecting Channel as it connects two Great Lakes and is part of the *Great Lakes, St. Lawrence River System*. Although it is a river, it is regulated differently than other *watercourses*. The NPCA does not regulate the *flooding hazard* on the Niagara River, except for 350 metres from the mouth of the Niagara River at Lake Ontario and an area at the head of the Niagara River within the *100 year flood* elevation of 177.11 metres GSC (Geodetic Survey of Canada Datum) of Lake Erie (an area which includes lands around the Peace Bridge and within the urban area of the Town of Fort Erie). These areas are regulated under the shoreline hazard policies of this section.

Much of the land along the bank of the Niagara River is owned by the Niagara Parks Commission (NPC). As a Provincial Agency on 'crown lands', Niagara Parks is exempt from municipal legislation as well as the Conservation Authorities Act. Land under NPC ownership is not subject to Ontario Regulation 41/24. However,

land along the Niagara River not owned by the NPC is regulated by the NPCA. Planning Act applications and Building Permit applications on privately owned lands along the Niagara River will be reviewed by the NPCA to address *erosion hazards* associated with steep slopes (slope height greater than or equal to 3 metres) and *flooding hazards* where the Niagara River meets Lake Erie and Lake Ontario.

4.1.2 Great Lakes and Niagara River Shoreline Flooding Hazard

4.1.2.1 Flooding Hazard Limits along the Great Lakes

Flooding has historically and repeatedly caused considerable damage along shorelines. Shorelines may experience various magnitudes and durations of shoreline flooding as the result of a combination of:

a) Higher, lake wide, static water levels due to abnormally high levels of precipitation and *runoff* and the annual lake level fluctuations;
b) Short-term, storm induced wind setups; and,
c) Wave action which rushes up the shore and other water related hazards, including wave overtopping, ice jamming and piling.

4.1.2.2 Approach to Flood Hazards along the Great Lakes

In general, *development activity* is restricted within the shoreline flood hazard and is subject to mitigation measures. Certain forms of *development activities* are prohibited. The flood hazard within NPCA's regulated areas shall be mitigated prior to *development activity* approval.

4.1.2.3 100-Year Flood Level

The *100-year flood* level is the sum of the mean lake level and storm surge with a combined probability of a 100-year return period (i.e., on average, has a 1 percent probability of occurring in any given year or on average once in 100 years).

4.1.2.4 100-Year Flood Levels for Lake Erie

The *100 Year Flood* levels for Lake Erie are illustrated in **Table 4.1** below (figures derived from Lake Erie Shoreline Management Plan, 2010):

Table 4.1: 100 Year Flood Levels for Lake Erie		
Location	**100 Year Flood Elevation (metres GSC)**	**Floodproofing Elevation (metres GSC)**
• Sector E-21 Mohawk Point (SMP reaches 1-1 and 1-2)	176.7	177.0
• Sector E-22 Port Colborne (SMP reaches 2-1 to 7-4)	176.8	177.3
• Sector E-23 Port Abino (SMP reaches 7-4 and 7-9)	176.9	177.3
• Sector E-24 Crystal Beach (SMP reaches 8-1 and 9-3)	177.0	177.4
• Sector E-25 Fort Erie (SMP reaches 10-1 and 10-10)	177.1	177.6

4.1.2.5 100-Year Flood Levels for Lake Ontario

The *100 Year Flood* levels for Lake Ontario are illustrated in **Table 4.2** below (figures derived from Lake Ontario Shoreline Management Plan, 2009):

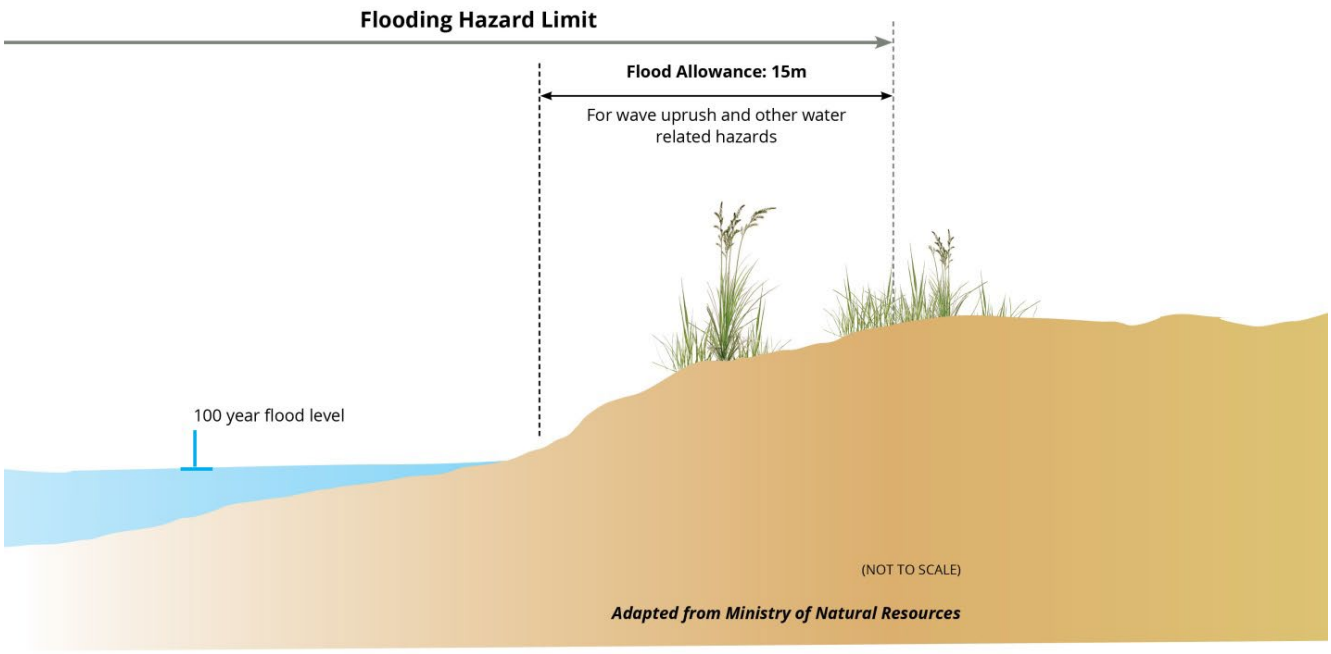
Table 4.2: 100 Year Flood Levels for Lake Ontario		
Location	**100 Year Flood Level (metres GSC)**	**Floodproofing Elevation (metres GSC)**
• Fifty Point to Port Weller, reaches 0 to 36	76.01	76.50
• Port Weller to Mississauga Point, reaches 37 to 58	76.15	76.62

4.1.2.6 Flood Hazard Area along the Great Lakes Shoreline

The shoreline policies restrict (except as permitted in accordance with the policies of this document) *development activities* within the *flooding hazard*. The *flooding hazard* limit considers the cumulative impact of the *100-year flood* level, *wave uprush* and, other water-related hazards, including ship-generated waves, ice piling and ice jamming. Specifically, the *flooding hazard* combines the *100-year flood* level (i.e., static water level, storm surge, and wind setup), and a flood allowance for *wave uprush* and other water related hazards, including ship-generated waves, ice piling and ice jamming. In the absence of a site-specific *wave uprush* assessment, a 15 metre horizontal *setback* shall be applied as a conservative estimate of *wave uprush*. A

reduction to this *setback* shall only be considered if an engineering analysis by a qualified engineer (completed by the applicant and approved by the NPCA) justifies the reduction. **Figure 4.1** illustrates the shoreline flood hazard.

Figure 4.1: Great Lakes Shoreline Flooding Hazard



4.1.2.7 Wave Action and Wave Uprush

Winds can drive water farther inland. The extent of the *wave uprush* can be influenced by a range of site-specific factors, such as the presence of shore protection works or other *structures*. For planning purposes, the generic allowance for *wave uprush* is 15 metres to be measured horizontally from the *100 year flood* level. However, given the potential variability along the shorelines, a site-specific analysis completed by a qualified engineer may be required to determine the appropriate *wave uprush* allowance on a specific site.

4.1.3 Great Lakes and Niagara River Erosion Hazard

4.1.3.1 Approach to Erosion Hazards along the Great Lakes

In general, *development activity* is restricted within the *erosion hazard* and is subject to mitigation measures prior to *development activity* approval. Certain forms of *development activities* are prohibited.

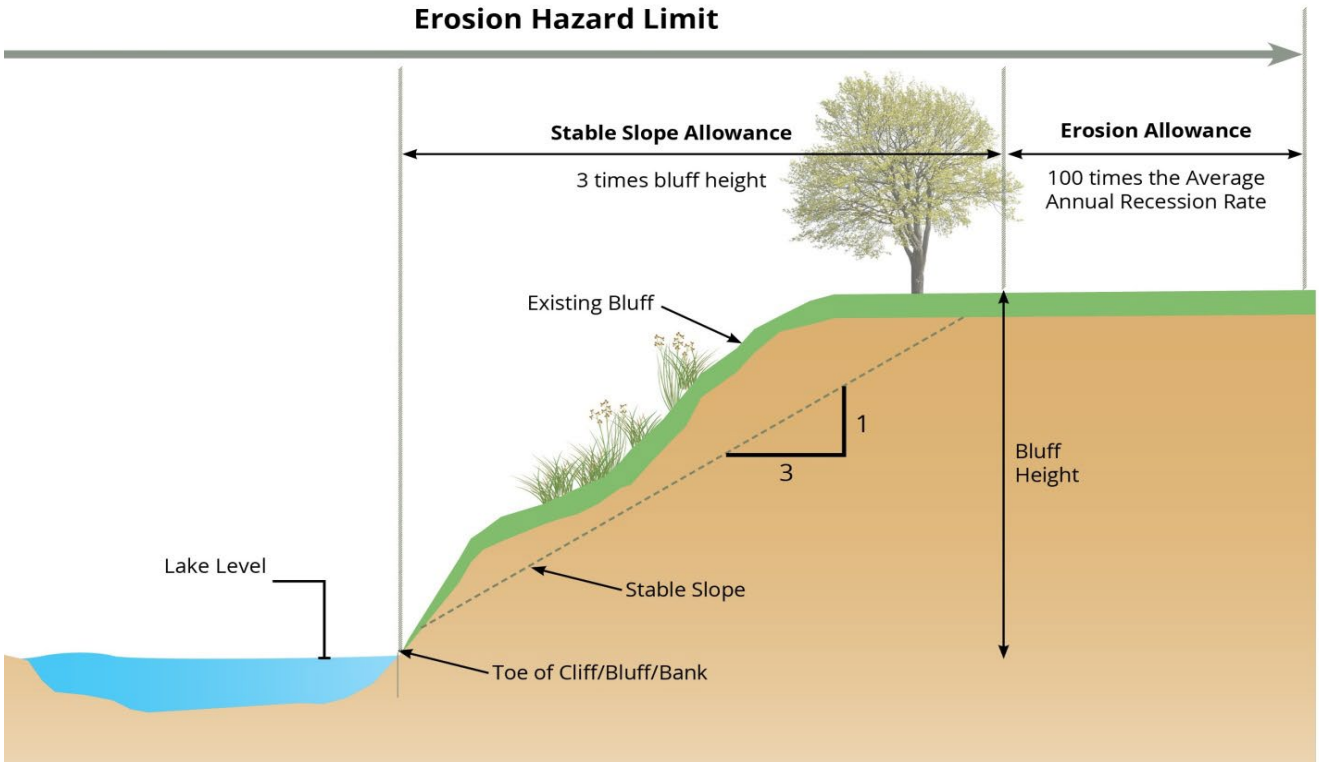
4.1.3.2 Erosion Allowance and Slope Stability Allowance

Shoreline lands along the Great Lakes shoreline and at the mouth of the Niagara River are the lands that are subject to erosion and in some cases, slope stability issues. Erosion is the loss of soil/rock at the ground surface, while slope failure consists of large masses of soil/rock sliding along a planer surface. The *erosion hazard* is determined by the sum of the following elements:

a) Erosion allowance; and,
b) Stable slope allowance.

Figure 4.2 illustrates the Great Lakes shoreline *erosion hazard*.

Figure 4.2: Great Lakes Shoreline Erosion Hazard



4.1.3.3 Erosion Allowance

The erosion allowance varies along the shoreline based on the annual recession rate and the presence of shore protection. The erosion allowance, measured from the limits of the stable slope allowance, shall be calculated based on the recession rate times 100 years. If shore protection exists, the erosion allowance can be reduced by the approximate remaining functional life of the shore protection.

4.1.3.4 Stable Slope Allowance

The stable slope allowance along the Great Lakes shoreline is 3:1 (horizontal to vertical) in the absence of a site-specific geotechnical study (see Policy 5.1.4.9).

4.1.3.5 Technical Studies

Technical studies undertaken by a qualified coastal engineer and/or geotechnical engineer may be required to determine the exact extents of the shoreline *erosion hazard* limits.

4.1.4 Great Lakes Dynamic Beach Hazard

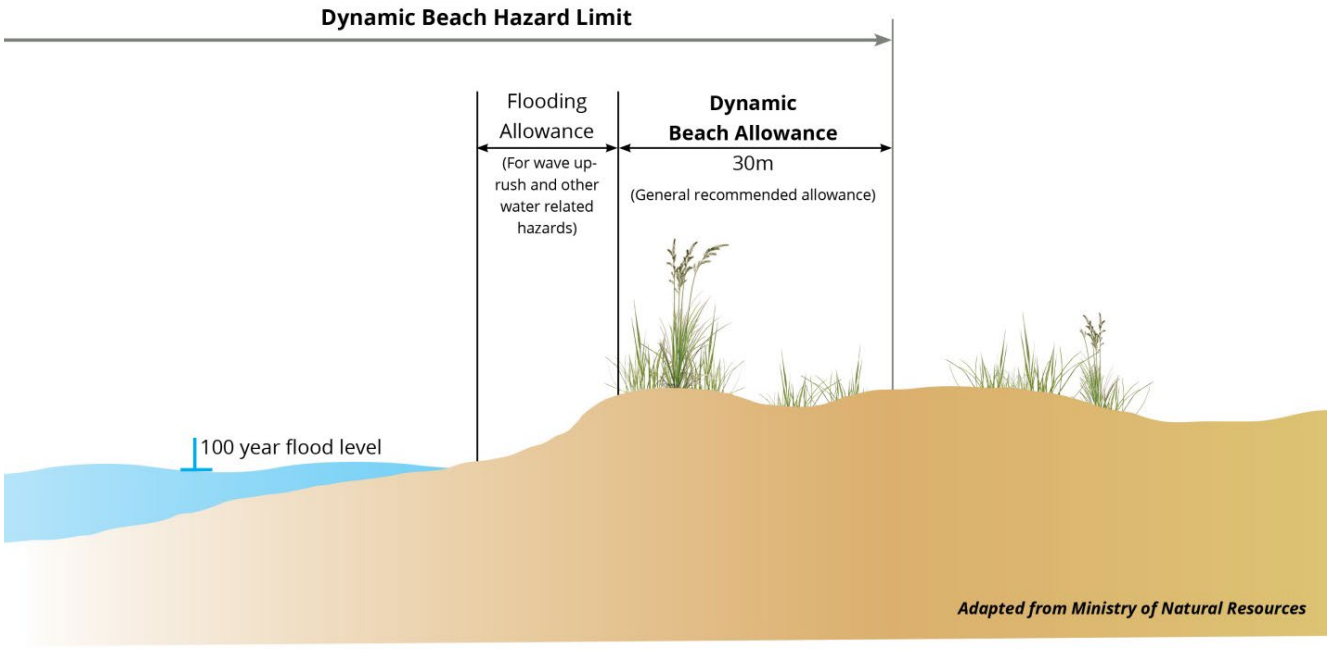
4.1.4.1 Approach to Dynamic Beach Hazard

The *dynamic beach hazard* is the area of unstable accumulation of shoreline sediments along the Great Lakes. The *dynamic beach hazard* within NPCA's regulated areas shall be mitigated prior to *development activity* approval. There are 23 *dynamic beaches* along the shores of Lake Erie and 10 located along the shores of Lake Ontario. In general, *development activity* is restricted within the *dynamic beach hazard* and is subject to mitigation measures, including non-structural and structural protection measures (refer to the current Lake Erie and Lake Ontario Shoreline Management Plans, as amended from time to time). Certain forms of *development activities* are prohibited.

4.1.4.2 Defining the Hazard

A *dynamic beach* is defined where the beach deposit is at least 0.3 metres in thickness, 10 metres in width and 100 metres in length based on provincial standards. The generic *setback* for *development activities* along the Great Lakes shoreline should be 30 metres from the limits of the shoreline flood hazard (**Figure 4.3**). A site-specific analysis completed by a qualified engineer may be completed to determine the extent of the *dynamic beach hazard*.

Figure 4.3: Dynamic Beach Hazard



4.2 POLICIES FOR GREAT LAKES SHORELINE HAZARDS

4.2.1 Objectives

The objectives for the shoreline hazard policies are to:

a) Prevent loss of life and minimize potential for property damage and social disruption;
b) Reduce the potential for incurring public costs associated with the impacts of shoreline hazards;
c) Manage existing risks and reduce the potential for future risks;
d) Promote a co-ordinated approach to the management of the shoreline; and,
e) Reduce the potential for adverse impacts to shorelines.

4.2.2 Development Activities within the Shoreline Hazard

Unless exempt under Section 3.5.4, *Development activities* and *site alteration* within the Great Lakes and Niagara River regulated area shall not be permitted except in accordance with the policies of this Chapter.

4.2.3 New Buildings and Structures

4.2.3.1 New Habitable Buildings and Ground Floor Additions

New *buildings* and *structures*:

a) Are not permitted within the stable slope allowance or the *dynamic beach hazard*.

b) May be permitted within the *flooding hazard* provided:

   i. Means are provided to mitigate the *wave uprush* hazard (i.e., shutters installed on windows).
   ii. Means are provided to mitigate the *100 year flood* hazard (i.e. no openings are constructed within the *structure* below the regulatory *100 year flood* elevation and *safe access*/egress is provided).
   iii. The NPCA is satisfied that no practical alternative exists to locate the proposed *building* or *structure* outside of the *flooding hazard*.

c) May be permitted within the erosion allowance provided:

   i. There is an appropriate level of shore protection in place and the shore protection is in good repair for the site conditions.
   ii. There is a minimum 5 m wide maintenance access provided.
   iii. A *setback* from the stable slope allowance of 7.5 metres is provided. Notwithstanding this, the 7.5 metre requirement may be reduced subject to a geotechnical study.
   iv. The NPCA is satisfied that there is no reasonable alternative location outside of the *erosion hazard* and that the *building* or *structure* is being placed in a low risk location.

4.2.4 Reconstruction, Repair and Interior Alterations to Existing Buildings and Structures

4.2.4.1 Reconstruction of Existing Buildings and Structures

The replacement of existing *buildings* or *structures*:

a) *Buildings* destroyed by flood and/or erosion forces will not be permitted to be reconstructed at the same location unless it can be conclusively demonstrated that the Great Lakes Hazards can be adequately mitigated to the satisfaction of the NPCA.

b) *Buildings* or *structures* destroyed by forces other than flood and erosion may be reconstructed within the *Dynamic Beach Hazard* provided:
   i. the *building* or *structure* is of the same use, the same size or smaller than the original *building* or *structure* that was destroyed and contains the same number of dwelling units;
   ii. the design minimizes impact on the *dynamic beach*;
   iii. there is no practical alternative location outside of the *dynamic beach hazard*; and,
   iv. The proposed *development* meets all other relevant policies of this Document.

c) *Buildings* or *structures* destroyed by forces other than flood and erosion may be reconstructed within the stable slope allowance provided:
   i. The *building* or *structure* is of the same use, the same size or smaller than the original *building* or *structure* that was destroyed and contains and contains the same number of dwelling units;
   ii. there is no practical alternative location outside of the stable slope allowance;
   iii. Adequate shore protection is in place;
   iv. A geotechnical study is provided indicating that the proposed *development* will not be adversely impacted by the adjacent slope; and,
   v. The proposed *development activity* meets all other relevant policies of this Document.

d) *Buildings* or *structures* destroyed by forces other than flood and erosion may be reconstructed within the erosion allowance provided:
   i. Adequate shore protection is in place;
   ii. A *setback* from the stable slope allowance of 7.5 metres is provided. Notwithstanding this, the 7.5 metre requirement may be reduced subject to a geotechnical study.
   iii. there is no practical alternative location outside of the *erosion hazard* and that the *building* or *structure* is being placed in a low risk location; and
   iv. The proposed *development activity* meets all other relevant policies of this Document.

e) Repairs and maintenance, including interior alteration to existing *buildings* or *structures* within the flood hazard, *dynamic beach hazard*, stable slope allowance and the erosion allowance are permitted provided that:
   i. the risks associated with flooding and erosion are low;
   ii. any interior renovation does not result in an increase in the number of dwelling units;
   iii. the internal renovation does not result in a new use prohibited by Section 2.3.2.1 e);
   iv. electrical, mechanical and heating services are located above the level of the *Regulatory flood*, wherever possible; and
   v. there is no risk of structural failure.

4.2.5 Additions to Existing Buildings and Structures

4.2.5.1 New Habitable Building and Ground Floor Additions

Additions to existing *buildings* and *structures*:

a) Are not permitted within the stable slope allowance or the *dynamic beach hazard*.

b) Are permitted within the *flooding hazard* provided:

   i. Means are provided to mitigate the *wave uprush* hazard (i.e., shutters installed on windows).
   ii. Means are provided to mitigate the *100 year flood* hazard (i.e. no openings are constructed within the *structure* below the regulatory *100 year flood* elevation and *safe access*/egress is provided).
   iii. The NPCA is satisfied that no practical alternative exists to locate the proposed *building* or *structure* outside of the *flooding hazard*.

c) Are permitted within the erosion allowance provided:

   i. There is an appropriate level of shore protection in place and the shore protection is in good repair for the site conditions.
   ii. There is an appropriate maintenance access provided.
   iii. A *setback* from the stable slope allowance of 7.5 metres is provided. Notwithstanding this, the 7.5 metre requirement may be reduced subject to a geotechnical study.
   iv. The NPCA is satisfied that there is no reasonable alternative location outside of the *erosion hazard* and that the *building* or *structure* is being placed in a low risk location.

Proposals for additional storeys to existing *buildings* or *structures* located within the shoreline flood hazard or the erosion allowance are permitted provided:

   i. *Safe access* and egress is provided;
   ii. No new dwelling units are created as a result of the addition;

iii. Other proposed improvements required to accommodate additional storeys, such as a replacement to an existing septic system, comply with the policies of this document; and,

iv. The proposed addition is not located in the stable slope allowance or *dynamic beach hazard*.

4.2.6 Accessory Buildings and Structures

Accessory buildings and structures:

a) Are not permitted within the stable slope allowance or the *dynamic beach hazard*.

b) Are permitted within the *flooding hazard* provided it incorporates flood-proofing.

c) Are permitted within the erosion allowance provided:

i. There is an appropriate level of shore protection in place and the shore protection is in good repair for the site conditions;

ii. The location does not obstruct maintenance access to and along existing shoreline protection works;

iii. A *setback* from the stable slope allowance of 7.5 metres is provided. Notwithstanding this, the 7.5 metre requirement may be reduced subject to a geotechnical study.

iv. The NPCA is satisfied that there is no reasonable alternative location outside of the *erosion hazard* and that the *building* or *structure* is being placed in a low risk location.

4.2.6.1 Decks, Stairs and Boardwalks

Notwithstanding Section 4.2.5, decks, stairs, and boardwalks are permitted subject to the following:

a) Decks are permitted within the flood hazard and *erosion hazard* provided safety concerns due to flood hazards are addressed and there is an appropriate level of shore protection in place and the shore protection is in good repair for the site conditions. Decks are not permitted within the stable slope allowance or the *dynamic beach hazard*.

b) Stairs are permitted within all shoreline hazards. Stairs within the stable slope allowance are to be constructed perpendicular to the shoreline unless otherwise required to comply with accessibility standards under the Building Code.

c) Board walks are permitted within the *erosion hazard* provided the *structure* is not at risk for 10 years (3 metres). Board walks are permitted within the flood hazard provided safety concerns due to flooding are addressed. Board walks are permitted within the *dynamic beach hazard* only as perpendicular access to the shore. Board walks are not permitted within the stable slope allowance.

4.2.6.2 Swimming Pools

In-ground and above-ground swimming pools are not permitted within the shoreline *flooding hazard*, stable slope allowance or *dynamic beach hazard*. Swimming pools are permitted within the shoreline erosion allowance provided:

a) Adequate shore protection exists.
b) A *setback* from the stable slope allowance of 7.5 metres is provided. Notwithstanding this, the 7.5 metre requirement may be reduced subject to a geotechnical study.
c) Drainage impacts are addressed.
d) The location of the pool does not obstruct maintenance access to and along existing shoreline protection works.

4.2.7 Private Sewage Disposal Systems

New *private sewage disposal systems* are not permitted within the shoreline hazard area. The replacement of *private sewage disposal systems* which are associated with an existing use may be permitted within the shoreline hazard area if it has been demonstrated to the satisfaction of the NPCA and other regulatory agencies that the control of flooding, erosion, *dynamic beaches* or unstable soils or bedrock will not be increased. Where feasible, the location of the replacement *private sewage disposal system* shall be located outside of the shoreline hazard area.

4.2.8 Shoreline Protection Works

Shoreline protection works are generally defined as a combination of structural works with landform modifications designed, and constructed, to address the impacts of flooding and other water related hazards and to arrest the landward retreat of shorelines subject to erosion. The shoreline zone is characterized by a complex interaction of short-term and long-term water level variations, waves and currents, morphology, sediments and protection *structures*.

Shoreline protection works shall consider natural coastal processes and be effective against long-term erosion, preserve cobble/shingle beaches, and not adversely impact neighbouring shoreline. There may be circumstances when specialized shore protection methods are considered for zones of no shoreline protection to allow for natural dynamic beach processes to continue.

The design and installation of the protection works should be such that access to the shoreline protection works by heavy machinery for regular maintenance purposes and/or to repair the protection works, should failure occur, should not be prevented. The following outlines the requirements for shoreline protection works:

a) The purpose or objective of the proposed works must be clearly defined.
b) The shoreline works must be designed according to accepted scientific coastal engineering principles, and shall conform to the recommendations of the appropriate Shoreline Management Plans.
c) The works may be required to be designed and the installation supervised by a professional engineer with experience and qualifications in coastal engineering.
d) Slope stability may be required to be assessed by a professional geotechnical engineer.
e) The ownership of land, where the protection works are proposed, must be clearly established by the applicant.
f) Where the applicant does not own the land, written permission shall be obtained from the landowner allowing for the construction of the proposed shore protection.
g) The design and installation of protection works must allow for an appropriate access corridor to and along the protection works for equipment and machinery in order to undertake maintenance and repair of the protection works should failure occur. Where shore protection works are shared across properties, a shared access route may be provided.
h) The works should not aggravate existing hazards and/or create new hazards at updrift or downdrift properties.
i) In areas of existing *development activity*, protection works should be coordinated with adjacent properties.
j) All works should be located above the 80th percentile of the High Water Mark as defined by Fisheries and Oceans Canada: Lake Erie 174.62 metre and Lake Ontario 75.32 metre (IGLD 1985).

5.0 CONFINED RIVER AND STREAM VALLEYS

5.1 WHAT ARE VALLEYLAND EROSION HAZARDS?

5.1.1 Valleys

Valleys are depressional features associated with a river or stream, which may or may not contain a *watercourse*. Where a *watercourse* is present, the *watercourse* may be either permanent or intermittent. The boundaries of a valley are defined by the primary *top of bank* on each side of the landform depression.

The valleyland resources within the NPCA jurisdiction can be categorized by - steep `V' shaped valleys and broad `U' shaped stream corridors. Generally, the steep valley systems are found north of the Niagara Escarpment in the western portions of Niagara-on-the-Lake and St. Catharines, as well as the eastern portion of the Town of Lincoln. The broader stream corridors are found south of the Escarpment, in Fort Erie, Port Colborne, Wainfleet and Haldimand County.

5.1.2 Erosion Hazard

Erosion hazard refers to 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. (PPS, 2020). The *erosion hazard* limit includes two different elements: erosion; and slope stability.

5.1.2.1 Erosion

Erosion means the process of gradual washing away of soil by water movement or seepage which may occur in one of the following ways:

a) Rainfall or snowmelt and surface *runoff* (sheet, rill or gully erosion);
b) Internal seepage and piping;
c) Water flow (banks or base of river, creek, channel); and
d) Wave Action (shorelines of ponds, lakes and bays)

Erosion impacts soil at the particle level by dislodging and removing the particles from the parent mass (with water being the transporting agent). Wind and frost may also weather and transport soil particles.

5.1.2.2 Slope Instability

Slope instability is the sudden movement or sliding of a large mass of soil over a failure plane. Slope instability can occur in many ways, such as:

a) Changes in slope configuration, such as steepness or inclination.
b) Increases in loading on or near the slope, such as *structures* or *filling*.
c) Changes in groundwater conditions or soil drainage (e.g. heavy rainfall, spring melt, drainage blocked by *filling*, broken watermains, etc.).
d) Loss of vegetation cover and root systems.
e) Slope erosion (MNR Technical Guide, River and Stream Systems: Erosion Hazard Limit, 2002).

Certain valleys in Niagara have, in recent years, exhibited slope failure problems. These problems have been aggravated by historical *development activities* situated in proximity to, or on, the top of valley slopes. This situation, in combination with varied soil characteristics, groundwater hydraulics/movement and historical *fill* placement (for example), has created damaging and dangerous situations. The Twenty Mile Creek Valley in Lincoln and the Twelve Mile Creek Valley in St. Catharines are two such areas. Historic *development activities* have created situations where homes and businesses are now experiencing greater risk of major damages due to slope instability problems. Solving these types of problems through 'structural' means can be cost. As a result, a comprehensive 'non-structural' approach to deal effectively with *development activities* in these situations is of great importance.

5.1.3 (Deleted)

5.1.4 Defining the Valleyland Erosion Hazard

5.1.4.1 Regulated Valleylands

The policies of this Document apply to *erosion hazards* associated with *apparent valleys* where the bank height is equal to or greater than 3 metres in height. Valleys are considered not to be apparent where the valley height is less than 3 metres.

5.1.4.2 Physical Top of Slope

The physical top of slope is defined as the evident transition point between the plateau lands and the face of the slope. Where the physical top of slope is required to be established, site inspections with the applicant and NPCA staff are to be undertaken. The NPCA approved physical top of slope shall be marked in the field. The applicant will then submit drawings indicating the surveyed location of the 'NPCA approved' physical top of slope for NPCA review and approval.

5.1.4.3 Stable Top of Slope

The physical top of slope and the stable top of slope may be coincident. However, in some cases, due to specific on-site conditions (such as slope inclination, proximity of the *watercourse* to the toe of slope, soil conditions, erosion, etc.) the stable top of slope may not be located at the physical top of slope, but rather may be located landward from the physical top of slope.

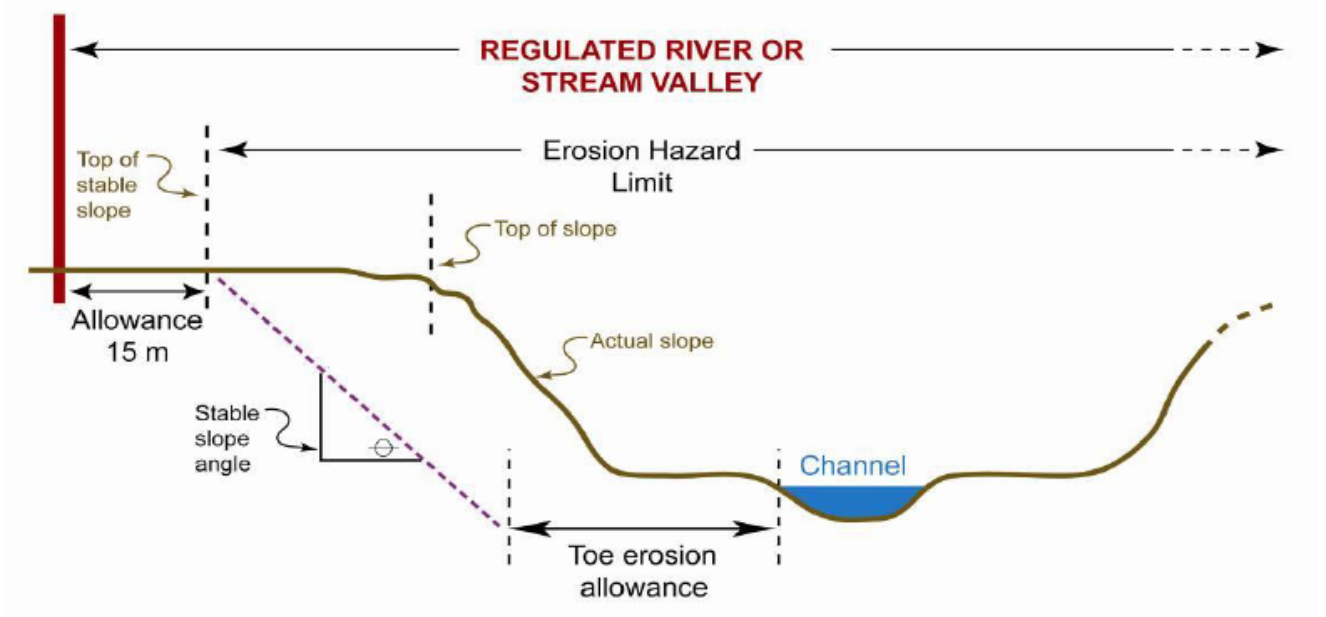
The stable top of slope is to be established by a professional geotechnical engineer following Provincial Guidelines to the satisfaction of NPCA staff. Where no geotechnical study has been undertaken, the stable top of slope is based on a line projected upwards from the base of the slope at a 3:1 (horizontal to vertical) angle. The geotechnical study must take into consideration and make recommendations pertaining to: construction equipment/access; limit of work area; vegetation protection; sediment and erosion controls; drainage; etc.

5.1.4.4 Defining the Erosion Hazard

The *erosion hazard* shall be the sum of the following elements (**Figure 5.1**):

a) The location of the stable top of slope or the physical top of slope, whichever is determined to be further landward on the plateau.
b) A slope stability allowance of 15 metres from the stable top of slope.
c) The toe erosion allowance, where a *watercourse* is located less than 15 metres from the toe of slope.

Figure 5.1: Valleyland Erosion Hazard



5.1.4.5 Stable Slopes

Stable slopes are slopes which have been previously defined as such through a geotechnical study or have been confirmed to be stable through a field investigation to have a slope less than 3:1 (horizontal to vertical) and do not reveal evidence of any of the following:

a) Bare slopes absent of any vegetation;
b) Outward tilting of trees;
c) Toe erosion at the base of the slope;
d) Slumping, gullying or other visible erosion processes;
e) Contain additional *fill* material;
f) Contain an easily eroding soil type (i.e. Short Hills area of Pelham contains soil types which are highly erodible and easily susceptible to gully erosion).

In the absence of a previous geotechnical study and despite the presence of the above noted conditions, depending on the scope, nature, and location of the proposed *development activity*, the NPCA may still require that a geotechnical study be undertaken to confirm the location of the stable top of slope.

5.1.4.6 Unstable Slopes

Unstable slopes are slope which have evidence of any of the following:

a) Bare slopes absent of any vegetation.

b) Outward tilting of trees.
c) Toe erosion at the base of the slope;
d) Slumping, gullying or other visibly erosion processes;
e) The addition of *fill* material;
f) The presence of a *watercourse* within 15 metres of the toe of slope;
g) Containing an easily eroding soil type (i.e. Short Hills area of Pelham contains soil types which are highly erodible and easily susceptible to gully erosion); or,
h) The angle of the slope is steeper than 3:1 (horizontal to vertical).

Unstable slopes shall require a geotechnical study to determine the extent of the *erosion hazard* and determine appropriate *development activity setbacks*.

5.1.4.7 Toe Erosion Allowance

A toe erosion allowance may be required where a *watercourse* is located less than 15 metres from the toe of a slope to address the potential for erosion along the bank of the *watercourse* which may increase the risk of slumping and slope failure. The toe erosion allowance shall be defined as one of the following:

a) The average annual recession rate, based on 25 years of data to determine the toe erosion allowance over a 100 year period.
b) A 15 metre toe erosion allowance to be measured inland horizontally and perpendicular to the top of the *watercourse* slope.
c) Toe erosion allowance based on a geotechnical study completed by a qualified professional engineer.
d) Toe erosion allowance based on soil types and hydraulic processes as illustrated in **Table 5.1** (from MNR Technical Guide, River and Stream Systems: *Erosion Hazard* Limit).

Table 5.1: Minimum Toe Erosion Allowance, Where a Watercourse is Less than 15 metres from the Toe of Slope

Type of Material (native soil *structure*)	**Evidence of Active Erosion or where the bankfull flow is**	**No Evidence of Active Erosion**
		Bankfull Width

	greater than competent flow velocity	< 5 metres	5-30 metres	>30 metres
Hard Rock (e.g. granite)	0-2 metres	0 metres	0 metres	1 metre
Soft Rock (e.g. shale, limestone), cobbles, boulders	2-5 metres	0 metres	1 metre	2 metres
Clays, clay-silt, gravels	5-8 metres	1 metre	2 metres	4 metres
Sand, silt	8-15 metres	1-2 metres	5 metres	7 metres

5.1.4.8 Geotechnical Study

The NPCA may request that the applicant undertake a geotechnical study, completed by a qualified professional engineer, to confirm the location of the top of stable slope and/or the potential for slope failure on lands which have evidence of *unstable slopes*. The results of the geotechnical study shall define the extent of the *erosion hazard*, taking into account the specific site characteristics and the nature of the proposed *development activity*. Geotechnical studies should be based on the MNRF's Technical Guide for River and Stream Systems: *Erosion Hazard* Limit (2002) and must demonstrate that there is no increased risk to life or property. An appropriate factor of safety shall be incorporated into all designs/analysis based on the consequences or risks to land use or life in the event of slope failure. The recommended minimum factors of safety are provided in **Table 5.2** (from the MNR's Technical Guide).

The NPCA reserves the right to have any and all studies peer reviewed at the expense of the applicant. The NPCA also reserves the right to have studies updated where the time of the report is considered to be outdated.

Table 5.2: Design Minimum Factors of Safety	
Land Use	**Design Minimum Factor of Safety**
PASSIVE; no *buildings* near slope; farm field, bush, forest, timberland, woods, wasteland, badlands, tundra	• 1.10
LIGHT; no *habitable structures* near slope; recreational parks, golf courses, buried small utilities, tile beds, barns, garages, swimming pools, sheds, satellite dishes, dog houses	• 1.20 to 1.30
ACTIVE; *habitable* or occupied *structures* near slope; residential, commercial, and industrial *buildings*, retaining walls, storage/warehousing of *non-hazardous substances*	• 1.30 to 1.50
***INFRASTRUCTURE* and PUBLIC USE;** public use *structures* or *buildings* (i.e., hospitals, schools, stadiums), cemeteries, bridges, high voltage power transmission lines, towers, storage/warehousing of hazardous materials, waste management areas	• 1.40 to 1.50

Source: Technical Guide - River and Stream Systems: Erosion Hazard Limit 2002, Ontario Ministry of Natural Resources

5.2 POLICIES FOR PLANNING AND REGULATING VALLEYLAND EROSION HAZARDS

5.2.1 Objectives

The objectives of the *erosion hazard* policies are to:

a) Prevent the loss of life;
b) Minimize property damage;
c) Reduce the potential for incurring public costs associated with the impacts of *erosion hazards*;
d) Manage existing risks and reduce the potential for future risks;

5.2.2 Development Activities within the Valleyland Erosion Hazard

Unless exempt by Section 3.5.4, *Development activities* and *site alteration* within valleyland *erosion hazard* limits shall not be permitted except in accordance with the policies of this Chapter.

5.2.3 Permitted Uses

The following types of *development activities* are permitted within the valleyland *erosion hazard* limit:

a) *Buildings*, *structures*, accessory *buildings*, accessory *structures* in accordance with Sections 5.2.4, 5.2.5, and 5.2.6.
b) *Structures* associated with erosion and sediment control, as well as any flood protection works.
c) *Infrastructure* in accordance with Chapter 10.
d) Minor removal (less than 25 m^3) and placement of *fill* and site grading within the *erosion hazard* (but not below the physical top of slope) may be permitted where it has been demonstrated to the satisfaction of the NPCA that the control of erosion, flooding, unstable soils and bedrock will not be affected.
e) *Development activities* associated with existing uses located within the *erosion hazard* area in accordance with Sections 5.2.4, 5.2.5, and 5.2.6.
f) Restoration *activities*.
g) *Passive public recreational uses*, such as trails and pathways, as well as any associated *structures*, such as steps, staircases and lookouts in accordance with Sections 5.2.4, 5.2.5, and 5.2.6.

5.2.4 Development Activities on a Valley Wall

Development activities on a valley wall shall only be allowed in accordance with the following policies.

a) New *buildings* and accessory *buildings* are not permitted on a valley wall.

b) Existing buildings and accessory buildings destroyed by causes other than erosion may be reconstructed subject to the following policies:
   i. The *building* being replaced is not a *derelict building*.
   ii. There is no reasonable alternative location off the valley wall.
   iii. A geotechnical study may be required to be completed by a qualified professional to determine the risk of the proposed work. The study will include an assessment of the stability of the valley wall, rate of erosion or recession of the valley wall, access issues and an assessment of the construction technique on the valley wall. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life or property damage is anticipated.
   iv. There is no change in land use and no increase in the number of dwelling units.
   v. There is no increase in the *building* envelope greater than 28 m^2.
c) Additions to existing *buildings* or *accessory buildings* are subject to the following policies:
   i. There is no reasonable alternative location off the valley wall.
   ii. A geotechnical study may be required to be completed by a qualified professional to determine the risk of the proposed work. The study will include an assessment of the stability of the valley wall, rate of erosion or recession of the valley wall, access issues and an assessment of the construction technique on the valley wall. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life or property damage is anticipated.
   iii. There is no change in land use and no increase in the number of dwelling units.
   iv. The addition is not more than 28 m^2.
d) New *structures* associated with erosion control, *passive recreation*, and stairs, are subject to the following policies:
   i. A geotechnical study may be required to be completed by a qualified professional to determine the risk of the proposed work. The study will include an assessment of the stability of the valley wall, rate of erosion or recession of the valley wall, access issues and an assessment of the construction technique on the valley wall. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life or property damage is anticipated.
   ii. There is no change in land use and no increase in the number of dwelling units.
   iii. A re-vegetation plan is submitted for review and approval by the NPCA demonstrating there is no net loss of natural vegetation.
   iv. *Fill* placement and *site alteration* is limited to only what is necessary to erect approved *structures* or to provide suitable material for plantings.

5.2.5 Development Activities within the Erosion Hazard Allowance

Development activities within the *erosion hazard* allowance shall only be allowed in accordance with the following policies.

a) *Development* activities are not permitted to extend beyond the physical top of slope.
b) In *settlement areas*, new *buildings* and *structures*, accessory *buildings* and additions to existing *buildings* and *structures* shall provide an appropriate *setback* from the stable top of slope to ensure the long term stability of the valley slope and safety of the building or *structure*. This *setback* shall be based on a geotechnical study, approved by the NPCA. In no case shall any portion of a building or *structure* extend beyond the physical top of slope.
c) Outside of *settlement areas*, new *buildings* and *structures*, *accessory buildings* and additions to existing *buildings* and *structures* shall be *setback* 7.5 metres from the stable top of slope.
d) In *settlement areas*, repairs, interior alterations and *reconstruction* of existing *buildings* destroyed by causes other than erosion may be permitted subject to Section 5.2.5 b).
e) Outside *settlement areas*, repairs, interior alterations and *reconstruction* of existing *buildings* destroyed by causes other than erosion may be permitted subject to the following:
    i. There is no reasonable alternative beyond 7.5 metres from the stable top of slope;
    ii. There is no increase in the number of dwelling units; and
    iii. The reconstructed *building* has the same *building* envelope.
f) Drainage resulting from *development activities* shall be conveyed in such a manner as to avoid concentrated flows beyond the physical top of slope.
g) *Site alteration*, *fill* placement, and landscaping is permitted so long as no *site alteration* or *fill* placement takes place beyond the physical top of slope. A geotechnical study may be required depending on the nature of the *site alteration* taking place and the proximity to the physical top of slope.

5.2.6 Development on the Valley Floor

Development activities on the floor of a valley shall be subject to the following policies.

a) *Development activities* and *site alteration* on the valley floor may be subject to other sections of this Document where other Regulated Areas are present.
b) *Development* activities and site alteration within the toe allowance will have an appropriate *setback* to ensure the long-term stability of the valley slope, as determined through a geotechnical study approved by the NPCA.

5.2.7 Restoration Works

Restoration works are subject to the following policies:

1) Depending on the scope, nature and location of any *site alteration*, a geotechnical study may be required to ensure long-term stability of the valley slope.
2) The design of the restoration works should incorporate elements of *green infrastructure* and bioengineering to the extent feasible.

5.2.8 Development Activities in Non-Apparent Valleys

Development activities in *non-apparent valleys* is not subject to the policies in this Chapter but may be subject to other sections of this Documents where other Regulated Areas are present.

6.0 UNCONFINED RIVER AND STREAM VALLEYS

6.1 RIVER AND STREAM FLOOD HAZARDS

6.1.1 Flood Plains and Flooding Hazards

To mitigate the potential risks to public health, safety and property, the Province of Ontario, through various regulations (such as Ontario Regulation 41/24 limits the amount of potential *development activities* in *flood plains*. *Flood plains* are usually low lands adjoining a *watercourse* which has been or may be subject to flooding. Lands which are subject to flooding or may be subject to flooding are referred to as *flooding hazards*.

6.1.1.1 River and Stream Flood Hazard Defined

In most cases, the Niagara Peninsula Conservation Authority defines the flood hazard as the *100 year flood* event. The *100 year flood* event is a frequency-based flood event that is determined through analysis of precipitation, snow melt, or a combination thereof, having a return period of once every 100 years on average (or having a 1% chance of occurring or being exceeded in any given year). The *100 year flood* event is the minimum acceptable standard (in Ontario) for defining the *regulatory flood plain*.

6.1.1.2 Exceptions to using the 100 Year Flood

Notwithstanding Section 6.1.1.1, the Regional Flood shall be used to determine the *flood plain* limits for the following *watercourses*:

a) Beaverdams Creek (Niagara Falls);
b) Shriner's Creek (Niagara Falls); and,
c) Ten Mile Creek (Niagara Falls).

6.1.2 Approaches to Regulating Flood Hazards

Floodplains can be large areas, covering rivers, streams and natural areas, as well as agricultural areas, *rural areas*, communities, homes and businesses. The diversity of conditions within floodplains requires a flexible approach managing change within the floodplain. The NPCA recognizes the Province's approach for planning and regulating *development activities* within the river and stream *flooding hazard*, including the following concepts:

a) One zone concept;
b) *Two zone concept*; and,
c) *Special Policy Area* concept.

6.1.3 The One Zone Concept

6.1.3.1 Preference for One-Zone Concept

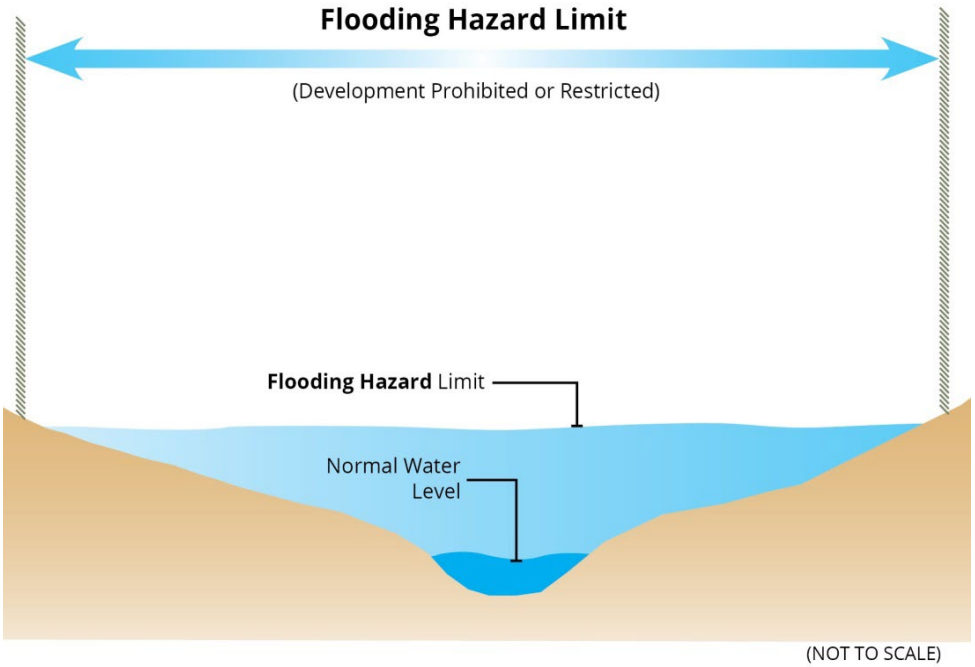
In most cases, the NPCA shall implement a one-zone concept to *flood plain* management. This means that generally, most forms of *development activity* or *site alteration* are prohibited within the regulated *flood plain*. Where a one zone concept is in place, the entire *flood plain* defines the *floodway*.

6.1.3.2 One-Zone Concept

Under the one-zone concept, the *regulatory flood plain* shall be defined as follows (**Figure 6.1**):

a) Where *100 Year Flood* information is available, the *100 Year Flood* shall be used for the purposes of delineating the *flood plain*; or,
b) Where no *flood plain* information is available and the Authority has a flooding concern, the proponent shall be required to provide the NPCA with *100 Year Flood Plain mapping* for review and approval at the cost of the applicant, not all of the flood hazards within the *watershed* are mapped.

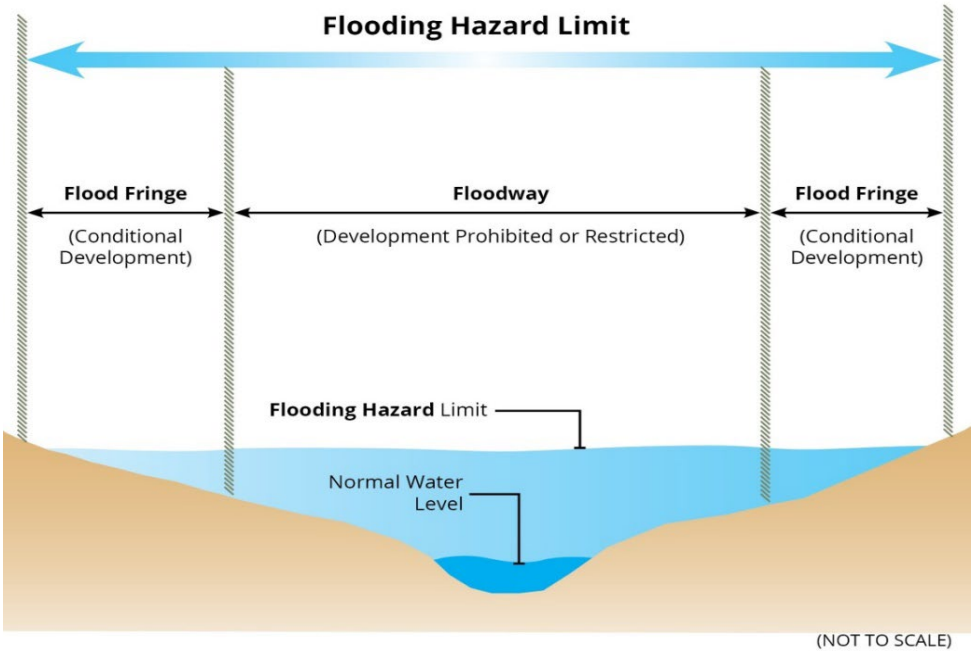
Figure 6.1: One Zone Concept



6.1.4 The Two Zone Concept

The *two zone concept* (**Figure 6.2**) identifies a *floodway* and a *flood fringe* within the *flooding hazard*. The *floodway* refers to the portion of the *flood plain* where *development activity* and *site alteration* is prohibited due to potential risks associated with public health and safety and property damage. The *floodway* is the inner portion of the *flood plain*, representing the area required for the safe passage of flood flow and/or that area where flood depth and/or velocities are considered to pose a potential threat to life and/or property damage. The *flood fringe* is the outer portion of the flood hazard that could potentially be safely developed. Currently there are no identified two-zone concept areas within the NPCA *watershed*.

Figure 6.2: Two Zone Concept



6.1.5 Meander Belt

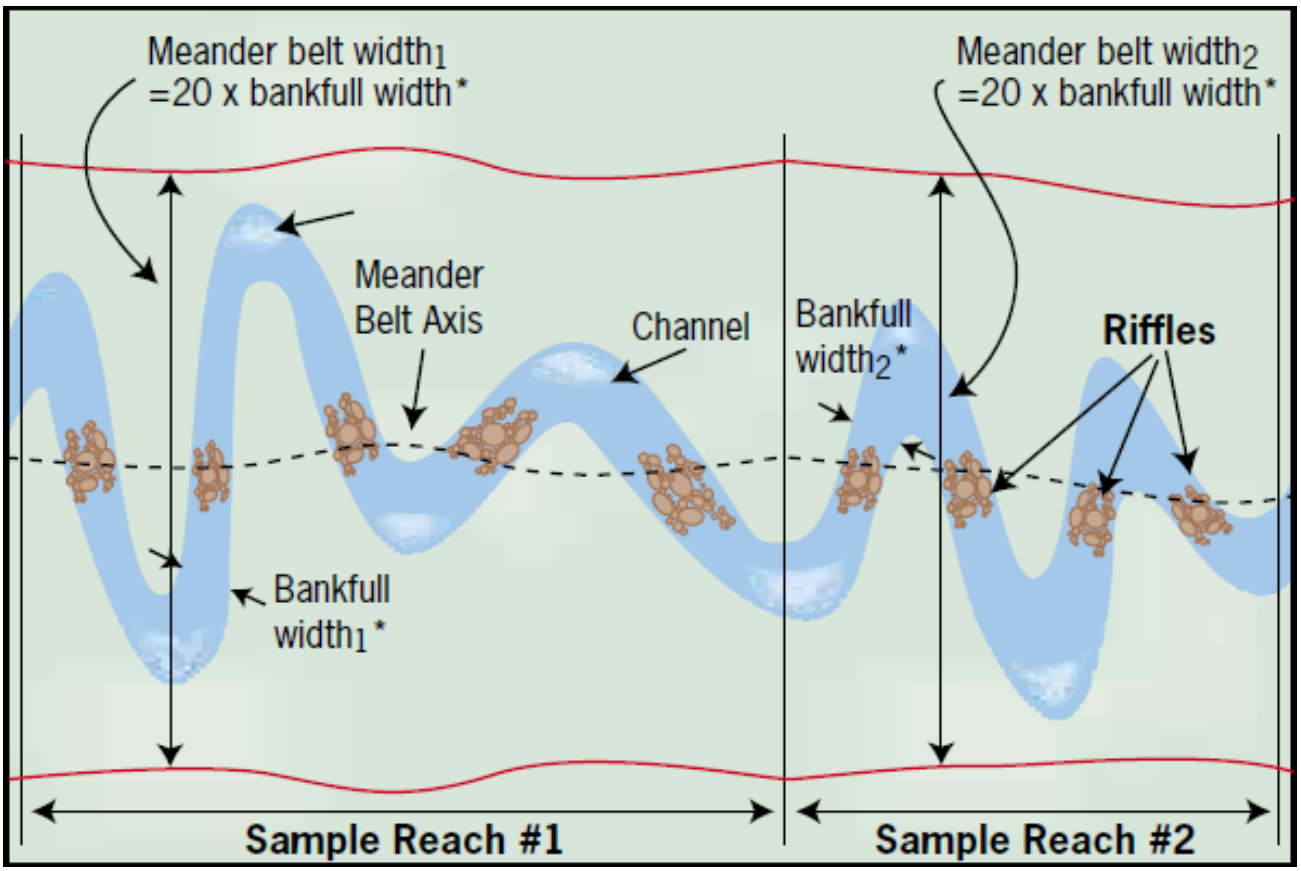
6.1.5.1 Defining Erosion Hazard

The *meander belt allowance* is normally used when planning authorities are considering *development activities* along unconfined river and stream systems flowing. The allowance is determined to ensure that *development activities* are not placed in harm's way, but also to ensure that the flow of water and its associated natural processes, including erosion, are maintained.

Meander belt allowance: The term *meander belt allowance* is the maximum extent that a water channel migrates. Other terms associated with meander belts are amplitude, wavelength, bend radius, bankfull width, point bars, pools, riffles and concave and convex banks. A meandering channel is a series of interconnected reaches. A reach is a length of channel over which the channel characteristics are stable or similar. For each reach, the meander belt should be centred on a line of axis drawn through the middle of the meanders or riffle zones, a line that essentially divides each of the meanders in half.

The width of a meander belt can be determined by analyzing the bankfull channel width of the largest amplitude meander. The *meander belt allowance* is defined as 20 times the bankfull channel width of the reach and centred on the meander belt axis. When determining the meander belt for these relatively straight reaches, the meander belt should be centred on the mid-line of the channel. Refer to **Figure 6.3**.

Figure 6.3: Meander Belt Diagram



*Use bankfull channel width of largest amplitude meander in the reach to determine the meander belt width.

6.2 POLICIES FOR FLOODING AND EROSION

6.2.1 Objectives

The objectives of the flood hazard policies are to:

a) Prevent loss of life;
b) Minimize property damage and social disruption;
c) Reduce the potential for incurring public costs associated with the impacts of *flooding hazards*;
d) Manage existing risks and reduce the potential for future risks;
e) Promote a coordinated approach to the management of water.

6.2.2 Permitted Uses within the Riverine Flood Hazard

Permitted uses within the flood hazard shall be consistent with the objectives of the Conservation Authorities Act and subject to Ontario Regulation 41/24. The following are permitted uses within the *flood plain*:

a) Agricultural *buildings* and *structures*;
b) Non-structural *agricultural uses*;
c) *Reconstruction* of existing *structures*;
d) Additions to existing *structures* and accessory *structures* outlined in Section 6.2.5;
e) Accessory *structures*;
f) Flood, erosion and sediment control measures;
g) *Open space* uses and *passive recreational uses*;
h) Placement of *fill* in accordance with Section 6.2.8;
i) Parking lots, driveways and private roads, subject to Section 6.2.7;
j) Raw materials and equipment storage, subject to Section 6.2.9;
k) *Infrastructure* in accordance with Chapter 10;
l) Works constructed under the Drainage Act accounting for the flooding potential at the site;
m) Uses listed in Section 3.5.4; and
n) Other uses not likely to incur or create damage from floodwaters.

6.2.3 Agricultural Buildings and Structures

New agricultural buildings and *structures* or additions to existing agricultural *buildings* and *structures* are permitted subject to the following:

a) The *building* or *structure* would not incur *significant* damages during a flood event;
b) The *building* or *structure* does not contain any dwelling units; and
c) The *building* or *structure* will not negatively impact the *flood plain*.

6.2.4 Replacement of Existing Buildings and Structures

Any *building* or *structure* located in the *flood plain* that has been destroyed for reasons other than flooding may be rebuilt subject to the following:

a) The *building* cannot be relocated outside of the *flood plain*;
b) The existing flood depths do not exceed 0.8 metres, the velocity does not exceed 1.7 metres/second and the product of depth and velocity is not greater than 0.4 square metres/second under a *Regulatory Flood* event;
c) All openings on the ground floor of the *building* are to be located above the *regulatory flood* elevation;
d) The replacement *structure* will not negatively impact the *flood plain*;
e) There is no increase in the number of dwelling units; and,
f) The replacement *structure* does not exceed the size of the *original ground floor area* or, where expansions are proposed, the proposal complies with Section 6.2.5.

6.2.5 Additions to Non Agricultural Existing Buildings

Additions to existing *buildings* are permitted subject to the following:

a) Any addition to the ground floor area of an existing *building* shall not exceed 46.5 m^2;
b) There have been no previous ground floor additions to the *building* since November 11, 2022;
c) The existing flood depths do not exceed 0.8 metres, the velocity does not exceed 1.7 metres/second and the product of depth and velocity is not greater than 0.4 square metres/second under a *Regulatory Flood* event;
d) All openings on the ground floor of the *building* are to be located above the *regulatory flood* elevation;
e) The addition will not negatively impact the *flood plain*; and,
f) There is no increase in the number of dwelling units.

6.2.6 Accessory Structures

Accessory *structures* are permitted within the *flood plain* subject to the following:

a) There is no reasonable alternative location outside of the *flood plain* on the site;
b) The accessory *structure* does not contain any dwelling units;
c) The accessory *structure* will not negatively impact the *flood plain*;
d) All openings on the ground floor of the *building* are to be located above the *regulatory flood* elevation;
e) For swimming pools, adequate hydrostatic pressure relief is incorporated in the design and excavated material is removed from the *flood plain*;
f) For water wells, the air vent extends above the maximum anticipated flooding level and not less than 0.4 metres above the ground surface; and
g) For replacement *private sewage disposal systems*, any excavated material is removed from the *flood plain*.

6.2.7 Safe Access (Ingress/Egress) and Parking

All *development activities*, including new parking facilities (above ground and underground *structures* and at-grade parking lots), must meet the minimum requirements for safe access for the nature of the *development activity* in accordance with Provincial and NPCA Standards, and demonstrate to the satisfaction of NPCA that:

a) risks due to both flooding and erosion have been addressed;
b) within the *flood plain*, flood depth under the Regulatory event do not exceed 0.3 metres;
c) within the *flood plain*, *filling* or re-grading to achieve compliance with flood depth and velocity criteria shall not be permitted unless such works are associated with an environmental assessment process, comprehensive environmental study or technical report supported by NPCA;
d) where applicable, confirmation from the affected municipal emergency services that flood emergency response procedures have been developed and can be implemented to the satisfaction of the municipality;
e) intrusions on natural features, areas, and systems contributing to the *conservation of land*, including areas providing *ecological functions* and *hydrologic functions*, are avoided or mitigated;
f) negative or adverse hydrological or ecological impacts on natural features and functions are avoided and mitigated; and
g) the level of ingress/egress available is appropriate to effectively manage the risks associated with the use.

6.2.8 Placement of Fill and Site Grading

The placement of *fill* less than $50m^3$ is permitted subject to the following criteria:

a) The *fill* is *inert* and placed in a manner which will not impact the control of flooding;
b) The *fill* does not interfere with a *watercourse* or *wetland*; and
c) Any disturbed areas are re-vegetated and is protected from erosion.

The placement of *fill* greater than $50m^3$ is permitted subject to the following criteria:

a) The *fill* is *inert*;
b) A hydraulic analysis demonstrates that there will be no *negative impacts* to the *flood plain*;
c) Does not interfere with a *watercourse*, *wetland*, *valleyland* or shoreline; and
d) Includes re-vegetation of any disturbed areas and is protected from erosion.

6.2.9 Raw Materials and Equipment Storage

Where the storage of raw materials is subject to a municipal approval, the storage of raw material and equipment storage is permitted, provided that:

a) They are properly anchored to prevent flotation;
b) They are not subject to major damage by flooding; and,
c) Flood flows or flood water storage are not impeded.

6.2.10 Floodproofing (Riverine Flood Hazard)

As permitted in the policies of this document, *floodproofing* is required for proposed *development activities* which may be impacted by flood hazards, upon consideration of:

a) the depth and velocity of flood waters;
b) the duration of the flood;
c) the rate of rise/fall of the flood waters; and,
d) the type of flood warning system in place.

6.2.11 Balanced Cut and Fill

Cut and *fill* is a technique that is used to minimize flood storage losses resulting from the placement of *fill* within a *flood plain* that results in a quantifiable adverse hydraulic impact. This is achieved by removing a volume of earth at the appropriate elevation and location to offset any increase in flood level due to *filling* areas within the *flood plain*. The suitability of cut and *fill* operations is extremely site-specific. It should be recognized that, in conducting a cut and *fill*, additional flood-free lands are not obtained. A cut and *fill* will only serve to transfer floodwaters from one area to another as a result of the manipulation of the land's contours. In reviewing applications that will require cut and *fill*, the following policies will be applicable.

6.2.11.1 General Balanced Cut and Fill Policies

Any proposals that will require cut and *fill* operations within the jurisdiction of the Authority and within the *flooding hazard* limit must be in accordance with the following policies and guidelines and must be to the satisfaction of the Authority.

a) There are no *negative impacts* on the hydrological function of *wetlands* or *valleylands* as a result of the cut and *fill* proposal.
b) The amount of earth removed (cut) must be equal to or greater than the volume of *fill* proposed for placement within the *flood plain*.
c) Cut and *fill* must be balanced in 0.3 m (1 foot) increments. An excess of cut volume may be permitted at any given increment; however, inadequate cut volume will not be permitted at any given increment.
d) No adverse impacts on the hydraulic conveyance capabilities of the *watercourse* will be permitted.
e) Depending on the location of the proposed works, a hydraulic/geotechnical evaluation may be required in order to ensure the long-term stability of the works.
f) A cut and *fill* plan must be submitted demonstrating consistency with the policies of this document.

6.2.11.2 Cut and Fill Plan Requirements

At a minimum, all plans and calculations for cut and *fill* operations shall be prepared by a qualified engineer or surveyor and are required to contain the following criteria:

a) Detailed calculations for incremental and total cut and *fill* volumes;
b) Cross-sectional plots to scale showing existing and proposed *flood lines* and ground elevations;
c) Detailed contour/topographic plan to scale showing existing conditions (including grades) and all proposed works and elevations;
d) Adequate erosion and sediment control measures will be implemented on-site, both during and after construction, and must be in accordance with the policies of this document;
e) A hydraulic analysis may be required as deemed necessary by the NPCA (i.e. HEC-RAS modelling); and,
f) A geotechnical analysis may be required as deemed necessary by the NPCA.

6.2.11.3 Exceptions for Balanced Cut and Fill

Notwithstanding the above policies, the NPCA recognizes that in some cases the need for *balanced cut and fill* may not be required due to the unique attributes of a given site. Where an applicant is able to demonstrate through a hydraulic study that there will be no impacts or negligible impacts on the loss of flood storage, the NPCA may grant a Permit to place *fill* in the floodplain.

6.2.12 Flood Plain Spill Areas

6.2.12.1 Spill Areas

There are several areas within NPCA's *watershed* in which *flood plain* spills occur, generally in the areas north of the Niagara Escarpment. Spill areas are locations where hydraulic modeling and mapping of the *flooding hazards* indicates that flood waters may leave the *flood plain* and "spill" into surrounding lands that are outside of the regulated *flooding hazard* limits. Generally, the depth of flooding cannot be precisely or readily determined as the flood depths that may occur depend on a number of factors such as the local (and downgradient) topography and storage volume as well as the amount of spill flow that would occur. Typically spills would occur only during the higher flow rates of the storm and hence the volume and depth of flood water is dependent also on the duration of the storm and the foregoing factors.

6.2.12.2 Approach to Spill Areas

The NPCA does not regulate *development activities* in spill areas in the same manner as *development activities* within *flood plain* areas, as these areas are not readily defined and the storage and flow that occurs in these areas is not considered as part of the natural *flood plain*, hence preservation of flood storage is not required. On a case-by-case basis where spill locations can be identified, the NPCA would review any Environmental

Assessment or land use application under the Planning Act, Niagara Escarpment Plan or Building Code so that the possible flood hazards can be assessed and appropriate mitigation can be established as part of the Municipal/Conservation Authority review process.

6.2.12.3 Potential Mitigation Measures for Development Activities within Spill Areas

Where mitigation measures are required for lands within a spill zone, *buildings* and *structures* may be permitted provided that adequate *floodproofing measures* are undertaken. Mitigation for *development activities* proposed within a spill area could include (but is not limited to):

a) Raising the elevation of proposed *buildings* or *structures* above the anticipated flood level; and/or,
b) Raising the lands within the spill location to prevent its occurrence.

6.2.13 Meander Belt Allowance

The following policies apply to *development activities* within the *meander belt allowance*:

a) Any *development activities* and/or *site alteration* proposal which is within the *meander belt allowance* must be supported by a valid engineering study in accordance with the NPCA Procedural Manual.
b) *Buildings* and *structures* located within the *meander belt allowance*, other than those destroyed by erosion or flooding, will be permitted to be replaced or relocated within the *meander belt allowance* provided the *buildings* or *structures* are of the same size and use, contain the same number of dwelling units and where the works will not increase the risk to life or damage to properties as a result of erosion.
c) Locating the *building* or *structure* on a portion of the property where the *flooding hazard* and/or *erosion hazard* is the least *significant* must be examined in the case of all proposals and applied wherever possible.

6.2.14 Special Policy Area Concept

6.2.14.1 Special Policy Area Concept

A *Special Policy Area* may only be proposed by lower tier or single tier municipalities (the proponent). The proponent is responsible for funding and preparing all mapping, studies, reports and Official Plan policies/amendments. *Special Policy Areas* require the approval of both the Minister of Natural Resources and the Minister of Municipal Affairs. The process for undertaking a *Special Policy Area* is outlined in the Ministry of Natural Resources Technical Guide for River and Stream Systems, *Flooding Hazard* Limit Appendix 5 *Special Policy Areas* (as amended in 2009) and includes:

a) Pre-consultation with the Ministry and the NPCA;
b) Phase 1: Request for Approval in Principle for *Special Policy Area* Status;
c) Phase 2: Application for Final Approval of *Special Policy Area*; and,
d) Phase 3: Post Approval Requirements.

6.2.14.2 Development Approvals

No *development activity* shall proceed within a *Special Policy Area* until the SPA has been approved by the Province and all necessary implementation tools are in place, such as local Official Plan Amendments (and where applicable, Regional Official Plan Amendments) and implementing Zoning By-law amendments are in place. Where a work permit is required from the NPCA, no approval shall be issued until the above-noted municipal policy and regulatory tools have been implemented.

6.2.14.3 Fort Erie Industrial Park Special Policy Area

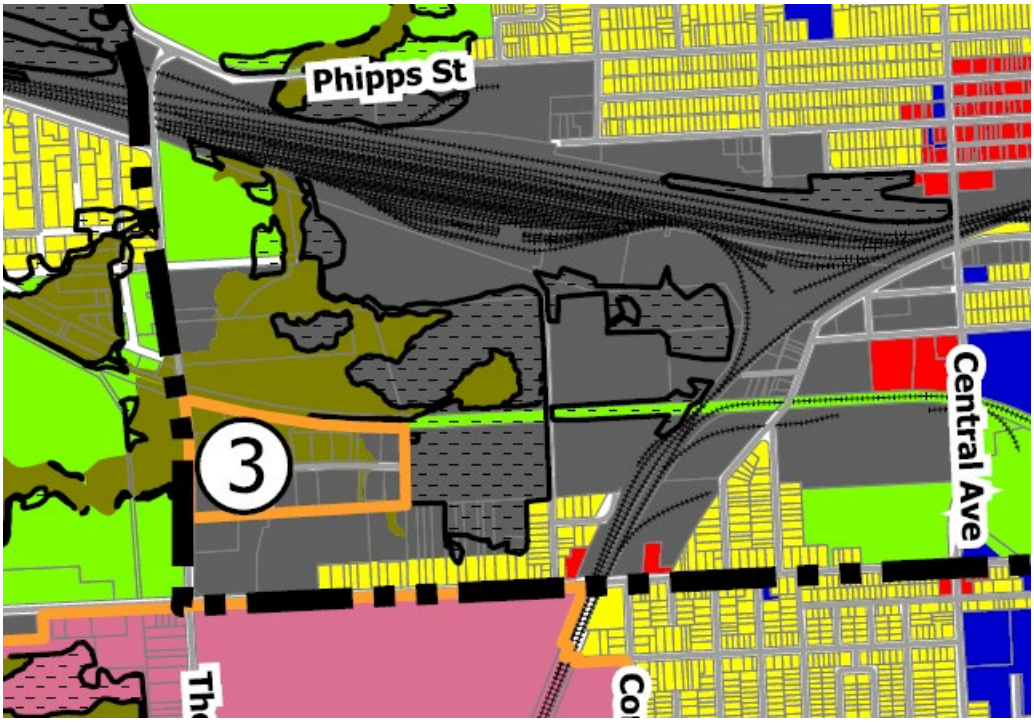
In 1985, the Ministry of Municipal Affairs approved Fort Erie Official Plan Amendment 32 that included provisions for a *Special Policy Area* for the Fort Erie Industrial Park to recognize that parts of the approved Industrial Park were located within the 1 in *100 year flood plain* of Frenchman's Creek and site specific policies apply. The Town's Official Plan includes site specific policies for this area (referred to Site Specific Policy Area #3 and illustrated in **Figure 6.4**) and includes the following policies:

a) No new *buildings* or *structures* other than those required for flood erosion control or flood management purposes shall be permitted in the Hazard area (1 in *100 year flood plain*) as determined by the Niagara Peninsula Conservation Authority as generally shown on Schedule "C1";
b) Extensions, enlargements or *reconstructions* of existing *buildings* and *structures* may be permitted within the 1 in *100 year flood plain* provided they are protected up to the 1 in *100 year* flood level;
c) Prior to the issuance of any *building* permit within the 1 in *100 year flood plain*, the Town shall consult with the Niagara Peninsula Conservation Authority regarding the administration of the Authority's *fill* and construction regulations to address any proposed flood damage reduction measures which may

include such matters as *building setbacks*, basement elevations, the strength of foundation walls, the placement of *fill* and control of *building* opening elevations; and,

d) Any amendment to the Zoning By-law affecting the "Fort Erie Industrial Park" shall conform to the provisions of this subsection. In this regard the Town may, in consultation with the Niagara Peninsula Conservation Authority, incorporate flood reduction measures in the by-law relating to such matters as *building* setbacks, minimum heights of openings to *buildings* and maximum lot coverage.

Figure 6.4: Excerpt from the Town of Fort Erie's Official Plan



7.0 HAZARDOUS LANDS

7.1 WHAT ARE HAZARDOUS SITES?

7.1.1 Hazardous Sites and Hazardous Lands

The Provincial Policy Statement defines *hazardous sites* as lands that could be unsafe for *development activities* due to naturally occurring hazards. These may include unstable soils (*sensitive* marine clays [leda], organic soils) or unstable bedrock (karst topography). The *Conservation Authorities Act* uses a similar term, referring to *hazardous lands*, which are lands that are unsafe to *development activities* due to naturally occurring processes. Naturally occurring processes includes flooding, erosion, *dynamic beaches* and unstable soils. In the context of the *Conservation Authorities Act*, the term *hazardous lands* is used as a general term, referring to a full range of natural hazards (i.e. flooding, erosion, unstable soils). Earlier chapters in this document address *hazardous lands* associated with *dynamic beaches* (Chapter 4), erosion and *unstable slopes* (Chapter 5), and flooding (Chapter 6). The following chapter provides guidance for *hazardous lands* associated with unstable soils, such as *sensitive*

marine clays (leda clays), organic soils and unstable bedrock, such as karst formations (such as sinkholes and caves). The term hazardous site is used in this chapter to refer to naturally occurring hazards associated with unstable soils and unstable bedrock (similar in definition to the term *hazardous sites* which is used in the PPS to describe a similar feature). This chapter also provides guidance for unstable soils associated with back-dunes areas.

7.1.2 Defining and Assessing Hazardous Sites

Hazardous sites are considered to be part of the NPCA's regulated areas. The potential for catastrophic failures in some areas of unstable soil and unstable bedrock warrant site specific studies to determine the extent of these *hazardous sites*, and therefore the appropriate limits of the hazard and regulation limits. The regulated area will be based on the conclusions and recommendations of such studies, to the satisfaction of NPCA. Accordingly, the limits for *hazardous lands*, such as leda clays, organic soils and karst formations, shall be determined on a site-specific basis according to the Ministry of Natural Resources Technical Guide for Hazardous Sites (1996) and Understanding Natural Hazards (2001).

7.1.3 Karst Formations

Karst is a landform that develops on or in limestone, dolomite, or gypsum by dissolution and is characterized by the presence of features such as sinkholes, underground (or internal) drainage through solution-enlarged fractures (joints) and caves. Karst formations can be *significant* geologic hazards. Sudden collapse of an underground opening of a sinkhole can cause surface subsidence that can severely damage overlying *structures* such as *buildings,* bridges or highways. Improperly backfilled sinkholes are prone to both gradual and sudden subsidence and similarly threaten overlying *structures*. Sewage, animal wastes and agricultural, industrial and ice control chemicals entering sinkholes as surface drainage are conducted directly and quickly into the groundwater/*surface water* systems.

There are at least five known locations within the *watershed* with Karst formations:

a) The Stoney Creek "Mountain" Area;
b) The Smithville Area;
c) The Gavora Drain and Balls Falls Area in Vineland,
d) The Brow of the Niagara Escarpment Area; and
e) The Onondaga Escarpment Area.

(Geologic Hazard Mapping Study, Karst Topography, Phase I, NPCA Watershed Area, Terra Dynamics, 2006)

7.1.4 Back-Dune Areas

There are a number of back-dune areas located in-land from shorelines of Lake Erie. Back dune areas are considered to be a natural hazard, as these are locations which may be susceptible to slope failure and erosion, but may not be part of an *apparent valleyland* or part of the shoreline hazard area (as overtime they receded beyond the extent of the shoreline area). Back dunes form as a result of long-term changes of lake levels and a gradual recession of dune areas from the shoreline area. The NPCA will evaluate the potential risks associated with *development activities* on back-dunes on a case-by-case basis.

7.1.5 Hazard Slopes

There are instances throughout the *watershed* where steep slopes exist that are not part of a defined valley. These are considered hazard slopes and can be defined as having a vertical height greater than 3 metres and a slope steeper than 3:1 (horizonal to vertical).

7.2 POLICIES FOR PLANNING AND REGULATING HAZARDOUS LANDS

7.2.1 Objectives

The objectives of the *hazardous sites* policies are to:

a) Prevent the loss of life;
b) Minimize property damage;
c) Reduce the potential for incurring public cost associated with the impacts of *hazardous sites*; and,
d) Manage existing risks and reduce the potential for future risks.

7.2.2 Development Activity Regulation on Hazardous Lands

1. Unless exempt by Section 3.5.4, *development activities* and *site alteration* on *hazardous lands* shall not be permitted except in accordance with the policies of this Chapter.
2. *Development activities* and *site alteration* may only be permitted on *hazardous lands* where the following criteria has been addressed:

    a) A geotechnical study, completed by a qualified professional, demonstrates that all hazards associated with the site can be appropriately mitigated;
    b) Applicable provincial standards related to floodproofing, protection works and access can be met and are implemented;
    c) Vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
    d) Existing hazards are not aggravated;
    e) New hazards are not created; and

3. *Infrastructure* is permitted within *hazardous lands* subject to the policies of Chapter 10.

7.2.3 Development within 50 metres of a Hazardous Site

Development activities and/or *site alteration* shall not be permitted within 50 metres of *hazardous land* unless it can be demonstrated that there are no adverse impacts to the hazard with respect to the control of flooding, erosion, *dynamic beaches*, unstable soil, and bedrock.

7.2.4 Additional Policies for Karst

In addition to the Policies in Section 7.2.2, the following Policies apply to *hazardous lands* that are karst features.

1) *Development activities* and *site alteration* on karst or within 50 metres of karst will only be considered where the following concerns are addressed:

a) Storm water drainage;
b) Utilities;
c) Groundwater contamination; and
d) Flooding.

2) *Surface water* run-off shall not directly enter a sinkhole or closed depression unless that is the natural drainage pattern. Drainage plans shall be designed to route *surface water* run-off through vegetative filters or other filtration measures before it enters such features.
3) No water wells shall be installed within 50 metres of a karst feature. The NPCA may require an assessment of the draw down impact of the well on the water table and may decline approval where the draw down has the potential to destabilize karst topography.

8.0 WETLANDS

8.1 WHAT ARE WETLANDS

8.1.1 Defining Wetlands

The Conservation Authorities Act provides a definition of *wetlands* that means land that:

a) is seasonally or permanently covered by shallow water or has a water table close to or at its surface;

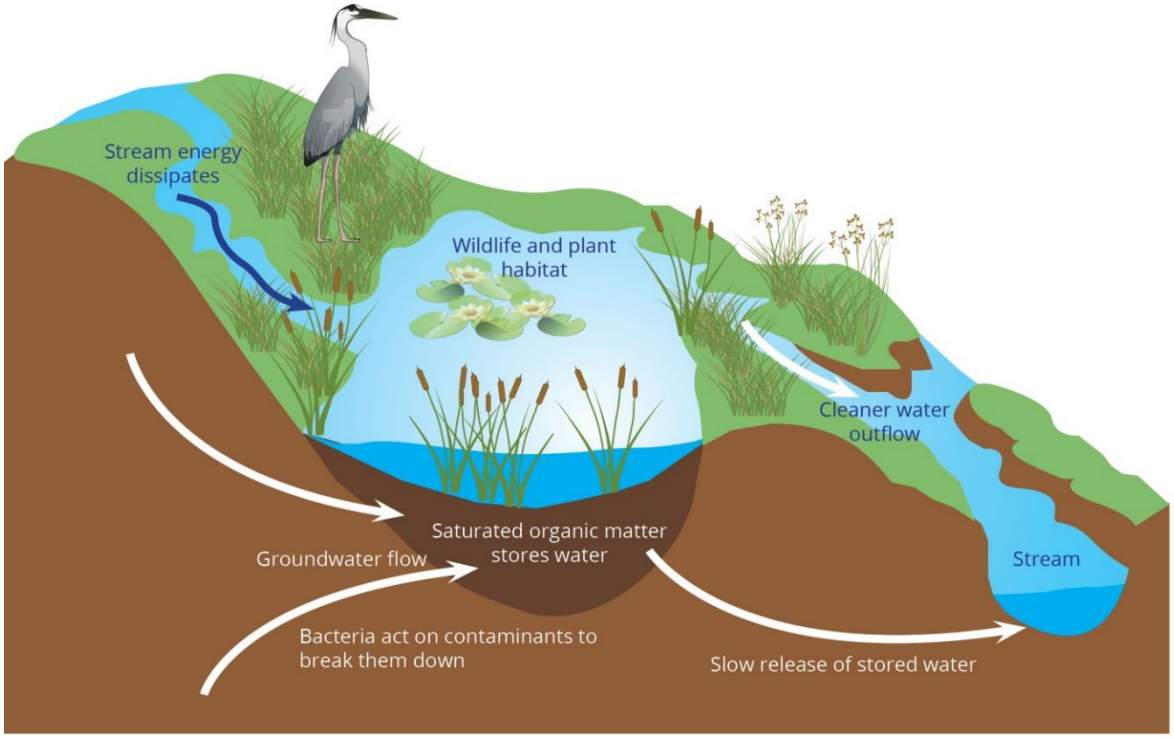
b) directly contributes to the hydrological function of a *watershed* through connection with a surface *watercourse*;

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, 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).

Wetlands are widely recognized as an important part of the ecosystem. *Wetlands* are among the most productive and biologically diverse habitats in the world. They play a multi-dimensional role in the hydrologic cycle acting as a source for flood attenuation, groundwater recharge and the improvement of water quality. *Wetlands* are an incredible source of biodiversity, offering a multitude of habitats for plants, birds, reptiles, amphibians, *fish* and other species. They also provide opportunities for *recreation* and have potential to play a significant role in *climate change* adaptation and mitigation strategies (see **Figure 8.1**).

Figure 8.1: Wetland Function



8.1.2 Classification of Wetlands

The policy framework within this Document recognizes several classes of *wetlands*:

a) *Provincially significant wetlands* (PSW);
b) *Non-Provincially significant wetlands* (non-PSW); and,
c) *Unevaluated wetlands*.

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*. Regardless of the classification given

to a *wetland* under the OWES methodology, if it meets the definition of a *wetland* under Regulation 41/24, it is regulated and *development activity* or *site alteration* adjacent or within the *wetland* is subject to NPCA's policies and procedures.

8.1.2.2 Non-Provincially Significant Wetlands

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

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 activity* 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.
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 activities* (including grading), or small scale non-permanent *development activity* (such as small backyard sheds not requiring planning approval) which in the opinion of NPCA will have no negative impact on the *hydrologic function* of the *wetland*. These cases will only be considered for small-scale *development* through the work permit process and where an appropriate *buffer* is maintained.
c) Areas identified through natural areas inventories, EIS's or other appropriate identification methodology (e.g., Ecological Land Classification) shall identify the area as a potential *unevaluated wetland* subject to these policies.
d) Where an *unevaluated wetland* is determined to be a non-PSW wetland and there is no reasonable alternative to avoid *development activity* within the non-PSW, in accordance with the Protection Hierarchy (avoid/minimize/mitigate first), the NPCA may allow for the reconfiguration and re-creation of the *wetland* in accordance with NPCA Procedures and subject to the following policies:

    i) The *wetland* to be reconfigured or re-created is within a Settlement Area;
    ii) The *wetland* to be reconfigured or re-created has been evaluated in accordance with the OWES Protocol and is not a PSW;
    iii) The Protection Hierarchy has been followed and all efforts to protect the feature have been exhausted first;
    iv) the *wetland* to be reconfigured or re-created is not protected by any other applicable federal, provincial or municipal requirement(s);
    v) An EIS is provided for review and approval to demonstrate conformity with Section 8.1.2.3 d);
    vi) The proposed *development activity* will not have a negative impact on any *species of concern*, *significant habitat* types or species at risk;

vii) The proposed *development activity* will not have a negative impact on the hydrological or *ecological function* of any remaining portions of the *wetland*;

viii) A restoration plan for the reconfigured or re-created *wetland* is provided and demonstrates an ecological net gain to the *watershed* natural system;

ix) A multi-year monitoring program is required (minimum five years) to ensure the long-term establishment of the reconfigured or re-created *wetland*;

x) A security deposit in an amount approved by the NPCA is provided to establish the reconfigured or re-created *wetland* and guarantee its establishment;

xi) 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 or re-created *wetland* that will provide the necessary details to implement the policies of Section 8.1.2.3 d); and

xii) Additional information, such as a hydrologic study, restoration plan and or other studies as required depending on site-specific characteristics.

8.1.3 Defining the Limits of Wetlands and Area of Interference

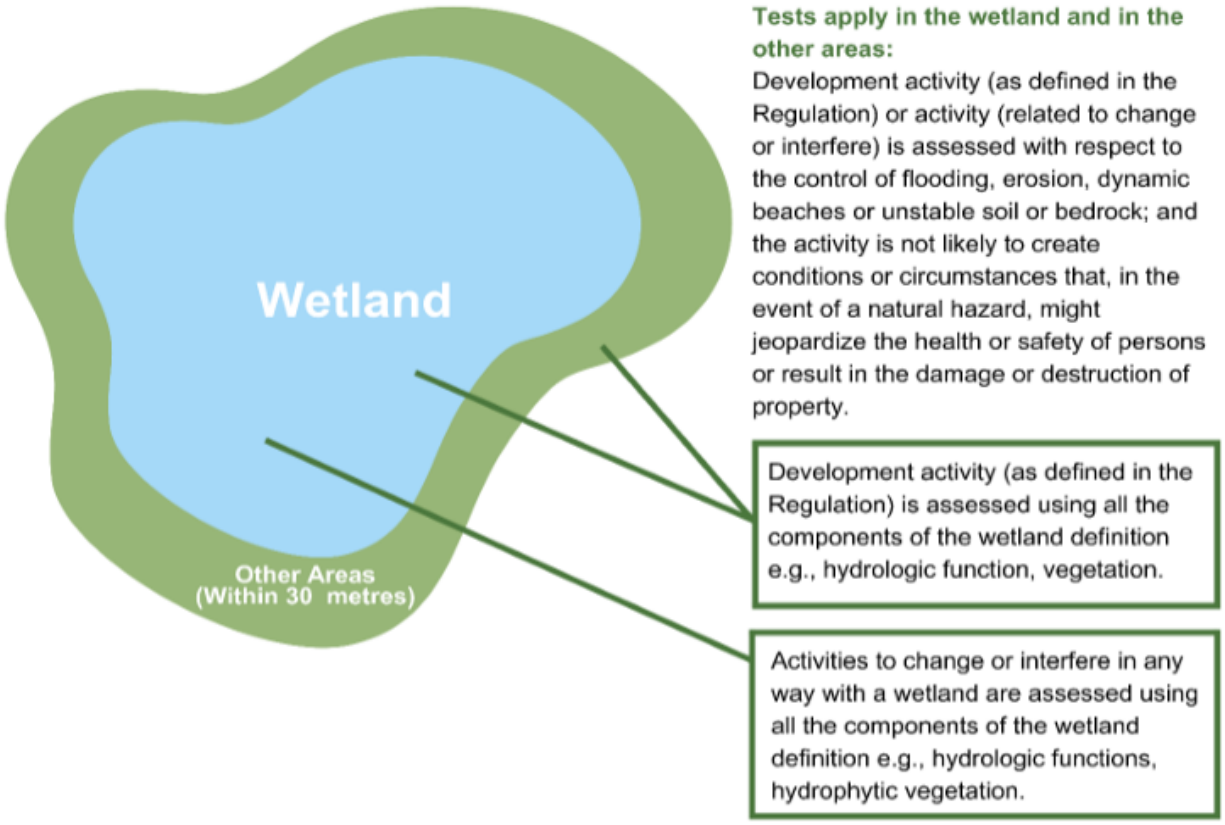
8.1.3.1 Wetland Boundary Delineation

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 activity* 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.

8.1.3.2 Area of Interference

The areas adjacent to *wetlands* where *development activities* could impact the *hydrologic function* of the *wetland* are referred to as areas of interference (see **Figure 8.2**). The areas of interference are considered to be a regulated area under the Ontario Regulation 41/24. The area of interference is 30 metres.

Figure 8.2: Areas of Interference



8.1.4 Environmental Impact Study (EIS)

Depending on the nature of the proposed *development activity*, the NPCA may request that the applicant undertake an EIS to evaluate the potential impacts on a *wetland*. The NPCA Procedural Manual provides guidance for the scoping and completion of an EIS. A component of the EIS work may include a wetland feature water balance assessment to examine impacts to the ecological integrity of a wetland through changes to its hydrology.

8.1.5 Hydrological Study

Depending on the nature of the proposed *development activity*, the NPCA may request that the applicant undertake a hydrological study to confirm potential impacts on the *hydrologic function* of the *wetland*. The NPCA Procedural Manual provides guidance for the scoping and completion of a hydrologic study.

8.2 POLICIES FOR PLANNING AND REGULATING DEVELOPMENT ACTIVITIES AND INTERFERENCE WITH WETLANDS

8.2.1 Objectives

The objectives of the *wetland* policies are to:

a) Promote the protection of *wetlands*;
b) Maintain and where appropriate, enhance *wetland* hydrological functions and features;
c) Protect wetlands and their functions to mitigate natural hazards;
d) Promote the maintenance, restoration and enhancement of *wetlands*; and
e) Provide a policy framework which aligns with Provincial standards for *wetland* protection, including guidance for decision-making related to the interference of *wetlands*.

8.2.2 Development Activities and Interference within a Wetland

8.2.2.1 Development Activities and Interference

Unless exempt by Section 3.5.4, no *development activity* and/or interference shall be permitted within any *wetland*.

8.2.2.2 New Buildings and Structures and Additions to Existing Buildings or Structures

1) New *buildings* or *structures* are not permitted within a *wetland*.

2) Additions to existing *buildings* or *structures* are not permitted within a *wetland*.

8.2.2.3 Reconstruction, Repair and Interior Alterations to Existing Buildings and Structures

1) The *reconstruction* of an existing *building* or *structure* within a *wetland* may be permitted subject to the following:

   a) the *structure* to be replaced is not a *derelict building*;
   b) the *structure* is replaced within the existing disturbed area;
   c) there is no viable alternate location on the property outside of the *wetland*;
   d) all other natural hazards which are associated with the wetland and site (e.g. flooding, unstable soils) must be addressed to the satisfaction of the NPCA;
   e) all *development activities* are located above the high water table;
   f) existing drainage patterns will be maintained; and
   g) best management practices are used to maintain water balance and control erosion and sedimentation.

2) Repairs and maintenance, including interior alteration to existing *buildings* or *structures* within a *wetland* are permitted provided that:

a) the risks associated with flooding are low;
b) any interior renovation does not result in an increase in the number of dwelling units; and
c) any interior alteration does not increase the physical footprint of the *building* or *structure*.

8.2.2.4 Accessory Structures and Buildings and Additions Thereto

Unless exempt by Section 3.5.4, accessory *structures* and *buildings* and additions thereto are not permitted within a *wetland*.

8.2.2.5 Conservation and Restoration Projects

1) Restoration projects may be permitted where it has been demonstrated to the satisfaction of the NPCA that the proposed works will enhance the overall ecological and hydrological function of the *wetland*. Depending on the scope, nature and location of the proposed works, the NPCA may require an EIS in accordance with the NPCA Procedural Manual to demonstrate how the hydrological features and functions will be protected, created, restored and/or enhanced.

2) Interference to any *wetland* by selective tree harvesting employing good forestry practices may be permitted provided it can be demonstrated to the satisfaction of the NPCA through an EIS or equivalent, such as a Forest Management Plan, there will be no negative impact on the hydrologic *functions* of the *wetland*.

8.2.2.6 Passive Recreation within a Wetland

Passive recreation is permitted within a *wetland*, subject to the following:

a) The risk to public safety from natural hazards, including flooding, erosion and shoreline hazards is not increased;
b) The area of disturbance is minimized;
c) The existing topography is maintained;
d) Trails are established using organic, pervious surfaces, or using boardwalks which will not impact natural vegetation;
e) Docks within riparian *wetlands* are designed only to accommodate small watercraft;
f) The removal of trees is avoided and/or minimized;
g) An EIS and/or re-vegetation plan in accordance with the NPCA Procedural Manual may be required to demonstrate there is no net loss of natural vegetation; and,
h) The overall hydrological functions of the *wetland* are maintained.

8.2.2.7 Site Alteration within a Wetland

1) *Site alteration* and placement of *fill* is not permitted within a PSW and any other *wetland*.

2) The crossing of a *watercourse* that contains a PSW or any other *wetland* that is confined to the channel may be permitted subject to the policies of Section 9.2.4.

8.2.2.8 Infrastructure

Public *infrastructure* is regulated within a *wetland* in accordance with the policies of Chapter 10.

8.2.3 Development in Areas of Interference

1) Unless exempt by Section 3.5.4, *development activities* or *site alteration* within 30 metres of a *wetland* shall not be permitted.

2) Notwithstanding Section 8.2.3.1, the following uses may be permitted within 30 metres of a *wetland*:

   a) New *buildings* or *structures* in accordance with Section 8.2.3 3);
   b) Replacement *buildings* and *structures*, in accordance with Section 8.2.3 4);
   c) *Accessory buildings and structures* in accordance with Section 8.2.3 4);
   d) Additions to existing *buildings* or *structures* in accordance with Section 8.2.3 4);
   e) Placement of *fill* in accordance with Section 8.2.3 5);
   f) *Infrastructure* in accordance with Chapter 10;
   g) Conservation and restoration projects in accordance with Section 8.2.2.5;
   h) *Passive recreational uses* in accordance with Section 8.2.2.6; and
   i) Other forms of *development activities* and *site alteration* which do not adversely impact the hydrological function of the *wetland*, and where the proposed *development activity* meets the *five tests* under the Conservation Authorities Act.

3) New *buildings* or *structures* within 30 metres of a wetland are subject to the following:

   a) A *buffer* is provided in accordance with Section 8.2.3.1;
   b) disturbances to natural vegetation communities contributing to the *hydrologic function* of the *wetland* are avoided;
   c) the overall existing drainage patterns will be maintained;
   d) disturbed area and soil compaction is minimized;
   e) where appropriate, the *development* activities is located above the high water table;
   f) all *private sewage disposal systems* are located a minimum of 15 metres from the *wetland* and a minimum of 0.9 metres above the water table;
   g) impervious areas are minimized;

h) the area between the proposed *development activity* and the *wetland* is or will be comprised of dense vegetation; and
i) best management practices are used to:
    i. Maintain water balance
    ii. Control sediment and erosion

4) Replacement *Buildings* and *Structures,* Additions to Existing *Buildings,* and new *Accessory Buildings and Structures* within 30 metres of a *wetland* are permitted subject to the following:

a) A *buffer* is provided to the extent possible where supported by an EIS prepared in accordance with the NPCA's Procedural manual;
b) disturbances to natural vegetation communities contributing to the *hydrologic function* of the *wetland* are avoided;
c) the overall existing drainage patterns will be maintained;
d) disturbed area and soil compaction is minimized;
e) where appropriate, *development activities* are located above the high water table;
f) all *private sewage disposal systems* are located a minimum of 15 metres from the *wetland* and a minimum of 0.9 metres above the water table;
g) impervious areas are minimized;
h) the area between the proposed *development* and the *wetland* is or will be comprised of dense vegetation; and
i) best management practices are used to:
    i. Maintain water balance
    ii. Control sediment and erosion
    iii. Buffer wetlands

5) *Site alteration* and/or *fill* placement may be permitted within 30 metres of a *wetland* subject to the following:

a) A *buffer* is provided in accordance with Section 8.2.3.1;
b) disturbances to natural vegetation communities contributing to the *hydrologic function* of the *wetland* are avoided;
c) the overall existing drainage patterns will be maintained;
d) disturbed area and soil compaction is minimized;
e) impervious areas are minimized;

f) the area between the proposed *development activity* and the *wetland* is or will be comprised of dense vegetation; and

g) best management practices are used to:

   i. Maintain water balance

   ii. Control sediment and erosion

8.2.3.1 Buffers to Wetlands

1) Where development activities are proposed adjacent to a wetland, a 30 metre buffer shall be provided.

2) Notwithstanding Section 8.2.3.1 1), a reduction to a non-PSW buffer shall only be considered where:

   a) There is no other reasonable alternative; and

   b) where supported by an EIS in accordance with NPCA Procedural Manual.

9.0 WATERCOURSES

9.1 WHAT ARE WATERCOURSES?

9.1.1 Watercourses

A *watercourse* is a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs (Conservation Authorities Act). *Watercourses* are complex, multi-functional, living systems. They transport water, sediment and energy. They are ecosystems, providing habitat for *fish*, amphibians, invertebrates, birds, plants and other species. *Watercourses* provide drinking water for communities, wildlife and livestock. *Watercourses* are also highly valued socio-economic resources, offering recreational opportunities, food, hydro generation, land drainage and educational experiences.

The Conservation Authorities Act uses the wording "in any way" when describing change or interference with a *watercourse*. *Activities* proposed within the *watercourse* boundary that could interfere "in any way" with the *watercourse*, including both those *activities* that meet the definition of *development activity* and those that do not necessarily meet the definition of *development activity* are regulated as described in sections 28 of the Conservation Authorities Act. An example of an *activity* that does not strictly meet the definition of *development activity* and could represent interference is vegetation removal. Consistent with the interpretation by MNRF/Conservation Ontario Section 28 Regulation Committee (2008) interference "in any way" is interpreted by NPCA as any anthropogenic act or instance which hinders, disrupts, degrades or impedes in any way the natural features or hydrologic of a *watercourse*.

Watercourses may need to be confirmed by NPCA through field investigation and further technical assessments may be required.

9.1.2 Need for an EIS or Hydrological Study

An EIS and/or hydrological study may be required in accordance with the NPCA Procedural Manual to confirm the location and limits of a *watercourse*, as well as any potential impacts of the proposed *development* on the hydrological features and functions. An EIS may also be required to confirm the extent of any natural *buffers* (refer to policy 9.2.5 for additional details) or for morphological assessments or any impacts on established natural *buffers*.

9.2 POLICIES FOR WATERCOURSE INTERFERENCE

9.2.1 Objectives

The objectives of the *watercourse* policies are to:

a) Protect and improve the health of *watercourses* within the *watershed*;
b) Protect and enhance hydrologic features and functions within the *watershed*;
c) Provide policy direction for *development activities* which may impact *watercourses* within the NPCA *watershed*; and,
d) Promote the conservation and restoration of *watercourses*.

9.2.2 Interference with a Watercourse

Interference with a *watercourse* shall not be permitted, except in accordance with the policies of this Document.

9.2.3 Watercourse Alterations

9.2.3.1 Watercourse Alterations

The NPCA may allow the alteration of a *watercourse* for the following works:

a) Channel realignments;
b) vegetation alteration/spot removal of sediment accumulation;
c) full or partial diversions;
d) retaining walls;
e) revetments;
f) bridges;
g) culverts;
h) docks;
i) erosion control measures;
j) storm sewer outlets; and
k) enclosures greater than 20 metres.

9.2.3.2 Criteria for Assessing Watercourse Alterations

The following policies apply to the alteration of a *watercourse*:

a) The need for the *watercourse* alteration has been demonstrated to the satisfaction of the NPCA;
b) The *watercourse* has been evaluated under NPCA's Procedural Manual and the alteration would be supported;
c) The proposed works are in accordance with NPCA standards;

d) Any proposed channel realignment shall only be allowed such that any required riparian *buffer* will not cross any property lines;
e) The proposed *watercourse* alteration does not increase *flood plain* elevations, flood frequency, erosion rates or erosion frequency along either side of the *watercourse*, upstream and/or downstream of the proposed works;
f) The works will not adversely affect the *hydrologic function* of the *watercourse* and *riparian zone*;
g) Adequate erosion protection measures are utilized when required; and
h) Sediment control measures are incorporated during the construction phase to the satisfaction of the NPCA.

9.2.3.3 Alterations to Existing Water Control Structures

Alterations to existing water control *structures* may be permitted where it can be demonstrated to the satisfaction of the NPCA that the items noted in Section 9.2.3.2 have been addressed.

9.2.4 Watercourse Crossings

Watercourse crossings, including *infrastructure* which goes over a *watercourse* or underneath it, such as bridges, culverts, pipelines, channel enclosures of less than 20 metres and causeways may be permitted, subject to the following:

a) There are no reasonable alternatives to the crossing;
b) Where physical alterations to the *watercourse* are required, they are in accordance with policy 9.2.3.2;
c) Where feasible, crossings avoid any bends in the *watercourse*;
d) The preferred location for crossings is in areas which are already disturbed, making use of existing impacted or open areas on the channel bank or valley slope;
e) The risk for increased flooding as a result of the crossing, either upstream or downstream, is mitigated;
f) Risks associated with erosion are addressed;
g) The design minimizes impacts on the hydrological features and functions, with a preference for open bottom *structures* and where appropriate, restoration measures are included to the satisfaction of the NPCA; and,
h) Maintenance requirements are minimized.

9.2.5 Watercourse Buffer Composition

9.2.5.1 Buffer Requirements

The following *buffer* requirements apply to *development* and *site alteration* adjacent to a *watercourse*:

a) A 30 metre *buffer* shall be provided where the *watercourse* contains permanent flow. Notwithstanding this requirement, the *buffer* may be reduced where supported by technical study in accordance with the NPCA Procedural Manual, but in no case shall the *buffer* be reduced below 15 metres.

b) A 15 metre *buffer* shall be provided for *watercourses* containing intermittent flow. Notwithstanding this requirement, the *buffer* may be reduced where supported by a technical study in accordance with the NPCA Procedural Manual.

9.2.6 Infrastructure

Notwithstanding the policies of this section, public *infrastructure* is permitted within a *watercourse* subject to the policies of Chapter 10.

9.2.7 Conservation and Restoration Projects

9.2.7.1 Conservation and Restoration of Watercourses

Notwithstanding the policies of this section, restoration projects, such as stream rehabilitation works intended to improve and enhance ecological and hydrological function of the *watercourse* may be permitted, subject to the following:

a) The proposed ecological and hydrological improvements are demonstrated to the satisfaction of the NPCA;
b) the proposed rehabilitation works uses best management practices;
c) the need for future maintenance is minimized;
d) stream bank stability is addressed, and where appropriate, enhanced;
e) channel design techniques are in accordance with NPCA Standards; and
f) considerations for the control of flooding, erosion, *dynamic beaches*, unstable soils, and bedrock are addressed.

10.0 POLICIES FOR INFRASTRUCTURE

It is recognized that certain *development activities*, interference and alterations associated with *infrastructure* by their nature may need to be located within or cross valley and stream corridors, *wetlands*, *watercourses*, *hazardous lands*, and lands adjacent to the Lake Ontario, Lake Erie and Niagara River shorelines. *Infrastructure* servicing, including new, replacement or expanded *infrastructure*, should be carefully sited and designed to:

- avoid, mitigate and remediate risks associated with flooding, erosion or slope instability
- protect, rehabilitate and restore existing landforms, features, and functions; and
- provide for human access.

10.1 General Infrastructure

The following policies apply to all *infrastructure* projects in addition to the policies of Sections 10.2, 10.3 and 10.4:

1) *Development activities*, interference and *site alteration* associated with *infrastructure* will not be permitted within a regulated area except in accordance with these policies.

2) *Development activities*, interference and alterations associated with new, replacement or expanded *infrastructure* may be permitted where it has been demonstrated that all feasible alternative sites and alignments have been explored through an environmental assessment process, or equivalent technical report, whichever is applicable based on the scale and scope of the project, and where it can be demonstrated to the satisfaction of NPCA that:

    a) There is no increase in risk associated with flood hazards and *erosion hazards* to upstream or downstream properties within valley and stream corridors;
    b) There is no impediment to the safe passage of flood flows;
    c) Along Lake Ontario and Lake Erie, *infrastructure* is designed in a manner that considers coastal processes such that there is no increase in risk associated with flood hazards, *erosion hazards* or *dynamic beach hazards* to adjacent properties within the shoreline reach;
    d) Notwithstanding any other clause in Section 10.1, only through Environmental Assessment could infrastructure interfere with a *wetland* provided that all alternatives to avoid *wetland* loss or interference have been considered and where unavoidable, the proposed alignment minimizes *wetland* loss or interference and maintains wetland water balance to the greatest extent feasible;
    e) *Infrastructure* has been designed in a manner that:

i. does not decrease the base flow characteristics of *watercourses*;
ii. minimizes the number of crossings and areas to be disturbed by *infrastructure* within valley and stream corridors or Lake Ontario, Lake Erie and Niagara River shoreline reach and potential *cumulative impacts*;
iii. considers options for remediation of existing natural hazards;
iv. minimizes the area of construction disturbance and vegetation removal;
v. maintains the predevelopment configuration of the *flood plain*, valley or stream corridors and the topography along the Lake Ontario, Lake Erie and Niagara River shorelines;
vi. does not impair *surface water* and groundwater quality through the introduction of sediments;
vii. does not prevent access for maintenance, evacuation, or during an emergency;
viii. when applicable, is in accordance with the requirements of NPCA standards for working on NPCA-owned lands dealing with archaeology, permission to enter and registered property interests; and
ix. is consistent with NPCA's Procedural Manual for mitigation measures, sediment and erosion control, construction access routes, restoration plans and maintenance management plans for *infrastructure* projects;

f) NPCA's *stormwater management* criteria, (water quantity, water quality, erosion control and water balance for groundwater), are met in accordance with applicable NPCA or municipal *stormwater management* criteria; and
g) That the interference is acceptable and/or it has been demonstrated that, in the opinion of NPCA, the control of flooding, erosion, *dynamic beach*, unstable soils and bedrock will not be affected.

3) Archaeological assessments are required for any *infrastructure* proposed for NPCA-owned lands.

4) Where *infrastructure* is permitted within *hazardous lands* or *hazardous sites*, an environmental monitoring and contingency plan, in accordance with NPCA Standards, may be required to address potential emergencies during construction and operation.

5) *Infrastructure* projects undertaken in a regulated area require an NPCA work permit.

10.2 Underground Infrastructure

Infrastructure installed underground includes, but is not limited to: sanitary sewers, watermains, gas and oil pipelines, geothermal energy systems, cable, electricity, and telecommunication lines. For tunnels for roads or public transit rights-of-ways, the policies for transportation (Section 10.3) also apply.

1) That *development activities*, interference and alterations associated with new, replacement or expanded underground *infrastructure* may be permitted where it has been demonstrated that all feasible alternative sites and alignments have been considered through an environmental assessment, or equivalent technical report, whichever is applicable based on the scale and scope of the project, and where it can be demonstrated to the satisfaction of NPCA that:

    a) there are no *negative impacts* to the *quality and quantity of groundwater and surface water*, including stream baseflow;
    b) impacts on groundwater flow and discharge are minimized and mitigated;
    c) *erosion hazards* of valley and stream corridors and the Lake Ontario, Lake Erie and Niagara River shorelines are avoided;
    d) all options for horizontal and vertical alignments to avoid, minimize and/or mitigate impacts on aquifers and *surface water* receptors have been considered;
    e) dewatering and/or dewatering discharge during and post construction will be managed; and
    f) design and construction technologies are used to reduce the risk of hydrological impacts and minimize grade alterations to existing topography.

10.3 Transportation Infrastructure

Transportation *infrastructure* includes, but is not limited to: new road crossings, railway lines, subways, and other transit rights-of-way, their associated facilities, or alterations to existing transportation *infrastructure* such as extension, widening, repair to, upgrades of, or replacements. For the tunneling of roads or public transit right-of-way, the policies for underground *infrastructure* (Section 10.2) also apply.

1) That *development activities*, interference and alterations associated with new, replacement or expanded transportation *infrastructure* crossing valley and stream corridors may be permitted where it can be demonstrated to the satisfaction of NPCA that:

    a) there are no upstream or downstream impacts to flooding and erosion;
    b) flood flows can be safely conveyed;
    c) the crossing is situated at appropriate locations to avoid *hazardous lands*;

d) the hydrological functions of the valley or stream corridor are maintained by considering the following in accordance with the NPCA Procedural Manual:
    i. the physical characteristics and geomorphic processes of the *watercourse*;
    ii. valley or stream corridor form; and
    iii. pedestrian passage (e.g. trails).
e) for road widenings, the surface area of both the adjacent existing road and the new section of road meet applicable NPCA or municipal *stormwater management* criteria.

2) *Watercourse* crossings by municipal culverts are permitted subject to the following:

a) There are no reasonable alternatives to the crossing;
b) where physical alterations to the *watercourse* are required, they are in accordance with Section 9.2.3.2;
c) where feasible, crossings avoid any bends in the *watercourse*;
d) the preferred location for crossings is in areas which are already disturbed, making use of existing impacted or open areas on the channel bank or valley slope;
e) the risk for increased flooding as a result of the crossing, either upstream or downstream, is mitigated;
f) risks associated with erosion are addressed;
g) the design minimizes impacts on the hydrological functions, with a preference for open bottom *structures* and where appropriate, restoration measures are included to the satisfaction of the NPCA; and
h) maintenance requirements are minimized.

10.4 Stormwater Management (SWM) Facilities Infrastructure

SWM facility *infrastructure* projects include new facilities and alterations to existing facilities designed to manage *stormwater* and the *infrastructure* necessary to support the function of the facility. Examples of SWM facilities include but are not limited to: SWM ponds, infiltration trenches, bioretention facilities, enhanced swales, and oil and grit separators. Examples of supporting *infrastructure* include but are not limited to outfall structures, plunge pools, outfall channels and maintenance access roads.

1) That *development activities*, interference and alterations associated with SWM facilities shall not be permitted:

a) within *watercourses* (on-line), or *wetlands*;

b) within the meander belt or, in the case of a quantity control facility, the *100-year flood plain* of a *watercourse*, whichever is greater;
c) on a valley wall subject to erosion; or
d) within the stable slope allowance or *dynamic beach hazard* along the Lake Ontario and Lake Erie shoreline.

2) That *development activities*, interference and alterations associated with *infrastructure* that supports SWM facilities (e.g. outfall *structures*, etc.) shall generally be:

a) located outside of the meander belt wherever possible;
b) avoid disturbance to natural features, to the extent possible to prevent erosion; and
c) designed to reduce erosive velocities and mitigate thermal impacts (in the case of outfalls and outfall channels).

3) That sub-*watershed* drainage diversion be avoided in order to maintain existing *watershed* boundaries and drainage patterns.

4) That *development activities*, interference and alterations associated with SWM facility *infrastructure* may be permitted where it has been demonstrated to the satisfaction of NPCA that:

a) Where such studies have been completed, the location and function of SWM facilities and supporting *infrastructure* are consistent with a sub-*watershed* study, a Master Environmental Servicing Plan (MESP), an environmental assessment process or equivalent supported by NPCA;
b) the specific location, sizing and design of the SWM facility *infrastructure* has been addressed in a *Stormwater Management* Report, or equivalent, in accordance with the applicable NPCA or municipal *Stormwater Management* criteria and policies;
c) the SWM facilities and supporting *infrastructure* will be naturalized using native species except where combined with *recreation* or other facilities;
d) an operation and maintenance plan has been developed and will be implemented to ensure long term performance of the facility; and
e) the SWM facilities are sited and designed to ensure public safety and, where appropriate, integrated into the developing or redeveloping community, as attractive amenities for safe, passive use and enjoyment.

5) That where a sub-*watershed* study, an MESP, an environmental assessment process or comprehensive environmental study, determines that SWM facilities designed to control to the *regional storm* are required, the facility be designed to ensure public safety and to reduce risk associated with failure.

DEFINITIONS/ GLOSSARY

It is intended that the definition of these and other terms contained in this Document be consistent with the definitions listed in the Provincial Policy Statement, as amended, and/or with the definitions listed in the Guidelines for Implementing Ontario Regulation 155/06: *Development*, Interference with Wetlands and Alterations to Shorelines and Watercourses, where appropriate.

Access Standards: means methods or procedures to ensure safe vehicular and pedestrian movement, and access, for the maintenance and repair of protection works, during times of flooding hazards, erosion hazards, and/or other water-related hazards. (PPS 2020)

Accessory Buildings and Structures: means a *non-habitable* building or structure that is subordinate and exclusively devoted to a main use, building or structure and is located on the same lot as the main use, building or structure to which it is subordinate.

Activity: means something done by a person that poses an inherent risk to a source of drinking water.

Adjacent lands: mean those lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or area. The extent of the adjacent lands may be recommended by the Province or based on municipal approaches which achieve the same objectives. (PPS 2020)

Adverse effects: as defined in the Environmental Protection Act, means one or more of:

a) impairment of the quality of the natural environment for any use that can be made of it;
b) injury or damage to property or plant or animal life;
c) harm or material discomfort to any person;
d) an adverse effect on the health of any person;
e) impairment of the safety of any person;
f) rendering any property or plant or animal life unfit for human use;
g) loss of enjoyment of normal use of property; and
h) interference with normal conduct of business (PPS 2020)

Agricultural uses: means the growing of crops, including nursery, biomass, and horticultural crops; raising of livestock; raising of other animals for food, fur or fibre, including poultry and *fish*; aquaculture; apiaries; agro-forestry; maple syrup production; and associated on farm buildings and structures, including, but not limited to livestock facilities, manure storages, value-retaining facilities, and accommodation for full-time farm labour when the size and nature of the operation requires additional employment. (PPS 2020)

Agriculture-related uses: means those farm related commercial and farm-related industrial uses that are directly related to farm operations in the area, support agriculture, benefit from being in close proximity to farm operations, and provide direct products and/or services to farm operations as a primary activity. (PPS 2020)

Apparent Valley: means a valley that is greater than or equal to 3 metres in height.

Balanced Cut and Fill: means an engineering technique used to balance flood storage losses resulting from Filling or Development activities within *flood plains*. An equivalent volume of earth is removed from the *flood plain* at appropriate elevations and locations to offset areas within *flood plains* that are Filled or developed.

Buffer: means an area or band of permanent natural self-sustaining vegetation, located adjacent to a regulated feature and area and usually bordering lands that are subject to development or site alteration.

Building: 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.

Climate Change: means changes in long-term weather patterns caused by natural phenomena and human activities that alter the chemical composition of the atmosphere through the build-up of greenhouse gases which trap heat and reflect it back to the earth's surface.

Coastal wetland: means

a) any wetland that is located on one of the Great Lakes or their connecting channels (Lake St. Clair, St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers); or
b) any other wetland that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located 2 kilometres upstream of the 1:100 year floodline (plus wave run-up) of the large water body to which the tributary is connected. (PPS 2020)

Cumulative Impacts: 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. (NPCA EIS Guidelines)

Defined portions of the flooding hazard along connecting channels: means those areas which are critical to the conveyance of the flows associated with the one hundred year flood level along the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers, where development or site alteration will create flooding hazards, cause updrift and/or downdrift impacts and/or cause adverse environmental impacts. (PPS 2020)

Deposits of Mineral Aggregate Resources: means an area of identified mineral aggregate resources, as delineated in Aggregate Resource Inventory Papers or comprehensive studies prepared using evaluation procedures established by the Province for surficial and bedrock resources, as amended from time to time, that has a sufficient quantity and quality to warrant present or future extraction. (PPS 2020)

Derelict building: means a building or structure which is empty and in a bad state of repair because it has not been used or lived in for a long time.

Development: [in the PPS] means the creation of a new lot, a change in land use or the construction of Buildings and Structures which require approval under the Planning Act but does not include:

a) activities that create or maintain *infrastructure* authorized under an Environmental Assessment Process;
b) works subject to the Drainage Act; or
c) for the purposes of PPS policy 2.1.4 (a), underground or surface mining of minerals or advanced exploration on mining lands in Significant areas of mineral potential in EcoRegion 5E, where advanced exploration has the same meaning as under the Mining Act. Instead, those matters shall be subject to policy 2.1.5(a). (PPS 2020)

Development Activities: [under the Conservation Authorities Act] means

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

Dynamic Beach: means an area of inherently unstable accumulations of shoreline sediments, which can change without warning.

Dynamic Beach Hazard: 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 dynamic beach allowance. (PPS 2020)

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 (PPS 2020).

Essential Emergency Service: means services which would be impaired during an emergency as a result of flooding, the failure of floodproofing measures and/or protection works, and/or erosion. (PPS 2020)

Evaluated Wetland: A wetland that has been evaluated using the Ontario Wetland Evaluation System (OWES), or evaluated with NPCA's evaluation process.

Fill: Is 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 Tests: The five tests of a work permit application under Ontario Regulation 41/24 including the control of flooding, erosion, dynamic beaches, unstable soil and bedrock.

Flood Fringe: for river, stream and small inland lake systems, means the outer portion of the flood plain between the floodway and the flooding hazard limit. Depths and velocities of flooding are generally less severe in the flood fringe than those experienced in the floodway.

Flood Line: means an engineered line delineating the potential extent of flooding, by elevation, as a result of a specific flood event.

Flood plain: for river, stream and small inland lake systems, means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazards. (PPS, 2020)

Flooding hazard: means the inundation, under the conditions specified below, of areas adjacent to a shoreline or a river or stream system and not ordinarily covered by water:

a) along the shorelines of the Great Lakes - St. Lawrence River System and large inland lakes, 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 the greater of:
    1. the flood resulting from the rainfall actually experienced during a major storm such as the Hurricane Hazel storm (1954) or the Timmins storm (1961), transposed over a specific watershed and combined with the local conditions, where evidence suggests that the storm event could have potentially occurred over watersheds in the general area;
    2. the one hundred year flood; and
    3. a flood which is greater than 1. or 2. which was actually experienced in a particular watershed or portion thereof as a result of ice jams and which has been approved as the standard for that specific area by the Minister of Natural Resources and Forestry;

    except where the use of the one hundred year flood or the actually experienced event has been approved by the Minister of Natural Resources and Forestry as the standard for a specific watershed (where the past history of flooding supports the lowering of the standard). (PPS 2020)

Floodproofing standard: means the combination of measures incorporated into the basic design and/or construction of buildings, structures, or properties to reduce or eliminate flooding hazards, wave uprush and other water-related hazards along the shorelines of the Great Lakes - St. Lawrence River System and large inland lakes, and flooding hazards along river, stream and small inland lake systems. (PPS 2020)

Flood Plain Mapping: means the process whereby floodlines are produced and plotted on suitable base maps using procedures approved by the Province of Ontario. The use of computers allows for the detailed identification and consideration of local watershed features, such as drainage areas, soils, land use, flow constrictions, and topography when determining flows and flood levels.

Floodway: for river, stream and small inland lake systems, means the portion of the flood plain where development and site alteration would cause a danger to public health and safety or property damage. Where

the one zone concept is applied, the floodway is the entire contiguous flood plain. Where the two zone concept is applied, the floodway is the contiguous inner portion of the flood plain, representing that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage. Where the two zone concept applies, the outer portion of the flood plain is called the flood fringe. (PPS 2020)

Great Lakes - St. Lawrence River System: means the major water system consisting of Lakes Superior, Huron, St. Clair, Erie and Ontario and their connecting channels, and the St. Lawrence River within the boundaries of the Province of Ontario. (PPS 2020)

Green infrastructure: means natural and human-made elements that provide ecological and hydrological functions and processes. Green infrastructure can include components such as natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs. (PPS 2020)

Ground water feature: 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. (PPS 2020)

Hazardous forest types for wildland fire: means forest types assessed as being associated with the risk of high to extreme wildland fire using risk assessment tools established by the Ontario Ministry of Natural Resources and Forestry, as amended from time to time. (PPS 2020)

Habitable: means that portion of a building or structure containing rooms or spaces required and intended for overnight occupancy and associated living space, and includes those portions which contain facilities for storage, heating, air-conditioning, electrical, hot water supplies, etc., which are necessary to maintain the habitable condition.

Hazardous Lands: When applying the Conservation Authorities Act, hazardous land means land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock.

Hazardous Lands: When applying the Planning Act, means property or lands that could be unsafe for development due to naturally occurring processes. Along the shorelines of the Great Lakes - St. Lawrence River system, this means the land, including that covered by water, between the international boundary, where applicable, and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along the shorelines of large inland lakes, this means the land, including that covered by water, between a defined offshore distance or depth and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along river, stream and small inland lake systems, this means the land, including that covered by water, to the furthest landward limit of the flooding hazard or erosion hazard limits. (PPS 2020)

Hazardous sites: means property or lands that could be unsafe for development and site alteration due to naturally occurring hazards. These may include unstable soils (*sensitive* marine clays [leda], organic soils) or unstable bedrock (karst topography). (PPS 2020)

Hazardous substances: means substances which, individually, or in combination with other substances, are normally considered to pose a danger to public health, safety and the environment. These substances generally include a wide array of materials that are toxic, ignitable, corrosive, reactive, radioactive or pathological. (PPS 2020)

Hydraulic Floodway: means the inner portion of the flood plain where flood depths and velocities are generally higher and faster flowing than those experienced in the outer or fringe portion of the overall flood plain. The floodway represents that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a significant threat to life and/or property damages.

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.

Impacts of a changing climate: means the present and future consequences from changes in weather patterns at local and regional levels including extreme weather events and increased climate variability. (PPS 2020)

Individual on-site sewage services: means sewage systems, as defined in O. Reg. 332/12 under the Building Code Act, 1992, that are owned, operated and managed by the owner of the property upon which the system is located. (PPS 2020)

Individual on-site water services: means individual, autonomous water supply systems that are owned, operated and managed by the owner of the property upon which the system is located

Inert: In the context of fill means earth or rock fill or waste of a similar nature that contains no putrescible materials or soluble or decomposable chemical substances. (PPS 2020)

Infrastructure: 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. (PPS 2020)

Institutional use: means land uses where there is a threat to the safe evacuation of vulnerable populations such as older persons, persons with disabilities, and those who are sick or young, during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion. (PPS 2020)

Intensification: means the development of a property, site or area at a higher density than currently exists through:

a) *redevelopment*, including the reuse of brownfield sites;
b) the development of vacant and/or underutilized lots within previously developed areas;
c) infill development; and d) the expansion or conversion of existing buildings. (PPS 2020)

Intermittent watercourse: means a waterbody that may carry water on an irregular basis, for example, only at certain times of the year, or only in certain years. Intermittent systems flow continuously for only a portion of the year, or are consistently dry, during the summer months. If a watercourse flows during brief periods (usually during the spring and/or fall), or for brief periods following storm events during the summer months or has a defined channel but is dry for at least three months of the year, it should be considered intermittent. If the watercourse is categorized as an intermittent system, but habitats are present within the drain where there are known *sensitive* species, the drain cannot be considered intermittent.

Large inland lakes: means those waterbodies having a surface area of equal to or greater than 100 square kilometres where there is not a measurable or predictable response to a single runoff event. (PPS 2020)

Interfering in any way (also interference): means any anthropogenic act or instance which hinders, disrupts, degrades or impedes in any way the natural features or hydrologic and ecologic functions of a wetland or watercourse.

Large Fill: Includes the placement of fill which is greater than 250m^3 (8829 cubic feet).

Legal or Technical Reasons: means severances for purposes such as easements, corrections of deeds, quit claims, and minor boundary adjustments, which do not result in the creation of a new lot.

Meander belt allowance: means the limit for development within the areas where the river system is likely to shift. It is based on twenty (20) times the bankfull channel width where the bankfull channel width is measured at the widest riffle section of the reach. A riffle is a section of shallow rapids where the water surface is broken by small waves. The meander belt is centred over a meander belt axis that connects the riffle section of the stream.

Mineral Aggregate Operation: means

a) lands under license or permit, other than for wayside pits and quarries, issued in accordance with the Aggregate Resources Act;
b) for lands not designated under the Aggregate Resources Act, established pits and quarries that are not in contravention of municipal zoning by-laws and including adjacent land under agreement with or owned by the operator, to permit continuation of the operation; and
c) associated facilities used in extraction, transport, beneficiation, processing or recycling of mineral aggregate resources and derived products such as asphalt and concrete, or the production of secondary related products. (PPS 2020)

Mineral Aggregate Resources: means gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, rock or other material prescribed under the Aggregate Resources Act suitable for construction, industrial, manufacturing and maintenance purposes but does not include metallic ores, asbestos, graphite, kyanite, mica, nepheline syenite, salt, talc, wollastonite, mine tailings or other material prescribed under the Mining Act. (PPS 2020)

Mineral Aggregate Resource Conservation: means

a) the recovery and recycling of manufactured materials derived from mineral aggregates (e.g. glass, porcelain, brick, concrete, asphalt, slag, etc.), for re-use in construction, manufacturing, industrial or maintenance projects as a substitute for new mineral aggregates; and
b) the wise use of mineral aggregates including utilization or extraction of on-site mineral aggregate resources prior to development occurring. (PPS 2020)

Minor Works: means a category of Development within the flood plain which has relatively small economic value and will not lead to significant economic hardship if lost in times of severe flooding. The construction of Minor Works does not require detailed Floodproofing measures and therefore there is an assumption of risk associated with the Development.

Municipal Drain: means a "drainage works" as defined under the Drainage Act. Under the Act, a drainage works is defined as a drain constructed by any means, including the improving of a natural watercourse, and includes works necessary to regulate the water table or water level within or on any lands or to regulate the level of the waters of a drain, reservoir, lake or pond, and includes a dam, embankment, wall, protective works or any combination thereof. To be a municipal drain, there must be a municipal by-law that adopts an engineer's report that defines the drainage system and states how the cost of the system is to be shared among property owners.

Negative impacts: means
a) in regard to policy 1.6.6.4 and 1.6.6.5, potential risks to human health and safety and degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features, and their related hydrologic functions, due to single, multiple or successive development. Negative impacts should be assessed through environmental studies including hydrogeological or water quality impact assessments, in accordance with provincial standards;
b) in regard to policy 2.2, degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features, and their related hydrologic functions, due to single, multiple or successive development or site alteration activities;
c) in regard to fish habitat, any permanent alteration to, or destruction of fish habitat, except where, in conjunction with the appropriate authorities, it has been authorized under the Fisheries Act; and
d) in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities. (PPS 2022)

Non-Apparent Valley: means a valley that is less than 3 metres in height.

Normal farm practices: means a practice, as defined in the Farming and Food Production Protection Act, 1998, that is conducted in a manner consistent with proper and acceptable customs and standards as established and followed by similar agricultural operations under similar circumstances; or makes use of innovative technology in a manner consistent with proper advanced farm management practices. Normal farm practices shall be consistent with the Nutrient Management Act, 2002 and regulations made under that Act. (PPS 2022)
On-farm diversified uses: means uses that are secondary to the principal agricultural use of the property, and are limited in area. On-farm diversified uses include, but are not limited to, home occupations, home industries, agritourism uses, and uses that produce value-added agricultural products. Ground-mounted solar facilities are permitted in prime agricultural areas, including specialty crop areas, only as on-farm diversified uses. (PPS 2022)

One hundred (100) year flood: for river, stream and small inland lake systems, means that flood, 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% change of occurring or being exceeded in any given year. (PPS 2020) It is the flood used for regulatory purposes in the Niagara Peninsula with the exception of three watersheds located within the City of Niagara Falls.

One hundred year flood level: means

a) for the shorelines of the Great Lakes, the peak instantaneous stillwater level, resulting from combinations of mean monthly lake levels and wind setups, which has a 1% chance of being equalled or exceeded in any given year;
b) in the connecting channels (St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers), the peak instantaneous stillwater level which has a 1% chance of being equalled or exceeded in any given year; and
c) for large inland lakes, lake levels and wind setups that have a 1% chance of being equalled or exceeded in any given year, except that, where sufficient water level records do not exist, the one hundred year flood level is based on the highest known water level and wind setups. (PPS 2020)

One hundred (100) year flood limit (for the shorelines of the Great Lakes): means the peak instantaneous stillwater level , resulting from combinations of mean monthly lake levels and wind setups that have a 1% chance of being equaled or exceeded in any given year.

Open space: means lands that are retained in an open, green state. These lands may or may not be maintained as natural areas, but could include Conservation Areas, municipal parks, or green belts along stream or river corridors.

Original Ground Floor Area: means the ground floor area of a Building at current grade, measured by the total dimensions of the exterior face of the Structure. For purposes of the Authority's cumulative exceedance requirements, original floor area of Building would be the floor area of a Building that existed on or after May 4th, 2006 for the purposes of Buildings in the flood plain (date on which Ontario Regulation 155/06 came into effect).

Other water-related hazards: means water associated phenomena other than flooding hazards and wave uprush which act on shorelines. This includes, but is not limited to ship-generated waves, ice piling and ice jamming. (PPS 2020)

Partial services: means a) municipal sewage services or private communal sewage services combined with individual on-site water services; or b) municipal water services or private communal water services combined with individual on-site sewage services. (PPS 2020)

Passive Recreational Uses: means recreational activities that occur in a natural setting which require minimal development or facilities, and the importance of the environment or setting for the activities is greater than in developed or active recreation settings.

Permanent Watercourse: Permanent systems flow year round or are consistently wet. If a watercourse continues to flow (in an average year), or is consistently wet, during the dry summer months, it should be considered permanent.

Predicted meander belt allowance: means the maximum extent that a water channel migrates.

Prime agricultural area: means areas where prime agricultural lands predominate. This includes areas of prime agricultural lands and associated Canada Land Inventory Class 4 through 7 lands, and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture. Prime agricultural areas may be identified by the Ontario Ministry of Agriculture and Food using guidelines developed by the Province as amended from time to time. A prime agricultural area may also be identified through an alternative agricultural land evaluation system approved by the Province. (PPS 2020)

Prime agricultural land: means specialty crop areas and/or Canada Land Inventory Class 1, 2, and 3 lands, as amended from time to time, in this order of priority for protection.

Private Sewage Disposal System: means any onsite sanitary sewage treatment system and may include components such as a septic tank, holding tank, tile bed, mantle, and privy.

Provincially Significant Wetland: an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry using evaluation procedures established by the Province, as amended from time to time. (PPS 2020)

Protection works standards: means the combination of non-structural or structural works and allowances for slope stability and flooding/erosion to reduce the damage caused by flooding hazards, erosion hazards and other water-related hazards, and to allow access for their maintenance and repair.

Provincial Plan: means a provincial plan within the meaning of section 1 of the Planning Act.

Public service facilities: means land, buildings and structures for the provision of programs and services provided or subsidized by a government or other body, such as social assistance, recreation, police and fire protection, health and educational programs, long-term care services, and cultural services. (PPS 2020)

Quality and Quantity of Water: is measured by indicators associated with hydrologic function such as minimum base flow, depth to water table, aquifer pressure, oxygen levels, suspended solids, temperature, bacteria, nutrients and hazardous contaminants, and hydrologic regime. (PPS 2020)

Reconstruction: The restoration of a building or structure to its original form (i.e. same dimensions, square footage and building footprint).

Recreation: means leisure time activity undertaken in built or natural settings for purposes of physical activity, health benefits, sport participation and skill development, personal enjoyment, positive social interaction and the achievement of human potential. (PPS 2020)

Redevelopment: means the creation of new units, uses or lots on previously developed land in existing communities, including brownfield sites. (PPS 2020)

Regional Storm: The Regional Storm used for this part of Ontario is the Hurricane Hazel storm. This storm occurred over the Humber River watershed in October, 1954. This storm is used for regulatory purposes for three watersheds located within the City of Niagara Falls.

Regulatory Flood: means the Regulatory Flood is the 100 Year Flood for the entire Niagara Peninsula Conservation Authority with the exception of three watersheds located within the City of Niagara Falls. The Regional Storm is the Regulatory Flood for the watersheds associated with Shriner's Creek, Ten Mile Creek and Beaverdam's Creek (including Tributary W-6-5).

Residence surplus to a farming operation: means an existing habitable farm residence that is rendered surplus as a result of farm consolidation (the acquisition of additional farm parcels to be operated as one farm operation). (PPS 2020)

Residential intensification: means intensification of a property, site or area which results in a net increase in residential units or accommodation and includes:

a) *redevelopment*, including the *redevelopment* of brownfield sites;
b) the development of vacant or underutilized lots within previously developed areas;
c) infill development;
d) development and introduction of new housing options within previously developed areas;
e) the conversion or expansion of existing industrial, commercial and institutional buildings for residential use; and
f) the conversion or expansion of existing residential buildings to create new residential units or accommodation, including accessory apartments, additional residential units, rooming houses, and other housing options. (PPS 2020)

Riparian Vegetation: means the plant communities in the riparian zone, typically characterized by hydrophilic plants.

Riparian Zone: means the interface between land and a flowing surface water body.

River, Stream and Inland Lake Systems: means all watercourses, rivers, streams and small inland lakes or waterbodies that have a measurable or predictable response to a single runoff event. (PPS 2020)

Rural Areas: means a system of lands within municipalities that may include rural settlement areas, rural lands, prime agricultural areas, natural heritage features and areas, and resource areas. (PPS 2020)

Rural Lands: means lands which are located outside settlement areas and which are outside prime agricultural areas. (PPS 2020)

Runoff: That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into the receiving waters.

Safe Access: means the ability of both pedestrians and vehicles to enter and exit a property safely during times of flooding hazards, erosion hazards, and/or other water-related hazards. It also means the ability to safely perform regular or emergency maintenance and repair of protection works.

Settlement areas: means urban areas and rural settlement areas within municipalities (such as cities, towns, villages and hamlets) that are:

a) built-up areas where development is concentrated and which have a mix of land uses; and
b) lands which have been designated in an official plan for development over the long-term planning horizon. In cases where land in designated growth areas is not available, the settlement area may be no larger than the area where development is concentrated. (PPS 2020)

Setback: means the horizontal distance between the boundary of a feature and the nearest point of any building or structure.

Site Alteration: means activities such as grading, excavation, and the placement of fill that would change the landform and natural vegetative characteristics of a site. (PPS 2020)

Special Policy Area: means an area within a community that has historically existed in the flood plain and where site-specific policies, approved by both the Ministers of Natural Resources and Municipal Affairs and Housing, are intended to provide for the continued viability of existing uses (which are generally on a small scale) and address the significant social and economic hardships to the community that would result from strict adherence to provincial policies concerning development. The criteria and procedures for approval are established by the Province. A Special Policy Area is not intended to allow for new or intensified development and site alteration, if a community has feasible opportunities for development outside the flood plain.

Stormwater: includes stormwater runoff, snow melt runoff, surface runoff and drainage. It excludes infiltration.

Stormwater Management (SWM): practices implemented to protect natural waterways and receiving waters from urban impacts. Controls used include peak flow control for flood control, peak flow and volume control to mitigate erosion impacts and water quality controls for water quality impacts.

Structure: means that which is built and can include, but is not limited to, dwellings or other Buildings or partial Building, all of which require footings or foundation support, as well as retaining walls, septic systems, private roads, parking lots, berms, swimming pools and decks.

Surface water: means water that is on the earth's surface.

Surface water feature: 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. (PPS 2020)

Surface water intake protection zone: means an area of land and water that contributes water to a drinking water intake over a distance or set period of time. Toe erosion allowance a horizontal allowance measured landward from the toe of the shoreline cliff, bluff, or bank reflecting the possible erosion of the toe of the slope. Also, the potential extent of inland recession of the toe (bottom) of a slope, due to erosive forces, over a period of 100 years.

Top of bank: means the first significant break in slope along a waterbody, sometimes leading to a plateau of relatively level ground. Threatened species means a species that is classified as "Threatened Species" on the Species at Risk in Ontario List, as updated and amended from time to time. (PPS 2020)

Unstable slope: means the four main classes of slope movement: translational or surficial sliding, rotational failures, retrogressive failures, and flow slides or earth flows. Refer to Section 2.4.5.1 of MNR's Technical Guide – River and Stream Systems: Erosion Hazard Limit (2002) for additional information.

Two zone concept: means an approach to floodplain management where the flood plain is differentiated in two parts: the floodway and the flood fringe. (PPS 2020)

Valleylands: 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. (PPS 2020)

Vulnerable: means surface and/or ground water that can be easily changed or impacted. (PPS 2020)

Watercourse: means a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs.

Wave uprush: means the rush of water up onto a shoreline or structure following the breaking of a wave; the limit of wave uprush is the point of furthest landward rush of water onto the shoreline. (PPS 2020)

Watershed: means an area that is drained by a river and its tributaries. (PPS 2020)

Wayside pits and quarries: means a temporary pit or quarry opened and used by or for a public authority solely for the purpose of a particular project or contract of road construction and not located on the road right-of-way. (PPS 2020)

Wetland, under the Conservation Authorities Act: 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, 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).

Wetland, under the Planning Act (Provincial Policy Statement): means lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either

hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition. (PPS 2020)

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