

Nottawasaga Valley Conservation Authority



Planning and Regulation Guidelines

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1.0 INTRODUCTION

1.1 The role of the Planning Services Program

The mission of the Nottawasaga Valley Conservation Authority is “*Working together to value, protect, enhance, and restore our watershed resources, for a healthy sustainable future.*”

There are numerous tools in the form of legislation, provincial plans, policies, and guidelines that assist the Authority in achieving this goal. The *Conservation Authorities Act* and *Planning Act* are the most important tools used by the Planning Services program to further the goal. These Acts and accompanying regulations, policies and guidelines, provide the basis and authority for this document.

The achievement of the Authority’s goal, objectives and targets is a challenge as development pressure within the watershed is expected to increase along with competition for the land and resources such as water. Other factors such as climate change and the potential for more frequent extreme weather events (both storms and droughts) add to the challenges and uncertainty. The NVCA will assist its municipal partners in managing growth and the competing resource uses, so as to ensure the long-term health and sustainability of the watershed.

Planning Services’ programs play a significant role in helping to ensure the long-term health and sustainability of the watershed. They contribute to the Authority’s goal, objectives, targets and legislative requirements through the regulation program and by providing watershed and ecosystem based planning advice to our municipal partners and the public. This information helps guide municipalities, landowners and watershed stakeholders in the land use planning and permitting processes.

The planning program provides environmental planning expertise to guide municipal and other land-use planning decision on a watershed basis, consistent with current applicable federal and provincial legislation and policies, authority policy and municipal planning policy.

The Planning Services program has three major components:

1. Plan Input and Review (*Planning, Environmental Assessment and Niagara Escarpment Acts* etc.)
2. Conservation Authority Regulation and Permitting (*Conservation Authorities Act*)
3. Strategic Planning (Watershed/subwatershed plans and policy/guideline development)

These guidelines have been developed for the first two components to provide the technical details and direction to help ensure a consistent approach in implementing the Planning and Regulation programs. The strategic planning component follows the water management guidelines provided by the Ministry of Natural Resources at the following link.

http://www.mnr.gov.on.ca/MNR_E002319.pdf

1.2 What is the purpose of these guidelines and who is the primary audience?

The guidelines will assist staff in meeting the Authority's goal, objectives, targets and planning and permitting obligations.

The primary audience is Authority staff. They will be particularly useful for new staff as it will provide a summary of all relevant legislation, plans and policies. The guidelines will provide staff with the Authority's technical standards and requirements (e.g. vegetative setbacks required for streams and wetlands) for both the Plan Input and Review and Permitting programs.

The guidelines will also be a valuable source of information for the Authority's Board of Directors, municipal staff, development industry and the public.

1.3 What approach was used in the development of these guidelines?

Planning Service's two largest programs are the Plan Input/Review and Regulation & Permitting programs. These guidelines provide direction for the implementation of the policies for each of these programs as mandated by the *Planning Act* and the *Conservation Authorities Act*.

There often is a need for coordination between these two programs. For example, development restrictions related to a *Planning Act* application adjacent to or within a natural hazard, should be similar to restrictions related to a permit application for the same property. To assist in promoting this coordination, the guidelines for both programs are located within this document and the areas requiring coordination are highlighted.

To make the guidelines as clear and concise as possible, they summarize relevant legislation and policy sections and reference the supporting documents rather than copy large amounts of material into this document. In some cases the website where the supporting material is located has been identified. The most important supporting documentation is placed in the appendix.

Those guidelines that apply to both the regulation and plan input/review programs (for example natural hazards) will only be provided once under the regulation section. It will be noted that they also apply to the implementation of the planning program.

To promote greater consistency between conservation authorities across the province and provide the highest quality technical standards and advice in implementing the Section 28 Regulations, Conservation Ontario has developed detailed technical guidelines. This document is titled *Draft Guidelines to Support Conservation Authority Administration of the "Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation"* dated April 21, 2008. It provides guidelines to assist conservation authorities in interpreting and implementing the *Conservation Authorities Act*, Section 28 (1) Regulations. It is intended to provide a framework around which local, Board-approved regulations implementation guidelines can be created or adjusted to encourage consistency amongst all conservation authorities.

These NVCA guidelines use this Conservation Ontario document as the basis for Section 4 dealing with the Section 28 Regulation. However, there may be a few situations where the NVCA's guidelines differ somewhat from Conservation Ontario's framework due to local conditions and historic precedents.

Conservation Ontario's Section 28 guidelines have been developed with input and review from the local Authorities. This version, dated April 21, 2008, has been endorsed by Conservation Ontario's council for submission to the Ministry of Natural Resources (MNR) for approval and use by authority staff. Once approved by MNR, the final Conservation Ontario document will be circulated to all authorities and placed on their website.

The NVCA's proposed Planning and Regulation Guidelines were first presented to the Authority's Planning Advisory Committee on May 9, 2008, and staff were directed to use the document as an "interim guideline." They were then circulated to municipal planning staff on May 21st, 2008, for review and comments. The proposed guidelines have been posted on the NVCA's website inviting public input since May 2008. A workshop was held with municipal partners to review the draft guidelines and obtain feedback in November 2008. The revised guidelines were presented to the Authority's Planning Advisory Committee on April 17, 2009. Following their direction, the guidelines were circulated to member municipalities and posted on our website for a further 30 day review period.

These guidelines include the results of the consultation process and once Conservation Ontario's guidelines have been approved by the province, they will be updated again as appropriate.

It is important to note that these Planning and Regulation Guidelines will be a dynamic and "living document" that will evolve as new information and technical standards are developed by the Authority, Conservation Ontario and the province. Updates will be posted on the NVCA website and notices of revisions will be sent to our municipal partners.

1.4 When will these guidelines come into effect?

The guidelines came into effect on August 28th, 2009, following their approval by the NVCA Board of Directors.

2.0 LEGISLATION AND PROVINCIAL PLANS AND POLICY DIRECTION

This section highlights the legislation, provincial plans, policies and guidelines that provide the Conservation Authority with its mandate and direction in planning matters.

The Planning program plays a major role in implementing numerous pieces of legislation. In some cases it coordinates input and comments from all NVCA program areas. For example, the Planning program coordinates engineering and natural heritage comments for applications under the *Planning Act*. In other cases, (authority regulation) the Planning program acts as the approval agency.

A following chart lists the legislation, identifies where it applies, and outlines the Authority's role. The most significant pieces of legislation are dealt with in more detail below.

Legislation:	NVCA Role:
<u>Conservation Authorities Act</u> (entire watershed)	approval
<u>Planning Act</u> (entire watershed)	commenting
<u>Municipal Act</u> (entire watershed)	commenting
Federal <u>Fisheries Act</u> (entire watershed)	commenting
<u>Environmental Assessment Act</u> (entire watershed)	commenting
<u>Aggregate Resources Act</u> (entire watershed)	commenting
<u>Niagara Escarpment Planning & Development Act</u> (portions of Clearview, Mulmur, Grey Highlands and Towns of The Blue Mountains and Mono)	commenting
<u>Conservation Land Act</u> (entire watershed)	approval
<u>Oak Ridges Moraine Conservation Act</u> (portions of Adjala-Tosorontio, Towns of New Tecumseth and Mono)	commenting
<u>Greenbelt Act</u> (small portion of the Town of Mono)	commenting
<u>Places to Grow Act (2005)</u> (Simcoe, Dufferin counties)	commenting
<u>Ontario Water Resources Act</u> (entire watershed)	commenting
<u>Clean Water Act</u> (entire watershed)	commenting/coordinating

To locate the most recent versions of the provincial legislation listed above and accompanying regulations please consult the following website: <http://www.e-laws.gov.on.ca>

2.1 *Conservation Authorities Act*

The *Conservation Authorities Act* (1946) established conservation authorities as local agencies, in response to flooding and erosion problems and the management of natural resources. Their geographic jurisdictions are watershed-based ecological systems.

The ability and powers for conservation authorities to become involved in natural resource and water management comes from the following sections of the *Act*.

Section 20 (1) of the *Act* broadly defines the purpose of an Authority as follows:

"The objects of an Authority are to establish and undertake in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals."

More specifically the following subsections of Section 21(1) outlines the powers of Authorities related to water management and planning as:

(a) *"To study and investigate the watershed and to determine a program whereby the natural resources of the watershed may be conserved, restored, developed and managed."*

(j) *"To control the flow of surface waters in order to prevent floods or pollution or to reduce the adverse effects thereof."*

(n) *"To collaborate and enter into agreements with ministries and agencies of government, municipal councils and local boards and other organizations."*

These sections provide the Authority with the mandate to develop programs to conserve, restore, develop and manage the watershed's natural resources. They provide the basis for the Authority's review of planning applications as a commenting agency under the *Planning Act* as well as through agreements with its municipalities.

Section 28 of the *Conservation Authorities Act* is the basis for the Authority's regulation and permitting program. It gives the Authority power to pass regulations in the area of its jurisdiction as follows:

(a) *Restricting and regulating the use of water in or from rivers, streams, inland lakes, ponds, wetlands and natural or artificially constructed depressions in rivers or streams;*

(b) *Prohibiting or regulating or requiring the permission of the Authority for the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream or watercourse or for changing or interfering in any way with a wetland;*

(c) *Prohibiting or regulating or requiring the permission of the Authority for development if, in the opinion of the Authority, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected by development;*

(d) *Providing for the appointment of officers to enforce any regulation made under this section or Section 29;*

(e) *Providing for the appointment of persons to act as officers with all the powers and duties of officers to enforce any regulation made under this section.*

2.2 Planning Act

The *Planning Act* sets out the ground rules for land use planning in Ontario and describes how land use may be controlled, and by whom.

The purpose of the *Planning Act* is to:

- promote sustainable economic development in a healthy natural environment within a provincial policy framework
- provide for a land use planning system led by provincial policy integrate matters of provincial interest into provincial and municipal planning decisions by requiring all decision-makers to have regard to the *Provincial Policy Statement*
- provide for planning processes that are fair by making them open, accessible, timely and efficient
- encourage co-operation and coordination among various interests
- recognize the decision-making authority and accountability of municipal councils in planning
- provide for the consideration of the provincial interest including the development to the *Provincial Policy Statement* which includes protecting and managing our natural resources

Conservation Authorities participate in this land use planning process under the *Planning Act*, through several mechanisms as follows:

- Authorities comment on planning applications circulated to them by the municipalities and approval authorities as prescribed by regulations under the *Planning Act*
- In April 1995, Conservation Authorities were delegated natural hazard responsibilities by the Minister of Natural Resources
- In 2001, a Memorandum of Understanding (**Appendix 1**) was signed between Conservation Authorities, and the Ministries of Natural Resources and Municipal Affairs and Housing confirming the delegated responsibilities, and defining the respective roles under the Provincial One Window Planning System
- NVCA has developed formal agreements with member municipalities (e.g. Simcoe County, **Appendix 2**) to provide technical plan input and review support. This includes providing comments and technical support on natural heritage planning issues as well as those relating to natural hazards.

2.3 Other Related Legislation

There are several other Acts that staff may need to consider as part of their municipal plan review and in some cases the permitting processes, including the following:

The *Clean Water Act* 2006 helps protect drinking water at the source, to safeguard human health and the environment. A key focus of the legislation is the preparation of locally-developed terms of reference, science-based assessment reports and source water protection plans. While the source water protection plans are due to be completed in 2012, there may be opportunities in the interim to identify and protect vulnerable source water areas under the *Planning Act*.

Conservation Ontario is currently developing “*Interim Guidance for Conservation Authorities on Integrating Drinking Water Source Protection (DWSP) under the Planning Act.*” The purpose of

this document will be to provide guidance to CAs on the release and use of interim DWSP information in municipal land use planning process. Once the guidelines have been completed staff will follow them as an interim means of assisting member municipalities in protecting their drinking water resources.

The Green Energy Act (2009)

The Ontario government has introduced the *Green Energy Act*. The purpose of this Bill is to “facilitate the development of a sustainable energy economy that protects the environment while streamlining the approval process, mitigate climate change, engage communities and build a world-class green industrial sector.” Since most of the green energy projects will be in rural areas their impacts on the natural environment will have to be assessed as appropriate and required by the legislation and resulting regulations.

This legislation as well as new Acts may have an impact on the Plan Input and Review process. These impacts will be assessed and updates will be made to these guidelines as appropriate. For example, following the completion of the source water protection plans under the *Clean Water Act* in 2012; this document will be updated and posted on our website at www.nvca.on.ca

2.3.1 The Federal Fisheries Act

The *Federal Fisheries Act*'s primary objective is to protect fish habitat; but where necessary and as a last resort, it may authorize impacts to fish habitat. The NVCA plays a significant role in this process through an agreement with the Federal Department of Fisheries and Oceans. This process is outlined below.

The NVCA has a “level 2 agreement” with the Department of Fisheries and Oceans (DFO) Canada to administer the review of projects under section 35(1) of the *Fisheries Act*. This section states that “No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.”

The *Federal Fisheries Act* can be accessed at the following link:<http://laws.justice.gc.ca/en/F-14/>

The agreement was established for the conservation and protection of fish habitat and promotion of good fisheries management. Under this agreement the NVCA conducts the initial review of projects with the potential to affect fish habitat to determine if there is any harmful alteration, disruption or destruction of fish habitat.

If there are potential impacts to fish habitat and they can be mitigated, then the NVCA issues a letter of advice outlining the steps necessary to mitigate these impacts. If the impacts to fish habitat cannot be fully mitigated, then the project is forwarded to DFO for further review and approval.

To further assist in the implementation of the *Fisheries Act*, a multi-agency Inter-Jurisdictional Compliance Protocol for Fish Habitat and Associated Water Quality was prepared in 2007 by the federal government and the province of Ontario. The intent of the Protocol is to enhance and clarify interagency activities regarding the protection of fish habitat and associated water quality. The protocol summarizes the roles and responsibilities of the various agencies having

enforcement and compliance interest in the protection of fish habitat and water quality. This Protocol is located on the Ministry of Natural Resources website at the following link:
http://www.web2.mnr.gov.on.ca/mnr/ebr/compliance/protocol_en.pdf

2.4 Provincial Policies, Plans and Guidelines

The provincial policies, plans and guidelines outlined in this section provide staff with specific directions when dealing with *Planning Act* applications and in some cases permit applications under the *Conservation Authorities Act*. The information provided below represents a brief summary of the documents and policies. Please see the complete document for the details and the planning context for the policies.

2.4.1 Provincial Policy Statement 2005

The *Provincial Policy Statement* (PPS) provides policy direction on matters of provincial interest related to land use planning and development. The document sets the policy foundation for regulating development and use of land.

The *Provincial Policy Statement* aims to provide for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment.

The PPS is also complemented by several provincial plans affecting the NVCA including the Greenbelt, Niagara Escarpment and Oak Ridges Moraine Plans, and most recently the Growth Plan for the Greater Golden Horseshoe. These plans are discussed in the following sections. Particularly important sections of the PPS to the Authority's Planning Services programs are included below.

Please note that the PPS is more than a set of individual policies and is intended to be read in its entirety and the relevant policies are to be applied to each situation. The numbering of the sections below maintains the PPS numbering. Please see the PPS for its definitions.

Provincial Policy Statement 2005

Part II: LEGISLATIVE AUTHORITY

The Provincial Policy Statement is issued under the authority of Section 3 of the Planning Act and came into effect on March 1, 2005. It applies to all applications, matters or proceedings commenced on or after March 1, 2005.

In respect of the exercise of any authority that affects a planning matter, Section 3 of the Planning Act requires that decisions affecting planning matters "shall be consistent with" policy statements issued under the Act.

Part V: POLICIES

2.0 WISE USE AND MANAGEMENT OF RESOURCES

Ontario's long-term prosperity, environmental health, and social well-being depend on protecting natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits.

Accordingly:

2.1 NATURAL HERITAGE

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.3 Development and site alteration shall not be permitted in:

- a) significant habitat of endangered species and threatened species;*
- b) significant wetlands in Ecoregions 5E, 6E and 7E; and*
- c) significant coastal wetlands.*

2.1.4 Development and site alteration shall not be permitted in:

- a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;*
- b) significant woodlands south and east of the Canadian Shield ;*
- c) significant valleylands south and east of the Canadian Shield;*
- d) significant wildlife habitat; and*
- e) significant areas of natural and scientific interest*

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.5 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.6 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

2.1.7 Nothing in policy 2.1 is intended to limit the ability of existing agricultural uses to continue.

2.2 WATER

2.2.1 Planning authorities shall protect, improve or restore the quality and quantity of water by:

- a) using the watershed as the ecologically meaningful scale for planning;*

- b) minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts;*
- c) identifying surface water features, ground water features, hydrologic functions and natural heritage features and areas which are necessary for the ecological and hydrological integrity of the watershed;*
- d) implementing necessary restrictions on development and site alteration to:*
 - 1. protect all municipal drinking water supplies and designated vulnerable areas; and*
 - 2. protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions;*
- e) maintaining linkages and related functions among surface water features, ground water features, hydrologic functions and natural heritage features and areas;*
- f) promoting efficient and sustainable use of water resources, including practices for water conservation and sustaining water quality; and*
- g) ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces*

2.2.2 Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.

Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.

3.0 PROTECTING PUBLIC HEALTH AND SAFETY

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 or human-made hazards. Development shall be directed away from areas of natural or human-made hazards where there is an unacceptable risk to public health or safety or of property damage.

Accordingly:

3.1 NATURAL HAZARDS

3.1.1 Development shall generally be directed to areas outside of:

- a. 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;*
- b. hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards; and*
- c. hazardous sites.*

3.1.2 Development and site alteration shall not be permitted within:

- a. the dynamic beach hazard;*
- b. defined portions of the one hundred year flood level along connecting channels (the St. Mary's, St. Clair, Detroit, Niagara and St. Lawrence Rivers);*
- c. 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*
- d. a floodway regardless of whether the area of inundation contains high points of land not subject to flooding.*

3.1.3 Despite policy 3.1.2, development and site alteration may be permitted in certain areas identified in policy 3.1.2:

- a. 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 site-specific policies or boundaries applying to a Special Policy Area, must be approved by the Ministers of Municipal Affairs and Housing and Natural Resources prior to the approval authority approving such changes or modifications; or*
- b. 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.*

3.1.4 Development shall not be permitted to locate in hazardous lands and hazardous sites where the use is:

- a. an institutional use associated with hospitals, nursing homes, pre-school, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion;*
- b. an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations, which would be impaired during an emergency as a result of flooding, the failure of floodproofing measures and/or protection works, and/or erosion; and*
- c. uses associated with the disposal, manufacture, treatment or storage of hazardous substances.*

3.1.5 Where the two-zone concept for flood plains is applied, development and site alteration may be permitted in the flood fringe, subject to appropriate floodproofing to the flooding hazard elevation or another flooding hazard standard approved by the Minister of Natural Resources.

3.1.6 Further to policy 3.1.5, and except as prohibited in policies 3.1.2 and 3.1.4, development and site alteration may be permitted in those portions of hazardous lands and hazardous sites where the effects and risk to public safety are minor so as to be managed or mitigated in accordance with provincial standards, as determined by the demonstration and achievement of all of the following:

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

The *Provincial Policy Statement* must be read in its entirety and all relevant policies are applied to each situation. The entire policy including definitions can be found at the following Ministry of Municipal Affairs and Housing link: <http://www.mah.gov.on.ca/Page1485.aspx>

2.4.1.1 Technical Guidelines Supporting the PPS

2.4.1.1.1 Natural Heritage Reference Manual

The Natural Heritage Reference Manual (Ministry of Natural Resources –June 1999) provides additional information on technical issues relative to the application of Natural Heritage sections (2.1) of the *Provincial Policy Statement*.

The reference manual, developed in consultation with practitioners, represented at the time, the most up-to-date information available (1999) on specific technical issues relating to the PPS Natural Heritage policies. For example, how the municipalities can determine the criteria for their “significant” natural features.

Please note: It is our understanding that a revised version of this document is underway to assist in implementing the 2005 *Provincial Policy Statement*. It will be initially posted on the Environmental Bill of Rights website and once approved it will be posted on the on MNR’s website at the following link: <http://www.mnr.gov.on.ca/en/Publication/index.html>

The 1999 Natural Heritage Reference Manual can be found at the following link on MNR’s website: <http://www.mnr.gov.on.ca/en/Business/LUEPS/Publication/249081.html>

2.4.1.1.2 Understanding Natural Hazards and the Technical Guidelines for Great Lakes and Rivers Flood and Erosion Hazards

These publications were prepared by the Ontario Ministry of Natural Resources to assist the public, planning authorities, local municipalities and conservation authorities with an explanation of the Natural Hazards Policies of the *Provincial Policy Statement*.

The technical information concerning the implementation of the Natural Hazards Policies is available in the following documents:

- Understanding Natural Hazards (2001);

- Great Lakes – St. Lawrence River System and Large Inland Lakes Flooding, Erosion and Dynamic Beach Hazards;
- River and Stream Systems Flooding and Erosion Hazards and Hazardous Sites.

The introductory document, and the one most often used by planners “Understanding Natural Hazards” can be found at the following link on MNR’s website.

http://www.mnr.gov.on.ca/en/Business/Water/Publication/MNR_E002317P.html

Authority staff have access to the two other technical guidelines through both the Planning and Engineering and Technical Services programs.

2.4.2 Oak Ridges Moraine Conservation Plan

The Oak Ridges Moraine Conservation Plan (November 2001) provides policies for the protection of the ecological and hydrological integrity of the Oak Ridges Moraine. In 2005, the Oak Ridges Moraine was included within the Greenbelt Planning Area; however the Oak Ridges Moraine Plan remains the guiding document.

The plan covers a small portion of the NVCA’s watershed in the southern headwaters of the upper Nottawasaga within the municipalities of New Tecumseth, Adjala-Tosorontio and Mono. The vast majority of the Authority’s portion of the moraine is within the Innisfil Creek subwatershed. However, there are also two small tributaries to the Upper Nottawasaga River in the vicinity of the village of Hockley with their headwaters in the moraine. One is located in the Township of Adjala-Tosorontio and the other in the Town of Mono.

The Oak Ridges Moraine Conservation Plan requires that all decisions made under the *Planning* or *Condominium Acts* must conform to this plan. In addition, the NVCA along with other conservation authorities on the moraine, agreed to use their best efforts to ensure that all permits issued under the *Conservation Authorities Act*, be in conformity with the Oak Ridges Moraine Conservation Plan. This approach was confirmed by NVCA’s Executive Committee on June 28, 2002 stating, “*that staff be directed to administer all Conservation Authority permit applications for lands on the Oak Ridges Moraine in conformity with the Oak Ridges Moraine Conservation Plan.*”

Guidelines were also prepared in November 2003 to assist staff issuing permits in meeting this commitment. They are included in **Appendix 3**.

The Oak Ridges Moraine Conservation Plan and land use designations map can be found on the Ministry of Municipal Affairs and Housing’s website at the following link:

<http://www.mah.gov.on.ca/Page323.aspx>

In addition, the Oak Ridges Moraine mapping including the land use designations, wetlands and significant woodlands are located on the GIS directory for Authority staff.

2.4.2.1 Oak Ridges Moraine Technical Guidelines

The Ministry of Municipal Affairs, in conjunction with the Ministry of the Environment and the Ministry of Natural Resources, has developed a series of technical papers to assist in the implementation of the policies and application of some of the technical requirements contained

in various sections of the Plan. The technical papers were prepared based on the best science and information available at the time of preparation. They represent the province's approach to implementing the Plan's policies and provide clarification and assistance for the implementation of these policies.

The Technical Guidelines are located on the Ministry of Municipal Affairs and Housing website at the following link: <http://www.mah.gov.on.ca/Page4808.aspx>

2.4.3 Niagara Escarpment Plan

The Niagara Escarpment Plan (June 2005) along the west side of the watershed, applies to a significant portion of Mulmur and Clearview townships, and the towns of Mono and The Blue Mountains.

The Niagara Escarpment Planning and Development Act established a planning process to ensure that the area would be protected. The Niagara Escarpment Plan serves as a framework of objectives and policies to strike a balance between development, preservation and the enjoyment of this important resource. In 2005, the Niagara Escarpment Plan was included within the Greenbelt Planning Area; however the Niagara Escarpment Plan remains the guiding document.

Authority staff provide comments to the Niagara Escarpment Commission on the development permit applications and Niagara Escarpment Plan amendments.

The Niagara Escarpment Plan is located on the government website at:
http://www.escarpment.org/Publications/plan_intro.htm

2.4.4 Growth Plan for the Greater Golden Horseshoe

The Growth Plan for the Greater Golden Horseshoe (GGH) covers all of the NVCA's area of jurisdiction except those lands within Grey County.

The Growth Plan (June 16th 2006) sets clear standards for growth and development.
The Plan:

- Establishes coordinated population and job growth forecasts for municipalities as the basis for planning.
- Encourages revitalization of downtowns and city centres, making them more vibrant, people-oriented and attractive.
- Reduces development pressures on agricultural lands and natural areas by directing more growth to existing urban areas
- Ensures that new development is planned to create complete communities that offer more choices in housing, better transit and a range of amenities like shops, schools, entertainment and services that are closer to where people live.
- Identifies 25 downtown locations in the GGH (including Barrie), that will be focal points for accommodating people and jobs, through initiatives that offer attractive new living options within easy access to shops and services. These centres will also support transit and the economy of the surrounding area.

- Complements the province's Greenbelt Plan that protects 1.8 million acres of valuable farmland and natural areas at the heart of the Greater Golden Horseshoe.
- Establishes an integrated transportation network that will offer more transportation choices for getting from place to place, reducing congestion on our roads.
- Links planning for growth with planning for infrastructure, so that the roads, sewers, schools and other infrastructure is in place to meet the needs of growing communities.

This plan is an important policy document for the Authority. It will be implemented by the municipalities through updates to their official plans.

The plan directs almost all development to "settlement areas" which may take pressure off the rural natural heritage systems and the intensification of development with the urban centres may make it easier to implement enhanced best management practices to protect water quality.

The Growth Plan for the Greater Golden Horseshoe is located on the Ministry Energy and Infrastructure website at the following link: <http://www.placestogrow.ca>

2.4.5 The Greenbelt Plan

The Greenbelt Plan (February, 2005) is an overarching strategy that provides clarity and certainty about urban structure, where and how future growth should be accommodated, and what must be protected for current and future generations.

The Greenbelt Plan identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring on this landscape.

The Greenbelt planning area also includes the Niagara Escarpment and the Oak Ridges Moraine; however their plans still provide the direction for those areas. The 10 year review for the Greenbelt plan may address the need to harmonize all three plans.

The NVCA has only a very small portion of the Greenbelt Plan within its watershed (other than the Niagara Escarpment and Oak Ridges Moraine Lands). The lands (approximately 1,400 acres) are located in the southern portion of the Town of Mono in the vicinity of Lots 4 and 5, Con 1 to 5.

The Greenbelt Plan can be found on the Ministry of Municipal Affairs and Housing website at the following link: <http://www.mah.gov.on.ca/Page189.aspx#greenbelt>

2.4.6 Provincial Delegation of Authority and Memorandum of Understanding

A Memorandum of Understanding (MOU) between Conservation Authorities, the Ministry of Natural Resources, and the Ministry of Municipal Affairs and Housing was signed in early 2001. The MOU defines the roles and relationships between the three agencies in planning for implementation of conservation authority delegated responsibilities under the Provincial One Window Planning System.

Conservation Authorities were delegated natural hazard responsibilities by the Minister of Natural Resources in April 1995. The delegation from the MNR including flood plain

management, hazardous slopes, Great Lakes shorelines, unstable soils and erosion which are now encompassed by Section 3.1 “Natural Hazards” of the *Provincial Policy Statement*. In this delegated role, the conservation authority is responsible for representing the “provincial interest” on these matters in planning exercises where the province is not involved.

The NVCA, under the authority of the *Conservation Authorities Act*, and in conjunction with its municipal partners, developed business plans, watershed and subwatershed plans and natural resource management plans within its area of jurisdictions.

These plans recommend specific approaches to land use and resource planning and management that should be incorporated into municipal planning documents and related development applications in order to be implemented. The NVCA is involved in the review of municipal planning documents and development applications under the *Planning Act*. The Authority works with its municipal partners to ensure that these specific approaches are addressed in land use decisions made by the municipal planning authorities.

In this role, the NVCA represents its program and policy interests as a watershed based resource management agency and as a commenting agency under the *Planning Act*. Please see **Appendix 1** for the details of the Memorandum of Understanding.

3.0 NVCA'S STRATEGIC DIRECTIONS, POLICY AND GUIDELINES

In addition to the provincial legislation, plans, policies and guidelines outlined above to guide staff, the NVCA has its own set of directions documents. They range from broad strategic direction, to specific policies and measurable targets. In order to keep these guidelines as concise as possible, this section provides a brief summary of these documents and the links to the complete version.

3.1 Watershed Plan (1996) and Watershed Plan Strategic Review (December 2006)

To assist conservation authorities in strategic and watershed planning, the province has prepared several comprehensive guidelines including:

- Water Management on a Watershed Basis: Implementing and Ecosystems approach, June 1993
- Subwatershed Planning, June 1993
- Integrating Water Management Objectives into Municipal Planning Documents – June 1993
- Watershed Plans, Water Budgets and other technical guidelines for the Oak Ridges Moraine

These documents helped guide the development of NVCA's watershed and subwatershed plans and are available on the Ministry of Natural Resources website at the following link:

<http://www.mnr.gov.on.ca/en/Publication/index.html>

In 1996 the NVCA completed its first Watershed Plan to provide an overview of its watersheds and address broad water related issues. It dealt with water management issues across the entire Nottawasaga, Batteaux and Pretty rivers, and Black Ash and Silver creek watersheds, a total drainage area of 3,361km².

In 2006 a strategic review of the 1996 Watershed Plan was completed to address the issues that have arisen since the plan was completed. This review examined and updated the Watershed Plan's strategic directions, issues, recommendations, and assessed the effectiveness of its implementation.

To assist with this assessment the strategic review added measurable targets for the Watershed Plan's goal and objectives. The targets are to be adjusted and new ones added as appropriate through the Authority's business planning process. The targets are quite specific. For example to protect water quality and fish and wildlife habitats, 75% of all streams (not including drains) should be naturally vegetated for 30m on both sides of the stream.

The strategic review highlighted the importance of integrating the Watershed Plan with the business planning process as this was the mechanism to actually implement the Watershed Plan. As a result, the NVCA has developed an annual business and budget planning process that directs the implementation of the Plan's strategic directions and provides a mechanism to keep the Plan current by updating its targets. In this manner it can also quickly react to implement appropriate local and provincial initiatives.

The Watershed Plan Strategic Review was approved by the Authority's Board of Directors on November 24th 2006. It is considered an amendment to the 1996 Watershed Plan and represents NVCA policy.

The Watershed Plan and the Strategic Review documents are available on the Authority's website at the following link:

<http://www.nvca.on.ca/OurProgramsandServices/Planning/PlanningManagementPlans/index.htm>

3.2 Subwatershed Plans (Black Ash, Willow and Innisfil Creeks)

Subwatershed Plans have been completed for three of the Authority's subwatersheds - Black Ash Creek, Willow Creek and Innisfil Creek. These subwatersheds were chosen as a result of significant water management issues. The primary issue with Black Ash Creek was the potential for flooding within the Town of Collingwood. Willow Creek has its headwaters in the Oro Moraine (a significant landform of particular interest to its municipalities) and includes Little Lake and portions of Minesing Wetland. Innisfil Creek was studied as it is the Authority's most impacted water course, with summer low flow issues and nutrient loading problems. The subwatershed plans provided a mechanism for dealing with the specific water management issues across municipal boundaries sharing both the costs and benefits.

The subwatershed plans provide an ecosystems approach helping to coordinate all water related issues and incorporating provincial and local initiatives (e.g. the Oak Ridges Moraine Conservation Plan requirements). They provide valuable information for input into local municipal planning documents as well as a strong foundation for other technical studies that may be required to address a specific issue (e.g. Innisfil Creek's low flow conditions).

The three subwatershed plans provide additional direction for the resource management of those subwatersheds.

The subwatershed plans are located on the Authority's website listed below

<http://www.nvca.on.ca/OurProgramsandServices/Planning/PlanningManagementPlans/index.htm>

3.3 NVCA's Three Year Business Plan and Annual Budget

The Business Plan is a very important document providing staff with direction by assigning program priorities and funding through the budget process.

The Business Plan provides a forum and a tool for Board Members and staff that:

- Helps them gain an understanding of the Authority's roles and responsibilities;
- Provides direction to staff through the review and approval of appropriate programs and implementation strategies related to the achievement of NVCA targets;
- Provides the foundation for the development and implementation of the annual budget and two-year financial forecasts; and
- Informs and updates municipal councils and staff on NVCA programs.

In addition to providing this forum for Board Members, the Business Plan implements the Authority's strategic directions (goal, objectives, targets and recommendations) as outlined in the Watershed Plan, by developing specific implementation strategies for each program. The Business Plan will also annually track the successes in achieving the watershed targets.

3.4 Conservation Land Protection and Acquisition Policy - May 2002

The purpose of the Conservation Land Protection and Acquisition Policy (CLPAP) is to establish a framework to provide staff with a basis for identifying conservation lands for protection and for pursuing certain lands for acquisition through the land use planning process. In particular the purpose of this policy is to:

- Help secure significant conservation lands within the watershed in perpetuity
- Increase the public ownership of conservation lands in the watershed
- Foster relationships with conservation organizations for land securement
- Augment the conservation land base in the watershed for research and analysis
- Communicate the importance of conservation land protection and acquisition

Acquisition

Through the land use planning process, the NVCA will pursue the acquisition of conservation lands eligible for the Conservation Land Tax Incentive Program (CLTIP). These lands will not result in an increased tax burden to the NVCA and include:

- Provincially significant wetlands
- Provincially significant Areas of Natural and Scientific Interest (ANSIs)
- Niagara Escarpment lands (Escarpment Natural Areas designation)
- Habitat of endangered species
- Community conservation lands

Community Conservation Lands are natural areas of significance owned by non-profit charitable conservation organizations and conservation authorities and are eligible for tax relief under CLTIP.

The acquisition of these lands through the land development process will occur as a condition of development (e.g. condition of draft plan approval) and through fair and equitable negotiations.

Other conservation lands may be acquired at the discretion and approval of the Authority's Board of Directors. These lands could include significant woodlands which would be eligible for the Managed Forest Tax Incentive Program (MFTIP) or other lands that would further the goals and objectives of the Watershed Plan.

Protection

When reviewing land use proposals, the NVCA may require the establishment of conservation easements under the *Conservation Land Act* on private property for those lands not qualifying for acquisition. The conservation easement will be in favour of the NVCA and will be policed by staff. Other land use protection controls such as zoning will be used where appropriate.

The details of the Conservation Land Protection and Acquisition Policy are provided in **Appendix 4**

3.5 Pond Policy - May 2005

There has been an increase in the number of proposals for the construction of new ponds and the modification of existing ponds. Ponds have an impact on our watershed, thus it is important to manage and monitor their effects on a cumulative basis over time.

The purpose of this policy is to establish a framework that will:

- Protect water resources
- Direct pond development away from environmentally significant areas
- Prevent flooding hazards through proper pond design and re-design
- Promote the proper design, operation and maintenance of ponds
- Monitor the effects of ponds in the watershed on a cumulative basis
- Promote the consistent review of applications for pond development
- Communicate and educate the general public on proper pond development
- Clarify the landowner's responsibility regarding pond maintenance and restoration in order to ensure human safety and protect properties located downstream of a pond
- Establish a policy framework for the re-establishment of on-line ponds.

The details of the Pond Policy are provided in **Appendix 5**

3.6 Engineering's Technical Development Review Guidelines (Stormwater Management)

The Authority's Engineering Services has prepared technical standards for the review of Stormwater Management Plans. These Development Review Guidelines were established to provide a fair, reasonable and uniform basis for stormwater management approvals. The guidelines require a systems approach to resource management including both upstream and downstream water quality and quantity considerations for all development, as emphasized within the Watershed Plan. They outline policies specific to the NVCA, summarize typical application information required for NVCA technical review, and outline standard parameters to be applied throughout the watershed. The guidelines present procedures, computation methods, and input parameters that are commonly accepted by NVCA staff, however it is still the designer's responsibility to recommend and justify the most appropriate methods. If the designer determines that alternative procedures, computation methods, or parameters are required to best describe the development site, an explanation of the rationale acceptable to the NVCA must be provided. The application of hydrologic / hydraulic computer simulation models to drainage design should be undertaken with sound engineering judgment.

The most up-to-date version of Engineering Services Development Review Guidelines is located on the NVCA website under Engineering and Technical Services at the following link:
<http://www.nvca.on.ca/OurProgramsandServices/EngineeringTechnicalServices/DevelopmentReviewGuidelines/index.htm>

4.0 GUIDELINES TO SUPPORT THE IMPLEMENTATION OF THE AUTHORITY'S SECTION 28 REGULATION

To help maintain consistency with other conservation authorities, the following guidelines mirror the Conservation Ontario guidelines titled: *Draft Guidelines to support Administration of the "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation"* dated April 21, 2008.

On April 28, 2008 Conservation Ontario Council approved the following resolution:

THAT the "Draft Guidelines to Support Conservation Authority Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation" be endorsed for submission to MNR for approval AND THAT the document be circulated to CA staff for consideration relative to their Conservation Authority's administration of the regulatory program (C.W.# 12/08).

Leading up to the above resolution, the MNR/Conservation Ontario Committee drafted and conducted extensive internal review of the draft guideline, including eight regional consultation sessions in 2007 and 2008 for conservation authority staff.

It is our understanding that the Conservation Ontario Guidelines will be made available for public review through the MNR posting on the Environmental Bill of Rights website. Once the document has been approved by MNR, the Conservation Ontario Guidelines will be posted on their website. The NVCA's guidelines may be adjusted as appropriate and if so, notices will be sent to our stakeholders and posted on our website.

The NVCA's guidelines will assist staff in the review of permit applications by providing a comprehensive outline of the Authority's technical standards and requirements (e.g. setbacks from streams and wetlands etc.).

In some cases there may be a need for coordination between planning applications and those under the Authority's Regulation and Permitting Program. This can also be complicated by the fact that the two applications may be received years apart. The Authority will ensure that its position on a *Planning Act* application is the same as its position on a permit application for the same property; except where planning policies supported by the PPS, municipal official plans or the Authority's Board of Directors, may be more restrictive. The principal of development is determined through the review process under the *Planning Act*.

The following outlines the process that was followed to create the NVCA's specific regulation (172/06) under Section 28 of the *Conservation Authorities Act*:

- Ontario Regulation 97/04 "Content of Conservation Authority Regulations under Subsection 28 (1) of the Act: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses" (i.e. Generic Regulation) was approved in May 2004. This Regulation established the content requirements to be met in a regulation made by a Conservation Authority under Subsection 28(1) of the *Conservation Authorities Act*.

- In 2006, the Minister of Natural Resources approved the Development, Interference and Alteration Regulations (individual conservation authority regulations) for all conservation authorities consistent with Ontario Regulation 97/04 of the *Conservation Authorities Act*. The NVCA's individual Ontario Regulation is 172/06.

4.1 Procedures for the Implementation of Ontario Regulation 172/06

In February of 2007, the NVCA Board of Directors approved the administrative Procedures for the Implementation of Ontario Regulation 172/06. Please consult this document for the procedures related to the processing of permit applications, violation investigations, application refusals and the hearing and appeals processes. This document also contains the NVCA's complete Ontario Regulation 172/06.

These procedures and Regulation 172/06 are located on the Authority's website at the following link:

<http://www.nvca.on.ca/OurProgramsandServices/Planning/PlanningPolicies/index.htm>.

4.2 Background to NVCA's Generic Regulation 172/06

Section 28(1) of the *Conservation Authorities Act*, allows conservation authorities to make regulations "*prohibiting, regulating or requiring permission of the authority for development if, in the opinion of the authority, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected by the development.*"

The Nottawasaga Valley Conservation Authority's first regulation was the Fill, Construction and Alteration to Waterways Regulation (Ontario Regulation 164 R.R.O. 1990), and was part of an overall water management program for many years including:

- flood forecasting & warning;
- information & education;
- the construction & maintenance of flood control works; and
- environmental land use planning

In order to streamline the regulatory framework for development approvals and provide greater consistency, the province of Ontario made changes to the *Conservation Authorities Act* in 1997. All conservation authorities were directed to produce a local regulation that complied with the Generic Regulation (Ontario Regulation 97/04) by May 1, 2006.

As a result on May 4th 2006, the NVCA's first Ontario Regulation 164 R.R.O.1990 was replaced by the generic regulation known as the *Development, Interference with Wetlands and Watercourses Regulation* (Ontario Regulation 172/06).

The regulation is located on the Authority's website at the following link:

<http://www.nvca.on.ca/OurProgramsandServices/Planning/PlanningPolicies/index.htm>

The NVCA's Ontario Regulation 172/06 essentially outlines what and where the Authority can regulate. Specifically, this regulation allows the Authority to:

- Prohibit, regulate or provide permission for straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or changing or interfering with a wetland.

- Prohibit, regulate or provide permission for development if the control of flooding, erosion, dynamic beaches, pollution or the conservation of land may be affected by the development

A principal mandate of the Authority is to prevent the loss of life and property due to flooding and erosion, and to conserve and enhance natural resources. This regulation is a key tool in fulfilling this mandate because it prevents or restricts development in areas where the control of flooding, erosion, dynamic beaches, pollution or the conservation of land may be affected by development.

The following types of lands are regulated:

- Ravines, valleys, steep slopes (escarpment areas),
- Wetlands including swamps, marshes, bogs, fens and ponds,
- Any river, creek, flood plain or valley land,
- Lake shorelines.

Areas regulated by the NVCA have been mapped in accordance with guidelines from the Ministry of Natural Resources and Conservation Ontario. **However, it is very important to note that in case of a conflict, the description of those areas in Section 2(1) of the Regulation 172/06 shall prevail over the regulated areas shown on the maps Section 2(2).**

The maps depicting the regulated area are located on the Authority's website at the following link:

<http://www.nvca.on.ca/OurProgramsandServices/Planning/PlanningDevelopmentInterferencewithWetlandsandAlterationstoShorelinesandWatercoursesRegulation/index.htm>

The following is an example of regulated areas:

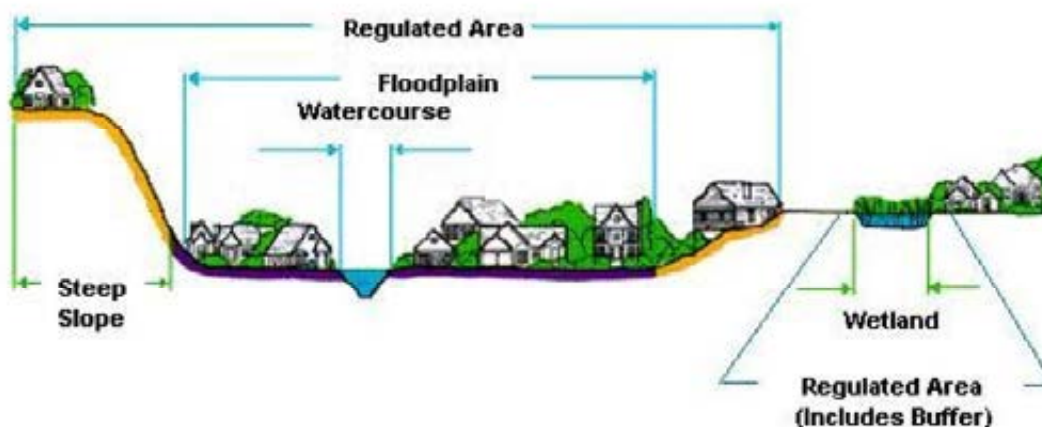


Figure 1: *Cross section through a typical regulated area.*

Please note that for wetlands the regulated area includes “Other Areas” where development could interfere with the hydraulic function of a wetland and may include a buffer.

The following activities must be approved by the NVCA if the applicant’s lands are located within a regulated area:

- the construction, reconstruction, erection or placing of a building or structure of any kind with the exception of minor works such as decks, fences, playground equipment and structures less than 10 square metres (107 square feet) in size;
- changes that would alter the use or potential use of a building or structure;
- increase the size of a building or structure or increase the number of dwelling units in the building or structure;
- site grading;
- the temporary or permanent placing, dumping or removal of any material originating on the site or elsewhere;
- the straightening, changing or diverting or interfering with the existing channel of a river, creek, stream or watercourse; or
- changing or interfering with a wetland.

4.3 River or Stream Valleys

4.3.1 NVCA’s Regulation 172/06

The following section identifies how the extent of river or stream valleys is determined for the purpose of administering the Regulation.

The NVCA’s Regulation contains the following sections dealing with river or stream valleys.

Development prohibited

- 2.(1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on areas within the jurisdiction of the Authority that are,
 - (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 in accordance with the following rules:
 - (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 toe of the slope or, if the toe of the slope is unstable, from the predicted location of the toe of slope as a result 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 the greater of,
 - A. the distance from a point outside the edge of the maximum extent of the floodplain under the applicable flood event standard, plus 15 metres, to a 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, plus 15 metres, to a similar point on the opposite side.

Permission to develop

- 3. (1) The Authority may grant permission for development in or on the areas described in subsection 2(1) if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development.
- (2) The permission of the Authority shall be given in writing, with or without conditions.

4.3.2 Additional Definitions

The following section provides additional definitions to those in Section 6.0 of this document.

To define the Regulation Limits for river and stream valleys, it is important to understand the landforms through which they flow. While there are many different types of systems, the application of the Regulation Limit for rivers and stream systems is based on two simplified landforms, as explained in the Technical Guide – River and Stream Systems (MNR, 2002a and MNR 2002b):

Apparent¹ (confined) river and stream valleys: are ones in which the physical presence of a valley corridor containing a river or stream channel, which may or may not contain flowing water, is visibly discernible (i.e. valley walls are clearly definable) from the surrounding landscape by either field investigations, aerial photography and/or map interpretation. The location of the river or stream channel may be located at the base of the valley slope, in close proximity to the toe of the valley slope (i.e. within 15 metres), or removed from the toe of the valley slope (i.e. greater than 15 metres).

Not Apparent (unconfined) river and stream valleys: are ones in which a river or stream is present but there is no discernible valley slope or bank that can be detected from the surrounding landscape. For the most part, unconfined systems are found in fairly flat or gently rolling landscapes and may be located within the

¹ The NVCA's regulation describes river or stream valleys as "apparent" and "not apparent." Provincial Technical Guides utilize the terminology 'confined' and 'unconfined,' respectively.

headwater areas of drainage basins. The river or stream channels contain either perennial (i.e., year round) or ephemeral (i.e. seasonal or intermittent) flow and range in channel configuration from seepage and natural channels to detectable channels.

4.3.3 Discussion of River or Stream Valleys

To provide guidance in regulating river and stream valleys, it is necessary to highlight their hydrological and ecological functions.

4.3.3.1 Processes and Functions of River or Stream Valleys

River or stream valleys are shaped and re-shaped by the natural processes of erosion, slope stability and flooding. Erosion and slope stability are two natural processes that are quite different in nature yet often linked together. Erosion is essentially the continual loss of earth material (i.e. soil or sediment) over time as a result of the influence of water or wind. Slope stability, usually described in terms of the potential for slope failure, refers to a mass movement of earth material, or soil, sliding down a bank or slope face as a result of a single event in time.

The degree and frequency with which the physical change will occur in these systems depends on the interaction of a number of interrelated factors including hydraulic flow, channel configuration, sediment load in the system, storage and recharge functions, and the stability of banks, bed and adjacent slopes. The constant shaping and re-shaping of the river and stream systems by the physical processes result in hazardous conditions that pose a risk to life and cause property damages.

Erosion hazards mean the loss of land, due to human or natural processes, that pose a threat to life and property. The erosion hazard limit is determined using the 100-year erosion rate (the average annual rate of recession extended over a hundred year time span), and includes allowances for toe erosion, meander belt, and slope stability. The erosion hazard component of river and stream systems is intended to address both erosion potential of the actual river and stream bank, as well as erosion or potential slope stability issues related to valley walls.

Flooding of river or stream systems typically occurs following the spring freshet and may occur again as a result of extreme rainfall events. Rivers naturally accommodate flooding within their valleys. Historically, development occurred in floodplain areas because of the availability of water for power, transportation, energy, waste assimilation, and domestic and industrial consumption. However, floodplain development is susceptible to flooding which can result in property damage and/or loss of life.

In Ontario, either storm centred events, observed events, or a flood frequency based event may be used to determine the extent of the Regulatory floodplain. The Timmons Storm flood event standard applies to all watersheds within the NVCA except for Georgian Bay where the 100 year flood level plus wave uprush applies.

River and stream systems may contain lands that are not subject to flooding or erosion. Examples of these non-hazardous lands include isolated flat plateau areas or areas of gentle slopes (see **Figure 2**). In these situations the Authority will determine the applicability of the Regulation.

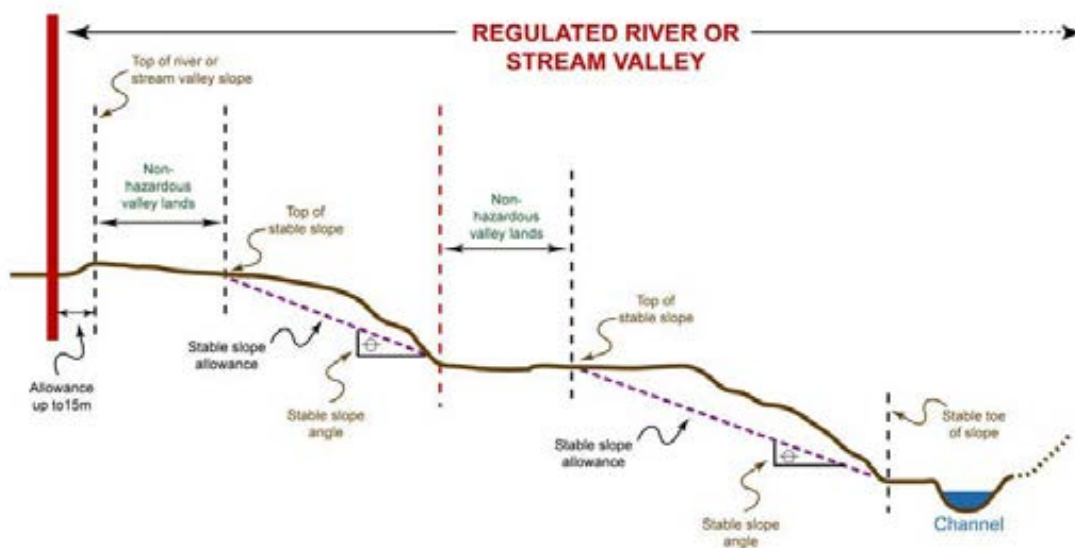


Figure 2: *Regulated river or stream valley containing non-hazardous valley lands.*

River and stream systems also provide physical, biological and chemical support functions for sustaining ecosystems. These functions are directly associated with the physical processes of discharge, erosion, deposition and transport which are inherent in any river and stream system. The interplay between surface and ground water and the linkages, interactions and inter-dependence of aquatic environments with terrestrial environments supply hydrologic and ecological functions critical to sustaining watershed ecosystems. Given that ecological sustainability is based on the dynamic nature of these systems, it is essential that they be allowed to function in as natural a state as possible.

4.3.3.2 Defining River or Stream Valleys

The limit of the river or stream valley is the furthest extent of the erosion hazard or flooding hazard plus an allowance. The following sections describe how the various components of a river or stream valley are determined.

Erosion Hazard/ Physical Feature

For the purpose of defining the regulated area, the extent of the erosion hazard is based on whether or not a valley is apparent (confined) or not apparent (unconfined) and whether or not the valley slopes are stable, unstable, and/or subject to toe erosion.

Apparent (Confined) River or Stream Valley where the valley slopes are stable (see Figure 3).

The Regulation Limit associated with the erosion hazard consists of:

- the river or stream valley extending to the stable top of slope
- an allowance of 15 metres from the stable top of slope

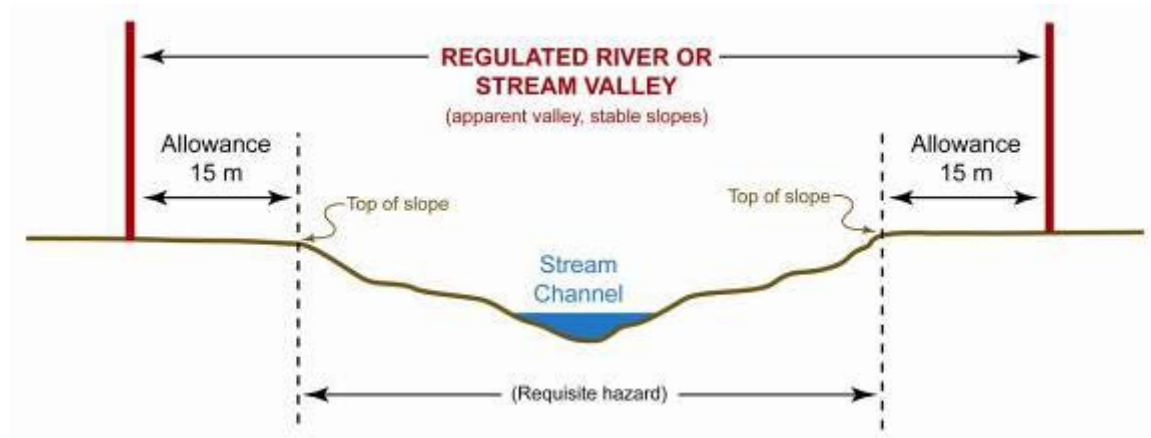


Figure 3: *Apparent river or stream valley where the valley slopes are stable.*

Apparent (Confined) river or stream valley associated with unstable slopes and stable toe (see Figure 4):

The Regulation Limit associated with the erosion hazard consists of:

- the river or stream valley including the predicted long term stable slope projected from the existing stable toe of slope
- an allowance of 15 metres from the stable top of slope

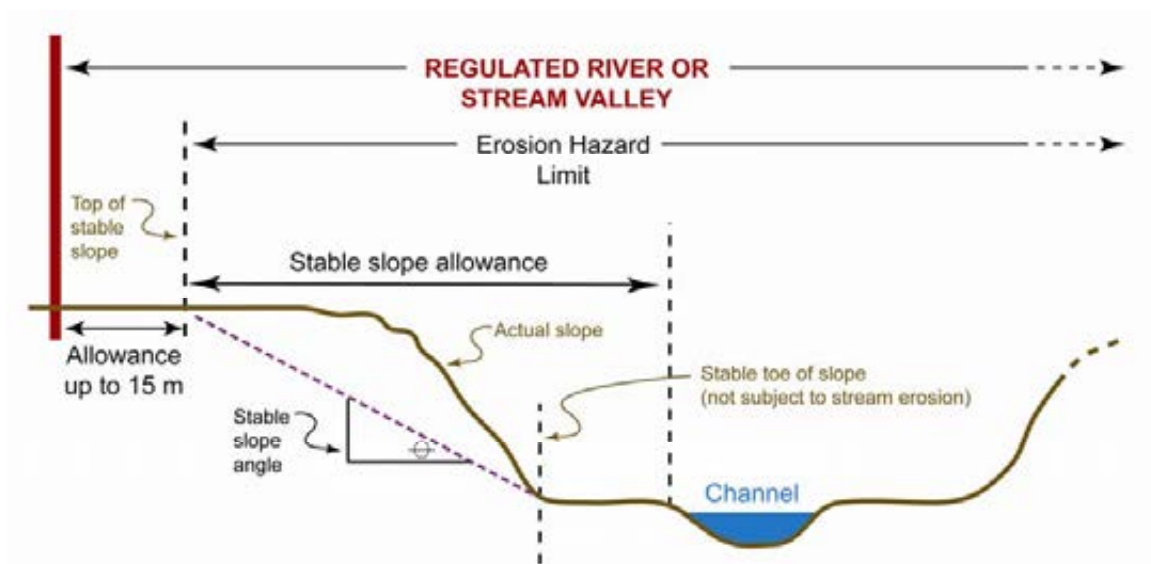


Figure 4: *Apparent river or stream valley associated with unstable slopes and stable toe.*

Apparent (Confined) river or stream valley with unstable slopes and active toe erosion (see Figure 5):

The Regulation Limit associated with the erosion hazard consists of:

- the river or stream valley including the long term stable slope projected from the predicted stable toe of slope
- an allowance of 15 metres from the stable top of slope

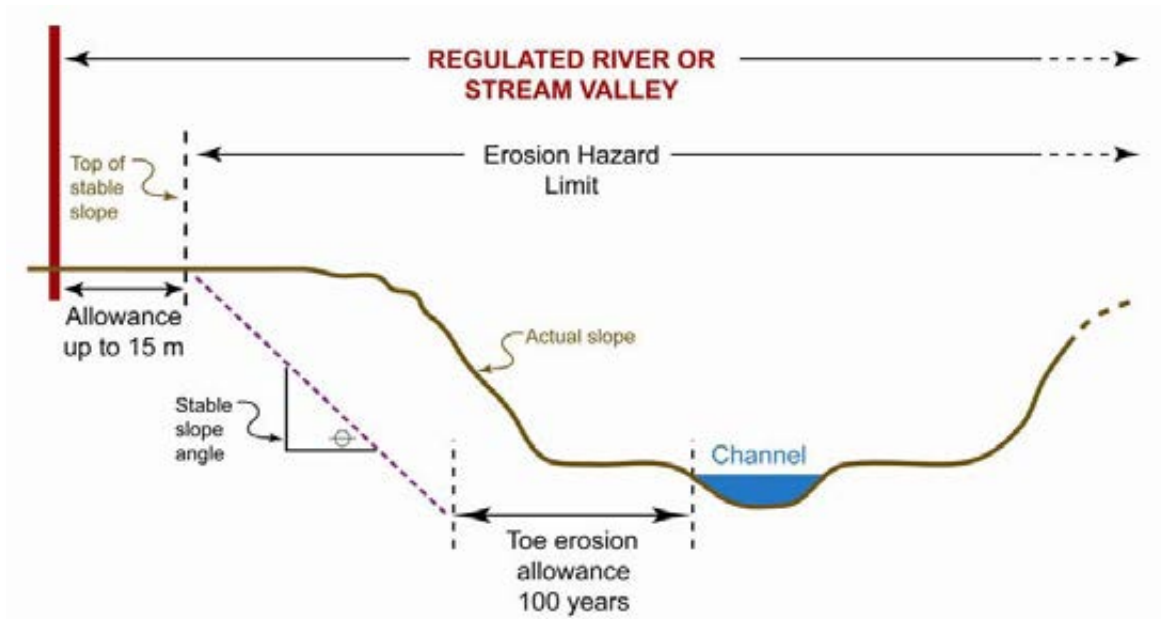


Figure 5: *Apparent river or stream valley with unstable slopes and active toe erosion*

Not Apparent (Unconfined) river or stream valley (see Figure 6):

The Regulation Limit associated with the erosion hazard consists of²:

- the maximum extent of the predicted meander belt of the river or stream
- an allowance of 15 metres from the edge of the predicted meander belt

² In river or stream valleys that are not apparent (unconfined), the regulated area is the greater of the maximum extent of the Regulatory floodplain or the maximum extent of the predicted meander belt plus an allowance of 15 metres.

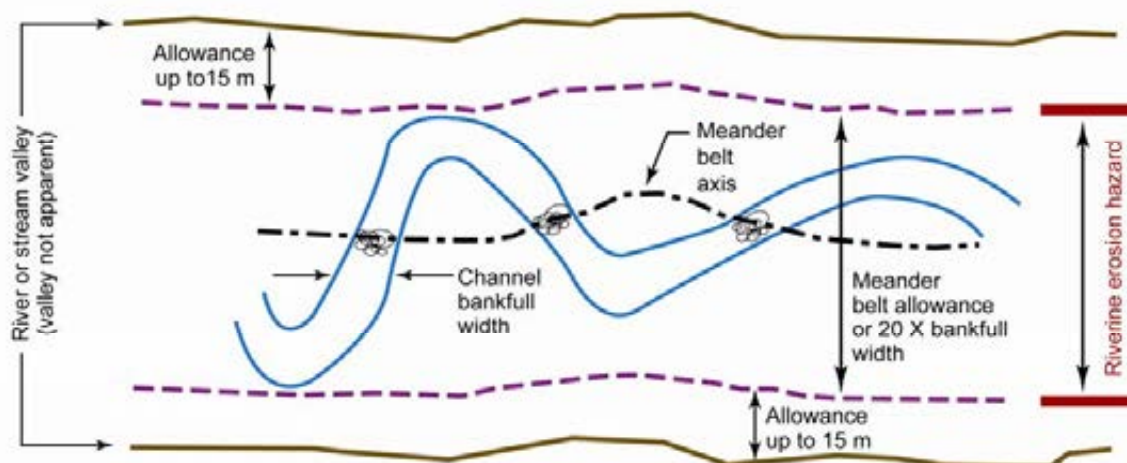


Figure 6: *Not Apparent river or stream valley (meander belt)*

Technical Analysis for Erosion Hazards

Frequently technical analysis is required to determine the appropriate toe erosion, slope stability, and meander belt allowances. Technical studies should be carried out by a qualified professional, with recognized expertise in the appropriate discipline, and should be prepared using established procedures and recognized methodologies to the satisfaction of the conservation authority. With respect to riverine erosion hazards, technical studies should be in keeping with the Technical Guide – River and Stream Systems: Erosion Hazard Limit, OMNR, 2002b, and must demonstrate that there is no increased risk to life or property

The Technical Guide provides four methods of determining the toe erosion allowance. The technical guide also states that toe erosion rates are best determined through long-term measurements and that a minimum of 25 years of data is recommended for erosion assessment rates. Sections 3.0, 3.1, 4.1 and 4.3 of the Technical Guide are particularly relevant in this regard. It is essential that qualified professionals properly characterize the watercourse in question to identify what processes are occurring. For channels where processes indicative of instability, such as down-cutting, are identified, very detailed fluvial geomorphic analyses would likely be required to predict erosion rates. As well, watercourses in catchments experiencing rapid land use change where the sediment and hydrologic regimes are changing could be experiencing erosion rates that are shifting in response and that rate of change may not be quantifiable without significant detailed analysis.

Sections 3.0, 3.2, 4.1 and 4.3 of the Technical Guide provide important direction with respect to slope stability analysis. Slope stability analysis should also be undertaken in accordance with the Geotechnical Principles for Stable Slopes, Terraprobe Limited for Ontario Ministry of Natural Resources, 1994. Recognized analytical methods should be utilized. An appropriate Factor of Safety should be incorporated into all designs/analysis based on the consequences or risks to land use or life in the event of a slope failure. Recommended minimum Factors of Safety are provided in the Technical Guide based on land use above or below the slope (Table 4.3, Page 60, Technical Guide – River and Stream Systems: Erosion Hazard Limit, MNR, 2002b). These

Factors of Safety should also be increased when necessary to account for the reliability of the information available for the technical analysis due to aspects such as natural soil variability in the subject area, limited site work due to constraints, etc.

The determination of the appropriate meander belt allowance usually involves a wide range of study areas such as geomorphology, engineering, ecology and biology. The existing and the ultimate configuration of the channel in the future must be considered. Due to the challenges in assessing meander belt widths, more than one method of determining the meander belt width may be required for any given application. Sections 3.0, 3.3 and 4.4 of the Technical Guide and the supporting documentation entitled “Belt Width Delineation Procedures” (Prent and Parish, 2001) provide further details.

Within not apparent valleys, there may be on occasion areas within the meander belt allowance that are not actually susceptible to erosion within a 100 year planning horizon. These areas may arise for a variety of reasons such as, but not limited to, soil type, hydraulic regime changes, implementation of publicly-owned erosion protection works, etc. In these areas, some development, particularly development associated with existing uses, may be considered as the development would not be susceptible to actual stream erosion over the 100 year planning horizon.

When assessing an application for development within any type of valley system, consideration must be given to the ability for the public and emergency operations personnel to safely access through the valley system for emergency purposes, regular maintenance to existing structures or to repair failed structures.

As part of the review of an application, the Authority may request an Environmental Impact Study (EIS) to address development within erosion hazards. An EIS is a mechanism for assessing impacts to determine the suitability of a proposal. The submission of an EIS does not guarantee approval of the works. An EIS must be carried out by a qualified professional, with recognized expertise in the appropriate area of concern and shall be prepared using established procedures and recognized methodologies to the satisfaction of the conservation authority. **Appendix 6** provides additional details on what the scope of an EIS may contain.

Flooding Hazard

In Ontario, either storm-centred events, flood frequency based events, or an observed event may be used to determine the extent of the Regulatory Floodplain³. These events are:

- a) **A storm-centred event**, either Hurricane Hazel storm (1954) or Timmins storm (1961). A storm-centred event refers to a major storm of record which is used for land use planning purposes. The rainfall actually experienced during a major storm event can be transposed over another watershed and when combined with the local conditions, Regulatory floodplains can be determined. This centred concept is considered acceptable where the evidence suggests that the storm event could have potentially occurred over other watersheds in the general area.

³ High points of land not subject to flooding but surrounded by floodplain or "flooded land" are considered to be within the flood hazard and part of the regulated floodplain.

- b) **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 (or a probability of occurrence) 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 for defining the Regulatory floodplain.
- c) An **observed event**, which is a flood that is greater than the storm-centred events or greater than the 100 year flood and which was actually experienced in a particular watershed, or portion thereof, for example as a result of ice jams⁴, and which has been approved as the standard for that specific area by the Minister of Natural Resources.

The flood standard used to define floodplain limits for the NVCA is a “Flood produced by the Timmins Storm (1961) or the 100 year Flood, whichever is greater.”

The Regulatory floodplain for river or stream valley systems is defined as the area adjacent to the watercourse which would be inundated by a flood event resulting from the Timmins Storm or by the 100 year frequency based event.

The regulated area includes the floodplain and for not apparent valley systems, an allowance. The allowance is not to exceed 15 metres and is a setback from the hazard (**Figure 7**).

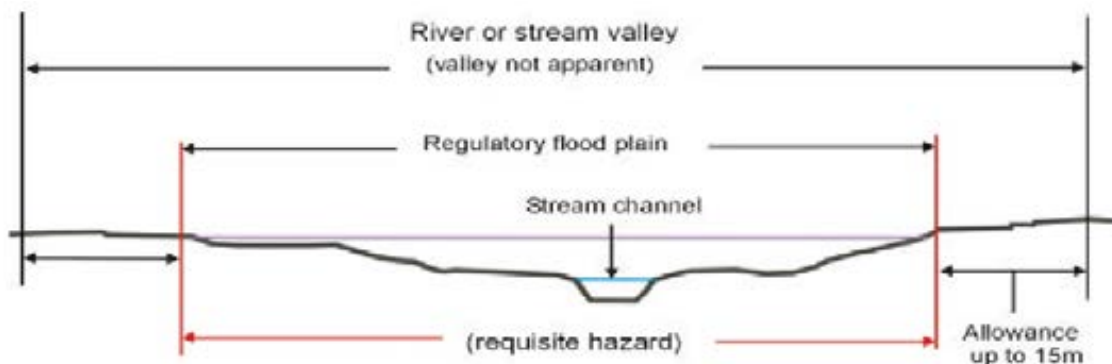


Figure 7: *Regulated area of floodplain for a not apparent valley*

Within Ontario, there are three policy concepts for floodplain management: one-zone, two-zone and special policy area.

One-Zone

In most river or stream valleys in Ontario, a one-zone concept is applied. This area encompasses the entire regulatory flood plain as shown in **figure 8**.

⁴ However, localized chronic conditions (e.g. ice or debris jams) related to flood prone areas may be used to extend the regulated area beyond the Regulatory Flood limit without the approval of the Minister of Natural Resources. It will be necessary to inform the property owner(s) as well as ensuring that the revised limits are reflected in the appropriate municipal documents at the first opportunity.

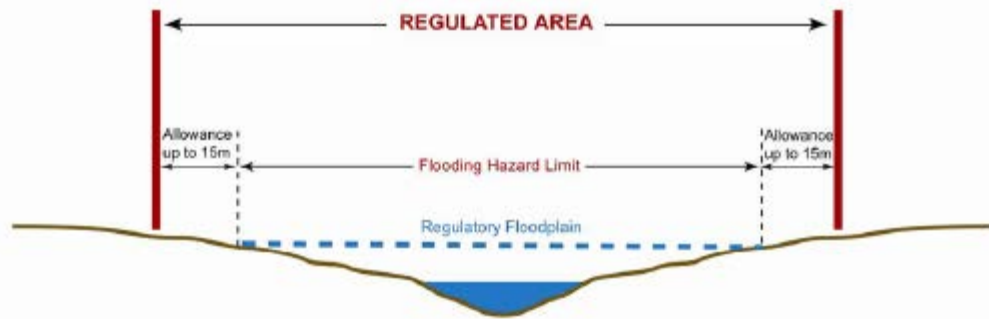


Figure 8: *One-zone concept flooding hazard limit*

Two-Zone

For areas adjacent to existing urban or built-up areas, where it can be demonstrated by the municipality that the one-zone approach is too restrictive, selective application of the two-zone concept **Figure 9** may be considered. The municipality, conservation authority and MNR (regional engineer) must agree to this approach. Development may be permitted within those portions of the floodplain where the depths and velocities of flooding are low (flood fringe) and provincial floodproofing and access standards can be met.

The two-zone concept is not intended to be applied throughout an entire subwatershed, but limited to areas or reaches where it may be appropriate due to the nature of the flood hazard and the existing “urbanized” development conditions.

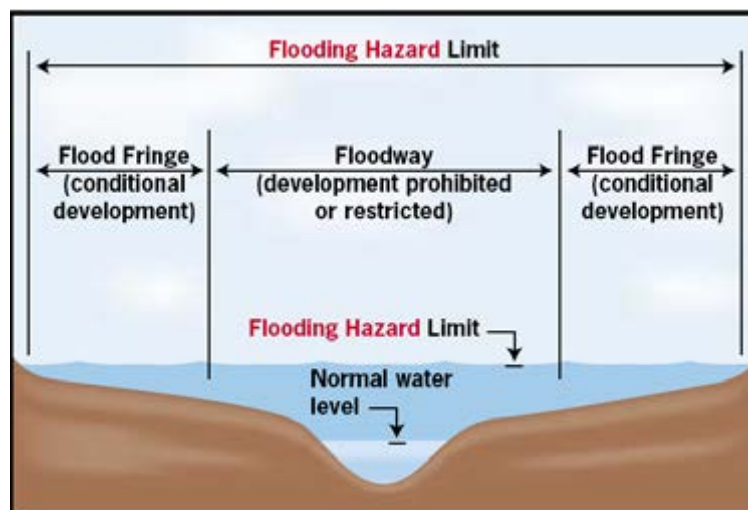


Figure 9: *Two-zone concept, flooding hazard limit*

The two- zone concept permits new development or redevelopment in the flood fringe provided that it is protected to the level of the Regulatory Flood. The two-zone concept may be considered where the Authority, in cooperation with the municipality, agrees that based on the local circumstances, the application of the concept is suitable. The feasibility of a two-zone requires the examination of a number of factors and implementation requires that various conditions be

met. Where the Authority and the municipality agree to the use of a two-zone, appropriate official plan designations and zoning must be put into place.

Within the Nottawasaga Valley Conservation Authority the two-zone concept applies only to the following communities and associated reaches of these watercourses:

Watercourse:	Community:
Spring Creek	Community of Alliston
Lamont Creek	Community of Stayner
Pretty River	Town of Collingwood
Nottawasaga, Mad and Pine rivers	Community of Angus

Special Policy Area

Where the one-zone or two-zone approaches have been demonstrated to be too stringent and would likely cause significant social and economic hardships to the community, Special Policy Areas (SPAs) may be considered. Special Policy Areas permit new development or redevelopment in the flood fringe and floodway. Where a Special Policy Area is applied, the municipality, conservation authority, and the province of Ontario (Ministry of Natural Resources [MNR] and Ministry of Municipal Affairs and Housing [MMAH]) must agree to relax provincial floodproofing and technical standards and accept a higher level of risk. Special Policy Area application is generally limited to areas of historic development that qualify of the basis of significance to the community and the severity of the potential flooding. Suitable policies and standards must be incorporated into the municipality's official plan and zoning by-law.

The Black Ash Creek within the Town of Collingwood was the only Special Policy Area within the NVCA. It was established through the Town of Collingwood and province to accommodate limited development within a shallow spill area of Black Ash Creek. Appropriate policies were established in the Town's Official Plan supporting the Special Policy Area requirements.

However, a channelization project for the Black Ash Creek within the Town of Collingwood that deepened and widened the channel to accommodate the regional storm event was completed in 2005. As a result the flood plain Special Policy Area was removed.

Appendix 7 provides additional details on the two-zone and Special Policy Areas flood management approaches.

Technical Standards for Flooding Hazards

Safe access

The ability for the public and emergency operations personnel (police, firefighters, ambulance etc.) to safely access the floodplain during regulatory flood events is a paramount consideration of any application for development within the riverine floodplain. Ingress and egress should be "safe" pursuant to provincial floodproofing guidelines (MNR 2002a). Depths and velocities should be such that pedestrian and vehicular emergency evacuations are possible.

Proposals must be reviewed to ensure access to the proposed development is safe and appropriate for the proposed use. The provision of means by which people, vehicles and equipment can gain access to and from the regulated feature for maintenance and/or construction of remedial works must also be considered.

In the context of new development, the risks should be controlled by prohibiting development in dangerous or inaccessible portions of the regulated feature.

For existing development, safety risks are a function of the occupancy of structures, the susceptibility of the structure and the access routes to the structure. For existing development, the following factors should be considered:

- The degree of risk with the use of the existing access;
- The ability to modify the existing access or construct a new safe access;
- The ability to find and use the access during an emergency; and
- The ability and willingness of the municipality (emergency vehicles) to use the access.

The risk can also be controlled by limiting the size (and therefore limiting the occupancy) of additions or reconstruction projects. If the risk is determined to be too great, no modifications/alterations/reconstructions of existing structures should be considered.

For minor additions and re-development on existing lots as a minimum, access should achieve the maximum level of flood protection determined to be feasible and practical based on existing infrastructure. In the absence of a site specific detailed analysis, it is recommended that the depths for safe access not exceed 0.3 metres and velocities not exceed 1.7 metres/second.

Flood Proofing

Flood proofing includes alteration to the design of specific buildings, raising of ingress and egress roadways and driveways, the construction of dykes, flood control channels, etc. The variety of flood proofing options and requirements are too detailed and extensive to include in these guidelines. For more information, please consult *Appendix 6: "Flood proofing" of the "Technical Guide – River and Stream Systems: Flooding Hazard limit" (MNR, 2002a)*.

Safety risks are a function of the occupancy of structures as well as the flood susceptibility of the structures and the access routes to those structures. Risk should be controlled by limiting the size and type (and thereby limiting the occupancy) of additions or reconstruction projects in dangerous or inaccessible portions of the Regulatory floodplain. Flood proofing measures should be in keeping with the standards of the *River and Stream Systems Flooding Hazard Limit, Technical Guide – Appendix 6, (MNR 2002a)*.

Where flood proofing standards or safe access cannot be obtained for development, generally the development should be prohibited.

As part of the review of an application, the NVCA may request an Environmental Impact Study (EIS) to address development within a flooding hazard. An EIS is a mechanism for assessing impacts to determine the suitability of a proposal. The submission of an EIS does not guarantee approval of the works. An EIS must be carried out by a qualified professional, with recognized

expertise in the appropriate area of concern and shall be prepared using established procedures and recognized methodologies to the satisfaction of the Authority. **Appendix 6** provides additional details on what the scope of an EIS may contain.

Regulation Allowances

River or stream valley allowances allow the NVCA to regulate development adjacent to erosion and flooding hazards in a manner that provides protection against unforeseen or predicted external conditions that could have an adverse effect on the natural conditions or processes of the river or stream valley. **The NVCA's regulation provides for an allowance of 15 metres.**

Allowances give the Authority the opportunity to protect access to and along a valley and/or floodplain. This access may be required for emergency purposes, regular maintenance to existing structures or to repair failed structures.

Development within the allowance must be regulated to ensure that existing erosion and flooding hazards are not aggravated, that new hazards are not created, and to ensure that pollution and the conservation of land will not be affected. The allowance provides the conservation authority with the ability to maintain and enhance the natural features and ecological functions of the river or stream valley.

Regulation of development in the allowance is also required to deal with issues related to accuracy of the modeling and analysis tools utilized to establish the limits of the erosion and flooding hazards.

To provide access and protection against unforeseen conditions, provincial guidelines recommend that development should generally be setback a minimum of 6 metres adjacent to erosion and flooding hazards (Sections 3.0 and 3.4, Erosion Access Allowance, Technical Guide – River and Stream Systems: Erosion Hazard Limit, MNR, 2002b).

MNR recommends that this setback not only be applied to the erosion hazards discussed in the sections above but also adjacent to the flooding hazard because of the potential for erosion throughout the flooding hazard as a result of the flow of water during significant runoff events. For those situations where additional study is warranted to determine the development setback required providing the required public safety and access, a study should be undertaken using accepted scientific, geotechnical and engineering principles.

Protection of public safety and access however may not be sufficient to provide for all of the above noted requirements or purposes for the allowances. Additional technical studies by qualified professionals may be required to establish the appropriate extent and location of development within the allowance. A reduced development setback may be appropriate where the existing development already encroaches within the 15 metre setback and further development will not aggravate the erosion or flooding hazard.

4.3.4 Implementation Guidelines for River and Stream Valleys

The following sections outline the guidelines for implementing the NVCA Regulation with respect to river and stream valleys and the associated allowances. The Authority, in its role through the planning process, will also review planning applications to ensure that in general all

development can occur and be setback an appropriate distance from the river and stream valley hazards.

4.3.4.1 Development within the Erosion Hazard of an Apparent (Confined) River or Stream Valley

The following policies are focused on the physical feature and erosion hazard associated with apparent river or stream valleys.

- 1) In general, development shall not be permitted within the erosion hazard of an apparent river or stream valley;
- 2) In general, stabilization works within the erosion hazard of an apparent river or stream valley to allow for future/proposed development or an increase in development envelope or area shall not be permitted;
- 3) In general, development within the erosion hazard of an apparent river or stream valley on vacant lots of record shall not be permitted;
- 4) In general, stormwater management facilities within the erosion hazard of an apparent river or stream valley shall not be permitted;
- 5) Further to Section 4.3.4.1.1), development shall be prohibited within the erosion hazard of an apparent river or stream valley where the use is:
 - a) an institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of erosion and/or failure of protection works/measures, or
 - b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations which would be impaired during an emergency as result of erosion, or any other hazard associated with erosion and/or as a result of failure of protection works/measures, or
 - c) uses associated with the disposal, manufacture, treatment or storage of hazardous substances;
- 6) Notwithstanding Section 4.3.4.1.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within the erosion hazard of an apparent river or stream valley subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 7) Notwithstanding Section 4.3.4.1.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted within the erosion hazard of an apparent river or stream valley if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 8) Notwithstanding Section 4.3.4.1.1), stream bank, slope and valley stabilization to protect existing development and conservation or restoration projects may be permitted within the erosion hazard of an apparent river or stream valley subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;

- 9) Notwithstanding Section 4.3.4.1.1) and 4.3.4.1.3), minor removal and placement of fill and site grading within the erosion hazard of an apparent river or stream valley may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 10) Notwithstanding Section 4.3.4.1.1), development associated with the construction of a driveway or access way through the erosion hazard of apparent river or stream valley in order to provide access to lands outside of the apparent river or stream valley may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no viable alternative outside the regulated area; and
 - b) the requirements for the provision of safe access have been met.
- 11) Notwithstanding Section 4.3.4.1.1), development associated with existing uses located within the erosion hazard of an apparent river or stream valley such as minor additions, non-habitable accessory buildings, pools, landscaping retaining walls, grading, decks, etc., may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no feasible alternative site outside of the apparent river or stream valley or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;
 - b) no development is located on an unstable slope⁵ except for those works that by their nature must be located on an unstable slope such as slope stabilization works
 - c) there is no impact on existing and future slope stability;
 - d) bank stabilization or erosion protection works are not required;
 - e) development will have no negative impacts on natural stream meandering/fluvial processes;
 - f) structural development would not be susceptible to stream erosion;
 - g) development will not prevent access into and through the valley in order to undertake preventative actions/maintenance or during an emergency;
 - h) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans; and
 - i) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented and flooding hazards have been adequately addressed.
- 12) Notwithstanding 4.3.4.1.1), development may be permitted for the reconstruction or relocation of a building within the erosion hazard of an apparent river or stream valley provided that it has not been damaged or destroyed by erosion and if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding,

⁵ For this document, 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.

erosion, pollution or conservation of land will not be affected. The submitted plans should demonstrate that the building:

- a) cannot be relocated to an area outside the erosion hazard and if there is no feasible alternative site, that it is located in an area of least (and acceptable) risk;
 - b) will be protected from the erosion hazard through incorporation of appropriate building design parameters; and
 - c) will not exceed original habitable floor area nor the original footprint of the previous structure.
- 13) Notwithstanding Section 4.3.4.1.1), where technical assessment or studies demonstrate that lands within the erosion hazard of an apparent river or stream valley are not subject to an erosion or flooding hazard, development may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected. The submitted plans should demonstrate that:
- a) no access through the erosion susceptible area is required;
 - b) development will not prevent access into and through the valley in order to undertake preventative actions/maintenance or during an emergency;
 - c) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;
 - d) there is no impact on existing and future slope stability;
 - e) bank stabilization or erosion protection works are not required; and
 - f) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented and flooding hazards have been adequately addressed.
- 14) Notwithstanding Section 4.3.4.1.1), the replacement of sewage disposal systems may be permitted within the erosion hazard of an apparent river or stream valley if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected. The replacement system should be located outside of the erosion hazard where possible, and only permitted within the erosion hazard subject to being located in the area of lowest risk.

4.3.4.2 Development within the Allowance Adjacent to the Erosion Hazard of an Apparent (Confined) River or Stream Valley

- 1) Development may be permitted within the allowance adjacent to the erosion hazard of an apparent river or stream valley if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected. The submitted plans should demonstrate that:
- a) development does not create or aggravate an erosion hazard;
 - b) development is set back a sufficient distance from the stable top of bank to avoid increases in loading forces on the top of the slope;
 - c) development does not change drainage or vegetation patterns that would compromise slope stability or exacerbate erosion of the slope face;
 - d) development does not prevent access to and along the top of the valley slope;

- e) the potential for surficial erosion has been addressed through proper drainage, erosion and sediment control and site stabilization/restoration plans; and
- f) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented and flooding hazards have been adequately addressed;

4.3.4.3 Development within the Erosion Hazard of a Not Apparent (Unconfined) River or Stream Valley (Meander Belt)

The following policies are focused on the erosion hazards associated with not apparent valleys.

- 1) In general, development within the meander belt of a not apparent river or stream valley shall not be permitted;
- 2) In general, stabilization works within the meander belt of a not apparent river or stream valley to allow for future/proposed development or an increase in development envelope or area shall not be permitted;
- 3) In general, stormwater management facilities within the meander belt of a not apparent river or stream valley shall not be permitted;
- 4) In general, development within the meander belt of a not apparent river or stream valley on vacant lots of record shall not be permitted;
- 5) Further to Section 4.3.4.3.1), development shall be prohibited in the meander belt of a not apparent river or stream valley where the use is:
 - a) an institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of erosion and/or failure of protection works/measures, or
 - b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations which would be impaired during an emergency as result of erosion, or any other hazard associated with erosion and/or failure of protection works/measures, or
 - c) uses associated with the disposal, manufacture, treatment or storage of hazardous substances;
- 6) Notwithstanding Section 4.3.4.3.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within the meander belt of a not apparent river or stream valley subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 7) Notwithstanding Section 4.3.4.3.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted within the meander belt of a not apparent river or stream valley if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 8) Notwithstanding Section 4.3.4.3.1), stream bank stabilization to protect existing development and conservation or restoration projects may be permitted within the meander belt of a not apparent river or stream valley subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been

- demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 9) Notwithstanding Section 4.3.4.3.1), minor placement or removal of fill and site grading within the meander belt of a not apparent river or stream valley may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
 - 10) Notwithstanding Section 4.3.4.3.1), development associated with the construction of a driveway or access way through the meander belt of a not apparent river or stream valley in order to provide access to lands outside of the erosion hazard may be permitted subject to the provisions of safe access and if it has been demonstrated to the satisfaction of the conservation authority that there is no viable alternative outside of the regulated area and that the control of flooding, erosion, pollution, or the conservation of land will not be affected.
 - 11) Notwithstanding Section 4.3.4.3.1), development associated with existing uses located within the meander belt of a not apparent river or stream valley such as minor additions, non-habitable accessory buildings, pools, landscaping retaining walls, grading, decks, etc., may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no feasible alternative site outside of the meander belt of a not apparent river or stream valley or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;
 - b) development will not prevent access into and through the meander belt in order to undertake preventative actions/maintenance or during an emergency;
 - c) development will have no negative impacts on natural stream meandering/ fluvial processes;
 - d) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans; and
 - e) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented and flooding hazards have been adequately addressed;
 - f) non-habitable structural development would not be susceptible to erosion
 - h) minor additions would not be susceptible to stream erosion within the 100 year planning horizon
 - 12) Notwithstanding 4.3.4.3.1), development may be permitted for the reconstruction or relocation of a building within the meander belt of a not apparent river or stream valley, provided that it has not been damaged or destroyed by erosion and if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or conservation of land will not be affected. The submitted plans should demonstrate that the building:
 - a) cannot be relocated to an area outside the erosion hazard and if there is no feasible alternative site, that it is located in an area of least (and acceptable) risk; and
 - b) will be protected from the erosion hazard through incorporation of appropriate building design parameters; and

- c) will not exceed original habitable floor area nor the original footprint area of the previous structure.

4.3.4.4 Development within the Allowance Adjacent to the Erosion Hazard of a Not Apparent (Unconfined) River or Stream Valley (Meander Belt)

- 1) Development may be permitted within the allowance adjacent to the meander belt if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) development does not create or aggravate the erosion hazard;
 - b) development does not prevent access to and along the meander belt;
 - c) the potential for surficial erosion has been addressed through proper drainage, erosion and sediment control and site stabilization/restoration plans;
 - d) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented and flooding hazards have been adequately addressed;

4.3.4.5 Development Within One-Zone Regulatory Floodplain of River or Stream Valley

- 1) In general, development within the Regulatory floodplain shall not be permitted;
- 2) In general, flood hazard protection and bank stabilization works to allow for future/proposed development or an increase in development envelope or area within the Regulatory floodplain shall not be permitted;
- 3) In general, development associated with new and/or the expansion of existing trailer parks/campgrounds in the Regulatory floodplain shall not be permitted;
- 4) In general, stormwater management facilities within the 100 year floodplain shall not be permitted;
- 5) In general, development within the Regulatory floodplain on vacant lots of record shall not be permitted;
- 6) In general, basements within the Regulatory floodplain shall not be permitted;
- 7) In general, underground parking within the Regulatory floodplain shall not be permitted;
- 8) Further to Section 4.3.4.5.1), development shall be prohibited within the Regulatory floodplain where the use is:
 - a) an institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding and/or failure of flood proofing measures or protection works; or
 - b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations which would be impaired during an emergency as result of flooding, the failure of flood proofing measures and/or protection works; or
 - c) uses associated with the disposal, manufacture, treatment or storage of hazardous substances.

- 9) Notwithstanding Section 4.3.4.5.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within the Regulatory floodplain subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 10) Notwithstanding Section 4.3.4.5.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 11) Notwithstanding Section 4.3.4.5.1), stream, bank, slope, and valley stabilization to protect existing development and conservation or restoration projects may be permitted within the Regulatory floodplain subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 12) Notwithstanding Section 4.3.4.5.1), development associated with existing uses located within the Regulatory floodplain such as minor additions, non-habitable detached accessory buildings, pools, landscaping retaining walls, grading, decks, etc., may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no feasible alternative site outside of the Regulatory floodplain for the proposed development or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;
 - b) the proposed works do not create new hazards or aggravate flooding on adjacent or other properties and there are no negative upstream and downstream hydraulic impacts;
 - c) the development is protected from the flood hazard in accordance with established flood proofing and protection techniques;
 - d) the proposed development will not prevent access for emergency works, maintenance, and evacuation;
 - e) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;
 - f) natural features and/or ecological functions associated with conservation of land are protected, pollution is prevented and erosion hazards have been adequately addressed ;
- 13) Notwithstanding Section 4.3.4.5.1), development may be permitted for the reconstruction or relocation of a building within the Regulatory floodplain, provided that it has not been damaged or destroyed by flooding and if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or conservation of land will not be affected. The submitted plans should demonstrate that the building:
 - a) cannot be relocated to an area outside the flood hazard and if there is no feasible alternative site, that it is located in an area of least (and acceptable) risk; and

- b) will be protected from the flood hazard through incorporation of appropriate building design parameters; and
 - c) will not exceed original habitable floor area of the previous structure nor the original footprint area of the previous structure.
- 14) Notwithstanding Section 4.3.4.5.1), development associated with the construction of a driveway or access way through the Regulatory floodplain in order to provide access to lands outside of the Regulatory floodplain may be permitted subject to the provision of safe access and if it has been demonstrated to the satisfaction of the conservation authority that there is no viable alternative outside of the regulated area and that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 15) Notwithstanding Section 4.3.4.5.1), minor removal or placement of fill and site grading may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected;
- 16) Notwithstanding Section 4.3.4.5.1), the replacement of sewage disposal systems may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected. The replacement system should be located outside of the floodplain where possible, and only permitted within the floodplain subject to being located in the area of lowest risk.
- 17) Notwithstanding Section 4.3.4.5.1), above ground parking lots may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected, and that safe pedestrian and vehicular access is achieved.

4.3.4.6 Development Within the Allowance of the Regulatory Floodplain of River or Stream Valley

- 1) Development may be permitted within the allowance of a Regulatory floodplain if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected. The submitted plans should demonstrate that:
- a) development does not aggravate the flood hazard or create a new one;
 - b) development does not impede access for emergency works, maintenance and evacuation;
 - c) the potential for surficial erosion has been addressed through proper drainage, erosion and sediment control and site stabilization/ restoration plans; and
 - d) the natural features and/or ecological functions associated with conservation of land are protected, pollution is prevented and erosion hazards have been adequately addressed.

4.4 Great Lakes Shorelines

4.4.1 NVCA's Regulation 172/06

The following section indicates how the extent of Great Lakes shoreline is determined for the purpose of administering the Regulation. The NVCA's Regulation contains the following sections dealing with Great Lakes shorelines.

“Development prohibited

2. (1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on areas within the jurisdiction of the conservation authority that are:
 - (a) adjacent or close to the shoreline of the Great Lakes-St. Lawrence River system or to inland lakes that may be affected by flooding, erosion or dynamic beaches, including the area from the furthest offshore extent of the NVCA’s boundary to the furthest landward extent of the aggregate of the following distances:
 - i) the 100-year flood level, plus the appropriate allowance for wave uprush,
 - 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 the slope as that location may have shifted as a result of shoreline erosion over a 100-year period,
 - iii) where a dynamic beach is associated with the waterfront lands, a 30 metre allowance inland to accommodate dynamic beach movement,
 - iv) 15 metres inland;”

“Permission to develop

- 3.(1) The Authority may grant permission for development in or on the areas described in subsection 2(1) if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development.
- (2) The permission of the Authority shall be given in writing, with or without conditions.”

4.4.2 Discussion of Shorelines

Shorelines are comprised of three components: 1) flooding hazards, 2) erosion hazards, and 3) dynamic beach hazards.

4.4.2.1 Processes and Functions Along Shorelines

In general, flooding is a phenomenon influenced by and sensitive to water level fluctuations. Inundation of low-lying Great Lakes –St. Lawrence River system shorelines in and of itself does not necessarily constitute a significant hazard. The hazard is dependant on the type, design, location and density of any development in or near the flood inundated shorelines. However, where flooded lands are coupled with storm events, the cumulative impact can and frequently does pose significant degrees of risk. Of importance in managing a potential flood-susceptible

shoreline is the need to understand the interrelationship between pre-storm flooding, storm setup, wave height, wave uprush and other water related hazards (i.e., wave spray, ice). If the area of inundation is a wetland or an undeveloped area, the resultant “damage” caused by a storm event may be minimal if measured in terms of human losses (i.e., property and life). Indeed, periodic flooding of wetland complexes has been found to be beneficial for the continued maintenance and enhanced diversity of wetland vegetation itself, by helping to eliminate the invasion of water sensitive upland vegetation into low-lying shorelines during periods of low water levels. In terms of human use and occupation of the low-lying Great Lakes – St. Lawrence River system shorelines, development decisions based on or during periods of low water levels can present the most serious problem. During lower water levels, the potential flood hazard to homes, cottages and other development often goes unrecognized. Consequently, when water levels return to long-term averages or high water levels, flood damages are sustained. These damages are frequently quite significant (MNR1996b).

Erosion within the Great Lakes – St. Lawrence River system is a concern, particularly within the lower Great Lakes. Erosion rates are dependent upon a number of lake and land processes as well as the composition and morphology of the shore. In general terms, identification of erosion susceptible shorelines is rather simple in that erosion of bedrock and cohesive shores involves a unidirectional process. In the absence of human intervention and/or the installation of remediation measures, once material is removed, dislodged or extracted from the shore face and near shore profile it cannot reconstitute with the original material and is essentially lost forever. Even with the installation of remedial measures (i.e., assumed to address the erosion hazard), the natural forces of erosion, storm action/attack and other naturally occurring water and erosion related forces may prove to be such that the remedial measures may only offer a limited measure of protection and may only reduce or address the erosion hazard over a temporary period of time.

Given the naturally complex and dynamic nature of the beach environment, determining hazard susceptibility of a given beach formation requires careful assessment of a wide range of parameters. Over the short term, beach environments, impacted by flood and erosion processes, may undergo alternating periods of erosion and accretion as they attempt to achieve a dynamic equilibrium with the forces acting upon them. Over the long term, beaches experiencing a positive sediment budget (i.e., more sand and gravel is incoming than outgoing) are generally in fact accreting shore forms while those experiencing a negative sediment budget are eroding. As such, the depiction and evaluation of the hazard susceptibility of dynamic beaches should be dependent on the level of information, knowledge and understanding of the beach sediment budget and the cross-profile width over which most of the dynamic profile changes are taking place.

4.4.2.2 Shoreline Flood Hazard

The variable nature of water elevations of the Great Lakes is apparent from historical records. Of the two key factors influencing long-term and short-term changes in lake levels, natural phenomena (i.e., rainfall, evaporation, wind, storms, etc.) by far, cause the greater magnitudes of changes, than does human intervention (i.e., diversions, water control structures, etc.).

The most familiar changes in lake levels are seasonal fluctuations as evidenced by average differences of about 0.6 to 1.1 metres in lake levels between the summer and winter months.

Superimposed on these seasonal fluctuations are some extremely short periods of significantly larger magnitudes of lake level changes. The most temporary of these are caused by storm winds which blow over the lake surfaces pushing the water to the opposite side or end of the lake. These “wind setups” or “storm surges” have frequently caused total differences of more than 4 metres and occasionally as high as 5 metres in lake levels at opposite ends of some of the Great Lakes.

The shoreline refers to the furthest landward limit bordering a large body of water. Factors to be addressed in the areas susceptible to flooding along the shoreline include: the 100-year flood level; and flood allowance for wave uprush and/or other water related hazards (**Figure 10**).

The 100-year flood level is the water level due to the combined occurrences of mean monthly lake levels and wind set up having a 1% chance of occurring during any year.

The 100-year wave uprush level is based on mean monthly lake levels, wind setup and wind generated waves.

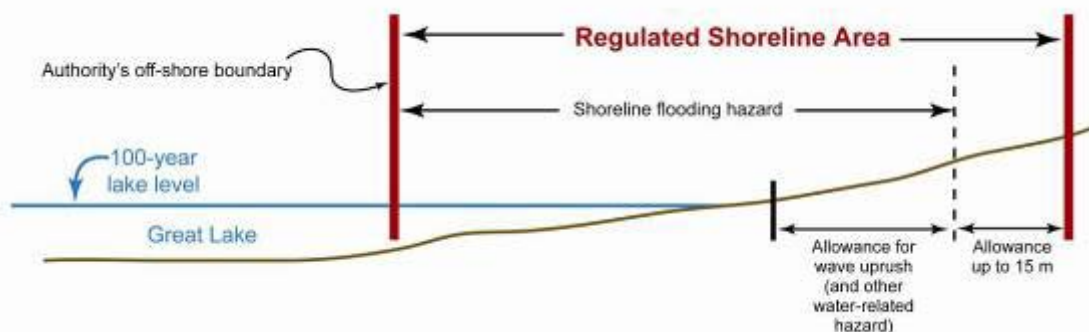


Figure 10: Lake Flooding

In areas susceptible to wave action, shoreline flood hazards extend landward beyond the 100-year flood level to the limit of wave action. All shorelines should be considered susceptible to wave action unless site specific studies using accepted engineering principles demonstrate that wave action is not significant.

Wave action includes wave uprush, wind setup, wave overtopping and/or wave spray. Wind setup is the mean increase in the water level caused by the onshore transport of water due to waves breaking at the shoreline, while wave uprush is the distance that the water will run-up on the shoreline. For straight, uniform shoreline reaches without protection works, the landward limit of wave action can be represented by the maximum sum of wave setup and wave uprush.

In areas where waves act on shore protection works and other structures, and in areas with irregular shorelines, the wave action may include wave overtopping and wave spray which are more difficult to determine and may require detailed study.

Shoreline flood hazards include, but are not limited to:

- wave overtopping
- wave spray

- ice piling
- ice jamming, and
- ship generated waves

Wave overtopping essentially occurs when the height of the natural shoreline, or of the protection work, above the still water level is less than the limit of the wave uprush. As a result, wave overtopping the shoreline or protection work can cause flooding of the onshore area and can threaten the structural stability of protection works.

Wave spray has been observed passing over structures (houses) and well past them. The landward extent and quantity of wave spray depends on such factors as the structure of the shore and nearshore, type of protection works, size of incident waves and wind conditions. Generally, during storms a significant amount of wave spray will occur behind structures that are near vertical and subjected to large breaking waves.

All shoreline areas and connecting channels form an ice cover. There are two types of ice which impact shoreline features: drift ice (slush, frazil, pancake, flow and composite ice) and shorefast ice (anchor ice). The impact on the shoreline by drift ice is dependent on the physical orientation and composition of the shoreline, wave action, wind setup and duration of ice action as the ice is transported alongshore and thrown onshore and then drawn offshore by wave action. Anchor or shorefast ice action on a shoreline has a horizontal and vertical impact on shoreline features as the stationary ice grows or diminishes in response to the temperature fluctuations over the winter period.

Ice piling results from wind blowing over the ice, pushing the ice landward. This can produce ridging and a large build-up of ice at the shore. This shore ice can then scour sections of the beach and nearshore as well as destroy structures close to the shore. The moving ice can also remove boulders from the shallow areas, thereby reducing the level of shore protection provided by the boulders.

Ice jamming, the build-up of ice at the outlets of the lakes into the connecting channels, can cause extensive damage to shore structures and nearshore profiles. At the same time, ice jams frequently pose problems by impeding water flows outletting from the lakes and into the connecting channels causing varying magnitudes in lake level increases depending on the size and duration of the ice jam blockage.

Depending on the shoreline configuration and slope characteristics, ship generated waves can rush up the shoreline past the 100-year flood level. In addition to ship generated wave uprush, the subsequent ship generated wave drawdown can scour and damage a shoreline or protection work.

High points of land not subject to flooding but surrounded by the shoreline flood hazard or “flooded land” are considered to be within the flood hazard and part of the shoreline flood hazard.

4.4.2.3 Shoreline Erosion Hazard

Many geological, topographical and meteorological factors determine the erodibility of a shoreline. These include soil type, surface and groundwater, bluff height, vegetation cover, shoreline orientation, shoreline processes, wind and wave climate and lake level fluctuations. Erosion over the long-term is a continuous process influenced by these lakeside (i.e. wave action, water levels) and landside factors (i.e., surface/subsurface drainage, loading/weight of buildings, removal of surface vegetation).

The rate of erosion may be heightened during severe storm events, resulting in large losses of land over a very short period of time. These large losses, which are more readily visible immediately following major storm events, at times can obscure the more continuing long-term processes.

The risk of erosion is managed by planning for the 100-year erosion rate (the average annual rate of recession extended over a one hundred year time span). The extent of the shoreline erosion hazard limit depends on the shoreline type: bluff or beach.

The shoreline erosion hazard limit includes the following (**Figure 11**):

- stable toe of slope (as may be shifted as a result of erosion over a 100 year period),
- predicted long-term stable slope projected from the stable toe of slope, and
- an allowance inland of 15 metres on large inland lakes or 30 metres on the Great Lakes.

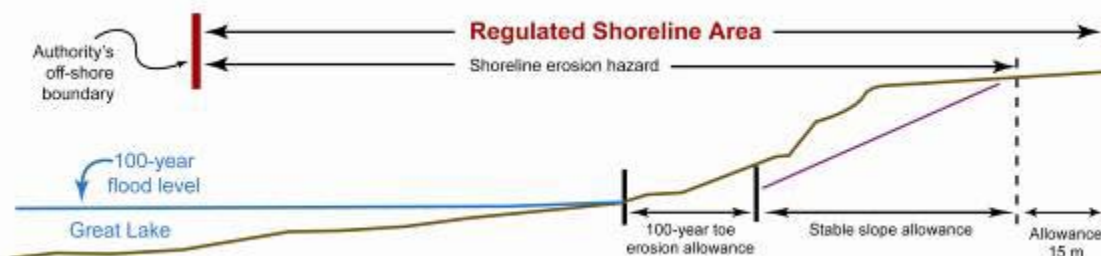


Figure 11: Lake Erosion

To slow the erosion of shorelines, structures such as breakwaters, seawalls and revetments have been used. *Technical Guidelines- Great Lakes –St. Lawrence River Shorelines- Part 7 – Addressing the Hazard* (MNR 1996b) provide guidance for considering how such structures may be considered to modify the shoreline erosion hazard.

Specifically a protection works standard - erosion hazard is provided to illustrate how shoreline erosion prevention structures should be evaluated.

However, even with the installation of remedial measures (i.e., assumed to address the erosion hazard), the natural forces of erosion, storm action/attack and other naturally occurring water and erosion related forces may prove to be such that the remedial measures may only offer a limited

measure of protection and may only reduce or address the erosion hazard over a temporary period of time. Even if the shoreline is successfully armoured, the near shore lake bottom continues to erode or down cut eventually on all shorelines. This process is more active typically on cohesive shorelines. Eventually the lakebed down cutting will undermine the shoreline armouring causing the structure present to ultimately fail (**Figure 12**). The failure and ultimate property loss may extend back to the point at which the natural shoreline occurs. The natural shoreline position is typically not the present waterline or break wall interface, but actually some point inland from the armoured shoreline position.

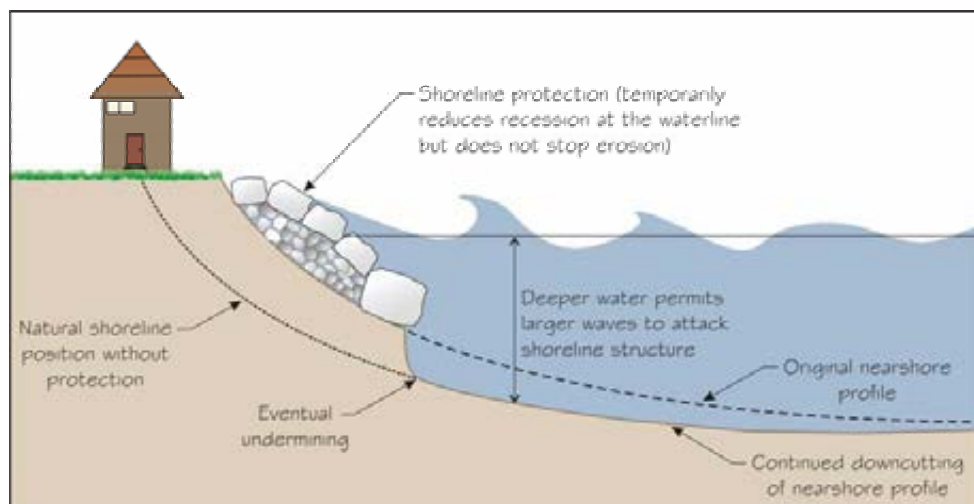


Figure 12: *Lake Erosion Down Cutting, see also Technical Guidelines - Great Lakes - St. Lawrence River (MNR 1996b).*

These problems usually occur on updrift and/or downdrift properties, aggravating existing off-site hazards, and/or posing unacceptable detrimental impacts on a wide array of environmental components of the shoreline ecosystem (e.g., fisheries, wetlands, water quality). The natural movement of the shoreline due to erosion can be aggravated by these human activities and the impact of the activity can be transferred some distance from the impact site.

Therefore, it is recommended as a general principle, that measures which harden the shoreline be avoided. Further, it is recommended that Shoreline Management Plans be undertaken to assist in development of shoreline specific policies and, specifically to evaluate whether the implementation of erosion protection structures (revetments, seawalls etc.) are appropriate in the context of the overall shoreline processes (MNR, 1987).

4.4.2.4 Dynamic Beach Hazard

To define a dynamic beach, the flooding hazard limit must be known. The flooding hazard limit combines the 100-year flood elevation plus wave uprush. In dynamic beach areas, elevations can change quite dramatically from season to season and year to year due to build up and erosion of sand, cobbles and other beach deposits. A dynamic beach is considered an unstable accumulation of shoreline sediments generally along the Great Lakes – St. Lawrence River system and large inland lakes. In dynamic beach areas, topographic elevations can change quite rapidly due to the accumulation or loss of beach materials through the effects of wind and wave action. These changes can occur seasonally or yearly and, at times, quite rapidly and dramatically.

To determine the limit of a dynamic beach, the flooding hazard must be established. The flooding hazard is defined as the aggregate of the 100-year lake level plus a landward allowance to accommodate wave uprush and other water related hazards.

It is important that the 100-year lake level be established as a historic location rather than as an elevation.

If considered as an elevation the location of the 100-year lake level will move with the accretion or loss of beach materials. For example, during a period of low lake levels, it is expected that the accretion of beach materials would occur. If established as an elevation, the 100-year lake level (and the subsequent flood hazard) would move lakeward. Under this approach the Regulation Limit could be construed as also moving lakeward. This area of accretion could rapidly be lost during a storm or when lake levels return to normal. Development permitted under this standard would be at risk.

Historic information about the location of the farthest landward extent of the 100-year lake level will be an important consideration for the long term management of dynamic beach hazards. The 1988 mapping created under the Flood Damage Reduction Program is an example which provides a historic location of the 100 year lake level for Lake Huron.

When topographic elevations change, so does the location of the flooding hazard limit. This is an especially important consideration, because in times of low lake levels (as has recently been the case on the Great Lakes), the near shore areas that have been submerged under normal or high lake levels are now exposed, subjected to accretion and erosion processes. It may seem that the landward extent of the dynamic beach has changed, thereby introducing potential for development or expansion of existing development. Historic information about the farthest landward extent of flooding will be an important consideration for good long-term management of dynamic beach hazards. The balance of various coastal processes, which allows for the state of dynamic equilibrium for these beach areas, only exists in the natural environment. Human intrusion within these areas can significantly and negatively impact on the form and function of the dynamic beach. Development should only be considered in limited defined areas outside of the dynamic beach hazard, following the appropriate level of scientific investigation and assessment.

The dynamic beach hazard is applied to all shorelines of the Great Lakes – St. Lawrence River system where there is an accumulation of surficial sediment landward of the stillwater line (defined at the time of mapping under non-storm conditions), such that action by waves and other water and wind-related processes can lead to erosion of the sediments and a resultant landward translation of the shore profile.

The dynamic beach hazard is only applied where:

- beach or dune deposits exist landward of the water line (e.g., land/water interface),
- beach or dune deposits overlying bedrock or cohesive material are equal to or greater than 0.3 metres in thickness, 10 metres in width and 100 metres in length along the shoreline, and

- where the maximum fetch distance measured over an arc extending 60 degrees on either side of a line perpendicular to the shoreline is greater than 5 km (this normally does not occur where beach or dune deposits are located in embayments, along connecting channels and in other areas of restricted wave action where wave related processes are too slight to alter the beach profile landward of the waterline).

The criteria used to define and classify a section of shoreline as a dynamic beach are intended to be applied over a stretch of shoreline on the order of 100 metres or more in length. Where shorter sections of sediments occur on a rocky or cohesive shoreline they are likely to be transitory. Beach width and thickness should be evaluated under calm conditions and at water levels between datum (IGDL) and the average annual low water level. When lake level conditions are higher, consideration should be given to the submerged portion of the beach. If possible, mapping should not take place during high lake level conditions. It is expected that the person carrying out the mapping will exercise judgment, based on knowledge of the local area and historical evidence, in those areas where the beach width is close to the suggested criteria for defining a dynamic beach.

Some dynamic beaches have been identified by the Ministry of Natural Resources and should be confirmed through a shoreline management plan (MNR, 1987).

The Dynamic Beach Hazard includes the following (**Figure 13**):

- 100-year flood level,
- an allowance for wave uprush, and if necessary, an allowance for other water related hazards, including ship generated waves, ice piling and ice jamming,
- an allowance inland of 30 metres to accommodate for dynamic beach movement on the Great Lakes.

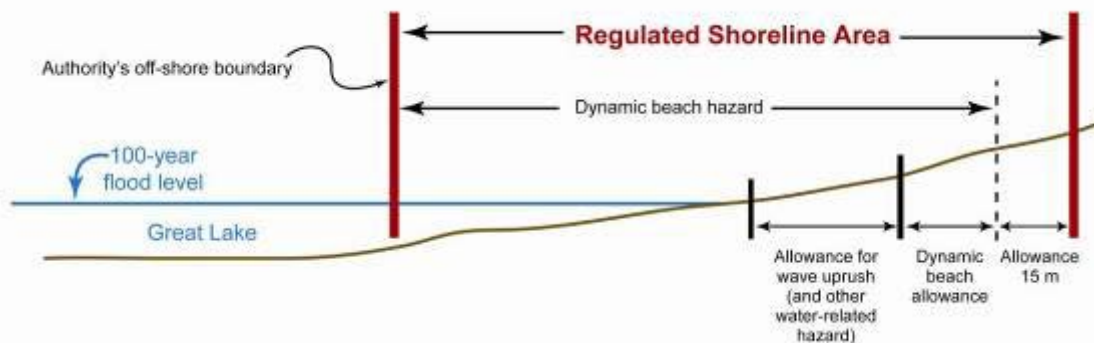


Figure 13: *Dynamic Beach*

To assist in addressing dynamic beach issues, the Town of Wasaga Beach in partnership with the NVCA, has prepared a discussion paper examining beach and dune conservation and protection. The discussion paper is located on the town's website under Natural Heritage Studies at the following link:

<http://www.wasagabeach.com/studies.index.gk>

4.4.2.5 Regulation Allowances

The allowances adjacent to shoreline flood, erosion and dynamic beach hazards allow the NVCA to regulate development in these areas in a manner that:

- Provides protection against unforeseen or predicted external conditions that could have an adverse effect on the natural conditions or processes of the shoreline;
- Protects access to and along the shoreline hazard areas. Access may be required for emergency purposes, regular maintenance to existing structures or to repair failed structures;
- Ensures that existing erosion, flooding and dynamic beach hazards are not aggravated and that new hazards are not created;
- Ensures that the control of pollution and the conservation of land will not be affected;
- Maintains and enhances the natural features and ecological functions of shorelines; and
- Addresses issues related to accuracy of the modeling and analysis tools utilized to establish the limits of the flooding, erosion and dynamic beach hazards

The NVCA's Regulation states that the dynamic beach allowance is 30 metres and the allowance is 15 metres as illustrated above.

4.4.3 Implementation Guidelines for Great Lakes Shorelines

The following sections outline the guidelines for implementing the NVCA's Regulation with respect to Great Lakes shorelines and the associated allowances. The NVCA, in its role through the planning process, will review planning applications to ensure that in general all development will be setback an appropriate distance from the shoreline hazards.

The NVCA's area of jurisdiction does not contain any large inland lakes which have a surface area equal to or greater than 100 square kilometres. As a result, the lakes within the Authority will be treated in a manner similar to a river or stream valleys.

4.4.3.1 Development Within the Shoreline Flood Hazard

For the purposes of the following policies, the shoreline flood hazard is the limit of the landward extent of flooding accounting for the 1:100 year flood elevation, plus an allowance for wave uprush and other water related hazards.

- 1) In general, development within the shoreline flood hazard shall not be permitted;
- 2) In general, flood hazard protection and bank stabilization works to allow for future/proposed development or an increase in development envelope or area within the shoreline flood hazard shall not be permitted;
- 3) In general, development associated with new and/or the expansion of existing trailer parks/campgrounds in the shoreline flood hazard shall not be permitted;
- 4) In general, stormwater management facilities within the shoreline flood hazard shall not be permitted;
- 5) In general, development within the shoreline flood hazard on vacant lots of record shall not be permitted;

- 6) In general, basements within the shoreline flood hazard shall not be permitted;
- 7) In general, underground parking within the shoreline flood hazard shall not be permitted;
- 8) Further to Section 4.4.3.1.1), development shall be prohibited in the shoreline flood hazard where the use is:
 - a) an institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding and/or failure of flood proofing measures or protection works, or
 - b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations which would be impaired during an emergency as result of erosion, the failure of flood proofing measures and/or protection works, or
 - c) uses associated with the disposal, manufacture, treatment or storage of hazardous substances;
- 9) Notwithstanding Section 4.4.3.1.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within the shoreline flood hazard subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 10) Notwithstanding Section 4.4.3.1.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted within the shoreline flood hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 11) Notwithstanding Section 4.4.3.1.1), shoreline, bank, and slope stabilization to protect existing development and conservation or restoration projects may be permitted within the shoreline flood hazard subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 12) Notwithstanding Section 4.4.3.1.1), development associated with existing uses located within the shoreline flood hazard such as minor additions, non-habitable accessory buildings (e.g. boat house), pools, landscaping retaining walls, grading, non-enclosed decks, etc., may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no feasible alternative site outside of the shoreline flood hazard for the proposed development or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;
 - b) the proposed works do not create new or aggravate flooding on the subject, adjacent or other properties;
 - c) development is protected from the shoreline flood hazard in accordance with established flood proofing and protection techniques;

- d) proposed development will not prevent access for emergency works, maintenance, and evacuation;
 - e) potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;
 - f) natural features and/or ecological functions associated with conservation of land are protected, pollution is prevented and erosion and dynamic beach hazards have been adequately addressed;
- 13) Notwithstanding Section 4.4.3.1.1), development may be permitted for the reconstruction or relocation of a building within the shoreline flood hazard, provided that it has not been damaged or destroyed by flooding or other water related hazards and if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or dynamic beaches or conservation of land will not be affected. The submitted plans should demonstrate that the building:
- a) cannot be relocated to an area outside the flood hazard and if there is no feasible alternative site, that it is located in an area of least (and acceptable) risk; and
 - b) will be protected from the flood hazard; and
 - c) will not exceed original habitable floor area nor the original footprint area of the previous structure.
- 14) Notwithstanding Section 4.4.3.1.1), development associated with the construction of a driveway or access way through the shoreline flood hazard in order to provide access to lands outside of the flood hazard may be permitted subject to the provision of safe access and if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 15) Notwithstanding Section 4.4.3.1.1), minor placement and removal of fill and site grading within the shoreline flood hazard may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected.
- 16) Notwithstanding Section 4.4.3.1.1), the replacement of sewage disposal systems may be permitted within the shoreline flood hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected. The replacement system should be located outside of the shoreline flood hazard where possible and only permitted within the shoreline flood hazard in the area of lowest risk.
- 17) Notwithstanding Section 4.4.3.1.1), above ground parking lots may be permitted within the shoreline flood hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected and that safe pedestrian and vehicular access is achieved.

4.4.3.2 Development within the Allowance Adjacent to the Shoreline Flood Hazard

- 1) Development may be permitted within the allowance adjacent to the shoreline flood hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected. The submitted plans should demonstrate that:
- a) development does not aggravate the flood hazard or create a new one;

- b) development does not impede access for emergency works, maintenance and evacuation; and
- c) the potential for surficial erosion has been addressed through proper drainage, erosion and sediment control and site stabilization/ restoration plans; and
- d) The natural features and/or ecological functions associated with conservation of land are protected, pollution is prevented and erosion and dynamic beach hazards have been adequately addressed.

4.4.3.3 Development within the Shoreline Erosion Hazard

For the purpose of the following policy, the shoreline erosion hazard is the limit of the landward extent of the stable slope measured from the existing protected or unprotected toe of slope, plus the limit of the 100-year erosion limit.

- 1) In general, development shall not be permitted within the shoreline erosion hazard;
- 2) In general, stabilization works within the shoreline erosion hazard to allow for future/proposed development or an increase in development envelope or area shall not be permitted;
- 3) In general, development within the shoreline erosion hazard on vacant lots of record shall not be permitted;
- 4) In general, stormwater management facilities within the shoreline erosion hazard shall not be permitted;
- 5) Further to Section 4.4.3.3.1), development shall be prohibited in the shoreline erosion hazard where the use is:
 - a) an institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of erosion and/or failure of protection works/measures, or
 - b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations which would be impaired during an emergency as a result of erosion, or protection works/measures, or
 - c) uses associated with the disposal, manufacture, treatment or storage of hazardous substances;
- 6) Notwithstanding Section 4.4.3.3.1), public and private infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within the shoreline erosion hazard subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 7) Notwithstanding Section 4.4.3.3.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted within the shoreline erosion hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 8) Notwithstanding Section 4.4.3.3.1.), shoreline, bank, and slope stabilization to protect existing development and conservation or restoration projects may be permitted within the shoreline erosion hazard subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction

- of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 9) Notwithstanding Section 4.4.3.3.1), development associated with minor additions, non-habitable accessory, buildings and pools may be permitted within the shoreline erosion hazard if it has been demonstrated to the satisfaction of the Conservation Authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no feasible alternative site outside of the shoreline erosion hazard or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;
 - b) no development is located within the stable slope allowance;
 - c) there is no impact on existing and future slope stability and bank stabilization;
 - d) development will not prevent access into and along the shoreline erosion hazard in order to undertake preventative actions/maintenance or during an emergency;
 - e) development will have no negative impacts on natural shoreline processes;
 - f) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;
 - g) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented, and flooding, and dynamic beach hazards have been adequately addressed.
 - 10) Notwithstanding Section 4.4.3.3.1), development associated with existing uses located within the shoreline erosion hazard such as landscaping retaining walls, grading, decks, stairs, etc., may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) there is no feasible alternative site outside of the shoreline erosion hazard or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;
 - b) development will not prevent access into and through the shoreline erosion hazard in order to undertake preventative actions/maintenance or during an emergency;
 - c) there is no impact on existing and future slope stability and bank stabilization;
 - d) development will have no negative impacts on natural shoreline processes;
 - e) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans; and
 - f) natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented, flooding hazards, and dynamic beach hazards have been adequately addressed.
 - 11) Notwithstanding 4.4.3.3.1), development may be permitted for the reconstruction or relocation of a building within the shoreline erosion hazard, provided that it has not been damaged or destroyed by erosion and if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or dynamic beaches or conservation of land will not be affected. The submitted plans should demonstrate that the building:

- a) cannot be relocated to an area outside the erosion hazard and if there is no feasible alternative site, that it is located in an area of least (and acceptable) risk; and
- b) will be protected from the erosion hazard through incorporation of appropriate building design parameters; and
- c) will not exceed original habitable floor area nor the original footprint of the previous structure.

4.4.3.4 Development within the Allowance Adjacent to the Shoreline Erosion Hazard

- 1) Development may be permitted within the allowance adjacent to the shoreline erosion hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) development does not aggravate the erosion hazard or create a new one;
 - b) development does not impede access for emergency works, maintenance and evacuation;
 - c) the potential for surficial erosion has been addressed through proper drainage, erosion and sediment control and site stabilization/restoration plans; and
 - d) the natural features and/or ecological functions associated with conservation of land are protected, pollution is prevented and erosion and dynamic beach hazards have been adequately addressed.

4.4.3.5 Development within the Dynamic Beach Hazard

For the purpose of the following policies the Dynamic Beach Hazard is the limit of the landward extent of the 100-year flood elevation limit, plus the allowance for wave uprush and other water-related hazards, plus the dynamic beach allowance. The dynamic beach allowance is 30 metres on the Great Lakes and interconnecting channels.

- 1) In general, development shall not be permitted in the dynamic beach hazard;
- 2) Further to Section 4.4.3.5.1), development shall be prohibited in the dynamic beach hazard where the use is:
 - a) An institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of erosion or any other hazard associated with dynamic beaches or as a result of failure of protection works/measures; or
 - b) An essential emergency service such that provided by fire, police and ambulance stations and electrical substations, which would be impaired during an emergency as a result of erosion or any other hazard associated with dynamic beaches and/or as a result of failure of protection works/measures; or
 - c) Associated with the disposal, manufacture, treatment or storage of hazardous substances.
- 3) Notwithstanding Section 4.4.3.5.1), underground public infrastructure (i.e. sewers) and various utilities (e.g. pipelines) may be permitted within the dynamic beach hazard subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation

- authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
- 4) Notwithstanding Section 4.4.3.5.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted within the dynamic beach hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;
 - 5) Notwithstanding Section 4.4.3.5.1), conservation or restoration projects may be permitted within the dynamic beach hazard subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beaches or the conservation of land will not be affected;

4.4.3.6 Development within the Allowance Adjacent to the Dynamic Beach Hazard

- 1) Development may be permitted within the allowance adjacent to the dynamic beach hazard if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, dynamic beach or the conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) development does not create or aggravate the dynamic beach hazard;
 - b) development does not prevent access to and along the dynamic beach;
 - c) the potential for surficial erosion has been addressed through proper drainage, erosion and sediment control and site stabilization/ restoration plans; and
 - d) the natural features and/or ecological functions contributing to the conservation of land are protected, pollution is prevented and flooding and erosion hazards have been adequately addressed;

4.5 Hazardous Lands

4.5.1 NVCA's Regulation 172/06

The following section indicates how the extent of hazardous lands is determined for the purpose of administering the Regulation. The NVCA's Regulation contains the following sections dealing with hazardous lands.

"Development prohibited

2. (1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on areas within the jurisdiction of the Authority that are:
 - ...
 - d) hazardous lands;"

"Permission to develop

3. (1) The Authority may grant permission for development in or on the areas described in subsection 2(1) if, in its opinion, the control of flooding, erosion, dynamic

beaches, pollution or the conservation of land will not be affected by the development.

- (2) The permission of the Authority shall be given in writing, with or without conditions.”

4.5.2 Discussion of Hazardous Land

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. **Please note that this section applies to activities located within unstable soil and unstable bedrock hazardous lands;** otherwise refer to the River and Stream Valleys and Great Lakes and Large Inland Lakes Shorelines sections for other hazardous lands such as flooding, erosion, and Shoreline section for dynamic beaches.

Due to the specific nature of areas of unstable soil or unstable bedrock, it is difficult to identify these hazards. 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 lands, and therefore the appropriate limits of the hazard and Regulation Limits. The regulated area is based on the conclusions and recommendations of such studies.

Development within areas deemed as hazardous is considered through the ‘development’ provision of the Regulation. Activities proposed within unstable soil and unstable bedrock hazardous lands must therefore meet the definition of “development” in the *Conservation Authorities Act* to be regulated (see Section 6.0).

4.5.2.1 Unstable Soil

Unstable soil includes but is not necessarily limited to areas identified as containing sensitive marine clays (e.g. leda clays) or organic soils (Conservation Ontario & Ministry of Natural Resources, 2005).

4.5.2.1.1 Sensitive Marine Clays (Leda Clay)

Sensitive marine clays, also known as leda clays, are clays that were deposited as sediment during the last glacial period in the Champlain Sea. Undisturbed, the clays can appear as solid and stable. But when disturbed by excessive vibration, shock or when they become saturated with water, the clays can turn to liquid (MNR, 2001). The resulting failures or earthflows can be sudden and catastrophic.

Sensitive marine clays are restricted to specific locations in the province, however, are not restricted to just along rivers and streams. In addition to the mapping that individual conservation authorities may have developed or obtained, information is also available from the Geological Survey of Canada and the Ontario Ministry of Natural Resources.

To determine Regulation limits, it is recommended that site specific studies be undertaken to determine the full extent of the sensitive marine clays and their full potential for retrogressive failures. While useful standards for defining the limits of the hazardous lands are provided within the *Ministry of Natural Resources Understanding Natural Hazards (2001)* document and *Hazardous Sites Technical Guide (MNR, 1996a)*, it is crucial to recognize that these standards

only address a first occurrence of slope failure. As such, the *Guidelines for Developing Schedules of Regulated Areas* recommend the use of a site/area specific study in defining the appropriate hazard (and therefore the Regulation Limit) to account for the potential of subsequent failures.

Section 3.0 of the *Hazardous Sites Technical Guide (MNR, 1996a)* provides important guidance with respect to assessing marine sensitive clays and the potential for development within this type of hazardous lands.

4.5.2.1.2 Organic Soils

Organic soils are normally formed by the decomposition of vegetative and organic materials into humus, a process known as humification. A soil is organic when the percentage weight loss of the soil, when heated, is five to eighty per cent (MNR, 2001).

As a result, organic soils can cover a wide variety of soil types. Peat soils are the most common type of organic soil in Ontario. Therefore, a conservation authority's wetland inventory may provide guidance in the location of organic soils. In addition, soil maps by the Ministry of Agriculture, Food and Rural Affairs and maps by the Geological Survey of Canada, Ontario Ministry of Natural Resources, and Ministry of Northern Development & Mines provide information on the location of organic soils.

Due to the high variability of organic soils, the potential risks and hazards associated with development in this type of hazardous land are also highly variable. As such, assessment of development potential in areas of organic soils is site specific. Section 4.0 of the *Hazardous Sites Technical Guide (MNR, 1996a)* provides important guidance in this regard.

4.5.2.2 Unstable Bedrock

Unstable bedrock includes but is not necessarily limited to areas identified as karst formations. Karst formations may be present in limestone or dolomite bedrock, and are extremely variable in nature. Local, site-specific studies are required for identifying karst formations. Air photo interpretation of surface features such as sink holes may provide an indication of karst formations (Ministry of Natural Resources and Conservation Ontario, 2005).

As with unstable soils, the potential for development to be undertaken safely in an area of unstable bedrock is site specific. Section 5.0 of the *Hazardous Sites Technical Guide (MNR, 1996a)* provides important guidance in this regard.

4.5.3 Implementation Guidelines for Hazardous Lands

The following sections outline the guidelines for implementing NVCA's Regulation with respect to unstable soil and bedrock. The Authority, in its role through the planning process will review planning applications to ensure that in general all development occurs outside the unstable soil and bedrock boundaries.

4.5.3.1 Development Within Unstable Soil and Unstable Bedrock Hazardous Lands

- 1) In general, development shall not be permitted within hazardous lands associated with unstable soils or unstable bedrock.

- 2) Further to Section 4.5.3.1.1), development shall be prohibited in hazardous lands associated with unstable soils or unstable bedrock where the use is:
 - a) An institutional use associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of erosion or any other hazard associated with unstable soils and unstable bedrock and/or as a result of failure of protection works/measures; or
 - b) An essential emergency service such as that provided by fire, police and ambulance stations and electrical substations, which would be impaired during an emergency as a result of erosion or any other hazard associated with unstable soils and unstable bedrock and/or as a result of failure of protection works/measures; or
 - c) Associated with the disposal, manufacture, treatment or storage of hazardous substances;
- 3) Notwithstanding Section 4.5.3.1.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within hazardous lands associated with unstable soil or bedrock subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution, or the conservation of land will not be affected;
- 4) Notwithstanding 4.5.3.1.1), development may be permitted for the reconstruction or relocation of a building within hazardous lands associated with unstable soils or bedrock provided it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or conservation of land will not be affected. The submitted plans should demonstrate that:
 - a) There is no feasible alternative site outside of the hazardous lands;
 - b) The control of flooding, erosion, pollution or the conservation of land will not be affected; and,
 - c) All hazards/risks associated with unstable soils or unstable bedrock have been adequately addressed.

4.6 Watercourses

4.6.1 NVCA's Regulation 172/06

The NVCA's Regulation contains the following sections dealing with watercourses:

"Alterations prohibited"

5. Subject to section 6, no person shall straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or change or interfere in any way with a wetland."

"Permission to alter"

6. (1) The Authority may grant a person permission to straighten, change, divert or interfere with the existing channel of a river, creek, stream or watercourse or to change or interfere with a wetland.

6. (2) The permission of the Authority shall be given in writing, with or without conditions.

4.6.2 Discussion of Watercourses

Watercourse means an identifiable depression in the ground in which a flow of water regularly or continuously occurs. These policies must be read in conjunction with Section 4.3 of this document, River and Stream Valleys.

To provide guidance in the regulation of watercourses, it is necessary to highlight the functions of watercourses.

4.6.2.1 Function of Watercourses

Watercourses transport both water and sediment from areas of high elevation to areas of low elevation. Watercourses also transfer energy (e.g. heating and cooling of stream waters) and organisms (e.g. movement of mammals, fish schooling and insect swarming) and provide habitat for fish and other species either in-stream or at the air-water interface. Watercourses also provide a source of water supply for wildlife and livestock.

From a human perspective, watercourses provide social and economic values such as water supply, food resources, recreational opportunities (canoeing and fishing), hydro generation, land drainage, education experiences, and aesthetics.

Watercourses are dynamic, living systems with complex processes that are constantly undergoing change. The structure and function of watercourses are influenced by channel morphology, sediment characteristics (soil type, bedrock, and substrate characteristics) and the nature of the riparian vegetation both on the overbank and rooted in the bed of the watercourse. Any changes to one of these influences can have significant impacts upon other parts of the system. One of the key influences on the structure and function of watercourses is related to the hydrology of the stream and its normal hydrograph. Changes in the volume, peaks and timing of flows can significantly impact the stream morphology, sediment transport and even riparian vegetation.

Changes to channel morphology reduce the ability of the watercourse to process sediment causing erosion and changing the amount or size of bed load being moved. Loss of riparian vegetation results in more pollutants and run-off being transferred from the land to the water, impacting water quality and flooding downstream reaches. These changes, in turn, degrade near shore and aquatic habitat and impair the watercourse for human use.

4.6.3 Implementation Guidelines for Watercourses

The following sections outline the guidelines for implementing the NVCA's Regulation with respect to watercourses. The term "interference" below includes all alterations mentioned within the NVCA's Regulation (straighten, change, divert or interfere in any way). The Authority, in its role through the planning process, will review planning applications to ensure watercourse alterations associated with development are appropriate.

4.6.3.1 Interference with Watercourses

1) In general, interference with a watercourse shall not be permitted;

- 2) Notwithstanding Section 4.6.3.1.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within a watercourse subject to the activity being approved through a satisfactory Environmental Assessment process or through other studies deemed necessary by the conservation authority and/ or if the interference on the natural features and hydrologic and ecological functions of the watercourse has been deemed to be acceptable by the conservation authority;
- 3) Notwithstanding Section 4.6.3.1.1), stream, bank, and channel stabilization to protect existing development or conservation or restoration projects may be permitted within a watercourse if the interference on the natural features and hydrologic and ecological functions of the watercourse has been deemed to be acceptable by the conservation authority;
- 4) Notwithstanding Section 4.6.3.1.1), any works that are to be located below the bed of the river within a watercourse shall be located below the long-term scour depth to the satisfaction of the conservation authority;
- 5) Notwithstanding Section 4.6.3.1.1), minor interference and/or alteration may be permitted within a watercourse if it has been demonstrated to the satisfaction of the conservation authority that the interference is acceptable on the natural features and hydrologic and ecological functions of the watercourse;
- 6) Notwithstanding Section 4.6.3.1.1), major interference (e.g. realignment, dam, enclosure, pond) with a watercourse may be permitted where supported by the recommendations of a sub-watershed study, Environmental Assessment and/ or if it has been demonstrated to the satisfaction of the conservation authority that the interference is acceptable for the natural features and hydrologic and ecological functions of the watercourse;
- 7) Notwithstanding Section 4.6.3.1.1), watercourse crossings may be permitted if it has been demonstrated to the satisfaction of the conservation authority that the interference on the natural features and hydrologic and ecological functions of the watercourse has been deemed to be acceptable by the conservation authority. At a minimum, the submitted plans should demonstrate the following based on morphological characteristics of the watercourse system⁶:
 - a) culverts have an open bottom where it is feasible, or where it is not feasible, the culverts should be appropriately embedded into the watercourse;
 - b) crossing location, width, and alignment should be compatible with stream morphology, which typically requires location of the crossing on a straight and shallow/riffle reach of the watercourse with the crossing situated at right angles to the watercourse;
 - c) the crossing is sized and located such that there is no increase in upstream or downstream erosion or flooding;
 - d) the design should consider fish and wildlife passage;
 - e) have regard for upstream and downstream effects when installing/replacing a culvert.

4.7 Wetlands And Other Areas

4.7.1 NVCA's Regulation 172/06

The NVCA's Regulation contains the following sections dealing with wetlands:

⁶ Refer to the Adaptive Management of Stream Corridors in Ontario (Stream Corridor Project Management Team, 2001) document for more information.

“Development prohibited

2. (1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on areas within the jurisdiction of the Authority that are:

(d) wetlands or

(e) other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially-significant wetlands and wetlands greater than 2 hectares in size, and areas within 30 metres of wetlands less than 2 hectares in size, but not including those where development has been approved pursuant to an application made under the *Planning Act* or other public planning or regulatory process.

“Permission to develop

3.(1) The Authority may grant permission for development in or on the areas described in subsection 2(1) if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development.

(2) The permission of the Authority shall be given in writing, with or without conditions.

“Alterations prohibited

5. Subject to section 6, no person shall ... change or interfere in any way with a wetland.”

“Permission to alter

6. (1) The Authority may grant a person permission ...to change or interfere with a wetland.

6. (2) The permission of the Authority shall be given in writing, with or without conditions.”

4.7.2 Additional Definitions

The following section outlines additional definitions to those provided in Section 6 of this document.

A wetland 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).

4.7.2.1 From the *Provincial Policy Statement*

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.

This is a comprehensive definition for the hydrologic cycle, which allows many factors to be considered when reviewing interference to wetlands. The Southern Ontario Wetland Evaluation System (MNR, 1993b) states "it must be recognized that many non-hydrological functions of a wetland depend, in part on the wetland's hydrological setting and that changes in the basin beyond the boundaries of the wetland could have an effect on the ecological value of the wetland."

4.7.2.2 Additional Interpretations

The *Provincial Policy Statement* (PPS) differentiates between wetlands in northern and southern Ontario. The NVCA's watershed is located in Southern Ontario (Ecoregions 5E, 6E and 7E) and the following PPS policy applies:

"Development and site alteration shall not be permitted in:

(b) significant wetlands in Ecoregions 5E, 6E and 7E"

It should be noted that the *Conservation Authorities Act* and the NVCA's Regulation use the wording "in any way" when describing change or interference with a wetland. Activities proposed within the wetland boundary that could interfere in any way with the wetland, including both those activities that meet the definition of "development" and those that do not necessarily meet the definition of "development" are regulated as described in Sections 5 and 6 of the Regulation. An example of an activity that does not strictly meet the definition of "development" and could represent interference is vegetation removal.

There are a variety of sources for identifying wetlands. Many wetlands have been identified thorough the provincial wetland evaluation program. The NVCA has also identified wetlands as part of other watershed programs such as the natural heritage and the Regulation mapping programs.

The province uses the Ontario Wetland Evaluation System (OWES), originally developed in 1983, to identify and evaluate wetlands primarily to support land use planning processes under the *Planning Act*. The OWES manual for the NVCA is the Southern Ontario Wetland Evaluation System (MNR, 1993a). Wetlands identified and evaluated using the OWES can be a valuable resource for implementing Section 28 of the *Conservation Authorities Act*, however, it is important to note that a wetland must meet the definition of 'wetland' within the *Conservation Authorities Act*.

4.7.3 Discussion of Wetlands and Other Areas

To provide guidance in the regulating of wetlands and the associated allowances, it is necessary to outline the functions of wetlands.

4.7.3.1 Functions of Wetlands

Wetlands provide functions that have both ecosystem and human values. From an ecosystem perspective, these include primary production, sustaining biodiversity, wildlife habitat, habitat for species at risk, maintenance of natural cycles (carbon, water) and food chains. From a human perspective, wetlands provide social and economic values such as flood attenuation, recreation opportunities, production of valuable products, improvement of water quality and educational benefits.

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

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

In addition, wetlands provide a variety of hydrologic functions. More than 60 potential hydrological functions have been identified for wetlands when developing the Southern Ontario Wetland Evaluation System. However, confirmation of many of these functions requires hydrological experts and field studies by qualified hydrologists. Therefore, the Ontario Wetland Evaluation System utilizes easily identifiable features and measures as surrogate values for these hydrological features.

4.7.3.2 Development and Interference

There are three “categories” through which the *Conservation Authorities Act* and NVCA’s Regulation address wetlands and other areas (areas of interference or adjacent lands within which development may interfere with the hydrologic function of the wetland - **Figure 14**)

- **Development within the wetland boundary** (Section 2.1 (d) of Regulation)
To be regulated, the activity must meet the definition of development (see Glossary, Section 6). Applications for development must be assessed with respect to the five “tests” outlined in the *Conservation Authorities Act* (control of flooding, erosion, pollution, dynamic beaches and the conservation of land);
- **Development within the “other areas”** (Section 2.1 (e) of Regulation)
To be regulated, the activity must meet the definition of development. Applications for development must be assessed only with respect to the hydrologic function of the adjacent wetland; and
- **Interference with Wetlands** (Section 5 of Regulation)
To be regulated, the activity must occur within the wetland boundary and must constitute interference in any way with the wetland. Applications for interference must be assessed

with respect to the natural features and hydrologic and ecological functions of the wetland.

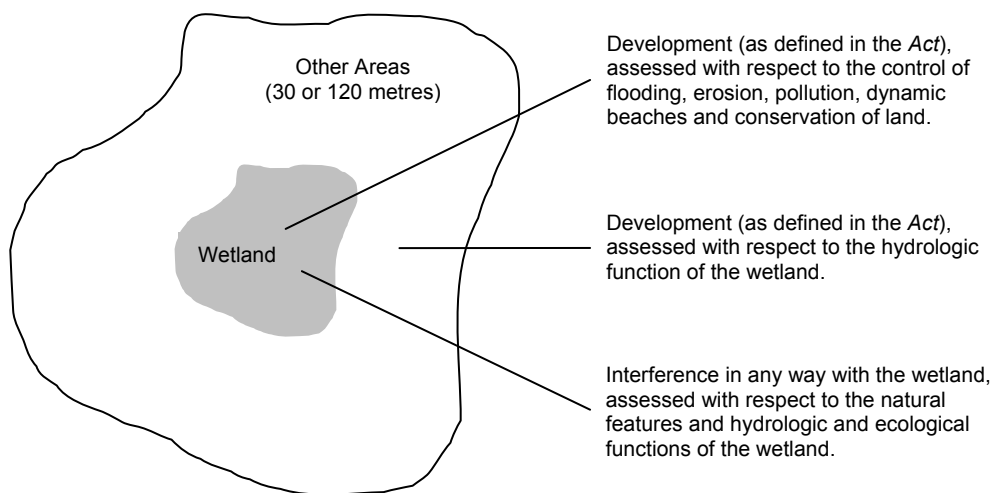


Figure 14: *Three ways through which the Conservation Authorities Act and NVCA's Regulation address wetlands and other areas.*

Portions of wetlands may also be regulated due to presence of hazardous lands such as regulated floodplains or unstable soils. The applicable sections of this guideline document should be referenced with respect to these hazards.

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

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

Many wetlands develop on organic soils and, as a result, when reviewing development within a wetland, the soil composition should be reviewed. Where the soils are organic then Section 4.5 (Hazardous Lands) should also be reviewed and the policies from this section should be incorporated in the decision making.

Pollution from development in the form of improperly installed or maintained septic systems or urban runoff has the potential to interfere with the wetland. Proposals to drain stormwater management facilities into wetlands do not benefit the wetland through constant flows for dilution and moving particulate matter. Nutrients, chemicals, and sediments could enter the wetland impeding the function of the wetland.

When reviewing an application with respect to interference or development, the evaluation done under the Ontario Wetland Evaluation System (OWES) may be used as an information resource because it identifies the features and functions of the wetland. It should be noted that when reviewing an application with respect to development under the Regulation, the significance of the wetland as determined by the OWES is not a reason to deny or approve the application. The application must be reviewed with respect to the control of flooding, erosion, pollution, dynamic beaches or the conservation of land.

Determining what represents an interference can be very challenging and is dependant on a variety of parameters such as the type and the scale of activity. The legal and practical implications associated with regulating interference will require ongoing discussions and court decisions over the upcoming years.

Many individual and cumulative hydrologic impacts to a wetland commonly occur within the catchment area of the wetland. It is important to consider the linkages between small wetlands and headwater areas, impacts of stormwater, and upstream constrictions to flow. Impacts to the hydrologic function of a wetland due to development within the “other areas” may also result from changes in imperviousness/infiltration due to a removal or change in vegetation, soil compaction during construction, disruption or alteration of groundwater flow paths due to underground construction, etc.

Subsection 2.(1) of the NVCA’s Regulation contain a clause specific to “other areas” which indicates that this regulated area does not include areas “where development has been approved pursuant to an application made under the *Planning Act* or other public planning or regulatory process.” As conservation authorities only regulate the “other areas” with respect to the hydrologic function of the adjacent wetland, this proviso was included to recognize that a conservation authority should not require regulatory approvals where, prior to the enactment of the individual conservation authority Regulation, the “interference” with a wetland had already occurred and where future development was supported by a study demonstrating the development did not interfere with the hydrologic function of a wetland. However, this clause has been subject to interpretations which are contrary to what the province intended and conservation authorities have been advised to apply the interference requirements of Subsection 2(1) to all new development (see **Appendix 8**: MNR Legal Services Branch letter dated June 11, 2007).

4.7.3.4 Technical Analysis

4.7.3.4.1. ‘Interfere in Any Way’

As part of the review of an application, the NVCA may request an Environmental Impact Study (EIS) to address interference with a wetland. An EIS is a mechanism for assessing impacts to determine the suitability of a proposal. The submission of an EIS does not guarantee approval of the works. An EIS must be carried out by a qualified professional, with recognized expertise in the appropriate area of concern and shall be prepared using established procedures and recognized methodologies to the satisfaction of the Authority. **Appendix 7** provides additional details on what an EIS may contain.

4.7.4 Implementation Guidelines for Wetlands and Other Areas

The following sections outline guidelines for implementing the NVCA's Regulation with respect to wetlands and 'other areas.' The NVCA, in its role through the planning process, should review planning applications to ensure that, in general all development can occur outside and be set back an appropriate distance from the wetland boundaries.

4.7.4.1 Development and Interference Within Wetlands

- 1) In general, development and interference shall not be permitted within wetlands;
- 2) In general, ponds and drains shall not be permitted within wetlands;
- 3) In general, stormwater management facilities shall not be permitted within wetlands;
- 4) Notwithstanding Section 4.7.4.1.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within a wetland subject to the activity being approved through a satisfactory Environmental Assessment process and/ or if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected and the interference on the natural features and hydrologic and ecological functions of the wetland has been deemed to be acceptable by the conservation authority;
- 5) Notwithstanding Section 4.7.4.1.1), conservation or restoration projects may be permitted within a wetland if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected and the interference on the natural features and hydrologic and ecological functions of the wetland has been deemed to be acceptable by the conservation authority;
- 6) Notwithstanding Section 4.7.4.1.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail system) may be permitted within a wetland if it has been demonstrated to the satisfaction of the conservation authority that the control of flooding, erosion, pollution or the conservation of land will not be affected and the interference on the natural features and hydrologic and ecological functions of the wetland has been deemed to be acceptable by the conservation authority.

4.7.4.2 Development Within "Other Areas"

The NVCA's Regulation identifies "other areas" as follows:

"Other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially-significant wetlands and wetlands greater than 2 hectares in size, and areas within 30 metres of wetlands less than 2 hectares in size, but not including those where development has been approved pursuant to an application made under the Planning Act or other public planning or regulatory process."

4.7.4.2.1 Area Within 30 Metres of the Wetland

- 1) In general, development shall not be permitted within 30 metres of the boundary of the wetland;

- 2) Notwithstanding Section 4.7.4.2.1.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within 30 metres of a wetland if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;
- 3) Notwithstanding Section 4.7.4.2.1.1), conservation or restoration projects may be permitted within 30 metres of a wetland if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;
- 4) Notwithstanding Section 4.7.4.2.1.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail system) may be permitted within 30 meters of a wetland if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;
- 5) Notwithstanding Section 4.7.4.2.1.1), single family buildings or structures may be permitted within 30 metres of a wetland on vacant lots of record if the interference on the hydrologic function of the wetland has been deemed to be acceptable by the conservation authority. An Environmental Impact Study to assess the hydrologic impact shall be required if the submitted plans do not demonstrate the following:
 - a) All development (including grading) is located outside the regulated wetland and maintains as much setback as feasible;
 - b) Disturbances to natural vegetation communities contributing to the hydrologic function of the wetland are avoided;
 - c) The overall existing drainage patterns for the lot will be maintained;
 - d) Disturbed area and soil compaction is minimized;
 - e) Development is located above the high water table;
 - f) All septic 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) Best Management Practices are used to:
 - i) maintain water balance
 - ii) control sediment and erosion
 - iii) buffer wetlands

4.7.4.2.2 Area Between 30 Metres to 120 Metres of the Wetland

- 1) In general, development may be permitted in the area between 30 metres to 120 metres of a wetland if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;
- 2) Further to Section 4.7.4.2.2.1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted in the area between 30 metres to 120 metres of a wetland subject to the activity being approved through a satisfactory Environmental Assessment process and/or if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;
- 3) Further to Section 4.7.4.2.2.1), conservation or restoration projects may be permitted in the area between 30 metres to 120 metres of a wetland if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;

- 4) Further to Section 4.7.4.2.2.1), development associated with public parks (e.g. passive or low intensity outdoor recreation and education, trail system) may be permitted in the area between 30 metres to 120 metres of a wetland if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority;
- Further to Section 4.7.4.2.2.1), single family buildings or structures may be permitted in the area between 30 metres to 120 metres of a wetland on vacant lots of record if the interference on the hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority. An Environmental Impact Study to assess the hydrologic impact shall be required if the submitted plans do not demonstrate the following:
- a) Disturbances to natural vegetation communities contributing to the hydrologic function of the wetland are avoided;
 - b) The overall existing drainage for the lot will be maintained;
 - c) Disturbed area and soil compaction is minimized;
 - d) Development is located above the high water table;
 - e) All septic systems are located at a minimum 0.9 metres above the water table;
 - f) Impervious areas are minimized;
 - g) Best Management Practices are used to:
 - i) maintain water balance
 - ii) control erosion and sediment
 - iii) buffer wetlands
- 5) Further to Section 4.7.4.2.2.1), larger scale development associated with large commercial uses, industrial uses, multiple residential uses (condominiums, apartments, townhouses, etc.) and/or development into the water table may be permitted in the area between 30 metres to 120 metres of a wetland if the interference on hydrologic functions of the wetland has been deemed to be acceptable by the conservation authority. An Environmental Impact Study to assess the hydrologic impact shall be required.

4.8 Additional NVCA Natural Hazards Guidelines

The following are additional guidelines for development within natural hazards. Some of these guidelines have evolved as a result of local conditions and watershed characteristics.

Repairs/Renovations

Repairs and renovations to an existing structure within the existing roofline and exterior walls and above the existing foundation do not require the permission of the NVCA.

Replacement of Damaged or Destroyed Structures

The objective of the NVCA in regulating the reconstruction of existing buildings within the flood plain is to allow for the continuance of existing uses, while ensuring that the risk of flood damages to buildings and their contents and the risk to public safety are not increased.

The replacement of existing buildings within the floodplain which have been damaged or destroyed by fire or other natural disasters (other than flooding) will be permitted provided that the following requirements are adhered to:

- (a) the former building was in a habitable condition prior to its destruction and documentation is provided by the applicant to the

- satisfaction of the NVCA. Permission will generally be refused for the reconstruction of derelict or abandoned structures within the floodplain.
- (b) the replacement structure is to be constructed at the same location, or in a shallower portion of the floodplain;
 - (c) the replacement structure is dry flood-proofed employing passive flood-proofing measures.

Accessory Structures

Accessory structures which are less than 10 square metres (108 square feet) in size do not require a permit from the NVCA under Ontario Regulation 172/06. The structure should be attached to a concrete pad or footings.

The construction of accessory structures larger than 10 square metres shall be subject to the Authority's Flood Proofing Standards and the guidelines for development within the flood plain.

Portable or Mobile Buildings and Structures

The NVCA shall generally discourage the placement of portable or mobile buildings (i.e. recreational trailers/construction trailers/portables) within the floodplain on a permanent basis, since these structures are highly susceptible to flood damages. However, the NVCA will allow portable or mobile structures to be located in the floodplain, provided that these structures are flood-proofed to the regulatory flood level, in order to prevent flotation, collapse and lateral movement of the structure.

Parking Lots

The NVCA shall discourage the development of parking facilities within the floodplain whenever possible.

However, in the case when parking facilities are to be located within the floodplain, they must satisfy the following criteria:

- (1) the parking facilities must not be associated with residential use if the depth of flooding exceeds 0.3 metres;
- (2) the parking lot must be designed to take into account the depths and velocity of flood waters;
- (3) the development of the parking lot will not result in an adverse impact in the floodplain within this reach of the watercourse.

Swimming Pools

The construction of a swimming pool (above ground or in ground) within an area which is susceptible to flooding represents a potential risk to property damage. For example the pool may be filled with silt and debris, pumps damaged, and the liners ruined.

Construction of either in ground or above ground swimming pools may be permitted in flood susceptible areas provided that all of the following conditions are satisfied:

- (a) The swimming pool plus the associated filter, heater, electrical connections, chemical storage facilities and change rooms are flood-proofed to a minimum of 0.3 metres above the Regulatory flood elevation;
- (b) The side walls and pool bottom of in ground pools are capable of withstanding the anticipated hydrostatic pressures; and
- (c) The placement of fill associated with the flood-proofing of the pool does not have an adverse impact on flood levels within that portion of the flood plain.

Fences

The construction of a fence does not require approval from the NVCA, provided that the fence does not restrict the free flow of water during a flooding event.

Flood-Proofing Standards (also see the Technical Standards for Flooding Hazards for flood proofing and safe access, page 38 of this document)

Generally all new development including roads and lots are to be located above the Regulatory flood elevation. However, in some cases where new development may be permitted within the flood plain (e.g. two-zone concept), flood proofing to NVCA and provincial standards will be required.

Hazard to life is linked to the frequency of flooding, and to depth of flood waters and the velocity of flow in the floodplain. Depth increases buoyancy and velocity increases instability. Flood-proofing is defined as a combination of structural changes and/or adjustments incorporated into the basic design and/or construction of buildings, structures, or properties which are subject to flooding to reduce or eliminate flooding damages. The variety of floodproofing options and safe access requirements are too detailed and extensive to include in these guideline. For more detailed information, please consult *Appendix 6: "Floodproofing" of the "Technical Guide – River and Stream Systems: Flooding Hazard limit"* (MNR, 2002a).

However, the following general flood-proofing and safe access standards will apply to development permitted in flood-prone areas within the NVCA watershed:

- To ensure safe access, in the absence of a site specific detailed analysis, it is recommended that the depths not exceed 0.3 m and velocities not exceed 1.7 m/s.
- When evaluating detailed analysis for safe access looking at the combination of depth and velocity, the NVCA uses the 2x2 rule with a value of $0.4\text{m}^2/\text{s}$, providing the depth does not exceed 0.8m and the velocity does not exceed 1.7 m/s.
- All new structures shall be dry flood-proofed using passive flood-proofing measures with the minimum opening elevation being located at least 0.3 metres above the regulatory flood elevation.
- Exceptions may be permitted for a non-habitable structure, provided that it can be demonstrated to the satisfaction of the conservation authority that it is not feasible or appropriate to dry flood-proof the structure. In these instances, the structure shall be flood-proofed using wet flood-proofing measures to the Regulatory flood elevation.
- That the foundation, basement floor, concrete slab floor and structural walls located below the Regulatory flood elevation must be designed and constructed to withstand the hydrostatic pressures of elevated water tables and lateral pressures exerted upon them by

the regulatory flood. Plans must be signed, stamped and dated by a registered professional engineer who specializes in structural design.

- Construction materials located below the regulatory flood elevation are to be of a type, which are not subject to deterioration by water or by alternate drying and wetting.
- All electrical panels, circuits, outlets and permanently installed electrical equipment is to be located at least 0.3 metres (1 foot) above the Regulatory flood elevation.
- Drains are to be equipped with valves which are capable of being closed manually or automatically to prevent the backup of floodwaters into the building.

5.0 GUIDELINES FOR THE IMPLEMENTATION OF THE PLAN INPUT AND REVIEW PROGRAM

5.1 Background to the Plan Input and Review Program

The NVCA provides input to and review of planning and development applications under legislation and regulations for the *Planning Act*, the *Niagara Escarpment Planning and Development Act*, *Environmental Assessment Act* and *Aggregate Resources Act*.

The vast majority of these applications are through the *Planning Act* (approximately 80%) and include municipal official plans, zoning by-laws, subdivisions, consents and site plans. The Niagara Escarpment applications represent about 18% of the applications and *Environmental Assessment Act* projects such as bridge and road construction make up about 2%. In most cases the aggregate applications are considered through the *Planning Act*; however applications may also be circulated to the NVCA under the *Aggregate Resources Act*.

As a watershed-based resource management agency, the NVCA's mandate includes a variety of responsibilities and functions in the land use planning and development process under the *Planning Act* (for further detail, please refer to the MOU with the province in **Appendix 1**).

The NVCA has delegated responsibilities from the province with respect to provincial interests regarding natural hazards encompassed by Section 3.1 of the *Provincial Policy Statement, 2005* (PPS, 2005). These delegated responsibilities require the NVCA to review and provide comments on policy documents (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.

The NVCA, as a 'public bodies' pursuant to the *Planning Act*, is to be notified of policy documents and planning and development applications as prescribed under the *Act*. The NVCA may comment to the municipality planning approval authority on these documents and applications representing their program and policy interests as a watershed-based resource management agency.

The NVCA performs a technical advisory role to the County of Simcoe and member municipalities, under the terms of service agreements (**Appendix 2**). Plan input and review comments and technical support at the OMB (upon request), will be provided to the County of Simcoe on natural heritage and natural hazards perspectives. A streamlining agreement is also in place with most of the conservation authority's member municipalities (**Appendix 2b**) that provides greater efficiencies in processing consent and minor variance applications. NVCA staff will continue to work with member municipalities to further streamline the planning process to provide greater efficiencies and effectiveness and reduce duplication.

The NVCA also has a "level 2 agreement" with the Department of Fisheries and Oceans (DFO) Canada to administer the review of projects under section 35(1) of the *Fisheries Act*. The agreement was established for the conservation and protection of fish habitat and promotion of good fisheries management. Under this agreement, the NVCA conducts the initial review of projects (including those part of *Planning Act* applications) with the potential to affect fish habitat to determine if there is any harmful alteration, disruption or destruction of fish habitat.

If there are potential impacts to fish habitat and they can be mitigated, then the NVCA issues a letter of advice outlining the steps necessary to mitigate these impacts. If the impacts to fish habitat cannot be fully mitigated, then the project is forwarded to DFO for further review and approval.

To assist in achieving the NVCA's goal, objectives and targets and to meet provincial legislation, policies and plan obligations, the following summarizes the Plan Input and Review implementation priorities:

- Assist the approval authorities and member municipalities by providing upfront plan input and pre-consultation and timely plan review responses to circulated applications.
- Provide technical support for our member municipalities at Ontario Municipal Board hearings.
- Assist the County of Simcoe, the City of Barrie and local municipalities (including those in Dufferin County) with implementation of the Growth Plan for the Greater Golden Horseshoe. This will be achieved primarily through input to their official plan updates.
- Examine the potential for new or revised partnership agreements with watershed municipalities, approval authorities and other agencies with regard to streamlining plan review.
- Establish a comprehensive compliance monitoring program for the Authority's Regulation.
- Assist in the development of source water protection plans for the watershed, focusing on their integration into municipal official plans.
- Develop and implement a revenue and workload tracking management database to provide recommendations for future workload, budget and fee schedule development.

The NVCA can expect a significant amount of development pressure in the future. The Growth Plan for the Greater Golden Horseshoe has indicated that the population of Simcoe County, including the cities of Barrie and Orillia, will increase by approximately 230,000 residents, to a population of 667,000 by 2031. The Town of Shelburne has also been identified by the Growth Plan as having growth potential within Dufferin County. The only part of the NVCA's area of jurisdiction not covered by the Growth Plan is within Grey County.

The direction set out in the Growth Plan for the Greater Golden Horseshoe will be implemented through updates to the official plans for Simcoe County, Barrie and the local municipalities including those in Dufferin County. Simcoe County has prepared its official plan update to be approved by the province. All local official plans are to be updated, bringing them into conformity with the Growth Plan by June 2009 and the approved County Plan. However the province has indicated that it may extend that deadline if their approval of the County Official Plan is delayed.

The updating of these official plans and by-laws will result in an increased workload in the input and review of these documents over the next several years. However, once the municipal documents have been updated and approved, the majority of development should be directed to

existing settlement areas on full servicing and that have the potential to be complete communities. Complete communities are those that meet people's needs for daily living (employment, public transportation etc) throughout an entire lifetime.

This trend towards development primarily in settlement areas may have an impact on the Authority's programs. There may be less development impacts on rural natural heritage features, but greater impacts on the receiving streams and the natural features in and adjacent to these settlement areas.

The following sections outline the guidelines for the Plan Input and Review programs. The program must be consistent with the direction provided by the provincial legislation, policies and plans, and help to implement the Authority's policies (watershed plans, business plan).

Please Note: To maintain consistency, the Plan Input and Review Program will utilize the Section 28 Regulation technical standards and guidelines as outlined in section 4.0 of this document; except where planning policies supported by the PPS, municipal official plans or the Authority's Board of Directors, may be more restrictive or comprehensive.

5.2 General Plan Input and Review Implementation Guidelines

The following directions apply to the Plan Input and Review programs to help implement the NVCA's watershed and business plans as well as provincial legislation, plans and policies:

- NVCA staff will work with municipal watershed partners (upper and lower tier) to ensure that the most up-to-date information and science on natural heritage features and areas and natural hazards are included in the municipal official plans and zoning by-laws.
- NVCA staff will encourage municipalities to go beyond the minimum policy requirements of the PPS in protecting their natural heritage features. For example, to maintain consistency with the Authority's Regulation, and protect a valuable natural heritage feature, the plan input and review program shall aim to protect all wetlands from development and site alteration, not just provincially-significant wetlands.
- NVCA staff will work with the municipalities of New Tecumseth, Mono and Adjala-Tosorontio to implement the planning requirements for the Oak Ridges Moraine Conservation Plan and the small portion of the Greenbelt plan within the Town of Mono.
- NVCA staff will in general, ensure that lot lines (including appropriate setbacks) do not encroach on the natural heritage features or natural hazards being protected. Staff will recommend that these areas and appropriate setbacks be placed in public ownership as part of the development application. If this is not possible, then the number of lot lines extending into the feature must be limited and the area appropriately protected through the municipality's zoning by-law and official plan. In some cases conservation easements may also be used to protect the feature and its functions.
- When reviewing severance applications staff in general, will recommend a minimum of 0.6 hectare of upland area outside of the hazard land or natural feature to accommodate a single residential dwelling and septic system.
- In general, staff will recommend that no new lots be created that would require a new crossing of a wetland or hazardous land limit to access a building envelope.

5.3 Natural Heritage

Section 2.4.1 of this document outlines the *Provincial Policy Statement's* (PPS) Natural Heritage Policies (Section 2.1). These policies represent the province's minimum requirements for protecting the watershed's natural heritage features and functions. Where municipalities adopt policies in their official plan that go beyond these minimum requirements to identify and protect natural heritage features (usually with the Authority's technical support), staff will support this policy direction.

The following guidelines reflect the additional direction provided by the Authority's watershed/subwatershed and business plans (adopted by the Board of Directors).

Wetlands

- To be consistent with the Authority's Regulation, in general, development and site alteration shall not be permitted within any wetland.
- Sections 4.7 of this document, *Wetlands and Adjacent Lands* outline the NVCA's Regulation requirements for development adjacent to wetlands and the potential impacts on the hydrologic functions of the wetlands. As stated above, these guidelines will be used by the plan review program. However, there also may be additional potential impacts on the wetland's features and functions (e.g. species at risk) that must be addressed through the planning process (usually an EIS) to ensure there are no negative impacts on the wetland.

Natural Heritage Features - Adjacent Lands and Vegetative Buffers

Adjacent Lands:

Section 2.2.1.6 of the *Provincial Policy Statement (PPS)* indicates that development and site alteration shall not be permitted on adjacent lands to the natural heritage feature identified in the PPS, unless the ecological functions of the adjacent lands have been evaluated and it has been demonstrated that there will be no negative impacts on the feature or its ecological functions. This will be determined through the preparation of an Environmental Impact Study. Staff will use the requirements from the Authority's Regulation and the province's recommendations from the *Natural Heritage Reference Manual June 1999* to define the extent of adjacent lands as follows:

- Wetlands greater than 2 hectares (120 metres)
- Wetlands less than 2 hectares (30 metres)
- Significant habitat of endangered and threatened species (50 metres)
- Significant woodlands (50 metres)
- Significant valleylands (50 metres)
- Significant wildlife habitat (50 metres)
- Significant areas of natural and scientific interest (50 metres)

Vegetative and Hazards Buffers:

Buffers will be maintained adjacent to watercourses, natural hazards and significant natural features through the planning process. The following vegetative buffers are recommended using the most recent science and technical information available (for example, the Greenbelt Plan and Oak Ridges Moraine Conservation Plan) to protect those features and functions.

In general, lots created through plan of subdivision or consent and/or development and site alteration, is to be set back a minimum of the following:

- 30 metres from the bankfull flow location of watercourses;
- 6 metres access allowance from natural hazards and valleylands top of bank
- 30 metres from a wetland
- 30 metres from a seepage area and springs
- 30 metres from a significant woodland

Local Municipal Natural Heritage Systems

Several municipalities have developed their own local natural heritage systems (with the assistance of NVCA) for their municipality. The Township of Oro-Medonte also developed a natural heritage system for the Oro Moraine and adopted policies for enhanced protection in its official plan.

- Where appropriate, NVCA staff will provide technical support to those municipalities that adopt policies in their official plan that go beyond the minimum requirements of the *Provincial Policy Statement* to protect their local natural heritage system areas.

5.4 Water Quality and Quantity

Section 2.2 of the *Provincial Policy Statement* indicates that planning authorities shall protect, improve or restore the quality and quantity of water and development shall be restricted in or near sensitive surface and ground water features.

- NVCA staff will assist member municipalities to ensure that the appropriate information and policies from Source Water Protection Plans and other ground water studies are incorporated into their municipal planning documents to protect surface and ground water resources.
- The NVCA shall provide both ground and surface water quality and quantity technical support to its municipalities through the review of development applications under the *Planning Act* including aggregate operations. Staff use the standards and criteria found in the NVCA's *Engineering Services Development Review Guidelines* (located on the website) and the Ministry of the Environment's (MOE) "*Stormwater Management Planning and Design Manual*," (2003).
- The NVCA shall provide technical input to MOE concerning the permits to take water following the Conservation Ontario and local municipal Memorandum of Understandings, to assist the decision makers in making the most informed decision possible.
- The NVCA shall promote the use of enhanced best management practices through the review of development applications to ensure the protection and restoration of water quality and quantity and the implementation of the Assimilative Capacity Study recommendations.
- NVCA staff will continue to work with its partner agencies to promote the development of an implementation strategy for the recommendations from the Nottawasaga River Assimilative Capacity Study and to facilitate the achievement of the watershed's phosphorus loading targets.

5.5 Natural Hazards

As noted above, staff will follow the natural hazards guidelines in Section 4.0 of this document when providing plan input and review comments. In addition to the guidelines in Section 4.0, the following guidelines will apply to the plan input and review program when dealing with natural hazards.

- In general, development and site alteration (including lot creation) is not permitted within the flooding and erosion hazard limits plus a 6 metre allowance (for access).
- There also shall be a minimum setback of 30 metres from the bankfull flow location of watercourses. This setback requirement can be adjusted up or down based on technical assessments of the actual natural hazard. The NVCA will recommend to the municipality that the natural hazard with the appropriate setbacks be transferred to a public agency to provide the maximum protection for the hazard lands in perpetuity.

6.0 GLOSSARY

The following section provides the definitions and interpretations from *Conservation Ontario's Guidelines to Support Conservation Authority Administration of the "Development, Interference with Wetland and Alterations to Shorelines and Watercourse Regulation"*. They are primarily from the *Conservation Authorities Act* and Regulation. It is important to note that the definitions from the *Conservation Authorities Act* must govern the implementation of the NVCA's Regulation. Some definitions have been included from the Provincial Policy Statement (PPS) to support the Plan Input and Review program.

100-year flood event standard: 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% chance of occurring or being exceeded in any given year.

Accessory buildings and structures: means a secondary, freestanding, non-habitable building or structure on the same lot as the main building or structure to which it is subordinate, devoted exclusively to a use naturally and normally incidental to the main use of the premises.

Area of interference: those lands where development could interfere with the hydrologic function of a wetland.

Armour: Artificial surfacing of bed, banks, shores or embankments to resist scour or erosion

Basement: means one or more storeys of a building located below the first storey (Building Code). Crawl Space or cellar shall be considered as a basement if it is,
(a) more than 1,800 mm high between the lowest part of the floor assembly and the ground or other surface below,
(b) used for any occupancy,

Breakwall/Breakwater: object (especially a groyne or pier) resisting force of waves

Conservation of land: the protection, management, or restoration of lands within the watershed ecosystem for the purpose of maintaining or enhancing the natural features and hydrologic and ecological functions within the watershed.

Development (1) as pertaining to the *Conservation Authorities Act*: 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. (definition applied to section 4)

Development (2): as it pertains to the *Planning Act*, 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* (PPS, 2005). (definition applied to section 5)

Dwelling unit: one or more habitable rooms, occupied or capable of being occupied as an independent and separate housekeeping establishment, in which separate kitchen and sanitary facilities are provided for the exclusive use of the occupants.

Dyke: An embankment or wall, usually along a watercourse or floodplain, to prevent overflow on to adjacent land. Also spelled dike.

Dynamic Beach Hazard: means areas of inherently unstable accumulations of shoreline sediments 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 2005)

Erosion: continual loss of earth material (i.e. soil or sediment) over time as a result of the influence of water or wind.

Erosion Hazard: 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), and an allowance for slope stability

Flood fringe: means the outer portion of the floodplain between the floodway and the flood hazard limit. Depths and velocities of flooding are generally less severe in the flood fringe than those experienced in the floodway. (PPS, 2005)

Flooding Hazard: in Ontario, either storm-centred events, flood frequency based events, or an observed event may be used to determine the extent of the flooding hazard⁷. These events are:

- a) A storm-centred event, either Hurricane Hazel storm (1954) or Timmins storm (1961). A storm-centred event refers to a major storm of record which is used for land-use planning purposes. The rainfall actually experienced during a major storm event can be transposed over another watershed and when combined with the local conditions, Regulatory floodplains can be determined. This centring concept is considered acceptable where the evidence suggests that the storm event could have potentially occurred over another watershed in the general area;
- b) 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 (or a probability of occurrence) 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 for defining the Regulatory floodplain; and

⁷ High points of land not subject to flooding but surrounded by floodplain or "flooded land" are considered to be within the flood hazard and part of the regulated floodplain.

- c) An observed event, which is a flood that is greater than the storm-centred events or greater than the 100-year flood and which was actually experienced in a particular watershed, or portion thereof, for example as a result of ice jams⁸, and which has been approved as the standard for that specific area by the Minister of Natural Resources.

Floodplain: means the area, usually low lands adjoining a watercourse, which has been or may be subject to flood hazards. (PPS, 2005)

Floodproofing standards: means the combination of measures incorporated into the basic design and/or construction of buildings and structures or properties to reduce or eliminate flood hazards, wave uprush and other water related hazards along the shoreline of Lake Ontario, and flood hazards along watercourses. (PPS, 2005)

- Dry passive floodproofing – includes the use of fill, columns or design modifications to elevate openings in the building or structure at or above the level of the flood hazard. These measures do not require flood warning or any other action to put the flood protection in effect.
- Dry active floodproofing – includes techniques such as installing water tight doors, seals or floodwalls to prevent water from entering openings below the level of the flood hazard. Advance warning is almost always required to make the flood protection operational (i.e. closing of water tight doors, installation of waterproof protective coverings or windows etc.).
- Wet floodproofing – involves designing a building or structure using materials, methods and design measures that maintain structural integrity by avoiding external unbalanced forces from acting on buildings or structures during and after a flood, to reduce flood damage to contents, and to reduce the cost of post-flood clean up. Buildings and structures are designed so as to intentionally allow flood waters to enter and exit, ensuring the interior space below the level of the flood hazard remains unfinished, non-habitable, and free of service units and panels.

Floodway: means the portion of the floodplain 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 floodplain.

Where the two-zone concept is applied, the floodway is the inner portion of the floodplain, 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 floodplain is called the flood fringe. (PPS, 2005)

Gabions: Stone-filled steel wire baskets which can be assembled or stacked to act as retaining walls or provide slope and erosion protection.

⁸ However, localized chronic conditions (e.g. ice or debris jams) related to flood-prone areas may be used to extend the regulated area beyond the Regulatory flood limit without the approval of the Minister of Natural Resources. It will be necessary to inform the property owner(s) as well as ensure that the revised limits are reflected in the appropriate municipal documents at the first opportunity.

Ground floor area: means the ground area of a lot covered by any part of a building, excluding decks, patios and similar structures.

Groyne: A structure extending from the shore to prevent erosion and arresting sand movement along a shoreline.

Habitable: suitable to live in or on (American Heritage Dictionary) OR means that can be inhabited. Inhabit means to dwell in, occupy.

Hazardous land: land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock.

Hydrologic function: 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.

Infrastructure: means physical structures (facilities and corridors) that form the foundation for development. Infrastructure includes: sewage and water systems, septage treatment systems, waste management systems, electric power generation and transmission, communications/telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities. (PPS, 2005)

Interference in any way: 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.

Jetty: Pile or mole running out to protect harbour or coast.

Large inland lakes: waterbodies that have a surface area equal to or greater than 100 square kilometres, where there is no measurable or predictable response to a single runoff event.

Minor Addition: (within flood and erosion hazard areas) To be considered a "minor addition," it must meet the following criteria:

- The addition does not increase the number of dwelling units of the existing building or structure.
- The addition does not include a basement, regardless if the existing building or structure has a basement, within flood and shoreline erosion hazards.
- Existing residential uses:
 - a) Ground floor additions: The ground floor addition is 50% or less (30% for shoreline erosion hazards) of the *original habitable ground floor area** to a maximum footprint of 100 square metres, or in the case of multiple additions, all additions combined are equal to or less than 50% (30% for shoreline erosion hazards) of the *original habitable ground floor area** to a maximum footprint of 100 square metres., **OR**

b) An additional storey: The additional storey does not exceed the *original habitable ground floor area**.

- Existing commercial and industrial uses:
The addition is 50% or less (30% for shoreline erosion hazards) of the *original ground floor area**, or in the case of multiple additions, all additions combined are equal to or less than 50% (30% for shoreline erosion hazards) of the *original ground floor area**.
- Subsequent requests for additions that will result in the cumulative exceedance of the maximum permitted allowance, as based on the *original ground floor area*, will not be permitted.

*** Please Note: the term “original ground floor area” or “original habitable ground floor area” refers to that ground floor area which existed on November 16, 1990, the date that the Authority’s Regulation 164 R.R.O. 1990 came into force.**

Natural heritage features and areas: means features and areas, including significant wetlands, fish habitat, significant woodlands, significant valleylands, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area. (PPS, 2005)

Natural heritage system: means a system made up of natural features and areas, linked by natural corridors which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state. (PPS, 2005)

Negative impacts: means: a) in regard to water, degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features, and their related hydrologic functions, due to a single, multiple or successive development or site alteration activities; b) in regard to fish habitat, the harmful alteration, disruption or destruction of fish habitat, except where, in conjunction with the appropriate agencies, it has been authorized under the *Fisheries Act*, using the guiding principles of no-net-loss of productive capacity; and c) in regard to other natural 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, 2005)

Other wetlands: means any wetland that that is not a provincially-significant wetland.

Pollution: Any deleterious physical substance or other contaminant that has the potential to be generated by development in an area to which a regulation made under clause (1) (c) applies (Section 28 of the *Conservation Authorities Act*)

Pond, bypass: Bypass ponds are located outside the channel of a watercourse and are created by diverting some of the flow of water from a watercourse into an adjacent pond. The outlet from these ponds usually returns water from the pond to the watercourse.

Pond, off-line or isolated pond: An off-line pond is located outside, or beyond, the channel of a watercourse, where the boundary of the watercourse is defined as the high water mark, as defined by the NVCA.

Pond, on-line: An on-line pond is created within the defined channel of a watercourse by way of a dam or other man-made means.

Quality and quantity of water: is measured by indicators 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, 2005)

Reconstruction: means the restoration, repair or replacement of a building or structure within its original footprint, not to exceed its original ground floor area, gross floor area or height, and without any change to its original use. 'Reconstructed' has a corresponding meaning.

Redevelopment: means the creation of new units, uses or lots on previously developed land in existing communities, including brownfield sites. (PPS 2005)

Retaining wall: A vertical structure designed to resist the lateral pressure of soil and water behind it.

Revetment: A vertical or inclined facing of rip-rap or other material protecting a soil surface from erosion.

Riprap: A layer of stone to prevent the erosion of soil.

Rubble: Waste fragments of stone, brick, etc. from old houses; pieces of undressed stone used especially as filling-in for walls; loose angular stones as covering of some rocks; water-worn stones.

Scour: Local lowering of a stream bed by the erosive action of flowing water.

Sedimentation: The deposition of detached soil particles.

Sensitive: as it pertains to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events including, but not limited to, water withdrawals, and additions of pollutants. (PPS, 2005)

Significant: means:

- a) in regard to wetlands, coastal wetlands and areas of natural and scientific interest, an area identified as provincially-significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the province, as amended from time to time;
- b) in regard to the habitat of endangered species and threatened species, means the habitat, as approved by the Ontario Ministry of Natural Resources, that is necessary for the maintenance, survival, and/or the recovery of naturally occurring or reintroduced populations of endangered species or threatened species, and where those areas of

occurrence are occupied or habitually occupied by the species during all or any part(s) of its life cycle;

c) in regard to woodlands, an area which is ecologically important in terms of features such as species composition age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area, or economically important due to site quality, species composition, or past management history; and

d) in regard to wildlife habitat and valleylands, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. (PPS, 2005)

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, 2005)

Special Policy Area: means an area within a community that has historically existed in the floodplain 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 floodplain. (PPS, 2005)

Still water line: the 100-year peak or flood level with a one chance in one hundred of occurring in any given year, without the influences of wave uprush, seiche, ship-generated waves, ice-piling or other water-related hazards

Story: the portion of a building,

(a) that is situated between the top of any floor and the top of the floor next above it, or

(b) that is situated between the top of the floor and the ceiling above the floor, if there is no floor above it.

Surficial erosion: the physical removal, detachment and movement of soil at the ground surface due to water or wind

Top-of-bank: The point at which the slope of a valley or shoreline meets the horizontal plain of the adjacent table-land.

Valleyland: means land that has depressional features associated with a river or stream, whether or not it contains a watercourse.

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

Watershed: an area that is drained by a river and its tributaries (PPS, 2005)

Wetland: 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)

Woodland: means treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and can vary in their level of significance at the local, regional and provincial levels. (PPS, 2005)

Please note: additional definitions may be found in the MNR's Natural Hazards and Natural Heritage Technical Guidelines, and in the Provincial Policy Statement

7.0 References and Web Links

References

Stream Corridors Project Management Team. (2001). *Adaptive Management of Stream Corridors in Ontario*.⁹

Ministry of Natural Resources (MNR) and Conservation Ontario. (2005). *Guidelines for Developing Schedules of Regulated Areas*.¹⁰

MNR. (2002a). *River and Stream Systems: Flooding Hazard Limit Technical Guide*.⁹

MNR. (2002b). *River and Stream Systems: Erosion Hazard Limit Technical Guide*.⁹

MNR. (2001). *Understanding Natural Hazards*.⁹

MNR. (1996a). *Hazardous Sites Technical Guide*.^{9 11}

MNR. (1996b). *Technical Guide for Great Lakes – St. Lawrence River System*.¹¹

MNR. (1996c). *Technical Guide for Large Inland Lakes*.¹¹

MNR. (1993a). *Ontario Wetland Evaluation System: Northern Manual*.

MNR. (1993b). *Ontario Wetland Evaluation System: Southern Manual*.

MNR. (1987). *Guidelines for Developing Great Lakes Shoreline Management Plans*.

Prent & J. Parish. (2001). *Belt Width Delineation Procedures*

Terraprobe Limited and Aqua Solutions (for MNR). (1998). *Geotechnical Principles for Stable Slope, Great Lakes – St. Lawrence River System: Physical features and Processes*, part #1 pp 38-49.¹¹

Web Links

Conservation Ontario: www.conservationontario.ca

The Institute for Watershed Science – Trent University

All conservation authorities have a three disc set of the following documents (provided in 2007): “*Adaptive Management in Ontario – Natural Hazards Technical Guides*” (MNR and Watershed Science Centre, 2002) and the *Great Lakes-St. Lawrence River System and Large Inland Lakes: Technical Guides* (Watershed Science Centre and MNR, 2001). They are available to purchase through the Institute of Watershed Science – Trent University. <http://www.trentu.ca/iws/>

Provincial Legislation and Regulations (*Conservation Authorities Act*.): www.e-laws.gov.on.ca

Provincial Policy Statement: <http://www.mah.gov.on.ca/Page215.aspx>

⁹ Available within the MNR and Watershed Science Centre (2002) disk *Adaptive Management of Stream Corridors in Ontario including Natural Hazards Technical Guide*.

¹⁰ Available on the Conservation Ontario, Members page under “Policy and Planning; Section 28 Regulation; Implementation Support Material”

¹¹ Available within the Watershed Science Centre and MNR (2001) disk *Great Lakes – St. Lawrence River System and Large Inland Lakes: Technical Guides for flooding, erosion, and dynamic beaches in support of natural hazards policies 3.1 of the Provincial Policy Statement*.

Appendices

Nottawasaga Valley Conservation Authority



Planning and Regulation Guidelines

August 28, 2009

List of Appendices

Appendix 1	Provincial Delegation of Authority and Memorandum of Understanding
Appendix 2	Municipal Plan Input and Review Agreements c) Simcoe County MOU d) Streamlining of Consent Applications
Appendix 3	Oak Ridges Moraine Permit Implementation Guidelines
Appendix 4	Conservation Land Protection and Acquisition Policy
Appendix 5	Pond Policy
Appendix 6	Environmental Impact Study
Appendix 7	Two Zone and Special Policy Areas Floodplain Management Approaches
Appendix 8	Interpretation of Clause 2(1)(d) and Clause 2(1)(e) (Great Lakes Shoreline) in Conservation Authorities Regulations

Please note: the following additional information is located in the Appendix of Conservation Ontario's *Guidelines to Support Conservation Authority Administration of the "Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulations."

- **Conservation Authorities Act, Section 28**
- **Ontario Regulation 97/04**
- **Conservation Authorities Act Section 28(3) Hearing Guidelines**
- **Synopsis of Interpretations of Conservation of Land**

Appendix 1

Provincial Delegation of Authority and Memorandum of Understanding

**CONSERVATION ONTARIO,
MINISTRY OF NATURAL RESOURCES &
MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING**

**MEMORANDUM OF UNDERSTANDING ON PROCEDURES TO
ADDRESS CONSERVATION AUTHORITY
DELEGATED RESPONSIBILITY**

PURPOSE OF THE MOU

The MOU defines the roles and relationships between Conservation Authorities (CAs), the Ministry of Natural Resources (MNR), and the Ministry of Municipal Affairs and Housing (MMAH) in planning for implementation of CA delegated responsibilities under the Provincial One Window Planning System.

BENEFITS TO SIGNATORY PARTIES

It is beneficial for all parties to enter into this agreement because it clarifies the roles of CAs and the unique status of CAs in relationship to the Provincial One Window Planning System.

DELEGATED RESPONSIBILITY FOR NATURAL HAZARDS

CAs were delegated natural hazard responsibilities by the Minister of Natural Resources. A copy of the delegation letter is attached. This letter (dated April 1995) went to all CAs and summarizes delegations from the MNR including flood plain management, hazardous slopes, Great Lakes shorelines, unstable soils and erosion which are now encompassed by Section 3.1 "Natural Hazards" of the Provincial Policy Statement (1997). In this delegated role, the CA is responsible for representing the "Provincial Interest" on these matters in planning exercises where the Province is not involved.

This role does not extend to other portions of the PPS unless specifically delegated or assigned in writing by the Province.

ROLES AND RESPONSIBILITIES

Ministry of Natural Resources

- a) MNR retains the provincial responsibility for the development of flood, erosion and hazard land management policies, programs and standards on behalf of the province pursuant to the *Ministry of Natural Resources Act*.
- b) Where no conservation authorities exist, MNR provides technical support to the Ministry of Municipal Affairs and Housing on matters related to Section 3.1 of the Provincial Policy Statement in accordance with the “Protocol Framework – One Window Plan Input, Review and Appeals”.
- c) MNR, in conjunction with MMAH, co-ordinates the provincial review of applications for Special Policy Area approval under Section 3.1 of the PPS.

Ministry of Municipal Affairs and Housing

- a) MMAH coordinates provincial input, review and approval of policy documents, and development proposals and appeals to the Ontario Municipal Board in accordance with the “Protocol Framework One Window Plan Input Review and Appeals”.
- b) Where appropriate, MMAH will consult conservation authorities as part of its review of policy documents and development proposals to seek input on whether there was “regard to” Section 3.1 of the PPS.
- c) Where there may be a potential conflict regarding a Conservation Authority’s comments on a planning application with respect to Section 3.1 of the PPS and comments from provincial ministries regarding other Sections of the PPS, the Ministry of Municipal Affairs and Housing will facilitate discussions amongst the affected ministries and the Conservation Authority so that a single integrated position can be reached.
- d) Where appropriate, MMAH will initiate or support appeals to the OMB on planning matters where there is an issue as to whether there was “regard to” Section 3.1 of the PPS.
- e) MMAH, in conjunction with MNR, coordinates the provincial review of application for Special Policy Area approval under Section 3.1 of the PPS.

Conservation Authorities (CAs)

- a) The CAs will review policy documents and development proposals processed under the *Planning Act* to ensure that the application has appropriate regard to Section 3.1 of the PPS.
- b) Upon request from MMAH, CAs will provide comments directly to MMAH on planning matters related to Section 3.1 of the PPS as part of the provincial one window review process.
- c) Where there may be a potential conflict regarding a Conservation Authority's comments on a planning application with respect to Section 3.1 of the PPS and comments from provincial ministries regarding other Sections of the PPS, the Ministry of Municipal Affairs and Housing will facilitate discussions amongst the affected ministries and the Conservation Authority so that a single integrated position can be reached.
- d) CAs will apprise MMAH of planning matters where there is an issue as to whether there has been "regard to" Section 3.1 of the PPS to determine whether or not direct involvement by the province is required.
- e) Where appropriate, CAs will initiate an appeal to the OMB to address planning matters where there is an issue as to whether there has been "regard to" Section 3.1 of the PPS is at issue. CAs may request MMAH to support the appeal.
- f) CAs will participate in provincial review of applications for Special Policy Area approval.
- g) CAs will work with MMAH, to develop screening and streamlining procedures that eliminate unnecessary delays and duplication of effort.

FURTHER CA ROLES IN PLAN INPUT, PLAN REVIEW AND APPEALS

CAs also undertake further roles in planning under which they may provide plan input or plan review comments or make appeals.

1. Watershed Based Resource Management Agency

CAs are corporate bodies created by the province at the request of two or more municipalities in accordance with the requirements of the *Conservation Authorities Act (CA Act)*. Section 20 of the *CA Act* provides the mandate for an Authority to offer a broad resources management program. Section 21 of the *CA Act* provides the mandate to have watershed-based resource management programs and/or policies that are approved by the Board of Directors.

CAs operating under the authority of the *CA Act*, and in conjunction with municipalities, develop business plans, watershed plans and natural resource management plans within their jurisdictions (watersheds). These plans may recommend specific approaches to land use and resource planning and management that should be incorporated into municipal planning documents and related development applications in order to be implemented. CAs may become involved in the review of municipal planning documents (e.g., Official Plans (OPs), zoning by-laws) and development applications under the *Planning Act* to ensure that program interests developed and defined under Section 20 and 21 of the *CA Act* are addressed in land use decisions made by municipal planning authorities. In this role, the CA is responsible to represent its program and policy interests as a watershed-based resource management agency.

2. Planning Advisory Service to Municipalities

The provision of planning advisory services to municipalities is implemented through a service agreement with participating municipalities or as part of a CAs approved program activity (i.e., service provided through existing levy). Under a service agreement, a Board-approved fee schedule is used and these fee schedules are coordinated between CAs that “share” a participating municipality. The “Policies and Procedures for the Charging of CA Fees” (MNR, June 13, 1997) identifies “plan review” activities as being eligible for charging CA administrative fees.

The CA is essentially set up as a technical advisor to municipalities. The agreements cover the Authority’s areas of technical expertise, e.g., natural hazards and other resource management programs. The provision of planning advisory services for the review of *Planning Act* applications is a means of implementing a comprehensive resource management program on a watershed basis.

In this role, the CA is responsible to provide advice on the interpretation of the Provincial Policy Statement (PPS) under the terms of its planning advisory service agreement with the municipality. Beyond those for Section 3.1 “Natural Hazards” where

CAs have delegated responsibility, these comments should not be construed by any party as representing the provincial position.

3. CAs as Landowner

CAs are landowners and as such, may become involved in the planning process as a proponent or adjacent landowner. Planning Service Agreements with municipalities have anticipated that this may lead to a conflict with our advisory role and this is addressed by establishing a mechanism for either party to identify a conflict and implement an alternative review mechanism.

4. Regulatory Responsibilities

a) *CA Act* Regulations

In participating in the review of development applications under the *Planning Act*, CAs will (i) ensure that the applicant and municipal planning authority are aware of the Section 28 regulations and requirements under the *CA Act*, and, (ii) assist in the coordination of applications under the *Planning Act* and the *CA Act* to eliminate unnecessary delay or duplication in the process.

b) Other Delegated or Assigned Regulatory/Approval Responsibility

Federal and provincial ministries and municipalities often enter agreements to transfer regulatory/approval responsibilities to individual CAs (e.g., Section 35 Fisheries Act/DFO; Ontario Building Code/septic tank approvals). In carrying out these responsibilities and in participating in the review of development applications under the *Planning Act*, CAs will (i) ensure that the applicant and municipality are aware of the requirements under these other pieces of legislation and how they may affect the application; and, (ii) assist in the coordination of applications under the *Planning Act* and those other Acts to eliminate unnecessary delays or duplication in the process.

CANCELLATION OR REVIEW OF THE MOU

The terms and conditions of this MOU can be cancelled within 90 days upon written notice from any of the signing parties. In any event, this document should be reviewed at least once every two years to assess its effectiveness, its relevance and its appropriateness in the context the needs of the affected parties. “Ed. Note: 90 days is to provide time for the parties to reach a resolution other than cancellation”.

MEMORANDUM OF UNDERSTANDING ON PROCEDURES TO ADDRESS CONSERVATION AUTHORITY DELEGATED RESPONSIBILITY

I hereby agree to support the provisions contained in this Memorandum of Understanding as an appropriate statement of the roles and responsibilities of relevant Ministries and Conservation Authorities in the implementation of the Provincial Policy Statement.

Jan 19, 2001: Original signed by

David de Launay
Director
Lands and Waters Branch
Ministry of Natural Resources

Date

Feb 12, 2001: Original signed by

Audrey Bennett
A/Director
Provincial Planning and Environmental Services Branch
Ministry of Municipal Affairs and Housing

Date

Jan 01, 2001: Original signed by

R.D. Hunter
General Manager
Conservation Ontario

Date

Appendix 2

Municipal Plan Input and Review Agreements

- a) Simcoe County MOU Regarding Land Use Planning**
- b) Streamlining of Consent Applications**

Appendix 2 a

**Memorandum of Understanding with Simcoe County
Regarding Land Use Planning**

PARTNERSHIP AGREEMENT

between

THE CORPORATION OF THE COUNTY OF SIMCOE

and the

**NOTTAWASAGA VALLEY CONSERVATION AUTHORITY
LAKE SIMCOE REGION CONSERVATION AUTHORITY
SEVERN SOUND ENVIRONMENTAL ASSOCIATION**

regarding

LAND USE PLANNING AND THE NATURAL ENVIRONMENT

1. Basis

The first Official Plan for the County of Simcoe was approved by the Ministry of Municipal Affairs and Housing (MMAH) on April 3, 1998. With resolution of appeals to the Plan, the County will be assigned the approval authority function previously held by MMAH. This function involves the approval of Official Plans and amendments of the local municipalities and all plans of subdivision and condominium in the County. The transfer of the provincial approval function to the County is in concert with the thrust of Bill 20, the Land Use Planning and Protection Act (1996). This Act recognized that municipal government is the most appropriate, responsible, and accountable level of government for making land use decisions related to the environment, economy, and social factors.

In its review of planning applications, the County of Simcoe will be seeking technical comments and information related to its natural heritage or environment and lands which are hazardous to people and property. The comments and information will be needed before a complete planning application is submitted, or before general policies are formulated (plan input) as well as during review of a planning application submitted under the Act (plan review). The County may also require peer review of studies submitted in support of development proposals. This agreement establishes that the County will seek the input, or direct development proponents to seek input, when appropriate, from the relevant Conservation Authority or the Severn Sound Environmental Association.

2. Definitions

"Conservation Authorities" (CA's) include the Nottawasaga Valley Conservation Authority and the Lake Simcoe Region Conservation Authority. The Severn Sound Environmental Association is not a Conservation Authority, but for editorial convenience will be referred as such within this document.

"Peer Review" refers to the review of a study undertaken by a qualified professional, generally submitted to provide advice on a development matter, by a person being of the same qualified profession to provide an objective opinion on the content of the study and its conclusions.

Such studies may include, but are not limited to: technical support studies required through the planning process, such as master servicing plans, servicing capability studies, stormwater management reports, and environmental impact statements.

"**Plan Input**" refers to the providing of input and information prior to the formulation of policy or the submission of a development application.

"**Plan Review**" refers to the review of specific development applications where County interests and policies are impacted, as determined by County Staff.

3. Context

The County will be seeking environmental input from the CA's from two perspectives:

- 1) In exercising its approval authorities for Official Plans and Amendments, and Plans of Subdivision and Condominium, and;
- 2) In establishing and implementing the policies of the County Official Plan as they relate to the Greenlands Designation, and other environmentally significant features identified in its' policies.

The County will utilize the services of the CA's where the environmental interests of the County are impacted by development activity.

To avoid duplication of current work and research already being done by the Conservation Authorities at the local level, the process of obtaining input from the CA's will be integrated within the pre-consultation stage of the development process in co-operation with the local municipalities. The processes for the review of plans of subdivision and Official Plans and amendments are outlined on Figures 1 and 2. Points of potential CA involvement are shown in *italics*. The terms outlined in this agreement are intended to complement these processes.

As Local Municipal Official Plans incorporate the policies of the County Official Plan, the CA's role will be further entrenched at the local level within local Official Plans.

Local Municipalities are the Approval Authorities for the following:

- Comprehensive Zoning By-Laws;
- Zoning By-Law Amendments;
- Site Plans;
- Minor Variance Applications;
- Consent Applications.

For these applications the County is a commenting agency. The CA's are also commenting agencies on these applications. The County recognizes that the CA's are already providing environmental plan input and review services to some Local Municipalities. To avoid duplication of services, the County recognizes this vital role already being provided to the Local Municipalities by the CA's.

It is also recognized that Local Municipalities may enter into agreements with other parties to provide plan review services. Where a Local Municipality has an agreement with a party other than a CA as defined herein, the policies and procedures of this agreement do not apply.

4. Purpose

The purpose of this Partnership Agreement is to:

- a) help fulfill the approval authority function transferred to the County of Simcoe from the MMAH;
- b) provide the CA's with a means to assist the County and its Local Municipalities with the environmental component of land use planning within the County;
- c) describe a framework that clearly articulates the roles and responsibilities of the County and the CA's with regard to the natural environment, in order to fulfill the approval authority function; and,
- d) establish a partnership between the County and the CA's that will enable an efficient and effective delivery of environmental service in the County.

5. Principles

This Partnership Agreement is based on the following principles:

- a) integration and cooperation will occur between the County, the Local Municipalities, CA's, and other stakeholders in the County in order to streamline the land use planning process;
- b) the ecosystem approach to land use planning will be applied which promotes the watershed area as a basis for environmental planning and management within the County;
- c) cost effective, proactive planning, using techniques such as pre-submission consultation, will be emphasized over cost intensive, reactive planning;
- d) land use planning decisions will be the sole responsibility of the County and the Local Municipalities;
- e) environmental planning and management within the County will reflect the provisions of the Planning Act, Provincial Policy Statement, the County Official Plan, and Local Official Plans, issued under the Planning Act;
- f) cost recovery for the plan review and peer review services will be achieved through a fee-for-service basis, paid directly to the appropriate CA by the proponent or the developer, in accordance with the CA's fee schedule.
- g) fees will be charged on a cost recovery basis for "plan input" where appropriate.

6. Jurisdiction

Schedule "A" to this Agreement generally identifies the jurisdictions of the CA's in relation to the political boundary of Simcoe County, with the recognition that the jurisdiction of the Ministry of Natural Resources (MNR) and the Ministry of the Environment (MOE) encompasses the entire County. The County will use

Schedule "A" in order to distribute the planning application or planning matter to the appropriate agency. For those areas on Schedule "A" not under the jurisdiction of the CA's, the "plan input, plan review and peer review" functions will be provided by the County in conjunction with the appropriate agency.

This Partnership Agreement recognizes that the MNR provides "plan input" where appropriate across the County, and information relating to Provincially Significant features.

This Partnership Agreement also recognizes that the MOE presently provides plan input and review in accordance with its jurisdiction under the Ontario Water Resources Act and the Environmental Protection Act. This will include plan input and the issuance of Certificates of Approval for Stormwater Management Facilities, and sewage treatment facilities for non-residential and multiple residential uses. This Ministry will also provide input respecting identified areas of interest across the County.

7. Roles and Responsibilities

The County and the CA's agree that:

- a) Plan input will be provided by the CA's on broad policy-oriented documents such as the County's Official Plan and amendments, and lower tier Official Plans and amendments including Secondary Plans, Adult Lifestyle Community Plans, and Growth Management Strategies, in their respective jurisdictions.
- b) Plan input and review will be provided from a natural heritage perspective by the CA's on all site specific development applications within the County Greenlands Designation, and in accordance with the other environmental policies of the County Official Plan, as determined by County staff. Plan input and review will be provided from a natural hazard perspective by the CA's on all site specific official plan amendments/applications located in proximity to a lake, river, or creek or located on or near a steep slope, or any other area that may exhibit physical constraints to development such as high water table and organic soil deposits.
- c) Where Local Municipal development approvals include environmentally-related conditions that are in accordance with the policies of the County Official Plan, the County will utilize the existing expertise of the CA's, at the expense of the applicant, to clear conditions. These may include the completion of studies prior to approval of zoning by-law amendments or site plans, or the clearing of conditions associated with consent approval.
- d) Environmental Impact Statements completed in accordance with the County Official Plan policies will be reviewed and completed to the satisfaction of the CA's.
- e) The CA's will provide ^{EXISTING} staff to attend Ontario Municipal Board Hearings at the request of the County with regard to any planning application, as appropriate.
- f) The CA's will continue to advise and issue permits where appropriate in accordance with the Conservation Authorities Act of Ontario, as amended.
- g) Nothing in this agreement prevents the CA's from advising the County on any issue of interest to them as it may relate to a development application, nor does this agreement preclude the CA's

from appealing or objecting to a decision of County Council.

8. *Implementation*

The County and the CA's agree:

- a) any information or data sources provided by the province or generated through municipal or watershed studies will be shared, subject to any restrictions or agreements already established by the respective organizations or the Province;
- b) the "plan input and review and peer review" functions will be in accordance with Policy 1.1.1e) and f), Policy 2.2 as it relates to the County Greenlands Designation, Policy 2.3, Policy 2.4, and Policy 3.1, and other policies within the Provincial Policy Statement, and the County Official Plan, and will complement, rather than duplicate, any plan input provided by the Province;
- c) that the County will ensure "plan input" opportunity is provided to the CA's, where appropriate;
- d) that the County will circulate appropriate documents to the CA's for plan review and peer review in a timely manner in accordance with the boundaries shown on schedule A;
- e) that "plan input and review and peer review" results will be provided by the CA's in writing to the circulating municipality, and copied to either the County or Local Municipality, as appropriate. Comments will be provided or copied to the County by the CA's using the following time frames as a guideline: within 20 working days following a pre-submission consultation meeting (plan input); within 20 working days of the receipt of a document for peer review; and, prior to the statutory public meeting or hearing scheduled in accordance with the Planning Act where the application has been formally circulated to the CA (plan review). The County recognizes that required time lines will vary based on the magnitude of the project;
- f) that the CA's will be responsible for collecting their fees for the services they provide directly from the applicant/proponent. The CA's should ensure that payment has been provided in accordance with their fee schedule prior to the release of final comments on a development matter;
- g) that the CA's may determine how to best meet the requirements of this Partnership Agreement through subsequent internal agreements;
- h) that this Partnership Agreement only applies to planning documents and applications originating under the Planning Act;
- i) to explore further opportunities to streamline the land use planning system as it relates to Provincial, County, and Local interests;
- j) that this agreement does not limit the right of the County to seek input, technical comments, or information from any other source;
- k) to review and evaluate the effectiveness of this Partnership Agreement, and from time to time amend the Agreement to reflect changes in municipal, provincial, and federal policies or

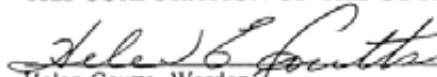
programs or as a result of discussions within the partners of this Agreement; and

- 1) that any party to this agreement may terminate their involvement with a minimum of 90 days notice to the remaining Agreement Parties.

9. *Certification*

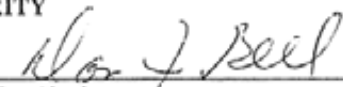
This Partnership Agreement will take effect on this 30th day of September, 1999.

THE CORPORATION OF THE COUNTY OF SIMCOE


Helen Courts, Warden

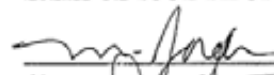

Helen MacRae, C.A.O.-Clerk

NOTTAWASAGA VALLEY CONSERVATION
AUTHORITY


Don Bell, Chair


Wayne R. Wilson, C.A.O./Secretary-Treasurer

LAKE SIMCOE REGION CONSERVATION AUTHORITY


Margaret Jordan, Chair


D. Gayle Wood, C.A.O./Secretary-Treasurer

FIGURE ONE

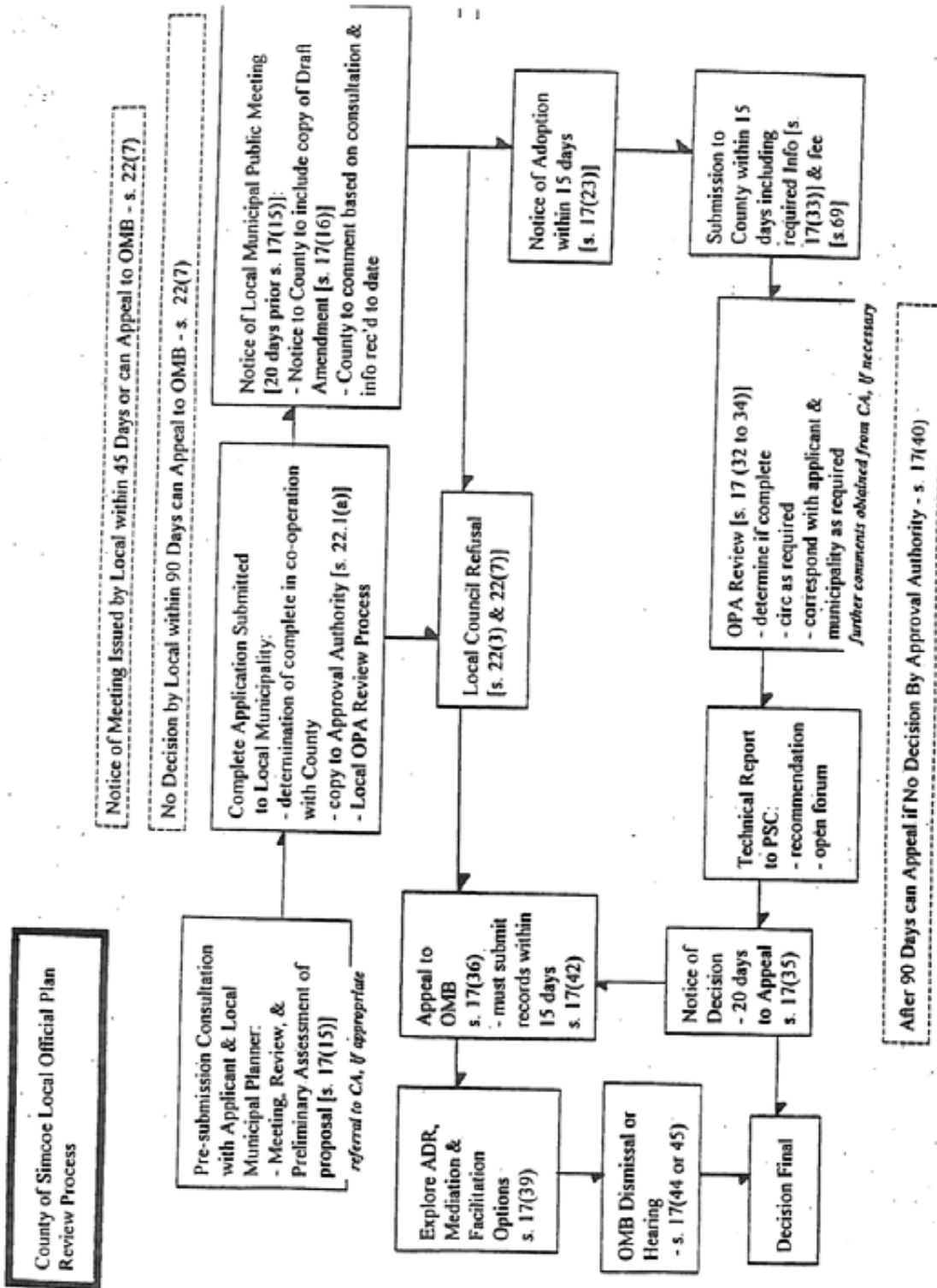
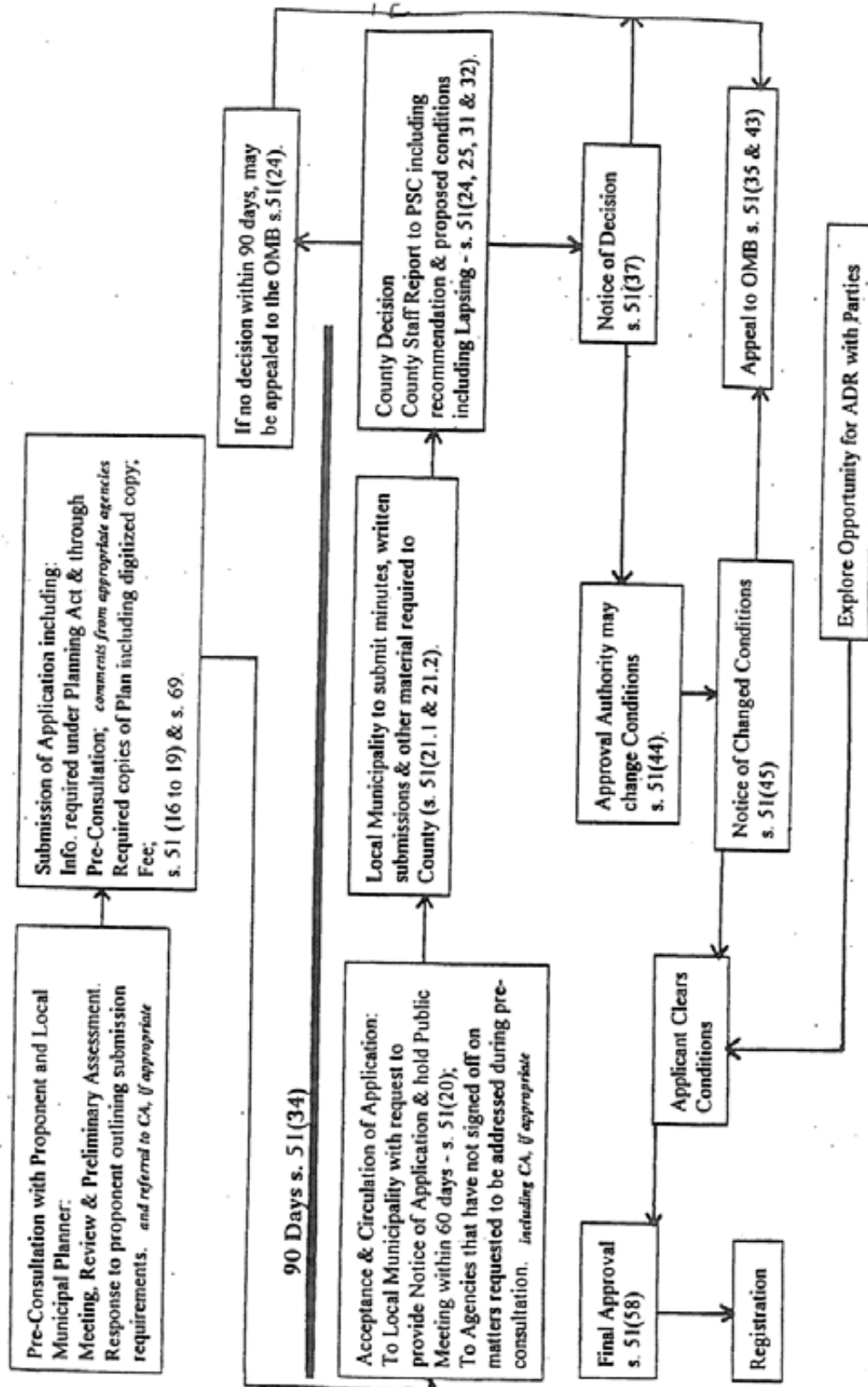


FIGURE TWO
COUNTY OF SIMCOE SUBDIVISION AND CONDOMINIUM REVIEW
PROCESS



Appendix 2 b

Agreement for Streamlining of Consent and Minor Variance Applications

**PARTNERSHIP AGREEMENT FOR STREAMLINING THE CIRCULATION PROCEDURES
FOR CONSENT AND MINOR VARIANCE APPLICATIONS**

B E T W E E N

The Nottawasaga Valley Conservation Authority

(herein referred to as the "NVCA")

- and -

The Township of Adjala-Tosorontio

The Township of Amaranth

The Township of Clearview

The Township of Essa

The Town of Mono

The Township of Mulmur

The Town of New Tecumseth

The Township of Oro-Medonte

The Town of Shelburne

The Township of Springwater

The Town of Wasaga Beach

(herein referred to as the "watershed municipality [ies]")

PARTNERSHIP AGREEMENT

Basis

On July 1, 1999, the NVCA and the Town of New Tecumseth ratified a preliminary streamlining agreement with regard to applications for consent and applications for minor variance. This agreement, which was struck by a "Letter of Intent", was essentially a pilot project to determine if a similar streamlining model could be used with the other watershed municipalities. We have determined, based on our assessment over the past six months, that the implementation of the streamlining agreement with the Town has been very successful.

On this basis, the NVCA consulted the remaining 16 municipalities in the watershed in order to determine if there were any interest in establishing a similar-type agreement. The Town of Collingwood was not contacted due to a similar Memorandum of Agreement that was previously established in December 1994 with the NVCA. Of the 16 municipalities, 69% expressed an interest in establishing an agreement while the status quo will be applied to the remaining 31% at this time. The basis of this Agreement is to recognize an existing decision-making ability of our watershed municipalities related to "screening" applications and to allow the NVCA to focus on those applications with relevant conservation authority issues.

Partnership Agreement

Page 2

Purpose

The purpose of this Agreement is to:

- establish a framework for streamlining the consent and minor variance process;
- create efficiencies with regard to the circulation of consent/minor variance applications;
- save time and money by reducing duplication;
- provide the watershed municipalities with increased decision-making autonomy; and,
- allow the NVCA (human resources) to focus on broader watershed planning initiatives.

Principles

This Partnership Agreement is based on the following principles:

- continued cooperation between the NVCA and the watershed municipalities;
- effective communication of information;
- direct consultation between the NVCA and the watershed municipalities;
- cost effective proactive planning over cost intensive reactive planning; and,
- cost recovery for the NVCA plan review service.

Legislative Context

Subsections 45(5) and 53(5) of the Planning Act specify that public bodies shall receive notice of a hearing related to minor variance and consent applications respectively. Ontario Regulations 200/96 and 197/96 further specify that notice of an application for minor variance and an application for consent respectively shall be given to the secretary-treasurer of the local conservation authority. The Regulations also identify that notice is not required if the conservation authority has notified the approval authority accordingly. This Partnership Agreement will establish a modified notice procedure by requiring that only those applications of particular conservation authority interest will be circulated to the NVCA. This Agreement only applies to minor variance and consent applications under Sections 45 and 53 of the Act.

Jurisdiction

This Partnership Agreement will use the "watershed" of the NVCA as the jurisdictional boundary. This Agreement will only apply to those lands within the municipality's jurisdiction where the NVCA watershed exists. For those municipalities that are partly within the NVCA's jurisdiction, the lands beyond the "watershed" will not be subject to this Agreement. For the purposes of this Agreement, the term "watershed" includes the entire lands within the municipal jurisdiction of the Township of Springwater.

Roles and Responsibilities

The Watershed Municipalities

1. The watershed municipality will continue to circulate consent and minor variance applications to the NVCA, in the manner prescribed under the Planning Act, as follows:

Partnership Agreement

Page 3

- if the property is environmentally designated (e.g. Hazard Land) in the Official Plan;
 - if the property is environmentally zoned (e.g. "EP" or "OS") in the Zoning By-Law;
 - if the property is in a natural heritage feature (e.g. woodland, wetland, etc.);
 - if the property is located in proximity to natural hazardous lands (e.g. steep slopes);
 - if the property is traversed by a watercourse or abuts a watercourse;
 - if the property is located on the shoreline of Georgian Bay, Little Lake, or Orr Lake; or,
 - if the property is located in the flood plain and fill plain.
2. The watershed municipality will discontinue the circulation of consent and minor variance applications to the NVCA if the property is located outside an area identified in #1 above.
 3. Where necessary, the watershed municipality will consult with the NVCA in order to determine if the property is located within the areas identified in #1 above. At the discretion of the watershed municipality, an application may be circulated to the NVCA where the subject property is located outside an area identified in #1 above.
 4. For those applications that meet one of the criteria identified in #1 above, the watershed municipality will collect the \$100 plan review fee on behalf of the NVCA. The \$100 cheque, payable to the NVCA, will be attached to the application. The application and the cheque will then be forwarded to the NVCA. This plan review fee may be amended at the discretion of the NVCA Executive Committee in consultation with the watershed municipalities.

The NVCA

1. The NVCA will provide the watershed municipalities with the necessary information related to natural hazard lands, such as flood plains and fill plains, and natural heritage features, such as wetlands in order to assist municipal staff with the "screening" function.
2. The NVCA will review and provide comment on the circulated applications within the time frame provided for under the Planning Act.
3. The NVCA will review and provide comment on the circulated applications in conformity with the *Provincial Policy Statement* (Revised 1997) under the Planning Act and the *Nottawasaga Valley Watershed Management Plan* (1996) under the provisions of the Conservation Authorities Act, and their successors.
4. The NVCA will participate in pre-submission or "upfront" consultation in order to promote cost effective proactive planning.

Implementation and Transition

This Partnership Agreement will take effect on the date a resolution is passed by the NVCA Executive Committee and the date identified on each resolution passed by the participating municipalities. Staff of the watershed municipalities may consult the NVCA during the early stages of implementation in order to ensure a smooth transition. To promote effective decision making, direct consultation between the watershed municipalities and the NVCA is strongly encouraged.

Partnership Agreement

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Monitoring

This Partnership Agreement will be reviewed on an on-going basis to evaluate its effectiveness. This Agreement may be amended from time to time in order to reflect any changing policies or programs at the provincial, conservation authority, or municipal level. At any time, a watershed municipality or the NVCA (within 30 days notice) may terminate this Agreement in whole or in part by resolution from the municipality or the NVCA Executive Committee. Technical amendments, such as correcting typographical errors or altering language to reduce ambiguity, may be permitted without approval from the municipalities and the Executive Committee.

Insurance



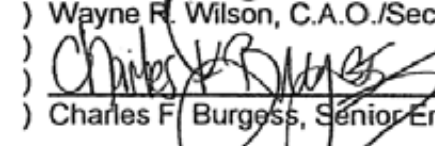
During the entire term of this Agreement, the watershed municipality agrees to obtain and keep in force a general public liability insurance policy that protects the municipality and the employees of the municipality from all claims, demands, actions, causes of actions, that may be taken or made against them or any of them for any loss, damage or injury, including death of any nature or kind whatsoever, that may arise through any act or omission or both, including negligent acts or omissions of the watershed municipality, or any employee or employees of the watershed municipality, or any of them.

Certification

This Partnership Agreement will take effect only by resolution from council or committee of adjustment of the individual watershed municipality and from the NVCA Executive Committee. The resolutions will be attached to this Agreement as Appendix "A". This Agreement will also be certified by way of signatures as follows:

Dated at Angus, this 9th day of June, 2000.

On behalf of the Nottawasaga Valley Conservation Authority

) 
) Harold Parker, Chair
) 
) Wayne R. Wilson, C.A.O./Secretary-Treasurer
) 
) Charles F. Burgess, Senior Environmental Planner

Appendix 3

Oak Ridges Moraine Permit Implementation Guidelines

Oak Ridges Moraine
Nottawasaga Valley Conservation Authority Permit
Implementation Guidelines

November 2003

1. INTRODUCTION

The Oak Ridges Moraine Conservation Plan (ORMCP) provides land-use and resource management planning direction on how to protect the ecological and hydrological features and functions on the Oak Ridges Moraine. Protecting and managing the health, diversity, size and connectivity of Key Natural Heritage Features as well as the hydrologically sensitive features is critical to the ecological and hydrological integrity of the ORM.

All municipalities and agencies must implement the ORMCP through the provincial planning process. Municipalities have the ultimate responsibility to ensure planning applications conform to the ORMCP. The Nottawasaga Valley Conservation Authority (NVCA) will assist municipalities with the review of Natural Heritage Evaluations or Hydrological Evaluations to ensure they meet ORMCP requirements.

Conservation Authorities on the Oak Ridges Moraine (ORM) have also agreed to use their best efforts to implement the ORMCP through the permitting process under their regulations.

This approach was confirmed by NVCA's Executive Committee on June 28, 2002 stating, *"that staff be directed to administer all Conservation Authority permit applications for lands on the Oak Ridges Moraine in conformity with the Oak Ridges Moraine Conservation Plan"*.

Purpose

The purpose of these guidelines is to assist staff in the implementation of the ORMCP through NVCA's permits that are **not** associated with a current Planning Act Application. Any permit that is associated with such an application will benefit from the studies required for the planning application.

2. ORMCP POLICIES

The propose of the Oak Ridges Moraine Conservation Plan is to provide land use and resource management planning direction to provincial ministries and agencies and other stakeholders on how to protect the Moraine's ecological and hydrological features and functions.

The Oak Ridges Moraine Conservation Act (Bill 122) was passed in the Ontario Legislature and received Royal Assent on December 14, 2001. On April 22, 2002 the Oak Ridges Moraine Conservation Plan (ORMCP) was approved and filed as a Minister's regulation O. Reg. 140/02. It is deemed to be in effect as of November 17, 2001. All decisions on planning and development applications under the Planning and Condominium Acts that commenced from that date forward must conform to the ORMCP.

Land Use Designations

The ORMCP has four land use designations. The most restrictive are identified as **Natural Core Area** (NCA) 38% and **Natural Linkage Area** (NLA) - 24%. These areas contain the greatest concentration of natural features and linkages and are characterized as follows.

- Very limited new land uses are permitted

- Development is permitted on vacant existing lots of record that have appropriate zoning
- New lot creation is limited. (The maximum permitted is a cumulative total of one such severance for each rural lot.)

A further 30% of ORM lands are designated as **Countryside Areas** (includes Rural Settlement areas), which are largely identified for agricultural, rural, recreational and resource uses.

- New lots are permitted in the very small rural settlement areas (around Colgan and Tottenham)
- In the remainder of the Countryside Area, again only one severance in total is permitted per rural lot.

The remaining 8% of the ORM lands are designated as **Settlement Areas** and are restricted to existing urban or settlement area boundaries. We do not have any settlement areas within our watershed.

Key Natural Heritage Features and Hydrologically Sensitive Features

(See sections 22. (2) and 26. (2) of the ORMCP for the details)

Generally, no development or site alteration (including lot creation) is permitted within Key Natural Heritage Features and Hydrologically Sensitive Features or their minimum vegetative protection zones (VPZ), except for resource management, flood and erosion control, transportation, utilities and low intensity recreation.

Key natural heritage features include:

- Wetlands
- Significant portions of the habitats of endangered, rare and threatened species.
- Fish Habitat.
- Areas of natural and scientific interest (life science).
- Significant valley lands.
- Significant woodlands.
- Significant wildlife habitat.
- Sand barrens, savannahs and tallgrass prairies.

Hydrologically sensitive features include:

- Permanent and intermittent streams
- Wetlands
- Kettle Lakes
- Seepage areas and springs

Development is defined in the ORMCP as: “means the creation of a new lot, a change in land use, or the construction of buildings and structures, any of which require approval under the Planning Act, the Environmental Assessment Act, or the Drainage Act, but does not include,

a) the construction of facilities for transportation, infrastructure and utilities as described in section 41, by a public body, or

b) for greater certainty,

- 1. the reconstruction, repair or maintenance of a drain approved under the Drainage Act and in existence on November 15, 2001, or*

2. *the carrying out of agricultural practices on land that was being used for agricultural uses on November 15, 2001*

Site Alteration is defined in the ORMCP as: “means activities such as filling, grading, and excavation that would change the landform and natural vegetative characteristics of the land but does not include,

a) *the construction of facilities for transportation, infrastructure and utilities as described in section 41, by a public body, or*

b) *for greater certainty,*

1) *the reconstruction, repair or maintenance of a drain approved under the Drainage Act and in existence on November 15, 2001, or*

2) *the carrying out of agricultural practices on land that was being used for agricultural uses on November 15, 2001*

Previously authorized single dwellings (Section 7)

The ORMCP “grandfathers” development on an existing lot of record that is properly zoned to permit the use, erection, or location of a single dwelling provided ***“the applicant demonstrates, to the extent possible, that the use, erection and location will not adversely affect the ecological integrity of the Plan Area”***.

The following Key Natural Heritage Features and Hydrologically Sensitive Features have been identified and mapped by the province: wetlands, ANSIs (life science), general location of RTEs, significant woodlands and kettle lakes and permanent and intermittent streams. Staff can locate this information on our server under Planning.

Any Planning Act application or NVCA permit application for development or site alteration will require an assessment to determine if there are any known key Natural Heritage Features and Hydrologically Sensitive Features on the site. No development or site alteration will be permitted within those areas or their minimum vegetative protection zones

Applications within a "minimum area of influence" (AOI) (usually 120m) for Key Natural Heritage or Hydrologically Sensitive Features will require a natural heritage evaluation (NHE) or hydrological evaluation (see section 23 and 26. (4) for the requirements).

Connectivity (see section 20)

To support connectivity, planning and permits applications must ensure that:

“Every application for development or site alteration shall identify planning, design and construction practices that ensure no building or other site alterations impede the movement of plants and animals among key natural heritage features, hydrologically sensitive features and adjacent land within the Natural Core Areas and Natural Linkage Areas.

Landform Conservation Areas (section 30 for the details)

To protect the landform character and function of the moraine, two categories of landform conservation areas have been identified and mapped. These areas are to be protected through site plans, development strategies and evaluations for earth science ANSIs

An application for development or site alteration with respect to lands in conservation area (category 1) shall identify planning, design, and construction practices that will keep disturbance to landform character to a minimum, including,

- a) maintaining significant landform features such as steep slopes, kames, kettles, ravines, and ridges in their natural undisturbed form;*
- b) limiting the portion of the net developable area of the site that is disturbed to not more than 25% of the total area of the site; and*
- c) limiting the portion of the net developable area of the site that has impervious surfaces to not more than 15 percent of the total area of the site.*

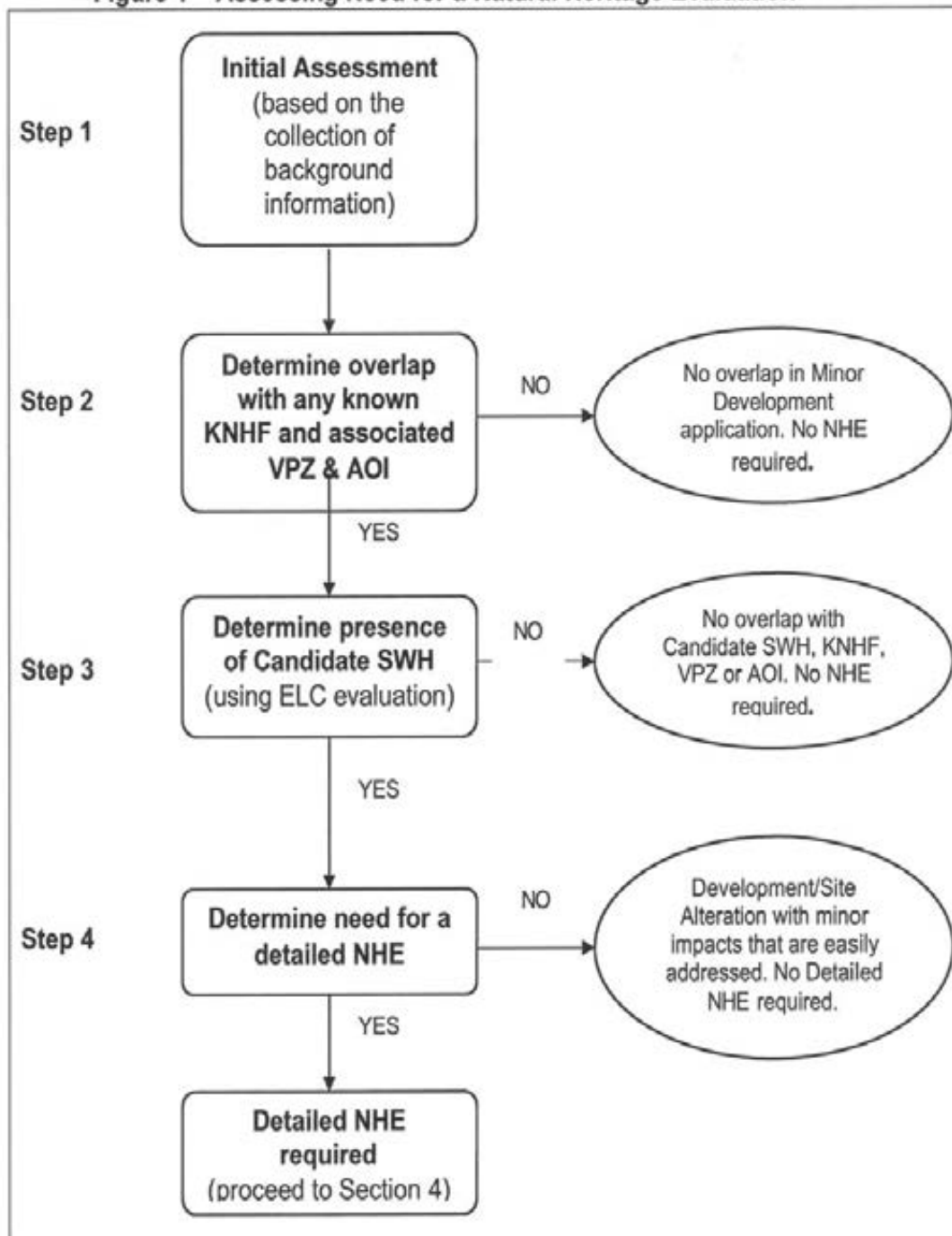
An application for development or site alteration with respect to lands in conservation area (category 2) shall identify planning, design, and construction practices that will keep disturbance to landform character to a minimum, including,

- a) maintaining significant landform features such as steep slopes, kames, kettles, ravines, and ridges in their natural undisturbed form;*
- b) limiting the portion of the net developable area of the site that is disturbed to not more than 50% of the total area of the site; and*
- c) limiting the portion of the net developable area of the site that has impervious surfaces to not more than 20 percent of the total area of the site.*

3) SUMMARY OF NVCA PERMIT IMPLICATIONS

- a) As a result of the above, any application for a permit within the ORM must assess the need for a Natural Heritage Evaluation. The following figure outlines that process. (See the ORM technical paper # 8 on Natural Heritage Evaluations for the details)
- b) An application for a permit within the minimum area of influence of a hydrologically sensitive feature shall be accompanied by a hydrological evaluation (see section 26.4)
- c) Wildlife corridors or “connectivity” must be maintained within the Natural Core and Linkage areas according to Section 20 requirements.
- d) The disturbances to Landform Conservation Areas (Category 1&2) shall be minimized according to section 30 requirements.

Figure 1 – Assessing Need for a Natural Heritage Evaluation



Appendix 4

Conservation Land Protection and Acquisition Policy

THE NOTTAWASAGA VALLEY CONSERVATION AUTHORITY

CONSERVATION LAND

PROTECTION

AND

ACQUISITION

POLICY

Through Ontario's

Land Use Planning

Process

May 2002

Nottawasaga Valley Conservation Authority
366 Mill Street, ANGUS, Ontario, L0M 1B0
Voice: 705.424.1479; Fax: 705.424.2115
Web: www.nvca.on.ca

CONSERVATION LAND PROTECTION AND ACQUISITION POLICY
Through Ontario's Land Use Planning Process

1.0 INTRODUCTION

The planning and engineering programs of the Nottawasaga Valley Conservation Authority (NVCA) process approximately 1,000 applications yearly related to planning and development. These applications range from policy oriented documents such as Official Plans and Secondary Plans to spot zonings to subdivision of land proposals including plans of subdivision and consents. Through Ontario's land use planning process which is legislated under the Planning Act, the NVCA reviews and provides comments on these applications from an environmental perspective. The review and comments are provided in conformity with the matters of provincial interest and the provincial policy statements in accordance with section 2 and subsection 3(6) of the Act respectively.

Often, the NVCA will identify through the planning process the various areas of environmental constraint and significance (conservation lands) associated with a given property. These environmental lands include areas susceptible to flooding or erosion (constraint lands) or ecological areas such as wetlands, woodlands, and fish habitat (significant lands). For the most part, constraint and significant lands are not suitable for development and, as such, are earmarked for protection. This is certainly the case in large-scale land development proposals such as plans of subdivision where significant blocks of land could be constrained and deemed undevelopable.

It is frequent, in these cases, that the developer is willing to donate the undevelopable lands to the municipality or the conservation authority for their protection in the long term or perpetuity. The NVCA supports the long term protection and public ownership of these conservation lands and, as a result, this Policy has been established to provide an appropriate framework for their acquisition.

2.0 Background

The watershed within the Nottawasaga Valley is abundant with significant natural landscapes and features. For example, the Niagara Escarpment, a world biosphere, is located in the western part of the watershed while the Oak Ridges and the Oro Moraines form part of the southern and eastern boundaries of the NVCA's jurisdiction respectively. Significant natural heritage features include the internationally significant Minesing Swamp and the Pinery, an old growth forest in the Town of New Tecumseth. These significant landform and natural heritage features together with constraint lands such as areas susceptible to flooding and other features would be classified as "conservation lands" for the purposes of this Policy.

3.0 Purpose

The purpose of the Conservation Land Protection and Acquisition Policy (CLPAP) is to establish a framework to guide staff of the NVCA with a basis for identifying conservation lands for protection and for pursuing certain lands for acquisition through the land use planning process. In particular, the purpose of this Policy is to:

- ⇒ Help secure significant conservation lands within the watershed in perpetuity
- ⇒ Increase the public ownership of conservation lands in the watershed
- ⇒ Foster relationships with conservation organizations for land securement
- ⇒ Augment the conservation land base in the watershed for research and analysis
- ⇒ Communicate the importance of conservation land protection and acquisition

4.0 Legislative Basis

The mandate and objective of the Nottawasaga Valley Conservation Authority (NVCA) is legislated under Section 20 of the Conservation Authorities Act. Section 20 of the Act states that the objective of a conservation authority is to establish and undertake a program designed to further the conservation, restoration, development, and management of natural resources.

The powers of the conservation authority, under Section 21 of the Act, further allow a conservation authority to study the watershed in order to conserve, restore, develop, and manage natural resources. The NVCA in exercising this power approved its visionary and guiding document in 1996, the *Nottawasaga Valley Watershed Management Plan*. The goal of this *Plan* is to conserve natural resources within our watershed in a cooperative, integrated manner in which the human needs are met in balance with the need to sustain the natural environment.

The objective of the “Public Conservation Lands Management” section of the Watershed Management Plan states that the acquisition of high priority conservation lands should be promoted. This Policy helps fulfill this objective.

Subsection 21(1)(c) of the Conservation Authorities Act further identifies that the conservation authority has the power to acquire by purchase, lease or otherwise any lands it may require. This Conservation Land Protection and Acquisition Policy exercises this power under the Act.

The Conservation Land Act provides conservation authorities with the power to require conservation easements on private land and to place restrictive covenants registered against the title of the lands. The requirement of the NVCA to exercise these powers will be in conformity with this Act.

In addition, this Policy will complement the NVCA “Land Acquisition Policy” (2000) which is currently administered by the Land Management & Stewardship Services Program.

Conservation Land Protection and Acquisition Policy**Page 3****5.0 Policy****Acquisition**

Through the land use planning process, the NVCA will pursue the acquisition of conservation lands eligible for the Conservation Land Tax Incentive Program (CLTIP). These lands, which will not result in an increased tax burden to the NVCA, will include:

-  Provincially significant wetlands
-  Provincially significant ANSI
-  Niagara Escarpment lands (Escarpment Natural Areas designation)
-  Habitat of endangered species
-  Community conservation lands

The acquisition of these lands through the land development process will occur as a condition of development (e.g. condition of draft plan approval) and through fair and equitable negotiations.

Other conservation lands may be acquired at the discretion and approval of the NVCA Full Authority. These lands could include significant woodlands which would be eligible for the Managed Forest Tax Incentive Program (MFTIP) or other lands that would further the goals and objectives of the Watershed Management Plan.

Protection

When reviewing land use proposals, the NVCA may require the establishment of conservation easements under the Conservation Land Act on private property for those lands not qualifying for acquisition. The conservation easement will be in favour of the NVCA and will be policed by staff. Other land use protection controls such as zoning will be used where possible.

6.0 Implementation

This Policy will be implemented through the land use planning program of the NVCA. The acquisition and protection of conservation lands will be undertaken through proper negotiation with the developer and municipality. This Policy will not be applied where a local municipality has a conservation land acquisition policy in effect (e.g. City of Barrie). Where possible, this Policy will be implemented through effective integration with regional (County) and local Official Plans.

In addition, this Policy will be implemented through the NVCA's permit approval process under Section 28 of the Conservation Authorities Act.

Conservation Land Protection and Acquisition Policy

Page 4

7.0 MONITORING

The Conservation Land Protection and Acquisition Policy will be reviewed on an on-going basis to evaluate its effectiveness. This Policy may be amended from time to time in order to reflect changing legislation, regulations, and policies at the federal, provincial, and municipal level. Amendments to this Policy may also occur as a result of changing programs and procedures at the Nottawasaga Valley Conservation Authority. Significant changes to this Policy will only occur through the normal policy formulation process, which includes ultimate approval from the Full NVCA Membership. Minor technical amendments (e.g. correcting ambiguous language) may be permitted at the NVCA staff level without the approval of the Committees and the Full NVCA Membership. A staff report, however, will be presented to the Executive Committee for their information with regard to any minor technical amendments.

8.0 APPROVAL

This Policy came into effect by resolution on May 10, 2002.

Chief Administrative Officer

Wayne R. Wilson

Growth and Development Advisory Committee

Barry Ward, Chair

Full Authority

Harold M. Parker, Chair

Appendix 5

Pond Policy

MARCH 2005

PONDS POLICY

(MARCH 2002, amended *MARCH 2005*)

1.0 INTRODUCTION

1.1 Environmental Significance of Ponds

Ponds, whether natural or artificial, have many functions. Natural ponds can provide important habitat for aquatic life and wildlife such as fish while artificial ponds can provide water for agriculture-related uses including livestock and irrigation. Ponds are also created to manage storm water as a result of urbanization and development. Despite their type and function, ponds can have both a positive and negative impact on our environment and ecosystem.

Ponds play an important role in the hydrologic cycle, providing a location for the storage and control of water. Wildlife, both terrestrial and aquatic, require water for their existence. Ponds provide a safe and plentiful supply of water for local species.

It has also been determined that ponds may have detrimental impacts on environmental features. Studies have revealed that the development of ponds can affect the water levels of groundwater, erosion and the transport and deposition of sediment within a stream system. The later changes can affect the watercourses ability to convey flows during times of flooding.

When an existing watercourse is blocked by an artificial dam or natural structure (i.e. beaver dam, log jam), there are associated negative impacts on the ecosystem which include flooding, impediment to fish migration, thermal impacts and decreased water quality and modifications to aquatic species which are influenced by changing velocities, water levels and habitats.

1.2 Cultural Significance of Ponds

In certain locations, artificial or on-line ponds have existed for many years. In some cases, communities or settlement areas have been created around or near ponds. To some degree, the pond was identified as the focal point of the community. Historically, ponds were used as a source of power for mills and as power sources for small operations. Ponds have also been created for recreational purposes. These ponds are valued by the community and are of historic significance to the local people. There are a number of examples of culturally significant ponds within the NVCA watershed, they include the Lake of the Clouds in the Town of the Blue Mountains, the New Lowell pond in the Township of Clearview, the Utopia pond in the Township of Essa, the Tottenham pond in the Town of New Tecumseth and the mill ponds in the Community of Hornings Mills, Township of Melancthon are examples of culturally significant ponds. In many cases, removal of the pond would have some form of negative impact on the area from a cultural, social or environmental perspective.

The NVCA has regard for the cultural significance of ponds throughout the watershed region.

1.3 Economic Significance of Ponds

Ponds are also of economic benefit to the community and the individual property owner. Economic benefits to a community could include the provision of water for livestock watering and

irrigation purposes, fire protection, generated power, flood attenuation, recreational and social opportunities. It is also recognized that the value and associated marketability of a property may be greater with the existence of a pond. This value is based on the aesthetic, recreational, and associated social factors of the pond.

2.0 PURPOSE

Increasing development pressures are being experienced throughout the jurisdiction of the Nottawasaga Valley Conservation Authority. These development pressures include an increase in the number of proposals for the construction of new ponds and the modification of existing ponds.

Recognizing that ponds have an impact on our watershed, it is imperative to manage and monitor their effects on a cumulative basis over time. In evaluating the impacts of ponds over time, we can determine and identify their negative impacts. Once determined, the negative impacts of ponds can be eliminated or reduced through the establishment of improved policy, regulations, and standards for pond development and redevelopment. The NVCA's Healthy Waters Program considers the impact of ponds on the health of area watercourses. This is an ongoing monitoring project of the NVCA.

The purpose of this policy is to establish a framework that will:

- Protect water resources;
- Direct pond development away from environmentally significant areas;
- Prevent flooding hazards through proper pond design and redesign;
- *Promote the proper design, operation and maintenance of ponds*
- Monitor the effects of ponds in the watershed on a cumulative basis;
- Promote the consistent review of applications for pond development;
- Communicate and educate the general public on proper pond development;
- Clarify the landowners responsibility regarding pond maintenance and restoration; in order to ensure human safety and protect properties located downstream of a pond; and
- Establish a policy framework for the re-establishment of on-line ponds.

3.0 Property Owner's Responsibilities

Property owners considering the construction of a pond on their property should be aware of their legal responsibilities:

- To obtain all necessary approvals for the construction of the pond and for any subsequent modifications to the structure;
- A dam constructed in association with a pond must be managed from the time that it is built until it is decommissioned. Dam owners are liable for the water stored behind a dam and any damages caused by it. Therefore, the proper operation, maintenance, repair and rehabilitation of a dam are essential in preventing the failure of the structure.

To ensure the proper operation and maintenance of a dam, it is recommended that periodic inspections of all dams be undertaken. Since most landowners do not possess the expertise to undertake these works, it is recommended that a dam owner hire a qualified engineer to

prepare detailed construction designs for new structures, undertake inspections and to evaluate and supervise any necessary corrective measures which may be required.

It is not intent of this policy to oversee the safe operation and maintenance of dams, which are associated with a pond. This is the sole responsibility of the property owner. In this regard, it is recommended that property owners consult the Canadian Dam Association:

The Canadian Dam Association
P.O. Box 4490
South Edmonton Postal Station
Edmonton, Alberta.
T6E 4X7
Telephone (780) 432-7236

4.0 LEGISLATIVE, REGULATORY, AND POLICY BASIS

4.1 Legislative Basis

The mandate and objective of the Nottawasaga Valley Conservation Authority (NVCA) is legislated under Section 20 of the Conservation Authorities Act. Section 20 of the Act states that the objective of a conservation authority is to establish and undertake a program designed to further the conservation, restoration, development, and management of natural resources.

The powers of the conservation authority, under Section 21 of the Act, further allow a conservation authority to study the watershed in order to conserve, restore, develop, and manage natural resources. The NVCA in exercising this power approved its visionary and guiding document in 1996, the *Nottawasaga Valley Watershed Management Plan*. The goal of this *Plan* is to conserve natural resources within our watershed in a cooperative, integrated manner in which the human needs are met in balance with the need to sustain the natural environment.

4.2 Regulatory Basis

4.2.1 Nottawasaga Valley Conservation Authority Fill, Construction and Alteration to Waterways Regulation (Ontario Regulation 164 R.R.O. 1990)

Section 28 of the Conservation Authorities Act allows for the establishment of regulations. This Section of the Act provides a framework in which the NVCA can regulate various works within scheduled and regulated areas, through a permitting process.

Pursuant to Section 28 of the Conservation Authorities Act, the Nottawasaga Valley Conservation Authority, through an Order in Council has established a Fill, Construction and Alteration to Waterways Regulation (Ontario Regulation 164 R.R.O. 1990).

In accordance with Ontario Regulation 164 R.R.O. 1990, permission is required from the NVCA for:

- Undertaking any construction activity in or on a pond or swamp or in any area susceptible to flooding during a regional storm;

- Placing or dumping of fill or the alteration of existing grades either permanently or temporarily; and
- Straightening, changing, diverting or interfering with the existing channel of a river creek, stream, watercourse or wetland.

A permit is also required from the NVCA, to undertake work on an existing pond.

4.2.2 Areas Not Subject to the Nottawasaga Valley Conservation Authority Fill, Construction and Alteration to Waterways Regulation (Ontario Regulation 164 R.R.O. 1990)

For areas of the NVCA watershed, which are not subject to the Authority's Fill, Construction and Alteration to Waterways Regulation, a letter of authorization will be issued for the construction of new offline or dugout ponds or modifications to existing offline or dugout ponds.

4.2.3 Procedure to Obtain Permission to Construct a New Pond or Undertake Work on an Existing Pond

Prior to the commencement of any work, an application for **Permission to Undertake Work** must be submitted to the Nottawasaga Valley Conservation Authority, and the landowner must be in receipt of a permit from the NVCA.

Applications for **Permission to Undertake Work** must be accompanied by details of the proposed work. Applications are available from the administrative office for the Nottawasaga Valley Conservation Authority, or they can be downloaded from the NVCA website (www.nvca.on.ca).

4.2.4 Pending Changes in the Nottawasaga Valley Conservation Authority's Fill, Construction and Alteration to Waterways

Recent provincial initiatives to streamline the regulatory framework will result in changes to Section 28 Regulations, made pursuant to the Conservation Authorities Act. Traditionally, Section 28 Regulations described regulated activities in terms of fill, construction and alteration to waterways. These regulated activities will be phrased in terms of development and interference with wetlands and watercourses. The new regulation to be adopted by all Conservation Authorities will be generic in nature.

4.3 Other Applicable Legislation

Approval of an application to construct a pond or make repairs to an existing structure by the Nottawasaga Valley Conservation Authority does not exempt an applicant from any other approvals required by legislation administered by other agencies.

Agencies that may have parallel jurisdiction include:

Level of Regulatory Approval:	Agency:	Legislation:	Type of Work:
Federal	Department of Fisheries and Oceans Canada	<u>Fisheries Act</u>	<ul style="list-style-type: none"> • Work within a watercourse that would have an impact on the movement of fish or • Work in or adjacent to a watercourse which would result in the alteration of fish habitat
Federal	Canada Coast Guard/Transport Canada	<u>Navigable Waters Protection Act</u>	<ul style="list-style-type: none"> • Decommissioning of on-line ponds and dams on navigable waterways
Provincial	Ministry of Natural Resources	<u>Lakes and Rivers Improvement Act</u>	<ul style="list-style-type: none"> • Work Permit -- Dams (includes the construction, reconstruction, repair, decommissioning or removal); • Construct or repair of ponds (by-pass ponds, instream ponds);
Provincial	Ministry of Natural Resources	<u>Aggregate Resources Act</u>	<ul style="list-style-type: none"> • Rehabilitation Plan
Provincial	Ministry of the Environment	<u>Ontario Water Resources Act</u>	<ul style="list-style-type: none"> • Permit to Take Water – Regulates water taking operations (>50,000 litres per day) from watercourses and groundwater sources. Ponds taking 50,000 litres of water or more per day must obtain a Permit to Take Water.
Provincial	Ministry of the Environment	<u>Environmental Protection Act</u>	<ul style="list-style-type: none"> • Certificate of Approval --Prohibits the discharge of contaminants (including sediment) into the environment in excess of regulatory established limits.
Provincial	Ministry of the Environment	<u>Ontario Water Resources Act</u>	<ul style="list-style-type: none"> • Certificate of Approval – for the application of chemicals to a pond
Provincial	Niagara Escarpment Commission	<u>Niagara Escarpment Planning and Development Act</u>	<ul style="list-style-type: none"> • Development Permit
Provincial	Ministry of Municipal Affairs and Housing	<u>Oak Ridges Moraine Conservation Act</u>	<ul style="list-style-type: none"> • Legislation developed at provincial level • Municipalities must ensure planning applications conform to the ORMCP <p>The NVCA administers all applications for lands on the Oak Ridges Moraine in conformity with the ORMCP</p>
Local	Municipality	<u>Oak Ridges Moraine Conservation Plan (ORMCP)</u>	
Local	Municipality	<u>Municipal Act</u>	
			<ul style="list-style-type: none"> • Grading and Site Alteration By-law, etc.

The federal government of Canada, through the Department of Fisheries and Oceans (DFO), has the constitutional responsibility for seacoast and inland fisheries and the habitats supporting them. Several provisions of the federal Fisheries Act provide for the conservation and protection of fish habitat. In particular, Section 35(1) of the Act prohibits the harmful disruption or destruction of fish habitat (referred to as a HADD) in Canadian Fisheries Waters, unless authorized by the Minister of Fisheries and Oceans. This authorization usually occurs with appropriate terms and conditions.

The Nottawasaga Valley Conservation has a Level II Agreement with the Department of Fisheries and Oceans Canada, to review applications and determine if the proposed work will have an impact on fish or fisheries habitat. Applications for the construction of a new pond or work on an existing pond which would result in the harmful alteration, disruption or destruction of fisheries habitat (HADD) will be forwarded to the Department of Fisheries and Oceans for their review under Section 35 of the federal Fisheries Act.

4.3.1 Circulation and Consultation with Other Agencies

The Nottawasaga Valley Conservation Authority will consult with other agencies as needed to ensure integration with the mandates of the other agencies.

4.4 Policy Basis

By resolution dated March 10, 2000, the Full Membership of the NVCA directed staff of the Land Use Planning program to implement the Natural Hazard land policies (3.1) of the *Provincial Policy Statement* (PPS), which was issued in 1997 under the Planning Act. The resolution also identified that the Natural Hazards Training Manual (January 1997) should also be used when processing planning, development, or site alteration applications. While it is recognized that the PPS typically applies to land use planning applications under the Planning Act, the NVCA believes that provincial policy should be applied or considered for all proposals, regardless of application type or origin. This approach, we believe, is in keeping with the provincial interest and the broader public interest.

Other applicable policies under the *Provincial Policy Statement* include the Natural Heritage policies (2.3) and the Water Quality and Quantity policies (2.4).

5.0 POLICY

5.1 New Ponds

5.1.1 General Development Policies

When reviewing applications for new ponds, the following policies shall apply:

- The proposed benefits of the pond must outweigh the detrimental effects;
- Other municipal, provincial, and federal interests must be considered;
- Aspects of common law drainage and riparian rights must be considered;
- The need for the pond must be fully justified and rationalized;
- Large unlined ponds to be used solely for aesthetic purposes shall be discouraged;
- Safety measures should meet current engineering standards for ponds and dams in Ontario;
- Ponds for the sole purpose of fill requirements will be strongly discouraged.

- The source of water for ponds shall not be fed through dug or drilled wells

5.1.2 Prohibitive Policies

New ponds will be prohibited in the following areas:

- Within the existing channel of a watercourse (in-stream pond or on-line pond);
- Within significant fish habitat;
- Within provincially significant and all classified (Class 4-7) wetlands;
- Within the erosion hazard limit;
- Within the floodway of a river or stream system;
- Within the meander belt of river and stream systems;
- Within key natural heritage areas or hydrologically sensitive areas as identified in the Oak Ridges Moraine Conservation Plan or other applicable technical studies i.e. South Simcoe Groundwater Study.

5.1.3 Restrictive Policies

In general, new ponds will be directed away from the following:

- All other wetlands;
- Significant valley lands;
- Significant habitat of threatened and endangered species;
- Significant woodlands;
- Significant wildlife areas;
- Significant areas of natural and scientific interest (ANSI);
- Significant riparian areas (the area within 30 metres from a watercourse);
- Significant recharge/discharge, and headwater areas;
- Environmentally significant areas (ESA);
- Other natural heritage features identified through subwatershed plans, etc;
- Natural hazard lands such as steep slopes and flood prone lands;
- Existing structures, sewage disposal systems, and point sources of pollution.

Ponds may be permitted in the areas identified under Section 5.1.3, provided that it can be demonstrated that ***there will be no negative impact on:***

- Natural heritage features;
- The function of the natural heritage feature;
- The function of the flood prone area;
- The quality and quantity of ground water;
- The quality and quantity of surface water; and
- Riparian rights of other landowners.

It is the responsibility of an applicant to demonstrate that “no negative impact” would result from the proposed work. Following a preliminary review of an application by staff of the Nottawasaga Valley Conservation Authority, the applicant will be advised which of the following studies and reports would be required to demonstrate their proposal will have no negative impact:

- An Environmental Impact Study;

- A Flood Plain Analysis;
- A Soils Report or Slope Stability Analysis;
- A Hydrogeologic Report;
- A fluvial geomorphology study;
- A professional engineered design;
- Or other reports deemed necessary by staff of the NVCA.

The costs associated with the preparation of the necessary studies and reports shall be the responsibility of the applicant.

All studies and reports must be prepared and certified by a qualified professional to the satisfaction of the NVCA.

In general, by-pass ponds shall be discouraged. However, by-pass ponds may be permitted if it can be demonstrated that there will be no negative impact and that there will be an overall environmental benefit resulting from the work.

5.2 Existing Ponds

5.2.1 General Redevelopment Policies

The issuance of a permit under the Conservation Authorities Act for the expansion or maintenance of an existing pond will be subject to the following general policies:

- The proposed benefits of the works must outweigh the detrimental effects;
- Other municipal, provincial, and federal interests must be considered;
- Aspects of common law drainage and riparian rights must be considered; and
- Structurally unsafe ponds will be redesigned to current safe standards.

The Nottawasaga Valley Conservation Authority shall strongly discourage landowners, who wish to expand an existing on-line pond.

5.2.2 On-Line Ponds that Fail

Existing ponds that fail may be permitted to be re-instated provided a permit is obtained from the NVCA as well as all other appropriate agencies which are listed in Section 4.3 of this policy.

Technical engineering and environmental studies may be required to demonstrate that the proposed works on the pond are in accordance with the NVCA's General Redevelopment Policies listed in Section 5.1.1 of this Policy, prior to the issuance of a permit under the Conservation Authorities Act.

5.2.3 Provision for Emergency Repairs

There is a consideration for a landowner to undertake temporary emergency repairs to a pond that fails in order to prevent further damage. The property owner is responsible for contacting the Nottawasaga Valley Conservation Authority as well as all other appropriate approval agencies as soon as the failure of a pond is observed. If the landowner is unable to contact the agencies listed above due to the time of day or because this agency is closed, the landowner shall contact these agencies on the next business day to report the failure.

5.2.4 Environmental Restoration

Where possible, the following restoration techniques will be implemented through the permit approval process and through the land use planning process as a condition of approval or as a prerequisite to development:

- The planting of trees on the subject property or in the same catchment area;
- The stabilization of the existing stream bank through bioengineering and engineering methods;
- The removal of fish barriers to create fish passage;
- The redesign of the existing pond to improve the aquatic ecosystem;
- The installation of bottom draw outlet structures to reduce thermal impacts; and
- The conversion of existing on-line ponds into off-line ponds.

5.3 Pond Maintenance

It is the responsibility of the landowner to maintain their ponds in accordance with all appropriate legislation and the soon to be approved Canadian Dam Safety Standards. A permit from the NVCA is required for any in-water works such as dredging or dam repairs.

6.0 IMPLEMENTATION

The *Ponds Policy* will be primarily implemented through the NVCA's land use planning program. As a result, this Policy will be applied to any land use planning proposal under the Planning Act, such as site plan and subdivision applications. The NVCA shall encourage its member municipalities to incorporate this policy into municipal planning documents such as Official Plans and implementing Zoning By-Laws.

This Policy will also be implemented, as part of the planning program, through the provisions (Sections 20, 21) and regulations (Section 28) under the Conservation Authorities Act. The NVCA's permit approval process is integral to the success of implementing this Policy.

Through the implementation and administration of site alteration and fill by-laws under the Municipal Act, the NVCA assists its member municipalities such as the Townships of Melancthon and Clearview with the implementation of these by-laws and the construction of ponds as designated officers. Municipal fill by-laws complement the work of the NVCA's Ponds Policy in that the construction of a pond and the expansion of an existing pond involve the alteration of existing grades.

Other program areas within the NVCA, such as "Healthy Waters Program", will also have regard to this Policy when implementing their projects.

7.0 INTERPRETATION

Dam

A structure constructed as a barrier across a river, lake, pond or stream or areas subject to flow which originate from either surface or subsurface flows, high water areas to hold back water in order to raise its level, create a reservoir or divert the flow of water.

Environmentally Significant Areas (ESA)

ESA will be defined by the Nottawasaga Valley Conservation Authority and other stakeholders through a public consultative process. Significant areas are ecologically important in terms of their features, function, representation or amount and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. Criteria for determining significance may be recommended by the Province and the local municipality.

Erosion Hazard Limit

Erosion hazards mean the loss of land, due to human or natural processes, that pose a threat to life and property. The Erosion Hazard Limit is determined using the 100-year erosion rate (the average annual rate of recession extended over a hundred year time span) and includes toe erosion, slope stability and access during emergencies. The erosion hazard limit will depend on whether the watercourse flows through a well defined valley system and is confined within a valley corridor or whether it flows through landscapes that are relatively flat, and is not confined or bounded by valley walls.

Floodway

Floodway is defined as the channel of a watercourse and that inner portion of the floodplain where flood depths and velocities are generally higher than those experienced in the flood fringe. The floodway represents that area required for the safe passage of flood flows and 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.

High Water Mark

Defined as the mark made by the action of water under natural conditions on the shore or bank of a body of water, which action has been so common and usual and so long continued that it has created a difference between the character of the vegetation or soil on one side of the mark and the character of the vegetation or soil on the other side of the mark.

Negative Impact (natural heritage features)

Negative Impact is defined as the loss of a natural heritage feature, its ecological function.

Negative Impact (flood prone area)

Negative Impact is defined as an unacceptable effect on the hydraulics of the flood plain and on the function of the flood plain.

Negative Impact (fluvial geomorphology)

Negative Impact is defined as an unacceptable effect on the fluvial geomorphology of a watercourse

Negative Impact (surface water and ground water)

Negative Impact is defined as an unacceptable effect on the quality and quantity of surface and ground water, as determined by parameters and standards established by the NVCA and/or the Ministry of Environment.

Other Municipal, Provincial, Federal Interests

These interests, among other matters, may refer to municipal Official Plans and Zoning By-Laws, under the Planning Act, provincial legislation such as the Lakes and Rivers Improvement Act, and the federal Fisheries Act.

Pond, By-Pass

Bypass ponds are located outside the channel of a watercourse and are created by diverting some of the flow of water from a watercourse into an adjacent pond. The outlet from these ponds usually returns water from the pond to the watercourse.

Pond, Off-Line or Isolated Pond

An off-line is located outside, or beyond, the channel of a watercourse, where the boundary of the watercourse is defined as the high water mark, as defined by the NVCA.

Pond, On-Line

An on-line pond is created within the defined channel of a watercourse by way of a dam or other man-made means.

Subsequent Legislation:

Where an Act, its regulations, policies, or Plans have been referred to in this Policy, such references shall be interpreted to include any subsequent changes that may replace or revise the applicable legislation, regulation, policy, or Plan.

Significant Natural Heritage Features

“Significant” natural heritage features, such as wetlands and woodlands, may be defined by the Ministry of Natural Resources, the Counties of Dufferin, Grey, Simcoe, any local municipality, and the NVCA.

Significant Riparian Areas

These areas are generally defined as the lands (wet or dry) within 30 metres of the high water mark of perennial watercourses. Significant riparian areas include intermittent streams, such as those originating on the Niagara Escarpment or those which are associated with wetlands.

Watercourse

A watercourse is flowing water, though not necessarily continuous, within a defined channel and with a bed or banks and usually discharges itself into some other watercourse or body of water.

Wetland

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 favored 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) and (d).

8.0 MONITORING

8.1 Policy

The ***Ponds Policy*** will be reviewed on an on-going basis to evaluate its effectiveness. This Policy may be amended from time to time in order to reflect changing legislation, regulations, and policies at the federal, provincial, and municipal level. Amendments to this Policy may also occur as a result of changing programs and procedures at the Nottawasaga Valley Conservation Authority. Significant changes to this Policy will only occur through the normal policy formulation process, which includes ultimate approval from the Planning Advisory Committee, the Executive Committee and the Full NVCA Membership. Minor technical amendments (e.g. correcting ambiguous language) may be permitted at the NVCA staff level without the approval of the Committees and the Full NVCA Membership.

Significant amendments to this policy will provide for an opportunity for comments from the NVCA's member municipalities and the public.

8.2 Cumulative Impact Assessment of Pond Development

The impacts of pond development will be managed and monitored on a cumulative basis over time, on a watershed basis. The generation of baseline data over time may result in subsequent changes to this Policy.

9.0 DISCLAIMER

- Ponds represent water hazards, which require ongoing inspection and maintenance. Property owners are liable for the proper operation, maintenance, repair and rehabilitation of ponds/dams.
- The Nottawasaga Valley Conservation Authority, its officers and employees disclaim any liability, which may result from structural failure, accidental drowning, and property damage or otherwise associated with the development of a pond within the NVCA watershed.

10.0 APPROVAL

This Policy came into effect by resolution on **March 8, 2002**.

This Policy was amended by resolution on **May 13, 2005**.

Chief Administrative Officer/Secretary-Treasurer
Wayne R. Wilson

Planning Advisory Committee
Lynn Dollin, Chair

Full Authority
Chris Carrier, Chair

Appendix 6

Environmental Impact Study

ENVIRONMENTAL IMPACT STUDY

The scope of an Environmental Impact Study (EIS) should be adjusted according to the nature/ sensitivity of the subject area and the type of work being proposed. The EIS may include:

1. Overview of the natural features and functions that may be impacted by the proposal. This could include, but not be limited to:
 - Valley Lands;
 - Environmentally Significant Areas (ESA's);
 - Areas of Natural and Scientific Interest (ANSI's);
 - Significant Habitat of endangered, threatened, and species of concern;
 - Woodlands;
 - Fisheries habitat;
 - Significant Wildlife habitat;
 - Cumulative impacts;
 - Hydrologic Setting
 - Groundwater recharge, discharge, quality, and quantity, including flow paths and contributions
 - Surface water quality and quantity, including flow paths and seasonal contributions
2. Detailed description of the natural environment and the development proposal, including a biophysical, hydrologic, and hydrogeologic inventory and analysis;
3. Detailed description of the development proposal;
4. Assessment of the potential impacts of the proposed development on the natural features and functions,
5. Cumulative impacts assessment, and
6. Analysis of the available techniques to avoid impacts, mitigation measures and their effectiveness to eliminate or reduce the potential impacts of development on natural area features and functions.

Appendix 7

Two-Zone and Special Policy Areas Floodplain Management Approaches

TWO ZONE AND SPECIAL POLICY AREAS FLOODPLAIN MANAGEMENT APPROACHES

The province has adopted standards for addressing flood plain management. The regulatory flood standard is the Hurricane Hazel (1954) standard for the south and central part of the province, the Timmins Storm (1961) for the central and northern part of the province and the 100 year flood for the eastern part of the province (see Figure B-1, Technical Guide River and Stream Systems: Flood Hazard Limit" (OMNR 2002)). These standards may be increased by the Minister of Natural Resources if a known flood (maximum observed) exceeds these criteria.

The basic planning approach is to prevent new development that would be flood susceptible, from locating in flood prone areas (one zone).

TWO ZONE APPROACH

For areas adjacent to existing urban or built-up areas, where it can be proven by a municipality that the one zone is too stringent and adversely impacts the economic viability of the municipality, selective application of a "two-zone" concept may be considered. The Regional Engineer of the Ministry of Natural Resources shall be contacted for advice in any area where the two zone approach is to be considered.

Appendix 4 of "Technical Guide River and Stream Systems: Flood Hazard Limit" (OMNR 2002) details the factors to be considered in the application of the two zone concept. These factors include:

- Frequency of flooding
 - Caution should be exercised in applying the two zone concept in areas that experience chronic flooding problems
- Physical characteristics of the valley
 - Steep valley slopes, unstable banks and poor soil conditions in flood fringe areas can render the area physically unsuitable for development. Typically, flat overbank areas with shallow flows are more favorable areas for the application of the two zone concept.
- Local need
 - Suitability of flood fringe areas for development can be influenced by municipal planning considerations including availability of developable land elsewhere in the municipality
- Impacts of proposed development
 - Encroachment within the flood fringe area usually results in an increase in flood levels. Potential upstream and downstream impacts must be assessed and it may be necessary to recalculate the flood standard levels for flood proofing purposes.

- Feasibility of flood proofing
- Constraints to the provisions of services
 - Flood fringe areas are low-lying and it is often difficult and expensive to provide necessary services
- Ingress/egress
- Changes in land use
- Administrative capability
 - Staff availability and expertise to examine and implement the various factors and conditions for a two-zone area should be considered.

Application of the two zone concept should also be based on the following conditions:

- The extent of the floodway should be determined based on local watershed conditions such as critical flood depth and velocity, existing and proposed development and the potential for upstream and downstream impacts
- The area is within designated settlement (city, town, village) urban boundary
- The application of the two zone concept shall be implemented adjacent to existing built-up areas throughout a watershed or major reach basis and not considered in response to a site-specific individual development proposal. The municipality should identify and support the areas where they wish to consider the application of the two zone concept and identify same in the municipal planning documents. Otherwise the one zone approach will apply.
- Flood levels need to be recalculated to consider total filling of the flood fringe and the resultant increase in flood elevation and flood flow velocities of the floodway.
- Generally, flow depth in excess of 1 meter and/or flow velocities greater than 1 meter per second can create significant hazards for development. Other options include the calculation of a hydraulic floodway (the minimum area required to pass the flood flows for the designated Regulatory Flood Standard). Other options include the use of the 100 year flood within the Hurricane Hazel or Timmins Storm Regulatory Flood Standards as the boundary between the floodway and flood fringe.
- While not a policy of the province, a 15 centimetre (6 inch) rise in downstream and/or upstream flood elevations is considered significant and should be reviewed to determine if it results in an increase in flood risk. Any increase in flood risk should not be permitted. An unacceptable increase in velocities is another factor to be considered. In some cases even a 15 centimetre (6 inch) rise in flood plain elevation is not acceptable if it will impact an existing structure or an opening into that structure or safe access etc.
- The implementation of the two zone concept is not acceptable in rural areas or areas involving site specific proposals such as individual subdivisions or severances
- All new development must be designed with adequate flood proofing measures to address the regulatory flood.
- A two zone approach is not acceptable if the existing potential flood fringe area is below the maximum observed flood level and/or it is proposed to not flood proof

new development to the regulatory flood standard. This situation must be addressed by implementing a Special Policy Area (SPA).

Process

- 1) Municipality consults with the Conservation Authority regarding areas they wish to consider implementation of the two zone concept. The municipality must present rationale supporting the implementation of the concept.
- 2) If there is agreement with the supporting rationale and the Conservation Authority supports consideration of the two zone concept, hydrologic and hydraulic analysis shall be completed to define the floodway and analyze and potential impacts. The Regional Engineer of the MNR shall be involved in decision making regarding potential application of a two zone concept.
- 3) The municipal planning documents (Official Plan and Comprehensive Zoning) should be revised to reflect the two zone area, flood proofing requirements and the inter-relationship with the Conservation Authority regulations.

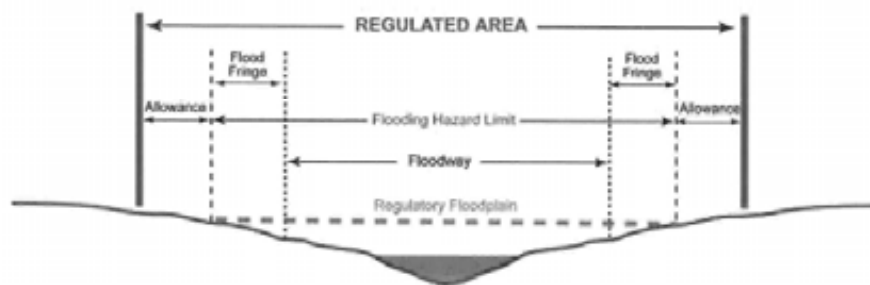


Figure 1. Illustration of Two Zone

SPECIAL POLICY AREAS

[NOTE: This section will be replaced by a new provincial bulletin on SPAs once it's been approved].

Special Policy Areas (SPAs) are areas within the flood plain boundaries of a watercourse (or small inland lakes which flood in response to river flows), where exceptions to the development restrictions of the natural hazards policy (3.1) in the Provincial Policy Statement (PPS), 2005, may be permitted. An area specific review and approval by both the Minister of Natural Resources and the Minister of Municipal Affairs and Housing is required.

A SPA is a flood plain management approach employed by the Province in appropriate cases where the one zone or two zone flood plain management approaches have been demonstrated to be too stringent and would likely cause significant social and economic hardships to the community.

The area-specific policies of the SPA are intended to provide for the continued viability of existing land uses while being sufficiently protective against natural hazards. A SPA 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.

There is no SPA option for Great Lakes- St. Lawrence River and Connecting Channels due to the severe nature of the natural hazard and international and inter-provincial agreements regarding flow rates, volumes and velocities (Great Lakes Charter, Ottawa River Board of Control etc.)

Appendix 8

Interpretation of Clause 2(1)(d) and Clause 2(1)(e) (Great Lakes Shoreline) in Conservation Authorities Regulations

Ministry of Natural Resources

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Our File: 951.01.001

June 11, 2007

Mr. Donald E. Greer
Manager, Source Water Protection Planning
Otonabee Conservation
250 Milroy Drive
Peterborough ON K9H 7M9

Dear Mr. Greer:

**Re: Interpretation of Clause 2(1)(d) and Clause 2(1)(e) (Great Lakes Shorelines) in
Conservation Authorities Regulations**

The provisions in Conservation Authorities Section 28 regulations dealing with areas of interference of a wetland have been subject to interpretations which are contrary to what the Province intended. These provisions identify areas within 120 metres of all provincially significant wetlands, and areas within 120 metres or 30 metres of other wetlands depending on the wording of the individual regulation, which require approval for any development. In order to recognize that additional approvals should not be required where interference with a wetland has already occurred and was supported by a study demonstrating the development did not interfere with the hydrologic function of a wetland, a proviso was added stating *"but not including those where development has been approved pursuant to an application made under the Planning Act or other public planning or regulatory process."* Unfortunately the wording of the exclusion appears not to clearly convey what was intended. This has resulted in situations where CA permits are not sought on the basis that development has already been approved under the Planning Act "or other public planning or regulatory process." The difficulty is that Planning Act approvals and other approvals do not necessarily address hydrologic interference which, for wetlands, is the primary concern of regulation by Conservation Authorities.

Conservation Authorities should amend clause 2(1)(d) or 2(1)(e) of their Section 28 regulations to delete the words, "but not including those where development has been approved pursuant to an application made under the Planning Act or other public planning or regulatory process." The draft amendments should be forwarded to MNR Legal Services as soon as possible so they may be submitted to Legislative Counsel for review and final drafting. This is also an opportunity to update references to studies and maps in the regulation.

In the interim, Conservation Authorities should be advised that the "interference" requirements of Sections 2(1)(d) and 2.1(e) of their "Development, Interference With Wetlands and Alterations to Shorelines and Watercourses" continue to apply to all new development.

Yours sincerely,



Krystine Lintell
Counsel
Legal Services Branch

cc: Bonnie Fox
Policy and Planning
Conservation Ontario