Central Lake Ontario Conservation

Policy and Procedural Document
For Regulation and Plan Review

Version: February 27 2014

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Purpose

The purpose of the Policy and Procedural Document (PPD) for Regulation and Plan Review is to provide policy direction, clarity and transparency on how Central Lake Ontario Conservation Authority (CLOCA) administers and implements Ontario Regulation 42/06 and plan review responsibilities.

It is the intent that CLOCA staff will follow the policies of the PPD when reviewing and making decisions on permit applications and when providing comments on planning applications and planning documents. The PPD will also form a resource and guidance tool for the CLOCA Board of Directors as well as our watershed municipalities, the land development industry and the public.

The PPD consists of eight chapters as follows:

Chapter 1 provides an overview of the legislative framework that determines CLOCA's regulatory role and responsibility.

Chapter 2 provides a detailed description of the procedure that will be followed by CLOCA in the administration of Ontario Regulation 42/06.

Chapter 3 provides general policies that set the context and fundamental principles that are considered when carrying out our mandate under Section 28 of the *Conservation Authorities Act* and our plan review responsibilities.

Chapter 4 provides a set of policies and parameters against which CLOCA administers and implements Ontario Regulation 42/06 for Lake Ontario shoreline.

Chapter 5 provides a set of policies and parameters against which CLOCA administers and implements Ontario Regulation 42/06 for river or stream valleys.

Chapter 6 provides a set of policies and parameters against which CLOCA administers and implements Ontario Regulation 42/06 for watercourse and wetland interference.

Chapter 7 provides a set of policies and parameters against which CLOCA administers and implements Ontario Regulation 42/06 for hazard lands associated with unstable soil.

Chapter 8 provides a set of policies providing guidance and direction related to CLOCA's role in reviewing and commenting on planning applications and documents.

The PPD should be read in its entirety and its content interpreted accordingly. While specific sections and policies may reference others or only apply under certain circumstances, this should not take away from the need to read the PPD as a whole.

Revisions/updates to the PPD that reflect new legislation and/or legislative changes and other minor revisions that do not alter the intent of the procedures or policy objectives may be made without the need for approval of the Authority Board. The Authority Board may consider amendments to the PPD at any time. It is the intent that a formal comprehensive review of the PPD be carried out on a five year basis through a public consultation process.

CLOCA has also developed a number of watershed plans and resource management plans. These individual plans may provide further detail to the policy provisions contained in the PPD.

CHAPTER 1 – ROLES AND RESPONSIBILITIES

1.1 History of Conservation Authorities

Conservation Authorities (CAs) have a long and important history in Ontario that dates back to the creation of the *Conservation Authorities Act* (CA Act) in 1946. This Act was created to address concerns about erosion, flooding and drought, and recognized that these and other natural resource initiatives were best managed on a watershed basis. The *CA Act* provided the legislative framework for collaborative action by the Province and watershed municipalities paving the way for a number of eventual legislative amendments by the Province.

After severe economic and human losses associated with Hurricane Hazel (1954), changes were made to the *CA Act* in 1956 to empower CAs to make regulations to prohibit filling in floodplains. These regulations were broadened in 1960 to prohibit or regulate the placing or dumping of fill in defined areas where, in the opinion of the CA, the control of flooding, pollution or the conservation of land may be affected. In 1968, amendments to the *CA Act* further extended the regulations to prohibit or regulate construction and alteration to waterways. In 1998, Section 28 of the *CA Act* was amended which led to the introduction of O. Reg. 97/04 "Content of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses" Regulation. O. Reg. 97/04 established the scope and content of individual Section 28 Regulations and replaced the previous "Fill, Construction and Alterations to Waterways" Regulation. While some CAs had been regulating activities in wetlands, shorelines and inter-connecting channels for years, the amendments required all CAs to regulate activities on Great Lakes shorelines, interconnecting channels, inland lakes and wetlands in addition to the areas and features each CA had historically regulated.

In 2006, pursuant to Section 28 of the *CA Act*, under O. Reg. 97/04, each CA developed individual "Development, Interference and Alteration" Regulations approved by the Minister of Natural Resources that identify and regulate certain *development* activities in and adjacent to watercourses (including valleylands), wetlands, shorelines of inland lakes and *hazardous lands* and activities that may cause the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or for changing or interfering in any way with a wetland. In general, permissions (permits) may be granted with or without conditions for *development*. Permits are issued where, in the opinion of the CA, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the *development* or for activities that may cause the straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or for changing or interfering in any way with a wetland.

1.2 CLOCA's Mission Statement

CLOCA's overall goal and vision is described in the mission statement as follows:

> "to work towards the awareness, understanding, wise use and enhancement of our watershed resources for the benefit of the natural environment in partnership with the Region of Durham including: Cities of Oshawa and Pickering, Towns of Ajax and Whitby, Municipality of

Clarington, Townships of Scugog and Uxbridge and our watershed communities".

This mission statement provides the fundamental context for the formulation of the policies set out in the PPD.

1.3 Watershed Management Programs

CLOCA delivers a variety of watershed management programs and services which are policy and science-based and delivered with professional staff with the objective to further the conservation, restoration *development* and management of natural resources. There is a wide range of responsibilities that fall under CLOCA including:

Watershed Strategies and Management
Flooding and Erosion Protection
Protection of Water Quality and Quantity
Environmental Education and Information Programming
Land Acquisition
Outdoor Recreation
Environmental Land Use Planning
Habitat Protection
Aquatic Resource Management
Protection, Restoration and Enhancement of Natural Resources

One of the fundamental roles of CLOCA focuses on water related natural hazard prevention and management and the protection of natural heritage features and water resources. In this regard, CLOCA undertakes the following roles and activities:

i. Regulatory authorities - under Section 28 of the *CA Act*, implementing and enforcing Ontario Regulation 42/06 to prohibit, restrict, regulate or give required permission for certain activities in and adjacent to watercourses (including valleylands), wetlands, shorelines of inland lakes and the Great Lakes-St. Lawrence river system and other hazardous lands.

ii. Delegated 'provincial interest' in plan review - as outlined in the Conservation Ontario/Ministry of Natural Resources (MNR)/Ministry of Municipal Affairs and Housing (MMAH) Memorandum of Understanding (MOU) on CA delegated responsibilities (Appendix 1), CLOCA has been delegated responsibilities from the Minister of Natural Resources to represent the provincial interests regarding natural hazards encompassed by Section 3.1 of the Provincial Policy Statement, 2005 (PPS, 2005). These delegated responsibilities require CLOCA to review and provide comments on municipal policy documents (official plans and comprehensive zoning by-laws), environmental assessments and applications submitted pursuant to the *Planning Act* as part of the provincial one-window plan review service.

iii. Resource management agencies - in accordance with Section 20 and 21 of the *CA Act*, CAs are local watershed-based natural resource management agencies that develop programs that reflect local resource management needs within their jurisdiction. Such programs and/or policies include the preparation of watershed plans and are approved by the Authority Board and may be funded from a variety

of sources including municipal levies, fees for services, provincial and/or federal grants and self-generated revenue.

iv. Public commenting bodies - pursuant to the Planning Act, CAs are 'public commenting bodies', and as such are to be notified of municipal policy documents and planning and *development* applications. CAs may comment as per their Board-approved policies as local resource management agencies to the municipality or planning approval authority on these documents and applications.

v. CLOCA also performs a technical advisory role to municipalities as defined under the terms of service agreement with our partner municipalities. These services include, matters related to policy input and advice, the assessment or analysis of water quality and quantity, environmental impacts, watershed science and technical expertise associated with activities near or in the vicinity of sensitive natural features, hydrogeology and storm water studies.

vi. Landowners - CAs are landowners, and as such, may become involved in the planning and *development* process, either as an adjacent landowner or as a proponent. Planning service agreements with municipalities have anticipated that as CAs are also landowners this may lead to a conflict with the CA technical advisory role to municipalities. This potential conflict of interest is addressed by establishing a mechanism for either party to identify a conflict and implement an alternative review mechanism as necessary.

1.4 Legislative Framework

The following outlines the primary legislative framework that relate to CLOCA's Plan Review and Regulation roles and activities.

Conservation Authorities Act
CLOCA is governed by the *CA Act* and by a Board of Directors who are appointed by the municipalities in CLOCA's jurisdiction. Section 20 of the CA Act broadly defines the objects 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 Sections 21 (a) (j) and (n) gives the Authority power:

> "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."
> "to control the flow of surface waters in order to prevent floods or pollution or to reduce the adverse effects thereof."
> "to collaborate and enter into agreements with ministries and agencies of government, municipal councils and local boards and other organizations."

Section 28 of the *CA Act* gives the Authority power to pass Regulations in the area of its jurisdiction regarding the following:

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.

Ontario Regulation 42/06 was approved under the Authority of Section 28 of the *CA Act* to cover the area under CLOCA's jurisdiction. A principal mandate of CLOCA is to prevent the loss of life and property due to flooding and erosion and to conserve and enhance natural resources. Ontario Regulation 42/06 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*.

Planning Act

The Planning Act sets out the ground rules for land use planning in Ontario and describe how land uses may be controlled, and who may control them. The Act also provides the basis for ensuring the rights of citizens and public agencies to be notified about planning proposals, to give their views to their municipal council and, where permitted, to appeal decisions to the Ontario Municipal Board Section 3(1) of the *Planning Act* provides for the issuance of policy statements on matters relating to municipal planning that are of provincial interest (e.g. *PPS, 2005*). Through the Minister's delegation letter and a Memorandum of Understanding, specific responsibilities have been delegated to CLOCA to ensure that decisions on *development* applications by planning approval bodies made pursuant to the *Planning Act* are consistent with the natural hazard policies of the *PPS, 2005.*

Section 3(5) and 3(6) of the *Planning Act* requires that in respect of the exercise of any authority that affects a planning matter including comments, submissions, advice and decisions of the council of a municipality, a local board, a planning board, a minister of the crown and a ministry, board, commission or agency of the government, including the Ontario Municipal Board, shall be consistent with Provincial Policy Statements that are in effect on the date of the decision and conform with and not conflict with provincial plans (e.g. greenbelt plan, growth plan for the greater golden horseshoe, Oak Ridges Moraine Conservation Plan) that are in effect on that date.

Section 26 of the *Planning Act* requires municipalities to revise official plans every five years to ensure the municipal official plans do not conflict with and must conform to provincial plans and have regard to provincial interests as outlined in Section 2 of the

Planning Act and are consistent with Provincial Policy Statements issued under Section 3 (1).

Clean Water Act

CAs have a role in the Ministry of the Environment (MOE) led provincial initiative under the *Clean Water Act* (CWA)(2006) in exercising and performing the powers and duties of a Source Protection Authority for a source protection area established by *CWA* Regulation. In acting as Source Protection Authorities under the *CWA*, during the source protection plan development phase, tasks included:

- Collection, analysis and compilation of technical and scientific information and data (watershed characterizations, water budgets, etc.)
- Local engagement, consultation, information management and communications
- Key supporting role to respective Source Protection Committees which includes funding
- Policy formulation and coordinating technical work with municipalities and others

Once the first Source Protection Plan is approved, the MOE will specify a date by which a review of the plan must begin and the Source Protection Authority ensures that the review and those that follow are conducted in accordance with the *CWA* and the Regulations.

Environmental Assessment Act (EA Act)

The purpose of the *Environmental Assessment Act (EA Act)* is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment. CAs review and comment on class and individual environmental assessments that occur within their jurisdiction under the EA *Act*. CAs bring local environmental and watershed knowledge into the review and assessment process.

It is a requirement for proponents to identify and consult with government agencies and may include CAs if the proposed project may have an impact on an item related to the CAs areas of interest. The MOE is responsible for the administration of the *EA Act* and ensuring that proponents meet the requirements of this Act. The Ministry of Environment is the approval authority for decisions under the *EA Act*.

CAs as landowners may also be the proponent under the *EA Act* for proposed projects that may occur on CA lands. The C*lass EA for remedial flood and erosion control projects* (Class EA) establishes a planning and approval process for a variety of remedial flood and erosion control projects that may be carried out by CAs. This Class EA sets out procedures and environmental planning principles for CAs to follow to plan, design, evaluate, implement and monitor a remedial flood and erosion control project so that environmental effects are considered as required under the *EA Act*. Approval of this Class EA allows CAs to undertake these projects without applying for formal approval under the *EA Act*, on the condition that the planning and design process outlined in the Class EA is followed and that all other necessary federal and provincial approvals are obtained.

Oak Ridges Moraine Conservation Plan

The purpose of the Oak Ridges Moraine Conservation Plan (2002) is to provide 'land use and resource planning direction to a multitude of agencies and stakeholders, on how

to protect the Moraine's hydrological and ecological features and functions'. The land use designations: Natural Core Areas, Natural Linkage Areas, Countryside Areas and Settlement Areas are representative of the land itself.

Among the objectives of the Oak Ridges Moraine Conservation Plan (ORMCP) are maintaining and improving ecological and hydrological function and integrity of the moraine. CAs having watersheds within the Moraine considers the policies in the ORMCP when reviewing planning applications and providing plan review comments.

Greenbelt Plan

The Greenbelt Plan (2006) similar to the ORMCP is a land use planning document that provides a framework which "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 the landscape".

The Greenbelt Plan defines a natural heritage system which, in addition to core and linkage areas defined in the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan, contains sixteen Natural Core Areas and linkages between them within the Protected Countryside Area across the Greater Golden Horseshoe. CAs having watersheds in the Greenbelt Plan Area considers the policies in the Greenbelt Plan when reviewing planning applications and providing plan review comments.

Aggregate Resources Act (AR Act)

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

Under CA *Act* Section 28 (11), areas licensed for aggregate extraction under the *AR Act* are exempt from CA permitting activities. However, CAs may bring local environmental and watershed knowledge into the application review process. CAs are afforded an opportunity to review and provide comments directly, or through their participating municipalities, to MNR on applications submitted under the *AR Act*, during the application review and consultation process. MNR is the approval authority for license applications submitted pursuant to the *AR Act*, whereas municipalities are the approval authorities with respect to applications submitted pursuant to the *Planning Act*. As with other applications submitted pursuant to the P*lanning Act*, CAs may review official plan Amendments, Zoning Bylaw Amendments and other applications for proposed new or expanded aggregate operations submitted pursuant to the *Planning Act*, and comment in an advisory capacity to municipalities making decisions on *Planning Act* applications.

Drainage Act

The Drainage Act is administered by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and is implemented by the local municipality. The Drainage Act defines the terms by which a drainage project may be initiated and prescribes the various stages of the procedure (e.g. engineer's report, consultation, appeals, construction) that must be followed by municipalities in the development of this municipal drainage infrastructure. The local municipality is also responsible for the maintenance, repair and management of the drainage systems that are developed through this procedure.

The Drainage Act and Conservation Authorities Protocol has been developed to provide provincially-approved guidance to conservation authority staff and municipal representatives (e.g. drainage superintendents) regarding the most appropriate practices and permit requirements for municipal drain maintenance and repair activities.

The protocol includes a set of Standard Compliance Requirements for regular repair and maintenance activities that, if followed, would serve as the written permission to proceed with work under the *CA Act*. As such, it allows for a streamlining of the approval process from an administrative perspective.

Ontario Water Resources Act (OWRA)
Under the OWRA, environmental compliance certificates are required for stormwater management infrastructure from MOE as the approval authority. CAs often undertake a public commenting role on these applications.

The Building Code Act
The Building Code Act and the building code itself (i.e. the regulations), are administered by the Ministry of Municipal Affairs and Housing. The council of each municipality is responsible for the enforcement of the Act, and its' regulations, within the municipality (Section 3.(1)). The chief building official of a municipality serves as the implementer and enforcement officer of the Act, and the code.

CAs works closely with local building officials to ensure that legislative requirements for *development*/construction within regulated areas are adhered to. The Building Code Act specifies a need to conform to other existing legislation. Specifically, Section 8(1)a) states, 8. (2) the chief building official shall issue a permit referred to in subsection (1) unless,

f. The proposed building, construction or demolition will contravene this Act, the building code or any other applicable law.

The regulations under Section 28 of the *CA Act* are considered applicable law under the Building Code Act. Ontario Regulation 349/06 made under the Building Code Act, 1992 amending O. Reg. 403/97 (building code came into place in 2006 following the approval of NPCA regulation 155/06. Section 5 clause 1.1.3.3.(1)(c) of the regulation was revoked and the following substituted:

(c) regulations made by a Conservation Authority under clause 28 (1) (c) of the *CA Act* with respect to permission of the Authority for the construction of a building or structure 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*.

This means that the chief building official must consult with CLOCA before issuing a building permit where the Conservation Authority regulations apply.
The building departments have screening maps to assist in red flagging areas of potential concern.

Migratory Birds Convention Act (1994)
The Act implements a convention for the protection and conservation of migratory birds, as populations and individual birds, in Canada and the U.S.A.; main prohibition is the destruction of wildlife habitat during nesting season.

CLOCA staff provides advice that the removal or pruning of trees should take place outside of the nesting season, however, it is the responsibility of the proponent to ensure compliance with the Act.

1.5 Management Plans

The following outlines Management Plans prepared by CLOCA that relate to CLOCA's Plan Review and Regulation roles and activities.

Watershed Plans
CLOCA's Watershed Plans provides guidance to CLOCA, municipalities, planning authorities, and agencies regarding the effective management of watershed resources in response to a changing environment. The Watershed Plans recognize the unique urban, rural and natural environment conditions present in the watershed, considers future growth and planning policy, and recommends specific measures to protect natural resources, including goals, targets and recommendations that, when implemented, will ensure healthy and sustainable watersheds.

The Watershed Plans are science-based documents prepared consistent with legislative requirements, provincial policies and legislative directions. In that the Watershed Plans make recommendations that will achieve the specific watershed health targets there may be instances where provincial, municipal or other legislative policies are more restrictive than those recommended in the Watershed Plans and in those case it is recognized that the more restrictive policies shall apply.

Through implementation of Watershed Plan recommendations CLOCA can continue to fulfill its mandate pursuant to Sections 20 and 21 of the *CA Act* to responsibly manage the resources of the watershed and to provide advice and comments on planning and *development* proposals regarding the identification, function and significance of natural heritage and hydrologic features, functions and systems.

Fisheries Management Plans and Fisheries Review
CLOCA's Aquatic Monitoring Program provides current and trend data allowing staff to provide scientific and technical advice with respect to protection of our natural resources. This program furthers our expertise and knowledge of the Natural Heritage features and functions within the watershed enabling the Authority to predict how these features and functions will respond to changes in land use, including *development*. The information collected through the monitoring program provides the basic, and when required, detailed aquatic habitat conditions which support many CLOCA programs, projects and plans including: Watershed Plans, Fisheries Management Plans, Conservation Area Management Plans, Annual Monitoring Reports, Engineering and Operations projects, Groundwater programming, Stewardship, Outreach and Education services. Other efficiencies arising from CLOCA's continuous long term monitoring program is the support provided to municipalities and the *development* industry enabling streamlining plan reviews, environmental studies, time sensitive projects and emergency works. Data collected also supports and helps expedite provincial and federal agency reviews related to the Endangered Species Act (ESA) and the Species at Risk Act (SARA) respectively.

1.6 Memorandum of Understanding for Planning Services

In order to ensure the safety of persons and property from natural hazards and the protection of the natural environment are addressed through plan review, CLOCA has a formal Partnership Agreement (Agreement) for planning services with the Region of Durham and the City of Oshawa. The Agreement recognizes the expertise provided by CLOCA in watershed management, natural heritage and natural hazard planning. It serves as a guide to the Region, City and CLOCA in carrying out the plan review function. A summary of the various roles and responsibilities of CLOCA in the Agreement include:

- Attendance at pre-consultation meetings;
- Advising of technical requirements for complete applications;
- Reviewing and commenting on planning applications and documents within the context of the *CA Act*, the Planning Act, the PPS, the Environmental Assessment Act, the Fisheries Act, the Oak Ridges Moraine Conservation Act, the Greenbelt Act and the Greenbelt Plan, and the Clean Water Act;
- Reviewing and commenting on planning applications and documents within the context of the identification, function and significance of natural heritage and hydrological features and systems and the review of studies which assess impacts on these features and areas;
- The need for and adequacy of stormwater management plans from a watershed management perspective; and,
- Information and analysis of natural hazards and water management.

CHAPTER 2 - PROCEDURES FOR THE ADMINISTRATION OF ONTARIO REGULATION 42/06

2.1 Background

CLOCA's permitting process is mandated under Section 28 of the *Conservation Authorities Act*. The regulation currently administered by CLOCA is Ontario Regulation 42/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Pursuant to this Regulation, a permit is required from CLOCA prior to any of the following:

- Development within the Regulated Area which includes Lake Ontario Shoreline, river or stream valleys, hazard lands, wetlands and other areas adjacent to a wetland and associated regulation allowances: and
- 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.

Development is defined in Section 28 of the C*onservation Authorities Act* as:

- The construction, reconstruction, erection or placing of a building or structure of any kind,
- 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,
- Site grading,
- The temporary or permanent placing, dumping or removal of any *material*, originating on the site or elsewhere.

Activities that would not meet the definition of *development* under *CA Act* include – non-structural activities associated with existing agricultural use (e.g., cropping, pasturing, tilling, fence row clearing, stone pile removal, etc.), other non-structural uses that would not result in alterations to the existing grade (e.g., gardens, nurseries, timber harvesting, etc.), maintenance and upkeep of existing buildings or structures (e.g., window repair, siding, etc.), installation of utility connections (e.g., telephone, cable, fiberoptics), well installation and fence installation. However, if these activities would result in the straightening, changing, diversion or interference in any way with the existing channel of a watercourse, or the changing or interference in any way with a wetland, they would be subject to Ontario Regulation 42/06 and require written permission from CLOCA.

Fencing is normally considered exempt from permission required under Ontario Regulation 42/06, however, CLOCA generally discourages fencing in natural hazard and natural heritage areas. Where fencing is necessary, such as agricultural fields, it must be constructed in such a fashion that it does not impede conveyance of flow of watercourses and does not require the use of fill within the flood plain and wetlands. There may be instances where a Permit may be required, for example, if a fence is proposed to cross a watercourse or forms a barrier that would impede conveyance of flood flows. Fencing may be permitted in wetlands provided no fill placement/removal is required. Staff will work with the applicant to review other options in order to avoid fencing within the wetland such as fencing the perimeter of the wetland.

Extensive mapping of the regulated area has been undertaken by CLOCA in support of Ontario Regulation 42/06. The general regulated area is delineated by mapping and identifies the area of interest, not the *development* limit. The regulated area includes flooding and erosion hazards associated with riverine systems and the Lake Ontario shoreline, hazard lands, along with wetlands and *areas of interference* around the wetlands. General mapping of the regulated areas is provided in Figure 1.

Figure 1 – Regulation Mapping

It is important to note the mapping is not definitive in terms of identifying areas subject to Ontario Regulation 42/06. There may be features described in Ontario Regulation 42/06 that are not mapped but are still subject to the Regulation.

Before work/*development* (filling, grading/site alteration, or construction) can proceed in an area regulated by CLOCA, a permit must be issued. Application forms are available at CLOCA's administration office and on the website (www.CLOCA.com). A general overview of the permitting process is provided in Figure 2.

Exceptions

Section 28 (10) of the *CA Act* provides that no regulation made under subsection (1),

a. shall limit the use of water for domestic or livestock purposes;
b. shall interfere with any rights or powers conferred upon a municipality in respect of the use of water for municipal purposes;
c. shall interfere with any rights or powers of any board or commission that is performing its functions for or on behalf of the government of Ontario; or,
d. shall interfere with any rights or powers under the Electricity Act, 1998 or the Public Utilities Act, 1998, c. 15, sched. E, s. 3 (8); 1998, c. 18, sched. I, s. 12.

An applicant proposing *development* or alteration related to the matters outlined in subsection (10) is still required to obtain permission from CLOCA. However, CLOCA must ensure that they do not limit or interfere with the proposed *development*. This allows CLOCA to ensure that interference with a wetland or watercourse is minimized to the extent possible and that the control of flooding, erosion, dynamic beaches or pollution or the conservation of land are either not affected by the *development* or the impacts are minimized to the extent possible.

2.2 Pre-consultation

Prior to the submission of an application for a permit, all applicants shall pre-consult with CLOCA. The pre-consultation process is intended to:

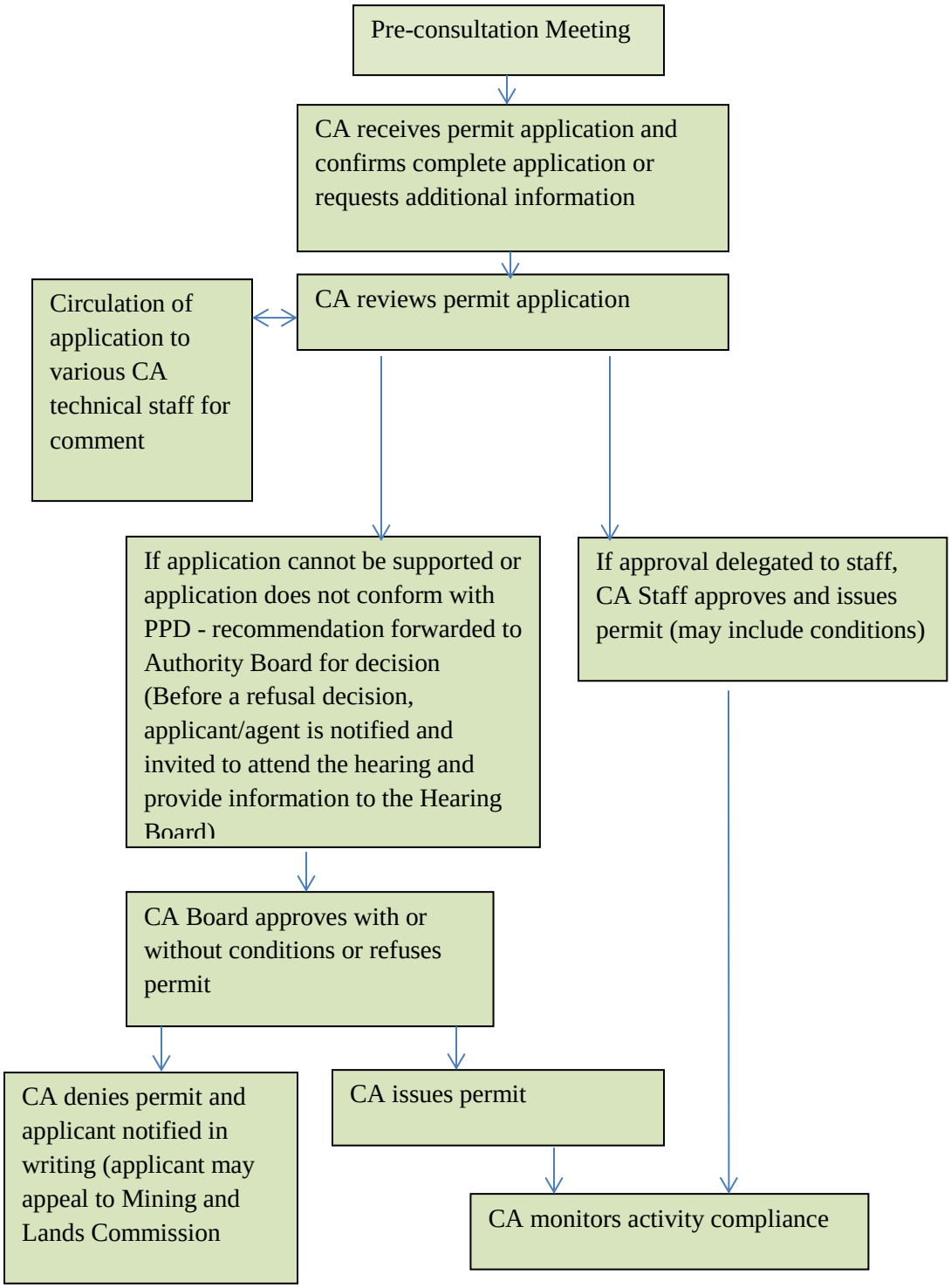
- determine if an application is required;
- what information should be submitted with the application (e.g. studies, drawings, etc.) to ensure that it is complete;
- clarify the general process that is required to obtain a permission; and
- identify any concerns that CLOCA may have with the proposed undertaking and to provide a preliminary determination of compliance with the policies contained in the PPD.

The type, scale and location of the proposal will determine the extent and formality of the pre-consultation process. For complex or major applications, applicants should contact CLOCA staff to arrange a formal meeting which could involve a number of internal staff as well as external municipal, agency, provincial and federal representatives who may have an interest in the review of the proposed activity. Pre-consultation meetings should also include input on the terms of references for technical requirements to ensure that the matters of interest are sufficiently addressed.

Following a formal pre-consultation meeting, a summary of the applicable information requirements for a complete application as well as any other preliminary comments on the proposed activity will be provided. A final decision on whether or not a proposal would be supported by CLOCA will not be made at the pre-consultation meeting.

Where proposals also require approval under the Planning Act, joint pre-consultation meetings with the relevant municipality will be encouraged.

Figure 2 - Permit Application Process



2.3 Complete Application

An application for a permit must be made by a person having an interest in the land (i.e. owner, purchaser with owner's knowledge and permission, or an authorized agent).

Upon submission of an application, it will be stamped received and assigned a file number which can be referred to for processing.

At the time a permit application is received, CLOCA staff will determine if the application is considered complete. To ensure the interests of CLOCA are met, and to appropriately assess the technical aspects of a proposal against the tests outlined in Regulation 42/06, the submission must include the compulsory information listed below. In addition, there are a number of potential technical information requirements that may be needed to assess the application as noted below. The scale, location, and complexity of a proposal and type of feature and or hazard existing typically dictates which information items listed below will apply to an application. The level of detail required for studies and reports can vary widely depending on the property and the proposal. In some situations, a single-page letter from a qualified expert will be sufficient, while in other cases a major study will be necessary. CLOCA has prepared a number of best management guidelines to assist in determining the level of scope required for technical reports.

Compulsory Application Requirements

- completed application form (applications for large fill sites also require all information under "Schedule A" of the application form)
- application fee
- a description of the works proposed
- appropriate plans/drawings including a key map and location of works

Potential Technical Requirements

- legal survey
- existing and proposed topographic and/or metric geodetic elevations
- flood line delineation study/hydraulics
- structural elevations and construction details
- architectural plans
- channel crossings assessment
- erosion and sediment control plans
- grading plans
- functional servicing plan
- geotechnical/slope stability study
- headwater drainage feature evaluation
- hydrogeological assessment
- landscaping/site rehabilitation plan
- environmental impact study
- watercourse erosion analysis stream corridor protection study
- stormwater management study/design drawings
- water balance analysis
- construction access and staging plans
- coastal engineering study
- soil quality report

- other reports/studies identified through staff consultation

Works that involve substantial site *development* should be prepared using the services of professionals. In all cases, it is necessary that the information provided with the application is clear as to the work proposed and is sufficient to allow CLOCA staff to complete a technical review.

When proposed *development* is also subject to Planning Act or other legislative approvals, the information and study requirements will be co-ordinated with the applicable agency/municipality/ministry. If CLOCA staff are of the opinion that other approvals could result in revisions to description of proposed works/submitted plans/drawings, the application may be deemed incomplete.

Within 21 days of receipt of an application, CLOCA will determine if the application is deemed complete. The review of completeness of an application does not involve a review of any required technical reports. Rather it involves a review to ensure that the application form is complete and all required technical studies/plans have been submitted. The analysis to determine the appropriateness of the technical reports occurs after an application is deemed complete. If deemed complete, staff will notify the applicant and indicate the date deemed complete on the application form submitted and initiate the review. If the application is deemed to be incomplete, CLOCA will, within 21 days of receipt of an application, notify the applicant of the missing and needed information.

If after 21 days from the notification of an incomplete application, the application is not deemed to be complete, CLOCA will put the application on hold or close the file and return the application material to the applicant. An application will only be put on hold for a maximum time of 6 months.

If the applicant is not satisfied with the decision on whether the application is deemed complete, the applicant can request an administrative review by the Chief Administrative Officer (CAO) and then if still not satisfied by the Board of Directors.

2.4 Application Fee

In accordance with the *CA Act*, the Authority is responsible for setting and collecting fees. Fees for the processing of applications are set by the Board of Directors of CLOCA and must be paid in full at the time of submitting an application. Once an application has been deemed complete and staff has initiated a review, the submitted fees will not be refundable.

The fee schedule is attached to the application form. The fee for a technical review is triggered when a technical report(s) is required in order to review the application and deem it complete. The technical review fee is based on the number of technical reports submitted by discipline (e.g. an EIS, SWM Report, and geotechnical assessment equals three reports). The technical review fee must be paid at the time of submission of technical reports. Examples of technical reports include:

- environmental impact study
- stormwater management study
- functional servicing plan
- flood line delineation study/hydraulics
- geotechnical/slope stability study
- hydrogeological assessment
- watercourse erosion analysis
- channel crossings assessment
- stream corridor protection study
- coastal engineering study

Individual technical letters and professional plans are not triggers for the full technical review fee on their own. Technical letters and plans are defined as information confirming that the proposed application conforms or is consistent with previous complete comprehensive reports. Examples of reports, technical letters and plans not subject to the technical review include:

- Planning rationale
- Environmental site assessment report
- Erosion and sediment control plans
- Grading plan
- SWM design brief
- Landscaping plan
- Structural elevations and construction detail

Applications that are subject to *Planning Act* approvals shall be subject to a consolidated fee where they would be subject to only the higher of the applicable application fee. An administration processing fee for permit application is still applicable.

CLOCA will undertake a review of the fee schedule annually to ensure that the cost recovery is appropriate. Prior to the establishment of an updated fee schedule, the authority will identify all eligible costs and consult with neighboring CAs, municipal partners and other stakeholders. The fee review will also include a review of process improvements and performance measures to ensure efficiencies.

Permit applications for large fill proposals are also subject to a fee based on the volume of fill to be received. In order to establish the fee, CLOCA staff will confirm the application volumes through the review of pre and post elevation drawings prepared by an OLS and/or by undertaking a site visit to estimate the volume capacity. In accordance with the large fill policy, the permit holder will monitor the fill volume. If it is determined that fill volumes exceed the permitted amount, the applicant will be responsible for submitting the outstanding fee. Once the fill activity has reached half of the permitted volume there will be no refund of fees if the final volumes are less than originally permitted.

A Fees Implementation Guideline for both Regulation and Plan Review fees can be found on CLOCAs website that provides further detail on how applications fees will be administered.

2.5 Processing of Complete Applications

All applications are reviewed to determine if they meet the legislative requirements and tests of the *CA Act* and Ontario Regulation 42/06 and that they conform to the policies set out in the PPD.

Site visits are typically conducted in order to confirm on-site or nearby features and application information. Site visits can also be used to determine and/or stake the limits of natural features, natural hazards or the physical top-of-bank. Further, a site visit may reveal the need for technical studies that were not identified during the determination of a complete application. Boundaries of Provincially Significant Wetlands (PSW) are confirmed by MNR. Other wetland boundaries can be confirmed by CLOCA staff during the growing season (June-Sept).

During the review of an application, CLOCA may request revisions or additional information to plans or reports submitted as part of an application. These additional requirements may be required as a result of the identification of additional concerns or where it is determined that the technical analysis in the reports is insufficient.

In the review of certain technical studies there may be a need for CLOCA to retain external expertise to assist in the review (coastal hazards, soil quality/geotechnical). The cost of such a peer review is borne by the applicant and the technical review fee would not be applicable.

When both a *CA Act* Section 28 permit application and a Planning Act application is required, CLOCA staff will coordinate the review to ensure that permit technical matters are addressed through the planning process to the fullest extent possible. To ensure that permissions are given that reflect final design and plans, prior to issuing a permit for *development* that includes infrastructure works, CLOCA staff will consult with the applicable municipality to confirm that all municipal requirements have been satisfied.

If an application remains inactive for one year, CLOCA will contact the applicant to confirm if it should remain open or if it should be closed. If no response is received within 30 days, CLOCA will close the file.

Fisheries Review

CLOCA delivers programs and provide services directed towards the protection and management of fish and fish habitat as an integral component of our watershed management program including:

- Review of impacts on fish and fish habitat for works within Regulated Areas as a component of administering Ontario Regulation 42/06 within the context of control of pollution and conservation of land;
- Provide comments and advice with respect to impacts on fish and fish habitat as an important element of CLOCA's plan review services under the *Planning Act* and *Environmental Assessment Act*;

Endangered Species Act

The Endangered Species Act, 2007 is administered and implemented by the Ministry of Natural Resources (MNR). Confirmation regarding the presence/absence of species at

risk and/or their habitat is the responsibility of MNR. Through the Authority's monitoring programs, all noted records of species at risk are submitted to MNR. These records are also entered into the Authority's species database and this information is provided to the Natural Heritage Information Centre (NHIC) (with the exception of aquatics information) on an annual basis. CLOCA, being the primary local resource for natural heritage information, has committed to screening applications which may require Endangered Species Act (ESA) review.

If it is determined that there may be a presence of species at risk, the applicant will be advised that they should contact MNR as it is their responsibility to ensure that all applicable laws, including the ESA, 2007 are adhered to.

Green Energy Act
Renewable energy projects proposed in areas regulated by CLOCA pursuant to Section 28 of the CA *Act*, require permission to ensure the control of flooding, erosion, dynamic beaches or pollution will not be affected by the proposed project. The test of *conservation of land* is not applicable to projects under the *Green Energy Act*.

While the issuance of permits is not integrated with provincial approvals for renewable energy projects, the alignment of the permitting process with the provincial approval process is critical to facilitate a coordinated review. It is expected that the Ministry of the Environment, Ministry of Natural Resources, and CLOCA will communicate and work closely to ensure the review and decision-making for permits and provincial ministry approvals will be aligned.

2.6 Decisions

Upon finishing a review of an application deemed complete, CLOCA staff will either:
- Issue a permit, with or without conditions; or
- Recommend approval, with or without conditions to the Authority Board for a decision; or
- Advise the applicant that the application cannot be supported and refer the application to a hearing with a recommendation for refusal.

Permits must be signed by the applicant/owner and the enforcement officer to be valid.

Approval granted by CLOCA under O. Reg. 42/06 shall not be interpreted as eliminating the need to fulfill the requirements of other federal, provincial and municipal bylaws, statutes, regulations and requirements.

Staff Delegated Approvals
Authority appointed regulation officers are delegated the responsibility to:

- Obtain from an applicant, any surveys, studies, engineering models and other information as may be necessary to make a decision on an application and to be able to deem an application complete.
- Approve and issue permits in response to applications that:
    - comply with the policies of contained within the PPD;
    - are considered non-complex;
    - have a maximum period of validity of 24 months or less

- Extend a permit that was granted under the 24 month category provided it meets the extension criteria outlined in the PPD.

Examples of delegated non-complex applications within a hazard include:

- cable and pipeline watercourse crossings
- minor stream bank or valley erosion control works
- storm sewer outfalls
- minor bridge/road crossing work or repair
- any emergency repair work
- any permitted use in accordance with the policies contained within the PPD

Non-delegated Approvals
The following applications will be referred to the Authority Board for an approval decision prior to issuance:

- applications that can be supported by staff that are requesting a period of validity beyond 24 months;
- applications that can be supported by staff and are considered to be complex

Complex applications are those which are considered to be a significant departure to the applicable policies contained in the PPD. The PPD contains numerical figures. It is the intent that minor deviations (eg 10%) may be permitted and would not be considered a significant policy departure requiring the Board approval.

Extensions to a permit issued for a period of validly greater than 24 months must be made by the Authority Board and comply with the criteria for an extension.

Applications referred to the Authority Board for approval will be accompanied by a staff report with rationale for support. The applicant will be notified of the Board meeting date and provided a copy of the staff report. If approved by the Authority Board, staff will issue a permit within 5 working days of the decision. Two copies of the permit are sent to the applicant and one copy is retained for CLOCA's reference.

Decision Time Frames
Permit applications are categorized as, Minor, Standard or Major. For all Minor Permits, CLOCA staff will make a decision to approve and issue a permit or refer the matter with a recommendation to the Authority Board for a decision within 30 days from the date the application is deemed complete. For Standard and Major Permits, a decision to either approve and issue a permit or refer to the Authority Board for a decision will be made within 90 days from the date an application is deemed to be complete. If a decision is not made within this timeframe the applicant can either agree to continue to work with CLOCA staff to resolve any outstanding matters or submit a request for administrative review by the CAO and then if not satisfied to the Authority Board.

Subsequent to receipt of a complete application, delays in timelines for decision making may occur due to CLOCA requests for additional information to address errors or gaps in technical information submitted for review or an applicant driven change in project start date. In such cases the application can be put on hold or returned to the applicant.

Refusal Decisions

If the Authority Board disagrees with the recommendation report for approval, the application must be referred to a Board Hearing and notification requirements must be adhered to.

In addition, if in the opinion of CLOCA staff, an application cannot be supported, the applicant will be advised of options that may be pursued to either bring the application into conformity, withdraw the application or of steps that can be taken to proceed to a formal Hearing before the Authority Board.

Period of Validity and Extensions

Generally the maximum period, including extension, for which permit is granted, is 24 months. As an exception, a maximum period, including extension, may be granted to maximum of 60 months provided CLOCA is of the opinion that:

- The project cannot reasonably be completed within 24 months from the day the permit is granted (examples include major infrastructure works), or
- Permits and approvals from other regulatory bodies cannot reasonably be obtained within 24 months from the day the permit is granted. Generally, CLOCA staff will encourage applicants to co-ordinate approvals thereby avoiding the need to issue permits beyond 24 months.

Permits greater than 24 months cannot be approved by staff. The Authority Board must approve such a permit prior to issuance.

If a permit is granted for a period of time less than the applicable 24 or 60 month time period, CLOCA may grant an extension of the permit if,

- The holder of the permit submits a written application for an extension to CLOCA at least 60 days before the expiry of the permit;
- No extension of the permit has previously been granted; and
- The applicant sets out the reasons for which an extension is required and, in the opinion of CLOCA demonstrates that circumstances beyond the control of the holder of the permit will prevent completion of the project before the expiry of the permit

When granting extensions, CLOCA may grant the extension for the period of time requested by the holder of the application or for such period as CLOCA deems appropriate, as long as the total period of validity of the permit does not exceed the applicable maximum period of 24 or 60 months.

An extension to a permit, within the 60 month permit category, can only be granted by the Authority Board.

The granting of an extension for a different period of time than the period of time requested does not constitute a refusal of an extension and is not appealable.

CLOCA may refuse an extension of a permit if in the opinion of the Authority the criteria for allowing a permit listed above have not been met.

Before refusing an extension of a permit, CLOCA shall give notice of the intent to the holder of the permit, indicating that the extension will be refused unless,

- The holder requires a hearing, before the Authority Board; and

- At the hearing, the holder satisfies CLOCA that the criteria for allowing an extension have been met.

2.7 Amending Permits

If a proposal is revised after the issuance of a permit but prior to completion of works, the permit may be amended. An application to amend the permission along with any required information and the required fee must be submitted. Amendments can include changes to the proposal and/or changes to the conditions of approval. All revisions to a proposal that are not in keeping with the permission shall require approval from CLOCA. If approved, the permit shall be amended to reflect the revised permission.

Typically, such amendments will be addressed by staff without the need for a specific referral to the Authority Board. However, if it is deemed to be a significant revision that results in a new or changed activity that is considered a significant departure from CLOCA policy, the amending application may be referred to the Authority Board.

2.8 Hearing

The applicant has the right to a hearing when staff is recommending refusal of an application, the Board of Directors cannot support a permit application, the applicant objects to the conditions of approval, or the Authority cannot support a request for an extension of a permit.
CLOCA shall, by personal service or by registered mail, give appropriate written notice of the time and place of the hearing of the application, together with a brief explanation of the nature of the application to:

a. the applicant or their designated agent;

b. all members of the Authority Board;

CLOCA may at its discretion request representation to the hearing as follows:

a. The municipality in which the property is located,

b. Any federal or provincial government representative,

c. Any surveyor, consulting engineer or other expert retained by CLOCA.

Upon hearing evidence submitted by the applicant or their designated agent, and reviewing any other information submitted in support or rejection of the application or request for extension, the Authority Board shall approve (with or without conditions) or refuse the application or request for extension. Upon refusal of the application or if permission is granted subject to conditions, the Board of Directors shall give written response to the applicant, including reasons, for its decision.

Detailed Section 28 Hearing Procedures are included in Appendix B of the PPD.

2.9 Cancellation of Permit

The Authority Board may, at any time, cancel a permit if it is of the opinion that the representations contained in the application for permit are not carried out and/or the conditions of the permit have not been met.

Prior to consideration of cancelling a permit, staff will try to work with the permit holder to resolve issues. Generally cancelling a permit is considered a last resort once all other options to resolve the issue have been exhausted.

Before cancelling a permit, CLOCA staff shall give notice of intent to cancel to the holder of the permit indicting that the permission will be cancelled unless the holder shows cause at a Hearing why the permit should not be cancelled. Following the giving of the notice, the Authority shall give the holder at least a 10 day notice of the hearing.

2.10 Appeal Process

An applicant who has been refused permit or is not in agreement with conditions of an approval may, within thirty (30) days of the receipt of the reasons for the decision, appeal to the Minister of Natural Resources. The Mining and Lands Commissioner will hold a hearing and may dismiss the appeal or grant permit.

In all cases, hearings/appeals will be conducted in accordance to the "procedural guidelines for appeals, under the *CA Act*", October 2005. The Mining and Lands Commissioner may dismiss the appeal or grant permit.

A decision from a Board Hearing to refuse an extension is not appealable to the Mining and Lands Commissioner.

2.11 Enforcement

Enforcement is an important component of the management of natural hazards and features of our watersheds. In accordance with Section 28 (1) of the CA Act, CLOCA has appointed officers to enforce Regulation 42/06. These officers have the responsibility of liaising with applicants and inspecting properties. Responsibilities also include investigating and monitoring violation situations as well as undertaking all other enforcement work under the regulation. Regulation officers carry identification for inspection purposes.

Whenever necessary, each permit issued by the Authority should be inspected by Authority staff prior to commencement of the activity, during the *development* activity and at a minimum at least once following completion of the *development*.

2.12 Violations

A violation of the Authority's regulation generally occurs in two ways:

i. when *development* or interference activities have taken place in an area regulated by the Authority without written approval;
ii. when *development* or interference activities have been undertaken contrary to the conditions stipulated in a permit issued by the Authority.

CLOCA staff, in coordination with municipal building and/or by-law enforcement staff, may carry out an initial investigation where the activity is clearly visible from a public road or property where access to private property is not required or permitted. Photographs and field notes of the activity taking place are taken and landowner contact is initiated. If the activity is not clearly visible from a public location, CLOCA staff will attempt to contact the landowner to arrange a site visit to discuss the matter. Subsequent to this, a determination regarding whether or not an offence has occurred is made and the appropriate action is taken. In accordance with the *CA Act*, a CLOCA appointed Regulation Officer may enter private property, other than a dwelling or building without consent of the owner or occupier and without a warrant under certain circumstance outlined in Section 28 (20) of the *CA Act*. Any initiators of unauthorized works that contravene the regulation will be requested to halt the works immediately. Authority staff will advise the offender(s) of the regulation and its purpose. There is no authority to issue a "stop work order" under the *Conservation Authorities Act*. However, if they have to make changes to the work or remedial measures, stopping the work can save the property owner money for the short and long term.

Where it is found that no violation occurred, no further action is taken.

Unless otherwise agreed to (without prejudice meetings), Regulation staff, will read the violators rights under the Provincial Offences Act prior to proceeding with the investigation in terms of communication with the violator and/or evidence gathering.

Normally a "notice of violation" will be sent to the landowner, their agent and/or the contractor as well as the clerk of the respective municipality. The notice of violation is to be sent by registered mail, hand delivered, or by some other form where there is confirmation of receipt of the notice. This notice will advise that the subject area is regulated, identify the section of the Regulation contravened, advise that activities observed require permission and will request that work cease and the respective parties contact CLOCA to discuss options for resolution of the matter within five (5) days of issue of the notice.

It should be noted that the Notice of Violation is not a legal document, rather formal correspondence notifying the landowner the identified activities constitute a violation of Ontario Regulation 160/06 and how to proceed. In general, where a violation has been identified the landowner has two options:
1. immediately stop the activity and contact CLOCA staff to obtain the necessary permit, provided the activity adheres to CLOCA requirements; or
2. remove the offending development or stop the activity and restore the area to its original condition by methods acceptable to CLOCA staff, including the potential need for a permit.

Should the violator not contact the Authority within the specified time period, legal action may be pursued under Section 28 of the C*A Act*.

In cases where other legislation, such as, the *Federal Fisheries Act, Lakes and Rivers Improvement Act, Ontario Water Resources Act,* etc. may also have been contravened, CLOCA will notify the appropriate authorities and may carry out a coordinated investigation and prosecution.

Generally, staff will attempt to resolve violations without the need to take legal action. However, if the violation is not resolved in a timely manner, generally within one year of the issuance of the violation, CLOCA may pursue legal action. Legal action against any offenders will be determined by CLOCA staff based factors such as:

1. The degree of risk to health and property
2. Is the responsible person someone with whom CLOCA can work to achieve a positive environmental outcome?
3. Did the responsible person disclose the incident voluntarily?
4. Did the responsible person co-operate?
5. How swiftly did the responsible person respond to the incident?
6. Did the actions taken by the responsible person effectively resolve the incident and prevent its recurrence and would education and outreach be more effective to assist the person in understanding, managing and complying with the regulation, than issuing an order or prosecuting?
7. Was the incident the result of gross negligence and/or deliberate actions by a responsible person?

The provisions of the *CA Act* and the P*rovincial Offences Act* direct CLOCA staff when investigating a violation. It is normal that in addition to any penalty levied by the court upon conviction, CLOCA will seek an order for rehabilitation of the site and/or removal of any buildings and/or structures ruled in contravention of Ontario Regulation 42/06.

All violations that can be resolved without legal action should be dealt with through the removal, remediation or restoration of the property, or through the permit process so that the Authority has some written assurance that the activity will be rectified in accordance with staff recommendations.

2.13 Court Action

Penalties available under the *Conservation Authorities Act* are identified under Section 28 (16) which states “every person who contravenes a regulation made under subsection (11) is guilty of an offence and on conviction is liable to a fine of not more than $10,000 or to a term of imprisonment of not more than three months”.
Where CLOCA and other regulatory agencies (DFO, municipality, Province of Ontario) have the power to prosecute, CLOCA will liaise and facilitate effective coordination to avoid inconsistencies and miscommunication noting that compliance with the requirements of policies in the PPD is the primary objective.

2.14 Transition Provision

Unless specifically referenced otherwise, the procedures and policies contained in Chapters 2-7 will apply to all permit applications received on or after April 16, 2013. Regarding permit applications related to Planning Act applications, CLOCA will ensure that concerns regarding the establishment of the principle of *development* are conveyed to the municipality during the Plan Review process and not through the *CA Act* S. 28 permitting process. Furthermore, to the extent possible, CLOCA will ensure that technical matters related to S. 28 permitting are addressed through the Plan Review process. It is recognized that there may be historic planning approvals that were made in the absence of current technical information or approvals that pre-date the approval of

the PPD which could now be considered to be contrary to the tests of Section 3(1) of the O. Reg. 42/06. Under such circumstances the Authority shall ensure that prior to the issuance of a permission all tests in Section 3(1) of the O.Reg. 42/06 are satisfied. Where possible, if an issue remains unresolved, the CA will work with the proponent and the municipality to pursue a resolution.

CHAPTER 3 – GENERAL POLICIE

3.1 General Policies

The PPD contains a number of general and specific policies intended to provide guidance to the administration and the implementation of Ontario Regulation 42/06 and CLOCA's plan review responsibilities.

General policies provide the basis for the formulation of the specific policies contained in Chapters 4-8. General policies also provide a set of considerations, restrictions and/or requirements applicable to proposed *development* and interference/alteration that are within CLOCA's scope and mandate related to Regulation 42/06 and Plan Review.

The specific policies found in Chapters 4-8 do not address all potential forms of proposed *development*, site alteration or other alterations. It is intended that the general policies will provide guidance on how to respond to those proposals that are not specifically referenced. Furthermore, when considering proposals not specifically referenced in the PPD, policies dealing with similar or like activities/uses will also be considered.

***General Policies**:*

- A precautionary approach to natural hazard management shall be taken, such that risk associated with natural hazards are controlled by prohibiting *development* and site alteration in areas where there is an unacceptable risk to public health or safety or of property damage;
- Proper natural hazard management requires that natural hazards be recognized and addressed in a manner that is integrated with land use planning and maintains environmental and ecosystem integrity;
- Effective floodplain management can only occur on a watershed and littoral reach basis with due consideration given to cumulative *development* effects and associated environmental and ecosystem impacts;
- Local conditions vary along floodplains and shorelines including depth, velocity, littoral drift, fetch, accretion, deposition, valleyland characteristics, etc. and accordingly must be taken into account in the planning and management of natural hazards;
- Where a regulated area pertains to more than one water-related hazard (e.g., lands susceptible to flooding that are part of a wetland), policies will be applied jointly, and where applicable, the more restrictive policies will apply.
- Applications related to existing *development* that is susceptible to natural hazards must demonstrate that there is no increase in risk to public safety or property damage and no new hazards are created;
- *Development* should only be considered within a natural hazard if there is no other feasible location outside of the natural hazard.
- there are no *adverse hydraulic or fluvial impacts* on rivers, creeks, streams, or watercourses;
- Wherever possible, development must not preclude access for emergency works and maintenance to erosion hazards;

- Works are constructed, repaired and/or maintained according to accepted *engineering principles* and approved engineering standards or to the satisfaction of CLOCA, whichever is applicable based on the scale and scope of the project;
- All new buildings must have safe access in accordance with Chapter 5;
- *Development* must protect, maintain and wherever possible enhance the natural heritage system and the features and functions that comprise the system;
- Wherever possible, groundwater recharge functions which support natural features or hydrologic or ecological functions on-site and adjacent to the site will be maintained or enhanced;
    a. Development activity involving soil disturbance or potential for soil disturbance apply best management practices for sediment and erosion control as outlined in the Erosion Sediment Control Guideline for Urban Development.
- *Development* is prohibited in *hazardous lands* and *hazardous sites* where the use is:
    a. an institutional use including, but not limited to, those associated with hospitals, nursing homes, preschool, school nurseries, day care and schools, as 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 floodproofing measures or protection works; or
    b. an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations as it would be impaired during an emergency as a result of erosion, the failure of floodproofing measures and/or protection works; or
    c. uses associated with the disposal, manufacture, treatment or storage of hazardous substances; and
- As it relates to administration of Ont. Reg. 42/06, prior to the issuance of a permission, CLOCA must be satisfied that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be adversely affected by *development*, including during and post *development*.

CHAPTER 4 - ONTARIO REGULATION 42/06 - LAKE ONTARIO SHORELINE

4.1 Regulation Content

Ontario Regulation 42/06 contains the following provisions which prohibits *development* along Lake Ontario shoreline unless permission is granted by CLOCA after it has been determined that the control of flooding, erosion, dynamic beaches, pollution or the *conservation of land* will not be affected by the *development*.

"*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:

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 Authority'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, shown in the most recent document entitled "Lake Ontario Shoreline Management Plan"' available at the head office of the Authority,

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, the appropriate allowance inland to accommodate dynamic beach movement shown in the most recent document entitled "Lake Ontario Shoreline Management Plan"' available at the head office of the Authority, and

iv) an allowance of 15 metres inland;"

4.2 Shoreline Processes and Functions

The following section provides a summary of the processes and functions that affect the shoreline of Lake Ontario and indicates how the extent of Lake Ontario shoreline is determined for the purpose of administering the regulation. Shorelines are comprised of three components: 1) flooding hazards, 2) erosion hazards, and 3) dynamic beach hazards.

4.2.1 Flooding Hazard

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 dependent 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. Understanding the interrelationship between pre-storm flooding, storm setup, wave height, wave uprush and other water related hazards (i.e. wave spray, ice) is important in managing a potentially flood susceptible shoreline. 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 (MNR, 1996b).

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 (e.g. 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. When a wave breaks, it results in an increase in the mean water level in shore from the breaking point, referred to as wave set-up. Wave run-up refers to the uprush movement of a wave breaking on a shoreline. This is a function of the height and periodicity of the wave as well as the foreshore slope.

4.2.2 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. 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.

Erosion process also includes slope stability. Slope instability consists of sudden movement or sliding of a mass of soil over a failure plain. A number of human activities can aggravate or create instability. Any changes in water flow over, topography or weight near slopes can impact slope stability.

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.

Erosion rates along Lake Ontario have been monitored at various locations within the shoreline area of CLOCA. Records date back to 1973 and CLOCA continues to monitor erosion rates at specific locations on a biennial basis.

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.

Regulation Allowances

Regulation allowances (15m inland from hazard limit) allow CLOCA 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.

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 CLOCA and the partner municipalities with the opportunity 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.

Access Allowance

An erosion access allowance should be provided for within the Regulation allowance of an erosion hazard. Erosion access allowance provides for:

- Provision for emergency access to erosion prone areas;
- Provision for maintenance and access to the site in the event of an erosion event or failure of a structure; and
- Provision against unforeseen or predicted external conditions which could have an adverse effect on the natural conditions or processes acting on or within an erosion prone area.

Consistent with the Technical Guide River and Stream Systems: Erosion Hazard Limit (MNR 2002) the erosion access allowance shall be 6m. The 6m access allowance may be either reduced or increased based on studies using acceptable scientific, geotechnical and engineering principles to the satisfaction of CLOCA. CLOCA may also determine that a reduced access allowance is appropriate where the existing *development* already encroaches within the recommended 6 metre setback, and where further *development* will not aggravate the erosion or flooding hazard.

4.2.3 Dynamic Beach Hazard

A dynamic beach is considered an unstable accumulation of shoreline sediments 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. 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.

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 embayment's, 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 in 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 (IDGL) 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.

4.3 Shoreline Flood Hazard

Defining Shoreline Flood Hazard

Lake Ontario flood hazard is defined as the combined influence of the: 100 year flood level (static water level and storm surge) and flood allowance for wave set-up and other related hazards (wave run-up). See Figure 3.

The allowance for the 100 year flood level, wave set-up and wave run-up is shown in the document entitled "Lake Ontario Shoreline Management Plan", December 1990, Table 7.1.

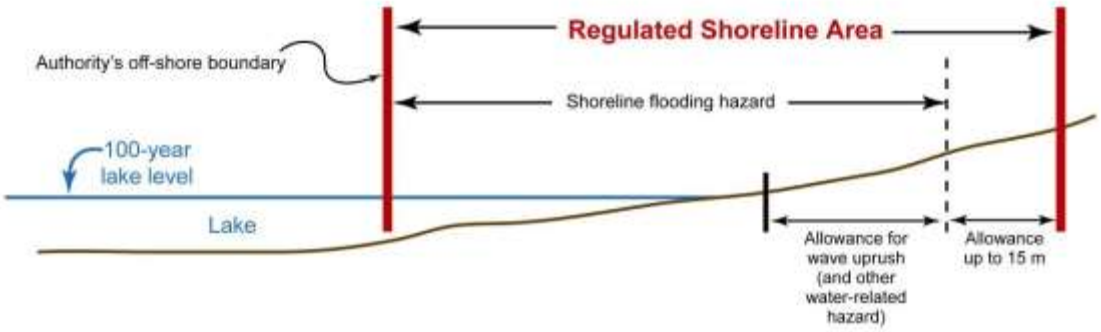


Figure 3 - Shoreline Flood Hazard

When determining the flooding hazard, other factors such as ice jamming or ship generated waves may result in an increased flood hazard. All shoreline areas and connecting channels form an ice cover. There are two types of ice which impact on shoreline features: drift ice (slush, frazil, pancake, floe 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 scours 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.

A reduction to the established hazard limit shall only be considered if an engineering analysis (submitted by the applicant and approved by CLOCA) justifies the reduction.

4.3.1 Policies for Development within Shoreline Flood Hazard

Where more than one hazard exist the farthest combined landward extent of the hazards delineates shoreline hazard lands. In accordance with Ontario Regulation 42/06, permission may be granted for *development* in regulated areas, if it has been demonstrated that the control of flooding, erosion, dynamic beaches, pollution or the *conservation of land* will not be affected.

In accordance with the procedural chapter, all required plans and reports must be carried out by a qualified expert. In the review of the plans and reports CLOCA may

retain the services of an expert consultant to carry out a peer review. Such a peer review will be carried out at the applicant's expense.

1) *Development* is prohibited within the shoreline flood hazard except where allowed under policies 4.3.1.2 – 4.3.1.8 and subject to the General Policies,

2) Repairs, maintenance and interior alterations may be permitted provided it does not result in additional *dwelling units*;

3) Public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted;

4) Public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted;

5) A new building/structure on an *existing vacant lot of record* or a *minor addition* to an existing building/structure or *reconstruction* associated with *existing uses* may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

   a. there is no feasible alternative site outside of the shoreline flood hazard for the proposed *development*;
   b. the proposed *development* does not result in an increase of flooding risk (i.e. floodproofing measures applied) and is located in an area of least risk (i.e. located furthest possible distance from the lake);
   c. the proposed works do not create new or aggravate flooding on the subject, adjacent or other properties;
   d. the *development* is protected from the shoreline flood hazard in accordance with established floodproofing and protection techniques. *Habitable* buildings must be dry-floodproofed. Non *habitable* buildings/structures must as a minimum be wet floodproofed;
   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 and pollution is prevented; and
   g. the proposed *reconstruction* is not for a building/structure that was destroyed by erosion and provided the *reconstruction* does not exceed the original *habitable* floor area nor the original footprint of the previous structure, contains the same or fewer number of *dwelling units*, and the use of the reconstructed dwelling/structure does not increase the risk to property and public safety.

6) Non-*habitable accessory* building/structures, pools, landscaping retaining walls, grading, unenclosed decks, etc., associated with *existing uses* may be permitted if:

   a. proposed *development* less than $14m^2$ in size demonstrates to the satisfaction of CLOCA that safety concerns due to flooding hazards are addressed considering the nature of the proposed use and site specific conditions; or
   b. proposed *development* larger than $14m^2$ demonstrates to the satisfaction of CLOCA that:
      - the *development* is anchored and is less than 50 square metres;
      - there is no feasible alternative site outside of the shoreline flood hazard;

- that there will not be an increase of flooding risk (i.e. floodproofing measures applied) and is located in an area of least risk (i.e. located furthest possible distance from the lake);
- there will not be new or aggravated flooding on the subject, adjacent or other properties;
- there will be access for emergency works, maintenance and evacuation; and
- the *development* will be flood proofed to the satisfaction of CLOCA.

7) The repair or replacement of a malfunctioned sewage disposal system may be permitted. 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.

8) Parking lots associated with existing non-residential uses may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

   a. there is no feasible alternative site outside the flood hazard;
   b. safe pedestrian and vehicular access is achieved; and,
   c. floodproofing is undertaken to the extent practical.

   In general, underground parking within the shoreline flood hazard shall not be permitted.

   Parking lots associated with new land uses must be floodproofed 0.3m above the shoreline flood hazard unless it can be demonstrated to the satisfaction of CLOCA that floodproofing is not technically feasible or would result in a compromise of other policy objectives in the PPD and that flood elevation will not exceed a depth of 0.2m.

4.3.2 Policies for 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 CLOCA that the General Policies shave been satisfied and:
   a. the *development* will not create new or aggravate existing flood hazards;
   b. safe access to and from a public road is provided;
   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 Shoreline Erosion Hazard

Defining Shoreline Erosion Hazard

In defining the landward limit of the shoreline erosion hazard limit there are three components to be calculated (see Figure 4):

- a setback distance for slope stability of a slope gradient of 3:1 or as defined using accepted geotechnical analysis;
- The 100 year erosion limit;

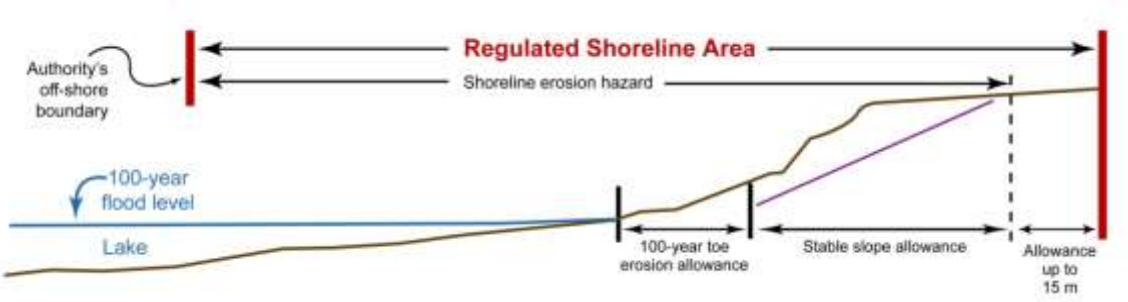


Figure 4 - Erosion Hazard

The 100 year erosion setbacks are summarized in the document entitled "Lake Ontario Shoreline Management Plan", December 1990, table 7.1. These setbacks may be adjusted/updated to reflect the most recent erosion monitoring.

A reduction to the established hazard limit shall only be considered if a geotechnical engineering analysis (submitted by the applicant and approved by CLOCA) justifies the reduction. CLOCA will not accept a stable slope allowance with steepness greater than 2:1.

4.4.1 Policies for Development within the Shoreline Erosion Hazard

1) *Development* is prohibited in the shoreline erosion hazard except where allowed under policies 4.4.1.2 - 4.4.1.8 and subject to the General Policies;

2) Public and private infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted;

3) Public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted if it has been demonstrated to the satisfaction of CLOCA that the *development* is located as far as possible from the hazard;

4) In general, stabilization/erosion protection works within the shoreline erosion hazard to allow for future/proposed *development* or an increase in a *development* envelope or area shall not be permitted except as provided in section 4.6. New *development* may be considered within the erosion hazard, where protection stabilization works has previously been constructed, provided the *development* complies with with the provincial guideline – Technical Guide For Great Lakes - St. Lawrence River Shorelines Appendix A7.2). Refinements to erosion allowance and/or long term stable slope allowance will only be considered if supported through engineering studies (coastal and geotechnical assessments), which includes verification that existing protection works is sound and any need for repairs to the satisfaction of CLOCA.

5) Shoreline, bank, and slope stabilization to protect existing *development* and conservation or restoration projects may be permitted if it has been demonstrated

to the satisfaction of CLOCA that all matters outlined in section 4.6 of this chapter;

6) *Development* associated with *minor additions* to buildings/structures and *reconstruction* of existing buildings/structures may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

a. there is no feasible alternative site outside of the shoreline erosion hazard;
b. the proposed *development* does not result in an increased risk of erosion damage and is located in an area of least and acceptable risk;
c. the proposed *development* is not located within the stable slope allowance plus an erosion hazard allowance based on a planning horizon of 70 years;
d. there is no impact on existing and future slope stability and bank stabilization;
e. the potential of increased risk due to loading forces on the top of the slope is addressed;
f. the proposed *development* will not prevent access into and along the shoreline erosion hazard in order to undertake preventative actions/maintenance or during an emergency;
g. the proposed *development* will have no negative impacts on natural shoreline processes;
h. the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/ restoration plans;
i. natural features and/or ecological functions contributing to the conservation of land are protected and pollution is prevented;
j. there is no increase in the number of *dwelling units*; and
k. the proposed *reconstruction* is not for a building/structure that was destroyed by erosion and provided the *reconstruction* does not exceed the original *habitable* floor area nor the original footprint of the previous structure and contains the same or fewer number of *dwelling units*.

7) Non-*habitable accessory* structures, pools, landscaping retaining walls, grading, unenclosed decks, etc. associated with *existing uses* may be permitted provided:

- the *development* will not prevent access into and through the shoreline erosion hazard in order to undertake preventative actions/maintenance or during an emergency;
- there is no feasible alternative site outside of the shoreline erosion hazard;
- the proposed *development* is located in an area of least (and acceptable) risk;
- no *development* is located within the stable slope allowance plus a setback to accommodate a 50 year erosion rate for buildings/structures and in-ground pools, and 10 year erosion rate for decks and above-ground pools;
- there is no impact on existing and future slope stability and bank stabilization;
- there is no ability for conversion into *habitable* space in the future.

8) Exterior repairs and interior alterations may be permitted provided it does not result in additional *dwelling units*.

4.4.2 Policies for Development within the Allowance Adjacent to the Shoreline Erosion Hazard

Development may be permitted within the allowance adjacent to the shoreline erosion hazard if it has been demonstrated to the satisfaction of CLOCA that all applicable General Policies are addressed and submitted plans demonstrate that:

a. there is no new or aggravated erosion hazard;
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.

4.5 Dynamic Beach Hazard

Defining Dynamic Beach Hazard
To define a dynamic beach, the flooding hazard limit must be known. 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.

The 100 year lake level should 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.

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.

The dynamic beach hazard includes the following (Figure 5):

- 100 year flood level; plus

- An allowance for wave uprush, and if necessary, an allowance for other water related hazards, including ship generated waves, ice piling and ice jamming (generally 15m); plus
- An allowance inland of 30 metres to accommodate for dynamic beach movement on the great lakes; plus

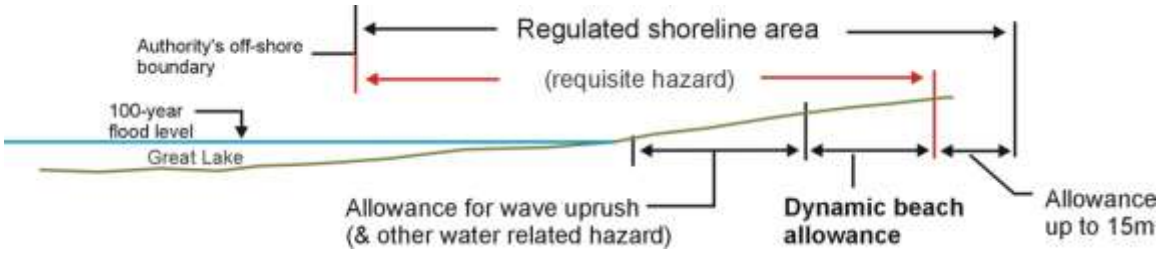


Figure 5 - Dynamic Beach Hazard

A reduction to the established hazard limit shall only be considered if an engineering analysis (submitted by the applicant and approved by CLOCA) justifies the reduction.

4.5.1 Policies for Development within the Dynamic Beach Hazard

1) *Development* within a dynamic beach hazard is prohibited except where allowed under policies 4.5.1.2 – 4.5.1.7 and subject to the General Policies;

2) Underground public infrastructure (e.g. sewers) and various utilities (e.g. pipelines) may be permitted;

3) Public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted if it has been demonstrated to the satisfaction of CLOCA that the *development* is located as far as possible from the hazard;

4) Conservation or restoration projects may be permitted.

5) *Reconstruction* of an existing building/structure within the shoreline dynamic beach hazard, if it has been demonstrated to the satisfaction of CLOCA that:

   a. there is no feasible alternative site outside of the dynamic beach hazard;
   b. the proposed *development* is located as far away from the hazard as possible;
   c. no *development* is located within the 100 yr. flood level;
   d. *development* will not prevent access into and along the shoreline hazard in order to undertake preventative actions/maintenance or during an emergency;
   e. the proposed *development* will not exceed original *habitable* floor area nor the original footprint area of the previous structure and contains the same number of *dwelling units*;
   f. *development* will have no negative impacts on natural shoreline processes;
   g. the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;

h. 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; and
i. *reconstruction* is not for a dwelling/structure that was destroyed by erosion or flooding and provided the *reconstruction* does not exceed the original *habitable* floor area nor the original footprint of the previous structure

6) New stabilization/protection works within the dynamic beach hazard to allow for future/proposed *development* or an increase in a *development* envelope or area shall not be permitted except as provided in section 4.6. New *development* may be considered within the dynamic beach hazard, where stabilization/protection works has previously been constructed, provided the *development* is located as far as feasible from the dynamic beach hazard and a coastal engineer has confirmed that there has been no failure in the protection works, there is no evidence of flanking and that the stabilization works will be effective in protecting the proposed *development* from coastal processes. The life expectancy of the stabilization/protection works must be considered in accordance with provincial guidelines.

7) Exterior building repairs and maintenance and interior alterations may be permitted provided it does not result in additional *dwelling units*.

4.5.2 Policies for 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 CLOCA that the General Policies have been satisfied and:
   a. there is no new or aggravated hazard;
   b. access to and along the dynamic beach is maintained;
   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.

4.6 Lake Ontario Shoreline Protection Works

To slow the erosion of shorelines, structures such as breakwaters, seawalls and revetments may be used under certain circumstances. 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 6). 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.

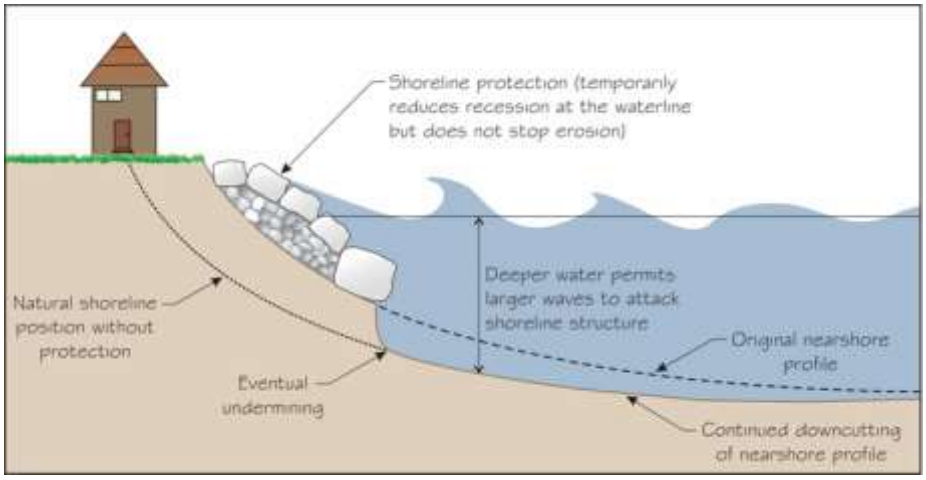


Figure 6 - Lake Erosion Down Cutting - See also Technical Guidelines - Great Lakes - St. Lawrence River (MNR, 1996b)

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.

As a result of the temporary nature of erosion protection works, measures which harden the shoreline to facilitate new *development* should be avoided wherever possible and should only be considered to lessen the threat of a risk to areas with existing development provided it can be demonstrated on a comprehensive reach approach that the following have been addressed.

- The need and purpose of the proposed works have been clearly defined;
- The shoreline works have been designed to the Lake Ontario flood hazard limit and according to accepted scientific and coastal *engineering principles*;
- The works have been designed and approved by a professional engineer with experience and qualifications in coastal engineering;
- Slope stability has been assessed by a professional engineer with experience and qualifications in geotechnical engineering;
- The ownership of land, where the protection works are proposed, has been clearly established by the applicant;
- The design and installation of protection works allows for access to and along the protection works for appropriate equipment and machinery for regular maintenance purposes and repair should failure occur;
- The protection works should follow accepted sustainable management practices;

- The protection works will not create new hazards or aggravate existing hazards on the subject or other properties;
- The works do not result in a measurable and unacceptable impact or cumulative effect on the control of flooding, erosion, dynamic beaches, pollution or the *conservation of land*;
- The works are not proposed within a dynamic beach hazard;
- Natural features, ecological functions and hydrologic functions contributing to the *conservation of land* are not affected;
- In areas of existing *development*, protection works should be coordinated with adjacent properties; and
- The protection works must address the considerations outlined in the provincial guideline "Technical Guide For Great Lakes – St. Lawrence River Shorelines Appendix A7.1 Recommended Approach For Designing Shoreline Protection Works.

4.6.1 Long Term Risk Prevention for Existing Development within Shoreline Hazard Areas

To effectively deal with the protection of human health and property for existing *development* within shoreline hazard areas, a comprehensive approach to the reduction in the hazard risk must be considered long term risk prevention and should be addressed through a shoreline management plan which can examine in detail matters such as:

- Public education and awareness;
- Formal monitoring of shoreline hazards;
- Protection works; and,
- Public acquisition.

A Lake Ontario Shoreline Management Plan was prepared in 1990 for the shoreline area of Central Lake Ontario, Ganaraska Region and Lower Trent Region Conservation Authorities which provided information on some generic shore protection methods for the various shoreline reaches. Any application of structural protection works to assist in addressing the erosion hazards must also consider the impacts to adjacent properties as well as to the terrestrial and aquatic environment. The 1990 Management Plan should be updated and specific areas along the shoreline (damage centres) should be reviewed in more detail. CLOCA will work with area municipalities and other partners and stakeholders to update and undertake additional work related to the Shoreline Management Plan.

CHAPTER 5 - ONTARIO REGULATION 42/06 - RIVER OR STREAM VALLEYS

5.1 Regulation Content

Ontario Regulation 42/06 contains the following provisions which prohibits *development* in or on river or stream valleys unless permission is granted by CLOCA after it has been determined that the control of flooding, erosion, dynamic beaches, pollution or the *conservation of land* will not be affected by the *development*.

Development prohibited:

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 regulatory floodplain 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.

5.2 River or Stream Valley Processes and Functions

River or stream valleys are shaped and re-shaped by erosion, slope stability and flooding. 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. Factors influencing stability of the valley slopes may include steepness, soil composition, ground and surface water flows, vegetative cover and land uses on or abutting the valley. The constant shaping and re-shaping of the river and stream valley systems by the physical processes results in hazardous conditions which pose a risk to life and cause property damages if inappropriate land uses are permitted to encroach into these areas.

River or stream systems (valleys) 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 within the defined valley system.

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 a natural a state.

5.3 Erosion Hazard

Defining Erosion hazard

Erosion hazards pose a threat to life and property through the loss of land due to human or natural processes. 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.

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. Stable slopes are generally defined as slopes having less steepness than 3:1. Note: the MNR technical guide river and stream systems erosion hazard limit should be used for additional detail on how to define stable slope allowance and toe erosion allowance.

Apparent (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).

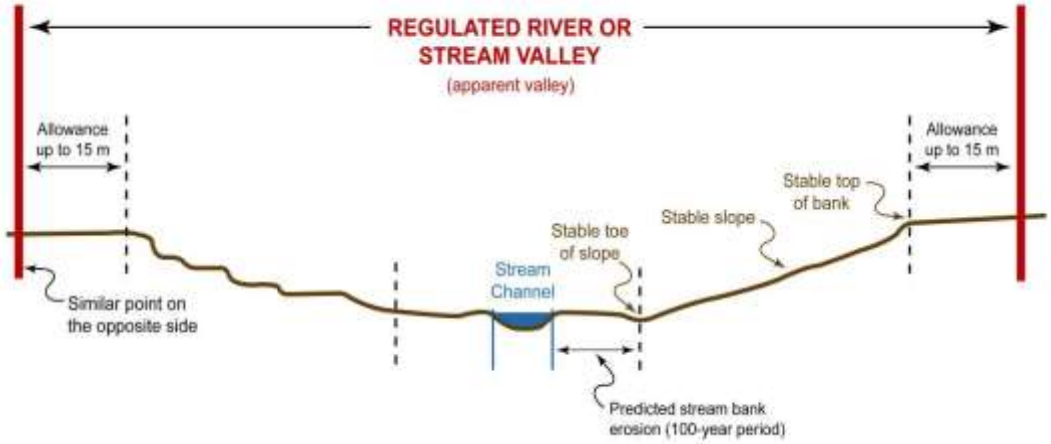
Generally valley systems are considered to be apparent or confined where bank or valley wall has a slope with a gradient of 15% or greater. Apparent valleys can exhibit three conditions:

- valley slopes which are discernible and stable,
- valley slopes which are steep and potentially unstable, and
- valley slopes which are subject to active stream bank erosion.

Apparent (confined) river or stream valley where the valley slopes are stable (see Figure 7):

The erosion hazard for an apparent valley with stable slopes is defined as any slope with a gradient between 15% and $33^{1/3}$% (3H:1V) and typically resist slumping and rotational slippage. The extent of the Regulated area is the stable top of bank plus 15m. Top of bank is defines as the point where the upward inclination of a valley slope has a visibly discernible break in slope or leveling off.

Figure 7 - Apparent River or Stream Valley Where the Valley Slopes are Stable

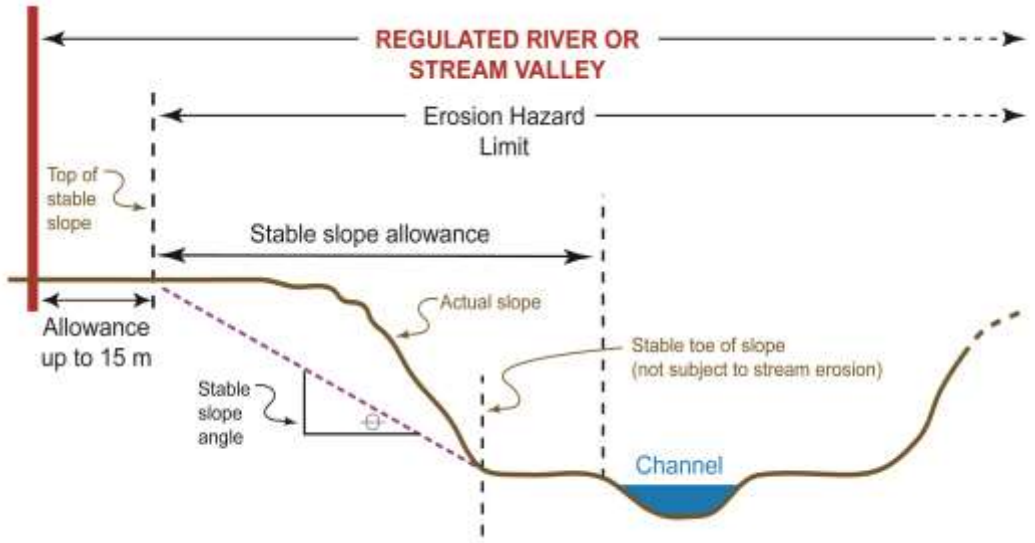


Apparent (confined) river or stream valley associated with unstable slopes and stable toe (see Figure 8):

The hazard limit associated with an apparent valley with unstable slopes (equal or greater than $33^{1/3}$% or 3H:1V) and stable toe is defined as:

- The river or stream valley including the predicted long term stable slope projected from the existing stable toe of slope;

Figure 8 - Apparent River of Stream Valley Associated with Unstable Slopes & Stable Toe

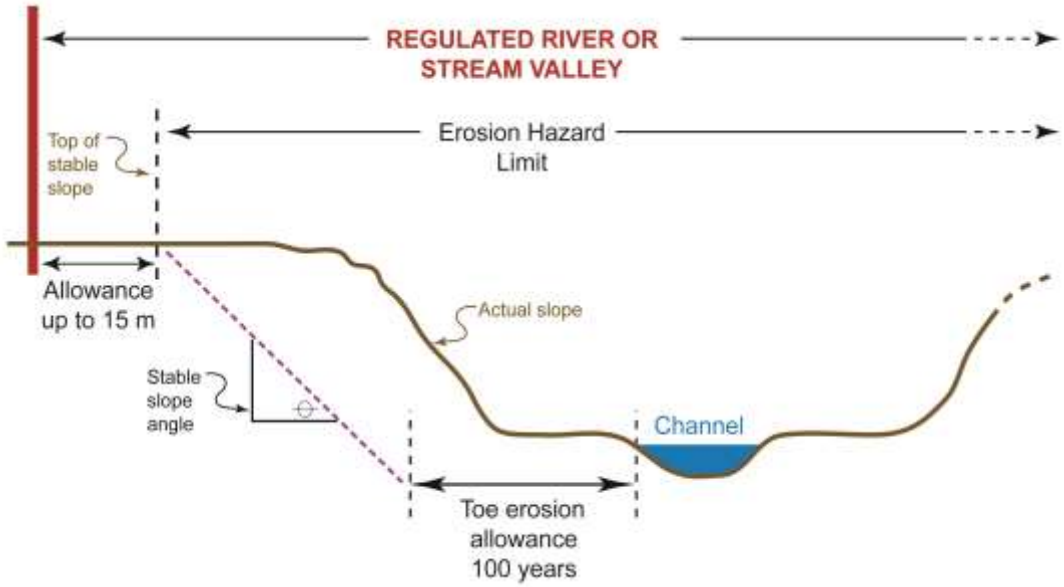


Apparent (confined) river or stream valley with unstable slopes and active toe erosion (see Figure 9):

The hazard limit associated with an apparent valley with unstable slopes (equal or greater than $33^{1/3}$% or 3H:1V) and active toe erosion is defined as:

- The river or stream valley including the long term stable slope projected from the predicted stable toe of slope.

Figure 9 - Apparent River or Stream Valley with Unstable Slopes & Active Toe Erosion



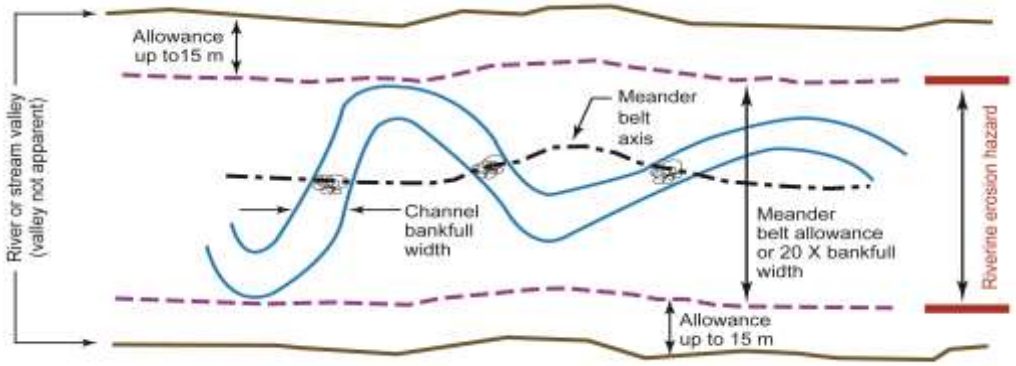
***Not apparent (unconfined) river and stream valleys*:** are ones in which a river or stream is present but there is no discernible valley slope (slope inclination less than 15%) or bank that can be detected from the surrounding landscape. For the most part, unconfined systems are found in fairly flat or gently rolling landscapes and may be

located within the 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.

Not apparent (unconfined) river or stream valley (see Figure 10):

The hazard limit associated with an unconfined valley (slope inclination less than 15%) is defined as the maximum extent of the predicted meander belt of the river or stream.

Figure 10 - Technical Analysis for Erosion Hazards



Regulation Allowances

Regulation allowances allow CLOCA 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.

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 CLOCA and the partner municipalities with the opportunity 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.

Access Allowance

An erosion access allowance should be provided for within the Regulation allowance of an erosion hazard. Erosion access allowance provides for:

- Provision for emergency access to erosion prone areas;
- Provision for maintenance and access to the site in the event of an erosion event or failure of a structure; and

- Provision against unforeseen or predicted external conditions which could have an adverse effect on the natural conditions or processes acting on or within an erosion prone area.

In accordance with the Technical Guide River and Stream Systems: Erosion Hazard Limit (MNR 2002) the erosion access allowance shall be 6m. The 6m access allowance may be either reduced or increased based on studies using acceptable scientific, geotechnical and engineering principles to the satisfaction of CLOCA. CLOCA may also determine that a reduced access allowance is appropriate where the existing *development* already encroaches within the recommended 6 metre setback, and where further *development* will not aggravate the erosion or flooding hazard.

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 CLOCA. With respect to riverine erosion hazards, technical studies should be in keeping with the Technical Guide – River and Stream Systems: Erosion Hazard Limit, (MNR, 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 downcutting, 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.

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.

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.

The MNR technical guide – river and stream systems: erosion hazard limit, provides that the top of stable slope is 3:1 (h:v) minimum or as determined by using accepted geotechnical principles. Accordingly CLOCA will consider a top of stable slope greater

than 3:1 provided a geotechnical report demonstrates a stable slope. Under no circumstances will CLOCA accept a stable slope steeper than 2:1.

As part of the review of an application, CLOCA may request an environmental impact study (EIS) to address *development* within erosion hazards in order to assess pollution and/or conservation of land. 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 CLOCA.

5.3.1 Policies for Erosion Hazards - River and Stream Valleys

The following outlines the specific policies for implementing CLOCA's regulation 42/06 with respect to erosion hazards associated with a river and stream valleys.

1) *Development* is prohibited within the erosion hazard of a river or stream valley except where allowed under policies 5.3.1.2) – 5.3.1.12) and subject to the General Policies;

2) Stormwater management facilities shall be encouraged to locate outside of the erosion hazard. However they may be permitted in confined systems provided:

   - it is demonstrated that there is no feasible location outside of the erosion hazard;
   - the General Policies have been addressed;
   - the facility is not the 100 year toe erosion allowance;
   - the facility is not within the stable slope allowance;
   - access to and along the top of stable slope is protected; and
   - the facility is not located within the natural heritage system as defined in the Watershed Plan.

3) Public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted it has been demonstrated to the satisfaction of CLOCA that there is the demonstrated need to locate in the hazard. Detailed geotechnical study will be required to determine precise erosion hazard limits(s) and demonstrate how impacts to the erosion hazard will be mitigated to ensure that there is no impact on existing and future slope stability;

4) Public parks and passive outdoor recreational uses [1](e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

   - there is no feasible alternative location outside of the erosion hazard;

[1] Passive outdoor recreational uses generally means minimal site alteration, infrastructure and structures and provide for low intensive recreational uses such as trail systems.

- buildings, structures and parking facilities are located outside of the erosion hazard;
- a geotechnical study demonstrates that there is no impact on existing and future slope stability; and
- unacceptable risks to life and property do not result;

5) Stream bank, slope and valley stabilization may be permitted subject to policies contained in Chapter 6 and 8 dealing with interference to watercourses and natural hazards;

6) Construction of a driveway or access way over an erosion hazard of a river or stream valley in order to provide access to lands outside of the river or stream valley, may be permitted subject to policies contained in Chapter 6 dealing with interference to watercourses;

7) *Minor addition* to an existing building/structure and the *reconstruction* of an existing building/structure may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

a. there is no feasible alternative site outside erosion hazard. In the event that there is no feasible alternative site, that the proposed *development* is located in an area of least (and acceptable) risk and the addition does not result in an increase in risk;
b. no *development* is located within the stable slope allowance plus a setback to accommodate the greater of the 70 year erosion rate or 8m toe erosion allowance;
c. there is no impact on existing and future slope stability;
d. any required bank stabilization or erosion protection works complies with the policies in Chapter 6 dealing with interference to watercourses;
e. there will be no negative impacts on natural stream meandering/fluvial processes;
f. the potential of increased loading forces on the top of the slope is addressed;
g. access into and through the valley system will be maintained wherever feasible;
h. the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/ restoration plans;
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;
l. the proposed *reconstruction* is not for a dwelling/structure that was destroyed by erosion/slope movements and provided the *reconstruction* does not exceed the original *habitable* floor area nor the original footprint of the previous structure and contains the same or fewer number of *dwelling units*.

8) Non-*habitable accessory* buildings/structures, pools, landscaping retaining walls, grading, decks, etc., associated with *existing uses* may be permitted provided:

- the *development* will not prevent access into and through the erosion hazard in order to undertake preventative actions/maintenance or during an emergency;
- *there is no feasible alternative site outside of the erosion hazard;*

- *the proposed development is located in an area of least (and acceptable) risk;*
- *no development is located within the meander belt of an unconfined system*
- *within a confined system, it has been demonstrated that the proposed development will not be subject to unstable slopes or stream erosion as determined by an erosion setback of the greater of a 50 year toe erosion or 8m. toe erosion allowance* and in-ground pools, and 10 year erosion rate for decks and above-ground pools;*;*
- *there is no impact on existing and future slope stability and bank stabilization; and,*
- *there is no ability for conversion into habitable space in the future.*

9) Fill placement and site grading within apparent valley with stable slopes (gradient less than 3:1) to alter the top of bank may be permitted provided no placement of fill occurs within the regulated floodplain or the stable toe of slope erosion hazard and the following matters are addressed:

a. The fill is proposed on an infill lot where the majority of surrounding lots adjacent to the stream valley are built and the ability for any future fill in the valley system is minimal;
b. That the placement of fill does not create a slope gradient greater than 3H:1V (A geotechnical report may also be required to confirm stable slopes);
c. That the placement of fill does not adversely impact the natural ecosystem of the stream valley (hydrology, hydraulics, flora and fauna, temperature/nutrients/sediment) and where possible results in an overall improvement to the natural system;
d. There is no adverse impact on water quality;
e. If the fill exceeds 500 m3, CLOCA's Large Fill Policy must be addressed;
f. The submission of a construction management plan describing suitable control works and supervision during construction by a qualified geotechnical engineer; and,
g. That any proposed new *development* incorporate the appropriate set backs as outlined in the PPD from the established top of bank.

10 Fill placement and site alteration within the 6m access allowance of an apparent valley with gradients greater than 3:1, may be permitted provided the following matters are addressed:

a. The ability to obtain access to the valley is maintained;
b. There is no adverse impact on the natural ecosystem of the stream valley (hydrology, hydraulics, flora and fauna, temperature/nutrients/sediment) and where possible results in an overall improvement to the natural system;
c. There is no adverse impact on water quality;
d. If the fill exceeds 500 m3, CLOCA's Large Fill Policy must be addressed;
e. The submission of a construction management plan describing suitable control works and supervision during construction by a qualified geotechnical engineer; and,

11) The repair or replacement of a malfunctioned sewage disposal system may be permitted. The replacement system should be located outside of the erosion hazard where possible and only permitted within the shoreline flood hazard in the area of lowest risk.

12) Exterior repairs and interior alterations may be permitted provided it does not result in additional *dwelling units*.

5.3.2 Policies for Development within the Allowance Adjacent - Erosion Hazard of a River or Stream Valleys

1) *Development* may be permitted within the allowance adjacent to the erosion hazard of a river or stream valley if it has been demonstrated to the satisfaction of CLOCA that the General Policies have been satisfied and:
   a. there is no new or aggravated erosion hazard;
   b. there is a setback of sufficient distance from the stable top of bank to avoid increases in loading forces on the top of the slope; and
   c. there is no change in drainage or vegetation patterns that would compromise slope stability or exacerbate erosion of the slope face;
   d. the potential for surficial erosion has been addressed through 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.

5.4 Flooding Hazard

Defining Flood Hazard

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. Floodplain *development* is susceptible to flooding which can result in property damage and/or loss of life.

Within CLOCA, the regulatory floodplain for river or stream valley systems is generally defined as the area adjacent to the watercourse which would be inundated by the greater flood event resulting from either Hurricane Hazel (Regional storm) or the 100 year frequency based event. . Darlington and Pringle Creeks are the exceptions, and are regulated solely on the 100 year storm flood limit. The Municipality of Clarington and Town of Whitby respectively made a request to the province to use the 100 year flood line as a regulatory flood limit on these two watersheds.

Within Ontario, there are three policy concepts for floodplain management: one zone, two zone, and special policy area (SPA). In most river or stream valleys in CLOCA, a one zone concept is applied. This area encompasses the entire floodplain.

The regulated area includes the flood hazard plus a regulation allowance of 15m. (Figure 11).

The river or stream valley policies assume the one zone concept applies. Policies for approved two zone areas are contained in separate documents specific to each two zone area.

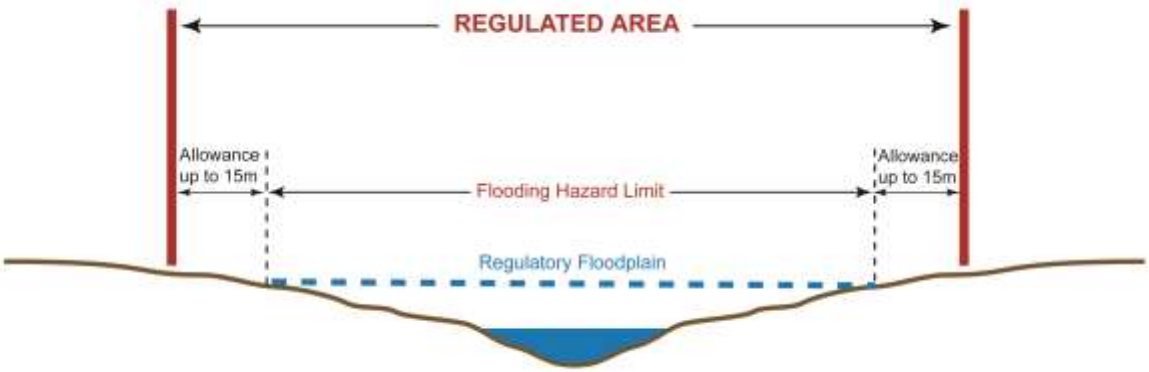


Figure 11 - One-zone Policy Approach

Technical Standards for the Flooding Hazard

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. Generally, risk should be controlled by limiting the size and type (and thereby limiting the occupancy) of new construction and additions or *reconstruction* projects in dangerous or inaccessible portions of the regulatory floodplain. Floodproofing measures should be in keeping with the standards of the River and Stream Systems Flooding Hazard Limit, Technical Guide – Appendix 6 (MNR, 2002a). Where floodproofing standards or safe access cannot be obtained for *development*, generally the *development* should be prohibited.

As part of the review of an application, CLOCA may request an Environmental Impact Study (EIS) to address *development* within a flooding hazard in order to assess pollution and/or conservation of land. 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 CLOCA.

Floodplain Spill Areas

There are several areas within CLOCA's watershed in which flood plain spills occur. A flood plain spill area exists where flood waters are not physically contained within the valley or stream corridor and exit into surrounding lands. As a consequence, the limit and depth of flooding are difficult to determine. Flood spill areas occur naturally or can occur as a result of downstream barriers to the passage of flood flows such as undersized bridges or culverts.

CLOCA does not regulate *development* in spill areas in the same manner as *development* within flood plain areas, as these areas are not readily defined and the storage/flow that occurs in these areas is not considered as part of the natural flood

plain, hence preservation of flood storage is not required. Where spill locations can be identified, CLOCA may permit *development* provided appropriate flood hazard mitigation can be established. Mitigation for *development* proposed within a spill area could include:

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

5.4.1 Policies for One-zone Floodplain - River or Stream Valleys

The following outlines the specific policies for implementing CLOCA's Regulation 42/06 with respect to flooding hazards associated with a river and stream valleys.

1) *Development* is prohibited within the regulatory floodplain except where allowed in policies 5.4.1.2) – 5.4.1.15) and subject to the General Policies;

2) A new building/structure on an *existing vacant lot of record* may be permitted provided it can be demonstrated that:

   a. No feasible alternative site outside of the flood hazard;
   b. The proposed *development* is located in an area of least risk;
   c. flood storage and flood hydraulics are not negatively affected;
   d. The *development* can be floodproofed , including demonstration that the proposed development can withstand hydrostatic pressure to the satisfaction of CLOCA;

3) Stormwater management facilities shall be encouraged to locate outside of the flood hazard. However quantity control facilities may be permitted within the flood hazard provided they are outside of the 100 year floodplain. Quality treatment facilities may be permitted provided they are outside of the 25 year floodplain. Both quantity and quality facilities must:

   a) ensure outlets are outside of the 2 year floodplain; and
   b) demonstrate there is no impact on flood hydraulics and flood storage; and
   c) be located outside of the natural heritage system as defined in the Watershed Plan.

4) Public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted if it has been demonstrated to the satisfaction of CLOCA that there is a demonstrated need to locate in the flood hazard;

5) Public parks (e.g. passive or low intensity outdoor recreation and education, trail systems) may be permitted if it has been demonstrated to the satisfaction of CLOCA that there is no alternative location outside of the flood hazard;

6) Stream, bank, slope, and valley stabilization to protect existing *development* and conservation or restoration projects may be permitted.

7) M*inor addition* to an existing building/structure and *reconstruction* of existing building/structure may be permitted if it has been demonstrated to the satisfaction of CLOCA 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. flood storage and flood hydraulics are not negatively affected. There must also be no potential for debris (ice) to be trapped or jammed creating a flood hazard;
c. the *development* is protected, to the extent feasible, from the flood hazard in accordance with established floodproofing 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;
g. the number of *dwelling units* is the same or fewer and there is no opportunity for conversion of non-*habitable* additions into additional *dwelling units*;
h. no basement is proposed; and
i. the past structure subject to the *reconstruction* was not previously damaged or destroyed by flooding and the *reconstruction* shall generally not exceed the original footprint and *dwelling units*, unless it is demonstrated that the replacement structure provides greater protection from flooding hazard and the use of the reconstructed dwelling/structure does not increase the risk to property and public safety.

8) Non-*habitable accessory* structures, pools, landscaping retaining walls, grading, decks, etc. may be permitted if it has been demonstrated that:

a. it is anchored;
b. there is no feasible alternative site outside of the flood hazard;
c. it does not result in an increase of flooding risk (i.e. floodproofing measures applied) and is located in an area of least risk (i.e. located furthest possible distance from the lake);
d. flood storage and flood hydraulics are not negatively affected;
e. it will not prevent access for emergency works, maintenance and evacuation; and,
f. it will be flood proofed to the satisfaction of CLOCA.

9) Construction of a driveway or access way through the regulatory floodplain in order to provide access to an existing lot of record outside of the regulatory floodplain may be permitted provided safe access can be achieved to the extent possible and the applicable policies addressing interference with a watercourse have been satisfied;

10) The repair or replacement of a malfunctioned sewage disposal system may be permitted. 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.

11) Parking lots associated with existing non-residential uses may be permitted if it has been demonstrated that:

a) there is no feasible alternative site outside the riverine flooding hazard;
b) safe pedestrian and vehicular access is achieved; and,
c) floodproofing is undertaken to the extent practical.

In general, underground parking within the regulatory floodplain shall not be permitted.

Parking lots associated with new land uses must be floodproofed 0.3 metres above the regulatory floodplain unless it can be demonstrated to the satisfaction of CLOCA that floodproofing is not technically feasible or would result in a compromise of other policy objectives in the PPD and that the flood elevation will not exceed a depth of 0.22 metres.

12) Golf courses, golf course expansion or driving ranges may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

a. all associated structures are located outside of the riverine flooding hazard;
b. there is no loss of flood storage;
c. watercourse crossings are minimized through site and facility design and flood emergency plans; and,
d. the risk of pollution from the application of fertilizers, herbicides, pesticides or insecticides or other chemical or organic compounds is minimized and addressed in a turf management plan that includes requirements for monitoring.

13) A new *dug-out or isolated pond* (not connected to watercourse by way of inlet) may be permitted if it has been demonstrated to the satisfaction of CLOCA that:

a. the pond is not located within an erosion hazard; and
b. all dredged material is removed from the riverine flooding hazard and the riverine erosion hazard;

14) Dredging of an existing *dug-out* or isolated pond may be permitted where it has been demonstrated to the satisfaction of CLOCA that:

a. all dredged material is removed from the riverine flooding hazard and the riverine erosion hazard;
b. hydrologic and ecological functions are restored and enhanced to the extent possible; and,
c. the risk of pollution and sedimentation during dredging operations is minimized.

15) Exterior building repairs and maintenance and interior alterations may be permitted provided it does not result in additional *dwelling units*.

5.4.2 Policies for Development within the Allowance of the Regulatory Floodplain - River or Stream Valleys

1) *Development* may be permitted within the allowance of a regulatory floodplain if it has been demonstrated to the satisfaction of CLOCA that the General Policies have been satisfied and:
a. it will not aggravate the flood hazard or create a new one;

b. it 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.

5.5 Floodproofing

All *development* proposed within the flood hazard limit must be floodproofed**.**

Floodproofing means structural changes and/or adjustments incorporated into the basic design and/or construction or alteration of individual buildings, structures or properties to protect them from flood damage. In many situations, floodproofing involves non-conventional design of the structural, drainage and electrical/mechanical systems of the building. Accordingly, for certain applications, the services of a licensed professional engineer will be a requirement.

Where buildings can be approved, but the services of a licensed professional engineer are required by this policy, the designer shall produce a summary or "owner's manual" for the owner (and for subsequent owners) such that measures to be taken prior to, during and following a flood event are defined to ensure the building's suitability for ongoing human habitation and to outline ongoing maintenance responsibilities and requirements.

Floodproofing Methods

The following describes the basic options available for floodproofing typical structures and the policies of the Authority in circumstances where *development* may be permitted. It should be recognized that for some situations one or more of the following options may prove to be technically or economically impractical. Recognizing the required floodproofing measures are the minimum standard, where feasible, CLOCA will require the most effective floodproofing measures in an effort to reach the maximum protection possible.

The following describes types and standards for floodproofing. For additional information, reference should be made to the *Technical Guide River and Stream Systems: Flood Hazard Limit*, MNR 2002.

a. wet floodproofing

- 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.
- Wet floodproofing is not permitted for habitable structures.
- Drawings must clearly indicate the means by which hydrostatic pressure is to be equalized on either side of the foundation walls and slab;
- At least two openable windows shall be provided on opposite sides of building;

- Top of window sills to be not less than 150 mm below finished exterior grade (to allow flood waters into the structure relieving hydrostatic pressure as soon as flooding of the surrounding land commences);
- Construction material must withstand alternate wetting and drying such as concrete, pressure treated wood etc.
- Be securely anchored.
- Sump pump may be required (to facilitate clean-up);
- The vertical height within the enclosed space under the building between the underside of the floor assembly and the ground cover directly below shall be no greater than 1800 mm.

b. dry floodproofing (active and passive)

- Active dry 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.
- Passive dry floodproofing is the use of fill or design modifications to elevate structure or openings in the building at, or above, the level of the flood hazard.
- Underside of main floor shall be at least 0.3 m above the regulatory flood level;
- All openings (windows, vents, doors) and electrical must be located at least 0.3m above the regulatory flood level.
- Structural details of foundation elements and specifications for fill *materials* and compaction procedures must be prepared or approved by a qualified professional engineer at the applicant's expense;
- The responsible professional engineer shall certify in writing that the design has taken into account regulatory flood (velocity and depth of flow) and site (soil type, bearing capacity, etc.) conditions encountered at the specific location of the *development*; and,
- The professional engineer’s certificate must confirm that the foundation and building are designed to withstand hydrostatic pressures and/or impact loading that would develop under water levels equivalent to the design storm plus (minimum) 0.3 metres of freeboard;
- The responsible professional engineer must also identify all operation and maintenance requirements to be met in order to ensure the effective performance of the floodproofing measures over the design life of the structure.

5.6 Safe Access/Egress

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 in 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 on a municipal roadway or private right of way. 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. Redevelopment and *minor additions* should not be permitted if it results in greater risk to safe access.

Access/egress shall remain dry at all times for institutional buildings servicing the sick, the elderly, the disabled or the young and in buildings utilized for public safety (i.e. police, fire, ambulance and other emergency measures) purposes.

Safe Access for New Development

Safe access to and from a site may only be achieved where the following depth and velocity criteria for pedestrians and automobiles are met:

a. For depths up to and including 0.2 metres, the velocity must be less than or equal to 4.5 metre/second (based on the flood hazard); and,
b. For depths greater than 0.2 metres and less than or equal to 0.3 metres, the velocity must be less than 3.0 metres/second and for depths between 0.3 and 0.4 metres, the velocity must be less than or equal to 0.6 metres/second (based on the flood hazard).

Notwithstanding the above depth and velocity criteria, where proposed *development* cannot meet the safe access provisions above, the *development* may be permitted provided there is no feasible alternative safe access location and provided the following is addressed:

a. Access to/from the site must have flood depths and velocities less than or equal to those experienced on the existing roadway; and,

b. Safe alternate or secondary access for pedestrians and emergency vehicles that is appropriate for the nature of the *development* and the natural hazard is provided.

or

c. Where the affected municipal emergency services provides confirmation that acceptable provisions for emergency ingress/egress, appropriate for the nature of the *development* and the flood hazard, are available for a site and/or the nature of the *development* is such that a significant risk to property damage and human health is not created.

For existing *development*, safety risks are a function of the occupancy of the structure, the flood susceptibility of the structure and the access routes to the structure. For *minor additions* or *reconstruction* of an existing structure, the following factors will 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 emergency vehicles to use the access

5.7 Large Fill Policy

CLOCA has an Authority Board approved policy for the large fill applications. Applications to place fill volumes in excess of 500m3 should refer to the large Fill Policy for application requirements. Applications for permission to place minor or small fill quantities (less than 500 cubic metres) in regulated areas shall include a plan of the subject property, drawn at an appropriate scale, clearly showing the boundaries of the area upon which fill is to be placed (with dimensions) and both the existing grade and proposed grades of the fill site. Placement of fill for the purpose of floodproofing shall include geodetic datums. Existing grades may be derived from up-to-date topographic mapping of suitable quality and scale; the source of such topographic information shall be identified in the application.

5.8 Cut and Fill

Cut and fill is a technique that is used to balance flood storage losses resulting from the placement of fill within a floodplain. Any proposal for a cut and fill within the flooding hazard must be in accordance with the following:

a) The loss of flood plain storage volume within the regulatory flood plain which will result from the placement of fill shall be fully compensated for by an incrementally stage storage balanced cut (or excavation) to be carried out in close proximity to and concurrently with the placement of the fill on the same property or with the consent of adjacent property owner;
b) All fill removed shall be required to be moved to an area that is outside of the floodplain;
c) Demonstrate that there will not be an adverse impact on natural features or functions;
d) The volume of available flood plain storage capacity within the affected river or stream reach shall not be reduced
e) The proposed site grading (cut and fill) must be designed to result in no increase in upstream water surface elevations and no increase in flow velocities in the affected river cross-sections, under a full range of potential flood discharge conditions (1:2 year to 1:100 year return periods and Regional storm); compliance with this requirement shall be demonstrated by means of hydraulic computations completed to the satisfaction of CLOCA.

Increases to flood elevation levels resulting from proposed development may be considered provided they are contained entirely within the property subject to the proposed development provided no existing or proposed development is subject to a natural hazard.

Should flooding increases occur in offsite areas as a result of proposed development, they may be acceptable to CLOCA provided the risk to existing structures and public health and safety are not increased and written acknowledgement and acceptance of the increases is obtained from the affected offsite owners.

Compliance with the cut and fill requirements shall be demonstrated by means of detailed plans prepared by a professional engineer which clearly show the existing and proposed grading in plan view and in cross section, accompanied by the designer's computations of the volume of flood plain storage to be displaced by proposed fill and

the volume of the compensating flood plain storage to be created by means of the proposed excavation, completed to the satisfaction of CLOCA.

Where minor site alterations are permitted the proponent shall submit a final as built grading plan immediately upon completion of the approved works prepared by a professional engineer indicating that grades achieved on the site conform to those indicated on the approved plan, maintenance of stage storage and that the quality of fill is appropriate for the subject site.

5.9 Separate Policy Management Areas

Notwithstanding the above policies, the Authority Board have approved two separate floodplain management policies for specific areas within CLOCA watershed that remain in effect. The first is the floodplain management policy for the West Corbett Creek and the second is the two-zone flood plain management policy for a reach of the Goodman Creek.

5.9.1 Floodplain Management Policy for the West Corbett Creek

In 1977, the Authority Board adopted a floodplain management policy for the West Corbett Creek. The policy identifies two areas within the West Corbett Creek watershed and contains special policies guiding *development* that may be permitted and recommendations for a management approach for the subject lands. A copy of the West Corbett Creek policy is available at the CLOCA office.

5.9.2 Two-zone Flood Plain Management Policy for a Reach of the Goodman Creek

In 1998, the Authority Board adopted a two zone floodplain management policy for a reach of the Goodman Creek. A two-zone concept identifies a floodway and the flood fringe area. The floodway is defined as the inner portion of the flood plain representing the 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. The flood fringe is the outer portion of the flood plain where flood depths and velocities are less severe and where *development* may be permitted subject to certain established standards and procedures.

The two-zone policy provides direction on the type and form of *development* that may be permitted within this area. A copy of the two-zone policy is available at the CLOCA office.

In April 2013, the Authority Board adopted Phase 2 of the two-zone floodplain management policy for a reach of the Oshawa and Goodman Creeks immediately upstream of the CP Railway embankment considered to be a flood damage centre (Chapter 5 & Appendix C). Based on two technical reports prepared by Greck and Associates Ltd. dated July 2005, and Rand Engineering, dated 1997, a flood fringe area was identified where, due to minimum flood depths and velocities, *development* may be permitted. The policies outline certain standards and procedures that must be addressed in these flood fringe areas.

CHAPTER 6 - ONTARIO REGULATION - WATERCOURSES AND WETLANDS

6.1 Regulation Content

Ontario Regulation 42/06 contains the following provisions which prohibits *development* in wetlands and other areas as well as the straightening, changing, diverting or interference with watercourses or to change or interfere with a wetland unless permission is granted by CLOCA after it has been determined that the control of flooding, erosion, dynamic beaches, pollution or the *conservation of land* will not be affected by the *development*.

Development *prohibited:*

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.

alterations prohibited

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."

6.2 Watercourse Processes and Functions

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. Moreover, watercourses 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 a watercourse is related to the hydrology of the stream and its normal hydrograph. Changes in the volume, peaks and timing of flows can significantly impact 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.

6.3 Interference with a Watercourse

Watercourses are defined as an identifiable depression in the ground in which a flow of water regularly or continuously occurs. A watercourse also includes a lake and a municipal drain. Watercourses include intermittent or ephemeral creeks. Watercourses may need to be confirmed by CLOCA through field investigation by considering maters such as flow assessment, channel form and aquatic habitat.

The *CA Act* and Ontario Regulation 42/06 use the wording "in any way" when describing change or interference with a watercourse. Activities proposed within the watercourse boundary that could interfere in any way with the watercourse, including both those activities that meet the definition of *development* 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 *developmen*t and could represent interference is vegetation removal. Consistent with the interpretation by MNR/Conservation Ontario Section 28 Regulation Committee (2008) interference in any way is interpreted by CLOCA as any *anthropogenic* act or instance which hinders, disrupts, degrades or impedes in any way the natural features or hydrologic and ecological functions of a watercourse.

6.3.1 Policies for Interference with a Watercourse

The following outlines the specific policies for implementing CLOCA's regulation 42/06 with respect to interference with watercourses. The term "interference" below includes all alterations mentioned within CLOCA's regulation (straighten, change, divert or interfere in any way).

1) Interference with a watercourse is prohibited except where permitted in policies 6.3.1.2) – 6.3.1.8) and subject to the General Policies;

2) Interference associated with public infrastructure (e.g. sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted if the interference on the natural features and hydrologic and ecological functions of the watercourse has been deemed to be acceptable by CLOCA;

3) Stream, bank, and channel realignment, stabilization, lowering, channelization or straightening to improve hydraulic and fluvial processes or aquatic habitat may be permitted if the interference on the natural features and hydrologic and ecological functions of the watercourse has been deemed to be acceptable by CLOCA, policies in Chapter 8 dealing with stream erosion protection works have been addressed and the following matters are addressed to the satisfaction of CLOCA:

a. the interference to a watercourse should be designed in accordance with natural channel design principles;
b. the works do not increase off site upstream or downstream floodplain elevations, flood frequency, erosion rates or erosion frequency along either side of the watercourse;
c. the works are designed to ensure that the storage capacity of the floodplain is maintained or improved;
d. the works will not adversely affect the ecological function of the watercourse or riparian area;
e. erosion protection is enhanced; and
f. adequate sediment and erosion control measures are incorporated during the construction phase;

4) Dredging of a watercourse may be permitted to improve hydraulic characteristics and fluvial processes or to improve aquatic habitat provided that the following is demonstrated:

a. stream bank stability is maintained or enhanced;
b. the works will not adversely affect the ecological function of the watercourse or riparian area; and
c. immediately following any required drying time, the dredge material is removed from the riverine flooding and erosion hazard.

5) Watercourse crossings may be permitted if it has been demonstrated that the interference on the natural features and hydrologic and ecological functions of the watercourse has been deemed to be acceptable by CLOCA. At a minimum, the submitted reports/plans should demonstrate the following based on morphological characteristics of the watercourse system;

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. maintenance of ecological and hydrological functions of the valley or stream corridor;
c. 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 no evidence of erosion with the crossing situated at right angles to the watercourse;
d. the crossing is sized and located such that there is no increase in upstream or downstream erosion or flooding;
e. risks associated with erosion and flood hazards on the crossing structure are avoided or mitigated as verified by a qualified person;
f. there is no obstruction of fish and wildlife passage;
g. where unavoidable, intrusions on natural features or hydrologic or ecological functions are minimized and it can be demonstrated that best management practices including site and infrastructure design and appropriate remedial measures will adequately restore and enhance features and functions; and
h. 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 CLOCA;
i.

6) *Enclosures* of watercourses may be permitted where there is an existing risk to public safety and/or potential property damage, where such works would significantly improve existing hydrological or ecological conditions; or where acceptable justification has been provided through a subwatershed plan, an environmental assessment or comprehensive environmental study which has been undertaken in consultation with and supported by CLOCA and the area municipality and harmonized as part of the planning process. Proposed *enclosures* must also demonstrate:

   a. all feasible options and methods have been explored to address the hazard(s);
   b. the risk to public safety is reduced;
   c. vulnerability to natural hazards is reduced and no new hazards are created;
   d. there are no negative impacts on wetlands;
   e. pollution, sedimentation and erosion during construction and post construction is minimized;
   f. there are no adverse impacts on groundwater recharge/discharge;
   g. there is no negative impact on downstream thermal regime; and
   h. there is no negative impact on fish and fish habitat.

7) Stormwater management ponds to protect existing *development* from a flooding hazard may be permitted provided:

   a. The water management benefits of the water control structure are demonstrated and all feasible alternatives considered;
   b. There will be no *adverse hydraulic or fluvial impacts*; and
   c. Impacts on the watercourse functionality are avoided.

8) Alterations, maintenance or decommissioning of existing water control structures may be permitted where it can be demonstrated that:

   a. Impacts on watercourse functionality are avoided;
   b. There are no adverse impacts on the capacity of the structure to pass flows; and
   c. The integrity of the original structure is maintained.

6.4 Wetlands and Other Areas Processes and Functions

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. Over 60 potential hydrological functions were identified for wetlands when the MNR was developing the Southern Ontario Wetland Evaluation System. Confirmation of many of these functions requires hydrological experts and field studies by qualified hydrologists.

The *CA Act* defines a wetland as an area that: a) is seasonally or permanently covered by shallow water or has a water table close to or at its surface, b) directly contributes to the hydrological function of a watershed through connection with a surface watercourse, c) has hydric soils, the formation of which has been caused by the presence of abundant water, and d) has vegetation dominated by hydrophytic plants or water tolerant plants, the dominance of which has been favoured by the presence of abundant water, but does not include periodically soaked or wet land that is used for agricultural purposes and no longer exhibits a wetland characteristic referred to in clause c) or d).

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

Development and Interference

There are three ways in which the Regulation addresses wetlands and other areas (Figure 12):

1) Development within the wetland boundary (section 2.1 (d) of regulation)

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

2) Development within the "other areas" (section 2.1 (e) of regulation)

To be regulated, the activity must meet the definition of *development* and be assessed with regard to interference with the hydrologic function of the adjacent wetland, including areas within 120 m of a Provincially Significant Wetland (PSW) and wetlands greater than 2 hectares in size and 30 m from a wetland less than 2 hectares in size. Hydrologic functions include both water regime and biogeochemical. If a measurable hydrologic impact to the wetland is predicted then the *development* must be assessed with respect to the five "tests" outlined in the *CA Act* (control of flooding, erosion, pollution, dynamic beaches and the *conservation of land*). Although not illustrated in Figure 12, Regulated areas can extend beyond the 120m and 30m distances if the activity is deemed to have a measurable impact on the hydrologic function of the wetland. ;

3) Interference with wetlands (section 5 of regulation)

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

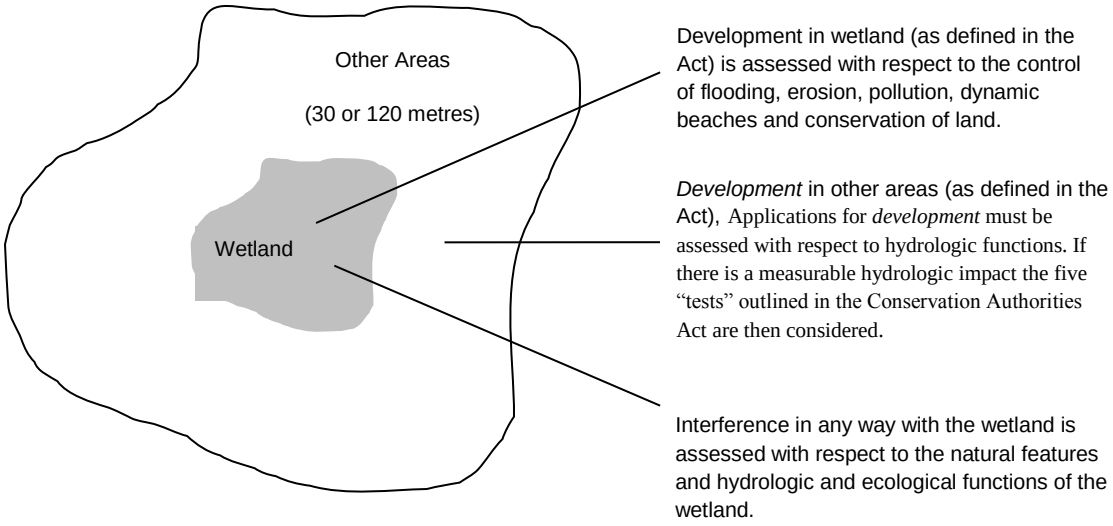


Figure 12 - Three Ways Through Which the CA Act and Individual CA Regulations Address

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 policies 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, Chapter 7, which deals with *hazardous lands*, should also be reviewed and considered in the decision making. Pollution from *development* (e.g. improperly installed or

maintained septic systems or urban runoff) has the potential to interfere with the wetland. Proposals to drain stormwater management facilities into existing 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* related to a PSW, the evaluation done under the OWES may be used as an information resource because it identifies the features and functions of the wetland. It should be noted that when reviewing applications with respect to *development* under the regulation, the significance of the wetland as determined by the OWES is not a reason to deny or approve the application. The application must be reviewed with respect to the control of flooding, erosion, pollution, dynamic beaches or the conservation of land. Many individual and cumulative hydrologic impacts to a wetland commonly occur within the catchment area of the wetland. It is important to consider the linkages between small wetlands and headwater areas, impacts of stormwater, and upstream constrictions to flow. Impacts to the hydrologic function of a wetland due to *development* within the "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.

As part of the review of an application, CLOCA may request an environmental impact study (EIS) to address potential impacts to a wetland. An EIS is a mechanism for assessing impacts to determine the suitability of a proposal and the minimum buffer from *development* to ensure no negative impact on the wetland. The submission of an EIS does not guarantee approval of the works. An EIS must be carried out by a qualified professional, with recognized expertise in the appropriate area of concern and shall be prepared using established procedures and recognized methodologies to the satisfaction of CLOCA. Figure 13 illustrates the review considerations for *development* in or adjacent to wetlands.

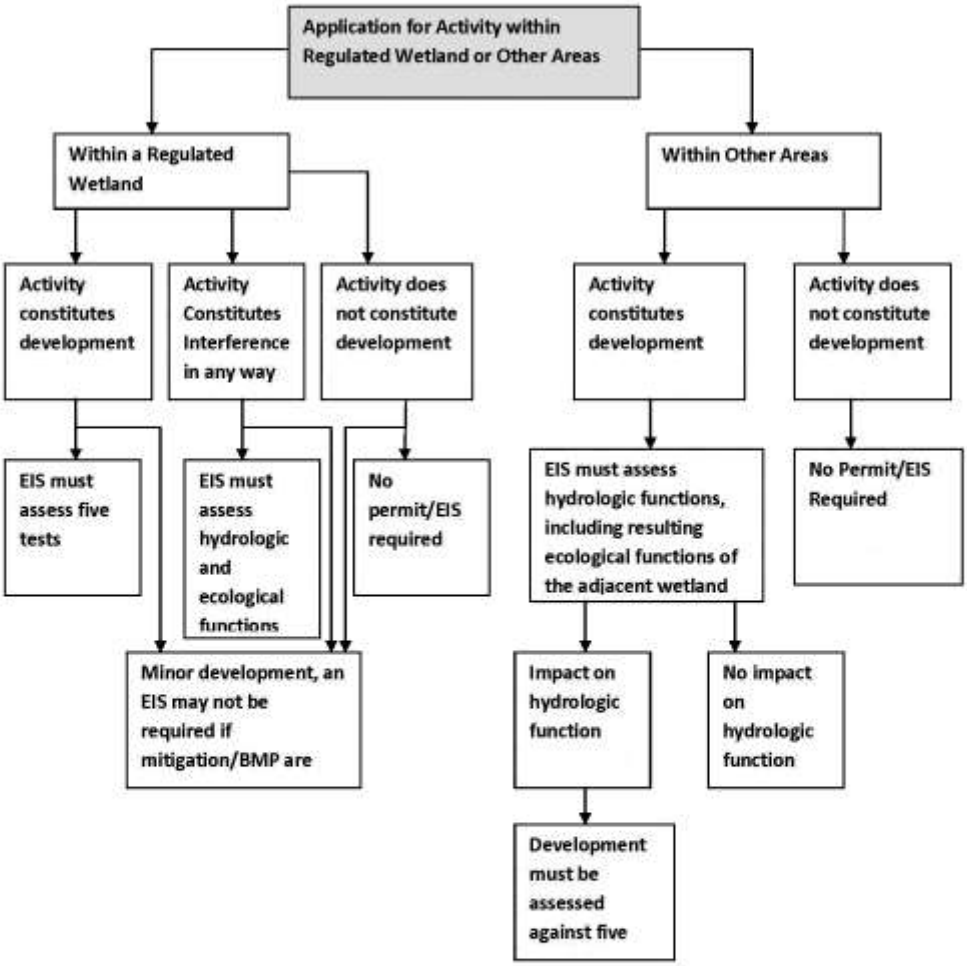


Figure 13 - Application for Activity within Regulated Wetland or Other Areas

6.4.1 Policies for Development within Wetlands and Interference with Wetlands

The following outlines the specific policies for implementing CLOCA's regulation 42/06 with respect to *development* within wetlands and interference with wetlands.

1) *development* and interference is prohibited within wetlands except as permitted in policies 6.4.1.2) – 6.4.1.12) and subject to the General Policies;

2) Dredging of existing ponds within a wetland may be permitted subject to the appropriate floodplain hazard policies and provided the dredging does not have an adverse impact on the wetland feature and function and provided all dredging material is placed at a suitable distance from the wetland;

3) A single dwelling may be permitted on an *existing vacant lot of record* within a wetland provided:

    a. The use, erection and location would have been permitted by the applicable municipal zoning by-law in force on April 17, 2013;

    b. There is no alternative location for the dwelling on the subject lot outside of the wetland;

    c. Hazards related to organic soils can be addressed; and

    d. The applicant demonstrates, to the extent possible, that the *development* will not adversely affect the wetland feature and functions. An EIS will be required to assess the ecology of the wetland and identify mitigation measures and best efforts to minimize impacts. If best efforts are not demonstrated to the satisfaction of CLOCA, a permit will not be issued.

4) Public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted if it has been demonstrated to the satisfaction of CLOCA through plan review that:

    - the proposed infrastructure minimizes wetland loss or interference to the greatest extent possible; and

    - 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;

    - there is a demonstrated need and no reasonable alternative that would avoid the wetland.

5) Conservation or restoration projects may be permitted if it has been demonstrated to the satisfaction of CLOCA that the interference on the natural features and hydrologic and ecological functions of the wetland has been deemed to be acceptable;

6) Trails may be permitted if it has been demonstrated to the satisfaction of CLOCA that there is not a feasible alternative location outside of the wetland and the interference on the natural features and hydrologic and ecological functions of the wetland has been deemed to be acceptable by CLOCA.

7) D*evelopment* within a wetland and interference to a wetland may be permitted where the wetland is less than 0.5 hectares, and it can be demonstrated through an environmental impact study that there is no feasible alternative location outside of

the wetland and the general policies in Chapter 3 have been met to the extent possible and that the wetland is not:

- Located within a floodplain ; and
- Part of a natural heritage system identified by CLOCA or to the satisfaction of CLOCA.

8) D*evelopment* within or interference to an *anthropogenic* or non-natural created wetland may be permitted where the wetland is less than 2 hectares, provided the wetland is not a PSW, is not located within a floodplain and compensation in the form of enhanced wetland features and functions is provided to the satisfaction of CLOCA.

9) Stream, bank, and channel realignment, stabilization, lowering, channelization or straightening to improve hydraulic and fluvial processes or aquatic habitat may be permitted within riparian wetlands if the interference on the wetland has been deemed to be acceptable by CLOCA and the policy matters outlined in the section dealing with interference to watercourses are addressed.

10) Interference to a wetland by selective tree harvesting employing good forestry practices may be permitted provided it can be demonstrated through an EIS or equivalent, such as a forest management plan, that there will be no negative impact on the hydrologic and ecological functions of the wetland.

11) R*econstruction* of existing structures may be permitted provided:

    - The replacement structure is restored to its original footprint or smaller; and
    - There is no feasible alternative location on the subject lot outside of the wetland.

12) An *accessory* structure less than 10m^2 in size associated with an *existing use* that is located outside of a hazard area may be permitted if it has been demonstrated to the satisfaction of CLOCA that there is not a feasible alternative location outside of the wetland, and the interference on the wetland features and functions has been deemed to be acceptable by CLOCA.

6.4.2 Policies for Development within Other Areas

1) *Development* is prohibited within other areas of a wetland except as permitted in policies 6.4.2.2)- 6.4.2.8) and subject to the General Policies:

2) Public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted if it has been demonstrated to the satisfaction of CLOCA that there is a demonstrated need and no reasonable alternative location outside of a 30 m buffer.

3) Conservation or restoration projects may be permitted.

4) *Development* associated with public lands (e.g. passive or low intensity outdoor recreation and education, trail system) may be permitted;

5) Land uses with existing Planning Act approvals may be permitted provided the previous approval was granted with CLOCA's support following an environmental review and the proposed *development* is modified in accordance with the General Policies, wherever possible.

6) A single dwelling on an *existing vacant lot of record*, *minor additions* to existing *buildings/structures*, *accessory building/structures* (less than 500 m^2), and *reconstruction* of existing buildings may be permitted provided it has been demonstrated to the satisfaction of CLOCA that:

   a. A minimum buffer of 15 metres from a PSW or wetlands greater than or equal to 2 hectares in size or a minimum buffer of 10 metres from wetlands between 0.5 hectares and 2 hectares in size is established;
   b. all *development* (including grading) is located outside the wetland and maintains as much buffer as feasible;
   c. disturbances to natural vegetation communities contributing to the hydrologic function of the wetland are avoided;
   d. the overall existing drainage patterns will be maintained;
   e. disturbed area and soil compaction is minimized;
   f. where appropriate, *development* is located above the high water table;
   g. all septic systems are located a minimum of 15 metres from the wetland and a minimum of 0.9 metres above the water table;
   h. impervious areas are minimized;
   i. the area between the proposed *development* and the wetland is or will be comprised of dense vegetation; and
   j. *best management practices* are used to:
      - Maintain water balance
      - Control sediment and erosion
      - Buffer wetlands
      - Limit impact of *development* on wildlife species

7) *Development* proposed within 30 -120 metres from a PSW or a wetland greater than 2 ha in size, which in the opinion of CLOCA may result in the interference on the hydrologic function of the wetland, may be permitted if an EIS is submitted which assesses impacts on the wetland and recommends appropriate mitigation measures.

8) *Development* proposed within 15-30 metres from a non PSW greater than 0.5ha and less than 2ha in size, which in the opinion of CLOCA may result in the interference on the hydrologic function of the wetland, may be permitted if an EIS is submitted which assesses impacts on the wetland and recommends appropriate mitigation measures.

CHAPTER 7 - HAZARDS LANDS – UNSTABLE SOIL OR BEDROCK

7.1 Regulation Content

Ontario Regulation 42/06 contains the following provisions which prohibits *development* in hazard lands unless permission is granted by CLOCA after it has been determined that the control of flooding, erosion, dynamic beaches, pollution or the *conservation of land* will not be affected by the *development*.

> 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, …
>
> c) hazardous lands;"

7.2 Hazardous Land Processes and Functions

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. If an activity is proposed within unstable soil and unstable bedrock *hazardous lands*, then this section applies, otherwise refer to the river or stream valleys and great lakes and large inland lakes shorelines chapters for other hazards such as flooding, erosion, and 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 will be based on the conclusions and recommendations of such studies, to the satisfaction of CLOCA.

Development within areas deemed as hazardous land 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*" (see section 1.4.1) in the *CA Act* to be regulated.

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 (MNR & co, 2005). Leda clays are not found within CLOCA's watershed.

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, however, are the most common type of organic soil in Ontario. Therefore, a CA's wetland inventory may provide guidance in the location of organic soils. In addition, maps by the Geological Survey of Canada, MNR, Ministry of Northern Development & Mines, and the

Ministry of Agriculture, Food and Rural Affairs may provide additional 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.

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 (MNR and co, 2005). No karst formations have been identified in CLOCA's watershed.

7.3 Policies for Development within Unstable Soil and Unstable Bedrock Hazardous Lands

The following outlines the specific policies for implementing CLOCA's regulation with respect to unstable soil and bedrock.

1) *Development* is prohibited within *hazardous lands* associated with unstable soils or unstable bedrock except where permitted in policy 7.3.3 and subject to the General Policies;
2) Where *development* is proposed in *hazardous lands* associated with unstable soil or unstable bedrock, the applicant will be required to provide a technical report identifying a more precise boundary or limit of the hazardous land, to the satisfaction of CLOCA.
3) *Development* may be permitted within *hazardous lands* due to organic soils where a site specific technical study and/or environmental impact study establishes a more precise hazardous land boundary and where it can be demonstrated that:
   a) there is no feasible alternative location outside the hazard land; and
   b) the risk of instability which would result in structural failure or property damage is minimized. CLOCA may require a peer review of any technical report. The cost of the peer review will be at the applicant's expense.

CHAPTER 8 – PLAN REVIEW SERVICES

8.1 Plan Review Overview

The policies contained in this chapter provide guidance and direction related CLOCA's role in reviewing and commenting on Planning Act applications and documents.

CLOCA has been actively involved in municipal planning matters since the early 1970's. It has been the objective of the Authority's plan review program to further the Authority's mandate of natural resource conservation and management, by providing comments on natural resource/heritage and natural hazard issues, as they relate to planning and *development* applications.

As outlined in chapter 2, CLOCA provides comments in the form of advice and guidance to municipalities for proposals submitted under the *Planning Act* or similar pieces of *development* related legislation from several perspectives - watershed based resource management agency, planning and technical advisory services, proponent and landowner and regulatory responsibilities.

In carrying out planning related responsibilities, CLOCA considers the following in commenting and making recommendations to *watershed* planning authorities:

- Policy conformity (i.e., conformity with PPS, provincial plans and CLOCA policy, etc.);
- Implications on sustainability and climate change;
- Potential impacts on natural heritage systems, natural heritage features and functions and hydrologic features and functions;
- Protection and restoration of aquatic habitat and fishery resources
- Potential impacts on natural hazards;
- Potential impacts to water resources, including surface and ground water features;
- Infrastructure, site servicing and grading;
- Stormwater management; and
- Erosion and sediment control.

In accordance with the agreement with the province, CLOCA has delegated responsibilities to review policy documents and applications under the *Planning Act* to ensure that they are consistent with the natural hazards policies section 3.1 of the Provincial Policy Statement (PPS), 2005. Generally section 3.1 of the PPS speaks to protecting people and property from the potential impacts of natural hazards. CLOCA also provides technical advisory services and planning advice in keeping with the partnership memorandum agreement with the Region of Durham which includes a range of issues, including natural heritage, stormwater management, groundwater and the review of environmental assessments. Further, CLOCA is considered a public body pursuant to Section 1 of the *Planning Act*. As such CLOCA must be notified of policy documents and applications as prescribed.

CLOCA also reviews and comments on Environmental Assessments under the *EA Act* that occur within our jurisdiction. CLOCA brings local environmental and *watershed* knowledge into the review and assessment process. It is a requirement for proponents to identify and consult with government agencies, including CAs, if the proposed project may have an impact on an item related to the CA's areas of interest (e.g., regulatory

authority or as service providers). These policies also provide guidance for CLOCAs review of Environmental Assessments.

In carrying out plan review responsibilities, CLOCA also considers its mandate under the *CA Act* as a natural resource manager. In this regard, approved watershed plans provide additional guidance beyond this document to ensuring *development* maintains and enhances the health of the watershed. Where there is a conflict with the policies in this chapter to any provision contained in a CLOCA approved Watershed Plan, the more protective policies relating to natural heritage and hazard shall prevail.

Both the *CA Act* and the Provincial Policy Statement include definitions of "*development*". Although similar, the definitions do have two main differences. The definition in the CA Act allows for the regulation of activities that are typically not regulated under the Planning Act (e.g. placement of *material*). Also, the Planning Act includes lot creation as *development* which is not included in the *CA Act* definition. Otherwise the definitions are generally consistent. As a result, the land use planning policies contained in this chapter focus on lot creation and protection of natural heritage features.

In general, site plan, variance and similar related applications deal with lots of record and are detail design oriented. As such, CLOCA staff typically process these applications in coordination with Section 28 (O. Reg. 42/06) permit requirements. Considering this, the policies outlined in Chapters 4, 5 and 6 dealing with the administration of O. Reg. 42/06 are also to be used to guide the review for these types of applications, while being consistent with all other relevant policies throughout this document.

8.2 Administering Plan Review Services

In accordance with the memorandum of understanding with the Region of Durham,

CLOCA plan review services include the following:

- Attending pre-consultation meetings for the purpose of determining study requirements and compliance issues related to the environmental/hazard related policies of the PPD, provincial legislation, plans and guidelines;
- Reviewing and commenting on planning applications and documents within the context of the *CA Act*, the Planning Act, the PPS, the Environmental Assessment Act, the Oak Ridges Moraine Conservation Plan, the Greenbelt Plan, and the Clean Water Act;
- Reviewing and commenting on planning applications and documents within the context of the identification, function and significance of natural heritage and hydrological features and systems and the review of studies which assess impacts on these features and areas;
- The need for and adequacy of stormwater management plans from a watershed management perspective; and
- Information and analysis of natural hazards and water management.

- Reviewing and commenting on planning applications and documents within the context of aquatic habitat and fishery resources. Staff review will determine if the submission is consistent with and/or support the goals, management objectives and

policies of the following documents as they apply to the protection and restoration of aquatic habitat and fishery resources:

- CLOCA's fisheries and watershed management plans;
- the PPS and other applicable Provincial Legislation and Regulations; and
- Regional and Municipal Official Plans.

Figure 14 generally illustrates CLOCA involvement in the review of site plan applications.

In some cases, provincial plan requirements may exceed CLOCA's regulatory requirements. In administering O. Reg. 42/06 and plan review services, the greater requirements shall take precedence. For example, the provincial plans may have greater requirements for vegetative buffers or more restrictions on the uses permitted than CLOCA's regulation requirements. Similarly, where there are regulations (including O. Reg. 42/06 and the Fisheries Act) that are more restrictive than those contained in these provincial plans, the more restrictive shall prevail.

The "principle of *development*" is established through the Planning Act approval processes, whereas CLOCA's permitting process provides for technical implementation of matters pursuant to Section 28 of the *CA Act.* As a result, it is CLOCA's objective to ensure that concerns regarding the establishment of the "principle of *development*" are conveyed to the municipality during the Planning Act approvals process. An established "principle of *development*" does not preclude the ability of CLOCA to appeal a planning matter to the Ontario Municipal Board.

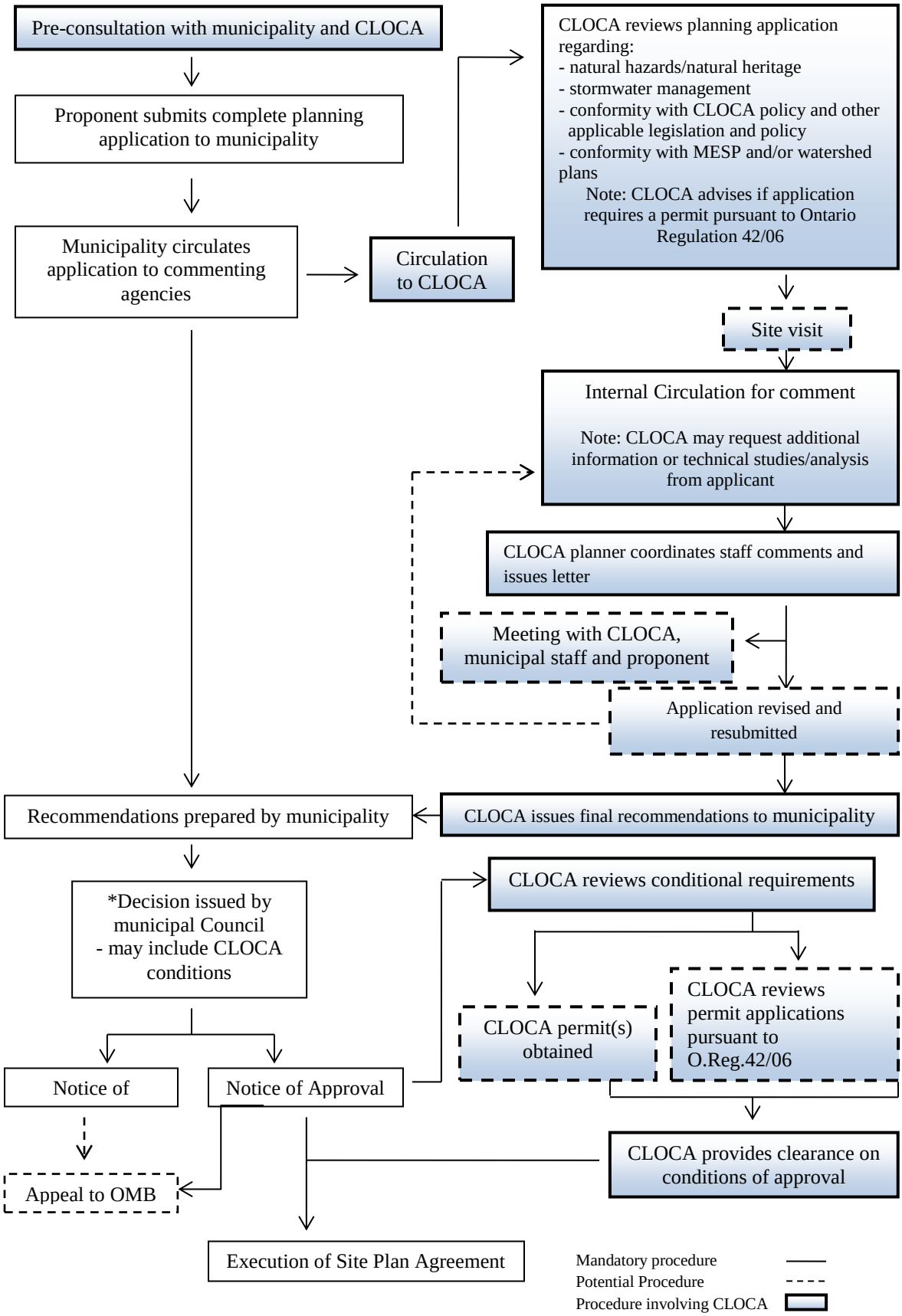
The Authority Board shall establish the status (participant or party) of staff representation in Ontario Municipal Board Hearings that are considered of particular significance to the Authority's mandate, policies and/or programs.

Staff comments on plan review matters will be provided by the requested due dates for comments. If comments cannot be provided by the requested date, the circulating agency, municipality or ministry shall be given notice of delayed comments, prior to the requested date for comments.

8.2.1 Transition Policy

The Plan Review policies generally apply to all applications that have been received by CLOCA on or after April 17, 2013 and all applications where the Authority had not provided written comments prior to April 17, 2013. It is CLOCA's intent to not use the policies within this Chapter to raise new concerns with approved draft plans of subdivision and secondary plans for which CLOCA had not previously identified concerns. However, this does not preclude Authority staff from applying the policies in the PPD to applications in which Authority staff had previously provided written comments prior to April 17, 2013. In such cases Authority staff must be of the opinion that updated comments are critical to meeting the objectives of the PPD, the PPS policy(s) and/or watershed plan policy.

Figure 14 - Review Procedures for Site Plan Applications



8.3 Land Use Policies

The following policies provide a framework which CLOCA staff will consider when providing comments and advice on Plan Review related applications.

8.3.1 Sustainable Development

CLOCA supports developing our watershed communities in a sustainable manner. In this regard, CLOCA's review of planning and *development* proposals includes:

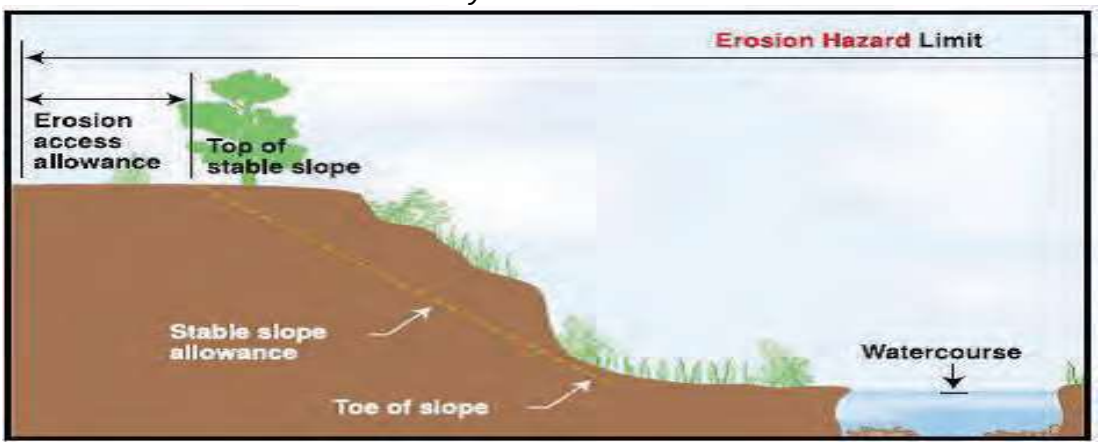
- the consideration of climate change impacts, mitigation and adaptation;
- the use and inclusion of sustainable practices such as green technology and infrastructure;
- the consideration of use patterns that maintain biodiversity;
- The consideration of low impact *development*, energy efficient building and design and energy conservation;
- Sustainable *development* practices related to soil management such as:
  - Leaving existing trees, vegetation, and soil undisturbed to the greatest extent possible;
  - Stripping, stockpiling, and preserving existing topsoil on-site for reapplication in areas to be landscaped;
  - Restoring post-construction soils in areas to be landscaped to meet minimum soil quality and depth standards.

8.3.2 Natural Hazards

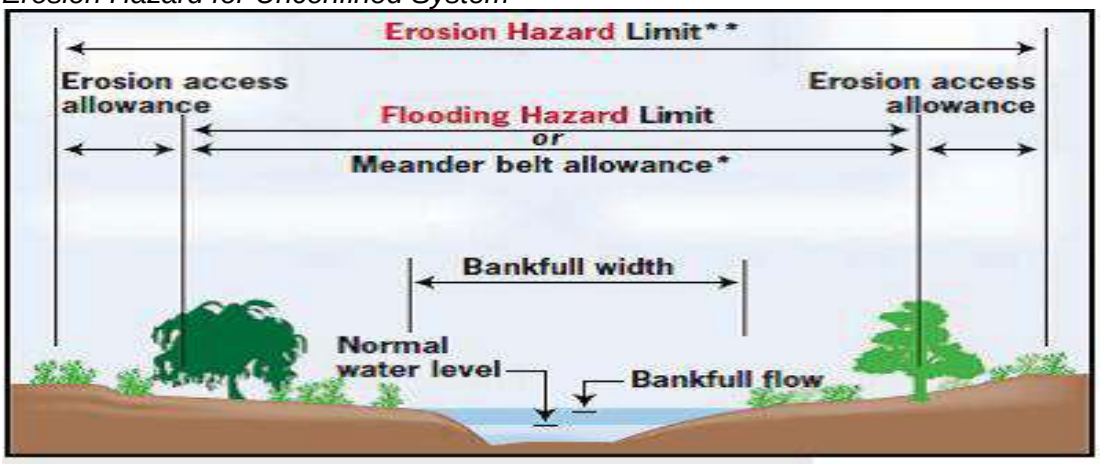
In accordance with the Provincial Policy Statement, 2005, (PPS) *development* shall be directed away from areas of natural hazards where there is an unacceptable risk to public health and safety or of property damage. The PPS defines natural hazards as both *hazardous lands* and *hazardous sites*. Chapters 4 through to 7 provide details on how natural hazards are to be defined. For the purpose of Plan Review, the extent of the flood or erosion hazard shall be in accordance with Provincial Guidelines and includes a 6m access allowance. Below are illustrations of Hazard Limit definitions for Plan Review.

Figure 15 – Defining Erosion hazard for Plan Review Purposes

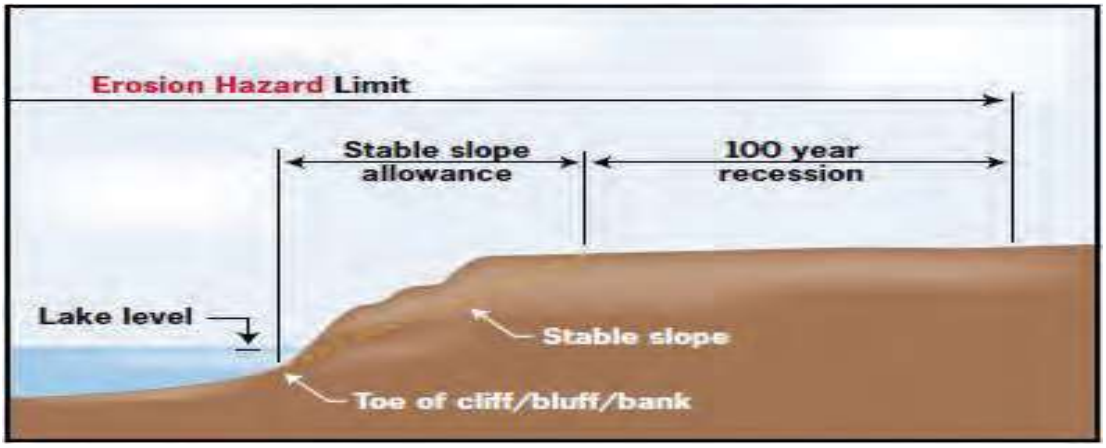
Erosion Hazard Limit for Confined System:



Erosion Hazard for Unconfined System



Erosion hazard for Lake Ontario Shoreline



Section 3.1 of the PPS and the policies contained within the PPD provide guidance in determining if *development* would result in an unacceptable risk.

CLOCA will recommend that lands identified by CLOCA as being susceptible to natural hazards be placed in a protective designation/zoning in official plans/zoning by-laws to recognize the environmental hazard and that policies contained within these policy documents be in accordance with the requirements of the PPS. *Backwater areas* may be identified as potential flood reduction areas provided it is demonstrated to the satisfaction of CLOCA that feasible measures can be implemented to reduce the floodplain area. However, it is CLOCAs position that such areas be considered as flood hazard until such time as floodplain reduction works are completed and verified.

Development shall not result in any upstream or downstream impacts such as increased flood levels, stream erosion, or reduction in baseflow. Where every management measure has been taken and upstream or downstream impacts persist, alternative stormwater controls may be considered.

Downstream erosion protection works as means to address downstream erosion resulting from proposed development will only be considered if:

- The provisions of Chapter 6 of the PPD have been satisfied;
- There is no other feasible option to mitigate downstream erosion;
- The erosion protection works is based on natural channel design; and
- The erosion protection works results in an overall environmental benefit to the watercourse/valley.

The policies contained in Chapters 3 through 7 addressing Ontario Regulation 42/06 contain detailed policies that also guide land use planning comments.

8.3.3 Natural Heritage Features and System

CLOCA supports the protection of Natural Heritage Features (NHF) and the Natural Heritage System (NHS) as identified in watershed plans consisting of a connected system of PSWs, provincially significant ANSIs, important aquatic habitat, riparian corridors, core habitat areas and corridors, woodlands and/or wetlands >/= 0.5ha, and areas identified for natural cover regeneration/restoration which will improve connectivity and habitat. The NHS has been scientifically identified to increase the value of existing features and cumulatively establish the overall ecological value of the system and therefore must be managed as important lands in the NHS.

Development within and adjacent to NHF/ NHS

Notwithstanding any other policy in this Chapter, in accordance with the Provincial Policy Statement development and site alteration shall not be permitted in Provincially significant habitat of endangered species and threatened species and Provincially significant wetlands.

New *development* within the NHS is generally restricted to: fish and wildlife management; conservation; forestry; *existing uses*; and flood or erosion control projects. Public trail *development* may be permitted provided there is no reasonable location outside of the NHS and there will be no negative impact to the features or functions of

the natural heritage system. In accordance with the policies contained in Chapter 5 and the watershed plans, stormwater management facilities are not permitted within the NHS.

Development may be considered within or adjacent to the functional NHS provided an EIS is prepared which confirms the extent and boundaries of a natural heritage feature. Adjacent is defined in Table 1. The EIS shall delineate the feature and function, determine the significance of the feature and function, assess its contribution to the ecological system including the Natural Heritage System, and evaluate whether it shall be protected or if mitigation can be provided to address any loss to the feature and/or function.

CLOCA may also request an EIS where *development* is proposed within or adjacent to a natural heritage feature that is outside of the NHS. The EIS shall delineate the feature and function, determine the significance of the feature and function, assess its contribution to the ecological system including the Natural Heritage System, and evaluate whether it shall be protected or if mitigation can be provided to address any loss to the feature and/or function.

Development may be considered on lands within the NHS identified for natural cover regeneration/restoration provided, there is no reasonable alternative location outside of the NHS and it can be demonstrated to the satisfaction of CLOCA, through an EIS that:

- an area of additional lands will be added to the NHS which will exceed the area of lands removed and the added lands will abut other portions of the system on the subject lands; and/or;
- corridor connectivity will be enhanced/restored and protected.

Within the Greenbelt Plan Area, areas within the NHS identified for natural cover regeneration/reforestation that are designated as Prime Agriculture Areas within an Official Plan shall be permitted to develop in accordance with the applicable official plan policies. Through stewardship and outreach, CLOCA staff will support the naturalization of these areas. For areas outside of the Greenbelt Plan, it is the policy of CLOCA that where every possible alternative has been considered and no other option exists, removal of NHS lands identified for natural cover regeneration/restoration may be considered provided the following has been demonstrated to the satisfaction of CLOCA:

- net gains to the Natural Heritage System will be achieved;
- corridor connectivity will be enhanced/restored and protected;
- the area of additional lands to be added to the Natural Heritage System will exceed the area of lands removed from the system;
- addition of land to the Natural Heritage System shall abut other portions of the system on the subject lands;

The need for an EIS to demonstrate the above matters will be determined on a case by case basis.

8.3.4 Valleylands

Valleylands are land that has depressional features associated with a river or stream, whether or not it contains a watercourse. In accordance with Chapter 4, valleylands are generally defined as the furthest extent of the top of bank or hazard limit. An EIS, or other technical study, may be required to refine the limits of valleylands based on natural heritage, natural hazards and hydrologic functions. Generally new *development* within a valley system should not be permitted unless it has been demonstrated that there will be no negative impact on the valleyland or its ecological functions. Wherever possible, lands within a buffer limit shall be dedicated to/acquired by an appropriate public agency.

8.3.5 Important Ecological Areas on Lands within 1km of Lake Ontario

Lands within 1 km of the Lake Ontario shoreline are identified as an important ecological area. New *development* within 1 km of the Lake Ontario shoreline shall incorporate site design criteria which limits *development* impact on: migratory species; resident species; important natural heritage features and functions; and on wildlife movement corridors. Where *development* currently exists, CLOCA will encourage and support education, restoration, rehabilitation and retrofit efforts to enhance natural features and functions.

8.4 Lot Creation

CLOCA will not support the creation of new lots through plan of subdivision or consent that extend into, or fragment ownership of, the natural heritage system, including natural heritage features and areas, hazardous land and *erosion access allowances*, in consideration of the long term management concerns related to risks to life and property and natural heritage protection.

In accordance with the PPS, CLOCA will not support lot creation within:

- the dynamic beach hazard;
- defined portions of the one hundred year flood level along connecting channels (the St. Mary's, St. Clair, Detroit, Niagara and St. Lawrence Rivers);
- 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 (Section 5.6 of the PPD provides further details regarding safe access); and
- a floodway regardless of whether the area of inundation contains high points of land not subject to flooding.

Despite the above policy, development and site alteration may be permitted in certain areas identified in policy above:

- 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

- 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.

Lot line adjustments within the NHS may be permitted provided the adjustment will not facilitate new *development* encroaching into the NHS and it has been demonstrating that there will be no negative impact on natural features.

Lot creation adjacent to the natural heritage system may be permitted subject to submission of an environmental impact study. Natural heritage features determined to be a significant component of the NHS shall be subject to the buffers outlined in Table 1. When multiple features exist, the greatest buffer shall apply. The EIS should identify the need for buffers greater than the listed minimum distances. Any buffers prescribed by Provincial planning legislation such as the Greenbelt Plan and the Oak Ridges Moraine Conservation Plan, take precedent over the buffers listed in Table 1.

Table 1:

Natural heritage/hazard feature or area	Adjacent lands width (study trigger)	Minimum buffer
Habitat of endangered and threatened species	120 m	To be determined by MNR
Wetlands	120 m	30 m for PSW and 15m for other wetlands
Woodlands	120 m	10 m from drip line
River and Stream Systems	120 m	The greater of the top of bank plus 10m or the defined hazard Limit (see note)
Wildlife habitat	120 m	To be determined through EIS
Areas of natural and scientific interest (life and earth)	50 m	To be determined through EIS
Watercourse	120 m	30/15 m

Note: when top of bank is greater, the access allowance would be included in the 10m buffer from the top of bank. For the purpose of Plan Review, erosion hazard includes an access allowance per Figure 15.

Notwithstanding the adjacent lands and buffers referenced in the table, the need for an EIS, lot creation *buffers* and the scope of environmental/technical study may vary depending on factors such as existing development, intervening land uses and existing land use entitlements.

The exact limits of valleylands, woodlands, wetlands fish habitat and flood and erosion hazards will be determined through site specific field investigations and technical reports where required. These limits will be established and confirmed to the satisfaction of CLOCA and the affected planning authority as appropriate. Generally, staking of boundaries should be carried out jointly with CLOCA staff.

Development shall maintain a 30m buffer from each side of the watercourse. A reduction in the buffer may be considered to a minimum of 15m adjacent to warm water streams if it can be demonstrated that there will be no negative impact to the feature and function, and/or the Natural Heritage System, and that hazard and floodplain requirements can be met to the satisfaction of CLOCA and the Municipality. The limit of the watercourse is described as:

- for a meandering stream with defined bed and banks, the line that connects the outside curve of the bank at bankfull stage;
- for a non-meandering stream with defined bed and banks, the normal high water mark;
- for lakes, the normal high water mark;
- for an intermittent stream with no defined bed and bank, including headwater drainage feature, the centre line of a channel or depression that concentrates flow

Where possible, headwater drainage features and their functions shall generally be protected. Notwithstanding, development may be considered provided the necessary technical studies are completed to the satisfaction of the Municipality and CLOCA that assesses the aquatic, hydrologic and geomorphic, and linkage attributes of the feature and function including management options.

Development within the buffer is restricted to; fish and wildlife management, conservation, and flood or erosion control projects. Storm water management facilities and public trail *development* may be permitted provided it is demonstrated to the satisfaction of CLOCA that there will be no negative impact to the features and/or functions and in accordance with the policies in Chapter 5.

8.5 Existing Vacant Lots of Record

CLOCA will not support the designation and/or rezoning of an *existing vacant lot of record* to facilitate the *development* of the lot where the lot is located entirely within the NHS, a flood hazard (One Zone Policy Area) or erosion hazard of a valley and stream corridor, the flood, erosion or dynamic beach hazards of the Lake Ontario, or has no safe access.

CLOCA may support the designation and/or rezoning of an *existing vacant lot of record* to facilitate the *development* of the lot where the lot has safe access and the lot is only partially located within the NHS, a flood hazard (One Zone Policy Area) or erosion hazard of a valley and stream corridor, the flood, erosion or dynamic beach hazards of the Lake Ontario subject to addressing natural heritage and natural hazard issues to the satisfaction on CLOCA.

8.6 Building Envelope

CLOCA will not support the creation of new lots unless it is confirmed that a suitable building envelope exists within the parcel(s) to be created, consistent with relevant CLOCA and municipal requirements and demonstration that the building envelop does not encroach into any natural heritage or natural hazard features. This includes sufficient space within the suitable building envelope to incorporate necessary

infrastructure including, but not limited to, private septic systems, wells, driveways and parking areas.

8.7 Site Access

CLOCA will not support the creation of new lots that would necessitate a new crossing of the natural heritage system, *hazardous lands*, *erosion access allowances* and associated buffers, to access a suitable building envelope unless it has been demonstrated, to the satisfaction of CLOCA, that there will be no adverse impacts on the features to be protected or their ecological functions and hydrologic functions.

CLOCA will not support the creation of new lots unless dry or flood free access (including parking facilities) can be achieved.

8.8 Infrastructure

Infrastructure and transportation projects shall demonstrate that there will not be any impediment to wildlife movement, stream flow, fish movement or aquatic habitat. Improvements to existing infrastructure, including roads, shall incorporate measures to eliminate any existing and/or future impediment to stream flow, fish movement or aquatic habitat. Where existing in stream barriers exist, the Municipality and CLOCA will work together to determine the best method of removal or preservation.

Where it is not feasible to avoid wildlife barriers, adequate wildlife crossing provisions must be provided as part of the approval, to the satisfaction of the Municipality in consultation with CLOCA. Improvements to existing infrastructure, including roads, shall incorporate measures to eliminate barriers to wildlife movement and include measures to accommodate enhanced wildlife movement.

Green Infrastructure that provides ecological and hydrological benefits is encouraged. . Green infrastructure can include components such as natural heritage features and systems, parklands, stormwater management systems, urban forests, permeable surfaces, and green roofs.

All new infrastructure shall respect natural drainage patterns, and approval will require confirmation of appropriate minor/major systems, management of external drainage, and discharge to appropriate outlets.

Generally, linear infrastructure should cross perpendicular to the NHS and at its most narrow point.

Where natural hazards exist, infrastructure should consider options for remediation.

When infrastructure cannot protect a natural feature, or part of a natural feature, (and the feature is not protected by any other applicable federal, provincial, or municipal requirement(s), compensation be provided in consultation with the municipality(ies).

8.9 Water Resources

Water resources are vital components of both environmental and human health. The quality, quantity, and temperature characteristics of water resources significantly impact ecosystem ecology, human well-being, recreational activities and city aesthetics. CLOCA supports the protection, improvement and restoration of vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions. CLOCA's Watershed Plans contain objectives, targets and policies related to sustainable and functioning water resources within our watershed. In addition, CLOCA has prepared a Guideline for Hydrogeological Assessment submissions. The Guideline provides information and guidance material related to hydrogeological assessment requirements to ensure comprehensive evaluations of potential impacts associated with development on natural ecological features and functions that are supported by groundwater resources.

8.9.1 Stormwater Management

CLOCA supports the effective management of stormwater run-off to protect the ecological health of the watershed and contribute to the protection of human life and property during storm events. Stormwater run-off will be controlled and treated for quality and quantity to the satisfaction of the Municipality in consultation with CLOCA. Pre-development runoff rates, flow paths, water quality and stream temperature shall be maintained. Where appropriate, the Municipality and CLOCA may determine that stormwater quantity controls are not required. CLOCA supports the use of enhanced stormwater quality treatment for all new development.

CLOCA has a Board approved Technical Guideline for Stormwater Management Submission that outlines CLOCA's expectations for all stormwater management submissions, which include a description of CLOCA policies, guidance on approved methods and techniques, a summary of key hydrologic parameters, and a summary of submission requirements.

Stormwater management practices should minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces. CLOCA also supports incorporation of a best management treatment train approach with increased emphasis on lot level/source, low impact development (LID) technologies and conveyance methods in addition to traditional end-of-pipe methods.

Discharge of stormwater to a receiving watercourse must be occur in a manner that does not adversely impact channel morphology, stream bank erosion or natural water temperature regimes of the receiving stream /feature. A geomorphological investigation shall be conducted to ensure that the impacts of stormwater discharge on streambank erosion are minimized.

Where stormwater management facilities do not exist or provide limited water quality treatment, efforts will be made to retrofit all areas with approved stormwater management measures using the most recent technologies and best management practices.

Redevelopment and infill development shall provide measures to improve water quality and quantity controls, including where possible, treatment of run-off from existing adjacent development.

Diversion of water from an existing drainage catchment to another catchment is discouraged and every effort shall be made to maintain drainage patterns and watershed boundaries.

8.9.2 High Volume Recharge Areas (HVRA)

Prior to any *development* within a HVRA, a Hydrogeological Report shall be completed to the satisfaction of CLOCA demonstrating that the proposed *development* or site alteration will have no adverse effects on groundwater recharge rates, quantity or quality or on natural heritage functions and hydrological features that rely on groundwater.

APPENDIX A - DEFINITIONS:

Accessory building or structure - a use of a building or structure that is subordinate and exclusively devoted to a main use, building or structure and located on the same lot.

Adverse hydraulic and fluvial impacts – any increase in flood elevation or impedance of flood and ice flows and/or an increase in the risk of flooding and erosion on adjacent upstream and/or downstream properties.

Anthropogenic – adverse human impact.

Aquifer - an underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt or clay).

Areas of interference - other areas where development could interfere with the hydrologic function of a wetland; within 120 metres of provincially significant wetlands and wetlands greater than or equal to 2 ha in size or within 30 metres of wetlands less than 2 ha in size.

Backwater area - a section of watercourse with a water surface elevation that is increased above the normal because of a downstream human-made obstruction such as a narrow bridge opening or culvert that restricts natural water flow.

Best management practices (BMPs) - methods, facilities and structures which are designed to protect or improve the environment and natural features and functions from the effects of development or interference.

Buffers - an area or band of permanent vegetation, preferably consisting of native species, located adjacent to a natural heritage feature and usually bordering lands that are subject to development or site alteration. The purpose of the buffer is to protect the feature and its function(s) by mitigating the impacts of the proposed land use and allowing an area for edge phenomena to continue. A buffer may also provide an area for recreational trails and a physical separation for new development that will discourage encroachment (adapted from Ontario Ministry of Natural Resources' Natural Heritage Reference Manual, 2nd Edition, 2010). The vegetation within a buffer can be managed (e.g. trimmed, cut, thinned, but not cultivated) providing that the integrity of the buffer remains intact.

Confined River or Stream System - a watercourse located within a valley corridor, either with or without a floodplain, and is confined by valley walls. The watercourse may be located at the toe of the valley slope, in close proximity to the toe of the valley slope (less than 15 m) or removed from the toe of the valley slope (more than 15 m). The watercourse can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels.

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 - as defined by the Conservation Authorities Act:

- The construction, reconstruction, erection or placing of a building or structure of any kind;
- 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;
- Site grading; or,
- The temporary or permanent placing, dumping or removal of material, originating on the site or elsewhere.

Development - as defined by the Provincial Policy Statement means the creation of a new lot, a change in land use, or the construction of buildings or structures, requiring approval under the Planning Act, but does not include:

- Activities that create or maintain infrastructure authorized under an environmental assessment process;
- Works subject to the Drainage Act; or,
- Underground or surface mining or minerals or advanced exploration on mining lands in significant areas of mineral potential in ecoregion 5e, where advanced exploration has the same meaning as under the Mining Act.

Dug-out or isolated ponds - anthropogenic waterbodies that are created by excavating basins with no inlet or outlet channels and in which surface and ground water collect.

Dwelling unit - a suite operated as a housekeeping unit, used or intended to be used as a domicile by one or more persons and usually containing cooking, eating, living, sleeping and sanitary facilities.

Enclosure - a pipe or other conduit for carrying a creek, stream or watercourse underground.

Endangered Species (federal) - a wildlife species that is facing imminent extirpation or extinction, listed in schedule 1 of the Species at Risk Act as updated and amended from time to time, by order in council (adapted from Species at Risk Act, 2002).

Endangered Species (provincial) - a species that is listed or categorized as an "endangered species" (i.e. a native species facing extinction or extirpation) on the Ontario Ministry of Natural Resources' official species at risk in Ontario list, as updated and amended from time to time (adapted from Provincial Policy Statement, 2005).

Engineering principles - current coastal, hydraulic and geotechnical engineering principles, methods and procedures that would be judged by a peer group of qualified engineers (by virtue of their qualifications, training and experience), as being reasonable for the scale and type of project being considered, the sensitivity of the locations, and the potential threats to life and property.

Enhance - in the context of wetlands and wetland buffers, means the altering of an existing functional wetland to increase or improve selected functions and benefits.

Environmental impact study - a report prepared to address the potential impacts of *development* or interference on natural features and ecological functions.

Erosion access allowance - a 6 metre development setback applied to the stable slope allowance/top of stable slope/meander belt allowance and forming part of the erosion hazard for confined (apparent) and unconfined (not apparent) river or stream systems. The erosion access allowance is applied to provide for emergency access to erosion prone areas, provide for construction access for regular maintenance and access to the site in the event of an erosion event or failure of a structure, and, provide for protection against unforeseen or predicted external conditions which could have an adverse effect on the natural conditions or processes acting on or within an erosion prone area.

Existing use - the type of activity associated with an existing building or structure or site on the date of a permit application.

Fish habitat - as defined in the Fisheries Act, c.f-14, means spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes (Provincial Policy Statement, 2005).

Habitable - that portion of a building or structure containing rooms or spaces required and intended for overnight occupancy and associated living space and includes those portions which contain facilities for storage, heating, air-conditioning, electrical, hot water supplies, etc., which are necessary to maintain the habitable condition and any area that has the potential to be used as or converted to residential living space, including basements.

Hazardous lands - as defined by the Conservation Authorities Act, means land that could be unsafe for development because of naturally-occurring processes associated with flooding, erosion, dynamic beaches, or unstable soil or bedrock.

Hazardous lands - as defined by the Provincial Policy Statement, means property or lands that could be unsafe for development due to naturally occurring processes. Along the shorelines of the great lakes - St. Lawrence River system, this means the land, including that covered by water, between the international boundary, where applicable, and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along the shorelines of large inland lakes, this means the land, including that covered by water, between a defined offshore distance or depth and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along river, stream and small inland lake systems, this means the land, including that covered by water, to the furthest landward limit of the flooding hazard or erosion hazard limits.

Hazardous sites - as defined by the Provincial Policy Statement, means property or lands that could be unsafe for development and site alteration due to naturally occurring hazards. These may include unstable soils (sensitive marine clays (leda), organic soils) or unstable bedrock (karst topography).

Headwater - the source and extreme upper reaches of a river, creek, stream or watercourse.

Existing Vacant Lot of Record – A parcel or tract of land described in a deed or other legal document that is capable of being legally conveyed, containing no preexisting buildings or structures.

Material - includes earth, sand, gravel, stone or woody debris (e.g., root wads, fascines).

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

Minor addition - a minor addition definition should not exceed provincial guidelines of 50% of the total floor area for riverine and shoreline flood hazards or 30% for riverine and shoreline erosion hazards and shall not result in an increase in the number of *dwelling units*. Once the total floor area maximum has been reached no further additions shall be permitted. Only the habitable floor space shall be considered when determining the existing floor space. Minor additions include both ground and above ground additions.

Natural heritage features - features and areas including all wetlands, significant woodlands, significant valleylands, fish habitat, significant habitat of endangered 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; part of an ecologically functional corridor or linkage between natural areas; or, any other features or areas that are considered ecologically important in terms of contributing to the quality and diversity of an identifiable geographic area or natural heritage system.

Normal high-water mark - the usual or average level to which a body of water rises at its highest point and remains for a sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the “active channel/bankful level” which is often the one to two year flood flow return level. For inland lakes, it refers to those parts of the waterbody bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominantly aquatic vegetation to terrestrial vegetation (excepting water tolerant species). Along the Trent-Severn waterway lakes, the upper controlled navigation limit is deemed to be the high-water mark.

One hundred year flood event (100-year flood) - rainfall or snowmelt, or a combination of rainfall and snowmelt, producing at any location in a river, creek, stream or watercourse a peak flow that has a probability of occurrence of one per cent during any given year.

One hundred year erosion rate - the predicted lateral movement of a river, creek, stream or watercourse or inland lake over a period of one hundred years.

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

Protect - in the context of wetlands, means the preservation of wetlands in perpetuity through implementation of appropriate physical and/or legal mechanisms (e.g. ecological buffers, development buffers, zoning, fencing, conservation easements, etc.).

Reconstruction - the removal of an existing building or structure and the construction of a new building or structure. Reconstruction does not include reconstruction on remnant foundations or derelict or abandoned buildings or structures.

River - a large natural stream of water emptying into an ocean, lake, or other body of water and usually fed along its course by converging tributaries.

Riparian vegetation - the plant communities in the riparian zone, typically characterized by hydrophilic plants.

Stream - a flow of water in a channel or bed, as a brook, rivulet, or small river.

Toe of slope - the lowest point on a slope, where the surface gradient changes from relatively shallow to relatively steep.

Top of slope - the point of the slope where the downward inclination of the land begins, or the upward inclination of the land levels off. This point is situated at a higher topographic elevation of land than the remainder of the slope.

Valley or valleyland - land that has depressional features associated with a river or stream, whether or not it contains a river or stream system.

Watercourse - an identifiable depression in the ground in which a flow of water regularly or continuously occurs. A watercourse also includes a lake and a municipal drain.

Wave uprush - the rush of water up onto a shoreline or structure following the breaking of a wave; the limit of wave uprush is the point of furthest landward rush of water onto the shoreline.

Wetland - as defined by the Conservation Authorities Act, means land that:

a. is seasonally or permanently covered by shallow water or has a water table close to or at its surface;
b. directly contributes to the hydrological function of a watershed through connection with a surface watercourse;
c. has hydric soils, the formation of which has been caused by the presence of abundant water; and,
d. has vegetation dominated by hydrophytic plants or water tolerant plants, the dominance of which has been favoured by the presence of abundant water,

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

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

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 vary in their level of significance at the local, regional and provincial levels (2005 PPS).

APPENDIX B: Section 28 Conservation Authorities Act Hearing Procedures

Central Lake Ontario Conservation Authority

1.0 PURPOSE OF HEARING PROCEDURES:

The *CA Act* requires that the applicant be party to a hearing by the local Conservation Authority Board for an application to be refused or approved with contentious conditions. Further, a permit may be refused if, in the opinion of the Authority, the proposed development adversely affects the control of flooding, erosion, dynamic beaches, or pollution or conservation of land. The Hearing Board is empowered by law to make a decision, governed by the *Statutory Powers Procedures Act.* It is the purpose of the Hearing Board to evaluate the information presented at the hearing by both the Conservation Authority staff and the applicant and to decide whether the application will be approved with or without conditions, or refused.
These procedures have been prepared to provide a step-by-step process to conducting hearings required under Section 28 (12), (13), (14) of the *CA Act.*

2.0 PREHEARING PROCEDURES

2.1 Apprehension of Bias
In considering the application, the Hearing Board is acting as a decision-making tribunal. The tribunal is to act fairly. Under general principles of administrative law relating to the duty of fairness, the tribunal is obliged not only to avoid any bias but also to avoid the appearance or apprehension of bias. The following are three examples of steps to be taken to avoid apprehension of bias where it is likely to arise.
(a) No member of the Authority taking part in the hearing should be involved, either through participation in committee or intervention on behalf of the applicant or other interested parties with the matter, prior to the hearing. Otherwise, there is a danger of an apprehension of bias, which could jeopardize the hearing.
(b) If material relating to the merits of an application that is the subject of a hearing is distributed to Board members before the hearing, the material shall be distributed to the applicant at the same time. The applicant may be afforded an opportunity to distribute similar pre-hearing material.
(c) In instances where the Authority requires a hearing to help it reach a determination as to whether to give permission with or without conditions or refuse a permit application, a final decision shall not be made until such time as a hearing is held. The applicant will be given an opportunity to attend the hearing before a decision is made; however, the applicant does not have to be present for a decision to be made.

2.2 Application
The right to a hearing is required where staff is recommending refusal of an application, the Board of Directors cannot support a permit application, the applicant objects to the conditions of approval, or the Authority cannot support a request for an extension of a permission. The applicant is entitled to reasonable notice of the hearing pursuant to the *Statutory Powers Procedures Act*.

2.3 Notice of Hearing
The Notice of Hearing shall be sent to the applicant within sufficient time to allow the applicant to prepare for the hearing. To ensure that reasonable notice is given, the applicant shall be consulted to determine an agreeable date and time based on the Authority's regular meeting schedule.

The Notice of Hearing shall contain the following:
(a) Reference to the applicable legislation under which the hearing is to be held (*CA Act).*
(b) The time, place and the purpose of the hearing.
(c) Particulars to identify the applicant, property and the nature of the application, which are the subject of the hearing.
Note: If the applicant is not the landowner but the prospective owner, the applicant must have written authorization from the registered landowner.
(d) The reasons for the proposed refusal or conditions of approval shall be specifically stated. This should contain sufficient detail to enable the applicant to understand the issues so he or she can be adequately prepared for the hearing.
It is sufficient to reference in the Notice of Hearing that the recommendation for refusal or conditions of approval is based on the reasons outlined in previous correspondence or a hearing report that will follow.
(e) A statement notifying the applicant that the hearing may proceed in the applicant's absence and that the applicant will not be entitled to any further notice of the proceedings.
Except in extreme circumstances, it is recommended that the hearing not proceed in the absence of the applicant.
(f) Reminder that the applicant is entitled to be represented at the hearing by counsel, if desired.
The Notice of Hearing shall be directed to the applicant and/or landowner by registered mail. Please refer to **Appendix A** for an example Notice of Hearing.

2.4 Presubmission of Reports
The applicant shall be provided with all reports from staff that will be provided to the Authority. The applicant shall be given two weeks to prepare a report once the reasons for the staff recommendations have been received. Subsequently, this may affect the timing and scheduling of the staff hearing reports.

2.5 Hearing Information
Prior to the hearing, the applicant shall be advised of the Authority's hearing procedures.

3.0 HEARING

3.1 Public Hearing
Pursuant to the *Statutory Powers Procedure Act*, hearings are required to be held in public. The exception is in very rare cases where public interest in public hearings is outweighed by the fact that intimate financial, personal or other matters would be disclosed at hearings.

3.2 Hearing Participants
The *CA Act* does not provide for third party status at the local hearing. While others may be advised of the local hearing, any information that they provide should be incorporated within the presentation of information by, or on behalf of, the applicant or Authority staff.

While the hearings will be held in public and are also open to attendance by the press, the filming of the hearing or the taking of pictures will not be permitted during the hearing by any person or persons.

3.3 Attendance of Hearing Board Members

In accordance with case law relating to the conduct of hearings, those members of the Authority who will decide whether to grant or refuse the application must be present during the full course of the hearing. If it is necessary for a member to leave, the hearing must be adjourned and resumed when either the member returns or if the hearing proceeds, even in the event of an adjournment, only those members who were present after the member left can sit to the conclusion of the hearing.

3.4 Adjournments

The Board may adjourn a hearing on its own motion or that of the applicant or Authority staff where it is satisfied that an adjournment is necessary for an adequate hearing to be held. Any adjournments form part of the hearing record.

3.5 Orders and Directions

The Authority is entitled to make orders or directions to maintain order and prevent the abuse of its hearing processes. A hearing procedures example has been included as Appendix B.

3.6 Information Presented at Hearings

(a) The *Statutory Powers Procedure Act*, requires that a witness be informed of his right to object pursuant to the *Canada Evidence Act.* The *Canada Evidence Act* indicates that no witness shall be excused from answering questions on the basis that the answer may be incriminating. Further, answers provided during the hearing are not admissible against the witness in any criminal trial or proceeding. This information should be provided to the applicant as part of the Notice of Hearing.
(b) The hearing procedural in general, will be informal without the evidence before the Board being given under oath or affirmation.
(c) The Board may authorize receiving a copy rather than the original document, however, the Board can request certified copies of the document if required.
(d) Privileged information, such as solicitor/client correspondence, cannot be heard. Information that is not directly within the knowledge of the speaker (hearsay), if relevant to the issues of the hearing, can be heard.
(e) The Board may take into account matters of common knowledge such as geographic or historic facts, times measures, weights, etc. or generally recognized scientific or technical facts, information or opinions within its specialized knowledge without hearing specific information to establish their truth.

3.7 Conduct of Hearing

3.7.1 Record of Attending Hearing Board Members

A record shall be made of the members of the Hearing Board.

3.7.2 Opening Remarks

The Chair shall convene the hearing with opening remarks, which generally; identify the applicant, the nature of the application, and the property location; outline the hearing procedures; and advise on requirements of the *Canada Evidence Act.* Please reference to **Appendix C** for the Opening Chair's Remarks model.

3.7.3 Presentation of Authority Staff Information

Staff of the Authority presents the reasons supporting the recommendation for the refusal or conditions of approval of the application. Any reports, documents or plans that form part of the presentation shall be properly indexed and received.

Staff and/or legal counsel of the Authority should not submit new information at the hearing, as the applicant will not have had time to review and provide a professional opinion to the Hearing Board.

3.7.4 Presentation of Applicant Information

The applicant has the opportunity to present information at the conclusion of the Authority staff presentation. Any reports, documents or plans, which form part of the submission should be properly indexed and received.

The applicant shall present information as it applies to the permit or extension application in question. For instance, does the requested activity affect the control of flooding, erosion, dynamic beach or conservation of land or pollution? The hearing does not address the merits of the activity or appropriateness of such a use in terms of planning.

- The applicant may be represented by legal counsel or agent, if desired
- The applicant may present information to the Board and/or have invited advisors to present information to the Board
- The applicant(s) presentation may include technical witnesses, such as an engineer, ecologist, hydrogeologist etc.

The applicant should not submit new information at the hearing, as the Staff of the Authority will not have had time to review and provide a professional opinion to the Hearing Board.

3.7.5 Questions

Members of the Hearing Board may direct questions to each speaker as the information is being heard. The applicant and /or agent can make any comments or ask questions on the staff report.

Pursuant to the *Statutory Powers Procedure Act*, the Board can limit questioning where it is satisfied that there has been full and fair disclosure of the facts presented. It should be note that the courts have been particularly sensitive to the issue of limiting questions and there is a tendency to allow limiting of questions only where it has clearly gone beyond reasonable or proper bounds.

3.7.6 Deliberation

After all the information is presented, the Board will deliberate and make a decision on the application. A resolution advising of the Board's decision and the particulars of the decision will then be adopted.

4.0. DECISION

The applicant must receive written notice of the decision. Except for decisions related to requests for an extension to a permission, the applicant shall be informed of the right to appeal the decision within 30 days upon receipt of the written decision, to the Minister of Natural Resources.

The Board shall itemize and record information of particular significance, which led to their decision.

4.1 Notice of Decision

The decision notice should include the following information:

(a) The identification of the applicant, property and the nature of the application that was the subject of the hearing.

(b) The decision to refuse or approve the application or request for extension. A copy of the Hearing Board resolution should be attached.

The written Notice of Decision shall be forwarded to the applicant by registered mail. A sample Notice of Decision and cover letter has been included as **Appendix D**.

5.0 RECORD

The Authority shall compile a record of the hearing. In the event of an appeal, a copy of the record should be forwarded to the Minister of Natural Resources/Mining and Lands Commissioner. The record must include the following:

(a) The application for the permit.

(b) The Notice of Hearing.

(c) Any orders made by the Board (e.g., for adjournments).

(d) All information received by the Board.

(e) The minutes of the meeting made at the hearing.

(f) The decision and reasons for the decision of the Board.

(g) The Notice of Decision sent to the applicant 7

Appendix A

NOTICE OF HEARING
IN THE MATTER OF
The Conservation Authorities Act,
R.S.O. 1990, Chapter 27
AND IN THE MATTER OF an application by
FOR THE PERMISSION OF THE
THE CENTRAL LAKE ONTARIO CONSERVATION AUTHORITY
Pursuant to Regulations made under
Section 28, Subsection 12 of the said Act

TAKE NOTICE THAT a Hearing before The Central Lake Ontario Conservation Authority will be held under Section 28, Subsection 12 of the *Conservation Authorities Act* at the offices of the said Authority, (location), at the hour (time and date), with respect to the application by (name) to permit development within an area regulated by the Authority in order to ensure no adverse effect on (***the control of flooding, erosion, dynamic beaches or pollution or conservation of land, alter or interfere with a watercourse, shoreline or wetland***) on Lot x , Plan/Lot xx, Concession x , (***Street***) in the City/Town of x , Regional Municipality of x , x Watershed.

TAKE NOTICE THAT you are invited to make a delegation and submit supporting written material to the Board of Directors of The Central Lake Ontario Conservation Authority for the meeting of (meeting date). If you intend to appear, please contact (name). Written material will be required by (*date*), to enable the Board members to review the material prior to the meeting.

TAKE NOTICE THAT this hearing is governed by the provisions of the *Statutory Powers Procedure Act*. Under the Act, a witness is automatically afforded a protection that is similar to the protection of the *Ontario Evidence Act*. This means that the evidence that a witness gives may not be used in subsequent civil proceedings or in prosecutions against the witness under a Provincial Statute. It does not relieve the witness of the obligation of this oath since matters of perjury are not affected by the automatic affording of the protection. The significance is that the legislation is Provincial and cannot affect Federal matters. If a witness requires the protection of the *Canada Evidence Act* that protection must be obtained in the usual manner. The Ontario Statute requires the tribunal to draw this matter to the attention of the witness, as this tribunal has no knowledge of the effect of any evidence that a witness may give.

AND FURTHER TAKE NOTICE that if you do not attend at this Hearing, the Board of Directors of The Central Lake Ontario Conservation Authority may proceed in your absence, and you will not be entitled to any further notice in the proceedings.

DATED the day of, 2_____

Chief Administrative Officer

Appendix B

HEARING PROCEDURES

1. Motion to sit as Hearing Board.

2. Roll Call followed by the Chair's opening remarks.

3. Staff will introduce to the Hearing Board the applicant/owner, his/her agent and others wishing to speak.

4. Staff will indicate the nature and location of the subject application and the conclusions.

5. Staff and/or counsel will present the staff report included in the Authority agenda and the reasons why the application was recommended for denial.

6. The Applicant will have the opportunity to ask questions of staff based on their presentation.

7. Following the Applicant, the members of the Board can ask the staff questions.

8. The applicant and/or his/her agent will make a presentation.

9. The staff and/or counsel will have the opportunity to ask questions of the applicant and/or his/her agents followed by questions from the Board.

10. The Hearing Board will move In Camera.

11. Members of the Hearing Board will move and second a motion.

12. A motion will be carried which will culminate in the decision.

13. The Hearing Board will move to reconvene in public forum.

14. The Chair or Acting Chair will advise the owner/applicant of the Hearing Board decision.

15. Where provided for in the CA Act, if the decision is "to refuse", the Chair or Acting Chair shall notify the owner/applicant of his/her right to appeal the decision to the Minister of Natural Resources within 30 days of receipt of the reasons for the decision.

Appendix C

Chair's Opening Remarks

We are now going to conduct a hearing under Section 28 of the *Conservation Authorities Act* in respect of an application by: for permission to:

The Authority has adopted regulations under Section 28 of the *Conservation Authorities Act* which requires the permission of the Authority for development within an area regulated by the Authority in order to ensure no adverse effect on the control of flooding, erosion, dynamic beaches or pollution or conservation of land or to permit alteration to a shoreline or watercourse or interference with a wetland. (or, if applicable, substitute - *which requires permission for an extension to a permission previously granted*.)
The staff has reviewed this proposed work *or extension request* and a copy of the staff report has been given to the applicant.

The *Conservation Authorities Act* (Section 28 [12]) provides that:

"Permission required under a regulation made under clause (1) (b) or c) shall not be refused or granted subject to conditions unless the person requesting permission has been given the opportunity to require a hearing before the Authority."
In holding this hearing, the Authority Board is to determine whether or not a permit is to be issued. In doing so, we can only consider the application in the form that is before us, the staff report, such evidence as may be given and the submissions to be made on behalf of the applicant.

OR Section 9 (7) of Ontario Regulation 42/06 indicates that "Before refusing an extension of a permission, the Authority or its executive committee shall give notice of intent to refuse to the holder of the permission, indicating that the extension will be refused unless, …"

The proceedings will be conducted according to the *Statutory Powers Procedures Act*. Further to this, Section 5 of the *Canada Evidence Act* states:

1. No witness shall be excused from answering any question on the ground that the answer to the question may tend to criminate him or may tend to establish his liability to a civil proceeding at the instance of the Crown or of any person.

2. Where with respect to any question a witness objects to answer on the ground that his answer may tend to criminate him or may tend to establish his liability to a civil proceeding at the instance of the Crown or of any person and if but for this *Act* or the *Act* of any provincial legislature, the witness would therefore have been excused from answering the question, then although the witness is by reason of the *Act* or the provincial *Act* compelled to answer, the answer so given shall not be used or admissible in evidence against him in any criminal trial or other criminal proceeding against him thereafter taking place other than a prosecution for perjury in giving of that evidence or for the giving of contradictory evidence.

The procedure in general will be informal without the evidence before it being given under oath or affirmation.

The rules of evidence before this Board are informal.

If the applicant has any questions to ask of the Board of Directors, he/she is free to do so providing all questions are directed to the Chair of the Board.

Chair's Opening Remarks Cont'd.
The Hearing will proceed as follows:
1. Staff and/or counsel of the Central lake Ontario Conservation Authority will present an overview of the application and the reasons why the application was recommended for denial. The Applicant will then have the opportunity to ask questions of staff based on their presentation. Following the Applicant, the members of the Board may ask the staff questions.
2. Next will be the presentation by the Applicant followed by questions by Central Lake Ontario staff and/or counsel and then questions by members of the Board of Directors.
3. Lastly, the Board of Directors will deliberate and make a decision on the application. A resolution advising of the Board of Directors decision and the particulars of the decision will then be adopted.

Appendix D

(Date)
BY REGISTERED MAIL
(name)
(address)
Dear:
RE: NOTICE OF DECISION
Hearing Pursuant to Section 28(12) of the Conservation Authorities Act
Proposed (development)
Lot , Plan ; City of
Application #:
In accordance with the requirements of the Conservation Authorities Act, The Central Lake Ontario Conservation Authority provides the following Notice of Decision:
On (meeting date and number), the Hearing Board for the Central lake Ontario Conservation Authority refused/approved your application/approved your application with conditions. A copy of the Board's resolution # has been attached for your records.
Please note that this decision is based on the following reasons: (the proposed development/alteration to a watercourse or shoreline adversely affects the control of flooding, erosion, dynamic beaches or pollution or interference with a wetland or conservation of land).
In accordance with Section 28 (15) of the Conservation Authorities Act, an applicant who has been refused permission or who objects to conditions imposed on a permission may, within 30 days of receiving the reasons under subsection (14), appeal to the Minister who may refuse the permission; or grant permission, with or without conditions.
For your information, should you wish to exercise your right to appeal the decision, a letter by you or your agent/counsel setting out your appeal must be sent within 30 days of receiving this decision addressed to:

The Honourable (Minister's Name)
Minister of Natural Resources
Queen's Park, Whitney Block
99 Wellesley Street West, 6th Floor, Room 6630
Toronto ON M7A 1W3
TEL: (416) 314-2301 FAX: (416) 314-2216

Should you require any further information, please do not hesitate to contact (staff contact) or the undersigned.

Yours truly,

Chief Administrative Officer
Enclosure