

# Policies and Procedures for the Administration of Section 28 Regulations

Conservation Authorities Act, Section 28 – “Generic Regulation”

## Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

Ontario Regulation 181/06 under Ontario Regulation 97/04



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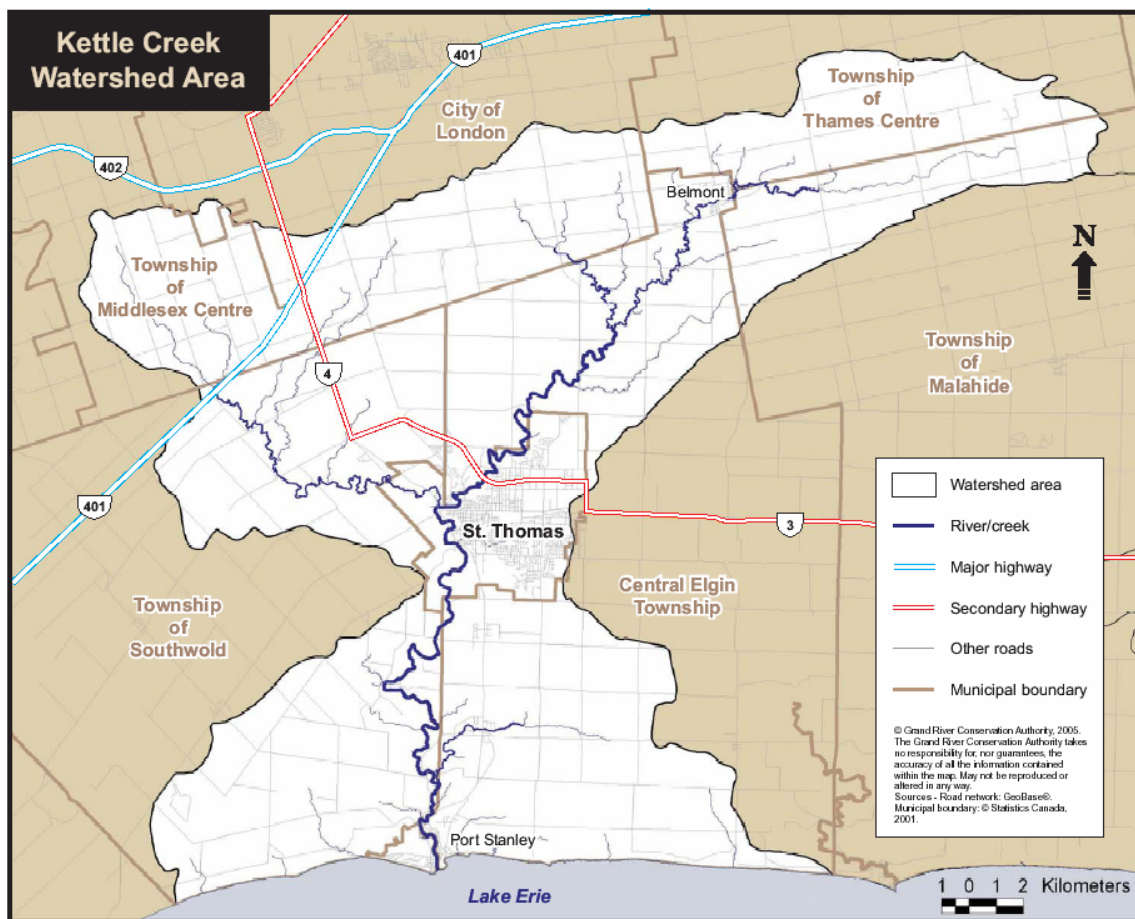
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## 1 Introduction

The Kettle Creek Conservation Authority is a corporate body established by an Order-in-Council under the Conservation Authorities Act, R.S.O, 1980, on April 1, 1965. The Act, which was originally enacted in 1946, permits a group of municipalities in a watershed to form a conservation authority for the purpose of implementing programs to respond to a variety of resource management issues including flooding and erosion. By the early 1980's, conservation authorities have assumed as one of their primary responsibilities the protection of life and property from the threat of flooding and erosion.

Section 20 of the Conservation Authorities Act, R.S.O, 1980, outlines the objective of all conservation authorities as follows"

*"20. 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."*



The Kettle Creek Conservation Authority administers a comprehensive hazard land and sensitive areas management program which consists of several integrated components. In conjunction with the 1988 Memorandum of Agreement with the Aylmer District of the Ministry of Natural Resources, they firmly establish the Authority as the lead agency in hazard land and sensitive areas management within the Kettle Creek watershed.

The components include:

- a) **Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06 (O.Reg.97/04):** The legal mechanism by which lands within hazardous lands, wetlands, shorelines and areas susceptible to flooding or erosion and associated allowances are regulated.
- b) **Regulation Limit Mapping:** Hazardous lands, wetlands, shorelines and areas susceptible to flooding, and associated allowances, within watersheds in the area of jurisdiction of the Authority are delineated by the Regulation Limit.
- c) **Municipal Plan review:** The review of planning documents and similar proposals in order to promote proper land uses.
- d) **Flood Warning/Contingency Planning:** A system which provide warning of impending flood events and identifies the responsibilities of various agencies during a flood.
- e) **Information/Education Programs:** The promotion of floodplain management principles to a variety of audiences in order to develop public understanding and acceptance of the Authority's Water and Related Land Management Program. This also includes increasing public awareness for the location of hazardous areas defined by Floodplain Mapping projects.

These components may be considered as "non-structural" parts of a hazard land and sensitive areas management program. Although it is possible to utilize structural means (ie. flood control dams) to alleviate potential flood damages, new development can be most economically protected through effective hazard land and sensitive areas management practices.

The **Memorandum of Agreement** with the Aylmer District of the Ministry of Natural Resources was signed on November 14th, 1988. The Agreement conferred certain obligations and responsibilities to the KCCA, including:

1. *The Kettle Creek Conservation Authority (KCCA) is the lead commenting agency on plan input and review matters relating to the following:*
  - a) *lands susceptible to flooding along watercourses and the Lake Erie Shoreline in the Kettle Creek watershed.*
  - b) *lands susceptible to erosion on unstable slopes, banks of watercourses and the Lake Erie Shoreline*
  - c) *lands with inherent instability and other unsatisfactory conditions which are prone to shifting, slumping or sinking which is a function of soil type, condition and/or moisture content.*
2. *The KCCA will comment on the hazard aspects and natural values of Class 1-7 wetlands.*
3. *The KCCA will comment on other water and land related management issues as appropriate.*
4. *The Aylmer District of the MNR will comment on Plan Input and review matters related to fish, wildlife, forestry, minerals, petroleum, Crown land, wetlands and areas of natural and scientific interest.*
5. *Along with the responsibility noted in #1 above, the KCCA will have regard for Provincial policies and directives and will safeguard the provincial interests in watershed and shoreline management.*
6. *Both agencies make a commitment to co-operate in the delivery of the provinces programs including public education and information.*
7. *Both agencies agree to discuss interrelated planning matters concerning Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations and the Lakes and Rivers Improvement Act and Public Lands Act, Beach Protection Act, Beds of Navigable Waters Act and Public Lands Act, with respect to providing the best response to the public."*

It should be emphasized that hazard lands and sensitive areas management programs are undertaken in cooperation with watershed municipalities and as such have the responsibility to identify, with the assistance of the Conservation Authority, hazard land and sensitive areas in their planning documents. By doing so, they can help ensure safe and appropriate land uses.

There exist a number of other provincial acts and related regulations which deal with the use of, and activities associated with, water resources. Notable among these are the Lakes and Rivers Improvement Act and the Public Lands Act administered by the Ministry of Natural Resources; the Ontario Water Resources Act and the Environmental Protection Act administered by the Ministry of the Environment; the Drainage Act administered by the Ministry of Agriculture Food; and the Navigable Waters Protection Act administered by the Federal Government. Regulations made under the Conservation Authorities Act do not supersede the regulations made under various other acts or any other regulations. As such, approvals granted for activities regulated by the Authority do not preclude compliance with any other applicable regulation.

The Policies within this manual focuses on the following three main tools:

***The Planning Act*** – Largely through an advisory role, the Authority provides planning and technical advice to municipalities to assist them with fulfilling their responsibilities under the Planning Act.

***The Provincial Policy Statement (PPS)*** – Under Section 3 of the Planning Act requires that decisions affecting planning matters “shall be consistent with” policy statements issued under the Act.

***The Conservation Authorities Act*** – Under Section 28, the Authority regulates development and site alteration within the regulation Limit.

The guidance provided in this document for the implementation of the Planning Act, PPS and the Conservation Authorities Act is applicable to all other Acts and regulations that the KCCA may be asked to comment on.

### **1.1 The Planning Act**

The Planning Act provides municipal governments, Conservation Authorities and other agencies with a broad, province-wide framework to promote the orderly development of land. It guides land use planning decisions in Ontario as well as local policy formulation that is consistent with provincial requirement. Section 3 of the Planning Act enables the Province to develop and implement detailed policies for those matters considered to be of provincial interest.

Municipalities circulate Planning Act applications to the Kettle Creek Conservation Authority for review in accordance with circulation procedures established under the Planning Act.

### **1.2 The Provincial Policy Statement (PPS)**

The PPS provides direction on matters of provincial interest related to land use planning and development, including Natural Hazard policies (section 3.1). As a key part of Ontario's policy-led planning system, the PPS sets the policy foundation for regulating the development and use of land. It also supports the provincial goal to enhance the quality of life for citizens of Ontario.

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

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

In 1997 the Province of Ontario released the PPS replacing the previous 1988 Flood Plain Planning Policy Statement made under the planning act. The new PPS is issued under the authority of Section 3 of the Planning Act and came into effect on March 1, 2005. It applies to all applications, matters or proceedings commenced on or after March 1, 2005.

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

Natural Hazard Policies, Section 3.1 of the Provincial Planning Policy (PPS) states:

“3.1 NATURAL HAZARDS

3.1.1 *Development* shall generally be directed to areas outside of:

- a) *hazardous lands* adjacent to the shorelines of the *Great Lakes – St. Lawrence River System* and *large inland lakes* which are impacted by *flooding hazards, erosion hazards* and/or *dynamic beach hazards*;
- b) *hazardous lands* adjacent to *river, stream and small inland lake systems* which are impacted by *flooding hazards* and/or *erosion hazards*; and
- c) *hazardous sites*

3.2.2 *Development* and *site alteration* shall not be permitted within:

- a) the *dynamic beach hazard*;
- b) *defined portions of the one hundred year flood level along connecting channels* (the St. Mary’s, St. Clair, Detroit, Niagra and St. Lawrence Rivers);
- c) areas that would be rendered inaccessible to people and vehicles during times of *flooding hazards, erosion hazards* and/or *dynamic beach hazards*, unless it has been demonstrated that the site has safe access appropriate for the nature of the *development* and the natural hazard; and
- d) a *floodway* regardless of whether the area of inundation contains high points of land not subject to flooding.

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

- a) in those exceptional situations where a *Special Policy Area* has been approved. The designation of a *Special Policy Area*, and any change or modification to the site-specific policies or boundaries applying to a *Special Policy Area*, must be approved by the Ministers of Municipal Affairs and Housing and Natural Resources prior to the approval authority approving such changes or modifications; or
- b) where the *development* is limited to uses which by their nature must locate within the *floodway*, including flood and/or erosion control works or minor additions or passive non-structural uses which do not affect flood flows.”

### **1.3 The Conservation Authorities Act**

Section 28 of the Conservation Authorities Act empowers an authority to make regulations applicable in the area under its jurisdiction:

1. 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;
2. Prohibiting, regulating or requiring the permission of the authority for 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;
3. Prohibiting, regulating or requiring permission of the authority for development if, in the opinion of the authority, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected by the development;
4. Providing for the appointment of officers to enforce any regulation made under this section;
5. Providing for the appointment of persons to act as officers with all of the powers and duties

The following objectives provide the basis for the decision making process for implementing the Authority's regulation and permit process:

- Prevent loss of life,
- Minimize property damage and social disruption
- Reduce public and private expenditure for emergency operation, evacuation and restoration,
- Minimize the hazards and unnecessary development of riverine flood plains and flood and erosion susceptible shoreline areas which in future years may require expensive protection measures,
- Regulate works and development which, singularly or collectively, may reduce riverine channel capacities to pass flood flows resulting in increased flood levels, and creating potential danger to upstream and downstream landowners,
- Control filling and/or drainage of natural storage areas such as wetlands and valleylands,
- Encourage the conservation of land through the control of construction and placement of fill on existing or potentially unstable valley slopes or shoreline bluffs,
- Reduce soil erosion and sedimentation from development activity,
- Control pollution or other degradation of existing and potential groundwater aquifer(s) and aquifer recharge areas, created by fill activities: and
- Control water pollution, sedimentation and potential nuisances due to floating objects and debris.



## **2 Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06 (O.Reg 97/04)**

### **2.1 Background to Regulation 181/06 (O. Reg. 97/04)**

Since 1995, under the auspices of the Red Tape Reduction Act, the Red Tape Commission has been responsible for streamlining provincial government acts and regulations. A key focus of the Commission is to bring clarity and consistency to existing legislation and eliminate regulations that are no longer needed. The Red Tape Commission process identified a need to make amendments to the Conservation Authorities Act. These amendments were subsequently tabled and the process of public consultation culminated with the enactment of amendments to the Conservation Authorities Act in 1997. The development of the Ontario Regulation 97/04 (Generic Regulation) and the development of local regulations to implement the Generic Regulation are direct requirements of the amended Conservation Authorities Act.

This Generic Regulation is not a new piece of legislation. The Conservation Authorities Act was originally created in 1946 in response to watershed management issues and the recognition that these and other natural resource initiatives were best managed on a watershed basis. Fill, Construction and Alteration to Waterways regulations were subsequently developed for all Conservation Authorities in Ontario. Many of these regulations have been in place since the 1960s and were last amended in 1990. The Generic Regulation is designed to achieve consistency province-wide in the Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

The Generic Regulation, made under the Conservation Authorities Act, complements implementation activities related to the Planning Act. Using the guidance provided by the Provincial Policy Statement, natural hazards are identified in the planning process and appropriate restrictions can be implemented. In cases where a Planning Act Application is not required, the Provincial Policy Statement cannot be applied and, in these cases, the Province's natural hazard management program can still be implemented through the Conservation Authorities Act. In this way, the Planning Act is a tool to proactively identify and regulate hazards while the Conservation Authorities Act can regulate activities in those cases where municipal plans have not been updated and in those cases where the municipal plan may allow the activity subject to certain requirements which can be addressed through the Conservation Authorities Act.

After subsequent modification to schedules and the text, in accordance with the provisions of the Generic Regulation, the standards and methodologies set out by the Ministry of Natural Resources and following the "Guidelines for Developing Schedules of Regulated Areas" established by Conservation Ontario, the revised regulation was sent to the Minister of Natural Resources for approval by the Lieutenant Governor in Council on January 25<sup>th</sup>, 2006. KCCA's Regulation received approval on May 4<sup>th</sup>, 2006 and was filed as Regulation 181/06 under Ontario Regulation 97/04 on May 4<sup>th</sup>, 2006. It was published in the Ontario Gazette on May 20<sup>th</sup>, 2006.

It is important to reference Ontario Regulation 97/04 on all mapping or documents referring to KCCA's Regulation 181/06.

## **2.2 Explanation to Regulation 181/06 (O. Reg. 97/04)**

A copy of the Kettle Creek Conservation Authority's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06 (Ontario Regulation 97/04) forms Appendix II to this document. Under Section 28 of the Conservation Authorities Act, R.S.O., 1980 (see Appendix I); the Authority may make regulations applicable in the area under its jurisdiction as noted in Section 1.2. The following briefly describes and provides an example of the basis of the regulation.

- a) The Authority has the power to grant or deny permission for any straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, lake or watercourse or interfere in any way with a wetland within the area of its jurisdiction. Man made alterations to existing watercourses can have serious and unpredictable environmental consequences (ie. flooding, erosion, sedimentation of fisheries habitat) and through the regulation, the Authority has the right to prevent or control such changes.
  
- b) Similar to (a) above, the Authority is empowered to grant or deny permission for development activities for lands that are located within the Regulation Limit. The development activities that apply to the regulation are as follows:
  - i. any construction, reconstruction, erection or placing of a building or structure of any kind,
  - ii. 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,
  - iii. site grading ,
  - iv. the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere or.

The types of land affected by the regulation, which are located within the Regulation Limits, are:

- i. Hazardous lands.
- ii. Shorelines
- iii. River or stream valleys;
- iv. Watercourses including Municipal Drains
- v. Wetlands; or
- vi. Other areas, where development could interfere with the hydrologic function of a wetland.

These areas are defined on the basis of slope stability, sensitive areas, river valley erosion potential, river valley storage capacity and associated allowances where development activity may increase the likelihood of pollution or flooding, or adversely affect the conservation of land. The defined areas are delineated by the Regulation Limit shown on maps 1 to 29, dated November 16, 2005 on registered Authority mapping and filed at the head office of the Authority, under the map title "Ontario Regulation 97/04: Regulation for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses".

In summary, the regulation is a document which describes the types of activity which may not take place within areas along watercourses or adjacent to areas susceptible to flooding or erosion within the KCCA's area of jurisdiction without prior permission from the Conservation Authority. Accompanying the regulation is the registered mapping which outlines the Regulation Limit, the regional flood line and locally and provincially significant wetlands overlaying an aerial photography base. The regulation also describes the information which is to be included with an application for permission to engage in any activity covered under the regulation, and indicates that the Authority may appoint officers to enforce the regulation. In the Kettle Creek Conservation Authority, the staff members who have been designated to enforce Regulation 181/06 under Ontario Regulation 97/04 are:

1. General Manager/Secretary Treasurer
2. KCCA Chair
3. Planning and Regulations Supervisor

### **2.3 Regulation Limit**

The lands defined by the Regulation Limit, generally are lands where the control of flooding, erosion, pollution or the conservation of land may be affected by development activity. Specifically, the Regulation Limit is a result of several components, each of which addresses a specific hazard. These include:

1. **Hazardous Land Areas:** Hazardous Land Areas are lands that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock.
2. **River or Stream Valley Areas:** River or stream valley areas are lands which are depressional features associated with a river or stream, whether or not they detain a watercourse. River or stream valley walls may be susceptible to erosion or instability, or where filling or removal of fill may aggravate or contribute to susceptibility.
3. **Shoreline areas of the Great Lakes-St. Lawrence River System:** Shoreline areas of the Great Lakes-St. Lawrence River system are lands that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to inland lakes that could be affected by flooding, erosion or dynamic beaches.
4. **Watercourse and wetland areas:** Control of filling in wetlands is necessary since they serve as flood storage reservoirs. Also, filling of wetlands can have a variety of environmental impacts including degraded surface and ground water quality and loss of habitat for numerous flora and fauna species.
5. **Other areas:** Other areas are lands that are not defined in the Conservation Act and/or Generic Regulation as river and stream valleys, lands adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or inland lakes, hazardous lands, wetlands or as a watercourse, that in the opinion of the Minister of Natural Resources, development should be prohibited or regulated or should require the permission of the Authority. (ie. lands adjacent to, and supporting the functions of wetlands – extending 120 metres outwards from the edge of the wetland boundary)

The Regulation Limit for each system is taken as the greater of the applicable hazard limits. Regulation Limit mapping prepared by Riggs Engineering Limited in cooperation with the Kettle Creek Conservation Authority, has been completed in full accordance with guidelines from the Ministry of Natural Resources and Conservation Ontario. The Regulation Limit is shown on maps 1 to 29, dated November 16, 2005 and filed at the head office of the Authority at 44015 Fergusson Line, R.R. #8, St. Thomas, Ontario, N5P 3T3, under the map title "Ontario Regulation 97/04: Regulation for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses"

### **3 General Objectives and Policies for the Administration of the Regulation**

The Authority's objectives, guidelines and policies for the administration of the regulation have been organized under the following Hazard Management sections:

1. General Objectives and Policies – *applies to all hazard types*
2. Riverine Floodplain Management – *(section 4.0)*
3. Shoreline Management - *(section 5.0)*
4. Erosion Hazard Management - *(section 6.0)*
5. Wetland Management - *(section 7.0)*

#### **3.1 General Objectives**

The following General Objectives for the regulation apply to all Hazard Management (Sections 4.0, 5.0, 6.0 and 7.0):

- a) To protect life and property from risks associated with Natural Hazard Processes;
- b) To ensure that no new hazards are created by development and site alteration;
- c) To ensure that no adverse impacts to the environment will result from development or site alteration in natural hazard areas;
- d) To maintain, restore and enhance the bio-diversity, ecological function and connectivity of natural heritage features and systems in the watershed;
- e) To ensure that the natural resources of the watershed are protected over the long term;
- f) To effectively mitigate the impacts of land development and servicing;
- g) To protect and enhance the resources and processes and their linkages which are needed to achieve a healthy ecosystem;
- h) To complement implementation activities related to the Planning Act, using the guidance provided by the Provincial Policy Statement; and
- i) To encourage a coordinated approach to the use of land and management of water resources based on an evaluation of relevant social, economic, physical and environmental factors.

### **3.2 General Policies**

The following General Policies for the regulation apply to all Hazard Management (Sections 4.0, 5.0, 6.0 and 7.0):

1. Development and site alteration shall be directed from hazard lands where there is an unacceptable risk to public health or safety or property damage potential for same, and/or affect on the environment and shall be directed to areas located outside of the defined limits of the hazard.
2. Development and site alteration may only be permitted in hazard lands provided that all of the following conditions can be implemented to the satisfaction of the Authority:
  - a) Appropriate floodproofing measures, protection works and safe and dry access during times of flooding, erosion and other emergencies are provided.
  - b) No new hazards will be created and existing hazards will not be aggravated.
  - c) No adverse impacts to the environment will result.
3. All development and site alteration proposed within the Regulation Limit shall require permission from the Authority in accordance with Section 28 of the Conservation Authorities Act and be consistent with policies contained herein.
4. In conjunction with the Policies of the Province of Ontario, development and site alterations will *not* be permitted within the defined limits of any hazard, where the use is:
  - a) associated with the manufacture, storage, disposal and/or consumption of hazardous substances or the treatment, collection and disposal of sewage, which would pose an unacceptable threat to public safety if it were to escape their normal containment/use as a result of flooding or failure of floodproofing measures;
  - b) associated with institutional services such as hospitals, nursing homes and schools which would pose a significant threat to the safety of the inhabitants (i.e. The sick, the elderly, the disabled or the young), if involved in the emergency evacuation situation as a result of flooding or failure of floodproofing measures; and
  - c) associated with services such as those provided by fire, police and ambulance stations and electrical substations, which would be impaired during a flood emergency as a result of flooding or failure of floodproofing measures.
5. Integration – While this manual is devoted to policies associated with the review and permission of applications made to the KCCA pursuant to Section 28 of the Conservation Authorities Act, it is imperative that staff integrate natural heritage policies, goals and objectives into the decision-making process. Similarly, staff must be familiar with and have regard for other environmental legislation which may have a direct bearing on whether development, interference with wetlands and alterations to shorelines and watercourses may proceed.

## **4 Riverine Floodplain Management**

Flooding of river and stream systems typically occurs following the spring freshet and may occur again as a result of thunderstorm activity in the summer or increased runoff in the fall. A flooding hazard limit will determine the extent of a flood.

In the case of riverine flood hazards, the Province has established the minimum Regulatory Flood Standard to be the 1:100 year flood. Although the 100 Year is established as the minimum, Conservation Authorities are encouraged to adopt a regulatory Flood Standard for their area of jurisdiction.

The applicable flood event standards used to determine the maximum susceptibility to flooding of lands or areas within the watershed in the area of jurisdiction of the Authority are the Hurricane Hazel Flood Event Standard (1954), the 100 Year Flood Event Standard and the 100 year flood level plus wave uprush.

### **4.1 Objectives for Riverine Floodplain Management:**

Above and beyond the General Objectives (Section 3.1), the objectives for the Riverine Floodplain Management are as follows:

- a) Regulate works and development which, singularly or collectively, may reduce riverine channel capacities to pass flood flows resulting in increased flood levels, and creating potential danger to upstream and downstream landowners,
- b) Minimize the hazards and unnecessary development of riverine flood plains which in future years may require expensive protection measures,
- c) To provide information pertaining to flood prone areas along the riverines within the watershed to interested parties;
- d) To reduce the necessity for public and private expenditures for emergency operations, evacuation and restoration of properties which are subject to riverine flooding;

## 4.2 **Guidelines for Riverine Floodplain Management:**

The following requirements are used to identify the limits of Riverine flood hazard areas:

**Flood Plain lands:** The flood plain is defined as the area adjoining a river, stream or watercourse which is susceptible to flooding during a Regional Storm (Regulatory Flood). The flood plain area is bounded by the Regulatory Flood Line and if under the two zone concept of floodplain management is further divided into two sections:

- a) *Floodway:* This is defined as the channel of a watercourse and that inner portion of the floodplain where flood depths and velocities are generally higher than those experienced in the flood fringe. The floodway represents that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage. In Port Stanley, the floodway has been redefined through an engineering study prepared by Cumming-Cockburn Ltd. ("Engineering Floodway, Kettle Creek – Port Stanley", August, 1988) and presently being revised by Riggs Engineering Limited. The engineered hydraulic floodway is used for regulation purposes in this area.
- b) *Flood Fringe:* This is defined as the outer portion of the floodplain between the floodway and the limit of the Regulatory Flood. Flood depths and velocities are generally less severe in the flood fringe than those experienced in the floodway.

The province of Ontario, through the Ministry of Natural Resources, has established the criteria that must be used when determining the Regional Storm for the Kettle Creek Conservation Authority watershed. The Regional Storm is defined in the Regulation (Appendix II) as the Hurricane Hazel storm (1954) or the 1:100 year flood, whichever is greater.

The "area susceptible to flooding" is determined by calculating the peak flow at any river location as a result of the Regional Storm and identifying, by way of a flood line, the elevation to which the peak flow will rise based on the river valley cross-sectional area at that location. This flood line delineates the Regulatory Flood Plain.

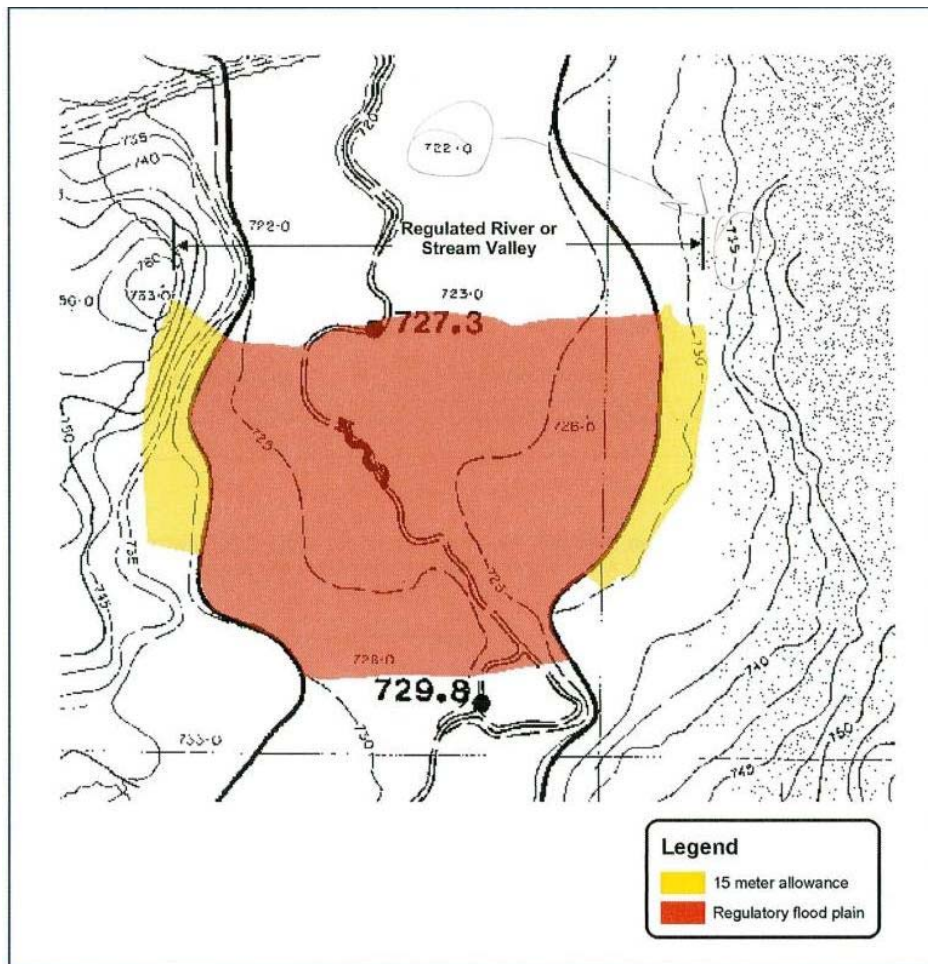
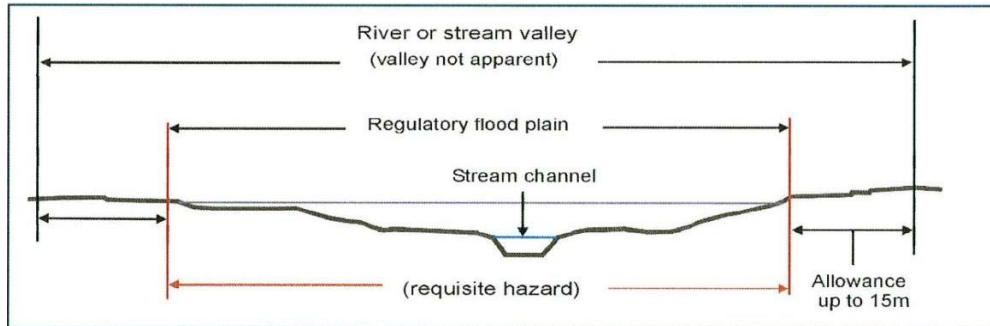
***Authority Floodplain mapping does not usually consider the effects of ice jams and related localized flooding problems. Flood levels delineated on the maps are based upon river flows only. However, these levels may be equaled or exceeded as the result of conditions such as an ice jam. Priority ice jam areas where historic records exist, may consider ice jam effects on flood levels.***

Determination Criteria:

Flood Hazard Lands are comprised of the following:

- a) Rivers and streams = maximum extent of the Regulatory Flood Plain + 15 metre allowance.

The following **schematic diagram** and **map** illustrates the application of the above criteria when the river or stream valley is not apparent – *flooding represents the greater hazard*.



### **4.3 Policies for Riverine Floodplain Management**

Above and beyond the General Policies (Section 3.2), the following policies shall apply for Riverine Floodplain Management:

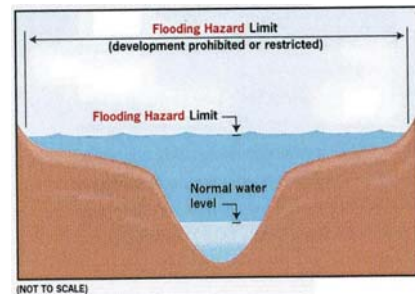
1. Floodplain management must take place within an overall, coordinated land use and planning framework;
2. The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations are an integral part of a floodplain management program to minimize flood damage and pollution and sedimentation of watercourse;
3. The Authority will continue a flood plain management program that includes adoption and administration of appropriate regulations;
4. Existing development and persons within areas of susceptible to flooding are to be protected as best possible against flood losses through the provision of a flood warning system and implementing other preventative flood damage reduction measures such as watershed modeling and regulations. The KCCA shall not be responsible for the provision or implementation of structural protection, unless such capital works have wide-ranging community or watershed benefit;
5. Future land uses which will be susceptible to flood damage or which will increase flood damage to existing uses must not be permitted within the floodplain;
6. Future land uses which will be susceptible to damage from erosion or slope instability, or which will increase damages to existing land uses must not be permitted;
7. The regulatory flood for the designation of flood plains within the jurisdiction of the Kettle Creek Conservation Authority shall be the flood elevations associated with the Regional Storm (Hurricane Hazel);
8. The Authority shall apply the one-zone concept of floodplain management to the municipalities within it's jurisdiction until such time as they may successfully apply for two-zone status in accordance with the criteria set out in part i) as follows. For example, these criteria have been met by the former Village of Port Stanley within the Municipality of Central Elgin, and the two-zone concept of the floodplain management is administered for the floodplain of Kettle Creek within the former Village's jurisdiction;

9. For portions of the flood plain that could potentially be safely developed with no adverse impacts, the Authority, in cooperation with and at the request of the watershed municipalities, may apply a two-zone (floodway-flood fringe) concept. In order to adequately assess the suitability of applying the two zone concept, a study must be prepared by or on behalf of the municipality to address the following factors:
- a) *Frequency of flooding:* Caution should be exercised in applying a two zone concept for chronic flood problem areas.
  - b) *Physical Characteristics of the Valley:* Steep valley slopes, unstable banks and poor soil conditions in flood fringe areas can physically render the flood fringe unsuitable for development. Adopting a two zone concept would show more promise for areas with a flat overbank and shallow flow.
  - c) *Local Need:* Suitability of flood fringe areas for development can be influenced by municipal planning considerations including availability of developable land elsewhere in the municipality. Detailed rationale and justification will be required.
  - d) *Impacts of Proposed Development:* Encroachment within the flood fringe area usually results in an increase in Regulatory Flood levels. It may be necessary to recalculate the Regulatory Flood levels for floodproofing purposes and identify and assess the upstream and downstream impacts where the two-zone concept is being considered.
  - e) *Feasibility of Floodproofing:* One of the major factors in determining if a flood fringe area is suitable for development is the feasibility of floodproofing.
  - f) *Constraints to the Provision of Services:* Flood fringe areas are low-lying and it is often difficult and expensive to provide necessary services such as watermains, sewers, drainage works, etc. to serve the developments.
  - g) *Ingress/Egress:* Major accessways to development potentially located in the flood fringe must be examined. It is not acceptable to have development isolated during flood conditions because roads and escape routes are not passable.
  - h) *Changes in Land Use:* Proposed development, not considered in the recalculation of flood lines, could create increased flood risks and thus reduce the effectiveness of flood plain management programs.
  - i) *Administrative Capability:* In order to ensure the continued proper administration of the two zone concept, certain factors must be in place. These include staff availability and expertise, appropriate zoning, site plan control, subdivision control and policies contained within the Official Plan of municipalities using the two zone concept that reflect the regulated or restricted uses permitted within the flood fringe and floodway.

10. The floodway is defined as the channel of a watercourse and that inner portion of the floodplain where flood depths and velocities are generally higher than those experienced in the flood fringe and will be based on a minimum of the 1:100 year flood for those areas where the two-zone concept is adopted. New development in the floodway is to be prohibited or restricted. Only through more detailed study (hydraulic floodway analysis) will the Authority consider further encroachment into a watercourse by redefinition of floodway elevations and location. In Port Stanley, the floodway has been redefined through an engineering study prepared by Cumming-Cockburn Ltd. ("Engineered Floodway, Kettle Creek – Port Stanley", August, 1988) and presently being revised by Riggs Engineering Limited. The hydraulic floodway is used for regulations purposes in this area;
11. The flood fringe is that portion of the floodplain between the floodway and the limit of the Regulatory Flood. New development that may be permitted in the flood fringe must be protected to the level of the regulatory flood, in order to minimize flood threats and damages to an acceptable level. Cumming-Cockburn concluded in their report on the hydraulic floodway for Port Stanley that complete infilling within the flood fringe in that former municipality would not have a significant impact upon flood levels and flows during a regional storm event;
12. Where the two-zone concept is proposed to be applied or is considered to be a plausible option, municipalities should include policies in their official plans that explain the intent of the two-zone concept and the development potential of the flood fringe versus floodway;
13. Where the two-zone concept is applied, the flood fringe should be zoned in conformity with the official plan designation and the flood hazard and requirements for floodproofing be recognized in the zoning document;
14. Where the two-zone concept is applied, the floodway should be appropriately zoned to reflect its prohibitive or restrictive use;
15. Where policies 8 to 14 cannot be applied, the concept of Special Policy Areas within the floodplain may be recognized. Special Policy Areas allow limited development in areas within a community that has historically existed in the flood plain and where strict adherence to certain province wide policies concerning new development would result in social and economic hardship for the community. Once such areas are designated and approved by the Authority, the Ministry of Natural resources and the Ministry of Municipal Affairs and Housing, controlled development may be permitted, subject to adequate flood damage reduction matters;
16. The Authority will encourage and assist watershed municipalities to identify flood prone areas in their planning documents. The Authority will consequently review and comment on municipal planning documents in accordance with the floodplain management policies contained herein, the policies outlined in the Floodplain Planning Policy Statement of the Province of Ontario and the policies and principles within the KCCA Plan Review Policy. The Authority may therefore object to any municipal planning document which, in its opinion, encourages unwise floodplain management; and
17. The Authority, if requested, will encourage and assist watershed municipalities in the development of emergency response plans to ensure the effective deployment of resources during emergency flooding situations.

#### **4.4 Permitted Uses and Alterations in the Floodplain (One-Zone Concept of Floodplain Management)**

The following uses and alterations are to be considered permitted uses in the floodplain under the one-zone concept of floodplain management. A Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses is required from the Authority. If a proposed activity falls within the list of permitted uses as outlined below, is deemed to be minor or insignificant and the permit procedures noted within Section 8.0 are strictly adhered to, the General Manager/Secretary Treasurer, or in his absence the KCCA Chair, may grant a permit.



Uses permitted in the following sections do not supersede any municipal by-law or other regulation, order, etc.

Essential facilities which are provided by the Government of Ontario, the Government of Canada, municipalities or any board or commission that is performing its function on their behalf shall be encouraged to incorporate hydrological designs. These facilities may include, but are not necessarily limited to, railroads, streets, bridges, and public services for the distribution of water, gas, oil and electricity.

The following uses are permitted:

1. Open space uses not requiring a structure such as agriculture uses or open space type public or private recreation areas;
2. Development or land uses normally associated with areas susceptible to flooding, such as flood and erosion control structures;
3. Buildings, structures and appurtenances essential to marina operations, provided that it is not possible to locate such buildings or structures outside the floodway;
4. Fences, walls or other appurtenances which would not constitute an obstruction or debris-catching obstacle to the passage of flood waters;
5. Landscaping, provided that the flood storage capacity of the floodplain is not reduced and the resulting flood flows are unrestricted;
6. Non-restrictive improvements in stream channel alignment, cross-section and capacity, and the normal maintenance thereof, provided that the design is approved by the Authority and the Ministry of Natural Resources (refer to the lakes and Rivers Improvement Act, Public Lands Act);
7. Uses, excluding new structures, not likely to incur or create damage from flood water;
8. Additions to existing structures, or reconstruction of existing structures located within the floodplain which have been damaged or destroyed by natural forces

other than flooding, or which require replacement or repair due to old age, will be permitted provided that:

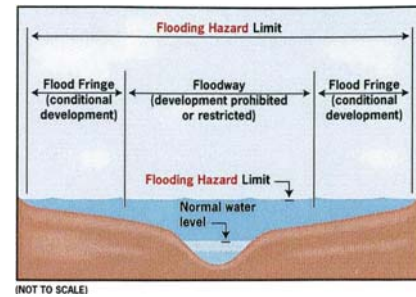
- a) The feasibility of relocating the proposed structure to a less hazardous area of the site is evaluated;
  - b) The structure is flood proofed to the level of the Regulatory Flood;
  - c) Dry passive floodproofing methods, certified by a professional engineer, are incorporated into the building plans to minimize the potential flood damages to a level acceptable to the KCCA;
  - d) The foundation area does not exceed the former foundation area by more than 30%. The new foundation must be located at the site of the old foundation or a site on the property less susceptible to flooding. The allowance for an increase in foundation size is intended as a one time occurrence only and subsequent, piecemeal expansions will not be permitted by the Authority;
  - e) The use remains the same as the former use or becomes a use that exhibits a lesser potential for threat to life and/or property damage due to flooding;
  - f) The flood depths and flood velocities under regional storm conditions do not prevent safe ingress and egress by foot;
  - g) The reconstruction or addition does not adversely affect other floodplain management considerations (flow impediment, re-routing, water levels, public safety, etc.); and
  - h) The proponent provides the Authority with a certificate from a registered professional engineer that the above requirements of the Authority are being met and such certification is to be included with the proponent's Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.
9. Overnight and day use parking where flooding depths and flood velocities:
- a) do not prevent safe pedestrian access to vehicles and removal of vehicles from the flood risk area; and
  - b) do not exceed the levels and velocities required for flotation and movement;

*It is the responsibility of the proponent to determine flooding depths and velocities, certified by a professional engineer to be correct and calculated based upon accepted principles and practices, to the satisfaction of the KCCA.*

10. Material and equipment storage provided that:
- a) they are properly anchored to prevent flotation;
  - b) they are not subject to damage by major flooding;
  - c) they are not of a hazardous, noxious, polluting, corroding or flammable nature which may pose a threat to public safety; and
  - d) they can be removed within the limited time available after a flood warning

#### **4.5 Permitted Uses and Alterations in the floodplain (Two-Zone Concept of Floodplain Management)**

The following uses and alterations are considered permitted uses in the floodplain under the two-zone concept of floodplain management. A Permit for Development, Interference with Wetlands and Alterations of Shorelines and Watercourses is required from the Authority. If a proposed activity falls within the list of permitted uses as outlined below, is deemed to be minor or insignificant and the permit procedures noted within Section 8.0 are strictly adhered to, the General Manager, or in his absence the KCCA Chair, may grant a permit.



Uses permitted in the flowing sections do not supersede any municipal by-law or other regulation, order, etc.

##### **4.5.1 Within the Floodway**

For the purposes of the policy, the floodway is defined as the channel of a watercourse and that inner portion of the floodplain where flood depths and velocities are generally higher than those experienced in the flood fringe. The floodway represents that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage. In Port Stanley, the floodway has been redefined through an engineering study prepared by Cumming-Cockburn Ltd. ("Engineered Floodway, Kettle Creek – Port Stanley", August, 1988) and presently being revised by Riggs Engineering Limited. The hydraulic floodway is used for regulations purposes in this area.

Essential facilities which are provided by the Government of Ontario, the Government of Canada, Municipalities or any board or commission that is performing its function on their behalf shall be encouraged to incorporate proper hydrological designs. These facilities may include, but are not necessarily limited to, railroads, streets, bridges and public services for the distribution of water, gas, oil and electricity.

Uses that are generally not appreciably damaged by flood waters shall be permitted in this zone, save and except the construction or reconstruction of new permanent or mobile structures, or additions to existing structures.

The following uses are permitted:

1. Open space uses not requiring a structure such as agricultural uses or open space type public or private recreation areas;
2. Development of land uses normally associated with areas susceptible in flooding, such as flood and erosion control structures;
3. Buildings, structures and appurtenances essential to marina operations, provided that it is not possible to locate such buildings or structures outside the floodway;

4. Fences, walls or other appurtenances which would not constitute an obstruction or debris-catching obstacle to the passage of flood waters;
5. Landscaping, provided that the flood storage capacity of the floodplain is not reduced and the resulting flood flows are unrestricted;
6. Non-restrictive improvements in stream channel alignment, cross-section and capacity, and the normal maintenance thereof, provided that the design is approved by the Authority and Ministry of Natural Resources (refer to the lakes and Rivers Improvement Act, Public Lands Act); and
7. Uses, excluding new structures, not likely to incur or create damage from flood water;

The Authority may ensure compliance with the foregoing either through direct application of the regulations or through the municipality's zoning by-law approval process where the by-law reflects the Authority's floodplain mapping and a rezoning is required for reconstruction of a non-conforming structure.

#### **4.5.2 Within the Flood Fringe**

For the purposes of this policy, the flood fringe is defined as the area of the floodplain between the outer limit of the floodway and the level of the regulatory flood elevation. The following uses are permitted:

1. Any use permitted in the Floodway, however defined.
2. Overnight and day use parking where flooding depths and flood velocities:
  - a) do not prevent safe pedestrian access to vehicles and removal of vehicles from the flood risk area; and
  - b) would not permit flotation and movement of vehicles.

***It is the responsibility of the proponent to determine flooding depths and velocities, certified by a professional engineer to be correct and calculated based upon accepted principles and practices, to the satisfaction of the KCCA.***

3. Material and equipment storage provided that:
  - a) they are properly anchored to prevent flotation;
  - b) they are not subject to damage by major flooding;
  - c) they are not of a hazardous, noxious, polluting, corroding or flammable nature which may pose a threat to public safety; and
  - d) they can be removed within the limited time available after a flood warning.

4. Excavation and/or temporary placement of extracted materials from associated development on site, provided that such activities will not:

- a) create a restriction to the passage of flood waters
- b) result in the pollution of water or sedimentation of a watercourse;
- c) result in significant flood storage loss; or
- d) exceed 20 loads (340 cubic metres) of material.

Excavation and/or temporary placement of materials shall be carried out in such a manner as to ensure that stability of all slopes in accordance with plans certified by an engineer and approved by the Authority. The maximum storage time period will be three months.

***Storage of dredged materials is not permitted in the floodplain.***

5. New Structures may be constructed in the flood fringe provided that:

- a) The structure is flood proofed to the level of the Regulatory Flood;
- b) Floodproofing methods, certified by a professional engineer, are employed to minimize the potential flood damages to a standard acceptable to the KCCA;
- c) The flood depths and flood velocities under regional storm conditions do not prevent safe ingress and egress by foot;
- d) The construction does not adversely affect other floodplain management considerations (i.e. Flow impediment, re-routing, water levels, public safety, etc.); and,
- e) The proponent provides the Authority with a certificate from a registered professional engineer that the above requirements of the Authority are being met and such certification is to be included with the proponent's Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

6. Additions to existing structures, or reconstruction of existing structures located within the flood fringe which have been damaged or destroyed by natural forces other than flooding, or which require replacement or repair due to old age, will be permitted provided that:
- a) The feasibility of relocating the proposed structure to a less hazardous area of the site is evaluated;
  - b) The structure is floodproofed to the level of the Regulatory Flood;
  - c) Dry passive floodproofing methods, certified by a professional engineer, are incorporated into the building plans to minimize the potential flood damages to a level acceptable to the KCCA;
  - d) The foundation area does not exceed the former foundation area by more than 30%. The new foundation must be located at the site of the old foundation or a site on the property less susceptible to flooding. The allowance for an increase in the foundation size is intended as a one time occurrence only and subsequent, piecemeal expansions will not be permitted by the Authority.
  - e) The use remains the same as the former use or becomes a use that exhibits a lesser potential for threat to life and/or property damage due to flooding;
  - f) The flood depths and flood velocities under regional storm conditions do not prevent safe ingress and egress by foot;
  - g) The reconstruction or addition does not adversely affect other floodplain management considerations (flow impediment, re-routing, water levels, public safety, etc.); and
  - h) The proponent provides the Authority with a certificate from a registered professional engineer that the above requirements of the Authority are being met and such certifications to be included with the proponent's Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

The Authority may ensure compliance with the foregoing either through direct application of the regulations or through the municipality's zoning by-law approval process where the by-law reflects the Authority's floodplain mapping and a rezoning would be required for the reconstruction of a non-conforming structure.

#### **4.6 Areas Where Floodplain Mapping is Not Available**

The Authority may require the proponent to calculate the depth and velocity of floodwaters associated with the Regulatory Storm, to the satisfaction of the Authority, where floodplain mapping has not been completed.

The Authority may cause or request that calculations submitted be reviewed and approved by the Regional Engineer of the Ministry of Natural Resources to confirm the appropriateness of the methodology and the accuracy of the results.

#### **4.7 Floodproofing Requirements**

Floodproofing methods must be incorporated into building designs for construction, reconstruction or additions to the floodplain. The specific methods must use accepted hydraulic and hydrological engineering principles, and be designed to the satisfaction of the Authority. Proponents of development within the floodplain must remember that, although the objective of the KCCA is optimal protection, due to unforeseen circumstances ***total protection of buildings and structures from flood damage cannot always be assured.***

As Floodproofing is applicable with certain limitations and only after certain prerequisite information is given to verify its feasibility. The Authority may cause or request that the floodproofing methods proposed by a proponent be reviewed and approved by the Regional Engineer for the Ministry of Natural Resources and/or a designated review engineer of the Authority's choice. The Authority's cost of reviewing engineered plans shall be borne by the proponent.

As a guideline, the 1988 Flood Plain Planning Policy Statement of the Province of Ontario identified two basic approaches to floodproofing which may be described as follows:

i) *Dry Floodproofing:*

- the use of fill, columns, or design modifications to elevate openings in buildings or structures above the regulatory flood level.

OR

- the use of water tight doors, seals, berms/floodwalls to prevent water from entering openings below the regulatory flood level.

ii) *Wet Floodproofing:*

- the use of materials, methods and design measures to maintain structural integrity and minimize water damage.

- buildings or structures are designed to intentionally allow flood waters to enter.

There are a further two basic techniques to floodproofing which may be described as follows:

i) *Active Floodproofing:*

- floodproofing techniques which require some action prior to any impending flood in order to make the flood protection operational (i.e. Closing of water tight doors, installation of waterproof protective coverings over windows, etc.).

ii) *Passive Floodproofing:*

- floodproofing techniques which are permanently in place and do not require advance warning and action in order to make the floodproofing effective.

Determining the most appropriate method of floodproofing to be used depends upon the conditions inherent to the particular site. Considerations would include the nature of the proposed development and the adjoining properties; the physical characteristics of the river system, in order to evaluate the potential for the upstream and downstream impacts; local flood conditions and the level of the regulatory flood; and the cost effectiveness of floodproofing.

The most effective method of floodproofing applicable to a site is considered a priority in the review of applications by KCCA staff. It is the policy of the KCCA that the most effective for floodproofing of all types of development shall be dry passive, followed by dry active, and finally, under some limited circumstances, wet passive floodproofing. Under no circumstances will wet active floodproofing be considered by the KCCA.

Lesser floodproofing methods than dry passive may be considered by the KCCA, in conjunction with an analysis of other policy requirements applicable to the proposed development and its locale. Floodproofing requirements will be determined at the KCCA's discretion, based upon policy and site practicalities. Financial impacts of floodproofing methods upon the proponent are not considered in the KCCA's determination of the preferred method.

For structures subject to Regional Storm floodwaters, all habitable portions must be dry passive floodproofed. Non-habitable portions may be dry active or thereafter wet passive floodproofed.

Floodproofing measures of any type and to any level of improved protection are encouraged for existing unprotected or poorly protected structures.

For KCCA approved floodproofing measures other than dry passive, the proponent will be required to enter into an agreement with the KCCA to include registration of the threat upon title to the property. Such agreement may include requirements for maintenance of floodproofing methods as recommended by the design engineer.

Floodproofing measures are to be approved by the municipal building inspector prior to KCCA approval. Building inspectors should be encouraged to work with the KCCA in the assessment of floodproofing requirements.

## **5 Shoreline Management**

Along the Great Lakes Shoreline, hazard lands can be defined as areas that are prone to flooding, erosion and dynamic beaches (shorelines that are constantly changing). The Natural Hazards Policies (section 3.1 of the PPS) are in place to prevent development from occurring within these hazard lands. These policies are administered in conjunction with the Department of Fisheries and Oceans (DFO) Fisheries Act and the Ministry of Natural Resources (MNR) Lakes and Rivers Improvement Act and the Public Land Act.

The Kettle Creek Conservation Authority has approved these shoreline management guidelines to assist in ensuring that development is not adversely affected by flood, erosion and dynamic beach problems along the shorelines of the Great Lakes. These guidelines are based on the Provincial Policy Statement, MNR's Understanding Natural Hazards Guide, KCCA's Shoreline Protection Plan, Shoreline Management Plan and the Port Stanley Beach Management Study.

The Shoreline Protection Plan and Shoreline Management Plan were completed in response to the 1988 delegation of shoreline hazards by the Province to local Conservation Authorities. The Port Stanley Beach Management Study was completed to support the recommendations within the Shoreline Management Plan. The KCCA uses shoreline mapping generated from these two studies, to assist in identifying hazards and implementing the recommendations of each study.

### **5.1 Objectives for Shoreline Management:**

Above and beyond the General Objectives (Section 3.1), the objectives for Shoreline Management are as follows:

- a) To minimize the potential for loss of life, property damage and social disruption, and to create a safer and better environment for shoreline property owners;
- b) Minimize the hazards and unnecessary development of flood and erosion susceptible shoreline areas which in future years may require expensive protection measures;
- c) To regulate the installation of works which will limit floodplain capacity and increase flood heights or increase the affects of flooding;
- d) To provide information pertaining to flood and erosion prone areas within the watershed along the shoreline of Lake Erie to interested parties;
- e) To reduce the necessity for public and private expenditures for emergency operations, evacuation and restoration of properties which are subject to lakeshore flooding and erosion;

## **5.2 Guidelines for Shoreline Management:**

A standard of protection is considered to be a specified level, elevation and/or setback to which new development will adhere in order that it shall be protected from erosion or flood related damage. The province has established certain standards when planning for lands adjacent to the Great Lakes. The standards of protection to which the shoreline within KCCA's jurisdiction shall be protected are:

- i. The 100 year flood limit; and
- ii. The 100 year erosion allowance setback
- iii. Dynamic Beaches

The following sections outline each of the above noted standards in detail.

### **i. 100 Year Flood Limit:**

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

The 100 year flood elevations, also known as the Regulatory Flood elevation, established for this watershed is 176.8 metres GSC, as identified in the Port Stanley Beach Management Study, prepared by Shoreplan Engineering Limited (March 1996).

### **ii. 100 Year Erosion Limit**

The 100 year erosion limit is defined as:  
*"The average annual rate of recession extended over a 100 year time span. The erosion limit is determined using the 100 year erosion rate, an allowance for slope stability, and an erosion allowance."*

Erosion limits are identified in the Shoreline Management Plan, prepared by Philpott Associates (December 1989) and depicted on the Regulation Limit mapping.

### **iii. Dynamic Beach**

A dynamic beach is defined as:  
*"An area of inherently unstable accumulations of shoreline sediment along the Great Lakes-St. Lawrence River system and large inland lakes. The dynamic beach hazard limit includes the flooding hazard limit plus a dynamic beach allowance."*

Dynamic Beach areas are identified and delineated within the Port Stanley Beach Management Study prepared by Shoreplan Engineering Limited (March 1996).

The Port Stanley Beach Management Study identifies two other standards of protection specifically for the beach in Port Stanley, additional to the standards established from the province. These additional standards are:

- i. The Modified Regulatory Flood Standard Zone
- ii. The Regulatory Flood Standard Zone

The following sections outline each of the above noted standards in detail:

i. The Modified Regulatory Flood Standard Zone:

The Modified Regulatory Flood Standard is identified as:  
*"An area where substantial development already exists, and although the ground surface is stabilized by some artificial means, the site is subject to flooding and minor wave penetration"*

The term "modified" is being used because, in addition to the common guidelines proposed in the PPS, further development guidelines exist.

ii. The Regulatory Flood Standard Zone

*"The Regulatory Flood Standard is the remainder of the area subject to the study. These areas have accreted and consist of cohesion less materials; they no longer exhibit any physical signs of beach activities."*

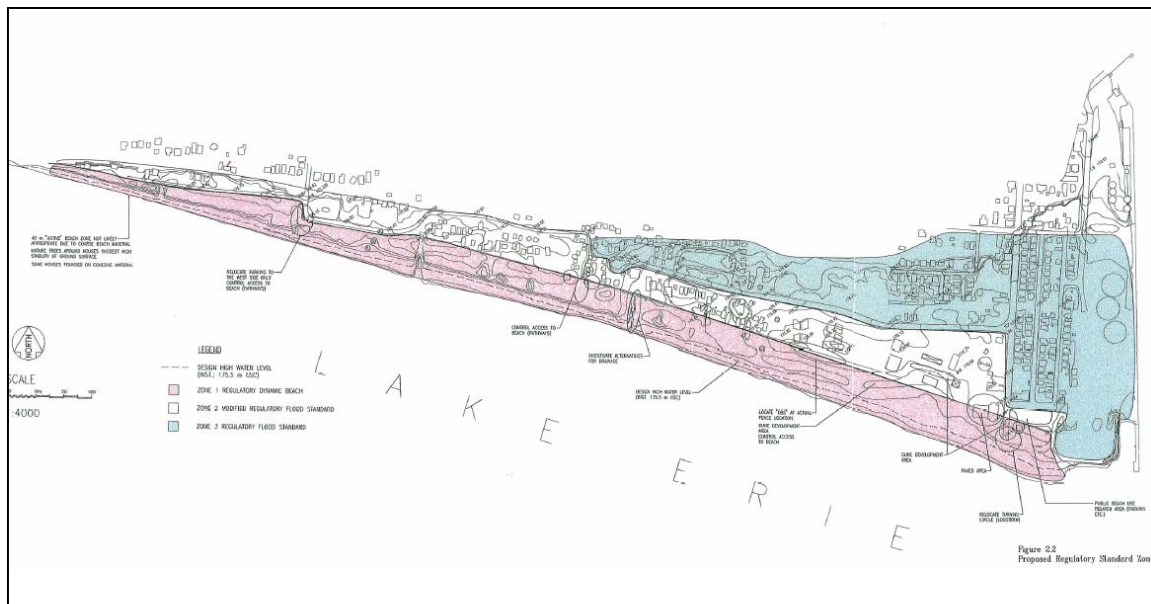


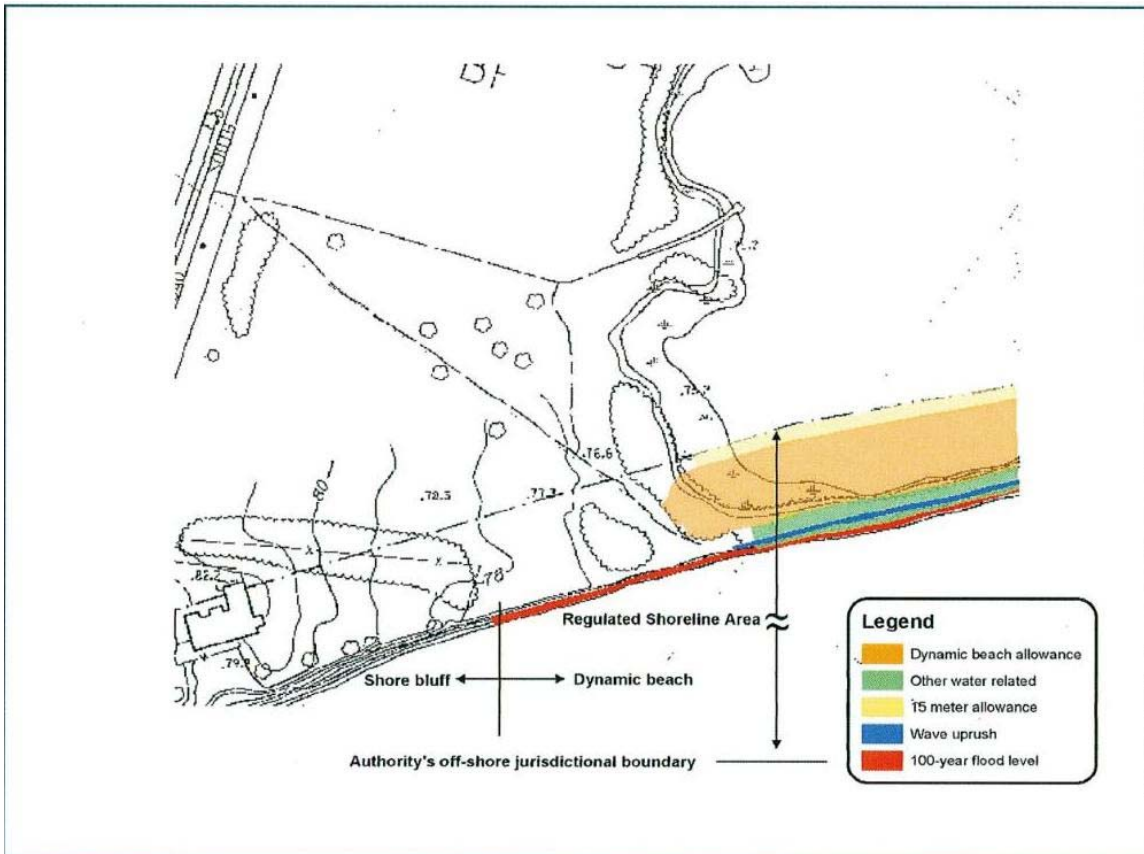
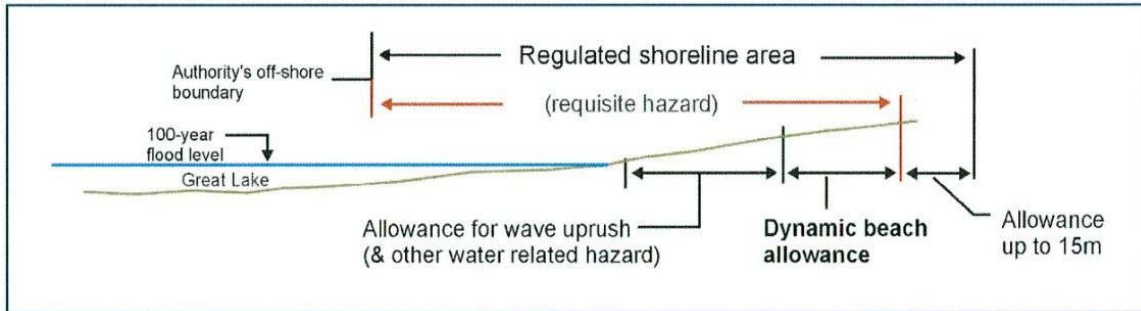
Figure 2.2  
Proposed Regulatory Standard Zones

Determination Criteria:

Shoreline of Great lakes – St.Lawrence River System

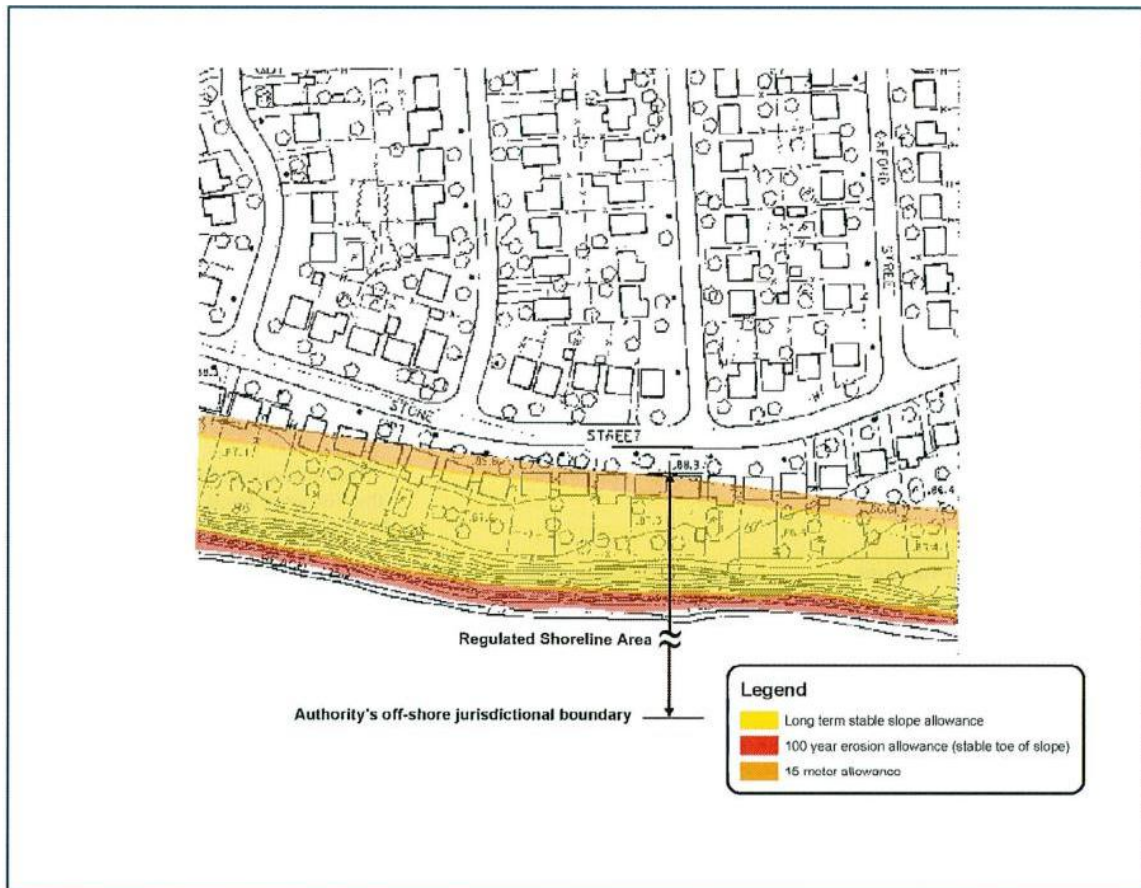
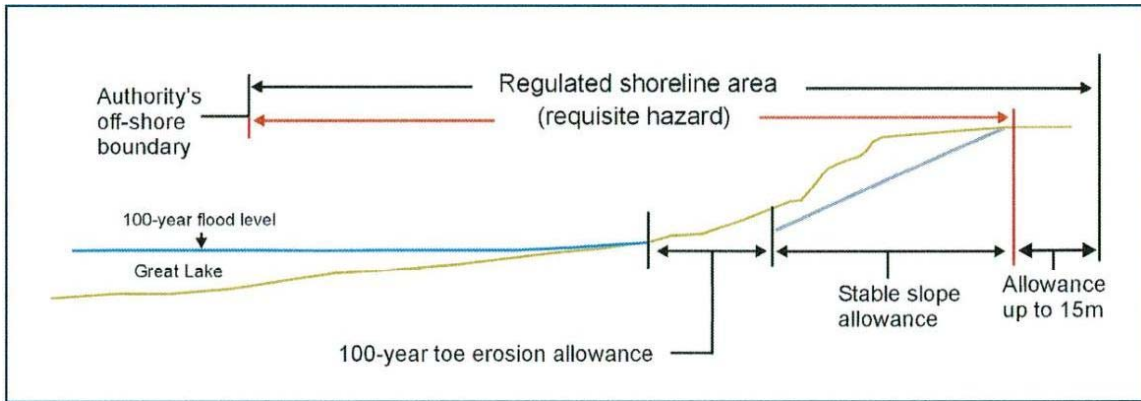
- i. Dynamic Beach = 100 year flood level + allowance for wave uprush + dynamic beach allowance (identified and delineated in the Port Stanley Beach Management Study prepared by Shoreplan Engineering Limited, March 1996)

The following **schematic diagram** and **map** illustrates the application of the above criteria to a shoreline where dynamic beach represents the greatest risk.



- ii. Shoreline Erosion = 100 year erosion allowance + stable slope allowance + 15 metre allowance (identified and delineated in the Shoreline Management Plan prepared by Philpott Associates, December, 1989)

The following **schematic diagram** and **map** illustrates the application of the above criteria to a shoreline where shoreline erosion represents the greatest risk.



### **5.3 Policies for Shoreline Management:**

Above and beyond the General Policies (Section 3.2), the following policies shall apply for Shoreline Management:

1. Development shall generally be directed to areas outside of hazardous lands adjacent to shorelines which are impacted by flooding hazards, erosion hazards and/or dynamic beach hazards. Subject to the provisions of the Provincial Policy Statement, development and site alteration within areas designated as hazard areas may be permitted where the effects and risk to public safety are minor so as to be managed or mitigated in accordance with provincial standards as determined by the provisions of section 3.1.6 of the Provincial Policy Statement.
2. Development and site alteration shall not be permitted within the Regulatory Dynamic Beach Standard Zone. The Regulatory Dynamic Beach Standard Zone is 60 metres inland from the 100 year flood level, consisting of 40 metres of the active beach zone and an allowance of 20 metres for foredune formation, as identified in the Port Stanley Beach Management Plan.
3. Development and site alteration may only be permitted within the Modified Regulatory Flood Standard Zone provided that all of the following conditions can be implemented to the satisfaction of the Authority:
  - a. No development is permitted that could potentially create new hazards, aggravate existing hazards and/or cause adverse environmental impacts;
  - b. Development and site alterations shall be directed to the least hazardous section of the property;
  - c. Subject to a site review of a coastal engineer; and
  - d. The structures must be floodproofed to the level of the Regulatory Flood.
4. Development and site alteration within the Regulatory Flood Standard Zone must be floodproofed to the level of the Regulatory Flood.
5. No new development is permitted along the shoreline within the 100 year erosion setback allowance as identified and delineated within the Shoreline Management Plan prepared by Philpott Associates Limited, December 1989.
6. All protective measures and proposals to alter the shoreline must be approved by the Ministry of Natural Resources (or designate) and the Kettle Creek Conservation Authority.
7. Permitted development and site alterations are subject to the recommendations and adherence to the KCCA's Shoreline Protection Plan, Shoreline Management Plan and the Port Stanley Beach Management Study.

#### **5.4 Permitted Uses and Alterations in the Shoreline Floodplain**

The following uses and alterations are to be considered permitted uses in the shoreline floodplain. A Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses is required from the Authority. If a proposed activity falls within the list of permitted uses as outlined below, is deemed to be minor or insignificant and the permit procedures noted within Section 8.0 are strictly adhered to, the General Manager/Secretary Treasurer, or in his absence the KCCA Chair, may grant a permit.

Uses permitted in the following sections do not supersede any municipal by-law or other regulation, order, etc.

Essential facilities which are provided by the Government of Ontario, the Government of Canada, municipalities or any board or commission that is performing its function on their behalf shall be encouraged to incorporate hydrological designs. These facilities may include, but are not necessarily limited to, railroads, streets, bridges, and public services for the distribution of water, gas, oil and electricity.

The following uses are permitted:

1. Open space uses not requiring a structure such as agriculture uses or open space type public or private recreation areas;
2. Development or land uses normally associated with areas susceptible to flooding, such as flood and erosion control structures;
3. Buildings, structures and appurtenances essential to marina operations, provided that it is not possible to locate such buildings or structures outside the floodway;
4. Fences, walls or other appurtenances which would not constitute an obstruction or debris-catching obstacle to the passage of flood waters;
5. Landscaping, provided that the flood storage capacity of the floodplain is not reduced and the resulting flood flows are unrestricted;
6. Non-restrictive improvements in stream channel alignment, cross-section and capacity, and the normal maintenance thereof, provided that the design is approved by the Authority and the Ministry of Natural resources (refer to the lakes and Rivers Improvement Act, Public Lands Act);
7. Uses, excluding new structures, not likely to incur or create damage from flood water;
8. Additions to existing structures, or reconstruction of existing structures located within the floodplain which have been damaged or destroyed by natural forces other than flooding, or which require replacement or repair due to old age, will be permitted provided that:
  - a) The feasibility of relocating the proposed structure to a less hazardous area of the site is evaluated;

- b) The structure is flood proofed to the level of the Regulatory Flood;
- c) Dry passive floodproofing methods, certified by a professional engineer, are incorporated into the building plans to minimize the potential flood damages to a level acceptable to the KCCA;
- d) The foundation area does not exceed the former foundation area by more than 30%. The new foundation must be located at the site of the old foundation or a site on the property less susceptible to flooding. The allowance for an increase in foundation size is intended as a one time occurrence only and subsequent, piecemeal expansions will not be permitted by the Authority;
- e) The use remains the same as the former use or becomes a use that exhibits a lesser potential for threat to life and/or property damage due to flooding;
- f) The flood depths and flood velocities under regional storm conditions do not prevent safe ingress and egress by foot;
- g) The reconstruction or addition does not adversely affect other floodplain management considerations (flow impediment, re-routing, water levels, public safety, etc.); and
- h) The proponent provides the Authority with a certificate from a registered professional engineer that the above requirements of the Authority are being met and such certification is to be included with the proponent's Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

9. Overnight and day use parking where flooding depths and flood velocities:

- a) do not prevent safe pedestrian access to vehicles and removal of vehicles from the flood risk area; and
- b) do not exceed the levels and velocities required for flotation and movement;

***It is the responsibility of the proponent to determine flooding depths and velocities, certified by a professional engineer to be correct and calculated based upon accepted principles and practices, to the satisfaction of the KCCA.***

10. Material and equipment storage provided that:

- e) they are properly anchored to prevent flotation;
- f) they are not subject to damage by major flooding;
- g) they are not of a hazardous, noxious, polluting, corroding or flammable nature which may pose a threat to public safety; and
- h) they can be removed within the limited time available after a flood warning

## 5.5 Floodproofing Requirements

Floodproofing methods must be incorporated into building designs for construction, reconstruction or additions to the floodplain. The specific methods must use accepted hydraulic and hydrological engineering principles, and be designed to the satisfaction of the Authority. Proponents of development within the floodplain must remember that, although the objective of the KCCA is optimal protection, due to unforeseen circumstances ***total protection of buildings and structures from flood damage cannot always be assured.***

As Floodproofing is applicable with certain limitations and only after certain prerequisite information is given to verify its feasibility. The Authority may cause or request that the floodproofing methods proposed by a proponent be reviewed and approved by the Regional Engineer for the Ministry of Natural Resources and/or a designated review engineer of the Authority's choice. The Authority's cost of reviewing engineered plans shall be borne by the proponent.

As a guideline, the 1988 Flood Plain Planning Policy Statement of the Province of Ontario identified two basic approaches to floodproofing which may be described as follows:

i) *Dry Floodproofing:*

- the use of fill, columns, or design modifications to elevate openings in buildings or structures above the regulatory flood level.

OR

- the use of water tight doors, seals, berms/floodwalls to prevent water from entering openings below the regulatory flood level.

ii) *Wet Floodproofing:*

- the use of materials, methods and design measures to maintain structural integrity and minimize water damage.

- buildings or structures are designed to intentionally allow flood waters to enter.

There are a further two basic techniques to floodproofing which may be described as follows:

i) *Active Floodproofing:*

- floodproofing techniques which require some action prior to any impending flood in order to make the flood protection operational (i.e. Closing of water tight doors, installation of waterproof protective coverings over windows, etc.).

ii) *Passive Floodproofing:*

- floodproofing techniques which are permanently in place and do not require advance warning and action in order to make the floodproofing effective.

Determining the most appropriate method of floodproofing to be used depends upon the conditions inherent to the particular site. Considerations would include the nature of the proposed development and the adjoining properties; the physical characteristics of the river system, in order to evaluate the potential for the upstream and downstream impacts; local flood conditions and the level of the regulatory flood; and the cost effectiveness of floodproofing.

The most effective method of floodproofing applicable to a site is considered a priority in the review of applications by KCCA staff. It is the policy of the KCCA that the most effective for floodproofing of all types of development shall be dry passive, followed by dry active, and finally, under some limited circumstances, wet passive floodproofing. Under no circumstances will wet active floodproofing be considered by the KCCA.

Lesser floodproofing methods than dry passive may be considered by the KCCA, in conjunction with an analysis of other policy requirements applicable to the proposed development and its locale. Floodproofing requirements will be determined at the KCCA's discretion, based upon policy and site practicalities. Financial impacts of floodproofing methods upon the proponent are not considered in the KCCA's determination of the preferred method.

For structures subject to Regional Storm floodwaters, all habitable portions must be dry passive floodproofed. Non-habitable portions may be dry active or thereafter wet passive floodproofed.

Floodproofing measures of any type and to any level of improved protection are encouraged for existing unprotected or poorly protected structures.

For KCCA approved floodproofing measures other than dry passive, the proponent will be required to enter into an agreement with the KCCA to include registration of the threat upon title to the property. Such agreement may include requirements for maintenance of floodproofing methods as recommended by the design engineer.

Floodproofing measures are to be approved by the municipal building inspector prior to KCCA approval. Building inspectors should be encouraged to work with the KCCA in the assessment of floodproofing requirements.

## **6 Erosion Hazard Management**

Erosion Hazards mean the loss of land, due to human or natural processes, that pose a threat to life and property. The erosion hazard limit is determined using the 100-year erosion rate (the average annual rate of recession extended over a hundred year time span), and includes allowances for toe erosion, slope stability and access during emergencies. 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 through which rivers flow. The application of the erosion hazard limit will depend on whether the watercourse flows through a well defined valley system and is confined within a valley corridor or whether it flows through landscapes that are relatively flat, and is not confined or bounded by valley walls.

Generally, development should not occur on or on top of valley walls because the long-term stability of the slope, and therefore public health and safety, cannot be guaranteed. Development should be set back from the top of valley walls far enough to avoid increases in loading forces on the top of the slope, changes in drainage patterns that would compromise slope stability or exacerbate erosion of the slope face, and loss of stabilizing vegetation on the slope face.

The KCCA has acquired mapping which establishes the location of erosion hazards which incorporates detailed erosion information for those areas where it is available along with general methodologies that are consistent with Provincial Technical Guidelines. The KCCA reserves the right to require a detailed assessment of erosion hazards as a prerequisite for reviewing any development or site alteration proposal and any such assessment must be undertaken with regard for Provincial Technical guidelines and follow accepted engineering practices to the satisfaction of the KCCA.

### **6.1 Objectives for Erosion Hazard Management:**

Above and beyond the General Objectives (Section 3.1), the objectives for Erosion Hazard Management are as follows:

- a) Encourage the conservation of land through the control of construction and placement of fill on existing or potentially unstable valley slopes or shoreline bluffs; and
- b) To regulate development or site alteration on or adjacent to hazardous or potentially hazardous valley lands and reduce soil erosion from hazardous or potentially hazardous valley slopes;
- c) Reduce soil erosion and sedimentation from development activity,
- d) To reduce the necessity for public and private expenditures for emergency operations, evacuation and restoration of properties which are subject to erosion hazards;

## 6.2 Guidelines for Erosion Hazard Management:

The riverine erosion hazard limit for Apparent Systems is comprised of the combined effect of the following:

- a) Valley Top of Slope – in cases where valley slopes are found to be at a stable angle, and not subject to the potential influence of toe erosion, the Valley Top of Slope is the riverine erosion hazard limit. The Valley Top of Slope is located at the break in slope point between the valley side slope and the tableland.
- b) Toe Erosion Allowance – in cases where there is a potential for erosion at the toe of the slope from natural processes, the riverine erosion hazard limit needs to be shifted to account for the influence of toe erosion.
- c) Stable Slope Allowance – in cases where a slope is steeper than its determined stable angle of repose, the riverine erosion hazard limit needs to be shifted to account for slope movement over time. In the absence of detailed geotechnical information about the slope, the stable slope allowance is based on an assumed stable slope gradient of 3 horizontal units to 1 vertical unit (3:1). For slopes having a steeper gradient, the allowance is equal to the distance between the actual valley top of slope and the point at which a slope at a 3:1 gradient, rising from the same position, would intersect the ground surface.

The riverine erosion hazard limit for Not Apparent Systems is the Meander Belt Allowance which provides a limit to development within those areas where the river system is likely to shift. It is based on twenty time the bankful channel width.

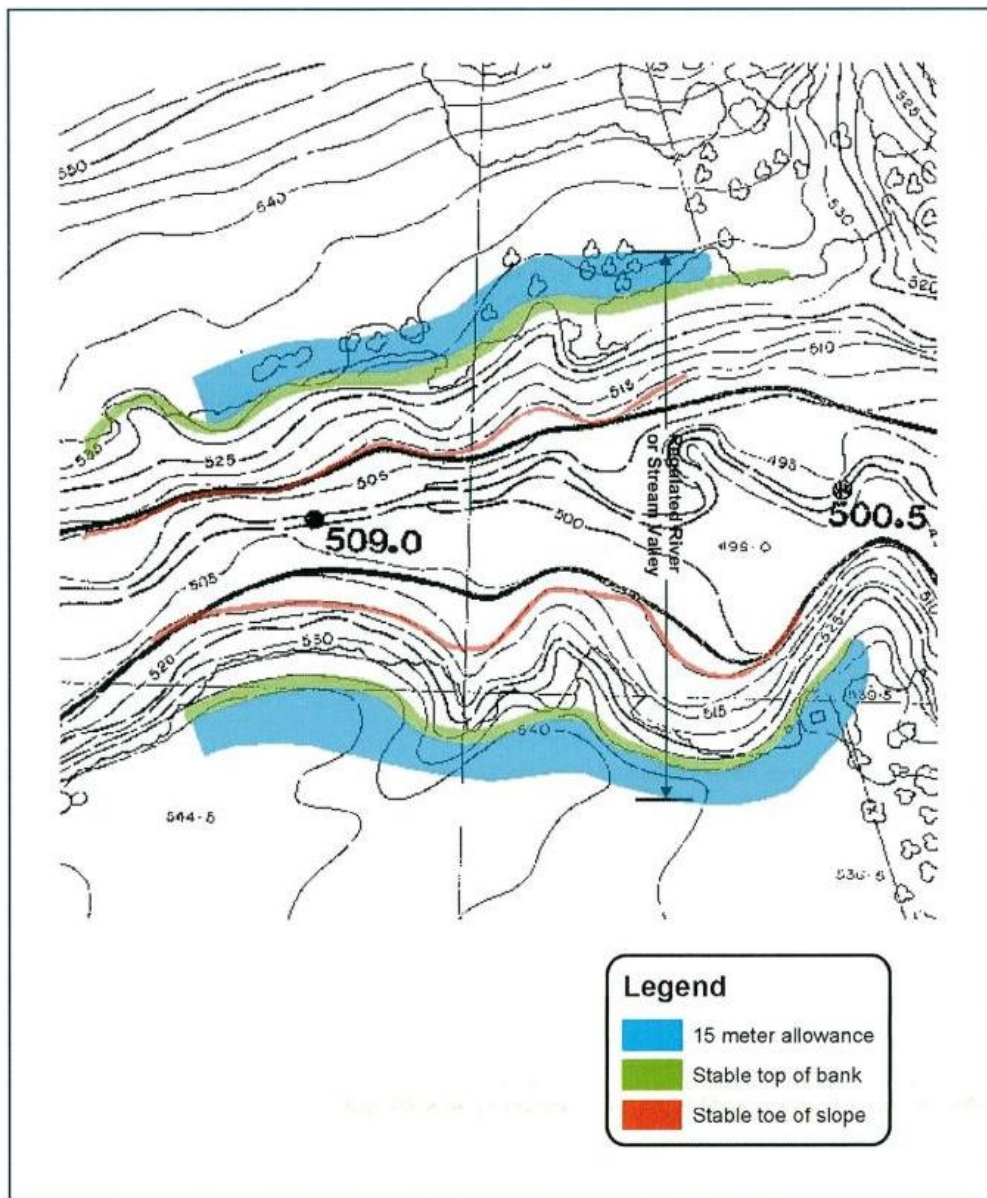
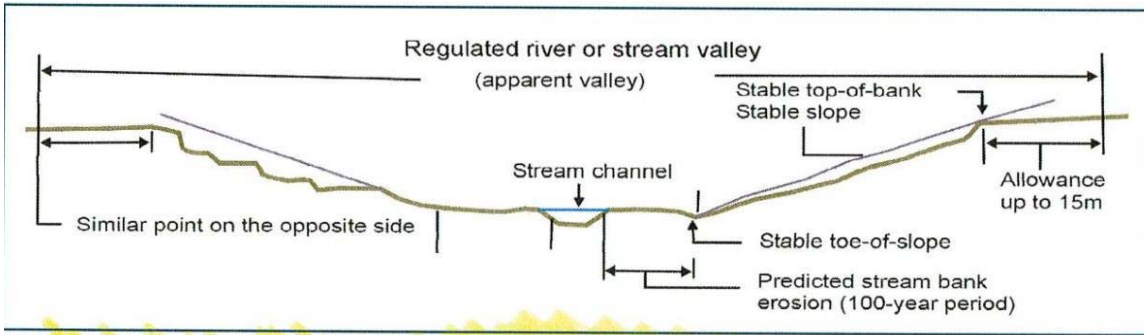
### Determination Criteria:

*Erosion Hazard Lands* are comprised of the following:

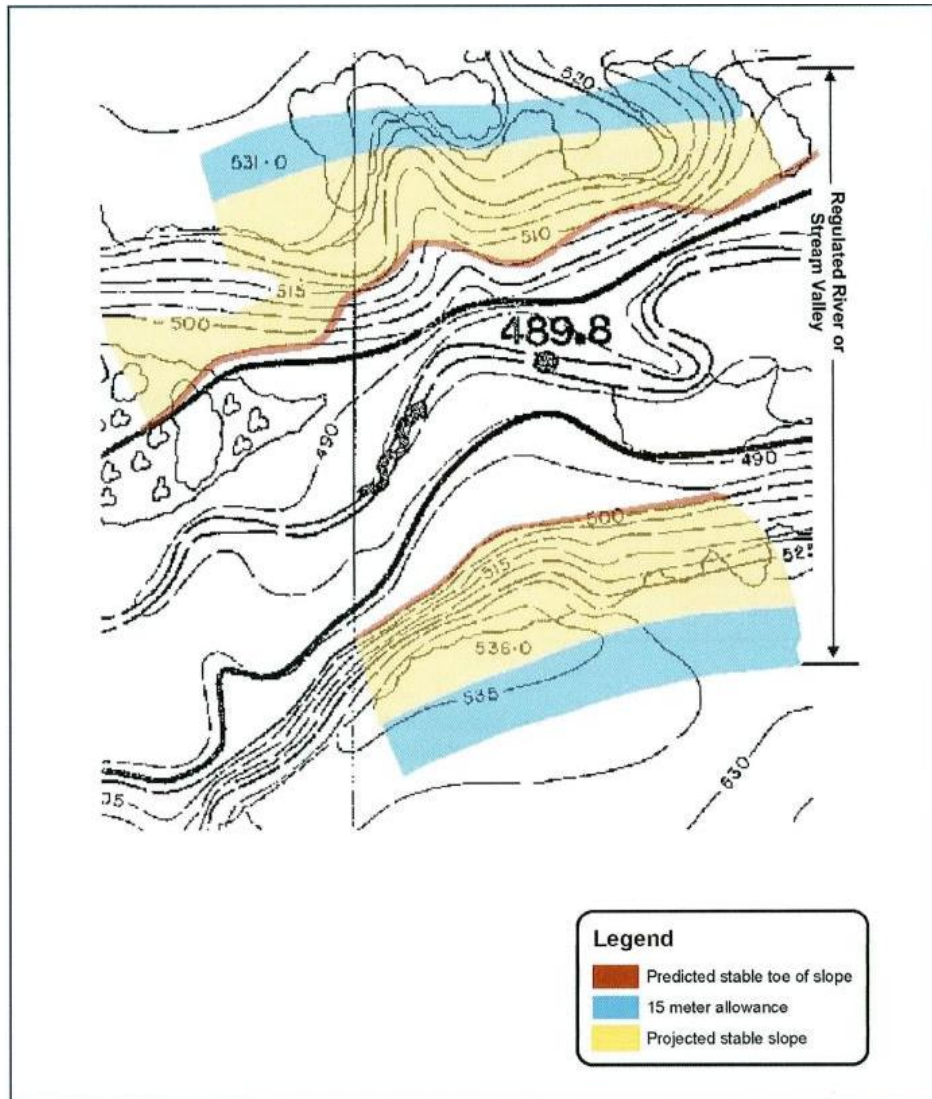
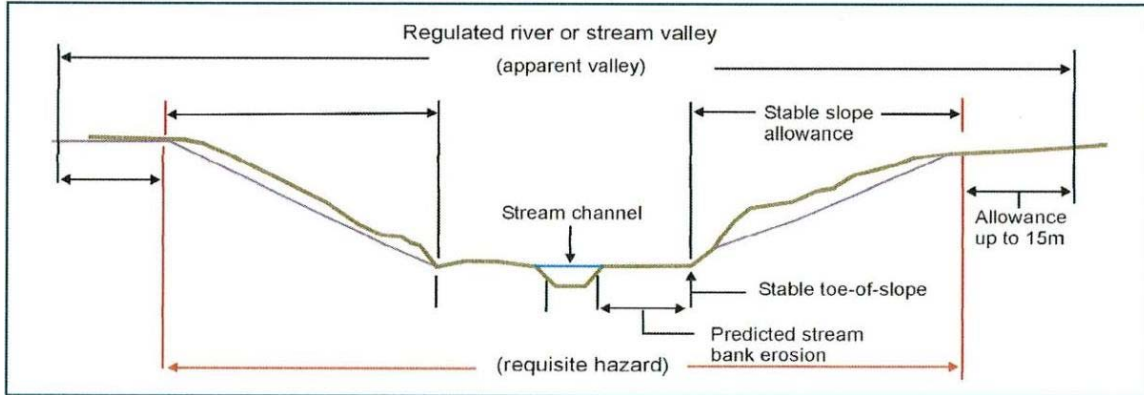
River and Stream valleys can be identified under two distinct situations:

- a) Where there is an *apparent river or stream valley*:
  - i. Where the valley slopes are stable = stable top of bank + 15 metre allowance
  - ii. Where the valley slopes are unstable = 100 year stream bank erosion allowance (stable toe of slope) + stable slope allowance + 15 metre allowance
- b) Where there is no apparent river or stream valley:
  - i. Predicted meander belt width + 15 metre allowance

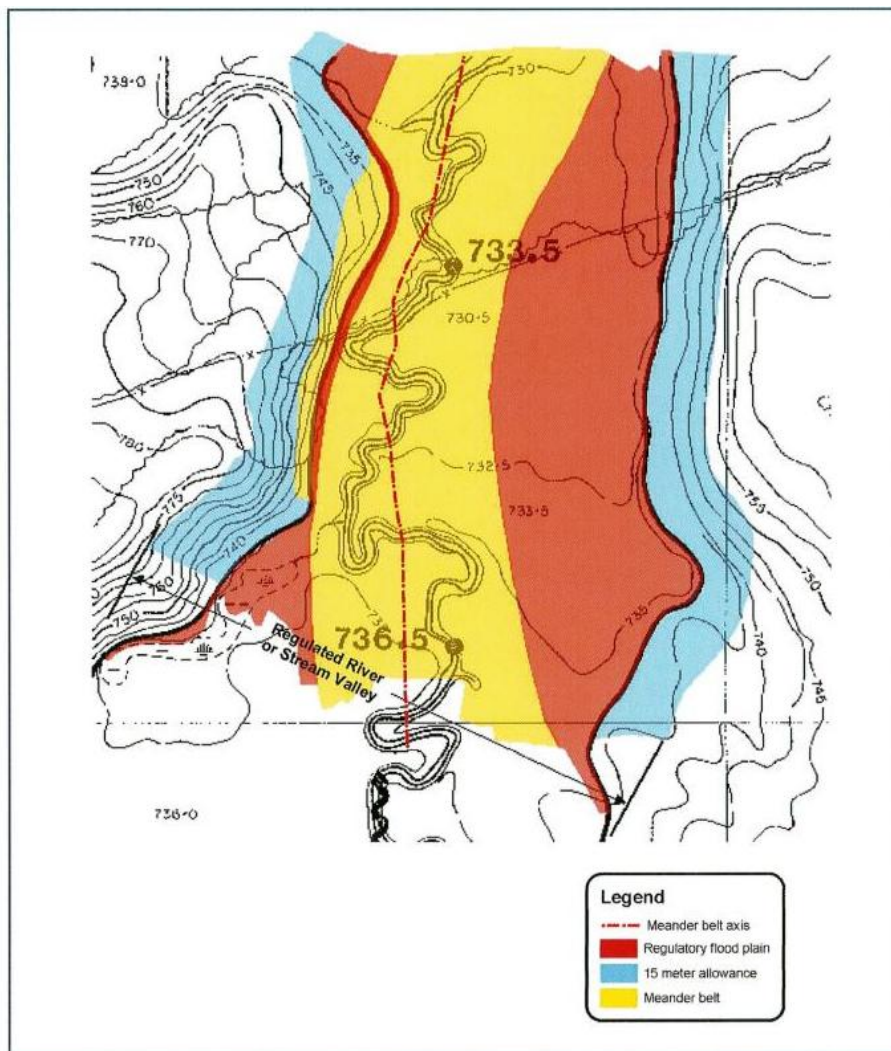
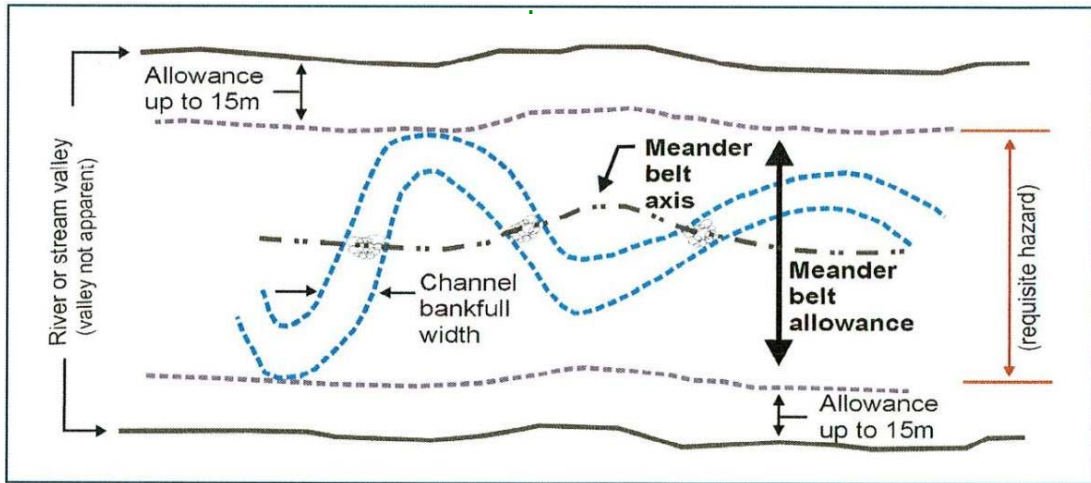
The following **schematic diagram** and **map** illustrates the application of the criteria for apparent river or stream valley – *where the valley slopes are stable*.



The following **schematic diagram** and **map** illustrates the application of the criteria for apparent river or stream valley – *where the valley slopes are unstable*.



The following **schematic diagram** and **map** illustrates the application of the criteria for no apparent river or stream valley - where the meander belt represents the greater hazard.



### **6.3 Policies for Erosion Hazard Management:**

Above and beyond the General Policies (Section 3.2), the following policies shall apply for Erosion Hazard Management:

1. Fill and grading and related site alteration activities shall not be permitted in erosion hazard lands, unless associated with measures prescribed and/or approved by a municipality or environmental agency specifically intended to remediate erosion concerns.
2. The Authority shall encourage the conservation of land through the prohibition or control of construction and placement of fill on existing or potentially unstable slopes.
3. The placement or removal of fill material may be permitted:
  - a) Outside of the Regulation Limit;
  - b) Within the Regulation Limit, provided that:
    - i. The fill is required to assist in the flood protection of development proposals approved under Sections 4.4 and 4.5;
    - ii. no net loss in flood flows or flood storage capacity occurs; and
    - iii. measures acceptable to the Authority are employed to minimize the potential for erosion of the fill by flooding.
    - iv. KCCA may require a qualified professional to complete a geotechnical study to determine the risk of the proposed work.
  - c) Where the fill is necessary to ensure the long term stability of a slope and the placement thereof is in accordance with a design certified by a professional engineer.
  - d) Where the fill materials are clean in accordance with the Ministry of the Environment standards;
4. In specific cases where buildings, structures or private access roads already exist on a valley wall, reconstruction or alteration may be permitted subject to the following:
  - a. Best efforts must be undertaken to relocate the existing structure outside of the valley wall and associated tableland Regulation Limit.
  - b. A qualified professional must complete a geotechnical study to determine the risk of the proposed work. The study will include an assessment of the stability of the valley wall, rate of erosion or recession of the valley wall, access issues and an

assessment of the construction technique on the valley wall. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life property damage is anticipated.

- c. No adverse impacts to existing natural features and functions.
5. No new development is permitted along the shoreline within the 100 year erosion setback allowance from the toe of bluff, as identified and delineated within the Shoreline Management Plan prepared by Philpott Associates Limited, December 1989.
6. Development and site alteration shall not be permitted within the Regulatory Dynamic Beach Standard Zone. The Regulatory Dynamic Beach Standard Zone is 60 metres inland from the 100 year flood level, consisting of 40 metres of the active beach zone and an allowance of 20 metres for foredune formation, as identified in the Beach Management Study.
7. Notwithstanding any of the policies as outlined in section 6.3 above, the placement or removal of fill as required for any development or site alteration proposal along steep and/or significant slopes or in close proximity to an erosion hazard and located within the Regulation Limit, may be permitted provided that a full geotechnical report prepared by a professional geotechnical engineer is submitted to the Authority. This report should outline the engineer's determination of the suitability and/or capability of the soils to maintain their stability in light of the proposal to remove or place fill or other aspects of the proposal that in the determination of the Authority may adversely impact upon the conservation of land. The report must be done in accordance with accepted engineering principles in a manner acceptable to the Authority. It should be submitted with the proponent's application under Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06 and the proponent must agree within the application to conform with any recommendations contained within the report.

A full geotechnical report may not be required if the proponent's geotechnical engineer inspects the site and provides the Authority with a brief outlining that, in the engineer's professional opinion, the removal or placement of fill for the purposes as proposed by the proponent will not have any adverse effects upon the stability of the slope and therefore the conservation of land.

8. Notwithstanding any of the policies as indicated above, the KCCA, as a part of its Plan Input and Review Policy and cooperation with its watershed municipalities, may request that the proponent have the site and the building plans reviewed by a professional geotechnical engineer and that any subsequent recommendations of the engineer be adhered to. All geotechnical reports and/or review that may be requested by the Authority will be undertaken solely at the expense of the proponent.



## **7 Wetland Management**

The specific definition for a wetland is provided in the glossary. From a natural hazard perspective, the following functions and characteristics of wetlands are considered:

- Flood storage, flood level and flow augmentation
- Source area
- Recharge area
- Potential standing water or for the presence of organic soils (peat and muck)

Filling or draining can have an impact on the hydrologic functions of a wetland which in turn, may influence the flooding and erosion processes in the area. While it may be argued that the impact of wetland draining or filling in local areas is difficult to quantify, it is certain that the incremental impact of widespread wetland interference can have a significant impact on downstream hydrology.

### **7.1 Objectives for Wetland Management:**

Above and beyond the General Objectives (Section 3.1), the objectives for Wetland Management are as follows:

- a) To control the development and site alterations of wetland areas, including area of interference, which could alter the natural water storage capacity of the watershed;
- b) Control filling and/or drainage of natural storage areas such as wetlands and valleylands;
- c) Control pollution or other degradation of existing and potential groundwater aquifer(s) and aquifer recharge areas, created by fill activities;
- d) To protect and enhance base flow and water quality; and
- e) To protect and enhance the Natural Heritage features of a wetland.

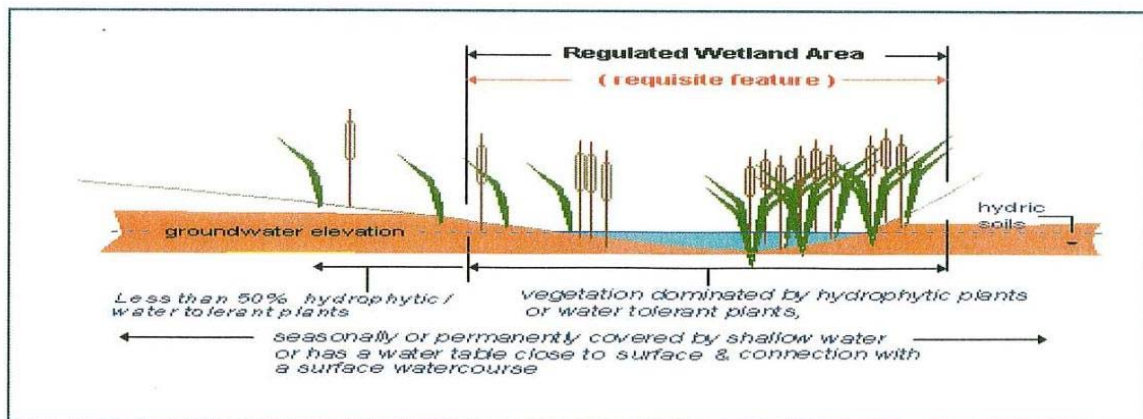
## 7.2 Guidelines for Wetland Management:

*Wetland* – The KCCA has identified wetland areas in the Regulation Limit mapping. Identified wetland areas include those areas which were evaluated using the Ontario Wetland Evaluation System, 3<sup>rd</sup> Edition (MNR, 1994) and unevaluated wetlands derived from a combination of information sources, such as the 1984 Wetlands Inventory and Evaluation, the Water Management Study of the Kettle Creek Wetlands (May 1986), the KCCA Wetlands Management Strategy (August 1987) and various subwatershed studies.

The KCCA reserves the right to require the proponent to submit a detailed wetland boundary determination consistent with the Ontario Wetland Evaluation System, 3<sup>rd</sup> Edition (MNR, 1994) or other methodology acceptable to the KCCA. It is noted that the revision of a wetland boundary may require the approval of the MNR.

*Wetlands Area of Interference* – Wetlands can be impacted by development and site alteration that is located outside of the wetland boundary. To address this concern, an Area of Interference is established around all wetlands in order to identify those lands which if developed could potentially have a negative impact on the wetland. The width of the actual Area of Interference will differ for each situation because it is based on a site by site assessment having regard for both the characteristics of the wetland and for the specifics of the proposed development or site alteration.

Consistent with the Provincial standards, and to ensure wetland protection, a standard Area of Interference has been applied to mapping of wetlands at a planning level. The Area of Interference for all Provincially Significant Wetlands and all other wetlands greater than 2 hectares is 120 metres. An Area of Interference of 30 metres is applied to all mapped wetlands that are less than 2 hectares in size and not Provincially Significant.



### **7.3 Policies for Wetland Management:**

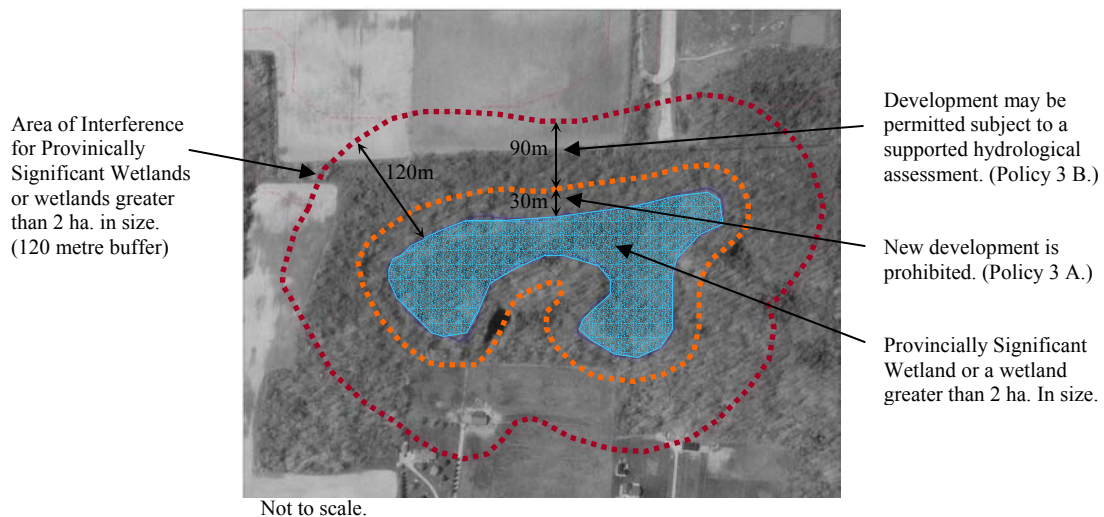
Above and beyond the General Policies (Section 3.2), the following policies shall apply for Wetland Management:

1. New development and site alteration is not permitted in wetlands. Some restricted uses may be permitted provided that they are supported by an EIS or an Environmental Assessment.
2. Development and site alteration within the area of interference of a wetland shall only be permitted by the Authority if the applicant can demonstrate that such activity will have no impact on the control of flooding, erosion, pollution or the conservation of land. This will involve a scoping process where the KCCA and the proponent (with the help of a qualified professional as required) will assess a proposed undertaking, having regard for the sensitivity of the wetland features and functions, the extent of encroachment and impact of use. This initial assessment will assist with the formulation of the terms of reference for a scoped EIS or a comprehensive EIS.
3. The following policies shall apply to regulating development and site alteration on lands located within 120 metres of Provincially Significant Wetlands and wetlands greater than or equal to 2 hectares in size:
  - A. Within 30 Metres
    - a) Where buildings and structures already exist within 30 metres of a Provincially Significant Wetland and wetlands greater than or equal to 2 hectares in size, any reconstruction, alteration or additions may be permitted subject to the following:
      - i. No new septic systems permitted
      - ii. Existing septic systems may be replaced provided there are no feasible locations available outside of the 30 metre area of interference and it does not encroach any closer to the wetland than the existing system
      - iii. Reconstruction, alteration or addition does not encroach any closer to the wetland than the existing development at its closest point
      - iv. Even if the existing development is closer than 15 metres to the wetland, no new development is permitted within 15 metres of the wetland
      - v. A hydrologic study may be required to determine whether there would be a negative impact on the hydrologic functions of the wetland as a result of the proposed development

- b) Where there is an existing lot of record and residential dwelling, in existence prior to the adoption of these policies and where no land exists outside of the 30 metre area of interference, pools, decks and non-habitable accessory structures may be permitted subject to:
  - i. No development or site alterations permitted within 15 metres of the wetland
  - ii. A hydrologic study may be required to determine whether there would be a negative impact on the hydrologic functions of the wetland as a result of the proposed development
- c) Except as provided for in policies 4.4 (4.) A (a) and 4.4 (4.) A (b), no new development or site alteration is permitted within 30 metres of a Provincially Significant Wetland or a wetland greater than or equal to 2 hectares in size.

**B. Between 30 and 120 metres**

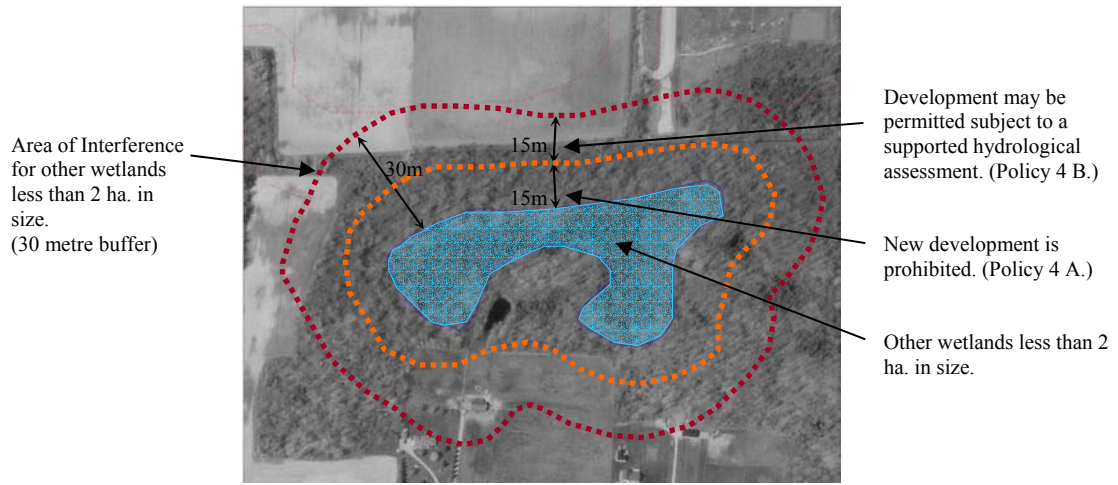
Development and site alterations proposed within 30 metres to 120 metres from the limit of a Provincially Significant Wetland or a wetland greater than or equal to 2 hectares in size will need to be supported by a hydrological assessment, prepared by a qualified professional, that identifies whether the proposed development or site alteration would cause a negative hydrologic impact on the wetland features/functions.



4. The following policies shall apply to regulating development and site alteration on lands located within 30 metres of Other Wetlands less than 2 hectares in size:
  - A. Within 15 metres
    - a) Where buildings and structures already exist within 15 metres of Other Wetlands less than 2 hectares in size, , any reconstruction, alteration or additions may be permitted, subject to the following:
      - i. No new septic systems permitted
      - ii. Existing septic systems may be replaced provided there are no feasible locations available outside of the 15 metre limit and it does not encroach any closer to the wetland than the existing system
      - iii. Reconstruction, alteration or addition does not encroach any closer to the wetland than the existing development at its closest point
      - iv. Even if the existing development is closer than 7.5 metres to the wetland, no new development is permitted within 7.5 metres of the wetland; and
      - v. A hydrologic study may be required to determine whether there would be a negative impact on the hydrologic functions of the wetland as a result of the proposed development
    - b) Where there is an existing lot of record and residential dwelling in existence prior to the adoption of these policies, and where no land exists outside of the 15 metres adjacent to a wetland, decks and non-habitable accessory structures may be permitted subject to:
      - i. No development or site alterations permitted within 7.5 metres of the wetland; and
      - ii. A hydrologic study may be required to determine whether there would be a negative impact on the hydrologic functions of the wetland.
    - c) Except as provided for in Policies 4.4 (5.) A. (a) and 4.4 (5.) A (b), no new development or site alteration is permitted within 15 metres of Other wetlands less than 2 hectares in size.

B. Between 15 and 30 metres

Development and site alterations proposed within 15 metres to 30 metres from the limit of wetlands less than 2 hectares in size will need to be supported by a hydrological assessment, prepared by a qualified professional that identifies whether the proposed development or site alteration would cause a negative hydrologic impact on the wetland features/functions.



Not to scale.

## **8 Administrative Procedures**

### **8.1 Permit Procedures**

Persons who wish to construct a building or structure, place or remove fill or interfere with the existing channel of a watercourse or wetland, within floodplain or other areas as defined by the Regulation Limit, require a permit. Applications for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses are available at the Authority's Administration Centre.

Persons wishing to receive an extension of permission previously granted, when the works have not been completed within the time frame of the permit, must reapply for a new permit. The existing legislation does not provide for "renewed" permits.

The staff of the Authority will make every effort to assist an applicant in the analysis of their site and the acceptability of the proposed use within the regulations. In addition, when technical information beyond the resources of the Authority is required, the onus will be on the applicant to provide necessary technical design data, at no cost to the Authority and of a quality acceptable to the Authority.

Each proposed activity which requires the approval of the Conservation Authority under the Regulations and for which an application has been filed, will be dealt with in the following manner:

1. **Application:** An application made under Section 3 and/or Section 6 of the Regulation shall be made by a person having an interest in the land for which the application is being made or their agent (authorization to be provided in writing). This may be done prior to the actual purchase of the property. A new permit must be obtained from the Kettle Creek Conservation Authority by the new owner.
2. An application made for a permit under Section 3 and/or Section 6 of the regulation shall be filed with the Planning and Regulations Supervisor or the General Manager/Secretary Treasurer of the Authority and such applications shall be submitted in the prescribed form pursuant to Section 4 or Section 7 of the regulation. The Planning and Regulations Supervisor or the General Manager/Secretary Treasurer shall note the date of receipt of the application.
3. Staff of the Authority shall review the application by discussing the proposal with the applicant, making a site inspection and noting any effects that the proposal may have on the subject or upstream/downstream properties with regards to the threats to life and property from flooding erosion.
4. Staff will contact the member(s) of the municipality in which the subject property to the application is located. Staff will provide the member(s) with the information contained within the application, including the name of the applicant, the location of the proposed work, the details of what is being proposed and what was observed/discussed during the site inspection.
5. The General Manager/Secretary Treasurer of the Authority, or in his absence the KCCA Chair, may issue a permit to the applicant.

6. The General Manager/Secretary Treasurer of the Authority, or in his absence the KCCA Chair, **may not** issue permits for:
  - a. Any application recommended for denial;
  - b. Any application posing a significant controversy (ie. beyond KCCA and applicant and spilling over into third party such as a lawyer, municipal or provincial concerns with respect to KCCA position);
  - c. Any application, as viewed by the Planning and Regulation Supervisor, the General Manager/Secretary Treasurer or the KCCA Chair as warranting review by the Executive or Full Authority, whether for technical, policy or information reasons.
7. For applications requiring review by the Full Authority or Executive as per #6 above, the procedures outlined in #1 to #5 still apply. Staff will then provide a written recommendation to the Authority.
8. The Full Authority shall review the application. In the absence of the Full Authority, the Executive Committee has been delegated the responsibility to undertake such review.
9. **Hearing:** The permit shall be approved or refused by the Full Authority/Executive Committee, but before refusing permission, the Full Authority/Executive Committee shall hold a hearing to which the applicant shall be a party (Conservation Authorities Act, R.S.O., Section 28(3)). If staff is recommending refusal of the application, a written reminder noting the date, time and location of the meeting shall be delivered to the applicant by either registered mail or hand delivery by staff. If the applicant is unable to attend the hearing, he/she must sign the application in the appropriate location on the application.
10. All hearings are open to the public, unless public security issues may be disclosed or unless there are other intimate financial, personal or other matters that in the opinion of the tribunal outweigh the desirability of a public meeting.
11. Should the Full Authority/Executive Committee approve the application, a permit under Development, Interference with Wetlands and Alterations to Shorelines and Watercourses shall be sent to the applicant by regular mail, the working day following the hearing. Permits are normally valid for a period of 24 months unless specified to expire at an earlier date.
12. The applicant and the Full Authority/Executive Committee have the right to present arguments and submissions, to be represented by counsel and to call witnesses and cross-examine witnesses, in the interest of the full disclosure of the facts.

13. The Full Authority/Executive Committee has the right to issue summons to require any person, including the applicant, to give evidence under oath or produce documents, in accordance with the Statutory Powers Procedures Act, R.S.O., 1980, c. 484.
14. In accordance with Section 5 of the Canada Evidence Act, any witness appearing before the Full Authority/Executive Committee to provide evidence at a hearing must be advised of his/her right to object to answering to questions and that no answer by the witness "shall be used or received in evidence against him" at any trial or proceeding other than for a prosecution for perjury.
15. In hearings before the Full Authority/Executive Committee, all testimonial evidence shall be entered under oath. Oaths shall be administered by the General Manager/Secretary Treasurer of the Authority or in his absence the deputy Chair of the board shall administer the oath. The wording of oaths shall be in a similar format to that used in a court of law (see Appendix VI)
16. The Full Authority/Executive Committee is conferred certain powers by the Statutory Powers Procedures Act to control the meeting procedures. They include:
  - a. The tribunal may make orders or directions which it considers proper to prevent abuse of its process. This relates to the power of the tribunal to control the hearing before it and to ensure that the applicant or his/her counsel does not abuse the process.
  - b. The tribunal may reasonably limit further cross examination of a witness where it is satisfied that the cross examination has been sufficient to disclose fully and fairly the facts in relation to which it has been given in evidence.
  - c. The tribunal may exclude anyone from the hearing who appears as an agent on behalf of the applicant or a witness other than a lawyer qualified to practice in the Province of Ontario, if the agent is found not to be competent to properly represent or advise the party or witness. Furthermore, if an agent does not understand or comply with the duties and responsibilities of an advocate at such a hearing, it is grounds for his expulsion.
17. Upon hearing evidence submitted by the applicant or his agent and reviewing any other information submitted in support or rejection of the application and upon refusal of the application, the Full Authority/Executive Committee shall give written reason by way of a registered letter for its refusal to the applicant.

18. Any applicant who has been refused permission may, within thirty (30) days upon receipt of the letter in 7 (above), appeal to the Ministry of Natural Resources who will arrange a hearing chaired by the Mining and Lands Commissioner, staff shall prepare all relevant documentation including transcripts of the hearing and forward the records to the Commissioner. The Commissioner may dismiss or grant permission and this decision is final (Conservation Authorities Act, R.S.O., 1980, Section 28(5)) unless the Commissioner has erred in law. (\*\*Note: The decision or order of the Authority is stayed (has no legal effect) upon an appeal by the applicant. It is as if permission has been neither given nor denied.).

## **8.2 Follow up Inspection Procedures**

Limited staff time prohibits follow-up-inspections of all permitted works. In addition, municipal staff cooperation with KCCA eliminates the need to follow-up with some types of permitted works. Minor works (ie. up to 5 loads of fill) seldom require follow-up. An applicant's dubious history of non-compliance or attitude problems encountered when applying; however, make follow-up necessary in all cases. Staff also has an opportunity to view any ongoing or completed work when traveling within its vicinity. However, it is the policy of the Kettle Creel Conservation Authority that specific site inspections will take place for any of the following:

- a) An application that has been denied, to ensure works have not been initiated or continued;
- b) Any application process posing any sign of controversy with the landowner or municipality;
- c) Any permit for filling or construction within the floodplain or alteration of a watercourse;
- d) Any permitted works, as viewed by the Planning and Regulations Supervisor, as warranting inspection for technical, policy or information reasons; and,
- e) Any further contact made with KCCA staff within two months of the application issuance.

The amount and timing of follow-up visits will be at the discretion of the Planning and Regulations Supervisor and based upon:

- a) Application reference to the timing of the works;
- b) Anticipated potential for problems;
- c) Municipal staff support;
- d) Contact with the applicant to determine the status of works; and,
- e) Request for applicant to notify staff at a stated time of works implementation.

### **8.3 Application Fees and Deposits**

The Authority has adopted a schedule of fees and deposits for the review of applications under the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06, (O.Reg. 97/04), made under Section 3 and/or Section 6 of the Regulation. A copy of the Application Fee Schedule forms Appendix III to this document. These fees are required to protect the Authority from financial loss exposure due to potentially unrecoverable and large expenses in staff time, support expenses and professional review and assistance to KCCA (legal, engineering, biology, hydrology, etc.) of applications or development of applications. They are divided into two sections; a refundable deposit and a non-refundable fee. Both the fees and deposits will not be applicable to municipal public projects that have a general public benefit (ie. Roadways, sewers, etc.).

- A. *Refundable Deposit:* The deposit will be required upon submission of the application. The deposits are solely for the purpose of financing extra expenses incurred by the Authority to be determined at the discretion of the General Manager/Secretary Treasurer, to cover KCCA costs of professional review of a proposal in development of a submission or of a submission (legal, engineering, biology, hydrology, etc.). Any deposit balance remaining upon permit issuance or denial is to be returned to the applicant. The deposit does not apply to staff time.
- B. *Non-Refundable Fees:* The premise of this program is to support the regulations/applications process and to recoup a portion of general tax dollars applied to staff wages and support expenses in the time consuming assessment of applications that ultimately have only specific personal or corporate benefit.

No portion of the administration fee is refundable. The fee will be required upon submission of the application.

A copy of the Application Fee Schedule forms Appendix III to this document.

#### **8.4 Enforcement Procedures**

In accordance with section 28(1(d)) of Conservation Authorities Act and Section 10 of the regulation, the Authority may appoint officers to enforce the Regulation. These officers have the responsibility of liaising with applicants, inspecting properties and processing the application.

Any initiators of unauthorized works that contravene the Regulation will be requested to halt the works immediately. The officer(s) will advise the offender(s) of the regulation and its purpose.

The officer will review the details of the violation with the General Manager/Secretary Treasurer of the Authority. The General Manager/Secretary Treasurer may direct the officer to issue a Notice of Violation to the involved parties immediately. If the violation, as viewed by the General Manager/Secretary Treasurer, warrants review by the Executive or Full Authority, whether for technical, policy or information reasons, then the officer will prepare a report for the Board with recommendations. The Full Authority or Executive may direct the officer to issue a Notice of Violation to the involved parties.

A Notice of Violation shall be sent to the involved parties by registered mail, with a copy sent to the respective municipality (board member). A report will be prepared for the file, containing all relevant information of the violation.

The offender has the option of removing the unauthorized works, or making formal application to the Authority to continue or modify works. The Authority must be informed of the offenders' intention within 48 hours of the receipt of the Notice of Violation.

If the offender chooses to apply for a permit, an application may be processed in the normal manner by the Full Authority (see Section 8.1), depending upon the nature and scale of the violation.

If the offender chooses to proceed with the works without a permit after having been requested to stop, a charge may be laid under the Authority's regulations made pursuant to Section 28 of the Conservation Authorities Act. Prior to laying charges, the officer and/or the General Manager/Secretary Treasurer shall consult with the Authority's Solicitor to review the details of the violation. The officer will then make a recommendation to the Full Authority or Executive outlining the latest developments in the violation, the Solicitor's recommendations, the costs that may be incurred in pursuing the matter in court compared to the total fine that could be expected and the Solicitor's estimation of the chances of getting a conviction. The Full Authority or Executive may then direct the officer to proceed with laying of charges.

If an affidavit or statement is required from the parties to be charged, the following procedure should be adhered to:

- a) The officer shall be accompanied by a full-time staff member who shall act as a witness.
- b) Conduct the interview in a quiet place to minimize disturbances or distractions.
- c) Advise the accused that charges are being laid with respect to the violation and that anything they say may be used against them in court. Confirm that they understand what is being told to them and that they are willing to proceed.

- d) Record the date and time of the statement, the location, the accused full name, date of birth, occupation and place of residence.
- e) Proceed with questioning. Do not "lead on" the accused. Word the questions so that they can respond in their own words.
- f) When finished questioning, allow the accused to read the statement, sign it and date it.

In laying a charge, the following must be undertaken:

- a) Prepare the summons (copies on file) or have the solicitor prepare it.
- b) Take the completed summons to the sheriff's office for delivery or deliver by hand to offender. Provide 1 copy of the summons and 1 copy of the affidavit (if any) to the offender.
- c) Ensure copies of information in (b) above are submitted to provincial Offenses Court prior to the first appearance.
- d) Prepare a brief on the violation for the Authority's solicitor. The brief should include:
  - details on the Statutory and Regulatory powers of the KCCA;
  - excerpts from the Policies and Procedures document relevant to the violation;
  - details of the violation;
  - a chronology of events from the first time the violation was brought to the attention of the Authority until the laying of charges;
  - details on the impacts of the violation (ie. loss of flood storage, threat to life and property, impacts on existing dams or structures); and
  - a conclusion recommending what remedy that the Authority is seeking through the courts.
- e) For the trial, a certified copy of the Regulation Limit mapping is required and can be obtained from the KCCA's Administration office. If a title search is necessary, the solicitor will do it. The title search must be certified by the Land Registry Office.

The Authority may also seek a court injunction to be served on the violator in order to have the works stopped. The Conservation Authorities Act makes no provision for the Authority to utilize a "stop work order" to have the activity ceased; however, legislation administered by MNR provides for "stop work order" authority and if the work negatively affects MNR regulations assistance in this regard may be possible.

The Authority also retains the right to withdraw any approvals granted if the terms and conditions stated within the application or requested by the Authority are not being met.



## **9 Amendments**

Amendments to the contents of this document shall be approved by the Full Authority prior to implementation. Additions or modifications to the regulation schedules that maintain the intent and improve the accuracy of the regulated area, such as updated wetland boundaries, will not require an approval process. These will normally be site-specific amendments. The Conservation Authority will consult the affected municipality and keep a listing of these modifications to the regulated area and file a report with the peer review committee and MNR.

Additions or modifications to the regulation schedules resulting from comprehensive or larger scale studies require re-circulation through the Peer Review/MNR process and notification if they substantially change the impact of the regulation. A copy of the mapping highlighting the proposed modification(s) and the rationale for the change(s) as well as a record of any consultation will be provided to the Peer Review Committee in support of the amendment application.



## **10 Interpretation**

The Full Authority of the Kettle Creek Conservation Authority is responsible for the final interpretation of any part of this document in the consideration of any matter related to the contents contained herein.



## **11 Glossary of Terms and Definitions**

**Access** (ingress/egress): means the standards and procedures currently applied in engineering practice associated with providing safe passage for vehicles and people to and from a shoreline or river-side property during an emergency situation as a result of flooding, other water related hazards, the failure of floodproofing and/or protection works, and/or erosion that have been reviewed and approved by the Conservation Authority and/or the Ministry of Natural Resources.

**Active Floodproofing:** means floodproofing techniques which require some action prior to an impending flood in order to make the flood protection operational (ei. Closing water tight doors)

**Adverse Effect:** under the Environmental Protection Act (EPA) means one or more of the following:

- a) Impairment of the quality of the natural environment for any use that can be made of it;
- b) Injury or damage to property or to plant or animal life;
- c) Harm or material discomfort to any person;
- d) An adverse effect on the health of the person;
- e) Impairment of the safety of any person;
- f) Rendering any property or plant or animal life unfit for human use;
- g) Loss of enjoyment of normal use of property; and
- h) Interference with the normal conduct of business; ("consequence prejudicial")

**Adjacent Lands:** means those lands which are contiguous to a natural heritage feature or area where there is a potential that development or site alteration will have a negative impact on the feature or area.

**Area of Interference:** means the area located outside of the wetland that could impact the wetlands if development were to be permitted.

**Authority:** shall refer to the Kettle Creek Conservation Authority, it's members, board and staff.

**Conservation of Land:** means the protection, preservation, management, or restoration of lands within the watershed that include natural heritage features such as wetlands, woodlands, and wildlife habitat as well as natural resources including surface and ground water.

**Control of Flooding:** means the provision of a flood warning system and implementation of other preventative flood damage reduction measures such as watershed modeling and regulations. The KCCA shall not be responsible for the provision or implementation of structural protection, unless such capital works have wide-ranging community or watershed benefit.

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

1. Activities that create or maintain infrastructure authorized under an environmental assessment process;
2. works subject to the Drainage Act; or
3. for the purposes of policy 2.1.3 (b), underground or surface mining of minerals or advanced exploration on mining lands in significant areas of mineral potential in EcoRegion 5E, where advanced exploration has the same meaning as under the Mining Act. Instead those matters shall be subject to policy 2.1.4(a)

**Development:** under the Conservation Authority Act means:

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

**Dry Floodproofing:** means protecting a building or structure by sealing its exterior walls to prevent the entry of flood waters.

**Environmental Assessment Process:** means a process that is used to predict the environmental effects of proposed initiatives before they are carried out. It is used to identify measures to mitigate adverse effects on the environment and can predict whether there will be significant adverse environmental effects, even after the mitigation is implemented.

**Environmental Impact Study (EIS):** means a report prepared by qualified professionals (engineers, biologists) to address the potential impacts of development on natural heritage features and areas. The types of Environmental Impact Studies include:

Comprehensive EIS – is a landscape scale study which identifies natural heritage features for protection, potential development areas and development setbacks that are ecologically sustainable.

Scoped EIS – is an area specific study that addresses issues of particular concern not previously addressed in sufficient detail in a comprehensive study. The factors which may be considered for a scoped EIS include:

- The extent of the encroachment
- The potential impact of the use; and
- The sensitivity of the feature.

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

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

**Executive Committee:** Shall refer to the Executive Committee of the Kettle Creek Conservation Authority.

**Fill:** means any material used or capable of being used to raise, lower or in any way affect the contours of the ground, whether on a permanent or temporary basis, and whether it originated on the site or elsewhere.

**Fish Habitat:** means the spawning grounds and nursery, food supply and migration areas which fish rely on to live.

**Flood/Flooding:** means a temporary rise in the water level which results in an influx of water in areas located adjacent to a watercourse that are usually not covered by water.

**Flood Fringe:** means the outer portion of the flood plain between the floodway and the limit of the regulatory flood. Flood depths and velocities have a tendency to be less severe in the flood fringe as compared to those in the floodway.

**Flood Plain:** means the area, usually low lands, adjoining a watercourse which has been, or may be covered by flood water.

**Floodproofing:** means a combination of structural changes and/or adjustments incorporated into the basic design and/or construction or alteration of individual buildings, structures or properties subject to flooding so as to reduce or eliminate flood damages.

**Floodway:** means the channel of a watercourse and the inner portion of the flood plain where flood depths and velocities are generally greater than those experienced in the flood fringe. The floodway represents that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to pose a potential threat to life and/or property damage.

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

**Hydrostatic Pressure:** means the pressure exerted by a body of water at any point under the water surface. The magnitude of this pressure is dependent upon the depth below surface of the point under consideration.

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

**Natural Hazards:** means physical environmental processes operating near or at the surface of the earth and sites of unstable soils that limit potential uses of some lands. They may include floods, ice jams, soil erosion, and slope failures that have resulted in damage to property, injury to humans and loss of life. Marine clay, organic soils and karst topography are also considered to be natural hazards because they are unstable and sensitive.

**One Hundred Year Erosion Rate:** The predicted lateral movement of a watercourse over a period of one hundred years.

**One Hundred Year Flood:** means the flood which is based on an analysis of precipitation, snow melt, or a combination thereof, having an average return period of 100 years or having a 1% chance of occurring or being exceeded in any given year. It is the minimum acceptable regulatory flood standard.

**Other Wetlands:** means any wetland that meets the definition of a wetland that is not Provincially Significant.

**Passive Floodproofing:** means floodproofing techniques which are permanently in place and do not require advance warning and action in order to make floodproofing and/or flood protection measure effective.

**Pollution:** means any deleterious physical substance or other contaminant which has the potential to be generated by development in an area where the Authority's regulation applies.

**Protection Works:** means structural or non-structural works which are intended to appropriately address damages caused by flooding, erosion and/or other water related hazards.

**Provincially Significant Wetlands:** means protected under the provincial planning policy.

**Regulation:** Shall refer to the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses regulation 181/06 (O.Reg. 97/04).

**Regulation Limit:** means the outside limit of all hazards and wetlands.

**Regulatory Flood Plain:** means the approved standard(s) which is used in a particular watershed to define the limits of the flood plain for regulatory purposes. In the case of the Kettle Creek Conservation Authority, the Hurricane Hazel storm event serves as the Regulatory Flood level.

**Restricted Uses:** means

- a) Conservation uses or activities such as wildlife or fisheries management, forestry or passive recreation;
- b) Flood and/or erosion control structures;
- c) Facilities which by their nature must locate near water or traverse water;
- d) Ancillary facilities of an adjacent land use which are of passive, non-structural nature and do not adversely affect the natural hazard or natural heritage feature or function; and
- e) Municipal infrastructure including roads and utilities/servicing (ie. sewer lines, gas pipelines, hydro facilities.)

**Significant:** as defined in the PPS means:

- a) In the case of wetlands means an area identified as provincially significant by the MNR using evaluation procedures established by the Province as amended from time to time.
- b) In the case of endangered species and threatened species, means the habitat as approved by the MNR that is necessary for the maintenance, survival and/or recovery of naturally occurring or reintroduced populations of endangered species or threatened species, and where those areas of occurrence are occupied or habitually occupied by the species during all or any part(s) of its life cycle.
- c) In the case of woodlands, means an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to site quality, species composition, or past management history.
- d) In the case of other features and areas including valleylands and wildlife habitat, it means ecologically important in terms of features and linkages, function representations or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.

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

**Special Policy Area:** means an area within a community that has historically existed in the flood plain and where strict adherence to certain province wide policies concerning new development would result in social economic hardship for the community. As a result, site specific policies are formulated and applied within the defined limits of the special policy area.

**Stable Slope:** means a slope that shows no sign of stress such as tension cracks, localized sloughing, seepage and or creep, or erosion. A stable slope tends to be well vegetated and the ratio of the forces resisting movement over the active forces such as gravity and seepage exceeds 1.5.

**Valleyland:** means a significant natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.

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

**Watershed:** means all the lands drained by a river or stream and its tributaries.

**Wetland:** means land that:

- a) Is seasonally or permanently covered by shallow water, or has a water table close to or its surface;
- b) Directly contributes to the hydrological function of a watershed through connection with a surface watercourse;
- c) Has hydric soil, 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.

**Wet Floodproofing:** means those measures taken to reduce or eliminate the potential for flood hazards to damage a building or structure by allowing water to enter a building with mechanisms to prevent structural damage.