



Conservation Halton
(The Halton Region Conservation Authority)
Policies and Guidelines for the Administration
of Ontario Regulation 162/06
and
Land Use Planning Policy Document
April 27, 2006 (last amended, November 26, 2020)

This document is certified to be a true copy of policies with consolidated amendments approved by the CH Board of Directors

Chair, Gerry Smallegange

November 26, 2020

Date

President and CEO, Hassaan Basit

November 26, 2020

Date

**Conservation Halton
(The Halton Region Conservation Authority)
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of Ontario Regulation 162/06
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Land Use Planning Policy Document**

Approved by Resolution 3A-12 of the Board of Conservation Halton
(The Halton Region Conservation Authority)
April 27, 2006.

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of Ontario Regulation 162/06
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Land Use Planning Policy Document**

Amendment History

CH Report No.	CH Board Resolution No.	Approval Date	Description
CHBD 3-06-01	3A-12	27/04/06	Policy Document: The <i>Policies, Procedures and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document (April 27, 2006)</i> were received.
CHBD 06 11 06	CHBD 06 08	11/08/11	Repealed - Removal of Procedures and Title Change: The name of the document was changed from <i>Policies, Procedures and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document (April 27, 2006)</i> to <i>Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document</i> . Section 2 which described procedures pursuant to Ontario Regulation 162/06 were removed from the policy document (<i>formerly Section 2</i>)
CHBD 05 14 01	CHBD 05 01	22/05/14	New - Policies for Revitalizing Oakville's Cultural Hub: Additional policies were added to allow for the replacement of buildings located within the Town of Oakville. The area is bounded by Navy Street to the east, Lakeshore Road to the south, and Sixteen Mile Creek to the west and north (<i>new Section 2.38</i>)
CHBD 08 13 04	CHBD 08 05	19/09/13	Repealed - Repeal Milton's Interim Special Policy Area – All references to an Interim Special Policy Area for Milton were repealed to support a one-zone approach in the area, in conformity with provincial direction was approved, effective September 20, 2013 (<i>formerly Section 3.32</i>)

CH Report No.	CH Board Resolution No.	Approval Date	Description
CHBD 08 15 01	CHBD 08 03	26/11/15	<p>Amended - Updated Shoreline Policies – Shoreline policies were restructured for consistency in format with existing riverine regulatory policies. Changes were made in accordance with technical guidelines prepared by the Ministry of Natural Resources and Forestry (MNRF) and Conservation Ontario. Policy modifications were made to adopt a 0.2m/year annual average erosion rate along the north shoreline of Hamilton Harbour/Burlington Bay in the City of Burlington. Policies were added to: 1) introduce the term “Engineered Development Setback” to differentiate between the erosion hazard and the development setback that can be achieved with the erosion hazard subject to engineering studies and shoreline protection works; 2) ensure new development proposals on lakeshore properties maximize the available lot depth and width; 3) provide more flexibility for reconstruction/replacement of structures on properties where it is physically impossible remove it from the Engineered Development Setback; 4) address geothermal infrastructure; and, 5) provide new definitions (<i>formerly Sections 3.41-3.50</i>)</p>
CHBD 10 15 03	CHBD 10 05	25/02/16	<p>Amended - On-Title Agreements – Changes were made to the on-title agreement policy to limit the use of on-title agreements to high-risk, vulnerable flooding or erosive areas.</p>
CHBD 07 16 04	CHBD 07 07	01/12/16	<p>New - Large Fill Policy – New policies were approved to address emerging issues related to the placement, dumping, and grading of fill within regulated areas (<i>new Section 2.47</i>)</p>
CHBD 04 20 14	CHBD 04 06	23/04/20	<p>Amended - Spill Policy – A revised spill policy was approved to clarify that spill areas are regulated under <i>Ontario Regulation 162/06</i> and provide clearer policies for defined spill areas (<i>former Section 4.2.5 replaced by new Section 2.29</i>)</p>

CH Report No.	CH Board Resolution No.	Approval Date	Description
CHBD 09 20 08	CHBD 09 03	26/11/20	<p>Amended – Consolidation and Housekeeping – The consolidated policies include: <u>Removal of:</u></p> <ul style="list-style-type: none"> • repealed and procedural sections • reference to Level II agreement under the Federal Fisheries Act as it no longer applies • outdated references • incorrect grammar • redundant land use policies <p><u>Update to:</u></p> <ul style="list-style-type: none"> • agency names • section and page numbers • policy references • definitions as approved in policies <p><u>Addition of:</u></p> <ul style="list-style-type: none"> • all CH approved policies • explanatory footnotes

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Section 1

Legislative and Policy Background

Legislative and Policy Background

1.0 How To Read This Document¹

This document consists of:

Section 1: Legislative and Policy Background - describes the authorizing legislation and regulation that Conservation Halton is governed by in and a summary of other legislation and policy that Conservation Halton staff utilize when making regulatory and planning decisions and recommendations.

Section 2: Policies for the Administration of Ontario Regulation 162/06 - describes the guiding, general and specific policies that Conservation Halton staff use when reviewing applications made pursuant to Ontario Regulation 162/06.

Section 3: Land Use Planning Policies - outlines policies that Conservation Halton staff use when providing plan input and review comments to municipal watershed partners and Provincial agencies.

Section 4: Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Review – provides a reference to additional guidelines that Conservation Halton staff use when reviewing regulatory and/or land use planning applications.

Section 5: Definitions - provides definitions for words that appear in italics within the document, except for direct quotes from legislation and headings.²

Section 6: Appendices - provides illustrative diagrams related to various policy requirements to give the reader a better understanding of the text.

¹ This policy documents represents a consolidation of all policies approved by the Conservation Halton Board of Directors since it was first approved in 2006. Note that these policies do not reflect recent or pending legislative changes to the *Conservation Authorities Act* or other legislation. Major revisions to this document will be made following the release of new regulations under a revised *Conservation Authorities Act* and other relevant Acts which deal with regulatory approvals and land use planning matters.

² The titles of specific legislation referenced in this document have also been italicized, except in headings.

1.1 Conservation Authorities Act, R.S.O., 1990, as amended

The *Conservation Authorities Act* (the Act) was originally created in 1946 in response to erosion and flooding problems and the recognition that these and other natural resource initiatives are best managed on a *watershed* basis. The Act's latest revision was approved by the Ontario legislature on June 6, 2019³. It should be noted that the *Conservation Authorities Act* will be amended from time to time and therefore, reference to the most recent amendment should be made where appropriate.

Among the primary mandates of Conservation Halton (The Halton Region Conservation Authority) are the prevention of loss of life and property due to flooding, the prevention of *pollution*, and the conservation and enhancement of natural resources. Section 20 of the *Conservation Authorities Act* sets out the objects of the Conservation Authority:

20. (1) The objects of an authority are to provide, in the area over which it has jurisdiction, programs and services designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals.

The Act also establishes the powers of the Conservation Authority, under Section 21, which include the following:

21. (1) For the purposes of accomplishing its objects, an authority has power,
(a) to study and investigate the watershed and to determine a program whereby the natural resources of the watershed may be conserved, restored, developed and managed.

Sections 20 (1) and 21 (1) (a) provide the mandate direction to Conservation Halton in the making and administration of land use planning policy.

Section 28 governs Conservation Halton in the making and administration of its Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. This regulation was passed pursuant to Section 28 and was approved by the Lieutenant Governor in Council.

Section 28 of the Conservation Authorities Act:

- 28.(1) Subject to the approval of the Minister, an authority may make regulations applicable in the area under its jurisdiction,
(a) restricting and regulating the use of water in or from rivers,

³ The *Conservation Authorities Act* was amended in 2019 and 2020. Many changes are not yet in effect and will be proclaimed at a future date, including modifications to Section 28. The legislation as quoted in the text of this document continues to apply until amended sections are proclaimed.

- streams, inland lakes, ponds, wetlands and natural or artificially constructed depressions in rivers or streams;
- (b) 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;
 - (c) prohibiting, regulating or requiring the permission of the authority for development if, in the opinion of the authority, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected by the development;
 - (d) providing for the appointment of officers to enforce any regulation made under this section or section 29;
 - (e) providing for the appointment of persons to act as officers with all of the powers and duties of officers to enforce any regulation made under this section.
- (2) A regulation made under subsection (1) may delegate any of the authority's powers or duties under the regulation to the authority's executive committee or to any other person or body, subject to any limitations and requirements that may be set out in the regulation.
- (3) A regulation made under clause (1)(b) or (c) may provide for permission to be granted subject to conditions and for the cancellation of the permission if conditions are not met.
- (4) A regulation made under subsection (1) may refer to any area affected by the regulation by reference to one or more maps that are filed at the head office of the authority and are available for public review during normal office business hours.
- (5) The Minister shall not approve a regulation made under clause (1)(c) unless the regulation applied only to areas that are,
- (a) adjacent or close to the shoreline of the Great Lakes – St. Lawrence River System or to inland lakes that may be affected by flooding, erosion or dynamic beach hazards;
 - (b) river or stream valleys;
 - (c) hazardous lands;
 - (d) wetlands; or
 - (e) other areas where, in the opinion of the Minister, development should be prohibited or regulated or should require the permission of the authority.
- (6) The Lieutenant Governor in Council may make regulations governing the content of regulations made by authorities under subsection (1), including flood event standards and other standards that may be used,

and setting out what must be included or excluded from regulations made by authorities under subsection (1).

- (7) A regulation made by an authority under subsection (1) that does not conform with the requirements of a regulation made by the Lieutenant Governor in Council under subsection (6) is not valid.
- (8) Subject to subsection (9), if a regulation is made by the Lieutenant Governor in Council under subsection (6), subsection (7) does not apply to a regulation that was previously made by an authority under subsection (1) until two years after the regulation made by the Lieutenant Governor in Council comes into force.
- (9) If a regulation made by the Lieutenant Governor in Council under subsection (6) is amended by an amending regulation, subsection (7) does not apply, in respect of the amendment, to a regulation that was made by an authority under subsection (1) before the amending regulation, until such time as may be specific in the amending regulation.
- (10) No regulation made under subsection (1),
 - (a) shall limit the use of water for domestic or livestock purposes;
 - (b) shall interfere with any rights or powers conferred upon a municipality in respect of the use of water for municipal purposes;
 - (c) shall interfere with any rights or powers of Ontario Hydro or of any board or commission that is performing its functions for or on behalf of the Government of Ontario; or
 - (d) shall interfere with any rights or powers under the Electricity Act, 1998 or the Public Utilities Act.
- (11) A requirement for permission of an authority in a regulation made under clause (1)(b) or (c) does not apply to an activity approved under the Aggregate Resources Act after the Red Tape Reduction Act, 1998 received Royal Assent.
- (12) Permission required under a regulation made under clause (1)(b) or (c) shall not be refused or granted subject to conditions unless the person requesting the permission has been given the opportunity to require a hearing before the authority or, if the authority so directs, before the authority's executive committee.
- (13) After holding a hearing under subsection (12), the authority or executive committee, as the case may be, shall,
 - (a) refuse the permission; or
 - (b) grant the permission, with or without conditions.

- (13.1) If the permission that the person requests is for development related to a renewable energy project, as defined in subsection 2 (1) of the Electricity Act, 1998, the authority or executive committee, as the case may be,
- (a) shall not refuse the permission unless it is necessary to do so to control pollution, flooding, erosion or dynamic beaches; and
 - (b) shall not impose conditions unless they relate to controlling pollution, flooding, erosion or dynamic beaches.
- (14) If the authority or its executive committee, after holding a hearing, refuses permission or grants permission subject to conditions, the authority or executive committee, as the case may be, shall give the person who requested permission written reasons for the decision.
- (15) A person who has been refused permission or who objects to conditions imposed on a permission may, within 30 days of receiving the reasons under subsection (14), appeal to the Minister who may,
- (a) refuse permission; or
 - (b) grant permission, with or without conditions.
- (16) Every person who contravenes a regulation made under subsection (1) is guilty of an offence and on conviction is liable to a fine of not more than \$10,000 or to a term of imprisonment of not more than three months.
- (16.1) A proceeding with respect to an offence under subsection (16) shall not be commenced more than two years from the earliest of the day on which evidence of the offence is discovered or first comes to the attention of officers appointed under clause (1) (d) or persons appointed under clause.
- (17) In addition to any other remedy or penalty provided by law, the court, upon making a conviction under subsection (16), may order the person convicted to,
- (a) remove, at that person's expense, any development within such reasonable time as the court orders; and
 - (b) rehabilitate any watercourse or wetland in the manner and within the time the court orders.
- (18) If a person does not comply with an order under subsection (17), the authority having jurisdiction may, in the case of a development, have it removed and, in the case of a watercourse or wetland, have it rehabilitated.

- (19) The person convicted is liable for the cost of a removal or rehabilitation under subsection (18) and the amount is recoverable by the authority by action in a court of competent jurisdiction.
- (20) An authority or an office appointed under a regulation made under clause (1)(d) or (e) may enter private property, other than a dwelling or building, without the consent of the owner or occupier and without a warrant, if,
- (a) the entry is for the purpose of considering a request related to the property for permission that is required by a regulation made under clause 1(b) or (c); or
 - (b) the entry is for the purpose of enforcing a regulation made under clause (1)(a), (b) or (c) and the authority or office has reasonable grounds to believe that a contravention of the regulation is causing or is likely to cause significant environmental damage and that the entry is required to prevent or reduce the damage.
- (21) Subject to subsection (22), the power to enter property under subsection (20) may be exercised at any reasonable time.
- (22) The power to enter property under subsection (20) shall not be exercised unless,
- (a) the authority or office has given reasonable notice of the entry to the owner of the property and, if the occupier of the property is not the owner, to the occupier of the property; or
 - (b) the authority or officer has reasonable grounds to believe that significant environmental damage is likely to be caused during the time that would be required to give notice under clause (a).
- (23) Subsection (20) does not authorize the use of force.
- (24) Any person who prevents or obstructs an authority or officer from entering property under subsection (20) is guilty of an offence and on conviction is liable to a fine of not more than \$10,000.
- (25) In this section,
- “development” means,
- (a) the construction, reconstruction, erection or placing of a building or structure of any kind,
 - (b) any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure or increasing the

- number of dwelling units in the building or structure,
- (c) site grading, or
- (d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere;

“hazardous land” means land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock;

“pollution” means any deleterious physical substance or other contaminant that has the potential to be generated by development in an area to which a regulation made under clause (1)(c) applies;

“watercourse” means an identifiable depression in the ground in which a flow of water regularly or continuously occurs;

“wetland” means land that,

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

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

- (26) A regulation that was in force immediately before the day the Red Tape Reductions Act, 1998 received Royal Assent and that was lawfully made under clause (1)(e) or (f) of this section as it read immediately before that day shall be deemed to have been lawfully made under clause (1)(c).

1.2 Ontario Regulation 162/06 (February 8, 2013 and as may be amended) - Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

Beginning in 1972, Conservation Halton administered the Fill, Construction and Alteration to Watercourse Regulation, which controlled:

- placing of fill and grading,
- construction of buildings and structures, and
- alteration of *watercourses*.

On May 1, 2004, the Generic Regulation (Ontario Regulation 97/04) was approved by the Province under Subsection 28 (1) of the *Conservation Authorities Act*. This regulation, commonly referred to as the "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses" regulation establishes the content that a regulation made by an authority under Subsection 28(1) of the *Conservation Authorities Act* must meet. The result of Ontario Regulation 97/04 is that Conservation Halton will continue to regulate those areas they have historically regulated, in addition to regulating shoreline areas affected by *flooding, erosion* and *dynamic beach hazards*, river and stream systems affected by *erosion hazards* and lands adjacent to: *wetlands* (up to 120 metres); *valleys* (up to 15 metres from *stable top of bank*); *flood plains* (up to 15 metres beyond the *flooding hazard* limit); and, shorelines (up to the furthest landward extent of the aggregate of the *flooding, erosion* and *dynamic beach hazards* plus an allowance of up to 15 metres).

These regulations apply to areas affected by *flooding and erosion hazards, wetlands, other hazardous lands* and land adjacent to these features/functions. For lands under Conservation Halton's jurisdiction, the *Regulatory Storm*, which is used to determine the flooding hazards, is normally defined as the greater of the *Regional Storm* or the *100-year storm* utilized for a particular area. The *Regional Storm* is normally defined as the rainfall event and soil conditions that existed during Hurricane Hazel, which occurred within the Humber River watershed in Toronto in 1954, transposed over a specific *watershed* and combined with local conditions. The regulation applies from the headwaters to Lake Ontario and includes the Lake Ontario shoreline.

Conservation Halton's regulation is Ontario Regulation 162/06. Section 2 of this regulation states:

3. (1) Subject to section 3, no person shall undertake development, or permit another person to undertake development in or on the areas within the jurisdiction of the Authority that are,
 - (a) adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to inland lakes that may be affected by flooding,

erosion or dynamic beach hazards, including the area from the furthest offshore extent of the Authority's boundary to the furthest landward extent of the aggregate of the following distances:

- (i) the 100 Year flood level, plus an allowance of 15 metres for wave uprush and other water-related hazards,
 - (ii) the predicted long-term stable slope projected from the existing stable toe of the slope or from the predicted location of the toe of the slope as that location may have shifted as a result of shoreline erosion over a 100-year period,
 - (iii) where a dynamic beach is associated with the waterfront lands, an allowance of 30 metres inland to accommodate dynamic beach movement, and
 - (iv) an allowance not to exceed 15 metres inland;
- (b) river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse, the limits of which are determined in accordance with the following rules:
- (i) where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus an allowance not to exceed 15 metres, to a similar point on the opposite side,
 - (ii) where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope or, if the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus an allowance not to exceed 15 metres, to a similar point on the opposite side,
 - (iii) where the river or stream valley is not apparent, the valley extends the greater of,
 - (a) the distance from a point outside the edge of the maximum extent of the flood plain under the applicable flood event standard, plus an allowance not to exceed 15 metres, to a similar point on the opposite side, and
 - (b) the distance from the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard, plus an allowance not to exceed 15 metres, to a similar point on the opposite side;

- (c) hazardous lands;
- (d) wetlands; or
- (e) other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially significant wetlands and wetlands greater than or equal to 2 hectares in size, and areas within 30 metres of wetlands less than 2 hectares in size.

Section 3 of the Regulation allows Conservation Halton to grant permission in or on the areas described in Section 2 if, in its opinion, the control of flooding, erosion, dynamic beaches, *pollution* or the conservation of land will not be affected by the *development*. *Pollution* is defined in the *Conservation Authorities Act* under Section 28(25) and could result from diminishing of base flow, lack of sediment and erosion controls, *thermal impacts/pollution*, contaminated fill or the storage of hazardous material. Conservation of land refers to protection of the natural features associated with *watercourses*, *wetlands*, *shorelines* and *valleylands*.

Section 6 of the Regulation allows Conservation Halton to grant permission to straighten, change, divert or interfere with the existing channel of a river, creek, stream or *watercourse* or to change or interfere with a *wetland*.

The regulation contains schedules and screening maps that identify the areas regulated by Conservation Halton. The regulated areas shown on the schedules and screening maps have been plotted according to the criteria outlined in Section 2 of *Ontario Regulation 162/06* (see above). Copies of the schedules and screening maps are available at the Administration Office of Conservation Halton.

1.3 Additional Legislation and Policy

In addition to the permitting and enforcement programs associated with Ontario Regulation 162/06, other programs to further the conservation mandate include but are not limited to: commenting on Environmental Assessments, Provincial Plans, municipal planning documents and applications, participating in watershed and subwatershed studies, and stewardship and forestry assistance to private landowners.

Section 3 of this document outlines Conservation Halton's land use planning policies that are utilized, in addition to the regulatory policies, when reviewing applications made pursuant to the *Planning Act*, the *Environmental Assessment Act*, the *Niagara Escarpment Planning and Development Act* and the *Parkway Belt Planning and Development Act*.⁴ Normally, unless specified elsewhere, where discrepancies between plans and policies exist, the more restrictive policy will be applied.

⁴ Under the *Clean Water Act* which was passed in 2006, conservation authorities have a role in exercising and performing the powers and duties of a source protection authority for a source protection area established by regulation.

1.3.1 The Federal Fisheries Act

Conservation Halton had a Level II agreement with Fisheries and Oceans Canada (DFO) to administer the review of projects under section 35(1) of the Fisheries Act. This agreement was terminated with changes to the *Fisheries Act* in 2013.

1.3.2 The Planning Act and the Provincial Policy Statement

Conservation Halton provides plan input and review to watershed municipalities for applications made pursuant to the *Planning Act*. Review and comments are based on the policies set out in this document, the Provincial Policy Statement and the Greenbelt Plan (where applicable).

The Provincial Policy Statement provides policy direction on matters of provincial interest related to land use planning, *development* and *site alteration*. Land use planning is only one of the tools for implementing provincial interests. A wide range of legislation, regulations, policies and programs also affect planning matters and assist in implementing these interests. The Provincial Policy Statement requires that all planning authorities "shall be consistent with" the policy statement in making decisions on planning applications. As such, when reviewing applications made pursuant to the *Planning Act* and made under Conservation Halton's regulations, Conservation Halton must be consistent with provincial policies in its decision-making.

Through the transfer of plan review responsibilities from the Province to the Regional and County municipalities in the late 1990's, Conservation Halton has entered into formal agreements (Memoranda of Understanding – MOUs) with the Regions of Halton and Peel, the City of Hamilton and the County of Wellington to provide peer review comments related to portions of the Natural Heritage, Water and Natural Hazards policies as set out in the Provincial Policy Statement. The municipalities have recognized the expertise of Conservation Halton to assist them in fulfilling this role. Conservation Halton's watershed municipalities have screening maps that identify which properties require Conservation Halton staff review of applications made pursuant to the *Planning Act*, in order to streamline the review process.

The portions of the Policy Statement, which pertain directly to Conservation Halton's review of planning and regulatory applications, are Policy 2.1 (Natural Heritage), Policy 2.2 (Water), and Policy 3.1 (Natural Hazards). Through Conservation Halton's Memorandum of Understanding with the City of Hamilton, comments are also provided with respect to Policy 2.5 (Mineral Aggregate Resources).

1.3.3 The Greenbelt Plan

The Greenbelt Plan builds upon the existing policy framework established in the Provincial Policy Statement. The Plan identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring in this landscape. The Plan includes lands within, and builds upon the ecological protections provided by, the Niagara Escarpment Plan (NEP) and complements and supports other provincial level initiatives such as the Parkway Belt West Plan. Approximately half of Conservation Halton's *watershed* is within the Greenbelt Plan and Niagara Escarpment Plan Areas. The Plan identifies the "Protected Countryside" which is further divided into the "Agricultural System", "Natural System" and "Settlement Areas". The "Natural System" consists of the "Natural Heritage System" and the "Water Resources System".

The "Natural Heritage System" includes the following key natural heritage features: significant habitat of endangered species, threatened species and special concern species; fish habitat; wetlands; Life Science Areas of Natural and Scientific Interest (ANSIs); significant valleylands; significant woodlands; significant wildlife habitat; sand barrens, savannahs and tallgrass prairie; and, alvars. The key hydrologic features within the "Water Resources System" include: permanent and intermittent streams; lakes (and their littoral zones); seepage areas and springs; and, wetlands. Many of the key features identified in the "Natural System" are either directly regulated by Conservation Halton (Ontario Regulation 162/06) or staff provide peer review comments with respect to the features to watershed municipalities and provincial partners (*Planning Act, Environmental Assessment Act, Niagara Escarpment Plan, Parkway Belt West Plan*).

The Greenbelt Plan must be read in conjunction with all other applicable land use planning policy, regulations and/or standards, as amended from time to time. Decisions made under the *Planning Act* or the *Condominium Act* must conform to the policies in the Greenbelt Plan. Specifically, Section 3.2.2.7 of the Greenbelt Plan states that, where regulations or standards of other agencies or levels of government exceed the standards related to key natural heritage features or key hydrologic features in the Greenbelt Plan, such as may occur with *hazardous lands* under section 28 of the *Conservation Authorities Act* or with fisheries under the Federal *Fisheries Act*, the most restrictive provision or standard applies.

When providing comments on applications to which the Greenbelt Act/Plan applies, Conservation Halton is required to be consistent with the Greenbelt Plan.

1.3.4 Watershed and Subwatershed Plans

Conservation Halton has been planning on a *watershed* basis for approximately 50 years and has adopted an ecosystem approach to land use planning. The primary boundary for this approach is based on the "*watershed*" as it is the primary pathway that integrates physical, chemical and biological processes of the ecosystem. Both the Provincial Policy Statement and the Greenbelt Plan recognize the "*watershed*" as the ecologically meaningful scale for planning. Conservation Halton is the lead agency in the development, administration and review of watershed studies and a key agency in the development, administration and review of subwatershed studies.

By implementing watershed planning, Conservation Halton obtains a broad understanding of the ecosystem function and status and can incorporate goals and management recommendations at an early stage in the land use planning process. Watershed Studies have been prepared for all of Conservation Halton's major *watercourses* and many of its minor *watercourses*.

Subwatershed planning is normally developed in conjunction with the secondary planning stage. Subwatershed planning is similar to the watershed planning process however, it is done at a greater level of detail for a smaller area. The same ecosystem approach is followed in implementing the goals and recommendations of the subwatershed plan. Subwatershed planning is normally developed in support of an urban boundary expansion, a secondary plan or community planning and will provide the details necessary for determining the extent of boundary expansion, the location and sizing of stormwater management facilities and the development of priorities for environmental protection areas.

Conservation Halton has been very pro-active in the watershed planning and subwatershed planning process however, it is acknowledged that the watershed/subwatershed plan is not a static process. Areas that are developing where a watershed/subwatershed plan has been undertaken will need to be monitored to determine if the goals and objectives of the plan are being met. Once these evaluations are determined, the plans should be reviewed and updated. Through the plan input process, staff will recommend that watershed and subwatershed studies be reviewed every five years to ensure they are up to date with changing policies and legislation. It is important to note that policy and legislation affecting recommendations within a watershed or subwatershed study may change prior to the five-year review of the document. For studies to be valid for application to a specific development an update may be required to reflect current policy and/or legislation.

Subwatershed studies are typically prepared to address the protection and management of aquatic, terrestrial, surface water and ground water resources in urbanizing areas. Significant time, effort and commitments go into the preparation of these studies. Where Conservation Halton has endorsed a subwatershed study for a new urban area, Conservation Halton will respect the commitments made within these studies regarding natural hazards and natural heritage. Notwithstanding this statement, in order to fulfill Conservation Halton's mandate to protect public health and safety, if new natural hazard areas are identified, they will need to be incorporated into the constraint areas associated with the subwatershed area.

In some instances, depending upon the size of the area covered by the subwatershed study, it can take up to 20 years to fully develop the urban area. Substantial policy changes at both Provincial and local levels can take place within that time period. One of the objectives of subwatershed studies is to integrate adaptive management whereby the recommendations are evaluated as to their effectiveness and changes are made where warranted. Similarly, if policy changes on the basis of better scientific information, staff recommend that it is reasonable to incorporate these changes into updates of the plans with the full participation of the stakeholders involved in the original subwatershed study including the affected landowners.

1.3.5 The Environmental Assessment Act

The purpose of the *Environmental Assessment Act* is "the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment". Within the Act, the term "environment" includes:

- a) air, land or water;
- b) plant and animal life, including human life;
- c) the social, economic and cultural conditions that influence the life of humans or a community;
- d) any building, structure, machine or other device or thing made by humans;
- e) any solid, liquid, gas, odour, heat, vibration or radiation resulting directly or indirectly from human activities; or
- f) any part or combination of the foregoing and the interrelationships between any two or more of them.

Staff of Conservation Halton generally focus on items (a) and (b) when reviewing Individual and Class Environmental Assessments prepared by provincial and municipal agencies pursuant to the *Environmental Assessment Act*. Review and comments are based on the policies set out

in this document, the *Environmental Assessment Act*, the Provincial Policy Statement and the Greenbelt Plan.

1.3.6 The Niagara Escarpment Planning and Development Act/Niagara Escarpment Plan

The purpose of the Niagara Escarpment Plan is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment. Staff of Conservation Halton review proposed amendments to the Niagara Escarpment Plan as well as Development Permit applications. Review and comments are based on the policies set out in this document, the Niagara Escarpment Plan, the Provincial Policy Statement and the Greenbelt Plan.

1.3.7 The Parkway Belt Planning and Development Act/Parkway Belt West Plan

The Parkway Belt West Plan was implemented for the purpose of creating a multi-purpose utility corridor, urban separator and linked open space system. Staff of Conservation Halton review proposed amendments to the Parkway Belt West Plan as well as zoning orders. Review and comments are based on the policies set out in this document, the Parkway Belt West Plan, the Provincial Policy Statement and the Greenbelt Plan.

1.3.8 Hamilton Harbour Remedial Action Plan

The Hamilton Harbour Remedial Action Plan is a detailed strategy to improve the quality of Hamilton Harbour. It includes actions related to:

- remediating toxic contaminants in the water and sediment harmful to living things;
- reducing nutrients and bacteria from sewers, wastewater treatment plants and streams flowing into the Harbour;
- urbanization and land management;
- creating and enhancing habitat for fish and wildlife; and,
- increasing access for recreational activities in water and along the shoreline.

Conservation Halton staff provide plan input and review comments as they pertain to the implementation recommendations within the Remedial Action Plan, for those plans and applications that are within the Hamilton Harbour watershed. The most current plan is titled *Remedial Action Plan for Hamilton Harbour – Stage 2 Update 2002*.

Section 2

Policies for the Administration of Ontario Regulation 162/06

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

Policies for the Administration of Ontario Regulation 162/06

The following are the policies of Conservation Halton used in the administration of Ontario Regulation 162/06. They apply to all *watercourses, valleylands, hazardous lands, wetlands*, the shoreline of Lake Ontario and Hamilton Harbour, and lands adjacent to each of these features/functions, within Conservation Halton's *watershed*. The policies **are considered in their entirety** when determining if permission requested should be approved, approved with conditions or denied.

GUIDING POLICIES

2.1 Watercourses, Valleylands, Hazardous Lands, Wetlands and Shorelines

Except where allowed under Policies 2.4 – 2.50 (inclusive), *development* is prohibited within a *watercourse, valleyland, hazardous lands, wetland* and lands adjacent or close to the shoreline of the *Great Lakes – St. Lawrence River System* or to inland lakes that may be affected by *flooding, erosion or dynamic beaches*.

2.2 Lands Adjacent to Watercourses, Valleylands, Hazardous Lands, Wetlands and Shorelines

Except where allowed under Policies 2.4 - 2.50, *development* is prohibited:

- (a) within 15 metres of the *stable top of bank* of a *major valley system* and 7.5 metres of the *stable top of bank* of a *minor valley system*, where a valley is apparent;
- (b) within 15 metres from the greater of the limit of the *flood plain* or the predicted *meander belt* width of a *watercourse* associated with a *major valley system* and within 7.5 metres from the greater of the limit of the *flood plain* or the predicted *meander belt* width of a *watercourse* associated with a *minor valley system*, where a valley is not apparent;
- (c) within 120 metres of a Provincially Significant Wetland and all *wetlands* greater than or equal to 2 hectares in size;
- (d) within 30 metres of *wetlands* less than 2 hectares in size;
- (e) within 5 metres of the furthest landward extent of the aggregate of the *flooding, erosion and dynamic beach hazards* along the Lake Ontario and Hamilton Harbour shorelines; and,
- (f) *hazardous lands*.

Refer to Section 6, Appendices 1-9 for figures that illustrate the *stable top of bank, flood plain, meander belt* widths and shoreline hazards.

2.3 One Zone Concept

Except as outlined in Policies 2.32 – 2.33 Conservation Halton utilizes the *One Zone Concept* for *flood plain* management wherein the entire *flood plain* is considered the *floodway*.

GENERAL POLICIES

Policies 2.4 to 2.18 are general policies. All works permitted under the Specific Policies 2.19 – 2.50 must also meet the requirements of the general policies unless specifically exempted.

2.4 Slopes and Slope Stability

Works allowed under Policies 2.19 - 2.22, 2.24, 2.25, 2.27, 2.30-2.33, 2.37, 2.47 -2.50 are permitted to occur within a *valley* (as long as other General Policies are met) unless stated otherwise within the relevant policy or policies. All other works must be located outside of a valley as per Policies 2.1, 2.2, 2.35 and 2.36.

Within Conservation Halton's *watershed* there are three *major valley systems* (Bronte, Grindstone and Sixteen Mile Creeks and all of their tributaries). Ontario Regulation 162/06 allows Conservation Halton to regulate up to 15 metres adjacent to the *stable top of bank* of valley features. For the three *major valley systems*, including all of the associated tributaries, Conservation Halton will utilize a 15-metre allowance adjacent to the *stable top of bank*.

Conservation Halton's *watershed* also has numerous *minor valley systems* including, but not limited to, Falcon, Indian, Hager, Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Fourteen Mile, McCraney, Morrison, Wedgewood and Joshua's Creeks. For the *minor valley systems*, including all associated tributaries, Conservation Halton will utilize a 7.5 metre allowance adjacent to the *stable top of bank*.

References to "major" or "minor" *watercourses/valley systems* throughout this document relate to this classification.

2.4.1 Physical Top of Bank (Valleylands and Shoreline)

2.4.1.1 Valleylands

The physical (or geographical) *top-of bank* of valley features greater than or equal to 2 metres in height, will be established in the field in conjunction with Conservation Halton staff, staff from the local municipality (if necessary) and the applicant. If the applicant is other than the landowner, permission must be received from the landowner prior to staking *top of bank*. The *top of bank*, as staked in the field, will represent the limit of the physical *top of bank*. When staking the limit of the physical *top of bank*, staff of Conservation Halton will require that the applicant's surveyor be in attendance during the site walk.

The physical *top of bank* and the *stable top of bank* may be coincident. However, in some cases, due to specific on-site conditions (such as slope inclination, proximity of the *watercourse* to the *toe of slope*, soil conditions, erosion, etc.) the *stable top of bank* may not be located at the physical *top of bank* but rather may be located landward from the physical *top of bank*. Policy 2.4.2.1 details the requirements for identifying the *stable top of bank*.

2.4.1.2 Shorelines

The physical (or geographical) *top-of bank* of shorelines is to be established in the field in conjunction with Conservation Halton staff, staff from the local municipality (if necessary) and the applicant. When staking the physical *top of bank*, the first lakeward break in the slope will determine the physical *top of bank*. If the applicant is other than the landowner, permission must be received from the landowner prior to staking *top of bank*. The *top of bank*, as staked in the field, will represent the limit of the physical *top of bank*. When staking the limit of the physical *top of bank*, staff of Conservation Halton will require that the applicant's surveyor be in attendance during the site walk.

The physical *top of bank* and the *stable top of bank* may be coincident. However, in some cases, due to specific on-site conditions (such as slope inclination, proximity of the lake to the *toe of slope*, wave action, soil conditions, erosion, etc.) the *stable top of bank* may not be located at the physical *top of bank* but rather may be located landward from the physical *top of bank*. Policy 2.4.2.2 details the requirements for identifying the *stable top of bank*.

2.4.2 Stable Top of Bank (Valleylands and Shoreline)

2.4.2.1 Valleylands

The *stable top of bank* is to be established by a professional, geotechnical engineer utilizing the guidelines and manuals outlined in Section 5, to the satisfaction of Conservation Halton staff. Where no geotechnical assessment has been undertaken, a minimum 8 to 15 metre toe erosion allowance (depending on soil type) and 3:1 stable slope allowance will be utilized. In addition to the requirements outlined in Section 5, the geotechnical assessment must take into consideration, and make recommendations pertaining to: construction equipment/access; limit of work area; vegetation protection; sediment and erosion controls; drainage; etc.

2.4.2.2 Shoreline

The *stable top of bank* along the shoreline is based on 3:1 slopes. In cases where the slope of the existing bank has an inclination steeper than 3:1 (horizontal to vertical), the *stable top of bank* may be established by a professional, geotechnical engineer utilizing the guidelines and manuals outlined in Section 5, to the satisfaction of Conservation Halton staff. The geotechnical assessment must take into consideration, and make recommendations pertaining to: construction equipment/access; limit of work area, vegetation protection; sediment and erosion controls; drainage; etc.

See Appendices 1 a) – e), 2, 3, and 4 for illustrations of Slope Stability and Erosion Hazard Limits.

2.4.3 Toe of Slope Setbacks

Any *development* permitted in accordance with Policies 2.19 – 2.50 (excluding Policies 2.35 – 2.37) will generally maintain a minimum setback of 15 metres from the toe of any *major valley* slope and 7.5 metres from the toe of any *minor valley* slope. Additional setbacks may be applied if required to address geotechnical concerns. Stable slope analyses (geotechnical assessments) must be undertaken by a qualified professional geotechnical engineer in accordance with the provincial guidelines referenced in Section 4.

2.5 Stream Erosion and Channel Migration

The stream banks of *watercourses* constantly change and meander. To ensure any *development* is not placed in harm's way and to ensure that the flow of water and its associated natural processes, including erosion, are maintained, *development* should be located outside of the maximum extent that a water channel migrates.

2.5.1 Unconfined Systems

For *unconfined systems*, any works being proposed within the *flood plain* or the setback from the *flood plain* and permitted under Policies 2.22, 2.24, 2.25 and 2.27 must also be reviewed under the *meander belt allowance* Policies 2.23, 2.24, 2.26 and 2.28.

In areas of legally existing development, in existence prior to April 27, 2006, where the meander belt encompasses existing buildings and structures, applications may be evaluated to ensure that any new *development* is not within the erosion hazard, based on the actual channel location and the anticipated movement of the channel due to long term erosion, rather than strict application of the meander belt criteria.

2.5.2 Confined Systems

Works proposed within *confined systems* and permitted in accordance with Policies 2.22, 2.24, 2.25 and 2.27, will be reviewed with consideration of the following with respect to stream erosion (unless specifically exempted within a policy):

- a) All **building or structural development** must be located outside of the area susceptible to stream meandering over a 100 year planning horizon as established by the Ministry of Natural Resources and Forestry technical guidelines (see Section 5.1) and a 6 metre erosion access allowance with the exception of:
 - Buildings and structures located within an area susceptible to stream meandering or the 6 metre erosion access allowance, other than those destroyed by erosion, will be permitted to be replaced or relocated within area susceptible to stream meandering provided the buildings or structures are of the same size and use, contain the same number of *dwelling units* and where the works will not increase the risk to life or damage to properties as a result of erosion. In cases where the building or structure can be reasonably relocated outside of an area susceptible to stream meandering and the erosion access allowance the applicant will be encouraged to do so.
- b) All **other development** will be evaluated with respect to the potential for stream erosion to affect the proposed works and with respect to the potential for the proposed works to have *negative impacts* on bank erosion and other natural stream processes (see Section 4). All *erosion hazards* associated with stream erosion must be safely addressed.

2.6 Riparian Buffers and Fish Habitat

Fish habitat, as defined in the *Fisheries Act*, means the spawning grounds and nursery, rearing, food supply, and migration areas on which *fish* depend directly or indirectly in order to carry out their life processes. *Fish habitat* is comprised of those physical, chemical and biological attributes of the environment, which are required by *fish* to carry out their life processes (e.g., spawning, nursery, rearing, feeding, overwintering, migration). It consists of those environments that directly or indirectly support *fish* stocks or *fish* populations that sustain, or have the potential to sustain, subsistence, commercial or recreational fishing activities. These guidelines can be applied to habitat, which although not directly supporting *fish*, provides nutrients and/or food supply to adjacent or downstream habitat or contribute to water quality for *fish*. Changes to riparian vegetation can alter *watercourse* temperatures. The introduction of sediment, pesticides or other deleterious substances degrades water quality. A vegetated buffer adjacent to watercourses can assist in removing some of these substances prior to entering

the *watercourse*. *Fish* require adequate substrate and water quality for successful reproduction. The provision of adequate vegetated buffers is essential to the maintenance and enhancement of *fish habitat*.

2.6.1 Any *development*, permitted in accordance with Policies 2.4 – 2.50, with the exception of *watercourse* alterations, will maintain a minimum setback of 30 metres from the bankfull channel of any *coldwater/coolwater watercourse* and *warmwater sportfish watercourse* and 15 metres from the bankfull channel of any *warmwater baitfish watercourse*. In addition to the setback, an additional allowance may be required from the long-term migration of the *watercourse* (i.e., erosion or *meander belt allowance*) further to Policy 2.5.

2.6.2 Exceptions to Policy 2.6.1 may be considered on a site-specific basis in areas of existing *development*, where the works will not encroach into the setback any further than the existing building/structure and where no other reasonable alternative exists.

2.6.3 Additional setbacks may be required as per Ontario Ministry of Natural Resources and Forestry and Fisheries and Oceans Canada guidelines, the Greenbelt Plan and/or when *endangered, threatened* or *special concern species* habitat is involved.

2.7 Limit of Wetland

The *wetland* limit is to be established in the field in conjunction with Conservation Halton staff, staff from the local municipality (if necessary) and the applicant. If the applicant is other than the landowner, permission must be received from the landowner prior to staking the *wetland*. When staking the limit of the *wetland*, staff of Conservation Halton will require that the applicant's surveyor be in attendance during the site walk.

2.8 Limit of Flood Plain

Flood plain mapping (possibly including modeling) and/or an elevation survey may need to be prepared by the applicant to verify the limit of the *flooding hazard* for any application in proximity to the *flood plain* or shoreline.

2.9 Timing

Any *development* permitted in accordance with Policies 2.4 - 2.50 may be required to adhere to strict timelines in order to ensure the work takes place at the appropriate time of year relative to instream fisheries windows, growing seasons to achieve vegetative cover, migration and nesting, etc. Fisheries timing windows are dictated by the respective Ministry of Natural Resources and Forestry districts.

2.10 Conservation of Land and Pollution

Where *development* is proposed within an area regulated pursuant to Ontario Regulation 162/06, it will be assessed based on whether the *development* will affect the conservation of land and/or *pollution*. Applications will be assessed to ensure no *adverse environmental impacts* to existing natural features and/or *ecological functions* as a result of the proposed *development*. A net environmental benefit will be encouraged. In addition, applications will be reviewed to determine whether there is any potential for a deleterious physical substance or other contaminant to be generated by the *development*.

2.11 Vegetation Protection Zone

Conservation Halton endeavours to set back *development* from natural features and *hazardous lands* such as *watercourses*, *valleylands*, *wetlands*, shorelines, etc. Ideally a vegetation protection zone should be established within these setbacks. It is intended that the vegetation protection zone should utilize vegetation native to the *watershed* and be established to achieve and be maintained as natural *self-sustaining vegetation*, wherever possible. Invasive species will not be permitted on any plans. In some cases, (i.e., Greenbelt Plan Area) vegetation protection zones are required as per the policies of that Plan.

While the establishment of natural *self-sustaining vegetation* is preferred, it is not required, if the land is, and will continue to be, used for agricultural purposes.

2.12 Ice Damage Potential

All applications located in known areas of ice related hazards will be reviewed with respect to ice hazards such as ice piling and jamming.

2.13 Construction Access and Site Controls

Any application for *development*, permitted in accordance with Policies 2.4 – 2.50, must demonstrate that access to the work area and completion of the works can be carried out in an acceptable manner (see Section 4). Consideration must be given to the impacts on flooding, erosion, valley slope and channel stability, water quality, and natural environment (including, but not limited to, *wildlife habitat* and *ecological functions*). Information required for review and approval includes, but is not limited to: limit of work area delineation; sediment and erosion controls; deleterious substances; tree protection; staging/phasing, etc.

2.14 Fencing

Fencing is normally considered exempt from permission required under Ontario Regulation 162/06, however, Conservation Halton generally discourages fencing in natural hazard and natural heritage areas. Where fencing is necessary, such as

agricultural fields, it must be constructed in such a fashion that it does not impede conveyance of flow of *watercourses* and does not require the use of fill within the *flood plain* and *wetlands*.

There may be instances where a Permit may be required, for example, if a fence is proposed to cross a *watercourse* or forms a solid barrier that would impede conveyance of flood flows. Fencing may be permitted in *wetlands* provided no fill placement/removal is required. Staff will work with the applicant to review other options in order to avoid fencing within the *wetland* such as fencing the perimeter of the *wetland*. The placement of fill or changing of grades within a regulated area would be subject to formal approval under Ontario Regulation 162/06 as per other policies in this document.

2.15 On-Title Agreements

The owner may be required to enter into an *on-title agreement* with The Halton Region Conservation Authority as a condition of approval for the: 1) reconstruction, relocation, replacement or additions to habitable or commercial buildings or structures with a foundation greater than 20 square metres or, 2) reconstruction, relocation, replacement or additions to agricultural buildings or structures with a foundation greater than 40 square metres, or 3) non- habitable buildings or structures that have a potential for conversion to habitable space, where:

- a) the depth of flooding is greater than one (1) metre and velocities are more than one metre per second (1 m/s) under *regulatory storm* conditions, or
- b) the building or structure is located entirely within the erosion hazard (e.g. meander belt, or on a valley wall), or
- c) the building or structure is located within the 40-year erosion hazard of Lake Ontario/Hamilton shoreline.

Within the *on-title agreement* the owner will:

- acknowledge the structure is susceptible to flooding and/or erosion,
- notify future landowners and tenants of this fact,
- acknowledge any restriction limiting further *development*, and
- save harmless the Authority from any future liability or claim for damages resulting from flooding and/or erosion.

This agreement will remain on-title in perpetuity and cannot be removed by current or subsequent landowners.

2.16 As-Built Drawings

As required, staff may request the submission of as-built drawings to ensure buildings and/or structures are constructed as per the Permit approvals. The drawings will be prepared by a qualified professional and may include the need for elevation surveys.

2.17 Shoreline

Conservation Halton's waterfront jurisdiction includes shorelines associated with Lake Ontario and Hamilton Harbour/Burlington Bay. The general shoreline policies within this document restrict *development* with the shoreline *hazardous lands* that are impacted by *flooding, erosion* and *dynamic beach hazards* (except as permitted in accordance with Policies 2.42-2.46). The basis objectives of the shoreline policies are to minimize risk to life, property damage, social disruption and *adverse environmental impacts*.

2.18 Agriculture

Normal farming practices that do not include structures, require a building permit and/or *Planning Act*/Niagara Escarpment Plan approvals do not require a Permit or a Clearance Letter from Conservation Halton within 120 metres of a Provincially Significant Wetland or wetland greater than or equal to 2 hectares in size, within 30 metres of wetlands less than 2 hectares in size, within 15 metres of the hazard limit associated with *major valley systems*, and within 7.5 metres of the hazard limit associated with *minor valley systems*, provided the practices do not involve an alteration to a watercourse or grade changes within the regulatory flood plain or wetlands.

SPECIFIC POLICIES

Unless specifically exempted within the policy, all works permitted under Policies 2.19 - 2.50 must also meet the requirements of the General Policies. Works permitted under the Watercourses, Flood Plains and Meander Belts, must also be assessed under the Shoreline and Wetland Policies (and vice versa). Works required to be located outside of a *confined system* must meet the Valleylands Policies. Works permitted under Public Infrastructure and Recreational Uses Policies are not subject to the other Specific Policies unless specifically stated. Unless indicated otherwise a Permit is required for all works outlined in Policies 2.19 – 2.50.

WATERCOURSES, FLOOD PLAINS AND MEANDER BELTS

2.19 Alteration to Watercourses and Flood Plains

- 2.19.1** Major *flood plain alterations* (including placement of fill to create, or enlarge, a building lot) and major *watercourse* alterations (including enclosures and diversions from one *watershed* to another) are generally not permitted. Such alterations may be considered where justification is provided through a subwatershed study, an Environmental Assessment or similar *comprehensive study* and are subject to conformity with municipal planning documents. The applicable study or assessment must be current (generally within 5 years) and must be supported by Conservation Halton.
- 2.19.2** *Flood plain* and *watercourse* alterations, that are minor in nature or have been justified under Policy 2.19.1 will be evaluated on an individual basis having consideration for the following:
- a) Maintenance of the natural topography of the *watercourse* system, flood conveyance (no increase in off-site flood elevations and on-site increases will only be permitted where it has been shown that it will not result in an increased risk to life or property) and flood storage (maintenance of *stage-storage-discharge* relationships for a range of rainfall conditions);
 - b) No adverse impacts on fluvial processes (including the 1:100-year meander belt width);
 - c) No adverse impacts on groundwater recharge/discharge;
 - d) Geotechnical (i.e. slope stability) issues are adequately addressed; and,
 - e) Implementation of recommendations within Conservation Halton approved *watershed* or subwatershed studies or Environmental Assessment.
- 2.19.3** Any *watercourse* alterations will be required to use natural channel design, to the maximum extent possible (see Section 4).

2.20 Private Access Roads – Watercourse and Flood Plain Crossings

Where no reasonable alternative exists, a crossing of the *flood plain, meander belt allowance* and/or a *watercourse* may be considered for approval provided the crossing is designed to provide safe *access and egress* under *regulatory storm* conditions and to meet all requirements under Policy 2.19. In addition:

- a) If the subject crossing is the only entrance/exit to a new residential, industrial or commercial operation, it must be shown, by a professional engineer, that full *access and egress* is available under *regulatory storm* conditions and that the crossing is designed to withstand the flood levels, velocities and pressures associated with the *regulatory storm* event;
- b) Dry or flood free access should be provided for all new buildings housing essential services such as police, fire and ambulance and for new institutional buildings servicing the sick, the elderly, the disabled or the young;
- c) Where an existing crossing to a residential dwelling, industrial, institutional or commercial operation is proposed for replacement, Conservation Halton staff will endeavour to have the crossing upgraded to provide full *access and egress* under *regulatory storm* conditions.

For all applications, the cumulative impacts of multiple crossings on the subject reach of *watercourse* will be taken into consideration.

2.21 Water-taking Structures

A water-taking structure may be approved where:

- a) It is designed to prevent adverse impacts to *fish* and *fish habitat*;
- b) It is designed to ensure applicable in-stream flow thresholds are maintained and the rate of diversion is controlled to within approved limits. In addition to ensuring minimum flows are protected, consideration should be given to other higher flow requirements. Considerations should be given to site specific conditions, fish species, maintaining channel defining flows, fluvial characteristics of the *watercourse* and other factors as deemed necessary;
- c) Consideration and respect have been given to the *riparian rights* of downstream water users;
- d) The operational plan meets the requirements of the Ontario Ministry of Environment, Conservation and Parks under the *Ontario Water Resources Act*; and,
- e) A monitoring program is developed to confirm that the structure performs as per designed.

2.22 Existing Flood Plain Development

2.22.1 Replacement/Relocations of Buildings and Structures

Buildings and structures located within the *flood plain*, other than those destroyed by flooding, will be permitted to be *replaced* or relocated within the *flood plain* provided the buildings or structures are of the same size and use, contain the same number of *dwelling units* and where the works will not increase the risk to life or damage to *flood plain* properties as a result of flooding. *Floodproofing* will be required to the extent possible and in cases where the building or structure can be reasonably relocated outside of the *flood plain* (and applicable setbacks) the applicant will be encouraged to do so.

Additions proposed in conjunction with a replacement or relocation of a building or structure will be considered in accordance with Policy 2.22.2.

2.22.2 Minor Additions (Legally Established Year-Round Uses Only)

2.22.2.1 Where the depth of flooding is less than one (1) metre and velocities are less than one metre per second (1 m/s) under *regulatory storm* conditions, an application may be considered for approval to construct *minor additions* to existing buildings provided it can be shown that no site can be reasonably utilized for the proposed works outside of the *flood plain*, there will be no interference with flood conveyance on upstream or adjacent properties as a result of the works, and where such works are proposed to be *floodproofed* to *regulatory storm* flows .

2.22.2.2 Where the depth of flooding is greater than one (1) metre and velocities are less than one metre per second (1 m/s) under *regulatory storm* conditions, an application may be considered for approval to construct an addition with an area of less than ten (10) square metres to an existing building provided it can be shown that no site can be reasonably utilized for the proposed works outside of the *flood plain*, there will be no interference with flood conveyance on upstream or adjacent properties as a result of the works, and where such works are proposed to be *floodproofed* to the extent possible.

2.23 Unconfined Systems - Existing Meander Belt Development

Buildings and structures located within the *meander belt allowance*, other than those destroyed by erosion, will be permitted to be *replaced* or relocated within the *meander belt allowance* provided the buildings or structures are of the same size and use, contain the same number of *dwelling units* and where the works will not increase the risk to life or damage to properties as a result of erosion. In cases where the building or structure can be reasonably relocated outside of the *meander belt allowance* and preferably outside of the *erosion hazard limit* the applicant will be encouraged to do so.

2.24 New Flood Plain and Meander Belt Development

2.24.1 Decks, Sheds, Gazebos and Similar Non- Habitable Accessory Structures

Decks, sheds, gazebos and other similar non-habitable accessory structures, may be permitted in the *flood plain* or *meander belt allowance* or, in the case of *confined systems*, within the area susceptible to stream meandering over a 100-year planning horizon, provided:

- a) An alternative site is not available outside the *flood plain* or the *meander belt allowance* or, in the case of *confined systems*, within the area susceptible to stream meandering over a 100-year planning horizon;
- b) In general, 20 square metres or smaller in size;
- c) There will be no interference with flood conveyance on upstream or adjacent properties;
- d) The structures are securely anchored such that they will not become an obstruction at downstream culverts during a flood event; and,
- e) If the structures are proposed within the *meander belt allowance* or, in the case of *confined systems*, within the area susceptible to stream meandering over a 100-year planning horizon, the structures:
 - Do not require a building permit from the municipality;
 - Are under 20 square metres in size;
 - Are located a minimum of 7.5 metres away from the edge of the bankfull channel. An additional setback may be required where warranted by erosion concerns; and,
 - By their construction type and material, are movable in the event that relocation is required.

For all applications, the cumulative impacts of multiple accessory structures on the subject property will be taken into consideration.

Generally, non-habitable accessory structures under 10 square metres in size, that do not require a building permit from the municipality, will not require a Permit and Conservation Halton will issue a clearance letter for approvals.

2.24.2 Swimming Pools

Above and below ground swimming pools will only be considered within the *flood plain* where an alternative site outside of the *flood plain* is not available and where it is not within a confined valley in a natural state. Pools are not permitted within the *meander belt allowance* or the 6-metre erosion access allowance. There must be no loss of flood storage or flood conveyance due to the pool's construction, fencing or associated grading. Electrical facilities must be *dry floodproofed*. An assessment of potential hydrostatic pressures under both normal and *regulatory storm* conditions may be required for below ground pools. It must be shown that on-going maintenance of the pool can be achieved without any *adverse environmental impacts*.

2.24.3 Agriculture

2.24.3.1 The use of the *flood plain* or *meander belt allowance* for existing ongoing cropland, livestock feeding and grazing, orchards, and nurseries and associated activities such as plowing and fencing are not considered *development*, provided the use/activity does not represent fill placement.

2.24.3.2 The construction of farm buildings and structures (excluding residences, commercial greenhouse operations and large-scale enclosed equestrian or livestock facilities) may be considered within the *flood plain*, where:

- a) It is not located within a confined valley in a natural state;
- b) It is not located within the *meander belt allowance* and 6 metre access allowance of an *unconfined system*;
- c) No site can be reasonably utilized for the proposed works outside of the *flood plain*; and,
- d) The structures and buildings will be *wet floodproofed*.

2.24.3.3 *Development* to improve water quality as part of farm management enhancements will be considered favorably provided a net benefit to the environment would result.

2.24.4 Parking Lots

Parking lots will be considered within the *flood plain* in cases where the *flood plain* is not within a confined valley or in areas of existing *development* within the valley with acceptable access to the site. Parking lots must be:

- a) Located outside of the *100-year flood plain*,
- b) Located outside of the *meander belt allowance* for *unconfined systems*,
- c) Where the parking lot is being considered in a *confined system* as part of existing *development*, it must be located outside of the area susceptible to stream meandering over a 100-year planning horizon for *confined systems* but is exempt from the 6-metre access allowance required under Policy 2.5.2
- d) Designed to account for *access and egress* under *regulatory storm* conditions; and,
- e) Designed to maintain the *stage-storage-discharge* relationship for a range of rainfall events.

2.24.5 Stormwater Management Facilities

End-of-pipe stormwater management (SWM) facilities, such as ponds and wetlands, should normally be located outside of the *Regional Storm flood plain*.

2.24.5.1 A stormwater management facility may be permitted within the *Regional Storm flood plain* if there is sufficient technical justification and it meets the following requirements:

- a) The facility will not be located within a confined valley;
- b) The facility will be located outside of the *1:100-year flood plain*;
- c) The facility will be located outside of the *1:100-year meander belt allowance* and a 6-metre erosion access allowance;
- d) There will be no loss of *flood plain* storage or conveyance, achieved by the removal of fill from the *flood plain* or through an incremental balanced cut and fill analysis. Flood storage provided by the facility itself is excluded from the *flood plain* storage; and,
- e) All other recommended Ministry of Environment, Conservation and Parks guidelines (see Section 4).

2.24.5.2 On-line stormwater management facilities will only be considered in the context of an existing Conservation Halton approved subwatershed plan (approved after May 2001) and

will only be considered where:

- a) The facility will not be located within a confined valley;
- b) No *fish habitat* exists at the site or upstream and there will be no detrimental impacts on downstream *fish habitat*;
- c) No *negative impacts* on water quality, including thermal *pollution*, will result from the works;
- d) All other recommended Ministry of Environment, Conservation and Parks guidelines (see Section 5);
- e) No *negative impacts* on upstream and downstream morphology will result from the works; and,
- f) Fisheries and Oceans Canada and the Ministry of Natural Resources and Forestry would have no objections to an on-line facility pursuant to the *Fisheries Act* and the *Lakes and Rivers Improvement Act*.

Subwatershed studies approved prior to May 2001 may require review/revision as per Section 1.3.4 of this document.

2.24.6 Ponds

2.24.6.1 Ponds will not be permitted on-line on a *watercourse*.

2.24.6.2 Dugout Ponds and Off-Line Bypass Ponds may be permitted within the *flood plain* if it can be shown that the following general and type specific criteria/requirements can be satisfied:

- a) All fill, including dredged material, is removed from the *flood plain*;
- b) No *negative impacts* on water quality, including thermal *pollution*, will result from the works;
- c) The pond will not affect the fluvial processes in the *flood plain*;
- d) The pond will not affect downstream wetlands;
- e) The pond is designed with appropriate side slopes for stability and safety purposes; and,
- f) For off-line bypass ponds, the water intake is designed in accordance with Policy 2.21.

2.24.6.3 The conversion of on-line ponds to off-line ponds is encouraged by Conservation Halton because generally there is a net benefit to the environment (i.e. reduction in

sedimentation rates, removal of fish barriers, reduction in stream temperatures, etc.).

Refer to Appendix 9 for a diagram illustrating Types of Ponds.

2.25 All Major Valley Systems – Development within 15 metres of Flood Plain

2.25.1 Existing Development Within 15 metres of Flood Plain

Where buildings and structures already exist within 15 metres of the *flood plain*, reconstruction, alteration or additions may be permitted subject to the following:

- a) The reconstruction, alteration or addition does not encroach any closer to the *flood plain* than the existing *development* at its closest point;
- b) Even if existing *development* is closer than 6 metres to the *flood plain*, no new *development* is permitted within 6 metres in order to provide for an access allowance as per the Provincial Policy Statement; and,
- c) In cases where the building or structure can be reasonably relocated outside of the *flooding hazard setback* the applicant will be encouraged to do so.

2.25.2 New Development Within 15 metres of Flood Plain

2.25.2.1 Where there is an existing lot of record and residential dwelling in existence prior to May 11, 2006, and where no land exists outside of the 15 metre area adjacent to the *flood plain*, decks, sheds and other non-habitable accessory structures that are less than 20 square metres in size may be permitted. Generally, non-habitable accessory structures under 10 square metres in size, that do not require a building permit from the municipality, will not require a Permit and Conservation Halton will issue a clearance letter for approvals.

2.25.2.2 Works that would be considered or permitted under Policies 2.24.2 to 2.24.6 would also be considered or permitted within 15 metres of the *flood plain*.

2.25.2.3 Non-structural *development*, such as grading works, may be permitted if all general policies have been met. Minor grading works may only require the issuance of a clearance letter but major grading works would require that a Permit be obtained.

2.25.2.4 Except as provided for in Policies 2.25.2.1 - 2.25.2.3, no new *development* is permitted within 15 metres of the *flood plain*.

2.26 Unconfined Major Valley Systems - Development within 15 metres of Meander Belt Allowance

2.26.1 Existing Development Within 15 Metres of Meander Belt Allowance

Where buildings and structures already exist within 15 metres of the *meander belt allowance*, reconstruction, alteration or additions may be permitted subject to the following:

- a) The reconstruction, alteration or addition does not encroach any closer to the *meander belt allowance* than the existing *development* at its closest point;
- b) Even if existing *development* is closer than 6 metres to the *meander belt allowance*, no new *development* is permitted within 6 metres in order to provide for an access allowance as per the Provincial Policy Statement; and,
- c) In cases where the building or structure can be reasonably relocated outside of the *erosion hazards limits* the applicant will be encouraged to do so.

2.26.2 New Development Within 15 metres of Meander Belt Allowance

2.26.2.1 Where there is an existing lot of record and residential dwelling in existence prior to May 11, 2006, and where no land exists outside of the 15 metre area adjacent to the *flood plain*, decks, sheds and other non-habitable accessory structures less than 20 square metres in size may be permitted between 6 and 15 metres from the *meander belt allowance*. Structures permitted within the *meander belt allowance* as per Policy 2.24.1 (e) may be permitted throughout the 15-metre allowance. Generally, non-habitable accessory structures under 10 square metres in size, that do not require a building permit from the municipality, will not require a Permit and Conservation Halton will issue a clearance letter for approvals.

2.26.2.2 Works that would be considered or permitted under Policies 2.24.2 to 2.24.6 would also be considered or permitted within 15 metres of the *meander belt allowance*.

2.26.2.3 Non-structural *development*, such as grading works, may be permitted if all general policies have been met. Minor grading works may only require the issuance of a clearance letter but

major grading works would require that a permit be obtained.

- 2.26.2.4** Except as provided for in Policies 2.26.2.1 - 2.26.2.3, no new *development* is permitted within 15 metres of the *meander belt allowance*.

2.27 Minor Valley Systems – Development within 7.5 metres of Flood Plain

2.27.1 Existing Development Within 7.5 metres of Flood Plain

Where buildings and structures already exist within 7.5 metres of the *flood plain*, reconstruction, alteration or additions may be permitted subject to the following:

- a) The reconstruction, alteration or addition does not encroach any closer to the *flood plain* than the existing *development* at its closest point;
- b) Even if existing *development* is closer than 6 metres to *flood plain*, no new *development* is permitted within 6 metres in order to provide for an access allowance as per the Provincial Policy Statement; and,
- c) In cases where the building or structure can be reasonably relocated outside of the *setback* the applicant will be encouraged to do so.

2.27.2 New Development Within 7.5 metres of Flood Plain

2.27.2.1 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 7.5 metre area adjacent to the *flood plain*, decks, sheds and other non-habitable accessory structures less than 20 square metres in size may be permitted. Generally, non-habitable accessory structures under 10 square metres in size, that do not require a building permit from the municipality, will not require a Permit and Conservation Halton will issue a clearance letter for approvals.

2.27.2.2 Works that would be considered or permitted under Policies 2.24.2 to 2.24.6 would also be considered or permitted within 7.5 metres of the *flood plain*.

2.27.2.3 Non-structural *development*, such as grading works, may be permitted if all general policies have been met. Minor grading works may only require the issuance of a clearance letter but major grading works would require that a permit be obtained.

2.27.2.4 Except as provided for in Policies 2.27.2.1 - 2.27.2.3, no new *development* is permitted within 7.5 metres of the *flood plain*.

2.28 Unconfined Minor Valley Systems - Development within 7.5 metres of Meander Belt Allowance

2.28.1 Existing Development Within 7.5 metres of Meander Belt Allowance

Where buildings and structures already exist within 7.5 metres of the *meander belt allowance*, reconstruction, alteration or additions may be permitted subject to the following:

- a) The reconstruction, alteration or addition does not encroach any closer to the *meander belt allowance* than the existing *development* at its closest point;
- b) Even if existing *development* is closer than 6 metres to the *meander belt allowance*, no new *development* is permitted within 6 metres in order to provide for an access allowance as per the Provincial Policy Statement; and,
- c) In cases where the building or structure can be reasonably relocated outside of the *erosion hazards limits* the applicant will be encouraged to do so.

2.28.2 New Development Within 7.5 metres of Meander Belt Allowance

2.28.2.1 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 7.5 metre area adjacent to the *meander belt allowance*, decks, sheds and other non-habitable accessory structures less than 20 square metres in size may be permitted between 6 and 7.5 metres from *meander belt allowance*. Structures permitted within the *meander belt allowance* as per Policy 2.24.1 (e) may be permitted throughout the 7.5 metre allowance. Generally, non-habitable accessory structures under 10 square metres in size, that do not require a building permit from the municipality, will not require a Permit and Conservation Halton will issue a clearance letter for approvals.

2.28.2.2 Works that would be considered or permitted under Policies 2.24.2 to 2.24.6 would also be considered or permitted within 7.5 metres of the *meander belt allowance*.

2.28.2.3 Non-structural *development*, such as grading works, may be permitted if all general policies have been met. Minor grading works may only require the issuance of a clearance letter but major grading works would require that a Permit be obtained.

2.28.2.4 Except as provided for in Policies 2.28.2.1 - 2.28.2.3, no new *development* is permitted within 7.5 metres of the *meander belt allowance*.

2.29 Spills

There are several areas within Conservation Halton's jurisdiction in which *flood plain* spills occur. Spill areas are locations where flood waters may leave the *flood plain* of a *watercourse* and "spill" into surrounding lands, rejoining the *watercourse* at a distance downstream or moving into another *watershed*. In the past, it was not possible to map and thus regulate spills because available technology could not accurately determine where the water would flow and at what speed and depth. With new tools and technologies, spill areas can be more accurately defined. Spills are considered flood hazards/hazard lands and permission is required to develop or redevelop in these areas.

2.29.1 *Development* and *redevelopment* in spill areas will be considered on a case-by-case basis. Permission may only be granted where the site is subject to low risk, and where appropriate, mitigation measures can be implemented to reduce potential impacts to the satisfaction of Conservation Halton (e.g., flood proofing).

2.30 Landscaping

Normally, a Permit is not required for the addition of top soil to lawns or the augmentation of soil mixtures for landscaping purposes, to a maximum thickness of 50 mm. Conservation Halton staff will issue a letter of clearance for such works provided it can reasonably be anticipated that the landscape works do not represent filling which would be subject to Ontario Regulation 162/06. The raising of grades to allow for changing the landscape characteristics of a property is considered *development* in the *flood plain* or *meander belt allowance*. This policy is not applicable to the placement of fill within a *wetland* for landscaping (or any other) purposes. No fill placement is permitted within a *wetland*.

Staff will review proposals for the addition of topsoil to lawns and/or the augmentation of soil mixtures for landscaping purposes in light of previous such works to ensure a cumulative impact to the *flood plain* or *meander belt allowance* does not occur.

2.31 Dredging of Ponds and Stormwater Management Facilities

2.31.1 The dredging of on-line ponds, including stormwater management facilities, is considered to be an alteration to a *watercourse* and will be reviewed under Policy 2.19.

2.31.2 The dredging of off-line ponds located within a regulated area, will typically require the proponent to obtain a permit from Conservation Halton. Straightforward applications to dredge off-line ponds and stormwater management facilities may be approved by a clearance letter.

Proposals to dredge off-line stormwater management facilities will likely be permitted provided it can be shown that all sediment dredged from the pond will be located outside of areas regulated by Conservation Halton.

Proposals to dredge off-line ponds, other than stormwater management facilities, will be considered for approval provided it is shown that all sediment dredged from the pond will be located outside of areas regulated by Conservation Halton or, alternatively, within regulated areas as may be permitted under Policies 2.4 – 2.50.

2.32 Site Specific Policy - Millgrove Flood Fringe

The culvert that conveys flows of Grindstone Creek beneath Highway No. 6 is not sufficient to pass *Regional Storm* flows. As a result, a backwater effect occurs which floods land that would not be flooded if the culvert constriction did not exist. Conservation Halton will continue to recommend to the Ministry of Transportation that the culvert size be upgraded to minimize flood susceptibility.

Within the Millgrove Settlement Area *development* on existing lots may be permitted within the *flood fringe* where the depth of flooding is less than one metre under *Regional Storm* conditions. The placement of fill to facilitate the creation of a new building lot is not permitted.

Flood storage volumes are required to be maintained in such a manner as to prevent the increase of flooding on adjacent lands.

Such residential or commercial *development* shall be *dry floodproofed* (non-habitable storage buildings and garages shall be *wet floodproofed*) to the *Regional Storm* elevation.

Refer to Appendix 7 for a diagram illustrating the Millgrove Flood Fringe.

2.33 Site Specific Policy – North Half of Lots 12 and 13, Concession IX (E.F.) and South Half of Lots 12 and 13, Concession X (E.F.), City of Hamilton

The culvert that conveys flows of Bronte Creek beneath Highway No. 6 is not sufficient to pass *Regional Storm* flows. As a result, a backwater effect occurs which floods land that would not be flooded if the culvert constriction did not exist. Conservation Halton will continue to recommend to the Ministry of Transportation that the culvert size be upgraded to minimize flood susceptibility.

Applications for *development* between the natural elevation of the *Regional Storm* (without Highway No. 6 constriction) and the elevation of the *Regional Storm* caused by the Highway No. 6 constriction in the north half of Lots 12 and 13, Concession IX (E.F.) and south half of Lots 12 and 13, Concession X (E.F.), City of Hamilton (formerly Town of Flamborough, Regional Municipality of Hamilton-Wentworth), are considered on the following basis:

- a) Flood storage volumes are maintained in such a manner as to prevent the increase of flooding on adjacent lands.
- b) Any residential, commercial or industrial building must be *dry floodproofed* to the elevation of the *Regional Storm* accounting for the Highway No. 6 culvert constrictions backwater effect.
- c) Any garage or storage buildings must be *wet floodproofed* to the elevation of the *Regional Storm* accounting for the Highway No. 6 culvert constriction backwater effect.
- d) *Access and egress* to residential, commercial and industrial buildings must be floodproofed to a depth of less than 0.4 metres of flooding under the *Regional Storm* accounting for the Highway No. 6 culvert constriction backwater effect.

2.34 Site Specific Policy - Hager and Rambo Creeks

Due to the diversion of upstream drainage, Conservation Halton considers drainage downstream of the Hager Rambo Diversion Channel in Burlington to be local drainage and not subject to Ontario Regulation 162/06. City of Burlington staff should be contacted for information relating to *development* in and adjacent to these features.⁵

⁵ The flood hazard in this area is currently being studied by the City of Burlington, in conjunction with Conservation Halton. Amendments to Conservation Halton's policies may be required to implement the findings of the study.

VALLEYLANDS

Slope failures can cause devastating damage to buildings, roadways and property. In many cases damage is exacerbated by human modification on or near the slope. Almost any modification increases the risk of slope movement. Slope failures can be triggered by atmospheric processes (heavy rainfall), geologic processes (earth tremors, freeze-thaw soil action), human modification or a combination of the above.

The policies that restrict *development* on the tablelands adjacent to the *top of bank* are in place in part to protect the valley slope vegetation and its root system from excavation and loading damage/destruction. The root system of the vegetation at the *top of bank* and along the valley walls helps to bind the soil particles and maintain bank stability. This in turn protects the landowner's property from the potential loss of tableland as a result of bank erosion. *Development* located at the *top of bank* can affect drainage patterns, which can result in an increase in soil erosion along the valley slopes. In addition, these policies provide for access to the bank for heavy machinery for construction (should erosion protection works be required in the future), maintenance and emergency access. The buffer/setback may also provide additional protection against unforeseen or unpredicted external conditions, which could have an adverse effect on the natural conditions or processes acting on or within an erosion prone area. One example of such an unpredicted external condition would be climate change.

Ideally the regulated tablelands adjacent to the *top of bank* should be left in a natural state (i.e., not manicured lawn) in order to allow for the natural succession of vegetation from the *valleylands* onto the tableland to provide a buffer to the *valleyland* vegetation and root system. The tableland adjacent to a *valley*, if left in a natural state, provides additional habitat, movement corridors and food sources for species that utilize the *valleylands* and provides some additional stormwater filtration prior to it entering the *valley* feature/*watercourse*.

2.35 Major Valley Systems - Development within 15 metres of Stable Top of Bank

- 2.35.1** Where there is a 7.5 metre publicly owned access adjacent to the *stable top of bank*, neither a Permit nor a clearance letter will be required from Conservation Halton, pursuant to Ontario Regulation 162/06, for any development between 7.5 metres and 15 metres of the *stable top of bank*.
- 2.35.2** Where buildings and structures already exist within 15 metres of the *stable top of bank* of *major valley systems*, and a 7.5 metre publicly owned access is not provided adjacent to the *stable top of bank* the following policies will apply:

2.35.2.1 Any replacement (same size and use) or additions, to the existing buildings and structures may be permitted subject to the following:

- a) the replacement or addition does not encroach any closer to the *stable top of bank* than the existing *development* at its closest point;
- b) even if existing *development* is closer than 6 metres to the *stable top of bank*, no new *development* is permitted within 6 metres of the *stable top of bank* in order to provide for an erosion access allowance as per the Provincial Policy Statement;
- c) a geotechnical assessment by a qualified engineer (at the expense of the applicant), may be required to determine the location of the *stable top of bank* and to determine if the proposed *development* would have a negative impact on slope stability. See Policy 2.4.2 and Section 4 for study requirements; and,
- d) In cases where the building or structure can be reasonably relocated outside of the setback the applicant will be encouraged to do so.

2.35.2.2 Pools, decks and non-habitable accessory structures may be permitted subject to:

- a) no reasonable alternative exists outside of the 15 metres from the *stable top of bank*;
- b) no *development* permitted within 6 metres of the *stable top of bank* in order to provide for an erosion access allowance as per the Provincial Policy Statement;
- c) a geotechnical assessment by a qualified engineer (at the expense of the applicant), may be required to determine the location of the *stable top of bank* and to determine if the proposed *development* would have a negative impact on slope stability. See Policy 2.4.2 and Section 4 for study requirements.

2.35.3 Except as provided for in Policies 2.35.1 and 2.35.2, no new *development* or *redevelopment* is permitted within 15 metres of the *stable top of bank* of *major valley features*.

2.36 Minor Valley Systems - Development within 7.5 metres of Stable Top of Bank

2.36.1 Where buildings and structures already exist within 7.5 metres of the *stable top of bank* of *minor valley systems*, any replacement (same size and use) or additions may be permitted subject to the following:

- a) the replacement or addition does not encroach any closer to the *stable top of bank* than the existing *development* at its closest point;
- b) even if existing *development* is closer than 6 metres to the *stable top of bank*, no new *development* is permitted within 6 metres of the *stable top of bank* in order to provide for an erosion access allowance as per the Provincial Policy Statement;
- c) a geotechnical assessment may be required (at the expense of the applicant, by a qualified geotechnical engineer) to determine the location of the *stable top of bank* and to determine if the proposed *development* will have a negative impact on slope stability. See Policy 2.4.2 and Section 4 for study requirements; and,
- d) In cases where the building or structure can be reasonably relocated outside of the setback the applicant will be encouraged to do so.

2.36.2 Where there is an existing lot of record and residential dwelling, in existence prior to May 11, 2006, and where no reasonable alternative exists outside of the 7.5 metre area adjacent to the *stable top of bank*, pools, decks and non-habitable accessory structures may be permitted within three (3) metres of the *stable top of bank*. A geotechnical assessment by a qualified engineer (at the expense of the applicant) may be required to determine the location of the *stable top of bank* and to determine if the proposed *development* will have a negative impact on slope stability. See Policy 2.4.2 and Section 4 for study requirements.

2.36.3 Except as provided for in Policies 2.36.1 - 2.36.2, no new *development* or *redevelopment* is permitted within 7.5 metres of the *stable top of bank* of *minor valley systems*.

2.37 Existing Valley Development

2.37.1 Where buildings or structures (including private access roads) already exist on a *valley* wall or in a valley, replacement may be permitted subject to the following criteria:

- a) Best efforts must be undertaken to relocate the existing building or structure outside of the *valley* and associated regulated tableland area;
- b) The buildings or structures are of the same size and use, and

- c) contain the same number of *dwelling units*;
- c) The buildings or structures are located no further into the *valley* or closer to a *watercourse* than the existing building or structure;
- d) If the building or structure is located within the regulatory *flood plain* or within 15 metres of the regulatory *flood plain*, Policies 2.22.1, 2.25.1, 2.27.1 will also apply; and,
- e) If the building or structure is located on a valley wall, a professional geotechnical engineer 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, (over a 100-year period), access issues and an assessment of the construction and construction technique on the valley wall. The study must be carried out, at a minimum, in accordance with the geotechnical documents referenced in Section 5. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life or property damage is anticipated.

2.37.2 Where an existing building or structure already exists on a *valley* wall or in a valley, additions to the existing building or structure, **that are minor in nature**, may be permitted subject to the following criteria:

- a) The addition extends no further into the valley or closer to a *watercourse* than the existing building or structure;
- b) There is no change in land use and no increase in the number of *dwelling units*;
- c) If the building or structure is located within the regulatory *flood plain* or within 15 metres of the regulatory *flood plain*, Policies 2.22.2, 2.25.1, 2.27.1 will also apply; and,
- d) If the building or structure is located on a valley wall, a professional geotechnical engineer 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 (over a 100-year period), access issues and an assessment of the construction and construction technique on the *valley* wall. The study must be carried out, at a minimum, in accordance with the documents referenced in Section 4. The design of any works must ensure that the long-term stability of the *valley* wall is maintained and that no risk to life or property damage is anticipated.

2.38 Site Specific Policy – Oakville Cultural Hub

The Town of Oakville’s historic downtown area is located adjacent to Sixteen Mile Creek where it enters Lake Ontario. Lands within the downtown are being considered by the Town for *redevelopment* and revitalization as part of the

Downtown Cultural Hub study. The pertinent area being considered is bounded by Navy Street to the east, Lakeshore Road to the south, and Sixteen Mile Creek to the west and north.

The following policies specific to the subject lands apply:

- 2.38.1** The footprints of all replacement buildings are located outside of the *flood plain* limits and relocated to the extent possible on the tablelands abutting Navy Street beyond the *stable top of bank*.
- 2.38.2** The footprints of all replacement buildings extend no further into the *valley* or closer to the *watercourse* than the existing buildings or structures.
- 2.38.3** Within the *erosion hazard*, the footprint areas of all replacement buildings do not exceed the total footprint areas of the existing buildings, plus 50%.
- 2.38.4** All residential and commercial spaces are located beyond the *stable top of bank* on the tablelands portion of the site abutting Navy Street.
- 2.38.5** Safe *access and egress* are available.
- 2.38.6** Accesses to underground parking structures are located beyond the *stable top of bank*.
- 2.38.7** A six-metre access allowance is maintained wherever possible.
- 2.38.8** A geotechnical study to determine the risk of any proposed work on the valley wall is completed by a professional geotechnical engineer. The study will include an assessment of the stability of the valley wall, rate of erosion or recession of the valley wall (over a 100-year period), access issues and an assessment of the construction and construction technique on the valley wall. The study must be carried out, at a minimum, in accordance with the documents referenced in Section 5 [of the Policies and Procedures Guidelines for the Administration of Ontario Regulation 162/06, August 11, 2011]. The design of any works must ensure that the long-term stability of the valley wall is maintained and that no risk to life or property damage is anticipated.
- 2.38.9** All non-habitable structures and landscaping for public open space are subject to a Conservation Halton permit where construction and/or grading and filling in amounts that exceed those indicated in Policy 2.30 is proposed.

WETLANDS

Wetlands provide for natural flood attenuation during storm events and, as such, it is important to maintain the *hydrologic function* of wetlands to assist in minimizing flooding impacts downstream. *Development* setbacks from *wetlands* are required for many of the same reasons as those for *valleylands*. In addition to providing a buffer to the natural feature and its functions, the setback also assists in maintaining the hydrologic regime adjacent to the *wetland*, helps to minimize the potential for contamination of the ground water and surface water and provides lands for activities such as nesting, resting, feeding and shelter for wetland species. Setbacks from *wetlands* need to be of sufficient size to protect the *hydrologic function* of the *wetland* and the Critical Function Zone, which is defined as the non-*wetland* area within which biophysical features or attributes directly related to the *wetland* occur (*How Much Habitat is Enough? A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern, Second Edition*, Environment Canada, 2004).

As outlined in Policy 2.7, a site inspection is required to precisely identify the limit of the wetland on site.

It is important to note that Policies 2.39 – 2.40 are specific to hydrologic impacts that may be caused by any proposed *development*. There may be instances where proposed *development* adjacent to a *wetland* may be permitted under Policies 2.39 – 2.40 (as a result of no hydrologic impact to the *wetland*) however, there may be other natural heritage impacts that would cause Conservation Halton to recommend denial of a *Planning Act*, Niagara Escarpment Plan or Parkway Belt West Plan application. See Section 3 for additional information.

2.39 Development within 120 metres of Provincially Significant Wetlands and wetlands greater than or equal to 2 hectares in size

2.39.1 Within 30 metres

Where buildings and structures already exist within 30 metres of a Provincially Significant Wetland or a *wetland* greater than or equal to 2 hectares in size, any reconstruction, alteration or additions, may be permitted subject to the following:

- a) no new septic systems permitted;
- b) existing septic systems may be *replaced* provided there are no feasible locations available outside of the 30-metre limit and it does not encroach any closer to the *wetland* than the existing system;
- c) the reconstruction, alteration or addition does not encroach any closer to the *wetland* than the existing *development* at its closest point;
- d) even if existing *development* is closer than 15 metres to the

wetland, no new *development* is permitted within 15 metres of the wetland; and,

- e) a hydrologic evaluation 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*.

2.39.2 Where there is an existing lot of record and residential dwelling, in existence prior to May 11, 2006, and where no land exists outside of the 30 metres adjacent to a *wetland*, pools, decks and non-habitable accessory structures may be subject to:

- a) no *development* permitted within 15 metres of the *wetland*;
- b) a hydrologic evaluation may be required to determine whether there would be a negative impact on the *hydrological functions* of the *wetland* as a result of the proposed *development*.

2.39.3 Except as provided for in Policies 2.39.1 and 2.39.2, no new *development* is permitted within 30 metres of a Provincially Significant Wetland or a *wetland* greater than or equal to 2 hectares in size.

2.39.4 Between 30 metres and 120 metres – Building Permit Applications

The following *development*, between 30 metres and 120 metres of a Provincially Significant Wetland or a *wetland* greater than or equal to 2 hectares in size, that is only subject to building permit approvals, is subject to Ontario Regulation 162/06 but may be permitted and will only require a letter of clearance:

- a) a single-family residential dwelling equal to or less than 500 square metres in size;
- b) swimming pools, decks, non-habitable accessory structures to a single-family residential dwelling that combined are equal to or less than 500 square metres in size;
- c) farm buildings and structures equal to or less than 700 square metres in size;
- d) additions to existing residential buildings/structures provided the addition does not result in the entire building/structure being greater than 500 square metres in size;
- e) additions to existing agricultural buildings/structures provided the addition does not result in the entire building/structure being greater than 700 square metres in size;
- f) residential septic systems;
- g) ponds less than or equal to 500 square metres in size; and,
- h) landscaping and minor grading associated with (a) – (f).

Best efforts must be made to locate the above uses as far from the

wetland as possible in order to minimize the potential impacts to the *hydrologic functions*. Cumulative impacts will be considered.

2.39.5 Between 30 metres and 120 metres – Permit

Any *development*, other than those outlined in Policy 2.39.4, proposed within 30 metres to 120 metres of a Provincially Significant Wetland or a *wetland* greater than or equal to 2 ha in size, will require a Permit pursuant to Ontario Regulation 162/06 and will need to be supported by a hydrological evaluation, prepared by qualified professional hydrological and hydrogeological engineers (or qualified hydrogeologist), that meets the requirements outlined in Section 4.

2.40 Development within 30 metres of a wetland less than 2 hectares in size

2.40.1 Within 15 metres

Where buildings and structures already exist within 15 metres of a *wetland* less than 2 hectares in size, any reconstruction, alteration or additions, may be permitted subject to the following:

- a) no new septic systems permitted;
- b) 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;
- c) the reconstruction, alteration or addition does not encroach any closer to the *wetland* than the existing *development* at its closest point;
- d) even if existing *development* is closer than 7.5 metres to the *wetland*, no new *development* is permitted within 7.5 metres of the *wetland*; and,
- e) a hydrologic evaluation 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* as per the requirements of Section 5.

2.40.2 Where there is an existing lot of record and residential dwelling, in existence prior to May 11, 2006, and where no land exists outside of the 15 metres adjacent to a wetland, pools, decks and non-habitable accessory structures may be permitted subject to:

- a) no *development* permitted within 7.5 metres of the wetland;
- b) a hydrological evaluation may be required to determine whether there will be a negative impact on the *hydrologic functions* of the *wetland* as per the requirements of Section 5.

2.40.3 Except as provided for in Policies 2.40.1 and 2.40.2, no new *development* is permitted within 15 metres of a *wetland* less than 2 hectares in size.

2.40.4 Between 15 metres and 30 metres – Letter of Clearance

The following *development* between 15 metres and 30 metres of a *wetland* less than 2 hectares in size, that is only subject to building permit approvals, is subject to Ontario Regulation 162/06 but may be permitted and will only require a letter of clearance:

- a) a single-family residential dwelling equal to or less than 500 square metres in size;
- b) swimming pools, decks, non-habitable accessory structures to a single-family residential dwelling that in total are equal to or less than 500 square metres in size;
- c) farm buildings and structures equal to or less than 700 square metres in size;
- d) additions to existing residential buildings/structures provided the addition does not result in the entire building/structure being greater than 500 square metres in size;
- e) additions to existing agricultural buildings/structures provided the addition does not result in the entire building/structure being greater than 700 square metres in size;
- f) residential septic systems;
- g) ponds less than or equal to 500 square metres in size; and,
- h) landscaping and minor grading associated with (a) – (f).

Best efforts must be made to locate the above uses as far from the *wetland* as possible in order to minimize the potential impacts to the *hydrologic functions*. Cumulative impacts will be considered.

2.40.5 Between 15 metres and 30 metres – Permit

Any uses, other than those outlined in Policy 2.40.4, proposed within 15 metres to 30 metres of a *wetland* less than 2 hectares in size, will require a Permit pursuant to Ontario Regulation 162/06 and will need to be supported by a hydrological evaluation, prepared by professional hydrological and hydrogeological engineers (or qualified hydrogeologist), that meets the requirements outlined in Section 5.

2.41 Private Access Roads – Wetland Crossing

Where no alternative exists, a crossing of a non- Provincially Significant Wetland less than 2 hectares in size, may be considered for approval where the crossing is required for access to a residential, commercial or agricultural operation, where no access currently exists and where the crossing will be generally less than 30 metres

in length and less than 10 metres in width (footprint), where the *wetland* is not contained within a *valley*, and provided the crossing is designed to:

- Provide safe *access and egress*,
- Maintain existing hydrologic regime in and adjacent to the *wetland*;
- Minimize the impact on flood flows and groundwater movement; and,
- Account for *wildlife* movement and habitat.

Compensating *wetland*, equivalent to the area disturbed by the crossing, must be created in close proximity to the crossing and will be incorporated into Conservation Halton's regulated area pursuant to Ontario Regulation 162/06 and will be subject to all applicable buffers and setbacks.

SHORELINES

The overall position of the Province of Ontario, with respect to shorelines that are susceptible to *flooding, erosion and dynamic beach hazards*, is that *development* will be directed to areas outside of the *hazardous lands*. In establishing provincial standards for defining and delineating shoreline hazards, the Province recognizes that there may be some situations where *development* may be considered within the less hazardous portions of the *hazardous lands*. A combination of three hazards is used to define *hazardous lands* related to the shoreline; *flooding hazards, erosion hazards and dynamic beach hazards*. The farthest combined landward extent of *flooding hazards, erosion hazards and dynamic beach hazards* delineates shoreline *hazardous lands*. *Flooding hazards* are based on the combined influence of lake levels, *shoreline protection works, wave uprush and other water related hazards*. *Erosion hazards* are based on the combined influence of recession and/or an erosion allowance, a long-term stable slope allowance and *shoreline protection works*. *Dynamic beach hazards* are based on the combined influence of *flooding, erosion and a dynamic beach allowance*.

The shoreline development setbacks are established based on: *shoreline protection works*; whether sufficient unobstructed land-based maintenance access is provided to and along *shoreline protection works*; appropriate *flooding and erosion allowances*; and, a *long-term stable slope allowance*. Setback standards are necessary due to a number of factors influencing the shoreline including, but not necessarily limited to: the complex short and long-term water level variations, waves, currents, morphology, sediment transport and shoreline protection structures associated with the shoreline zone; emerging coastal engineering science; recession rate data; nearshore down-cutting processes; future frequency and severity of storms; and, structure performance, design life and long-term maintenance requirements.

2.42 Shoreline Development Setback Standards

The following standards are applied when the engineered development setback is determined:

- 100-year planning horizon for buildings and additions,
- Erosion allowance based on minimum 0.3m/year average annual recession rate for the Lake Ontario shoreline, or as determined through a site-specific study as per provincial requirements,
- Erosion allowance based on minimum 0.2m/year average annual recession rate for Hamilton Harbour/Burlington Bay shoreline (excluding areas of fill), or as determined through a site-specific study as per provincial requirements,
- Minimum 20 metre erosion allowance for the Lake Ontario shoreline based on 35-year life span for *shoreline protection works* with unobstructed access,
- Minimum 13 metre erosion allowance for the Hamilton Harbour/Burlington Bay shoreline based on 35-year life span for *shoreline protection works* with unobstructed access,
- Minimum 5-metre wide, unobstructed, maintenance access to and along

shoreline protection works for heavy machinery necessary for regular maintenance purposes and to repair/replace *shoreline protection works* should failure occur,

- Maximum 35-year life span provided for *shoreline protection works* with unobstructed maintenance access,
- Long-term stable slope, based on existing grades, is assessed by a professional engineer, with experience and qualifications in geotechnical engineering, and
- *Floodproofing* standard based on the cumulative elevation of 100 year monthly mean lake level plus 100-year wind setup plus flood allowance for *wave uprush* and *other water related hazards*.

2.43 Dynamic Beach Hazard

A shoreline beach is an accumulation of detritus material or sediment along lake shorelines that has been transported and deposited by waves and currents. The sediment composition of a beach may vary from sand, gravel, cobbles or boulders. Shoreline beach profiles are physical features that experience constant change. Nearshore beach sediment that is readily visible during low wave conditions may often be transported offshore during storm events, only to be returned during periods of calmer weather. This sediment is deposited by wind and wave action landward, nearshore on the sub-aerial portion of the beach and above the water on the beach, or in the form of sand dune complexes. As such, shoreline beach profiles are “dynamic” in nature, being shaped and re-shaped over a range of time scales that extend from hours to decades in response to changing wave, wind and water level conditions and to changes in the rate of sediment supply to a particular stretch of shoreline.

The factors controlling the dynamic nature of a beach environment are numerous and their interaction produces a highly complex set of processes and responses. In general terms, beach dynamics reflect the operation of processes such as wave-generated and wind-generated currents in the lake, transport of beach building materials (i.e., sand, gravel) by wind on the sub-aerial part of the beach and dune, and the direct action of ice.

The *dynamic beach hazard* is delineated by the landward limit of the *flooding hazard* plus a 30-metre *dynamic beach allowance*. In areas where a recessional beach is present, an erosion allowance must also be added to the *dynamic beach hazard* limit delineation. Refer to Appendix 1 (f) for an illustration of the *dynamic beach hazard*. The *dynamic beach hazard* policies are generally not applied where beach or dune deposits overlying bedrock are less than 0.3 metres in thickness, less than 10 metres in width or extend for less than 100 metres along the shoreline. There is one dynamic beach, Burlington Beach, within the jurisdiction of Conservation Halton.

2.43.1 New Development

2.43.1.1 Boardwalks are permitted only as dune cross overs provided there are no *negative impacts* to the conservation of land and/or the natural dynamic beach processes.

2.43.1.2 Non-habitable buildings or structures which, by the nature of their use, are required to locate in close proximity to water (i.e., docks, boat ramps, non-habitable boathouses) may be permitted. Detailed site-specific evaluations with respect to *erosion, flooding* and *dynamic beach hazards* will be required as well as demonstration that there will be no negative impact on the conservation of land and natural dynamic beach processes. In addition, the ownership of land, where the buildings or structures are proposed, must be clearly established by the applicant and the applicable landowner(s) must sign the Permit application.

2.43.2 Existing Development

2.43.2.1 Repairs, maintenance and interior alterations that do not increase the size or change the use of an existing building or structure do not require a Permit from Conservation Halton.

2.43.2.2 Buildings and structures, including septic systems, located within the *dynamic beach hazard*, other than those destroyed by *flooding, erosion* and/or *dynamic beach hazards*, may be permitted to be *replaced* or relocated provided:

- a) There is no reasonable alternative location on the subject property to relocate the *development* such that it is outside of the *dynamic beach hazard*. "Reasonable" is assessed based on whether the proposal maximizes the lot depth and width available, outside of the *dynamic beach hazard*, based on municipal zoning by-law requirements, to maximize the landward siting of the *development*,
- b) The proposed *development* is of the same size, the same use and contains the same number of *dwelling units* as the existing building or structure, and
- c) The design minimizes the impact on natural beach processes and shoreline dunes.

2.43.2.3 Except as permitted in Policies 2.43.1 to 2.43.2 inclusive, no new *development* or *redevelopment* is permitted within *dynamic beach hazards*.

2.44 Flooding Hazard

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

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

The *flooding hazard* is determined by the influence of the 100-year flood level plus a 15-metre allowance for *wave uprush* and *other water related hazards*. Refer to Appendix 1 (a) for an illustration of the *flooding hazard*.

2.44.1 New Development

2.44.1.1 New habitable *development*, including new habitable *major additions*, may be permitted where it is demonstrated that flood free *access and egress* is available and dry passive *floodproofing* is provided to the *minimum floodproofing standard*.

2.44.1.2 New habitable *minor additions* to existing buildings or structures may be permitted where it is demonstrated that safe *access and egress* is available based on a maximum depth of flooding of 0.3 metres or, at a minimum, *access and egress* is no worse than existing, and dry passive *floodproofing* is provided to the *minimum floodproofing standard*

2.44.1.3 *Minor, non-habitable, detached accessory structures* less than or equal to 14m², will require a Letter of Permission. For all applications, the cumulative impacts of multiple accessory structures on the subject property will be taken into consideration.

2.44.1.4 *Major, non-habitable, detached accessory structures* (i.e., sheds, gazebos, decks and outdoor pools) greater than 14m² may be permitted provided the proposed *development* incorporates dry passive *floodproofing* or, where acceptable, *wet floodproofing* measures, to the *minimum floodproofing standard* and, depending on the scale of the structure and technical review, may only require the issuance of a Letter of Permission. For all applications, the cumulative impacts of multiple accessory structures on the subject property will be taken into consideration.

2.44.1.5 Buildings or structures which, by the nature of their use, are required to locate in close proximity to water (i.e., docks, boat ramps, non-habitable boathouses) may be permitted. Detailed site-specific evaluations with respect to *erosion, flooding* and *dynamic beach hazards* and their impacts on the conservation of land and the lake ecosystem will be required. In addition, the ownership of land, where the works are proposed, must be clearly established by the applicant and the applicable landowner(s) must sign the Permit application.

2.44.1.6 Geothermal infrastructure may be permitted where it can be demonstrated that there will be no adverse impact to *flooding, erosion* and/or *dynamic beach hazards*. In addition, the ownership of land, where the geothermal infrastructure is proposed, must be clearly established by the applicant and the applicable landowner(s) must sign the Permit application.

2.44.2 Existing Development

2.44.2.1 Repairs, maintenance and interior alterations that do not increase the size or change the use of an existing building or structure do not require a Permit from Conservation Halton.

2.44.2.2 Buildings and structures, including septic systems, located within the *flooding hazard*, other than those destroyed by *flooding, erosion* and/or *dynamic beach hazards*, may be permitted to be *replaced* or relocated provided:

- a) There is no reasonable alternative location on the subject property to relocate the *development* such that it is outside of the *flooding hazard*. "Reasonable" is assessed based on whether the proposal maximizes the lot depth and width available outside of the *flooding hazard*, based on municipal zoning by-law requirements, to maximize the landward siting of the *development*,
- b) The proposed *development* is of the same use, the same size and contains the same number of *dwelling units* as the existing *development*,
- c) Ingress/egress is the same or better than that which is available with the existing *development*,
- d) The proposed *development* is protected to the full *protection work standard*, and
- e) The proposed *development* incorporates *floodproofing* to the *minimum floodproofing standard*. Dry passive *floodproofing* is the preferred method of *floodproofing* where feasible.

- 2.44.2.3** Except as provided for in Policies 2.44.1 to 2.44.2 inclusive, no new *development* or *redevelopment* is permitted within *flooding hazards*

2.45 Erosion Hazard

Shorelines undergo a continuous change of form and configuration under the action of the natural processes of erosion and sedimentation. The *erosion hazard* is a combination of erosion and slope stability. Erosion is the loss of land due to natural processes and human interventions, while slope failures consist of a large mass of soil sliding along a planar surface. The erosion process gradually washes away the soil by water movement that commonly occurs in the form of wave action, rainfall, surface runoff and internal seepage. Other processes such as wind and frost may assist in the weathering and transport of soil particles. Along shoreline slopes, sustained storms or high lake levels may produce slope failures influenced by toe erosion. Slope movement or instability can occur in many ways but is generally the result of:

- Changes in slope configuration (steepness or inclination),
- Increases in loading on the slope (structures or filling near the crest),
- Changes in drainage of the soil (heavy rainfall, grading),
- Loss of vegetation, and/or
- Erosion of the *toe of slope*.

The *erosion hazard* along the Lake Ontario shoreline is determined by a 30-metre erosion allowance plus a *long-term stable slope* allowance. The 30-metre erosion allowance is based on 0.3 metres average erosion rate per year extended over a 100-year time span. The *erosion hazard* along the Hamilton Harbour/Burlington Bay shoreline is determined by a 20-metre erosion allowance plus a *long-term stable slope* allowance. The 20-metre erosion allowance is based on 0.2 metres average erosion rate per year extended over a 100-year time span. Refer to Appendix 1 (b) – (e) for illustrations of the erosion hazard allowance, stable slope allowance and Engineered Development Setback.

2.45.1 New Development

- 2.45.1.1** New habitable *development* may be permitted where it has been demonstrated that the *development* is not at erosion risk over a 100-year period and in accordance with the following:

- a) There is no reasonable alternative location on the subject property to locate the *development* such that it is outside of the *erosion hazard*. "Reasonable" is assessed based on whether the proposal maximizes the lot depth and width available outside of the *erosion hazard*, based on

municipal zoning by-law requirements, to maximize the landward siting of the *development*, and

- b) The proposed *development* location is outside of the *erosion hazard* or Engineered Development Setback, which is determined by the *protection works standard* plus the erosion allowance plus the *long-term stable slope* allowance, as outlined in Policies 2.42 and 2.46.

2.45.1.2 For those buildings or structures that are located outside of the Engineered Development Setback (which consists of the protection works standard plus the erosion allowance plus the long-term stable slope allowance, as outlined in Policies 3.41 and 3.48), additions may be permitted where it is demonstrated that the *development* is not at erosion risk over a 100 year period and in accordance with the following:

- a) There is no reasonable alternative location on the subject property to relocate the *development* such that it is outside of the *erosion hazard*. "Reasonable" is assessed based on whether the proposal maximizes the lot depth and width available outside of the *erosion hazard*, based on municipal zoning by-law requirements, to maximize the landward siting of the *development*, and
- b) The proposed *development* location is outside of the Engineered Development Setback, which consists of the *protection works standard*, plus the erosion allowance, plus the *long-term stable slope* allowance, as outlined in Policies 2.42 and 2.46.

2.45.1.3 In the case of a reconstruction and expansion of an existing dwelling or commercial/industrial structure, there are some situations whereby, due to the small size of the lot or the lot configuration, it is not possible to fully remove the dwelling from the Engineered Development Setback as outlined in Policies 2.42 and 2.45.1.2 (b). Where there is no reasonable alternative location on the subject property to relocate the *development* such that it is outside of the Engineered Development Setback, *development* may be permitted within the minimum setback provided:

- a) No additional habitable or new commercial/industrial *development* is proposed within the Engineered Development Setback as outlined in Policies 2.42 and 2.45.1.2 (b),
- b) Additional habitable or new commercial/industrial *development* permitted outside of the Engineered Development Setback as outlined in Policies 2.42 and 2.45.1.2 (b) will only be permitted if portions of the

existing habitable or commercial/industrial space are removed from within the Engineered Development Setback. The replacement will be permitted on a 1:2 basis such that for every one square metre removed from within the Engineered Development Setback, two square metres may be constructed outside of the Engineered Development Setback, and

- c) If an existing building or structure is proposed to remain in the Engineered Development Setback an addition to that building or structure may be permitted outside of the Engineered Development Setback provided the addition is less than 30% of the foundation area of the existing building or structure. In such cases, the requirements of Policy 2.45.1.3 (b) will not apply.

“Reasonable” is assessed based on whether the proposal maximizes the lot depth and width available outside of the *erosion hazard*, based on municipal zoning by-law requirements, to maximize the landward siting of the *development*.

2.45.1.4 *Minor, non-habitable, detached accessory structures* less than 14m², may be permitted provided:

- a) Safety concerns due to *erosion hazards* and shoreline slope stability are addressed, and
- b) The location of the proposed *development* does not obstruct maintenance access to and along the existing *shoreline protection works*.

Such works will only require the issuance of a Letter of Permission. For all applications, the cumulative impacts of multiple accessory structures on the subject property will be taken into consideration.

2.45.1.5 *Major, non-habitable, detached accessory structures* (i.e., sheds, gazebos, enclosed/indoor swimming pools) greater than 14m² may be permitted provided:

- a) Safety concerns due to *erosion hazards* and shoreline slope stability are addressed;
- b) The location of the proposed *development* maintains a 5-metre unobstructed maintenance access to and along the existing *shoreline protection works*,
- c) The proposed *development* meets the requirements of the *protection work standard*, and
- d) The minimum setback is based on an erosion allowance

and long-term stable slope allowance utilizing a 70 year planning horizon (i.e., 21 metre erosion allowance with no *shoreline protection works* and 15 metre erosion allowance if *shoreline protection works* are in good working order, with unobstructed access, on Lake Ontario and 14 metres and 10 metres respectively on Hamilton Harbour/Burlington Bay).

Depending on the scale of the structure and the technical review required, such works may only require the issuance of a Letter of Permission. For all applications, the cumulative impacts of multiple accessory structures on the subject property will be taken into consideration.

2.45.1.6 Swimming pools and decks may be permitted provided:

- a) Safety concerns due to *erosion hazards* and slope stability are addressed,
- b) The location of the proposed *development* does not obstruct maintenance access to and along the existing *shoreline protection works*,
- c) The proposed *development* meets the requirements of the *protection work standard*,
- d) The *development* setback is based on an erosion allowance and long-term stable slope allowance utilizing a 30-year planning horizon (i.e., 9 metre erosion allowance with no *shoreline protection works* on Lake Ontario and 6 metre erosion allowance for Hamilton Harbour/Burlington Bay), and
- e) Alteration to drainage patterns are addressed such that slope stability is not affected.

Depending on the technical review required, such works may only require the issuance of a Letter of Permission.

2.45.1.7 Buildings or structures (i.e., docks, non-habitable boathouses) which, by the nature of their use, are required to locate in close proximity to water may be permitted. Detailed site-specific evaluations with respect to *erosion, flooding* and *dynamic beach hazards* and their impacts on the *conservation of land* and lake ecosystem will be required. In addition, the ownership of land, where the building or structure is proposed, is clearly established by the applicant and the applicable landowner(s) must sign the Permit application.

2.45.1.8 Geothermal infrastructure may be permitted where it can be demonstrated that there will be no adverse impact to the flooding, erosion, *dynamic beach hazards*, *pollution* or the conservation of land. This will include, but not be limited to, a demonstration that the infrastructure, below the tableland, is below the elevation of the lake bed to ensure no long-term risk of exposure to the system. In addition, the ownership of land, where the geothermal infrastructure is proposed, must be clearly established by the applicant and the applicable landowner (s) must sign the Permit application

2.45.2 Existing Development

2.45.2.1 Repairs, maintenance and interior alterations that do not increase the size or change the use of an existing building or structure do not require a Permit from Conservation Halton.

2.45.2.2 Buildings and structures, including septic systems, located within the erosion hazard, other than those destroyed by flooding, erosion and/or *dynamic beach hazards*, may be permitted to be *replaced* or relocated provided:

- a) There is no reasonable alternative location on the subject property to relocate the *development* such that it is outside of the erosion hazard. "Reasonable" is assessed based on whether the proposal maximizes the lot depth and width available outside of the erosion hazard, based on municipal zoning by-law requirements, to maximize the landward siting of the *development*,
- b) The proposed *development* meets the requirements of the *protection work standard* and *access standard* to the maximum extent possible based on site-specific conditions, and
- c) The proposed *development* is of the same use, the same size and contains the same number of *dwelling units* as the existing building or structure.

2.45.2.3 Except as provided for in Policies 2.45.1 to 2.45.2.2 inclusive, no new *development* or *redevelopment* is permitted within *erosion hazards*.

2.46 Shoreline Protection Works

Shoreline protection works are generally defined as a combination of structural works with landform modifications designed, and constructed, to address the impacts of *flooding* and *other water related hazards* and to arrest the landward retreat of shorelines due to erosion. The shoreline zone is characterized by a complex interaction of short-term and long-term water level variations, waves and currents, morphology, sediments and protection structures. An ecosystem approach should be incorporated into any *shoreline protection works* design including consideration of natural coastal processes, effectiveness against long-term erosion, preservation of cobble/shingle beaches and protection/regeneration of aquatic and terrestrial habitat. The *shoreline protection works* design must also not negatively impact the neighbouring shoreline.

- 2.46.1** Where permitted, *shoreline protection works* may be used to address Lake Ontario shoreline *flood* and *erosion hazards* where it can be demonstrated, to the satisfaction of Conservation Halton, that
- a) The need for, and purpose of, the proposed *shoreline protection works* have been clearly defined and there is no feasible alternative,
 - b) The *shoreline protection works* are designed for the 100-year flood level and *other water related hazards* and according to current accepted scientific and coastal engineering principles,
 - c) The *shoreline protection works* are designed, and the installation supervised by, a professional engineer with experience and qualifications in coastal engineering,
 - d) Long-term stable slope allowance based on existing grades is assessed by a professional engineer with experience and qualifications in geotechnical engineering,
 - e) The ownership of land, where the *shoreline protection works* are proposed, is clearly established by the applicant and the applicable landowner(s) must sign the permit application,
 - f) The design and installation of the *shoreline protection works* provides for a 5-metre unobstructed access to and along the *shoreline protection works* for appropriate equipment and machinery for regular maintenance purposes and repair, should failure occur,
 - g) The *shoreline protection works* are *environmentally sound*,
 - h) The *shoreline protection works* will not create new hazards or aggravate existing hazards on the subject property, or other properties,
 - i) The *shoreline protection works* will not result in an unacceptable or cumulative impact on the control of *flooding, erosion, dynamic beaches, pollution* or the conservation of land;
 - j) Natural features, *ecological functions* and *hydrologic functions* contributing to the conservation of land will not be affected, and

- k) In areas of existing *development*, *shoreline protection works* are coordinated with adjacent properties.

2.46.2 *Shoreline protection works* will only be permitted where the works:

- a) appropriately consider natural coastal processes, including aquatic habitat,
- b) are effective against long-term erosion,
- c) preserve cobble beaches and shingle beaches,
- d) protect and regenerate natural features, *ecological functions* and *hydrologic functions* contributing to the conservation of land, and
- e) do not result in unacceptable *adverse environmental impacts* to adjacent shorelines

2.46.3 Where *shoreline protection works* exist, the integrity of the *shoreline protection works* may need to be assessed by a professional engineer with experience and qualifications in coastal engineering, and any recommendations for improvements incorporated into the *development* proposal to improve the effectiveness and integrity of the existing shoreline protection works.

PLACEMENT OR REMOVAL OF LARGE FILL

2.47 Large Fill

Large fill as defined by Conservation Halton, refers to 200 cubic metres (m³) or more of fill (greater than 15-20 standard dump truck loads). Fill includes excess soil. *Excess soil* is a term used by the province which means "soil that has been excavated, mainly during construction activities, that cannot or will not be reused at the site where the soil was excavated and must be moved off site" Under the Ontario Regulation 153/04 (Records of Site Condition – Part XV.1), *soil* is defined as "unconsolidated naturally occurring mineral particles and other naturally occurring material resulting from the natural breakdown of rock or organic matter by physical, chemical or biological processes that are smaller than 2 millimetres in size or that pass the US #10 sieve."

The importation of clean soil (e.g., those soils that meet Table 1 or Table 2 of the Soil, Ground Water and Sediment Standards, Ontario Regulation 153/04) solely for the purpose of agricultural soil enrichment are excluded from these policies provided that the following can be demonstrated to the satisfaction of Conservation Halton:

- a) The depth of the soil placement is minimal (generally less than 20cm in depth);
- b) Soil is not placed within 30 metres of Provincially Significant Wetlands or *wetlands* equal to or greater than 2 hectares and lands within 15 metres of a non-provincially significant wetland
- c) The soil quality and permeability meet or exceeds in-situ soils and serves to equal or better the soil conditions on the subject lands; and,
- d) The activity has no negative impact on the control of flooding, erosion, dynamic beaches, *pollution* or the conservation of land.

Conservation Halton supports soil conservation and the beneficial re-use of excess soil in a manner which promotes sustainability and the protection of the environment within regulated areas. Landowners considering the use of excess soils for the purpose of agricultural enrichment should contact Conservation Halton to discuss their plans in greater detail. A Letter of Permission may be required for soil enrichment of lands within 120 metres of Provincially Significant *Wetlands* or *wetlands* equal to or greater than 2 hectares and lands within 30 metres of non-provincially significant *wetlands* (i.e., other areas as defined in Ontario Regulation 162/06). Agricultural soil enrichment within *wetlands*, valley lands, shorelines adjacent or close to Lake Ontario or other *hazardous lands* will not be supported.

The following policies apply to the placement and dumping of fill and site grading in regulated areas not associated with:

- a) Development applications under the *Planning Act*;
- b) Fill activities proposed in accordance with a site licence under the *Aggregate Resources Act*; or
- c) Projects under the *Ontario Environmental Assessment Act*.

Other policies may apply if fill placement is associated with other development activities not associated with a), b) or c) above.

The following policies apply to the placement or removal of *large fill* within regulated areas:

- 2.47.1** The placement of *large fill* will not be permitted within *wetlands*, valley lands, *watercourses*, dynamic beaches or other *hazardous lands* or their allowances.
- 2.47.2** The placement of *large fill* and grading may be permitted within other areas, as defined under Ontario Regulations 162/06, Section 2 (1) (e), where it can be demonstrated to the satisfaction of CH that:
 - d) the control of flooding, erosion, dynamic beaches, *pollution* or the conservation of land is not negatively impacted during and post-*development*;
 - e) the risk to public safety is not increased;
 - f) there are no *adverse environmental impacts* on the natural shoreline processes of Lake Ontario;
 - g) *pollution*, sedimentation and erosion during and post-*development* are avoided;
 - h) the proposed receiving site is appropriate for the placement of excess soil and the excess soil proposed to be placed on-site meets the Ministry of the Environment and Climate Change (MOECC) Table 1 and 2 standards as outlined in the Soil Ground Water and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act* (Soil Standards);
 - i) intrusions on natural features are avoided and no *negative impacts* to natural features or hydrologic or *ecological functions* will occur;
 - j) there are *no negative impacts* on groundwater quality, quantity, flow or functions (recharge or discharge);
 - k) a minimum setback of 30 metres from Provincially Significant *Wetlands* and *wetlands* larger than 2 hectares and a minimum setback of 15 metres from all other *wetlands* is maintained;
 - l) the site is graded during the fill operation and stabilized as soon as possible subsequent to fill placement and final grading;
 - m) the risk of contaminated soils being deposited on the site is minimized and addressed in a contingency action plan, as part of a Fill Management Plan or equivalent plan;

- n) permission has been obtained from the Niagara Escarpment Commission, if applicable; and,
- o) a qualified professional has carried out weekly compliance monitoring during the active fill placement or grading period and monthly compliance monitoring thereafter until the final site inspection is completed.

PUBLIC INFRASTRUCTURE AND RECREATIONAL USES

2.48 Public Infrastructure - Utilities, Trails and Transportation

It is recognized that certain utilities and services such as watermains, storm and sanitary sewers, natural gas or oil pipelines, hydro and communication corridors, footpaths/trails and transportation links will, from time to time, be required to cross *hazardous lands, valleylands, wetlands* or *shorelines*. Such uses will be subject to the following criteria:

- a) The need for the project has been demonstrated and there is no reasonable alternative;
- b) The area of construction disturbance will be kept to a minimum;
- c) In order to protect and maintain the long-term integrity of *valley* systems, new utility and transportation corridors will be required to locate outside of *valley* and stream corridors, including the regulated tableland area, wherever possible;
- d) With the exception of footpaths/trails, crossings of *wetlands* will only be permitted where supported by an Environmental Assessment or equivalent *comprehensive study* as deemed appropriate by Conservation Halton;
- e) Public use footpaths/trails (including boardwalks) may be considered in *wetlands* where proposed for educational and recreational purposes by a public agency. Depending on the extent of works and nature of *wetlands*, an Environmental Impact Study or Environmental Assessment may be required;
- f) All works must be constructed in such a manner as to prevent increases in flooding and velocities (for range of storm events) on upstream and downstream properties;
- g) The construction of pipe or service pipelines must maintain the predevelopment configuration of the *flood plain* and *valley* walls and minimize disturbance to existing vegetation. Directional drilling or boring should be utilized for all permanent flowing streams. In addition, storm sewer outfalls should be designed to provide adequate protection to *watercourse* embankments;
- h) Stream *erosion hazards* must be adequately addressed;
- i) Where structures are necessary within the *flood plain*, the structure should be designed so that overtopping or flanking can occur with a minimum amount of damage. Major bridges not designed to pass the *flooding hazard* limit conditions should have their approach ramp(s) designed as spillways. Smaller footbridges should be securely anchored such that they will not become an obstruction at downstream culverts;
- j) Storm sewer outfalls required to be constructed on *valley* walls greater than 6 metres in height will normally utilize a drop shaft and tunnel in order to

protect the natural integrity of the *valley* wall;

- k) Habitat connectivity and *wildlife* movement must be incorporated into the planning, design and construction practices of all works. The design practices will maintain, and where possible improve or restore, key ecological linkages; and,
- l) Requirements of Policies 2.19, 2.21, 2.39, 2.40, 2.42-2.47.
- m) Requirements of Policies 2.22 to 2.28, 2.32 to 2.37 for any buildings.

2.49 Public Parks

It is recognized that on occasion there are significant benefits to society for public parks to utilize *valleylands*, *hazardous lands*, *wetlands* and *shorelines*.

Public park development applications within or adjacent to *flooding* and *erosion hazard* limits, *valleylands* and *wetlands* will be considered subject to the following criteria:

- a) Conformity with Provincial legislation, policy and guidelines and Regional and Municipal Official Plans;
- b) With the exception of footpaths/trails, crossings of *wetlands* will only be permitted where supported by an Environmental Assessment or equivalent *comprehensive study*. Footpaths/trails (including boardwalks) may be considered in *wetlands* where proposed for educational and recreational purposes. Depending on the extent of works and nature of *wetlands*, an Environmental Impact Study or Environmental Assessment may be required;
- c) Policy 2.19 will apply to all *watercourse* and *flood plain* alterations. Channelization and/or *watercourse* realignments will normally not be permitted to facilitate park design. Where site specific erosion control may be permitted, soft engineering (bio- engineering) is the preferred approach and should be based on a fluvial geomorphic review of the *watercourse*. Where structural measures are required, these should be combined with *watercourse* crossings or other suitable sites;
- d) Policies 2.22 to 2.29 will apply to all existing building and structures located within the *flooding or erosion hazard* limits and associated setbacks, other than those exempted by (e), however, the requirement for an *on-title agreement* may be waived;
- e) Access roads/trails, grassed playing fields, (playground equipment, enclosed buildings with a footprint smaller than 20 square metres, open structures such as picnic pavilions, gazebos, etc., and other similar structures/infrastructure, will be considered within the *flooding hazard* limit where it can be shown that: i. Hazards (i.e. flooding, erosion, bank instability) can be safely addressed; ii. There will be no danger to public health and safety;
- f) Approved revegetation plan and no net loss of natural vegetation;

- g) Policy 2.37 will apply to all existing valley and *valley wall development*.
- h) *Watercourse* crossings shall be minimized and designed in accordance with Policies 2.19 – 2.20. Access to the *valley* corridor for *watercourse* crossings shall be minimized and designed to take advantage of existing impacted or open areas on the *valley* slope (i.e., agriculture, farm access points, etc.);
- i) *Fish habitat* and riparian areas shall be maintained and enhanced;
- j) All new *development* must be set back from the top or the toe of a valley slope in accordance with Policies 2.35.3 and 2.36.3 with the exception of access routes and lookouts. Lookouts will be considered at the top of valleys subject to ensuring that the long-term stability of the *valley wall* is maintained and that there will be no *adverse environmental impacts* to existing natural features and *wildlife*. A net environmental benefit will be encouraged;
- k) For any *development* adjacent to the shoreline of Lake Ontario or Hamilton Harbour, the requirements of Policies 2.42 – 2.47 must be met.

2.50 Golf Courses

- a) Golf course *development* (tees, greens, fairways, carry-overs, structures, etc.) is not permitted within *flooding* and *erosion hazard* limits, *valleylands*, *watercourses* or *wetlands*, except as provided for within the specific subsections of Policy 2.50.
- b) All grading, servicing, structures, greens, tees and fairways shall be set back a minimum of 15 metres from the *stable top of bank* of *valley* of *major valley systems*, a minimum of 7.5 metres from the *stable top of bank* of *minor valley systems*, a minimum 15 metres from the limit of non-Provincially Significant Wetlands less than 2 hectares in size and a minimum of 30 metres from the limit of a Provincially Significant Wetlands and *wetlands* greater than or equal to 2 hectares in size. These setbacks may increase based on the results of a comprehensive Environmental Impact Study, including a hydrologic evaluation.
- c) Proposals to alter the *flood plain* will only be considered in areas outside of *valley* features and where all criteria of Policy 2.19 can be met.
- d) *Watercourse* crossings shall be minimized and designed in accordance with Policies 2.19 – 2.20. Access to the *valley* corridor for *watercourse* crossings shall be minimized and designed to take advantage of existing impacted or open areas on the *valley* slope (i.e., agriculture, farm access points, etc.).
- e) *Fish habitat* and riparian areas shall be maintained and enhanced. Channelization and/or *watercourse* realignments will not be permitted to facilitate a new golf course design and/or for the purpose of protecting future golf course infrastructure. Where site-specific erosion control may be permitted, soft engineering (bio-engineering) is the preferred approach and

should be based on a fluvial geomorphic review of the *watercourse*. Where structural measures are required, these should be combined with *watercourse* crossings or other suitable sites.

- f) A comprehensive hydrogeological and/or hydrological study will be required to demonstrate that the proposed *development* and any associated water taking will not negatively impact upon the quality and quantity of surface and ground water and its relationship to *fish habitat, wetlands, watercourses, etc.*

Section 3

Conservation Halton Land Use Planning Policies

Land Use Planning Policies

The following information describes the basis for Conservation Halton's program of plan input and review. It explains Conservation Halton's role at the Provincial and Local levels, and provides a description of the policies, procedures, technical analysis and standards that apply to the planning functions. The policies contained within this document should not be read in isolation of one another. Rather, they should be read in their entirety and the appropriate range of policies should be applied to each situation.⁶

3.1 General

- 3.1.1 Planning applications circulated by a municipality or Provincial agency prior to May 11, 2006 will be reviewed pursuant to the regulation in existence at that time (Ontario Regulation 150/90) and its associated policy document (Policies, Procedures and Guidelines for the Administration of Ontario Regulation 150/90 – Fill, Construction and Alteration to Watercourses October 1999).
- 3.1.2 If a planning file has been inactive for over five years and is reactivated by the applicant after the Minister approves Conservation Halton's revised regulation, staff will review the application based on the current regulation and policy document.
- 3.1.3 Conservation Halton staff will work with municipal watershed partners to include *natural heritage features* and *natural hazard areas* within appropriate Official Plan and zoning by-law designations to ensure no new *development* or *site alteration* occurs that would be contrary to Provincial or Conservation Halton policy.
- 3.1.4 Lot line setbacks adjacent to *natural heritage features* and natural hazard limits have not historically been achieved in rural areas due to the lack of connectivity of public agency ownership. In conjunction with Policies 3.2.3, 3.3.2 and 3.4.4, staff will continue to recommend that the natural features/hazards and the appropriate lot line setbacks be placed in public ownership as part of any development application. In those cases where the natural feature(s)/hazard will remain in private ownership (in rural areas) it is important to limit the number of lots which have ownership of the natural feature(s)/hazard and to ensure that the proper Official Plan and zoning designations are applied by the municipality to

⁶ Conservation Halton land use policies have not been updated since 2006. There have been several changes to provincial policies and plans since that time. The most recent policies and plans prevail. Updates to Conservation Halton's land use policies will be made to reflect recent legislative changes to the *Planning Act* and other legislation as well as updates to Memoranda of Understanding with member municipalities for advisory and technical services related to land use planning.

protect the features and functions of the area. Restrictive easements, on-title agreements and landowner information brochures may also be recommended to ensure the landowners are aware of the protected area(s) on their property.

- 3.1.5** An Environmental Impact Study (EIS) will be required to confirm that the proposed *development* and/or *site alteration* will not have a negative impact on the *natural heritage features and functions* and that the minimum setbacks identified in this document are adequate to protect the *natural heritage features and functions*. This is a requirement of the Provincial Policy Statement (2005), Policy 2.1 Natural Heritage, and many of the local municipal Official Plans. Section 3.6 of this document identifies various situations in which an EIS may be required. Staff strongly recommend that the applicant consult with Conservation Halton as early in the process as possible as Environmental Impact Studies may require four season inventories of the *natural heritage feature/function*.
- 3.1.6** When reviewing severance applications, staff will recommend a minimum of 0.6 hectares of upland area outside of the regulated area (riverine systems) and outside of the vegetation protection zone (*wetlands*) for locating all buildings, structures and septic tile beds (primary and reserve). This minimum land area is usually sufficient to accommodate a single residential dwelling and septic system. There may be instances, due to the configuration of the property or the size of the proposed dwelling, where 0.6 hectares is not sufficient.
- 3.1.7** When reviewing severance applications, staff will recommend that no new lots be created that would necessitate a new crossing of a *valleyland, wetland, watercourse* or *flooding* and *erosion hazard* limit to access a building envelope.
- 3.1.8** As part of Conservation Halton's conditions of approval for planning applications on-going monitoring of stormwater management facilities or *natural heritage features and functions* may be required.
- 3.1.9** Should Conservation Halton staff recommend denial of a planning application or building permit the applicant will be informed in writing and advised that the Resource Planning/Water Management Advisory Committee will consider the recommendation at their next scheduled meeting.⁷ The applicant will be given an opportunity to address the Committee.

⁷ The Resource Planning/Water Management Advisory Committee no longer exists. Recommendations from Conservation Halton staff on planning applications are submitted directly to the municipality and appropriate Regional municipality.

- 3.1.10** Should Conservation Halton staff wish to formally appeal a decision made by a Municipal Council or a Committee of Adjustment to the Ontario Municipal Board based on the requirements of the Provincial Policy Statement and these guidelines, that appeal should be taken to the next Board of Directors meeting to seek the formal endorsement of the Board.

3.2 Flooding and Erosion Hazard Limits

Conservation Halton's *flooding and erosion hazard* policies are described within Section 2 of this document. These reflect the policies contained in the Provincial Policy Statement and Ontario Regulation 162/06 related to *hazardous lands adjacent to river and stream systems and the Lake Ontario shoreline*.

- 3.2.1** With the exception of Policies 2.32 – 2.34, Conservation Halton utilizes the *One Zone Concept* for *flood plain* management wherein the entire *flood plain* is considered the *floodway*.
- 3.2.2** Through the review of planning applications, staff will work with the applicant and *watershed* municipalities to ensure no new *development*, including lot creation, or *site alteration* is permitted within the flooding and erosion hazard limits, that would be contrary to the Provincial Policy Statement and/or Conservation Halton regulatory policies. For *major valley systems*, a minimum lot line setback of 15 metres from the greater of the limit of the flooding and erosion hazard limit. For *minor valley systems* a minimum lot line setback of 7.5 metres from the greater of the limit of the flooding and erosion hazard limit will be recommended.
- 3.2.3** Conservation Halton will recommend to municipalities, through the provision of conditions of draft plan approval, that applications for a plan of subdivision adjacent to *flooding and erosion hazards*, be required to include protection of the *flooding and erosion hazards* and adjacent tableland in perpetuity through dedication to a public agency. However, there may be other acceptable methods to ensure that these areas are protected by a public agency.
- 3.2.4** The creation of new lots that contain the *flooding and erosion hazard* limit is not supported. There may be instances where an applicant wishes to have a lot addition to add property from a neighbouring lot onto their own which contains a *flooding hazard*. Staff will generally not object to such a lot addition provided the following criteria are met:
- a) both existing lots currently contain a portion of the *flooding and erosion hazard* limit;

- b) the lot addition will not necessitate or encourage any new or upgraded crossings of the *flooding and erosion hazard* limit for *access/egress* purposes; and,
- c) existing crossings are sufficient for the intended land use.

3.3 Valleylands

3.3.1 Conservation Halton's regulatory *valleylands* policies are described within Section 2 of this document. These reflect the policies contained in the Provincial Policy Statement and Ontario Regulation 162/06 related to *hazardous lands* adjacent to river and stream systems. Policy 3.6.5 within this document outlines additional policies with respect to significant *valleylands* and the Provincial Policy Statement.

3.3.2 Through the review of planning applications, staff will work with the applicant and watershed municipalities to ensure no new *development*, including lot creation, or *site alteration* is permitted within *valleylands* and the associated erosion hazard limits that would be contrary to the Provincial Policy Statement and/or Conservation Halton policies. Where the *flooding hazard* limit is contained within the *valley*, the lot line setbacks are a minimum of 15 metres from the greater of the physical or *stable top of bank* adjacent to *major valley systems* and 7.5 metres from the greater of the physical or *stable top of bank* adjacent to *minor valley systems*. Conservation Halton will recommend to municipalities, through the provision of conditions of draft plan approval, that applications for a plan of subdivision adjacent to *valleylands*, be required to include protection of the *valleyland* and adjacent tableland in perpetuity. It is Conservation Halton's preference that this be done through dedication to the municipality however there may be other acceptable methods to ensure that these areas are protected by a public agency.

3.4 Wetlands

Conservation Halton's wetlands policies are described within Section 2 of this document. These reflect the policies contained in the Provincial Policy Statement and Ontario Regulation 162/06 related to wetlands and interference with wetlands.

3.4.1 Policies 2.39 – 2.41 within Section 2 of this document outline the requirements for *development* adjacent to *wetlands*. It is important to note that Policies 2.39 - 2.41 are specific to the impact that a proposed *development* may have on the *hydrologic function* of the *wetland*. There may be instances where proposed *development* or *site alteration* adjacent to a *wetland* may be permitted under Conservation Halton's regulations (as a result of no impact to the *hydrologic function* of the

wetland) however, there may be other natural heritage impacts that would cause Conservation Halton to recommend denial of a *Planning Act*, Niagara Escarpment Plan or Parkway Belt West Plan application.

- 3.4.2** As per Policies 2.39.3 and 2.40.3, a minimum *vegetation protection zone* of 30 metres from the limit of a Provincially Significant Wetland or a *wetland* greater than or equal to 2 hectares in size and 15 metres from the limit of a *wetland* less than 2 hectares in size is required. In addition to the hydrologic evaluation that may be required as part of a Permit application, an Environmental Impact Study (EIS) may also be required to determine whether the minimum setback is sufficient. No buildings, structures or septic systems are permitted within this setback, except as outlined in Policies 2.39.1, 2.39.2, 2.40.1 and 2.40.2. It is the intention that this setback be left in a natural self-sustaining vegetated state, in public ownership wherever possible, in order to achieve the greatest benefit to the *natural heritage system*.
- 3.4.3** Through the review of planning applications staff will work with the applicant and *watershed* municipalities to ensure no new *development*, including lot creation, or *site alteration* is permitted within or adjacent to *wetlands* that would be contrary to the Provincial Policy Statement and/or Conservation Halton's regulatory policies. This will involve a minimum lot line setback of 30 metres from the limit of a Provincially Significant Wetland or wetland greater than 2 hectares in size and a minimum lot line setback of 15 metres from the limit of a wetland less than 2 hectares in size. Greater setbacks may be required as per Provincial or municipal policy.
- 3.4.4** Conservation Halton will recommend to municipalities, through the provision of conditions of draft plan approval, that applications for a plan of subdivision adjacent to *wetland* areas, be required to include protection of the *wetland* and adjacent tableland in perpetuity by a public agency. However, there may be other acceptable methods to ensure that these areas are protected by a public agency.
- 3.4.5** The creation of new lots that contain Provincially Significant Wetlands is not supported. There may be instances where an applicant wishes to have a lot addition to add property from a neighbouring lot onto their own which contains a wetland may be supported provided the following criteria are met.
- a) both existing lots currently contain a portion of the *wetland*.
 - b) the lot addition will not necessitate or encourage any new crossings or upgraded crossings of the *wetland* for access/egress purposes.
 - c) existing crossings are sufficient for the intended land use.

3.5 Golf Courses

In addition to the regulatory policies contained within Section 2 of this document, the following outlines land use planning policies that Conservation Halton will utilize when reviewing applications for golf courses:

- a) No encroachment into *wetlands, valleylands, flood plains or meander belt allowances* will be permitted.
- b) An Environmental Impact Study must be prepared to demonstrate no negative impacts to *significant wetlands, significant habitat of endangered species and threatened species, significant woodlands, significant valleylands, significant wildlife habitat, significant areas of natural and scientific interest and fish habitat*. Other *natural heritage features*, including corridors, linkages, cultural vegetation communities, hedgerows and swales should also be addressed in the Environmental Impact Study and incorporated into the design and landscaping of the golf course.
- c) Surface water quality and quantity must not be adversely impacted as a result of golf course development. Post-development flows must be maintained at pre-development levels. A Best Management Practice (BMP) plan must also be submitted in concert with stormwater management proposals outlining appropriate mitigative BMPs.
- d) Riparian vegetation along stream banks must be retained, enhanced and/or established. Riparian vegetation zones will be defined in accordance with the system type (i.e., coldwater, warmwater). Riparian vegetation zones must be left in a natural self-sustaining condition (i.e. golf course holes must be designed to be parallel to *watercourse/valleylands* rather than crossing them).
- e) Ponds incorporated into the golf course design must be off-line and use a bottom draw. Any ponds should be included in the stormwater management plan and should be designed to enhance water quality. Ponds used for irrigation purposes must not impact negatively on the hydraulic gradient of local upwellings and may have to be lined in areas of coldwater *fish habitat*.
- f) The site must be designed to maximize the capture of stormwater runoff for irrigation purposes prior to the consideration of water-taking structures within a *watercourse*.
- g) Sanitary servicing for the golf course should tie into existing municipal services, where possible. Where private sanitary services are proposed they must be located outside of the regulated areas.
- h) Erosion and sediment control measures to address all aspects of construction (i.e., grading, crossings, buildings, etc.).
- i) All disturbed sites shall be restored and a tree/vegetation salvage and transplant plan should be prepared for on-site transplant of trees where appropriate.

- j) Many golf courses are now working towards qualifying for the Audubon Program. Conservation Halton supports this, and equivalent, environmental programs.

3.6 Provincial Policy Statement

The natural hazards and *significant wetlands/coastal wetlands* policies within the Provincial Policy Statement are generally covered by the above noted planning policies and the policies as outlined in Section 2 of this document. Additional information is provided below with respect to wetlands.⁸

Pursuant to the Memoranda of Understanding between Conservation Halton and its various municipal partners, Conservation Halton staff provide peer review comments with respect to several other aspects of the Natural Heritage, Natural Hazards and Mineral Aggregate Resources sections of the Provincial Policy Statement. The following outlines the basis for comments pertaining to plan input and review.

3.6.1 Significant Wetlands and Coastal Wetlands

Policy 2.1.3 (b) and (c) of the Provincial Policy Statement state that *development* and *site alteration* shall not be permitted in significant wetlands or significant coastal wetlands. A coastal wetland is defined as any wetland that is located on one of the Great Lakes or their connecting channels or any other wetland that is on a tributary to the Great Lakes and lies, either wholly or in part, downstream of a line located two (2) kilometres upstream of the 1:100 year floodline (plus wave run-up) of the large water body to which the tributary is connected.

Policy 2.1.6 of the Provincial Policy Statement further states that *development* and *site alteration* will not be permitted on *adjacent lands* to *significant wetlands* or *significant coastal wetlands* unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions. As such, an Environmental Impact Study will be required for any planning applications within 120 metres of a significant wetland/coastal wetland.

3.6.2 Significant Habitat of Endangered Species and Threatened Species

Policy 2.1.3 (a) of the Provincial Policy Statement states that *development* and *site alteration* shall not be permitted within *significant*

⁸ The Provincial Policy Statement was updated in 2020. Therefore, references in this document may be inaccurate and will be corrected through an upcoming revision of Conservation Halton's land use planning policies. The text of the current Provincial Policy Statement prevails.

habitat of *endangered species* or *threatened species*. In addition, *development* and *site alteration* shall not be permitted on lands adjacent to this habitat unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions* (PPS, Policy 2.1.6). The Ministry of Natural Resources (and Forestry) *Natural Heritage Reference Manual* (1999) considers *adjacent lands* to be within 50 metres. As such, an Environmental Impact Study will be required for any planning applications within 50 metres of this habitat. Provincial and/or Federal Recovery Strategies are under development for various species. Conservation Halton staff will refer to these strategies and associated species experts when providing comments.

3.6.3 Fish Habitat

Policy 2.1.5 of the Provincial Policy Statement states that *development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with Provincial and Federal requirements. The Ministry of Natural Resources (and Forestry) *Natural Heritage Reference Manual* (1999) does not recommend a specific width for *adjacent lands*. Rather, it states that the extent of *adjacent lands* on which *development* or *site alteration* may affect *fish habitat* depends on numerous factors including the nature of *development* or *site alterations*, the sensitivity of *fish habitat* potentially affected and local site conditions (e.g., vegetative cover, slope, soils). Policy 2.1.6 of the Provincial Policy Statement states that *development* and *site alteration* shall not be permitted on lands adjacent to *fish habitat* unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*. As such, an Environmental Impact Study will be required for *development* and *site alteration* within (as permitted by provincial and federal requirements) and adjacent to *fish habitat*.

Refer to Section 1.3.1 for details pertaining to Conservation Halton's Level II agreement with Fisheries and Oceans Canada (DFO). Staff will endeavour to advise applicants to contact the Ontario Ministry of Natural Resources (and Forestry) (MNRF) for requirements as they pertain to the *Lakes and Rivers Improvement Act* and/or the *Public Lands Act* however, it is ultimately the applicant's responsibility to consult with all appropriate government agencies.

Although some existing subwatershed studies within Conservation Halton's *watershed* recommend the construction of on-line stormwater management facilities, staff will not recommend approval of any further subwatershed studies that incorporate on-line stormwater management

facilities due to their impact to *fish* and *fish habitat* unless it is in accordance with Provincial and Federal requirements, as per Policy 2.1.5 of the Provincial Policy Statement, and meets the criteria in Policy 3.23.5.2 of Conservation Halton's policy document.

3.6.4 Significant Woodlands

Policies 2.1.4 (b) and 2.1.6 of the Provincial Policy Statement state that *development* and *site alteration* shall not be permitted within or adjacent to *significant woodlands* south and east of the Canadian Shield unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*. The Ministry of Natural Resources (and Forestry) *Natural Heritage Reference Manual* (1999) provides parameters for identifying *significant woodlands* and considers *adjacent lands* to be within 50 metres. As such, an Environmental Impact Study will be required for planning applications within or adjacent to *significant woodlands*. In keeping with the Provincial Policy Statement, staff will work with watershed municipalities to ensure *significant woodlands* are identified in Official Plans and zoning by-laws and designated in appropriate Greenlands and Conservation Management zones.⁹ In the absence of an up-to-date subwatershed study (approved by Conservation Halton), a minimum 10 metre *development* and *site alteration* setback from dripline, to be confirmed through an Environmental Impact Study, will be recommended outside of the Greenbelt Plan Area and the Niagara Escarpment Plan Area. Within the Greenbelt Plan Area and Niagara Escarpment Plan Area a minimum 30 metre vegetated protection zone will be recommended as per the policies of the Greenbelt Plan.

3.6.5 Significant Valleylands

Policies 2.1.4 (c) and 2.1.6 of the Provincial Policy Statement states that *development* and *site alteration* shall not be permitted within or adjacent to *significant valleylands* south and east of the Canadian Shield unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*. All *valleylands* within Conservation Halton's *watershed* are regulated pursuant to Ontario Regulation 162/06. As such, most are afforded some level of protection from *development* and *site alteration*.

The Ministry of Natural Resources (and Forestry) *Natural Heritage Reference Manual* (1999) provides parameters for identifying *significant*

⁹ The terminology in municipal Official Plans has changed as per the direction in the current Provincial Policy Statement. Official plans generally designate significant natural heritage features in the broader context of a Natural Heritage System.

valleylands and considers adjacent lands to be within 50 metres. As such, an Environmental Impact Study will be required for planning applications within or adjacent to significant *valleylands*. In keeping with the Provincial Policy Statement, staff will work with watershed municipalities to ensure *significant valleylands* are identified in Official Plans and zoning by-laws and designated in appropriate Greenlands and Conservation Management zones.

3.6.6 Significant Wildlife Habitat

Policies 2.1.4 (d) and 2.1.6 of the Provincial Policy Statement states that *development* and *site alteration* shall not be permitted within or adjacent to *significant wildlife habitat* unless it has been demonstrated there will be no *negative impacts* on the natural features or their *ecological functions*. The Ministry of Natural Resources (and Forestry) has prepared a guide entitled *Significant Wildlife Habitat Technical Guide* (October 2000) that provides parameters for identifying *significant wildlife habitat* and *adjacent lands*. As such, an Environmental Impact Study will be required for planning applications within or adjacent to *significant wildlife habitat* as specified within the technical guidelines. In keeping with the Provincial Policy Statement, staff will work with watershed municipalities to ensure *significant wildlife habitat* is identified in Official Plans and zoning by-laws and designated in appropriate Greenlands and Conservation Management zones.

3.6.7 Significant Areas of Natural and Scientific Interest

Policies 2.1.4 (e) and 2.1.6 of the Provincial Policy Statement states that *development* and *site alteration* shall not be permitted within or adjacent to *areas of natural and scientific interest (ANSI)* unless it has been demonstrated there will be no *negative impacts* on the natural features or their *ecological functions*. The Ministry of Natural Resources (and Forestry) *Natural Heritage Reference Manual* (1999) considers *adjacent lands* to be within 50 metres. As such, an Environmental Impact Study will be required for planning applications within or adjacent to ANSIs. The Ministry of Natural Resources (and Forestry) identifies ANSIs. Staff will work with watershed municipalities to ensure *Areas of Natural and Scientific Interest* are identified in Official Plans and zoning by-laws and designated in appropriate Greenlands and Conservation Management zones.

3.6.8 Diversity and Connectivity

Policy 2.1.2 of the Provincial Policy Statement states that the diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should

be maintained, restored or, where possible, improved, recognizing linkages between and among *natural heritage features and areas*, surface water features and ground water features. Through the preparation of Watershed and Subwatershed Studies and through the review of land use planning applications, Conservation Halton strives to ensure that those linkages necessary to the functioning of the *natural heritage system* are identified for protection and enhancement.

3.6.9 Sensitive Ground Water Features

Policy 2.2 of the Provincial Policy Statement provides direction with respect to groundwater features. Specifically, Policy 2.2.2 states that *development* and *site alteration* shall be restricted in or near *sensitive* surface water features and *sensitive* ground water features such that these features and their related *hydrologic functions* will be protected, improved or restored. Staff of Conservation Halton review relevant Watershed/Subwatershed Studies and Aquifer Management Plans when determining whether an application has been made in or near *sensitive* ground water features. If information is not available, the applicant may be required to prepare a hydrologic/hydrogeological study.

3.6.10 Hazardous Sites

Conservation Halton provides peer review to the City of Hamilton, under the Memorandum of Understanding, for hazardous geology. Policy 3.1 of the Provincial Policy Statement provides direction with respect to natural hazards (*hazardous lands* and *hazardous sites*). Hazardous geology is included within "*hazardous sites*" and includes unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography). Karst topography has been found in the City of Hamilton along the Niagara Escarpment within Conservation Halton's *watershed*. The Ministry of Natural Resources' (and Forestry) *Understanding Natural Hazards (2001)* guide provides direction with respect to these policies within the Provincial Policy Statement and Conservation Halton will utilize these guidelines when reviewing applications that may be proposed within or near hazardous sites.

3.6.11 Aggregates, Petroleum and Wayside Pits

Conservation Halton provides peer review to the City of Hamilton, under the Memorandum of Understanding, for Mineral Aggregates, Petroleum Resources and Wayside Pits. Policy 2.5 of the Provincial Policy Statement states that mineral aggregate resources shall be protected for long term use. Under the Memorandum of Understanding, Conservation Halton provides the plan review (i.e., identifies the resource) however, technical clearance of any required reports remains with the Ministry of Natural

Resources and Forestry. Conservation Halton staff will consult the available aggregates mapping provided by the Ministry of Natural Resources and Forestry when providing comments.

Section 4

Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Review

Additional Guidelines and Information Requirements

Watershed management is constantly evolving and from time to time guidelines are developed or adopted for use by Conservation Halton. In addition, reference is made to other legislation that must be considered in the review of any works proposed for permission under Ontario Regulation 162/06. A up-to-date listing of additional guidelines that should be referred to when submitting a permit or planning application is available on the Conservation Halton website at www.conservationhalton.ca

Section 5
Definitions

Definitions

Definitions

“access and egress” means methods or procedures to ensure safe vehicular and pedestrian movement, and access for the maintenance and repair of protection works, during times of flooding hazards, erosion hazards and/or other water-related hazards.

“access standard” means a method or procedure to ensure safe vehicular and pedestrian movement, and access for the maintenance and repair of protection works, during times of flooding, erosion and other water related hazards.

“accepted engineering principles” refers to those principles, methods and procedures that are used and applied in current coastal and hydraulic engineering practice and have been reviewed and accepted by Conservation Halton.

“accepted geotechnical principles” refers to those principles, methods and procedures involving slope stability analysis which are used and applied in current geotechnical practice and have been reviewed and approved by Conservation Halton.

“accepted scientific principles” refers to those principles, methods and procedures which are used and applied in disciplines such as geology, geomorphology, botany and zoology and applied to the study of coastal processes, vegetation, wildlife and fisheries and have been reviewed and approved by Conservation Halton.

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

“adverse environmental impacts” as it pertains to the shorelines means those physical, biological and environmental changes which are of long-term duration, where the rate of recovery is low, where there is a high potential for direct and/or indirect effects and/or where the area is considered to be critical habitat or of critical significance to the protection, management and enhancement of the shoreline ecosystem.

“agricultural uses” means the growing of crops, including nursery and horticultural crops; raising of livestock; raising of other animals for food, fur or fibre, including poultry and fish; aquaculture; apiaries; agro-forestry; maple syrup production; and associated on-farm buildings and structures, including accommodation for full-time farm labour when the size and nature of the operation requires additional employment.

“apparent valley” or a confined valley means a valley that is greater than or equal to

two (2) metres in depth.

“areas of natural and scientific interest (ANSI)” means areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.

“coastal wetland” means (a) any wetland that is located on one of the Great Lakes or their connecting channels; or (b) any other wetland that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located 2 kilometres upstream of the 1:100 year floodline (plus wave run-up) of the large water body to which the tributary is connected.

“coldwater watercourse” means a watercourse, whether permanent, intermittent or ephemeral, which supports or contributes to the support of fish habitat or species associated with coldwater, such as salmonids, sculpins, coldwater benthic invertebrates, or acts as a production zone for anadromous species, or has thermal characteristics of a coldwater stream. Coldwater species that are best adapted prefer or usually occur at water temperatures less than 19 °C.

“comprehensive study” means a detailed study that fully assesses existing conditions and the potential impacts of proposed development with respect to, at a minimum, hydrology, hydraulics, hydrogeology, fluvial processes, erosion, slope stability and the natural environment (including, but not limited to, ecological functions).

“confined system” means where the watercourse is located within a valley corridor, either with or without a flood plain, and is confined by valley walls. The watercourse may be located at the toe of the valley slope, in close proximity to the toe of the valley slope (less than 15 metres) or removed from the toe of the valley slope (more than 15 metres). The watercourse can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels (Understanding Natural Hazards, MNR, 2001). Within Conservation Halton’s watershed, all valleys greater than or equal to 2 metres in height are considered confined systems.

“coolwater watercourse” means a watercourse, whether permanent, intermittent or ephemeral, which supports or contributes to the support of fish habitat or species associated with coolwater, such as pearl dace, redbreast dace, coolwater benthic invertebrates, or has thermal characteristics of a coolwater stream as designated by the Ministry of Natural Resources and Forestry (MNR). Coolwater species that are best adapted prefer or usually occur at water temperatures between 19-25 °C.

“development”, as it pertains to the Planning Act, Provincial Policy Statement, Greenbelt Plan and Conservation Halton Land Use Planning Policies (Section 4) means the creation of a new lot; a change in land use; or the construction of buildings and structures, requiring approval under the Planning Act, but does not include: (a) activities that create or maintain infrastructure authorized under an environmental assessment process; (b) works subject to the Drainage Act.

“development”, as it pertains to the Conservation Authorities Act, means:

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

“dry floodproofing” means those specific measures taken to reduce or eliminate the potential for flood hazards to damage a building or structure by isolating a building or appliance from flood waters (normally applies to habitable buildings or additions).

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

“dynamic beach hazard” means areas of inherently unstable accumulations of shoreline sediments along the Great Lakes – St. Lawrence River System and large inland lakes, as identified by Provincial standards, as amended from time to time. The dynamic beach hazard limit consists of the flooding hazard limit plus a dynamic beach allowance.

“ecological function” means the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include hydrological, biological, physical, chemical and socio-economic interactions.

“endangered species” means a species that is listed or categorized as an ‘Endangered Species’ on the Ontario Ministry of Natural Resources and Forestry’s (MNR) official species at risk list or on the COSEWIC list of endangered species, as updated and amended from time to time.

“environmentally sound” as it pertains to the shoreline policies means those principles, methods and procedures involved in addressing the protection and enhancement of the shoreline ecosystem which are used in disciplines such as geology, geomorphology, botany and zoology and applied in the study of coastal processes, vegetation, wildlife and aquatic habitat resource management and have been reviewed and approved by the Conservation Halton.

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

allowance.

“fish” as defined in the Fisheries Act, includes (a) parts of fish, (b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals and (c) the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.

“fish habitat” as defined in the Fisheries Act, means the spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes. Fish habitat is comprised of those physical, chemical and biological attributes of the environment which are required by fish to carry out their life processes (e.g., spawning, nursery, rearing, feeding, overwintering, migration). It consists of those environments that directly or indirectly support fish stocks or fish populations that sustain, or have the potential to sustain, subsistence, commercial or recreational fishing activities. These guidelines can be applied to habitat which although not directly supporting fish, provides nutrients and/or food supply to adjacent or downstream habitat or contribute to water quality for fish.

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

“flood plain” means the area, usually low lands, adjoining a watercourse, which has been or may be subject to flooding hazards.

“flood plain alteration” means activities, such as filling, grading and excavation, that would change the landform and natural vegetative characteristics of a site located within the flood plain.

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

- (a) Along the shorelines of the Great Lakes – St. Lawrence River system and large inland lakes, the flooding hazard limit is based on the one-hundred-year flood level plus an allowance for wave uprush and other water-related hazards;
- (b) Along river, stream and small inland lake systems, the flooding hazard limit is the greater of:
 - 1. the flood resulting from the rainfall actually experienced during a major storm such as the Hurricane Hazel storm (1954) transposed over a specific watershed and combined with the local conditions, where evidence suggests that the storm event could have potentially occurred over watersheds in the general area;
 - 2. the one-hundred-year flood; and,
 - 3. a flood which is greater than 1, or 2, which was actually experienced in a particular watershed or portion thereof as a result of ice jams and which has

been approved as the standard for that specific area by the Minister of Natural Resources

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

“floodway” means the portion of the flood plain where development and site alteration would cause a danger to public health and safety or property damage.

Where the one-zone concept is applied, the floodway is the entire contiguous flood plain.

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

“floodproofing standard” means the combination of measures incorporated into the basic design and/or construction of buildings, structures, or properties to reduce or eliminate flooding hazards, wave uprush and other water-related hazards along the shorelines of the Great Lakes – St. Lawrence River system and large inland lakes, and flooding hazards along river, stream and small inland lake systems.

“Great Lakes – St. Lawrence River System” means the major water system consisting of Lakes Superior, Huron, St. Clair, Erie and Ontario and their connecting channels, and the St. Lawrence River within the boundaries of the Province of Ontario.

“ground water feature” refers to water-related features in the earth’s subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrogeologic investigations.

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

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

“hydrologically sensitive feature” includes permanent and intermittent streams, wetlands, seepage areas and springs.

“hydrologic function” means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of water on the

surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things.

"large fill" refers to 200 cubic metres (m³) or more of fill (greater than 15-20 standard dump truck loads).

"long term stable slope" as it pertains to the shoreline means the stable angle derived by geotechnical investigation or, in the absence of an approved geotechnical study, 3:1 slope angle projected from the toe of slope (5:1 for sandy soils).

"major additions" as it relates to development within the shoreline flooding hazard, means construction that is greater than 50% of the foundation area of the existing structure and as it relates to development within the shoreline erosion hazard, means construction that is greater than 50% of the foundation area of the existing structure located within the erosion hazard.

"major, non-habitable detached accessory structures" as it relates to development within shoreline hazards, means non-habitable buildings or structures that do not qualify as minor non-habitable accessory structures and are not connected by any means to a habitable structure.

"major valley system" means the valley systems associated with Grindstone, Bronte or Sixteen Mile Creeks, including all tributaries.

"meander belt allowance" means the setback that keeps development from being affected by river and stream meandering (this includes allowance for the 100-year erosion rate).

"minimum floodproofing standard" as it relates to shoreline hazards, development is to be protected from flooding, as a minimum, to an elevation equal to the sum of the 100 year monthly mean lake level plus the 100 year wind setup plus a flood allowance for wave uprush and other water related hazards.

"minor additions" means:

- a) an addition to an existing building or structure (habitable or non-habitable) which does not exceed 50% of the total floor area and does not exceed 50% of the building or structure's footprint area that is located within the flood plain. Existing non-habitable space will not be considered in the determination of permissible habitable footprint/floor area;
- b) no increase in the number of dwelling units; and,
- c) in the case of multiple additions, all additions since the inception of this policy (1982) combined must be equal to or less than 50%.
- d) as it relates to development within the shoreline flooding hazard, means construction that is 50% or less of the foundation area of the existing structure and as it relates to development within the shoreline erosion hazard, means construction

that is 30% or less of the foundation area of the existing structure located within the erosion hazard.

“minor, non-habitable detached accessory structures” as it relates to development within shoreline hazards, means non-habitable, moveable structures with no utilities and a maximum size of 14m² that is not connected by any means to a habitable structure.

“minor valley system” means all valley systems within Conservation Halton’s jurisdiction other than those associated with Grindstone, Bronte and Sixteen Mile Creeks.

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

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

“negative impacts” means:

- (a) in regard to policy 2.2 of the PPS, degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features and their related hydrologic functions, due to single, multiple or successive development or site alteration activities;
- (b) in regard to fish habitat, the harmful alteration, disruption or destruction of fish habitat, except where, in conjunction with the appropriate authorities, it has been authorized under the Fisheries Act, using the guiding principle of no net loss of productive capacity; and
- (c) in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities.

“non-apparent valley” means a valley that is less than two (2) metres in depth.

“one hundred year flood” means that flood, based on an analysis of precipitation, snow melt, or a combination thereof, having a return period of 100 years on average, or having a 1% chance of occurring or being exceeded in any given year.

“one hundred year flood level” means, for the shorelines of the Great Lakes, the peak instantaneous stillwater level, resulting from combinations of mean monthly lake levels and wind setups, which has a 1% chance of being equaled or exceeded in any given year.

“one zone concept” means that the flood plain, as defined by the appropriate flood standard (i.e. the regulatory storm), will consist of one zone.

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

“on-title agreement” means a legal agreement between the owner and the Halton Region Conservation Authority that is registered on title of the lands.

“permissible addition allowance” is the size of an addition permitted under Conservation Halton’s policies.

“pollution” means any deleterious physical substance or other contaminant that has the potential to be generated by development in an area to which a regulation made under clause (1)(c) of Section 28 of the Conservation Authorities Act applies.

“protection work standard” means the combination of non-structural or structural works and allowances for slope stability and flooding/erosion to reduce the damages caused by flooding, erosion, and other water related hazards, and to allow access for their maintenance and repair.

As it relates to shoreline hazards means:

- the installation of protection works should be combined with:
 - a 30 metre hazard allowance (or as determined by a study using accepted scientific and engineering principles) plus
 - an allowance for stable slope (3:1 or as determined by a study using accepted geotechnical principles)
- the design and installation of protection works be such that access to the protection works by heavy machinery, for regular maintenance purposes and/or to repair the protection works should failure occur, is not prevented or obstructed.

“quality and quantity of water” is measured by indicators such as minimum base flow, depth to water table, aquifer pressure, oxygen levels, suspended solids, temperature, bacteria, nutrients and hazardous contaminants, and hydrologic regime.

“redevelopment” means the creation of new units, uses or lots on previously developed land in existing communities, including brownfield sites.

“Regional Storm” means the rainfall event and soil conditions existing during Hurricane Hazel that occurred within the Humber River watershed in Toronto in 1954, transposed over a specific watershed and combined with local conditions.

“regulatory storm” means the greater of the Regional Storm or the 100-year storm

utilized for a particular area.

“replaced” involves the removal of an existing structure and a new structure for same use and of same size or smaller erected

“riparian rights” means the common law rights of owners of property along a river or shore or other bodies of water. These rights include, stated generally, the right to make reasonable use of the water flowing past their land.

“river, stream and small inland lake systems” means all watercourses, rivers, streams and small inland lakes or waterbodies that have a measurable or predictable response to a single runoff event.

“self-sustaining vegetation” means vegetation dominated by plants that can grow and persist without direct human management, protection or tending.

“sensitive” in regard to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events including, but not limited to, water withdrawals, and additions of pollutants.

“shoreline protection works” means the combination of non-structural or structural works and allowances for slope stability and flooding, erosion and/or dynamic beach hazards to reduce the damages caused by flooding, erosion and/or other water related hazards, and to allow access for their maintenance and repair.

“significant” means:

- (a) in regard to wetlands, coastal wetlands and areas of natural and scientific interest, an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry (MNRF) using evaluation procedures established by the Province, as amended from time to time;
- (b) in regard to the habitat of endangered species and threatened species, means the habitat, as approved by the Ontario Ministry of Natural Resources and Forestry (MNRF), that is necessary for the maintenance, survival, and/or the recovery of naturally occurring or reintroduced populations of endangered species or threatened species, and where those areas of occurrence are occupied or habitually occupied by the species during all or any part(s) of its life cycle;
- (c) in regard to woodlands, an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species, composition, or past management history;
- (d) in regard to other natural heritage features and areas, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.

Criteria for determining significance for the resources identified in sections (c) and (d) are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used. While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation.

“site alteration” means activities, such as grading, excavation and the placement of fill, that would change the landform and natural vegetative characteristics of a site.

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

“special concern species” means a species with characteristics that make it sensitive to human activity or natural events, as designated by the Ontario Ministry of Natural Resources and Forestry (MNRF) and/or Environment Canada.

“stable top of bank” as it pertains to valleylands means,

- (a) the physical top of bank where the existing slope is stable and not impacted by toe erosion; or,
- (b) is defined by the toe erosion allowance plus the stable slope allowance where the existing slope is unstable and/or is impacted by toe erosion;

“stable top of bank” as it pertains to shorelines means a horizontal allowance measured landward from the toe of the bank equivalent to 3 times the height of the bank (e.g., difference in elevation between the top of the first lakeward break in slope and the toe of the bank, which may not be above or below the water level).

“stage-storage-discharge relationship” means the relationship of flood storage and flood elevation values at various flood flow rates within a particular watercourse/flood plain reach. This relationship is used as a factor to determine whether the hydraulic function of the flood plain is preserved.

“surface water feature” refers to water-related features on the earth’s surface, including headwaters, rivers, stream channels, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics.

“thermal impacts/pollution” means the impairment of water quality through

temperature increase or decrease. Changes in temperature can also effect species composition of plants, insects and fish in a water body.

“threatened species” means a species that is at risk of becoming endangered in Ontario and/or Canada if limiting factors are not reversed, as designated by the Ontario Ministry of Natural Resources and Forestry (MNRF) and/or Environment Canada.

“toe of slope” means the lowest point on a slope, where the surface gradient changes from relatively shallow to relatively steep.

“top of bank” means the point of the slope where the downward inclination of the land begins, or the upward inclination of the land levels off. This point is situated at a higher topographic elevation of land than the remainder of the slope. There may be situations where there are interruptions in the valley slope by plateau (terrace) areas.

“two zone concept” means that the flood plain, as defined by the appropriate flood standard (see flooding hazards), will consist of two zones – the floodway and the flood fringe.

“unconfined system” means those systems where the watercourse is not located within a valley corridor with discernable slopes, but relatively flat to gently rolling plains and is not confined by valley walls. The watercourse can contain perennial, intermittent or ephemeral flows and may range in channel configuration, from seepage and natural springs to detectable channels. Within Conservation Halton’s watershed, all valleys less than 2 metres in height are considered unconfined systems.

“valleys” and **“valleylands”** means depressional features associated with a river or stream, whether or not they contain a watercourse.

“vulnerable” as it pertains to Policy 2.2 of the PPS means surface and groundwater that can be easily changed or impacted by activities or events, either by virtue of their vicinity to such activities or events or by permissive pathways between such activities and the surface and/or groundwater.

“warmwater watercourse” means a watercourse, whether permanent, intermittent or ephemeral, which supports or contributes to the support of fish habitat or species associated with warmwater such as carp, bass, warmwater benthics invertebrates, or have thermal characteristics of a warmwater stream as designated by the Ministry of Natural Resources and Forestry (MNRF). Warmwater species that are best adapted prefer or usually occur at water temperatures greater than 25 °C.

“warmwater forage/baitfish watercourse” means watercourses with a thermal regime suited for warmwater fish which are lacking warmwater sportfish, but contain any combination of minnow species classified as baitfish by the Ministry of Natural Resources and Forestry (MNRF). Typically, these can include blacknose dace, creek chub, common shiner, bluntnose minnow or other species.

“warmwater sportfish watercourse” means a watercourse with a thermal regime suited for warmwater fish which contain any combination of smallmouth bass, largemouth bass, northern pike, walleye, yellow perch or panfish.

“watercourse” means an identifiable depression in the ground in which a flow of water regularly or continuously occurs.

“watershed” means an area that is drained by a watercourse and its tributaries.

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

“wet floodproofing” means those specific 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 (normally applies to non-habitable structures).

“wetland”, as it pertains to the Planning Act, the Provincial Policy Statement, the Greenbelt Plan and Conservation Halton’s Land Use Planning Policies (Section 4), means lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens.

“wetland”, as it pertains to the Conservation Authorities Act, means land that,

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

“wildlife” means all wild mammals, birds, reptiles, amphibians, fish, invertebrates, plants, fungi, algae, bacteria and other wild organisms.

“wildlife habitat” means areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a

vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species. Wildlife habitat includes fish habitat.

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

Section 6
Appendices

Appendix 1

Shoreline Flooding, Erosion and Dynamic Beach Hazards

a) Shoreline Flooding Hazard and Allowance

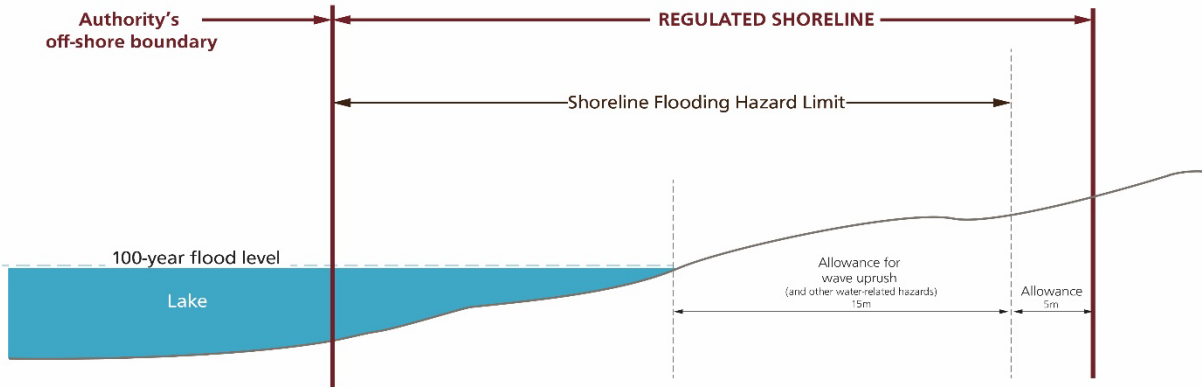


Diagram not to scale

b) Shoreline Erosion Hazard and Allowance

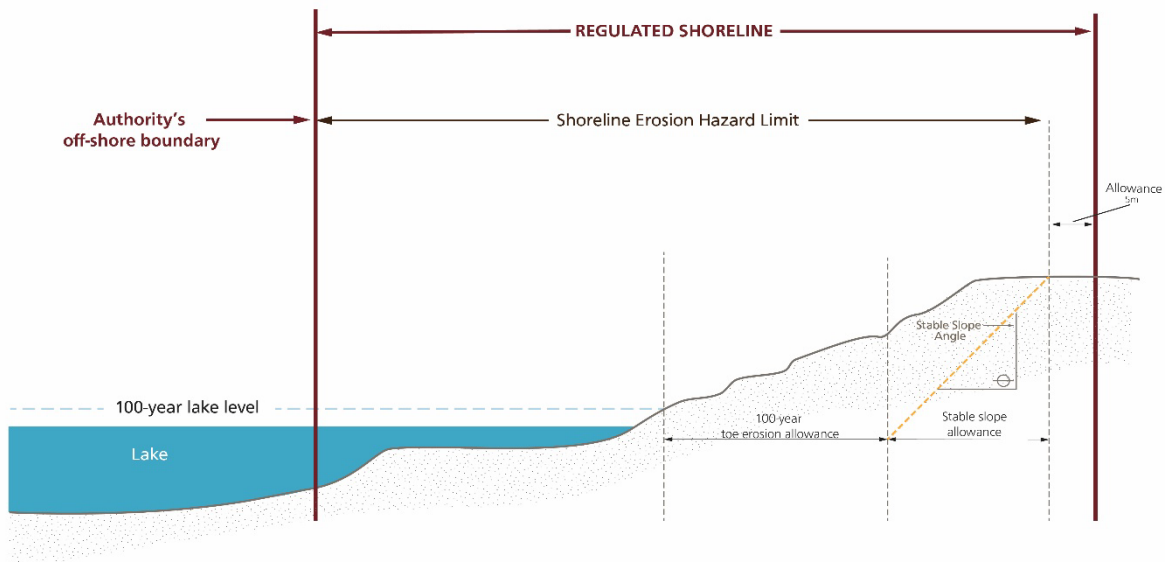
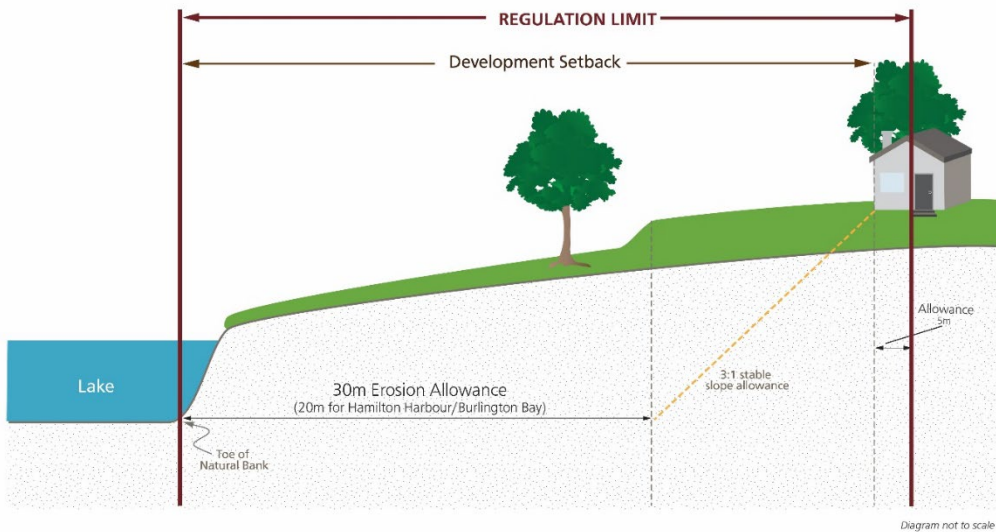


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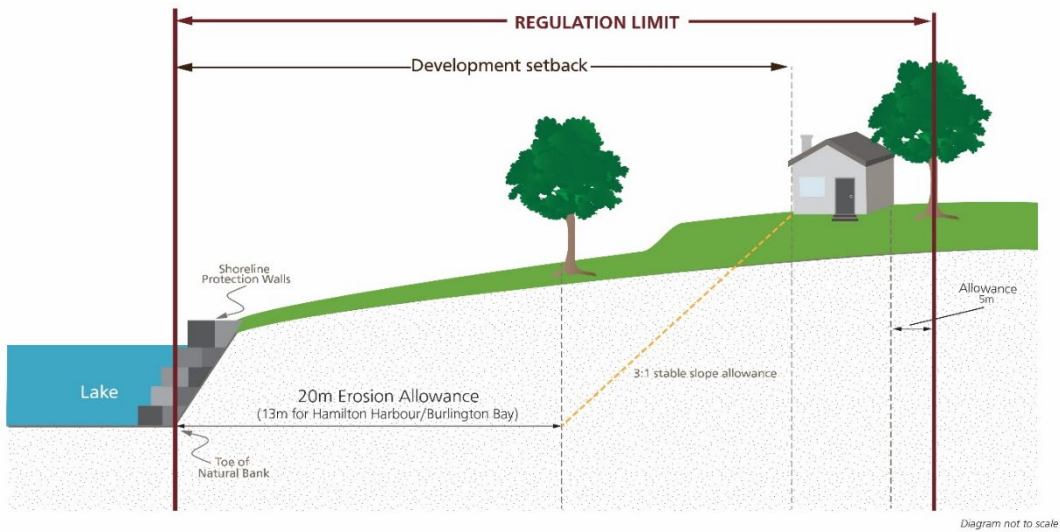
Appendix 1 (Continued)

Shoreline Flooding, Erosion and Dynamic Beach Hazards

c) Shoreline Erosion Hazard and Development Setback (No Shoreline Protection)



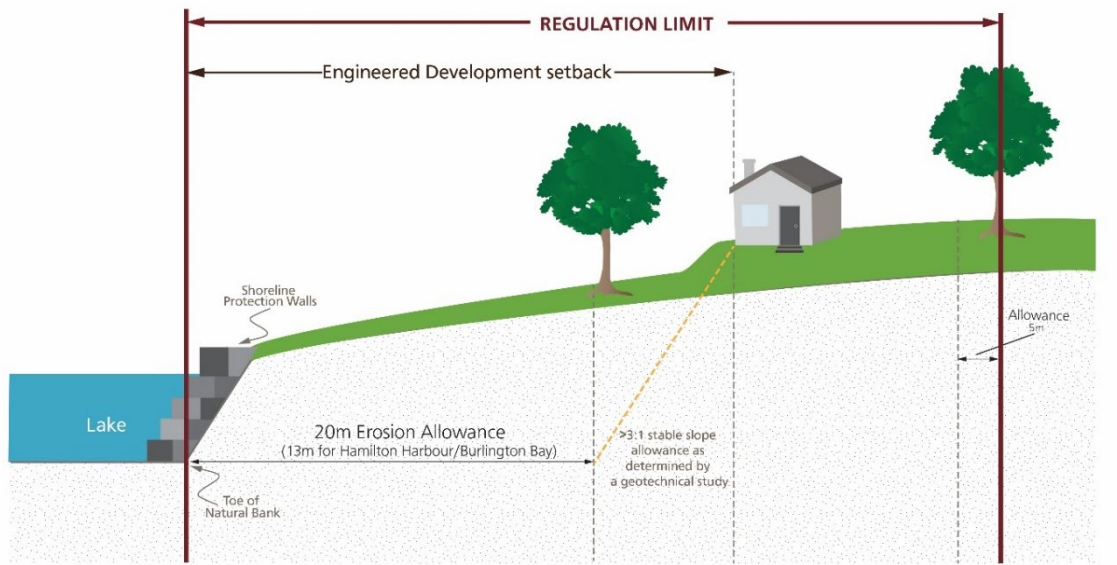
d) Shoreline Erosion Hazard and Development Setback (Shoreline Protection and 5 Metre Access to and along shoreline)



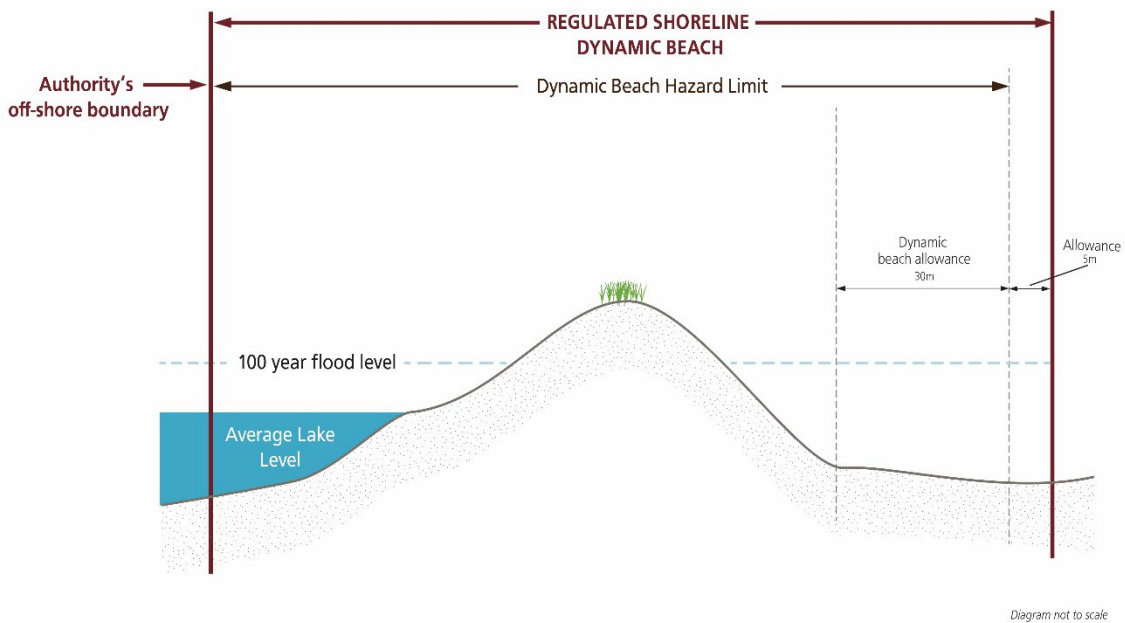
Appendix 1 (Continued)

Shoreline Flooding, Erosion and Dynamic Beach Hazards

e) Shoreline Erosion Hazard and “Engineered” Development Setback (as Determined by Engineering Studies with 5 Metre Access to and along shoreline)



f) Burlington Beach Dynamic Beach Hazard



Appendix 2

Valley Erosion Hazards – Stable Slopes

Erosion Hazard – Apparent (Confined) Valleys with Stable Slopes

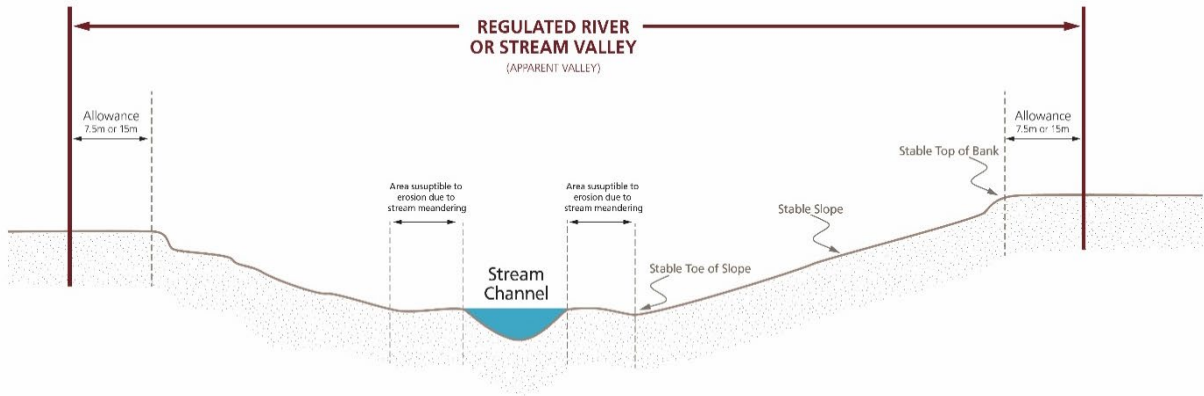
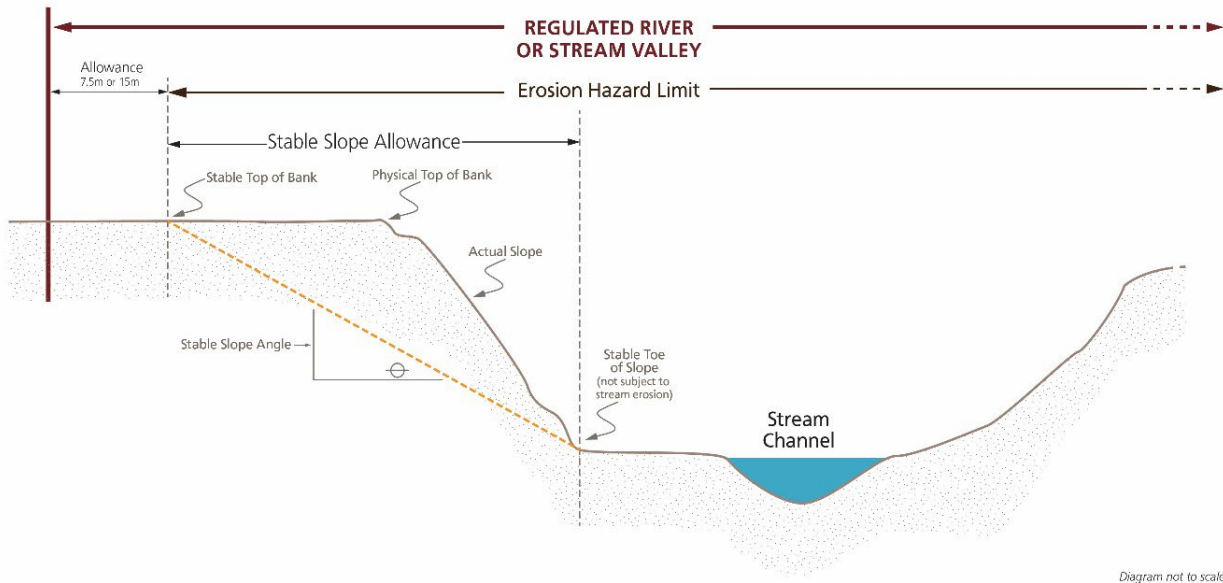


Diagram not to scale

Appendix 3

Valley Erosion Hazards – Stable Toe of Slope

Riverine Erosion Hazard – Apparent (Confined) Valleys with Stable Toe of Slope



Appendix 4

Valley Erosion Hazards - Toe Erosion

Riverine Erosion Hazard – Apparent Valleys with Active or Potential Toe Erosion

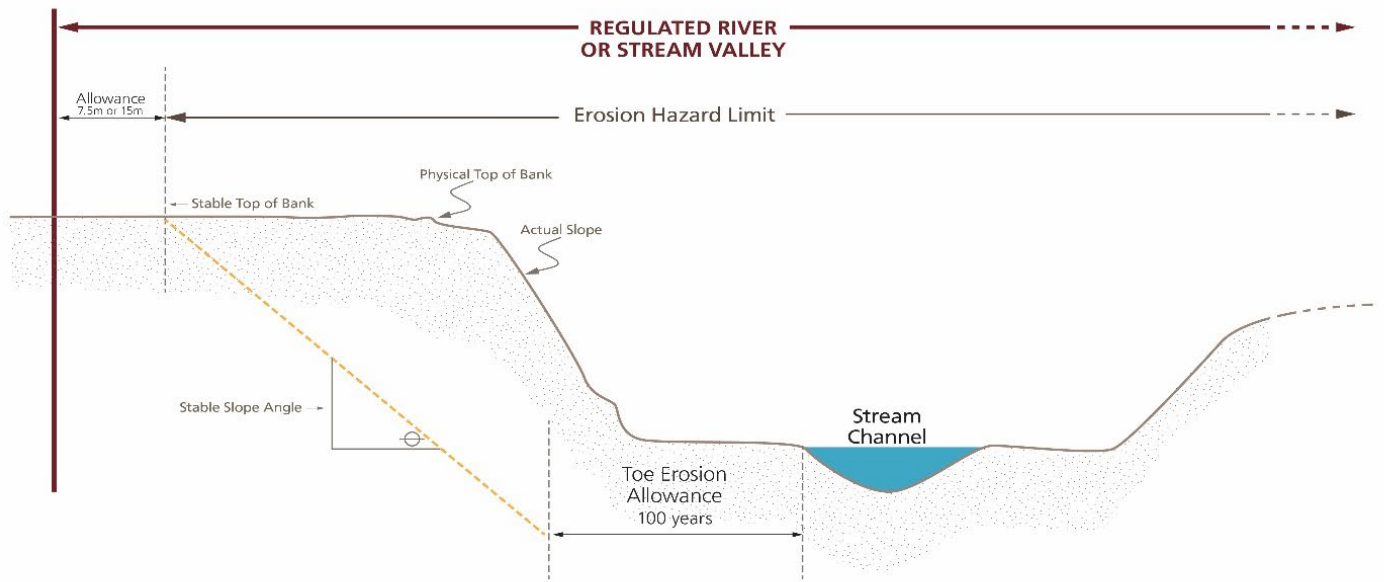
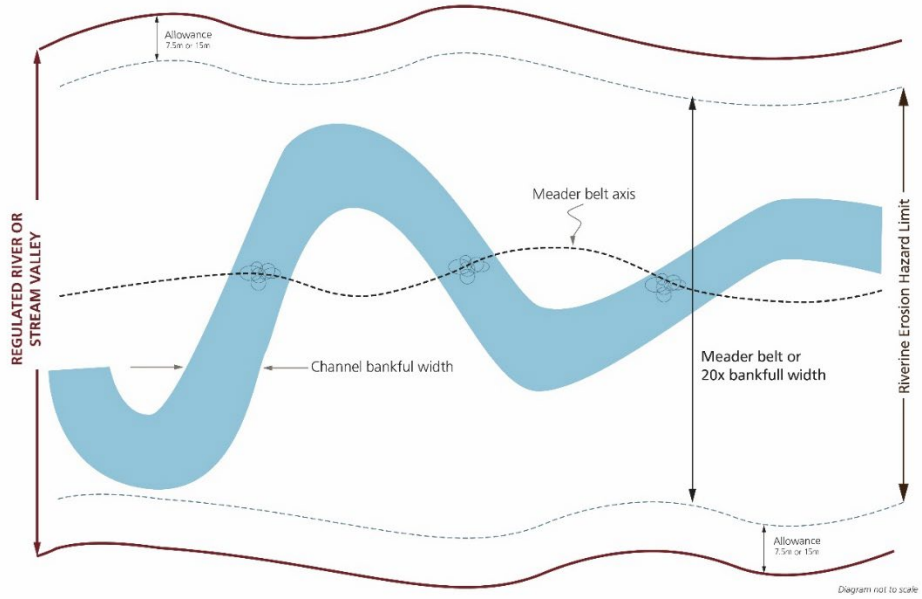


Diagram not to scale

Appendix 5

Unconfined Valley Hazards

No Apparent (Unconfined) Valley (Meander Belt)



Appendix 6

Valley Flooding Hazard

Riverine Flooding Hazard – One-Zone Policy Area

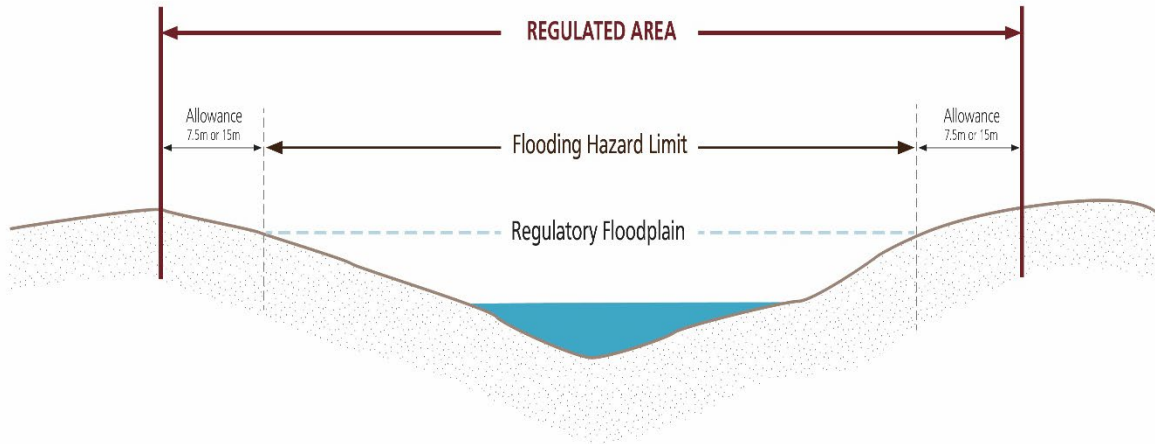
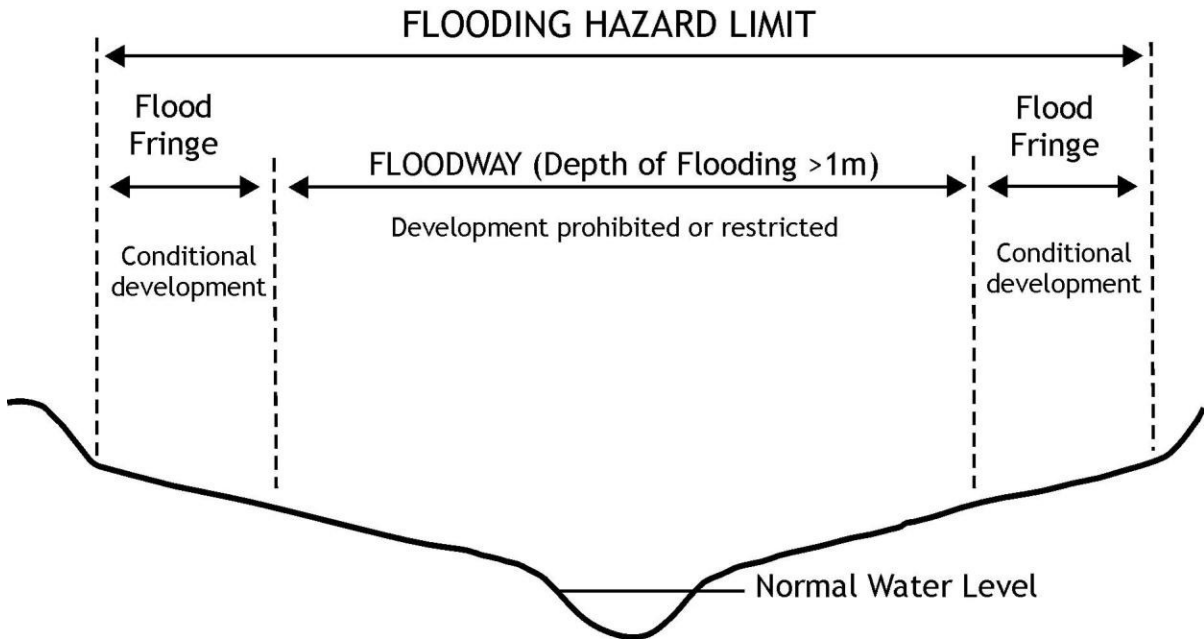


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Appendix 7

Millgrove Flood Fringe

Site Specific Millgrove Flood Fringe



Appendix 8

Wetlands and Other Areas

a) Profile View

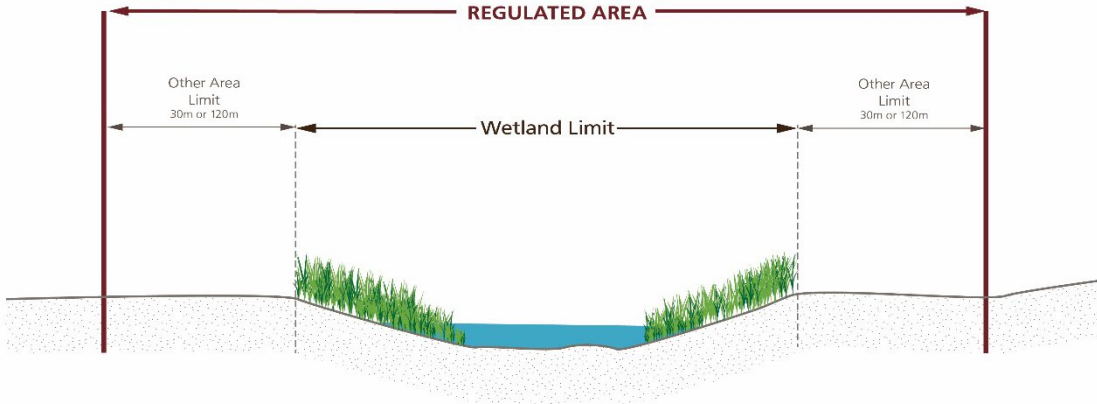


Diagram not to scale

b) Plan View

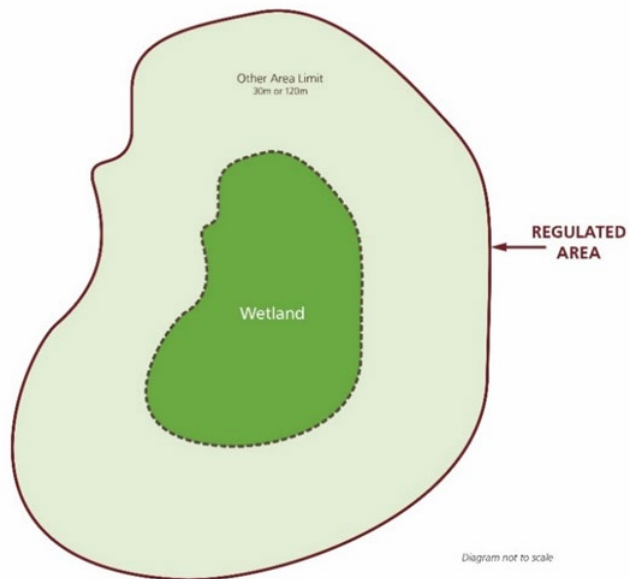


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Appendix 9

Types of Ponds and Riparian Buffers

