PROTECTING THE NATURAL ENVIRONMENT FROM LAKE TO ESCARPMENT

2596 Britannia Road West
Burlington ON L7P 0G3
905.336.1158 Fax 905.336.7014
conservationhalton.ca

February 4, 2013

Ms. Rose Caterini
City Clerk
City of Hamilton
71 Main Street W.
Hamilton, ON L8P-4Y5

Dear Ms. Caterini,

Re: Conservation Halton Regulatory Shoreline Policy Update Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation
Draft for Discussion
CH File: ADM 300

On April 27, 2006, Conservation Halton's Board of Directors approved the *Policies, Procedures and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document.* The approval of the document coincided with the Ministry of Natural Resources' approval of Conservation Halton's revised regulation (Ontario Regulation 162/06). The revised regulation included, among other changes, the addition of shoreline hazards to the hazardous lands regulated by Conservation Halton. As a result, Conservation Halton's policy document was updated to include regulatory policies related to shoreline hazards.

Through the implementation of the shoreline policies over the last six years, staff have identified a number of areas requiring further clarification and/or policies that need to be included in order to be consistent with Ontario Regulation 162/06. As a result, at Conservation Halton's November 29, 2012 Board of Directors meeting, the following recommendation was endorsed:

> **THAT** the Conservation Halton Board of Directors endorse the draft Shoreline Policies and the Compendium Summary for public consultation for a period of 60 days;
>
> **AND FURTHER THAT** the Conservation Halton Board of Directors endorse the draft Communications Plan, dated November 2012, and that Conservation Halton staff be directed to begin implementation of the Plan.

Please find enclosed a copy of the staff report, draft policies and compendium summary that were presented to the Board of Directors on November 29, 2012. **Comments are due on April 15, 2013.** A Public Information Centre will be held at Conservation Halton's Administration Office on **March 27, 2013.** Details regarding the time of the PIC will be available on Conservation Halton's website shortly. If you have any questions, please do not hesitate to contact me at 905-336-1158 ext. 266 or jlawrence@hrca.on.ca.

Yours truly,

Jennifer Lawrence, MCIP, RPP
Manager, Environmental Planning

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CONSERVATION HALTON
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REPORT TO: Board of Directors

FROM: Jennifer Lawrence, Manager, Environmental Planning
905-336-1158 x. 266

Ray Guther, Manager, Watershed Engineering Services
905-336-1158 x. 253

Teresa Labuda, Coordinator, Coastal Programs and
Watershed Capital Projects
905-336-1158 x. 234

DATE: November 29, 2012

SUBJECT: **Ontario Regulation 162/06**
Regulatory Policy Update - Shoreline
CH File #: ADM 300

Recommendation

THAT the Conservation Halton Board of Directors **endorse the draft Shoreline Policies and the Compendium Summary for public consultation for a period of 60 days;**

AND FURTHER THAT the Conservation Halton Board of Directors **endorse the draft Communications Plan, dated November 2012, and that Conservation Halton staff be directed to begin implementation of the Plan.**

Strategic Plan

This report relates to the following theme in Conservation Halton's Strategic Plan:

1 5 Deliver watershed management programs and services to ensure the protection of life and property from natural hazards;

Policies, Procedures and Process Pertaining to this Report

Reference is made to the *Conservation Authorities Act*, Ontario Regulation 162/06, the Provincial Policy Statement (2005) and the Ministry of Natural Resources *Technical Guide for the Great Lakes – St. Lawrence River System and Large Inland Lakes, Part 7 – Addressing the Hazards, 2001.*

Background

In 2005/2006 Conservation Halton staff undertook a complete policy review and update in order to implement the revised regulation that was required by Provincial legislation to be adopted by all Conservation Authorities by May 2006. The purpose of the policy update/review at that time was to.

- incorporate new policies to assist in implementing the newly regulated areas that would come into effect as a result of the revised regulation (i.e., shorelines, lands adjacent to hazard lands and wetlands);
- review all existing engineering and planning policies to ensure consistency with the new Provincial Policy Statement (2005);
- combine the engineering and planning policies into one comprehensive document.

At the request of the Region of Halton, Conservation Halton committed to undertake a review of the policy document one year after it had been approved. The Region felt that the revised regulation (and associated policy) had a somewhat fast-tracked public review process (approximately seven months) and a review after the policy had been implemented would help identify any necessary changes. The one-year review was scheduled to begin in May 2007. However, at that time there were a number of Conservation Authority and Provincial initiatives related to Conservation Authority policies that could impact on the content of Conservation Halton's policies. The initiatives that have occurred include:

- Greater Golden Horseshoe Conservation Authorities Policy Comparison (2008);
- Conservation Ontario's *Guidelines to Support Conservation Authority Administration of "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation"* (2008).

In 2009, staff brought a report to the Water Resources Advisory Committee recommending that a full policy update proceed at that time. Unfortunately, due to staffing resources, the full policy update has not taken place. In 2011, the policy document was updated such that the procedural components (original Section 2 of the document) were removed and placed in a separate Procedural Manual. This coincided with the Ministry of Natural Resources requirements related to review timelines that needed to be incorporated into Conservation Halton's procedural guidelines.

In order to ensure the regulatory and planning policies are updated, while addressing resource limitations, staff have separated the policy update process into several components. The first policy component to proceed with an update will be the shoreline policies.

Draft Shoreline Policies

Conservation Halton's current shoreline policies are Policies 3.41 to 3.50 within the *Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document*, dated revised August 11, 2011. The current shoreline policies are formatted significantly differently from the riverine regulatory policies within the document. For example, the riverine policies are structured by hazard whereas the shoreline policies are structured by type of development. For ease of reference and consistency within the same policy document, the revised shoreline policies have been drafted such that they are structured by hazard. The policies are now divided between flooding, erosion and dynamic beach hazards with additional policies related to shoreline protection works and development setback standards. A copy of the draft shoreline policies is included as Attachment 1.

In order to assist the general public and review agencies, staff have prepared a compendium summary that outlines the most significant revisions to the policies. Given the significant re-formatting, a track-changes version would not have been useful for public review. A copy of the compendium summary is attached to this report as Attachment 2.

As outlined in the compendium summary, some of the major changes include:

- incorporation of the reduced annual recession rate for Hamilton Harbour/Burlington Bay as approved by the Board of Directors at their meeting on June 23, 2011 (Meeting 05 11);
- greater description included as to what is considered a "reasonable alternative" when replacing and/or relocating existing structures within shoreline hazards;
- an explanation of how the Engineered Development Setback is calculated;
- introduction of policies for geothermal infrastructure within shoreline hazards;
- new policy for the replacement and expansion of existing residential dwellings on properties that are limited in size and/or configuration where it is not possible to remove the dwelling entirely from the Engineered Development Setback;
- definitions added for new terminology and refined for existing terminology.

Public Consultation

A Draft Communications Plan has been prepared and is included as Attachment 3 to this report. The draft policies will be released for a 60 day commenting period during which time a public consultation meeting will be held in early 2013. Upon conclusion of the commenting period, staff will compile the comments received, provide responses to the comments and modify the policies as necessary prior to bringing the final proposed shoreline policies to the Board of Directors for endorsement.

Summary

The purpose of the shoreline policy update is to ensure Conservation Halton's regulatory policies are:

- in-keeping with the wording of Conservation Halton's regulation;
- structured similarly to the riverine hazard policies;
- are defensible pursuant to the *Conservation Authorities Act* and Ontario Regulation 162/06; and.
- are reflective of minimum policy and technical guidelines prepared by the Ministry of Natural Resources and Conservation Ontario.

The draft policies have been prepared to achieve the above and a compendium summary has been prepared to assist the public and review agencies in understanding the most significant revisions that have been made to the policies.

Prepared by:

Jennifer Lawrence, Manager
Environmental Planning

Ray Gather, Manager
Watershed Engineering Services

Teresa Labuda, Coordinator,
Coastal Programs and
Watershed Capital Projects

Respectfully submitted:

Bob Edmondson, Director
Watershed Management Services

Approved for circulation:

Ken Phillips
CAO/Secretary-Treasurer

SHORELINE

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.

3.41 Shoreline Development Setback Standards

The following standards are applied when the 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 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 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 allowance is assessed by a professional engineer, with experience and qualifications in geotechnical engineering, based on existing grades; 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*.

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 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.

3.42 New Development

3.42.1 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.

3.42.2 Non-habitable buildings or structures 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* 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.

3.43 Existing Development

3.43.1 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.

3.43.2 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 citing 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.

3.43.3 Except as permitted in Policies 3.42.1 to 3.43.2 inclusive, no new *development* or *redevelopment* is permitted within *dynamic beach hazards*.

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 for an illustration of the *flooding hazard*.

3.44 New Development

3.44.1 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.*

3.44.2 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 then existing, and dry passive *floodproofing* is provided to the *minimum floodproofing standard*

3.44.3 *Minor, non-habitable, detached accessory structures* less than or equal to $14m^2$, 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.

3.44.4 *Major, non-habitable, detached accessory structures* (i.e., sheds, gazebos, decks and outdoor pools) greater than $14m^2$ 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.

3.44.5 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 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.

3.44.6 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.

3.45 Existing Development

3.45.1 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.

3.45.2 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 citing 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*;
e) the proposed *development* incorporates *floodproofing* to the *minimum floodproofing standard*. Dry passive *floodproofing* is the preferred method of *floodproofing* where feasible.

3.45.3 Except as provided for in Policies 3.44.1 to 3.45.2 inclusive, no new *development* or *redevelopment* is permitted within *flooding hazards*

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* 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 for an illustration of the erosion hazard and long-term stable slope allowance.

3.46 New Development

3.46.1 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 citing of the *development* ;
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 3.41 and 3.48.

3.46.2 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 citing of the *development*;
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 3.41 and 3.48.

3.46.3 In the case of a reconstruction and expansion of an existing dwelling, 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 3.41 and 3.46.2 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 *development* is proposed within the Engineered Development Setback as outlined in Policies 3.41 and 3.46.2 b);
b) additional habitable *development* permitted outside of the Engineered Development Setback as outlined in Policies 3.41 and 3.46.2 b) will only be permitted if portions of the existing habitable 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 habitable 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 3.46.3(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 citing of the *development.*

3.46.4 *Minor, non-habitable, detached accessory structures* less than $14m^2$, 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.

3.46.5 *Major, non-habitable, detached accessory structures* (i.e., sheds, gazebos, enclosed/indoor swimming pools) greater than $14m^2$ may be permitted provided:

a) safety concerns due to *erosion hazards* and shoreline 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*; 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.

3.46.6 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*; and,
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.

3.46.7 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.

3.46.8 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.

3.47 Existing Development

3.47.1 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.

3.47.2 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 citing 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.

3.47.3 Except as provided for in Policies 3.46.1 to 3.47.2 inclusive, no new *development* or *redevelopment* is permitted within *erosion hazards*.

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 neighbouring shoreline.

3.48 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 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 is assessed by a professional engineer with experience and qualifications in geotechnical engineering, based on existing grades;
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.

3.49 *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 impacts to adjacent shorelines.

3.50 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*.

Definitions

Floodproofing – means the combination of measures incorporated into the basic design and/or construction of buildings, structures, or properties to reduce or eliminate *flooding, wave uprush* and *other water related hazards* along the shorelines of the Great Lakes – St. Lawrence River System and large inland lakes, and *flooding* along river and stream systems.

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.*

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.

Protection works standard – 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.

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.*

Replaced – involves the removal of an existing structure and a new structure for same use and of same size or smaller erected

Minor Additions – as it relates to development within the shoreline *flooding hazard,* means construction that is less than 50% of the foundation area of the existing structure.

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.

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 $14m^2$ that is not connected by any means to a habitable structure.

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.

Conservation Halton
Shoreline Policy Update
Ontario Regulation 162/06
Compendium Summary

November 2012

The purpose of this summary is to provide an overview of the most significant changes that are proposed to Conservation Halton's regulatory shoreline policies. Given the change to the format/structure of the shoreline policies that is proposed, it was determined that a track-changes version of the document would not be beneficial given the significant formatting changes.

It is Conservation Halton's intention to update all of our regulatory and planning policies over the next couple of years. Shoreline policies were chosen to be updated first for the following reasons:

1. The formatting of the existing shoreline regulatory policies is significantly different from the formatting of the riverine regulatory policies. The existing shoreline policies are structured by development type whereas the existing riverine policies are structured by hazard. In order to provide consistency in formatting and ease of reference for the user, it was determined that updating the shoreline policies first would be most appropriate; and,
2. The wording of some of the existing shoreline policies needs to be updated to reflect the methodology for determining the extent of shoreline hazards as outlined in Conservation Halton's regulation (Ontario Regulation 162/06).

In addition to the format change and updates to wording to reflect the methodology for determining the extent of shoreline hazards, the following is a summary of the most significant revisions to the shoreline policies:

Recession Rate – Hamilton Harbour/Burlington Bay

Conservation Halton's Board of Directors, at their meeting of June 23, 2011, passed the following resolution:

> THAT the Conservation Halton Board of Directors adopt the use of a 0.2m/year annual average erosion rate for native soils along the north shoreline of Hamilton Harbour in the City of Burlington effective June 23, 2011;

AND FURTHER THAT the 0.2m/year erosion rate along the north shoreline of Hamilton Harbour in the City of Burlington be incorporated into Conservation Halton's regulatory policy document as part of the on-going policy update;

AND FURTHER THAT a copy of the staff report and Board resolution be circulated to the City of Burlington Planning and Building Departments for their information.

The reduced recession rate along Hamilton Harbour/Burlington Bay is the result of a study that Conservation Halton commissioned to assess the most appropriate recession rate to utilize along that portion of the shoreline. Specifically, Hamilton Harbour/Burlington Bay is somewhat sheltered from the full erosive forces experienced along the Lake Ontario shoreline. As such, the study which assessed historic long-term shoreline recession rates concluded that a recession rate of 0.2metres/year was more appropriate to use within the Harbour/Bay as compared to the 0.3metres/year that is used along the Lake Ontario shoreline. The recession rate of 0.2metres/year is based on native soil recession rates and therefore does not apply in areas that have been filled within the Hamilton Harbour/Burlington Bay. This reduced recession rate has been incorporated into Policy 3.41.

Reasonable Alternative Location

Conservation Halton's existing policies refer to the requirement to utilize the maximum lot depth and width when selecting a proposed building location. In order to provide clarity as to the expectations associated with "maximum lot depth and width" wording has been added to explain that the proposal needs to maximize the lot depth and width available, based on municipal zoning by-law requirements, to maximize the landward citing of the development. This revised wording can be found in Policies 3.43.2(a), 3.45.2(a), 3.46.3 and 3.47.1(a).

Engineered Development Setback

Although this terminology is new, the existing shoreline policies contain provisions for identifying the development setback and this basic concept has not changed. This term has been introduced to differentiate between the erosion hazard and the development setback that can be achieved within the erosion hazard subject to engineering studies and shoreline protection works. Reference to the Engineered Development Setback can be found in Policies 3.46.1 through 3.46.3. In addition, an appendix will be added to Conservation Halton's policy document that illustrates this setback.

Replacement/Expansion of Existing Residential Dwellings within the EDS

There are some properties that, due to their size and/or configuration, make it difficult or impossible to remove the entire structure from the Engineered Development Setback. In other words, the existing house is already closer to the lake then current policies would allow and reconstruction/replacement of the house may not be possible unless some of the home is permitted to remain within the Engineered Development Setback (i.e., closer to the lake then current policy would permit). A specific policy has been added to address such circumstances and provide criteria under which an application could be considered for

reconstruction/replacement in such a circumstance. The basic premise is that the structure should be removed from the Engineered Development Setback where it is physically possible and reasonable to do so. In those rare circumstances where it is not physically possible and reasonable to do so, Policy 3.46.3 provides for a removal ratio of 1:2 to enable some reconstruction/replacement on the property.

Geothermal Infrastructure

Conservation Halton staff receive frequent inquiries throughout our watershed with respect to geothermal infrastructure. There are currently no policies within Conservation Halton's policy document that pertain specifically to infrastructure. There are certain areas where, in the opinion of Conservation Halton, geothermal infrastructure is not appropriate (i.e., dynamic beach) however, there may be other locations (i.e., within the flooding hazard and/or the erosion hazard) where geothermal infrastructure may be appropriate if designed and installed appropriately. Reference to geothermal infrastructure can be found in Policies 3.44.6 and 3.46.8.

Definitions

A few new definitions have been added for the shoreline policies. Incorporating these definitions will assist in the implementation of the policies. The definitions have been taken from the Ministry of Natural Resources *Technical Guide for the Great Lakes – St. Lawrence River System and Large Inland Lakes, Part 7 – Addressing the Hazards, 2001.* These definitions will be added to Section 6 of Conservation Halton's *Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document* (revised August 11, 2011).