

Regulation Policies

Pursuant to Section 28 of the Conservation Authorities Act, R.S.O. 1990, c.27

Regulation of Development, Interference with Wetlands
and Alterations to Shorelines and Watercourses



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1 Introduction

Ontario Regulation 175/06, Raisin Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines And Watercourses, authorizes the Raisin Region Conservation Authority (RRCA) to permit *development* in areas within the jurisdiction of the authority that are in or adjacent to river or stream valleys, wetlands, shorelines, or hazardous lands.

2 Intent

This document seeks to ensure a consistent, timely and fair approach to the review of applications under Ontario Regulation 175/06. The policies guide the decisions of the RRCA Board of Directors and staff.

3 Policy Objectives

The policy objectives related to the administration of Ontario Regulation 175/06 include, but are not limited to:

- a. prevent loss of life, minimize property damage and social disruption, and avoid public and private expenditure for emergency operations, evacuation, and restoration due to natural hazards and associated processes;
- b. restrict *development* that may, singularly or cumulatively, restrict riverine channel capacities to pass flood flows or reduce storage capacity in floodplains and *wetlands* resulting in increased flood levels and create potential danger to upstream and downstream landowners;
- c. restrict *development* of flood and erosion susceptible *river* or *stream* valleys and shorelines that may increase hazard risk, create new hazards, or
- d. aggravate existing hazards that would in future years require expensive protection measures;
- e. prevent interference with *wetlands*;
- f. avoid the degradation and loss of *significant natural features* and *hydrologic functions* in *river* or *stream* valleys, *wetlands*, shorelines, and *hazardous lands*, and promote restoration and enhancement, whenever possible;
- g. prevent *pollution* of surface and ground waters associated with *development* in *river* or *stream* valleys, *wetlands*, shorelines, and *hazardous lands*; and

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- h. reduce potential nuisances associated with *development* by limiting the potential for floating objects and debris during flood events.

4 Regulated Areas

Ontario Regulation 175/06 applies to areas within the jurisdiction of the RRCA that are:

- a. adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to inland lakes that may be affected by flooding, erosion or dynamic beaches, including the area from the furthest offshore extent of the Authority's boundary to the furthest landward extent of the aggregate of the following distances:
 - i. the 100-year flood level for the St. Lawrence River System (Lake St. Lawrence, Hoople Bay, St. Lawrence River, and Lake St. Francis), plus the appropriate allowance for wave uprush as delineated in the most recent document entitled "Shoreline Management Plan" available at the head office of the Authority,
 - ii. the predicted long term stable slope projected from the existing stable toe of the slope or from the predicted location of the toe of the slope as that location may have shifted as a result of shoreline erosion over a 100-year period, as delineated in the most recent document entitled "Shoreline Management Plan" available at the head office of the Authority,
 - iii. where a dynamic beach is associated with the waterfront lands, the appropriate allowance inland to accommodate dynamic beach movement, and
 - iv. an allowance of 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 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 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 15 metres, to a similar point on the opposite side, and
- b) the distance from the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side;
- 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 2 hectares in size, and areas within 30 metres of wetlands less than 2 hectares in size.

5 Regulated Activities

Ontario Regulation 175/06 enables the RRCA to regulate *development* in river or stream valleys, wetlands, the St. Lawrence River shoreline, inland lakes, and hazardous lands within its jurisdiction. It also enables the RRCA to regulate alterations that straighten, change, divert, or interfere in any way with the channel of a river, *creek*, stream, watercourse, or change or interfere in any way with a wetland.

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.

Conservation Authorities Act, R.S.O. 1990, c. C.27, ss. 28(25)

The RRCA may, after consideration, not require permission for certain activities or *development*, including, but not limited to:

- i. non-habitable accessory buildings less than 10 m² associated with existing residential uses;

- ii. maintenance and upkeep of buildings and structures that do not change the existing footprint (e.g., replacement of windows, siding, roofs, stairs, etc.);
- iii. unenclosed structures associated with an existing use including, but not limited to, decks, gazebos, and patios;
- iv. non-structural agricultural uses such as cropping and pasturing outside the boundaries of regulated wetlands;
- v. on-going maintenance to stormwater management facilities that do not affect the control of flooding, erosion, pollution, or the *conservation of land*;
- vi. municipal water monitoring wells that would not affect the control of flooding, erosion, pollution, or the *conservation of land*; or
- vii. other non-structural uses such as gardens, nurseries, open arboretums, and forestry/wildlife management.

5.1 Permits

Development in areas described in Ontario Regulation 175/06 requires permission from the RRCA. Each permit application shall be evaluated on its own merits, on a case-by-case basis, consistent with the policies of this document.

Permit application forms are available at the head office of the RRCA and from the website: www.rrca.on.ca.

A permit may be approved with or without conditions, and a permit may be cancelled if conditions are not met.

Works commenced or completed without a permit in contravention of Section 28 of the Conservation Authorities Act may only be considered for a retroactive permit if the work meets – or can be reasonably modified to meet – the RRCA’s Regulation Policies. Retroactive permits may be subject to a permit fee surcharge in accordance with RRCA’s Fee Schedule, as amended.

5.2 Enforcement

Development and/or interference in *regulated areas* without RRCA permission is an offence under the *Conservation Authorities Act*. Every person who contravenes Ontario Regulation 175/06 may be subject to a fine of not more than \$10,000 or to a term of imprisonment of not more than three months (*Conservation Authorities Act*, R.S.O. 1990, c. C.27, ss. 28(16)).

On conviction, the court may order the removal of the *development/interference* at the party’s expense. The party may also be subject to a court order to rehabilitate the impacted area (*Conservation Authorities Act*, R.S.O. 1990, c. C.27, ss. 28(17)).

6 General Policies to Prohibit or Regulate Development

6.1 General Policies

6.1.1 *Development*, interference, or alteration shall not be permitted within a *regulated area*, except in accordance with Sections 6, 7, and 8.

Permission to Develop

6.1.2 *Development*, interference, or alteration within a *regulated area* may be permitted where it is demonstrated through appropriate technical studies and/or assessments, site plans and/or other plans as required by the RRCA that:

- a. the risk to public safety is not increased;
- b. susceptibility to natural hazards is not increased or new hazards created;
- c. there are no *adverse hydraulic or fluvial impacts* on *rivers, creeks, streams, or watercourses*;
- d. there are no adverse impacts on the natural shoreline processes of the Great Lakes-St. Lawrence River System and *inland lakes*;
- e. placing and removing *fill* is minimized;
- f. there are no adverse hydrologic impacts on *provincially significant wetlands*;
- g. *pollution*, sedimentation and erosion during construction and post construction is minimized using *best management practices* including site, landscape, infrastructure and/or facility design (whichever is applicable based on the scale and scope of the project), construction controls, and appropriate remedial measures;
- h. access for emergency works and maintenance of flood or erosion control works is available;
- i. works are constructed, repaired, and/or maintained according to *accepted engineering principles* and approved engineering standards or to the satisfaction of the RRCA, whichever is applicable based on the scale and scope of the project; and
- j. the control of flooding, erosion, dynamic beaches, *pollution*, or the *conservation of land* is not adversely affected during and post *development*, interference, or alteration.

Applications for Permission

- 6.1.3 Applications for permission to undertake *development*, interference or alteration in *Regulated Areas* shall be accompanied by appropriate technical studies and/or assessments, site plans and/or other plans as required by the RRCA. These studies/plans shall demonstrate, to the satisfaction of the RRCA, how the applicable policies in Sections 6, 7, and 8 are met.
- 6.1.4 Technical studies and/or assessments, site plans and/or other plans submitted as part of an application for permit to undertake *development*, interference or alteration in *Regulated Areas* shall be completed at the applicant's expense by a *qualified professional* to the satisfaction of the RRCA.
- 6.1.5 RRCA permits are valid for 24 months from the issue date (O. Reg. 175/06, s. 9(1)(a)).
- 6.1.6 Notwithstanding Section 6.1.5, the RRCA's executive committee may authorize a permit that is valid for a period up to 60 months where, in the opinion of the RRCA:
- a. the project cannot be reasonably completed within 24 months from the day the permission is granted (O. Reg. 175/06, s. 9(1)(b)(i)); or
 - b. the project requires approvals or permits from other regulatory bodies that cannot reasonably be obtained within 24 months from the day the permission is granted (O. Reg. 175/06, s. 9(1)(b)(ii)).

6.2 Prohibited Uses

- 6.2.1 Notwithstanding Section 6.1.2, *development* shall not be permitted within a *Regulated Area* where the use is:
- a. an institutional use associated with hospitals, nursing homes, pre-school, nurseries, day care or schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities, or the young;
 - b. an essential emergency service such as fire, police, ambulance or electrical substation;
 - c. associated with the disposal, manufacture, treatment, transfer, or storage of *hazardous substances*;
 - d. associated with the outdoor storage of any materials, either temporary or permanent;
or
 - e. associated with an *assisted living facility*.

7 Specific Policies to Prohibit or Regulate Development

7.1 River or Stream Valleys – Riverine Flooding Hazards

7.1.1 *Development* shall not be permitted within the Riverine Flooding Hazard except in accordance with Section 6.1 and Sections 7.1.2 – 7.1.32.

Permission to Development

7.1.2 *Development* within a *Riverine Flooding Hazard* may be permitted in accordance with Section 6 and where it is demonstrated that:

- a. there is no feasible alternative site outside the *Riverine Flooding Hazard*;
- b. *floodproofing* of additions is undertaken to the extent practical where *floodproofing* to the elevation of the *Regulatory Flood* is not feasible;
- c. *floodproofing* of buildings or structures sets the lowest opening to be 0.3 metres above the elevation of the *Regulatory Flood*;
- d. there is no risk of structural failure due to potential hydrostatic/dynamic pressures;
and
- e. *safe access* is established.

Residential

7.1.3 Notwithstanding Section 7.1.2 new *dwelling units* shall not be permitted within the *Riverine Flooding Hazard*.

7.1.4 Ground floor additions to residential buildings or structures may be permitted in accordance with Section 7.1.2 and where it is demonstrated that:

- a. the ground floor addition will have a maximum footprint of 50 m² or, in the case of multiple additions, all additions combined will have a maximum footprint of 50 m²;
- b. the number of *dwelling units* is the same;
- c. all *habitable floor space* is at or above the existing ground floor elevation; and
- d. any proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*.

7.1.5 An additional storey to residential buildings or structures may be permitted in accordance with Section 7.1.2 and where it is demonstrated that the number of *dwelling units* is the same.

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- 7.1.6 *Replacement* of residential buildings or structures may be permitted in accordance with Section 6 and where it is demonstrated that:
- a. the building or structure to be replaced is relocated outside the *Riverine Flooding Hazard* or where this is not feasible, the building or structure is relocated to an area within the existing lot where the risk of flooding and property damage is reduced to the greatest extent, wherever possible;
 - b. the number of *dwelling units* is the same or less;
 - c. the *replacement* building or structure shall be less than or equal to the original footprint;
 - d. the building or structure has *floodproofing* to standards set by the Ministry of Natural Resources Technical Guide - River and Stream Systems: Flooding Hazard Limit (2002);
 - e. any proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*;
 - f. electrical, mechanical, and heating services are located above the level of the *Regulatory Flood*, wherever possible; and
 - g. there is no risk of structural failure due to potential hydrostatic/dynamic pressures.
- 7.1.7 Notwithstanding 7.1.6, no permit shall be issued for *replacement* of damaged or destroyed buildings or structures where more than 60 months (five years) have passed since the building or structure was damaged or destroyed. *Replacement* does not include reconstruction of remnant foundations.
- 7.1.8 Relocation of residential buildings and structures may be permitted in accordance with Section 7.1.6 provided that the risk of flooding and property damage is reduced to the greatest extent possible.
- 7.1.9 Non-habitable *accessory buildings or structures* associated with an existing residential use such as detached garages, tool sheds, and other similar structures may be permitted in accordance with Section 6.1 and where it is demonstrated that:
- a. there is no feasible alternative site outside the *Riverine Flooding Hazard*;
 - b. the building or structure is securely anchored such that it does not break free and aggravate flooding;
 - c. *floodproofing* is undertaken to the extent practical, where *floodproofing* to the elevation of the *Regulatory Flood* is not feasible; and
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d. there is no opportunity for conversion into *habitable floor space*.

7.1.10 Above or below ground swimming pools may be permitted in accordance with Section 6.1, and provided that:

a. *floodproofing* of electrical facilities to the elevation of the *Regulatory Flood* is undertaken; and

b. all *fill*, except that approved for landscaping, is removed from the *Riverine Flooding Hazard*.

Commercial/Industrial

7.1.11 Additions to commercial/industrial buildings or structures may be permitted in accordance with Section 7.1.2 and where it is demonstrated that:

a. the addition will have a maximum footprint of 100 m² or, in the case of multiple additions, all additions combined will have a maximum footprint of 100 m²; and

b. any proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*.

7.1.12 *Accessory buildings or structures* associated with commercial/industrial uses may be permitted in accordance with Section 7.1.2 and where it is demonstrated that:

a. the building or structure is securely anchored such that it does not break free and aggravate flooding; and

b. any proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*.

7.1.13 *Replacement* of commercial buildings or structures may be permitted in accordance with Section 7.1.2 and where it is demonstrated that:

a. the building or structure to be replaced is relocated outside the *Riverine Flooding Hazard* or where this is not feasible, the building or structure is relocated to an area within the existing lot where the risk of flooding and property damage is reduced to the greatest extent, wherever possible;

b. the *replacement* building or structure shall be less than or equal to the original footprint;

c. proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*;

d. electrical, mechanical, and heating services are located above the level of the *Regulatory Flood*, wherever possible; and

- e. the risk of structural failure due to potential hydrostatic/dynamic pressures has been addressed through an appropriate study or review by a *qualified professional*.

7.1.14 Notwithstanding Section 7.1.13, no permit shall be issued for *replacement* of damaged or destroyed buildings or structures where more than 60 months (five years) have passed since the building or structure was damaged or destroyed. *Replacement* does not include reconstruction of remnant foundations.

7.1.15 Above ground parking lots associated with an *existing use* located wholly or partially within the *Riverine Flooding Hazard* may be permitted in accordance with Section 7.1.2 and where it is demonstrated that the risk of property damage is minimized through site design and flood emergency plans.

Internal Renovations

7.1.16 Internal renovations to buildings or structures that change the use or potential use of the building or structure but provide for no additional *dwelling units* may be permitted provided that:

- a. the internal renovation does not result in a new use prohibited by Section 6.2;
- b. electrical, mechanical, and heating services are located above the level of the *Regulatory Flood*, wherever practically possible; and
- c. the risk of structural failure due to potential hydrostatic/dynamic pressures has been addressed through an appropriate study or review by a *qualified professional*.

Septic Systems

7.1.17 *Replacement* of septic systems may be permitted within the *Riverine Flooding Hazard*, in accordance with Section 6.1 where there is no feasible alternative site outside the *Riverine Flooding Hazard* and where it is demonstrated that:

- a. the placement of *fill* associated with the septic system does not have an impact on the control of erosion, *pollution*, or the *conservation of land*;
 - b. the septic system design establishes the distribution pipes at or above the *Riverine Flooding Hazard*;
 - c. the septic system is flood-proofed using a watertight cap to prevent ingress of flood waters to the main tank as well as appropriate valves to prevent backflow; and
 - d. the septic system is designed to withstand lateral and buoyant pressures associated with floodwaters.
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7.1.18 New septic systems may be permitted within the *Riverine Flooding Hazard* in accordance with Section 6.1 where there is no feasible alternative site outside the *Riverine Flooding Hazard* and where it is demonstrated that:

- a. the placement of *fill* associated with the septic system does not have an impact on the control of flooding, erosion, *pollution*, or the *conservation of land*;
- b. the septic system design establishes the stone layer at or above the *Riverine Flooding Hazard*;
- c. the septic system is flood-proofed using a watertight cap to prevent ingress of flood waters to the main tank as well as appropriate valves to prevent back flow; and
- d. the septic system is designed to withstand lateral and buoyant pressures associated with floodwaters.

Wells

7.1.19 A drilled well may be permitted within the *Riverine Flooding Hazard* in accordance with Section 6.1 where there is no feasible alternative site outside of the *Riverine Flooding Hazard* and the well casing is designed to an elevation of 0.3 metres above the *Regulatory Flood*.

Public Infrastructure

7.1.20 Public infrastructure including but not limited to, roads, sanitary sewers, utilities, water and sewage treatment plants, water supply wells, well houses, and pipelines may be permitted in accordance with Section 6.1 where there is no feasible alternative site outside the *Riverine Flooding Hazard* as determined through an *Environmental Assessment* or other *comprehensive plan* supported by the RRCA, and where it is demonstrated that:

- a. *adverse hydraulic or fluvial impacts* are limited and any risk of flood damage to upstream or downstream properties is not increased or is minimized through site design and the affected landowner(s) is informed of the increased risk; and
- b. there is no loss of flood storage wherever possible.

7.1.21 The maintenance and repair of public infrastructure may be permitted in accordance with Section 6.1 and where it is demonstrated that where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized and it is demonstrated that *best management practices* including site and infrastructure design and appropriate remedial measures adequately restore and enhance features and functions.

Recreational Uses

- 7.1.22 Recreational uses such as passive parks, trails and *river* access points and other uses deemed appropriate by the RRCA – but not including new campgrounds, new golf courses or expansions to golf courses, marinas or permanent docks – may be permitted in accordance with Section 6.1 and where it is demonstrated that:
- a. there is no feasible alternative site outside the *Riverine Flooding Hazard*;
 - b. there is no loss of flood storage;
 - c. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized and it is demonstrated that *best management practices* including site, facility and/or landscape design and appropriate remedial measures adequately restore and enhance features and functions; and
 - d. the risk of property damage is minimized through site and facility design and flood emergency plans.
- 7.1.23 Marinas, permanent docks, and *boathouses* with no *habitable floor space* may be permitted in accordance with Section 6.1 and where it is demonstrated that:
- a. there is no measurable loss of flood storage;
 - b. facilities are designed to take advantage of existing impacted or open areas on the channel bank, wherever possible;
 - c. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized and it is demonstrated that *best management practices* including site, facility and/or landscape design and appropriate remedial measure adequately restore and enhance features and functions;
 - d. electrical and mechanical services are located above the level of the *Regulatory Flood*, wherever possible; and
 - e. the risk of property damage is minimized through site and facility design and flood emergency plans.
- 7.1.24 Golf courses or golf course expansions may be permitted in accordance with Section 6.1 and where it is demonstrated that:
- a. all associated permanent, closed structures including clubhouses, washrooms with septic systems and maintenance buildings are located outside of the *Riverine Flooding Hazard*;
 - b. there is no loss of flood storage;

- c. *watercourse* crossings are minimized and designed in accordance with Section 8;
- d. the risk of property damage is minimized through site and facility design and flood emergency plans; and
- e. the risk of *pollution* from the application of fertilizers, herbicides, pesticides, insecticides, or other chemical or organic compounds is minimized and addressed in a turf management plan.

Dug-Out/Isolated Ponds

7.1.25 A new *Dug-Out or Isolated Pond* or a redesign of a *Dug-Out or Isolated Pond* may be permitted in the *Riverine Flooding Hazard* in accordance with Section 6.1 and where it is demonstrated that:

- a. the pond is located outside of the *Riverine Erosion Hazard*; and
- b. finished side slopes are stable.

7.1.26 Dredging of a *Dug-Out or Isolated Pond* may be permitted where it is demonstrated that:

- a. all dredged material is removed from the *Riverine Flooding Hazard* and the *Riverine Erosion Hazard*;
- b. finished side slopes are stable;
- c. natural function is restored and enhanced to the extent possible; and
- d. the risk of *pollution* and sedimentation during dredging operations is minimized.

Agricultural Structures

7.1.27 Additions to agricultural buildings or structures may be permitted in accordance with Section 7.1.2 and where it is demonstrated that:

- a. the addition will have a maximum footprint of 100 m², or in the case of multiple additions, all additions combined will have a maximum footprint of 100 m²;
- b. any proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*; and
- c. *floodproofing* is undertaken to the extent practical where *floodproofing* to the elevation of the *Regulatory Flood* is not feasible.

7.1.28 *Accessory buildings or structures* associated with agricultural uses may be permitted in accordance with Section 7.1.2 and where it is demonstrated that:

- a. electrical, mechanical, and heating services are located above the level of the *Regulatory Flood*, wherever possible;
- b. the building or structure is securely anchored such that it does not break free and aggravate flooding;
- c. any proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*; and
- d. *floodproofing* is undertaken to the extent practical where *floodproofing* to the elevation of the *Regulatory Flood* is not feasible.

7.1.29 *Replacement* of agricultural buildings or structures may be permitted in accordance with Section 6.1 and where it is demonstrated that:

- a. the building or structure to be replaced is relocated outside the *Riverine Flooding Hazard* or where this is not feasible, the building or structure is relocated to an area within the existing lot where the risk of flooding and property damage is reduced to the greatest extent, wherever possible;
- b. the *replacement* building or structure shall be less than or equal to the original footprint;
- c. proposed basement or crawl space is designed to facilitate services only and is not *habitable floor space*;
- d. electrical, mechanical, and heating services are located above the level of the *Regulatory Flood*, wherever possible; and
- e. the risk of structural failure due to potential hydrostatic/dynamic pressures has been addressed through an appropriate study or review by a *qualified professional*.

7.1.30 Notwithstanding Section 7.1.29, no permit shall be issued for *replacement* of damaged or destroyed buildings or structures where more than 60 months (five years) have passed since the building or structure was damaged or destroyed. *Replacement* does not include reconstruction of remnant foundations.

7.1.31 Relocation of agricultural buildings and structures may be permitted in accordance with Section 7.1.29 provided that the risk of flooding and property damage is reduced to the greatest extent possible.

7.1.32 Agricultural structures that reduce risks associated with erosion or *pollution* or promote the *conservation of land* may be permitted in accordance with Section 6.1 and where it is demonstrated that:

- a. there is no feasible alternative site outside the *Riverine Flooding Hazard*;

- b. the risk of property damage is minimized through site design and flood emergency plans; and
- c. *floodproofing* is undertaken to the extent practical, where *floodproofing* to the elevation of the *Regulatory Flood* is not feasible.

7.2 St. Lawrence River Shoreline

7.2.1 *Development* shall not be permitted within the *Regulated Area* associated with the St. Lawrence River shoreline except in accordance with Sections 6.1 and 7.1.

Permission to Develop

7.2.2 *Development* within the *Regulated Area* associated with the St. Lawrence River shoreline may be permitted in accordance with Sections 6.1 and 7.1.

7.3 River or Stream Valleys – Riverine Erosion Hazards

7.3.1 *Development* shall not be permitted within the *Riverine Erosion Hazard* and the associated allowance except in accordance with Section 6.1 and Section 7.3.2.

Permission to Develop

7.3.2 *Development* within the *Riverine Erosion Hazard* Allowance may be permitted in accordance with Section 6.1 and where a site-specific geotechnical or engineering assessment based on established provincial guidelines and an appropriate *factor of safety* against slope failure or slipping establishes a more precise *Riverine Erosion Hazard* limit, and where it is demonstrated that:

- a. there is no feasible alternative site outside the *Regulated Area*;
- b. the proposed *development* is not subject to a *Riverine Erosion Hazard* or a *Riverine Flooding Hazard*;
- c. there is no impact on existing and future slope stability;
- d. the risk of creating new *Riverine Erosion Hazards* or aggravating existing *Riverine Erosion Hazards* caused by the *development* is *negligible*;
- e. the potential of increased loading forces on the top of the slope is addressed through appropriate structural design;
- f. the potential for surficial erosion is addressed by a drainage plan; and
- g. access into and through the valley for preventative actions or maintenance or during an emergency is not prevented.

7.4 Provincially Significant Wetlands and Areas of Interference

7.4.1 *Development/Interference* within a *provincially significant wetland* or *development* within the 120 metres adjacent to a provincially significant wetland shall not be permitted except in accordance with Section 6.1 and Sections 7.4.2 to 7.4.8. This prohibition includes but is not limited to:

- a. Buildings and structures;
- b. Stormwater management facilities;
- c. Open water features and ponds unless determined to be appropriate through an *environmental assessment* or similar study for conservation or restoration purposes;
- d. Construction of a new drain (either private or under the Drainage Act), including outlet improvements;
- e. Tile drainage;
- f. Peat extraction or related activities;
- g. Clear cutting; and
- h. Alteration to existing grade by the movement of material or by the placement of fill materials either originating on or off site.

Permission to Develop

7.4.2 Public infrastructure including but not limited to, roads, sanitary sewers, utilities, water supply wells, well houses, and pipelines, within a *provincially significant wetland* may be permitted in accordance with Section 6.1 and where it is demonstrated that:

- a. an *Environmental Assessment* or other *comprehensive plan* supported by the RRCA, demonstrates that all alternatives to avoid wetland loss or interference have been considered and that the proposed alignment minimizes *wetland* loss or interference to the greatest extent possible; and
- b. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* or *ecological functions* are minimized, and it is demonstrated that *best management practices* including site and infrastructure design and appropriate remedial measures will adequately restore and enhance features and functions.

7.4.3 Boardwalks (e.g., narrow, raised, planked trails) within a *provincially significant wetland* may be permitted in accordance with Section 6.1 and where it is demonstrated that:

- a. an *Environmental Impact Study* demonstrates minimal interference;

- b. the boardwalk is above the *Riverine Flooding Hazard*;
- c. the boardwalk is constructed with materials that do not interfere with the *provincially significant wetland*; and
- d. the design minimizes the *development* footprint.

7.4.4 Where an *Environmental Assessment* or other *comprehensive plan* is available and supported by the RRCA, the RRCA may request a more detailed site-specific study consistent with the *comprehensive plan*. This study will determine a more precise area *wetland* boundary in accordance with the current Provincial Wetland Evaluation System and demonstrate how the *hydrologic functions* and *ecological functions* of the *wetland* will be restored and enhanced.

Development within 120 metre adjacent lands

- 7.4.5 *Development* within an area of interference less than or equal to 120 metres from a *provincially significant wetland* may be permitted in accordance with Section 6.1, where there is no reasonable alternate location, and it has been determined there is no interference with the hydrological functions of the wetland or the that the impacts to hydrologic function are mitigated in a manner acceptable to the RRCA.
- 7.4.6 Peat Extraction within an area of interference may be permitted where a *wetland* impact study demonstrates that policies in Section 6.1 are met, and the affected area is rehabilitated to restore and enhance natural features and functions.
- 7.4.7 A *wetland* impact study may not be required in an area of interference situated between 30 and 120 metres from a *provincially significant wetland* if, in the opinion of the RRCA, the potential hydrologic impacts of the proposed *development* are *negligible*. This includes but is not limited to, single family residences, additions, and accessory structures for which less than one (1) hectare is required for grading.

Conservation Projects within Wetlands and Areas of Interference

- 7.4.8 *Wetland* conservation projects within *provincially significant wetlands* and *areas of interference* may be permitted where a *wetland* impact study demonstrates how the *hydrologic functions* and *ecological functions* will be protected, created, restored, and/or enhanced.

7.5 Inland Lakes

Lands adjacent or close to the shorelines of *inland lakes* may be subject to flooding and erosion.

- 7.5.1 *Development* along *inland lake* shorelines impacted by flooding or erosion hazards shall not be permitted except in accordance with Sections 6.1, 7.1, and 7.3.

Permission to Develop

7.5.2 Notwithstanding Section 7.5.1, *development* shall not be permitted for the uses described in Section 6.2.

7.6 Hazardous Lands

7.6.1 *Development* within *hazardous lands* shall not be permitted except in accordance with Section 7.6.2.

Permission to Develop

7.6.2 *Development* may be permitted within *hazardous lands* in accordance with Section 6.1 and where a technical site-specific study and/or an *Environmental Impact Study* done by a *qualified professional* establishes a more precise hazard land boundary and where it is demonstrated that:

- a. there is no feasible alternative site outside the *Regulated Area*; and
- b. the risk of instability that would result in structural failure or property damage is minimized.

7.6.3 Notwithstanding Section 7.6.2, *development* shall not be permitted in *hazardous lands* for the uses described in Section 6.2.

8 Policies for the Alteration of Watercourses

8.1 Straightening, Changing, Diverting or Interfering with an Existing Channel

8.1.1 Straightening, changing, diverting, or interfering with existing *river, creek, stream, or watercourse* is not permitted except in accordance with Section 6.1, and Sections 8.1.2 through Section 8.1.16. This prohibition includes but is not limited to:

- a. culvert placement or replacement;
- b. bridge construction;
- c. bed level crossings;
- d. piping of watercourses;
- e. installation or maintenance of pipeline crossings;
- f. cable crossings;
- g. construction or maintenance of by-pass;

- h. connected or online ponds;
- i. straightening and diversions; and
- j. any work within the bed or banks of the watercourse for the purpose of erosion control or remedial works.

Permission to Alter

8.1.2 Any alteration to the channel of a river, *creek*, stream, or watercourse requires permission from the RRCA.

Crossings

8.1.3 Crossings including, but not limited to, bridges, culverts, pipelines, channel *enclosures* of less than 20 metres and causeways may be permitted to be constructed, replaced or upgraded in accordance with Section 6.1 and Sections 7.1.20 - 7.1.22, where appropriate, and provided that all feasible alternative sites and alignments have been considered through an *Environmental Assessment* supported by the RRCA or through site-specific studies, whichever is applicable based on the scale and scope of the project, and where it is demonstrated that:

- a. crossings avoid any bends in the *watercourse* to the extent practical;
- b. crossings are located to take advantage of existing impacted or open areas on the channel bank or valley slope, wherever possible;
- c. crossing structures avoid the *Riverine Erosion Hazard* to accommodate natural *watercourse* movement, wherever possible;
- d. the risk of flood damage to upstream or downstream properties is reduced through site and infrastructure design, wherever possible;
- e. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized and it is demonstrated that *best management practices* including site and infrastructure design and appropriate remedial measures will adequately restore and enhance features and functions;
- f. physical *realignments* or alterations to the *river, creek, stream, or watercourse* channel associated with a new crossing are avoided or are in accordance with Section 8.1.14; and
- g. maintenance requirements are minimized.

Conservation Projects within or Adjacent to a River, Creek, Stream, or Watercourse

- 8.1.4 Conservation projects such as *stream* rehabilitation works, small impoundments and *realignments* that restore or enhance *watercourse* morphology or aquatic health and habitat may be permitted in accordance with Section 6.1 and provided that:
- a. the hydrologic and ecological benefits of the project are demonstrated to the satisfaction of the RRCA;
 - b. *stream* bank stability is enhanced;
 - c. *significant natural features* and *hydrologic functions* are restored and enhanced using *best management practices* including site and/or infrastructure design and appropriate remedial measures;
 - d. natural channel design principles are followed to the extent possible; and
 - e. maintenance requirements are minimized.

Erosion and Sediment Control Structures

- 8.1.5 Erosion and sediment control structures to protect existing *development* and other uses deemed appropriate by the RRCA may be permitted in accordance with Section 6.1 and where it is demonstrated that:
- a. erosion risk on adjacent, upstream, and/or downstream properties is reduced or erosion and sedimentation processes are controlled to reduce existing or potential impacts from adjacent land uses, whichever is appropriate;
 - b. natural channel design principles are followed to the extent possible;
 - c. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized, and it is demonstrated that *best management practices* including site and infrastructure design and appropriate remedial measures will adequately restore and enhance features and functions; and
 - d. maintenance requirements are minimized.

Maintenance, Repair, Alterations, Retirement and Removal of Structures

- 8.1.6 Maintenance, repair and alterations of dams, water control structures, or erosion and sediment control structures may be permitted where it is demonstrated that:
- a. *pollution* and sedimentation during maintenance and repair activities is minimized using *best management practices* including site and infrastructure design, construction controls and appropriate remedial measures;

- b. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized, and it is demonstrated that *best management practices* including site and infrastructure design and appropriate remedial measures will adequately restore and enhance features and functions;
- c. there are no adverse impacts on the capacity of the structure to pass flows;
- d. susceptibility to natural hazards is not increased or new hazards created; and
- e. works are maintained, repaired or altered according to *accepted engineering principles* and approved engineering standards or to the satisfaction of the RRCA based on the scale and scope of the project.

8.1.7 The retirement or the removal of dams, water control structures or erosion and sediment control structures that are structurally unsound or no longer serve their intended purpose, located within a *river, stream, creek* or *watercourse* may be permitted where an *Environmental Assessment* or a detailed decommissioning plan supported by the RRCA demonstrates that:

- a. all potential hydrologic and ecological impacts have been identified and considered;
- b. *significant natural features* and *hydrologic functions* within or adjacent to the *river, creek, stream, or watercourse* are restored and enhanced through the retirement or removal of the structure and a site restoration plan supported by the RRCA;
- c. the risk of *pollution* and sedimentation during and after retirement or removal is addressed through a draw down plan supported by the RRCA; and
- d. susceptibility to natural hazards is not increased or new hazards created.

Ponds

8.1.8 Connected ponds with no water intakes from the *watercourse* but which outflow into the *watercourse* may be permitted provided that the provisions of Section 6.1 are met, and a site plan and/or other site-specific study demonstrates that:

- a. there is no negative impact on the downstream water quality; and
- b. maximum berm heights above existing grades do not exceed 0.3 metres within the Riverine Flooding or Erosion Hazard and all remaining *fill* is removed from the hazard area.

8.1.9 Bypass ponds connected to *watercourses* created as part of site restoration plan or a conservation project may be permitted subject to the provisions of Section 8.1.8 and where it is demonstrated that the water intake is set above the elevation that permits

continuous flow (i.e., refreshing of the pond will depend on increased water flows from snow melt and rainfall events).

8.1.10 Online ponds in a *watercourse* are not permitted except as specified in Section 8.1.9.

8.1.11 Online ponds at the upstream end of *watercourses* may be permitted for *wetland* restoration and fish and wildlife habitat enhancement in accordance with Section 6.1 and where a site plan and/or other site-specific study demonstrates that there are no negative impacts on areas of groundwater recharge/discharge.

8.1.12 Dredging of an existing connected, bypass or online pond may be permitted in accordance with Section 7.1.26.

Dredging of a Watercourse

8.1.13 Dredging of a *watercourse* may be permitted to improve hydraulic characteristics and fluvial processes or to improve aquatic habitat or water quality in accordance with Section 6.1 and where a dredging plan and/or other site-specific study demonstrates that:

- a. *stream* bank stability is maintained or improved;
- b. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized and it is demonstrated that *best management practices* including site design and appropriate remedial measures will adequately restore and enhance features and functions; and
- c. all dredged material is removed from the Riverine Flooding and Erosion Hazard and safely disposed of.

Realignment, Channelization or Straightening

8.1.14 *Realignment*, channelization or straightening of a *river*, *creek*, *stream* or *watercourse* may be permitted to improve hydraulic characteristics and fluvial processes or to improve water quality in accordance with Section 6.1 and where a site plan and/or other site-specific study demonstrates that:

- a. all feasible alternative alignments have been considered through an *Environmental Assessment* supported by the RRCA or through site-specific studies, whichever is applicable based on the scale and scope of the project;
- b. *stream* bank stability is enhanced;
- c. where unavoidable, intrusions on *significant natural features* or *hydrologic functions* are minimized and it is demonstrated that *best management practices* including site

design and appropriate remedial measures will adequately restore and enhance features and functions; and

- d. natural channel design principles are followed to the extent possible.

Enclosures

8.1.15 *Enclosures of creeks, streams or watercourses* may be permitted where there is a risk to public safety and/or potential property damage and where a site-specific study demonstrates that:

- a. all feasible options and methods have been explored to address the hazard(s) and the *enclosure* is supported by the RRCA;
- b. the risk of public safety is reduced;
- c. susceptibility to natural hazards is reduced and no new hazards are created;
- d. there are no negative or adverse hydrological impacts on *wetlands*;
- e. *pollution*, sedimentation and erosion during construction and post construction is minimized using *best management practices* including site and infrastructure design, construction controls, and appropriate remedial measures;
- f. intrusions within or adjacent to the *river, creek, stream, or watercourse* are minimized and it is demonstrated that *best management practices* including site design and appropriate remedial measures will adequately restore and enhance features and functions to the extent possible; and
- g. works are constructed, repaired, and/or maintained according to *accepted engineering principles* and approved engineering standards or to the satisfaction of the RRCA, whichever is applicable based on the scale and scope of the project.

Shoreline Protection

8.1.16 Shoreline protection/improvement projects may be permitted in accordance with Section 6.1 and where it is demonstrated that:

- a. the project results in no significant effects on *river* hydraulics;
- b. transitions from proposed protection to adjacent shorelines is designed to mitigate local erosion, debris accumulation, or undesirable changes in local current;
- c. the design incorporates adequate drainage features; and
- d. there is no danger from marginally stable or unstable slopes.

9 Definitions

100 Year Flood Event Standard means rainfall or snowmelt, or a combination of rainfall and snowmelt producing at any location in a river, *creek*, stream, or watercourse a peak flow that has a probability of occurrence of one percent during any given year.

Accepted Engineering Principles means those current coastal, hydraulic, and geotechnical engineering principles, methods and procedures that would be judged by a peer group of qualified engineers as being reasonable for the scale and type of project being considered, the sensitivity of the locations, and the potential threats to life and property.

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

Adverse Hydraulic and Fluvial Impacts means flood elevations are not increased, flood and ice flows are not impeded and the risk of flooding to and erosion on adjacent upstream and/or downstream properties is not increased.

Areas of Interference means those lands where *development* could interfere with the hydrologic function of a provincially significant wetland.

Assisted Living Facility means a multiple residential unit that is constructed with limited kitchen facilities in the unit(s) or a group home, where individuals who require full or partial assistance with activities of daily living (e.g., bathing, toileting, ambulating, self administration of medications, etc.) reside.

Best Management Practices means methods, facilities, and structures that are designed to maintain or improve the environment and natural features and functions from the effects of *development* or interference.

Boathouse means a detached one level *accessory building or structure* that does not contain habitable living space which is designed or used for the sheltering of a boat, watercraft, or other form of water transportation (not for non-motorized vessels) located on a lot with access and frontage on a water body. The structure must include an opening to the water of an appropriate size to accommodate a boat, watercraft, or other form of water transportation which cannot reasonably be removed from the water without mechanical means, AND have a means of directly accessing the water, either by a wet slip or by mechanical means (i.e. marine railway or boat lift).

Channelization means the alteration of a watercourse by widening, deepening, or dredging, to improve the flow of water.

Comprehensive Plan means a study or plan undertaken at a landscape scale such as a watershed/subwatershed plan, an *Environmental Assessment*, a detailed Environmental Implementation Report (EIR) that has been prepared to address and document various

alternatives and is part of a joint and harmonized planning or *Environmental Assessment* process, or a community plan that includes a comprehensive *Environmental Impact Study*.

Conservation of land means the protection, preservation, management, or restoration of lands within the watershed.

Creek means a natural stream of water normally smaller than and often tributary to a river.

Development means the construction, reconstruction, erection or placing of a building or structure of any kind; any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure, or increasing the number of *dwelling units* in the building or structure; site grading; or the temporary or permanent placing, dumping or removal of material, originating on the site or elsewhere (*Conservation Authorities Act*, R.S.O. 1990, c. C.27, ss. 28(25)).

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

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

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 biological, physical, and socio-economic interactions.

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

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

Environmental Impact Study (EIS) means a report prepared to address the potential impacts of *development* or interference on natural features.

Erosion Access Allowance means the allowance to provide a large enough safety zone for people, vehicles, and equipment to enter and exit an area for emergency repairs or required maintenance.

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

Factor of Safety means the ratio of average available strength of the soil along the critical slip surface to that required to maintain equilibrium. The design minimum factors of safety are provided by the Ministry of Natural Resources Technical Guide - River and Stream Systems: Erosion Hazard Limit (2002). The higher factor of safety is used in complex geotechnical conditions or where there are geologically metastable materials.

Fill means any material that affects flood storage whether that material is placed on a permanent or temporary basis and whether that material originates on the site or elsewhere.

Floodproofing means structural changes and/or adjustments incorporated into the basic design and/or construction or alteration of individual buildings, structures or properties to protect them from flood damage under the standards set by the Ministry of Natural Resources Technical Guide - River and Stream Systems: Flooding Hazard Limit (2002), as amended from time to time.

Habitable Floor Space means any area that has the potential to be used as or converted to residential living space with bathroom fixtures, including basements and garages.

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 Substances means substances that individually or in combination with other substances, are normally considered to pose a danger to or threat to public health, safety, and the environment. These substances generally include a wide range of materials that are toxic, ignitable, corrosive, reactive, radioactive, or pathological.

Hydrologic Function means the functions of the hydrologic 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.

Hydrologic Study means a report prepared to address the potential impacts of *development* and interference on the hydrologic functions of a wetland or other natural feature.

Inland lake means a waterbody that may respond to single runoff events. Shoreline and adjacent lands may be subject to flooding and erosion hazards.

Meander Belt means the area of land in which a watercourse channel moves or is likely to move over a period of time.

Meander Belt Allowance means a limit for *development* within the areas where the river system is likely to shift. It is based on twenty times the bankfull channel width where the bankfull channel width is measured at the widest riffle section of the reach. The meander belt is centred over a meander belt axis that connects the riffle section of the stream.

Meander Belt Axis means the line or “axis” that the meander belt is centred over which connects all the riffle sections of a stream.

Negligible means not measurable or too small or unimportant to be worth considering.

Non-Apparent Valley or **Unconfined Valley** means that part of the valleyland system where a river, *creek*, stream, or watercourse is not contained within a clearly visible valley section.

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

Online Pond means a pond that is created within the defined channel of a watercourse by way of a dam or other man-made means.

Pollution means any deleterious physical substance or other contaminant that has the potential to be generated by development.

Provincially Significant Wetlands means wetlands the province has identified as being the most valuable under the Ontario Wetland Evaluation System.

Qualified Professional means a person with specific qualifications, training, and experience authorized to undertake work in accordance with accepted engineering or scientific principles as well as provincial standards, criteria, and guidelines to the satisfaction of the RRCA.

Realignment means the practice by which straightening, widening, dredging, ditching, or other means are used to shorten or reroute the natural stream course.

Regulated Area means the greatest extent of the combined hazards plus any prescribed allowance as described in Ontario Regulation 175/06.

Regulatory Flood means the 1:100-year flood, the limits of which define the riverine flooding hazard.

Replacement means the removal of an existing building or structure and the construction of a new building or structure. It does not include reconstruction of remnant foundations nor derelict or abandoned buildings or structures.

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

Riffle means a section of shallow rapids where the water surface is broken by small waves.

Riverine Erosion Hazard means the loss of land, due to human or natural processes, that poses a threat to life and property.

Riverine Flooding Hazard means the inundation caused by the 100 Year Flood Event Standard.

Safe Access means locations where the depth of flooding during a Regulatory Flood along the full length of the travelled surface of the access roadway or right-of-way is no greater than 0.3 metres with a maximum flood velocity of 3 m/s for vehicle access and no greater than 0.8 metres with a maximum flood velocity of 1.8 m/s for pedestrian access.

Significant Natural Features means features and areas including provincially significant wetlands, fish habitat, valleylands, habitat of endangered species, significant wildlife habitat, confirmed habitat for provincially or regionally significant species, part of an ecologically functional corridor or linkage between natural areas, or any other features or areas that are considered ecologically important in terms of contributing to the quality and diversity of an identifiable geographic area or natural heritage system.

Stable Slope Allowance means the distance between the actual valley top of slope and the point at which a stable slope gradient, rising from stable toe position, intersects the ground surface and includes an appropriate factor of safety.

Stable Slope Angle means the stable slope gradient determined by a geotechnical study or engineering assessment.

Straightening means changing the course of the river usually by cutting out meanders

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

Toe Erosion Allowance is the distance measured inland from the bankfull edge of the watercourse calculated by multiplying the average annual recession rate (as determined by an engineered study based on observation of twenty-five years or longer) over a 100-year planning horizon or 15 metres in absence of such a study.

Top of Slope 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.

Valleyland means land that has depressional features associated with a river or stream, regardless of whether it contains a watercourse.

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 river 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.

Wetland means land that: is seasonally or permanently covered by shallow water or has a water table close or at the surface; and directly contributes to the hydrological function of a watershed through connection with a surface watercourse; and has hydric soils, the formation of which have been caused by the presence of abundant water; and 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 wetland characteristics.

10 References

Conservation Authorities Act. (1990).

Lakes and Rivers Improvement Act. (1990).

Ontario Ministry of Natural Resources. (2002). Technical Guide River & Stream Systems:
Flooding Hazard Limit.

Ontario Regulation 175/06: Raisin Region Conservation Authority: Regulation of Development,
Interference with Wetlands and Alterations to Shorelines and Watercourses. (n.d.).