REGULATION POLICIES

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

Ontario Regulation 170/06*:*
Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

February 2022

Revisions

Revision No.	Board Approval Date	Details
1	September 27th, 2006	Resolution BD-136/06 on September 27th, 2006 Minutes BD-147/06 on October 25th, 2006
2	August 15th, 2019	Resolution BD-125/19 on August 15th, 2019 Minutes BD-133/19 on September 19th, 2019
3	February 17th, 2022	Resolution BD-028/22 on February 17th, 2022 Minutes BD-040/22 on March 17th, 2022

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1. Introduction

1.1 Role

The Ontario government passed the *Conservation Authorities Act* in 1946 in response to severe flooding and erosion experienced throughout the province. The legislation empowered municipalities to voluntarily establish *watershed* partnership organizations to manage land and water resources.

The South Nation River Conservation Authority (hereinafter South Nation Conservation or “SNC”) formed in 1947 and it consists of 16 member municipalities comprising portions of the United Counties of Prescott and Russell; United Counties of Stormont, Dundas and Glengarry; United Counties of Leeds and Grenville; and the City of Ottawa. The member municipalities appoint a twelve-member – plus past chair – Board of Directors to govern SNC’s work, set policy, and approve its budget.

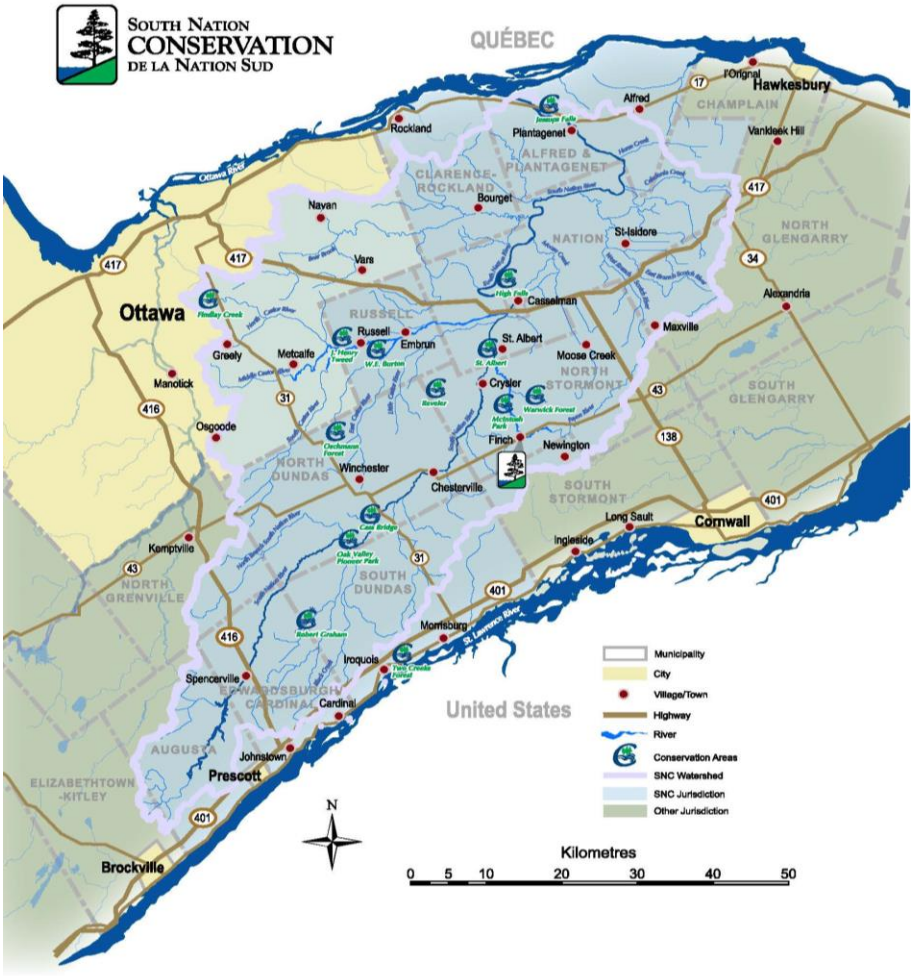

Figure 1: South Nation Conservation Jurisdiction

SNC works closely with all levels of government and local partners to enhance *watershed* health by coordinating and implementing a variety of programs and services that seek to:

- facilitate watershed planning;
- reduce flood damage via floodplain mapping and flood forecasting and warning;
- protect water quality and water systems;
- promote forestation through the planting of native tree species and forest management;
- protect natural areas and biodiversity;
- provide environmental education; and
- provide outdoor recreational opportunities.

1.2 Regulation

Ontario Regulation 97/04: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation allows conservation authorities to prevent or restrict *development* in areas where the control of flooding, erosion, dynamic beaches, *pollution,* or the *conservation of land* may be affected by *development*, to prevent the creation of new hazards or the aggravation of existing hazards.

The Conservation Authority can:

- prohibit or regulate development in river or stream valleys, wetlands, shorelines, and hazardous lands; and
- prohibit or regulate the straightening, changing, diverting, or interfering in any way with the existing channel of a river, creek, stream, watercourse, or for changing or interfering in any way with a wetland.

The Minister of Natural Resources approved SNC's specific regulation on May 4, 2006, titled *Ontario Regulation 170/06 South Nation River Conservation Authority: Development, Interference with Wetlands and Alteration to Shorelines and Waterways Regulation.*

Ontario Regulation 170/06 makes SNC permission necessary to undertake *development* in *river* or stream valleys, *wetland*s, shorelines, or *hazardous land*s; alter a *river*, *creek*, *stream,* or *watercourse*; or interfere with a *wetland*.

SNC may grant permission for proposed work in a *Regulated Area* if it is demonstrated to SNC's satisfaction that the proposed work will not affect the control of flooding, erosion, dynamic beaches, *pollution*, or the *conservation of land*.

SNC policies for the administration of Ontario Regulation 170/06 are outlined in Sections 6, 7, and 8. **Figure 2** illustrates the legislative context of the policies.

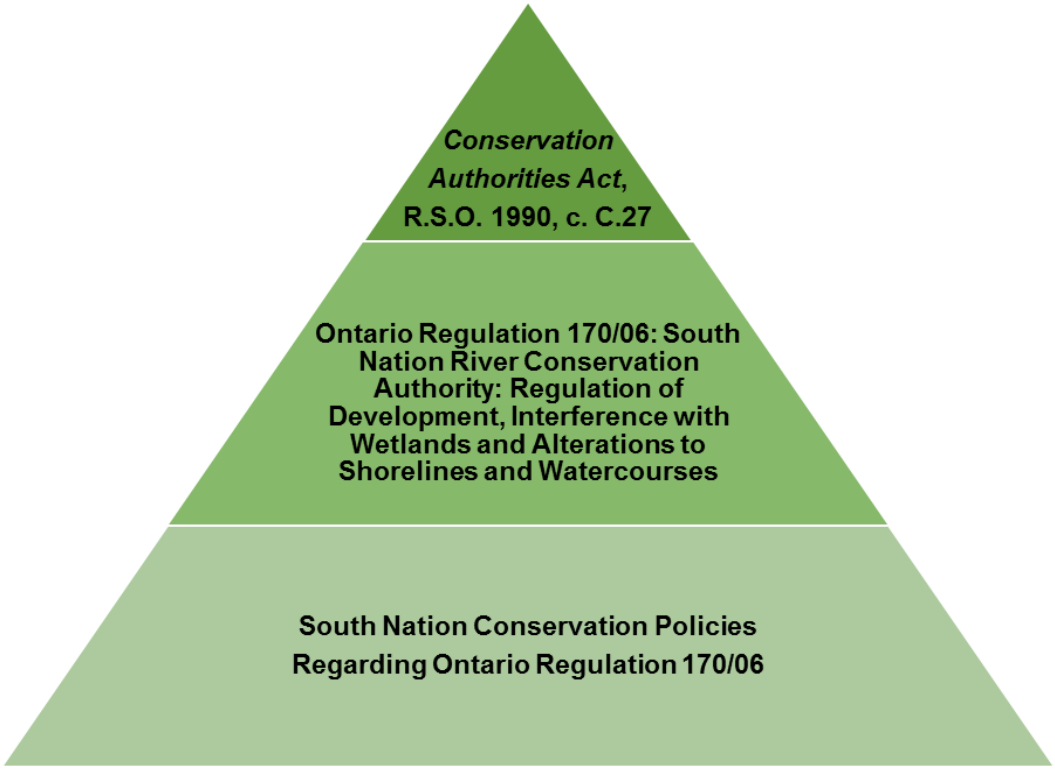

Figure 2: Hierarchy of legislation and policies

2. Intent

This document seeks to ensure a consistent, timely, and fair approach to the review of applications under Ontario Regulation 170/06. The policies guide the decisions of the SNC Board of Directors and staff.

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3. Policy Objectives

The policy objectives related to administration of Ontario Regulation 170/06 include, but are not limited to:

- 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;
- restrict *development* that may, singularly or cumulatively, restrict riverine channel capacities to pass flood flows or reduce storage capacity in floodplains and *wetland*s resulting in increased flood levels and create potential danger to upstream and downstream landowners;
- restrict *development* of flood and erosion susceptible *river* or *stream* valleys and shorelines that may increase hazard risk, *create* new hazards, or aggravate existing hazards that would in future years require expensive protection measures;
- prevent interference with *wetland*s;
- avoid the degradation and loss of *significant natural features* and *hydrologic function*s in *river* or stream valleys, *wetland*s, shorelines, and *hazardous land*s, and promote restoration and enhancement, whenever possible;
- prevent *pollution* of surface and ground waters associated with *development* in *river* or stream valleys, *wetland*s, shorelines, and *hazardous land*s; and
- reduce potential nuisances associated with *development* by limiting the potential for floating objects and debris during flood events.

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4. Regulated Areas

Ontario Regulation 170/06 applies to:

i) *river* or stream valleys;

ii) *wetland*s;

iii) areas where *development* could interfere with the *hydrologic function* of a *wetland*;

iv) areas adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or *inland lakes*; and

v) *hazardous land*s.

The *Regulated Area* represents the greatest extent of the combined hazards plus any prescribed allowance as described in Ontario Regulation 170/06.

Areas regulated under Ontario Regulation 170/06 are mapped according to the criteria and standards outlined in the Guidelines for Developing Schedules of Regulated Areas (October 2005) as approved by the Ontario Ministry of Natural Resources and Forestry and Conservation Ontario. Existing mapping is accurate to the scale the mapping was undertaken. Modifications to the extent of the *Regulated Area* may be made where more detailed studies determine a more precise boundary.

Ontario Regulation 170/06 applies to all *Regulated Areas*. Current maps may not delineate the full extent of areas regulated by Ontario Regulation 170/06.

Works requiring a permit under Ontario Regulation 170/06 require landowner permission and may be subject to legislation, policies, and standards administered by other agencies including, but not limited to, the provincial *Planning Act, Drainage Act, Ontario Water Resources Act*, *Environmental Assessment Act*, *Public Lands Act, Lakes and Rivers Improvement Act*, *Endangered Species Act*, and the federal *Fisheries Act*.

The Ministry of Natural Resources and Forestry and the Department of Fisheries and Oceans Canada prohibit in water works on the St. Lawrence River, Ottawa River, and the lower South Nation River to Plantagenet weir between March 15 and July 15 of any given year. In water works are prohibited on the remainder of the South Nation River and its tributaries between March 15 and June 30 of any given year.

SNC permission to undertake work does not preclude compliance with other applicable municipal by-laws, legislation, and regulations. Conversely, approval of work under other applicable municipal by-laws, legislation, and regulations do not preclude compliance with Ontario Regulation 170/06.

It is the responsibility of the applicant to ensure all necessary approvals are obtained prior to undertaking any works that require a permit under Ontario Regulation 170/06.

5. Regulated Activities

Ontario Regulation 170/06 enables SNC to regulate *development* in river or stream valleys, wetlands, St. Lawrence River shoreline, *inland lakes*, and hazardous lands within the SNC's jurisdiction. It also enables SNC 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:
>
> - 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 any material, originating on the site or elsewhere.
>
> *Conservation Authorities Act*, R.S.O. 1990, c. C.27, ss. 28(25)

SNC may not require permission for the following activities and development, including but not limited to:

i. non-habitable *accessory buildings* less than 10 m^2 (108 ft^2) 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.

Permits

Development in areas described in Ontario Regulation 170/06 requires a permit from SNC. Each application shall be evaluated on its own merits, on a case-by-case basis, consistent with the policies outlined in Sections 6, 7, and 8.

Permit application forms are available at SNC's Head Office and website (www.nation.on.ca/development/find-form).

Applicants may request a hearing before the SNC Board of Directors in accordance with Subsection 28(12) of the *Conservation Authorities Act* and the South Nation Conservation Hearing Guidelines, as amended. A decision of the SNC Board of Directors may be appealed to the Ontario Lands Tribunal.

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 – SNC's Section 28 Regulation Policies. Retroactive permits are subject to a 200% applicable fee in accordance with SNC's Fee Schedule, as amended.

Enforcement

Development and/or interference undertaken in *Regulated Areas* without SNC permission is an offence under the *Conservation Authorities Act.* Every person who contravenes Ontario Regulation 170/06 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)).

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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.

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 SNC 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 *river*s, *creek*s, *stream*s, or *watercourse*s;

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 wetland*s;

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 satisfactions of SNC, 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.

6.1.3 Notwithstanding Section 6.1.1, *development,* interference, or alteration in a *Regulated Area* may be permitted subject to policies specified in Sections 7 and 8.

6.1.4 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 SNC. These studies/plans shall demonstrate, to the satisfaction of SNC, how the applicable policies in Sections 6, 7, and 8 are met.

6.1.5 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 SNC.

6.2 Prohibited Uses

6.2.1 Notwithstanding Section 6.1, *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*.

6.3 Validity of Permits

6.3.1 SNC permits are valid for 24 months (2 years) from the issue date.

6.3.2 Notwithstanding Section 6.3.1, SNC may issue a permit that is valid for a period up to 60 months (5 years) where, in the opinion of SNC:

a) the project cannot be reasonably completed within 24 months (2 years) from the day the permission is granted; or

b) the project requires approvals or permits from other regulatory bodies that cannot reasonably be obtained within 24 months (2 years) from the day the permission is granted.

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7. Specific Policies to Prohibit or Regulate Development

7.1 River or Stream Valleys – Riverine Flooding Hazards

Defining the Riverine Flooding Hazard

Flooding of *river* or *stream* systems typically occur following the spring freshet but may occur later in the year from extreme rainfall events. *River*s naturally accommodate flooding within their valleys. Historical *development* occurred in floodplains due to the availability of water for power, transportation, energy, waste assimilation, and domestic and industrial consumption. However, floodplain *development* is susceptible to flooding that can result in property damage, loss of land, and loss of life.

The *Riverine Flooding Hazard* in SNC's jurisdiction is established via the Provincially mandated *100 Year Flood Event Standard* (hereafter referred to as the *Regulatory Flood*).

The *Regulated Area* along a *river* or *stream* system is generally determined by adding a 15 metre (50 ft) allowance to the extent of the furthest landward *Riverine Flooding Hazard* (**Figure 3**). *Regulated Area*s within SNC's jurisdiction associated with the *Riverine Flooding Hazard* are One-Zone Policy Areas.

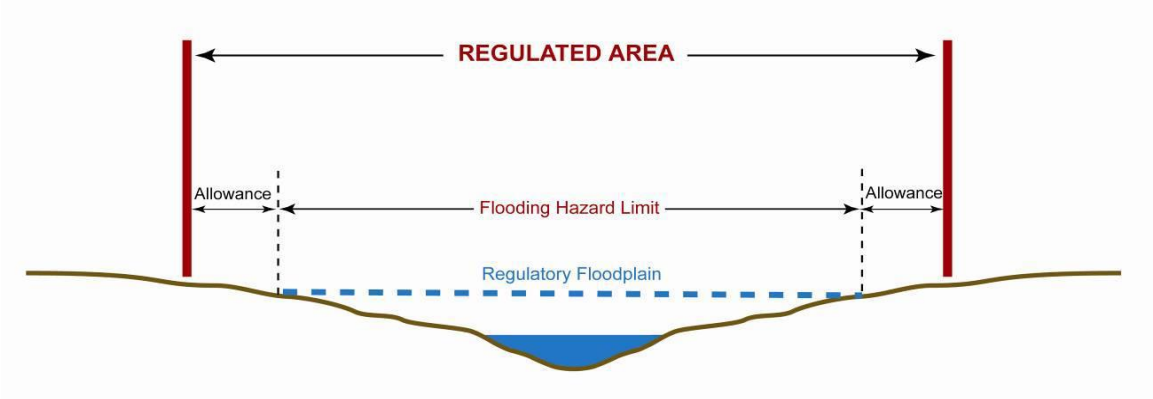

Figure 3: Riverine Flooding Hazard – Regulated Area for One-Zone Policy Areas

Policies for One-Zone Policy Areas

The following policies apply to *development* proposed in a One-Zone Policy Area subject to a *Riverine Flooding Hazard*.

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 - 7.1.29.

Development

7.1.2 *Development* within a *Riverine Flooding Hazard* 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) *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 m^2 (538 ft^2) or, in the case of multiple additions, all additions combined will have a maximum footprint of 50 m^2 (538 ft^2);
b) the number of *dwelling unit*s 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 unit*s is the same.

7.1.6 *Replacement* of residential 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 number of *dwelling unit*s 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.

Notwithstanding the foregoing, 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.

7.1.7 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.

7.1.8 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

d) there is no opportunity for conversion into *habitable floor space*.

7.1.9 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

7.1.10 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 m^2 (1,076 ft^2) or, in the case of multiple additions, all additions combined will have a maximum footprint of 100 m^2 (1,076 ft^2); and

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

7.1.11 *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*.

7.1.12 *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*.

Notwithstanding the foregoing, 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.

7.1.13 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

7.1.14 Internal renovations to buildings or structures that change the use or potential use of the building or structure but provide for no additional *dwelling unit*s 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

7.1.15 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 back flow; and
d) the septic system is designed to withstand lateral and buoyant pressures associated with floodwaters.

7.1.16 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

7.1.17 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

7.1.18 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 SNC, 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.

7.1.19 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 function*s 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

7.1.20- Recreational uses such as passive parks, trails and river access points and other uses deemed appropriate by SNC – 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 function*s 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.

7.1.21 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.

7.1.22 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 8.1.2;

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

7.1.23 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.

7.1.24 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

7.1.25 Additions to agricultural buildings or structures may be permitted in accordance with Subsections 7.1.2 a), b), and d) and where it is demonstrated that:

a) the addition will have a maximum footprint of 100 m^2 (1,076 ft^2), or in the case of multiple additions, all additions combined will have a maximum footprint of 100 m^2 (1,076 ft^2);

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.

7.1.26 *Accessory buildings or structures* associated with agricultural uses may be permitted in accordance with Subsections 7.1.2 a), b), and d) 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.

7.1.27 *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*.

Notwithstanding the foregoing, 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.

7.1.28 Relocation of agricultural buildings and structures may be permitted in accordance with Section 7.1.27 provided that the risk of flooding and property damage is reduced to the greatest extent possible.

7.1.29 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.

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7.2 St. Lawrence River Shoreline

St. Lawrence River Shoreline Flooding Hazard

The St. Lawrence River shoreline of the partner municipalities of Augusta Township, The Township of Edwardsburgh/Cardinal, and The Municipality of South Dundas comprise part of SNC's jurisdiction. Flooding from the St. Lawrence River affects the entire shoreline area.

The St. Lawrence River flooding hazard is based on the *100 Year Event Standard* with additional allowances for *wave uprush* and *other water-related hazards.* The hazard is further informed by the Environment Canada report: St. Lawrence River Flood Levels, Inland Water Directorate, Environment Canada, July 1993.

The *Regulated Area* along the St. Lawrence River shoreline generally consists of the furthest landward extent of the *Riverine Flooding Hazard*, a 5 metre (16 ft) allowance for wave uprush and *other water-related hazards*, as well as a further 15 metre (50 ft) allowance.

Policies for St. Lawrence River Shoreline

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

7.3 Ottawa River Shoreline

Ottawa River Shoreline Flooding Hazard

The Ottawa River shoreline of the partner municipalities of The City of Clarence Rockland and The Township of Alfred and Plantagenet comprise part of SNC's jurisdiction. Flooding from the Ottawa River affects the entire shoreline area.

The Ottawa River flooding hazard is based on the *100 Year Event Standard*.

The *Regulated Area* along the Ottawa River shoreline generally consists of the furthest landward extent of the *Riverine Flooding Hazard* and a 15 metre (50 ft) allowance.

Policies for Ottawa River Shoreline

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

7.4 River or Stream Valleys – Riverine Erosion Hazards

Riverine Erosion Hazards

Erosion is a natural process of soil loss due to human or natural processes. The *Riverine Erosion Hazard* within *river* or *stream* valleys is that area of *riverbank* and lands adjacent to *watercourse*s where erosion is actively occurring and/or where *development* could *create* slope stability issues.

The *Riverine Erosion Hazard* applies to those portions of the *valleyland* system that are both apparent (confined) and not apparent (unconfined). The extent of the hazard varies and is dependent on the characteristics of the bedrock and soils that comprise the valley slope, the degree to which the valley slope is stable or unstable, and whether the valley slope is subject to active erosion. Valley systems are apparent or confined where valley walls are greater than 3 metres (10 feet), with or without a floodplain.

Apparent Valleys can exhibit three different conditions within which erosion hazards exist or may develop: valley slopes which are steep but stable, valley slopes which are over steepened and potentially unstable, and valley slopes which are subject to active stream bank erosion. Where a *watercourse* is not contained within a clearly visible valley section, valleys are *not apparent* (unconfined).

Development within the *Regulated Area* of *valleylands* requires SNC permission.

Regulated Area for Apparent Valleys (Confined Systems)

The *Riverine Erosion Hazard* is determined using considerations of three (3) factors:

1. *Toe Erosion Allowance*: a 15 metres (50 feet) allowance measured inland from the bankfull edge of the watercourse or to the stable toe of slope, whichever is greater.

2. *Stable Slope Allowance*: a horizontal allowance measured landward from the toe of the slope (if >15 m from bankfull edge of the watercourse) or the location of the toe erosion allowance equivalent (if <15 m from bankfull edge of the watercourse) to three times the height of the slope (3H:1V) or five times the height of slope (5H:1V) for sandy soils and clays.

3. *Erosion Access Allowance*: a 15 metre (50 feet) 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.

Figure 4 illustrates the three components used to establish the *Regulated Area* where slopes are oversteepened with a stable toe. **Figure 5** illustrates the three components used to establish the *Regulated Area* where slopes are oversteepened and active toe erosion is occurring.

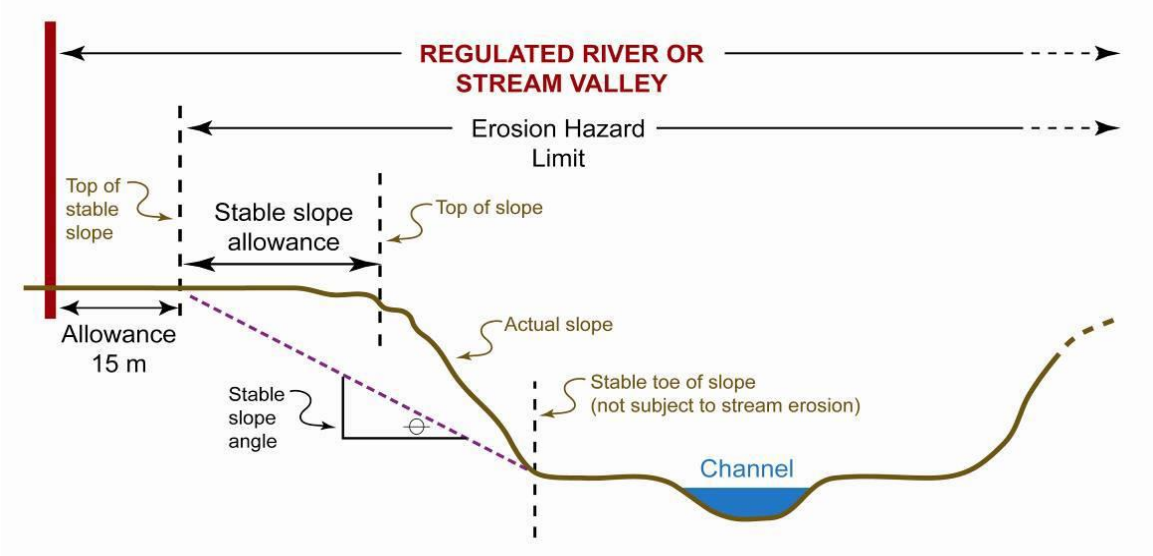

Figure 4. Riverine Erosion Hazard – Regulated Area for Apparent Oversteepened Valleys with Stable Toe

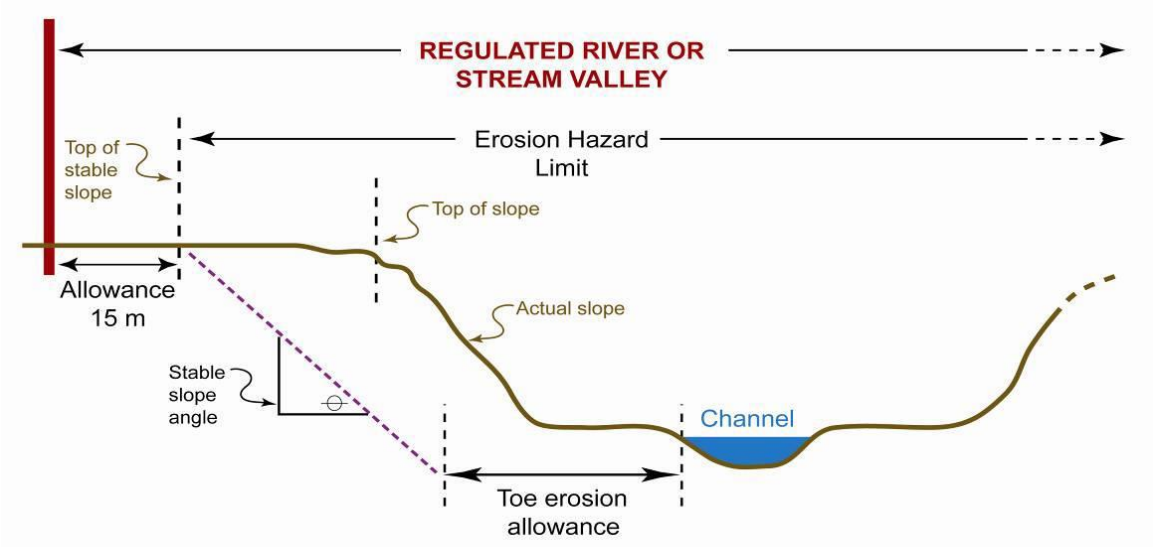

Figure 5. Riverine Erosion Hazard – Regulated Area for Apparent Oversteepened Valleys with Active Toe Erosion

Regulated Area for No Apparent Valley (Unconfined Systems)

Where there is *No Apparent Valley*, the flow of water is free to shift across the shallower land. Although toe erosion and slope stability are not deemed potential hazards, consideration for the meandering tendencies of the system must be provided. In these valley sections, the *Regulated Area* is the greater of the extent of the *Riverine Flooding*

Hazard plus the prescribed allowance or the *Meander Belt Allowance* plus an allowance of 15 metres (50 feet).

The *Meander Belt Allowance* provides a limit to *development* within the areas where the *river* system is likely to shift. This allowance is based on twenty (20) times the bankfull channel width, where the bankfull channel width is measured at the widest *riffle* section of the reach. A *riffle* is a section of shallow rapids where the water surface is broken by small waves. The *meander belt* is centered over the channel (**Figure 6**).

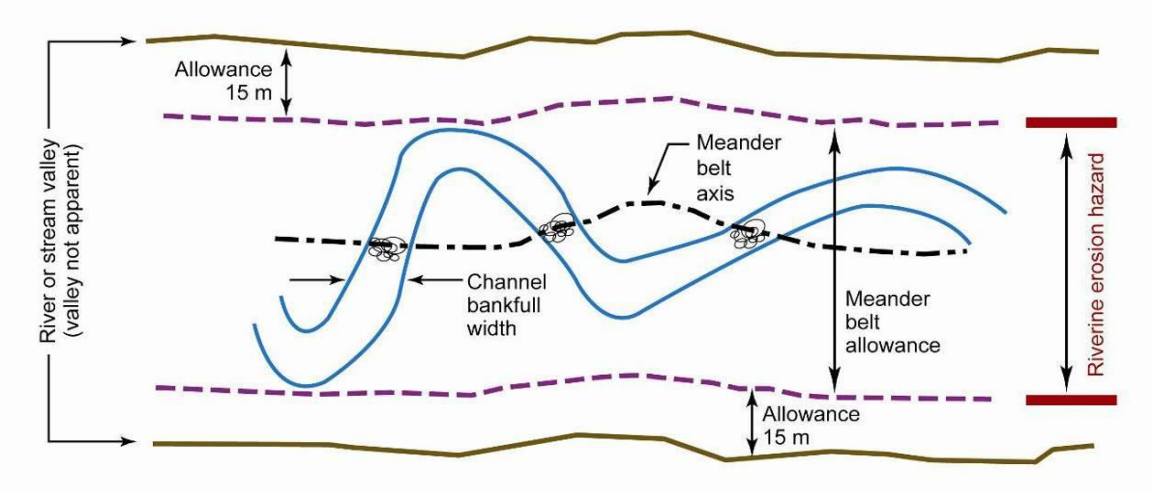

Figure 6. Riverine Erosion Hazard Regulated Area with no *Apparent Valley*

Policies for Riverine Erosion Hazards and the Associated Allowance

7.4.1 *Development* shall not be permitted within the *Riverine Erosion Hazard* and the associated allowance except in accordance with 6.1 and Section 7.4.2.

Development in the Riverine Erosion Hazard Allowance

7.4.2 *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.

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7.5 Wetlands and Areas of Interference

Provincially Significant Wetlands and Areas of Interference

Provincially Significant Wetlands are those wetland areas identified by the province as being the most valuable. Their boundaries are established and maintained by the Ministry of Natural Resources and Forestry using the Ontario Wetland Evaluation System.

Areas surrounding *provincially significant wetland*s where *development* could interfere with the *hydrologic function* of the *provincially significant wetland* are called *areas of interference*. This is the land within 120 metres (394 feet) of the boundaries of *Provincially Significant Wetlands* (**Figure 7)**.

*Provincially significant wetland*s and their associated *areas of interference* are regulated under Ontario Regulation 170/06. Any interference with *provincially significant wetland*s or development in *areas of interference* requires SNC permission.

Policies for Provincially Significant Wetlands and Areas of Interference

7.5.1 *Development/Interference* within a *provincially significant wetland* or *development* within an *area of interference* shall not be permitted except in accordance with Section 6.1 and Sections 7.5.2 - 7.5.8.

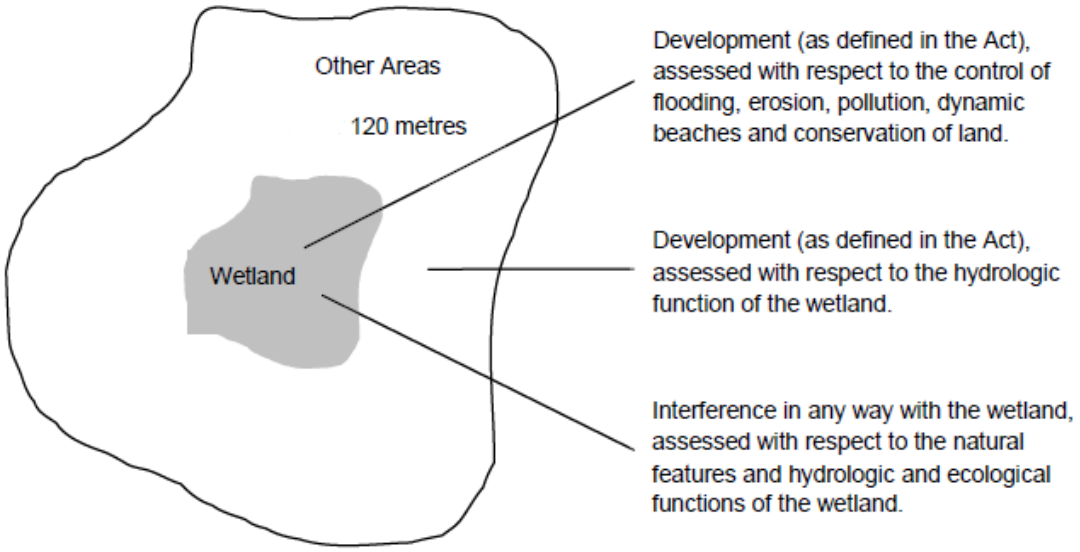

Figure 7: Provincial Significant Wetlands and Associated *Areas of Interference*

Development/Interference within Provincially Significant Wetlands

7.5.2 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 SNC, 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.

7.5.3 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.

7.5.4 Where an *Environmental Assessment* or other *comprehensive plan* is available and supported by SNC, SNC 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 Areas of Interference

7.5.5 *Development* within an area of interference less than or equal to 120 metres (394 feet) from a *provincially significant wetland* may be permitted in accordance with Section 6.1, a wetland impact study is conducted, and where it is demonstrated that *development* is located outside of the *provincially significant wetland* and maintains as much setback as feasible.

7.5.6 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.

7.5.7 A wetland impact study may not be required in an area of interference 120 metres (394 ft) from a *provincially significant wetland* if, in the opinion of SNC, 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 (2.5 acres) is required for grading.

Conservation Projects within Wetlands and Areas of Interference

7.5.8 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 function*s will be protected, created, restored, and/or enhanced.

7.6 Inland Lakes

Lands adjacent or close to the shorelines of *inland lakes* with a surface area greater than 2 hectares (5 acres) are subject to flooding and erosion. *Development* adjacent to *inland lakes* requires SNC permission.

Hazards adjacent to inland lakes are delineated in a manner consistent with the *Riverine Flooding Hazard* and the *Riverine Erosion Hazard*.

7.6.1 *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 7.5.

7.6.2 Notwithstanding Section 7.6.1, *development* shall not be permitted for the uses described in Section 6.2.

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7.7 Hazardous Lands

Development within or adjacent to *hazardous lands* requires permission from SNC.

Hazardous land is land that may be unsafe for *development* because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock (*Conservation Authorities Act*, R.S.O. 1990, c. C.27, ss. 28(25)).

Hazardous lands in SNC's jurisdiction unrelated to flooding include, but are not limited to, organic soils (peat soils), unstable bedrock (karst), and sensitive marine clays (Leda clay).

Organic Soils

Organic (peat soils) are formed by the decomposition of vegetative and organic materials into humus can release humic acids to the ground water system and create highly combustible methane gas. Peat and other organic soils also lack soil structure making them susceptible to erosion and unable to support structure because they compress easily.

Unstable Bedrock

Unstable bedrock includes, but is not limited to, areas identified as karst formations. Karst formations may be present in limestone or dolomite bedrock and are extremely variable in nature. Local, site-specific studies are required for identifying karst formations.

Sensitive Marine Clay (Leda Clay)

Sensitive marine clays, also known as Leda clays, are clays deposited as sediment by the Champlain Sea during the last glacial period. Undisturbed, the clays appear solid and stable. However, when disturbed by excessive vibration, shock, or when they become saturated with water the clays can turn to liquid. The resulting failures or earthflows can be sudden and catastrophic.

Policies for Hazardous Lands

7.7.1 *Development* within *hazardous land*s shall not be permitted except in accordance with Section 7.7.2.

Development in Hazardous Lands

7.7.2 *Development* may be permitted within *hazardous land*s 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.

Prohibited Uses in Hazardous Lands

7.7.3 Notwithstanding Section 7.7.2, *development* shall not be permitted in *hazardous lands* for the uses described in Section 6.2.

7.8 Casselman to Lemieux Potential Retrogressive Landslide Area

The banks of the South Nation River between the villages of Casselman and Lemieux contain sensitive marine clay (Leda clay) that are prone to large-scale retrogressive landslides. This area is identified as the *Potential Retrogressive Landslide Area* and has been the subject of decades of research and geotechnical studies.

The *Potential Retrogressive Landslide Area* is delineated by two studies: Potential Retrogressive Landslide Mapping Update South Nation River Casselman to Lemieux, Ontario 1998 (Report No. 981-009) and Preliminary Slope Stability Evaluation Wolf Creek Township of Cambridge Ontario 1996 (Report No. 961-208).

The most recent large-scale landslide occurred on June 20, 1993 at the site of the former town of Lemieux, two years after the town and residents were relocated away from the hazard. The landslide dammed the river and consumed seventeen hectares of land (**Figure 8**). A previous large-scale retrogressive landslide occurred in 1971, approximately 4.5 kilometers upriver from the 1993 event.

Figure 8: Lemieux Retrogressive Landslide 1993

Policies for the Potential Retrogressive Landslide Area

7.8.1 *Development* within the *Potential Retrogressive Landslide Area* shall not be permitted.

7.8.2 *Development* within 30 metres (100 ft) of the *Potential Retrogressive Landslide Area* shall not be permitted except in accordance with Section 7.8.3.

7.8.3 *Development* may be permitted within 30 metres (100 ft) of the *Potential Retrogressive Landslide Area* in accordance with Section 6.1 where it is demonstrated there is no feasible alternative site greater than 30 metres (100 ft) from the *Potential Retrogressive Landslide Area* and where the applicant provides a geotechnical report by a *qualified professional* engineer having expertise in retrogressive landslides, to the satisfaction of SNC.

Prohibited Uses

7.8.4 Notwithstanding Section 7.8.3, *development* shall not be permitted within 30 metres (100 ft) of the *Potential Retrogressive Landslide Area* for the uses described in Section 6.2.

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8. Policies for the Alteration of Watercourses

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

Any alteration to the channel of a *river*, *creek*, *stream,* or *watercourse* requires permission from SNC. This includes activities such as, but not limited to:

- culvert placement or *replacement*;
- bridge construction;
- bed level crossings;
- piping of *watercourse*s;
- installation or maintenance of pipeline crossings;
- cable crossings;
- construction or maintenance of by-pass;
- connected or online ponds;
- straightening and diversions; and
- any work within the bed or banks of the *watercourse* for the purpose of erosion control or remedial works.

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 - 8.1.18.

Crossings

8.1.2 Crossings including, but not limited to, bridges, culverts, pipelines, channel *enclosure*s of less than 20 metres (66 feet) and causeways may be permitted to be constructed, replaced or upgraded in accordance with Section 6.1 and Sections 7.1.18 - 7.1.20 and/or Section 7.1.23, where appropriate, and provided that all feasible alternative sites and alignments have been considered through an *Environmental Assessment* supported by SNC 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 function*s 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 8.1.16; and

g) maintenance requirements are minimized.

Water Control Structures

8.1.3 Water Control Structures to protect existing *development* or other uses deemed appropriate by SNC from the *Riverine Flooding Hazard* including dykes and berms, but not *dam*s, may be permitted to be constructed maintained or repaired in accordance with Section 6.1 and where it is demonstrated that:

a) all feasible alignments have been considered through an *Environmental Assessment* supported by SNC or other site-specific technical studies, whichever is applicable based on the scale and scope of the project; and

b) where unavoidable, intrusions on *significant natural features* or *hydrologic function*s 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.

Dams

8.1.4 *Dams* may be permitted where it is demonstrated that:

a) all feasible alternative sites and alignments have been considered through an *Environmental Assessment* supported by SNC or through site-specific studies, whichever is applicable based on the scale and scope of the project;

b) the water management benefits of the *dam* are demonstrated to the satisfaction of SNC;

c) *pollution*, sedimentation and erosion during construction and post construction are minimized using *best management practices* including site, landscape, infrastructure design, construction controls, and appropriate remedial measures;

d) where unavoidable, intrusions on *significant natural features* or *hydrologic function*s 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

e) works are constructed according to *accepted engineering principles* and approved engineering standards or to the satisfaction of SNC, whichever is applicable based on the scale and scope of the project.

8.1.5 Alterations[1] to *Dams* may be permitted where it is demonstrated that:

a) *pollution*, sedimentation and erosion during construction and post construction are minimized using *best management practices* including site, landscape, 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) the integrity of the original structure is maintained or improved; and
e) works are altered according to *accepted engineering principles* and approved engineering standards or to the satisfaction of SNC, whichever is applicable based on the scale and scope of the project.

8.1.6 The retirement of *Dams* or the removal of *Dams* 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 SNC demonstrates that:

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

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

8.1.7 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 SNC;

[1] Alterations to existing dams in watercourses that, in the opinion of SNC, would not affect the control of flooding, erosion, pollution or the conservation of land and that would not result in changes in the capacity to pass river flows or impacts on integrity of the structure or in-water works do not require a permit under Regulation 170/06.

b) *stream* bank stability is enhanced;

c) *significant natural features* and *hydrologic function*s are *restore*d 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

8.1.8 Erosion and sediment control structures to protect existing *development* and other uses deemed appropriate by SNC 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 function*s 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 of Dams or Erosion and Sediment Control Structures

8.1.9 The maintenance and repair of *Dams* 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 function*s 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) susceptibility to natural hazards is not increased or new hazards created; and

d) works are maintained or repaired according to *accepted engineering principles* and approved engineering standards or to the satisfaction of SNC based on the scale and scope of the project.

Ponds

8.1.10 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 (1 foot) within the *Riverine Flooding* or *Erosion Hazard* and all remaining *fill* is removed from the hazard area.

8.1.11 Bypass ponds[2] connected to *watercourse*s created as part of site restoration plan or a conservation project may be permitted subject to the provisions of Section 8.1.10, 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 *stream* flows from snow melt and rainfall events).

8.1.12 On-Line ponds[3] in a *river*, *creek*, *stream,* or *watercourse* are not permitted except as specified in Sections 8.1.4 and 8.1.11.

8.1.13 On-Line ponds at the upstream end of *watercourse*s 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.

8.1.14 Dredging of an existing connected, bypass or on-line pond may be permitted in accordance with Section 7.1.23.

Dredging of a River, Creek, Stream or Watercourse

8.1.15 Dredging of a *river*, *creek*, *stream,* or *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 function*s 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.

[2] A bypass pond is created by diverting some of the flow from a watercourse into an adjacent pond. The outlet of this type of pond usually returns water to a watercourse.
[3] An on-line pond is built by digging-out or dredging an area within an existing watercourse or by damming a watercourse.

Realignment, Channelization or Straightening

8.1.16 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 SNC 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 function*s 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

a) natural channel design principles are followed to the extent possible.

Enclosures

8.1.17 *Enclosures* of *creek*s, *stream*s or *watercourse*s 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 SNC;

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 SNC, whichever is applicable based on the scale and scope of the project.

Shoreline Protection

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

a) alignment 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.

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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 per cent 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.

"Apparent Valley or Confined Valley" means that part of the *valleyland* system where the valley walls are greater than 3 metres (10 feet), with or without a floodplain.

"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.

"Comprehensive Plan" means a study or plan undertaken at a landscape scale such as a *watershed*/sub*watershed* 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*.

"Dam" means a structure or work holding back or diverting water and includes a dam, tailings *dam*, dike, diversion, channel, artificial channel, culvert, or causeway (*Lakes and Rivers Improvement Act*, R.S.O. 1990 c. L3, s. 1)

"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 unit*s in the building or structure; site grading; or the temporary or permanent placing, dumping or removal of material, originating on the site or elsewhere.

"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 15 metre (50 feet) 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: Flooding 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).

"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 function*s of a *wetland* or other natural feature.

"*Inland lake*" means a waterbody with a minimum surface area of 2 hectares (5 acres) that may respond to single runoff events. Shoreline and adjacent lands may be subject to flooding and erosion hazards.

"Karst" means an area of irregular limestone where erosion has produced fissures, sinkholes, underground *stream*s, and caverns.

"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 (20) 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.

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

"Potential Retrogressive Landslide Area" means the mapped hazardous lands between the Village of Casselman and the former Hamlet of Lemieux where engineer and geotechnical reports indicate large-scale retrogressive landslides can occur at any time.

"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 SNC.

"Regulated Area" means the greatest extent of the combined hazards plus any prescribed allowance as described in Ontario Regulation 170/06.

"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 wetland*s, fish habitat, *valleyland*s, 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.

"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 (50 feet) 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;
- directly contributes to the hydrological function of a *watershed* through connection with a surface *watercourse*;
- 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, R.S.O. 1990, c. C.27
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90c27_e.htm

Ontario Regulation 170/06
https://www.ontario.ca/laws/regulation/060170

Provincial Legislation and Regulations
www.e-laws.gov.on.ca

Federal Legislation and Regulations
http://laws.justice.gc.ca/en/

Provincial Policy Statement, 2020
https://www.ontario.ca/page/provincial-policy-statement-2020