

APPENDIX U: GUIDELINES FOR IN-WATER AND SHORELINE WORKS (2017 Update)

Introduction

The Cataraqui Region Conservation Authority (CRCA) administers Ontario Regulation 148/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses pursuant to Section 28 of the *Conservation Authorities Act*. This Regulation applies to all shorelines, watercourses, waterbodies and wetlands, and to land beside these features, within the CRCA jurisdiction. Works or undertakings within the regulated areas require permission from CRCA prior to the works being undertaken, in accordance with the Guidelines for Implementing Ontario Regulation 148/06 (November 2017). In-water works are often required to support marine uses, shoreline protection, and water taking activities.

These guidelines apply to in-water and shoreline works, and related activities. They will be used by staff in the review of permit applications to ensure that these activities meet the intent of the Guidelines for Implementing Ontario Regulation 148/06.

1.0 General Guidelines

The following general guidelines will be considered in reviewing applications under Ontario Regulation 148/06 for all in-water and shoreline works.

- a) Compliance with all applicable legislation, by-laws and regulations are encouraged through the promotion of the best management practices associated with them.
- b) In order to maintain healthy shorelines and waterbodies, no more than 20% or 15 metres whichever is less, of any one property owner's shoreline should be developed with in-water or shoreline structures, exclusive of erosion control measures.
- c) Proponents are encouraged to abide by the timing window guidelines for fish spawning and turtle nesting (as established by the Ontario Ministry of Natural Resources and Forestry) and species listed as threatened or endangered under the *Endangered Species Act* (administered by OMNRF) or *Species at Risk Act* (administered by DFO for aquatic species). The timing windows restrict in-water work related to an activity during certain periods in order to protect fish and/or other species listed under these Acts from impacts of works or undertakings in and around water during spawning migrations and other critical life stages.
- d) Sediment and erosion control measures must be implemented as appropriate to prevent the entry of sediments into the water column and to control turbidity levels.
- e) Regular maintenance and repair of an existing structure that does not alter the size and/or dimensions of the structure does not require permission from the CRCA. All other repairs, renovations or replacement will require permission, and should be designed to have a net positive impact on the environment where possible.
- f) Environmentally benign building material (e.g. cedar lumber) are encouraged for in-water structures located below the average annual water mark. Treated lumber that meets provincial and federal standards are also acceptable for use. However, pre-treated lumber

should be dry before it is placed in the water. Substances not accepted for marine application (e.g. creosote treated lumber) are not acceptable.

- g) All activities including maintenance procedures are to be conducted in a manner to control the entry of petroleum products, debris, rubble, concrete or other deleterious substances into the water.

2.0 Guidelines for Docks and Boatlifts

- a) Docks and boatlifts by their nature are generally located within the regulatory flood plain. The Authority will strive to minimize development within the regulatory flood plain to that required to provide for the storage or berthing of marine vessels. Best management practice considerations for dock and boatlift structures will be to locate structures where environmental impacts are minimized. This will be accomplished by promoting dock and boatlift facilities that are located and designed in a way that will:
 - I. have the least impact on riparian habitat,
 - II. result in the maintenance of natural shorelines through minimal disturbance,
 - III. minimize shading to preserve aquatic plants, and
 - IV. have appropriate water depths for mooring marine vessels and to avoid requests for dredging.
- b) In-water structures with solid support systems (i.e. solid fill, concrete block, etc.) will not be supported.
- c) Cantilevered, floating, and docks supported on legs, posts, or pipes are recommended.
- d) Docks that no longer require CRCA permission include seasonal docking facilities that do not interfere with the substrate of a watercourse or waterbody or interfere with the natural features and hydrological functions of a wetland (e.g floating dock, removeable dock).
- e) Seasonal docks attached by a new support system requires permission if shoreline alteration is required to secure the dock (e.g. placement of fill, concrete pad, etc.) or permanent features are installed (e.g. posts). NOTE: The permission will be associated with the connected portion and not the seasonal dock itself.
 - a. If a seasonal dock is connected to an existing structure or support system then permission is not required by the CRCA.
- f) Crib (timber or steel) style docks with open spans may be permitted where warranted by site-specific circumstances. Cribs should occupy less than 15 square metres of the lake or river bottom (combined footprint). Rocks used for the filling of cribs should be clean and free of soil, taken or imported from land, not taken from a lake or river bottom, and should not exceed a small quantity of fill (less than 12 cubic meters).
- g) Docks should have deck surface widths of no greater than 2.44 metres (up to a maximum of 3.66 metres where construction constraints are warranted) perpendicular to the shoreline. Consideration for width larger than 3.66m will be taken when:
 - I. shoreline characteristics are appropriate (e.g. vertical bedrock shorelines) and there will be no disturbance to shoreline vegetation and soil mantle; and,

- II. the dock width (parallel to the shoreline), in combination with all in-water and shoreline structures on the property's shoreline, does not occupy more than 25% or 15 metres, whichever is less, of the shoreline; or
 - III. the dock is offset from the shoreline a minimum of 2 metres with a connecting ramp no wider than 2.44 metres.
- h) In shallow waters, the extension of dock lengths is encouraged to avoid requests for dredging.
 - i) Boatlifts should be located at least 2 metres from the shoreline to maintain littoral movement.

3.0 Guidelines for Boathouses and Boat Ports

Boathouses and boat ports are structures designed to shelter boats from wave action, sun and rain and often provide boat storage during the winter. A boathouse has a roof, walls and a front door while a boat port consists of a roof (supported on posts) and no walls.

- a) Best management practice considerations for boathouse and boat port structures will be to locate structures where environmental impacts are minimized. This will be accomplished by promoting boathouse and boat port facilities that are located and designed in a way that will:
 - I. have the least impact on riparian habitat,
 - II. result in the maintenance of natural shorelines through minimal disturbance,
 - III. minimize shading to preserve aquatic plants (e.g. open-sided structures are recommended), and
 - IV. have appropriate water depths for mooring marine vessels and to avoid requests for dredging.
- b) Boat houses and boat ports with solid support systems (i.e. solid fill, concrete block, etc.) will not be supported.
- c) Cantilevered, floating, and boathouses/boat ports supported on legs, posts, or pipes are recommended.
- d) Boathouses and boat ports will be single story structures with no provisions for human habitation. New structures that propose areas for human habitation or that could be converted for human habitation will not be supported.
- e) Boathouse roofs will generally be restricted to 4.5 metres in height to the peak (measured from the first floor). Flat roofed boathouses are supported.
- f) A boathouse must have an open boat slip within the interior.
- g) Services, other than electricity, are not supported.
- h) Boathouses and boat ports should be located at least 2 metres from the shoreline (with access via a connecting ramp or platform with a width no greater than 2.44 m) to maintain near shore currents and to minimize disturbance to shoreline vegetation and soil mantle
- i) Crib (timber or steel) style structures with open spans may be supported where warranted by site-specific circumstances.

- j) Cribs should occupy less than 15 square metres of the lake or river bottom (combined footprint). Rocks used for the filling of cribs should be clean and free of soil, taken or imported from land, and not taken from a lake or river bottom.
- k) The stabilization of existing two story structures will be supported where:
 - I. The existing support structures will be replaced/repared with identical construction methodology.
 - II. The support structures are being replaced with a new construction methodology and it is demonstrated through proper engineering analysis by a qualified professional engineer that the new support structures are appropriately designed.

4.0 Guidelines for Shoreline Erosion Control Measures

These works include bio-engineering, rip-rap rock, and vertical shore walls usually composed of armour stone, masonry rock, concrete, steel, wood, plastic or gabion baskets.

While vertical shore walls have short term benefits, the retention of existing emergent aquatic vegetation and planting of additional trees and shrubs on the shoreline bank (bio-engineering) is the preferred and most effective method of arresting and preventing further erosion in an environmentally responsible manner. Rip-rap, which is the placement of clean angular stone or rock rubble on a slope, may be used in combination with bio-engineering methods where bio-engineering methods alone would be ineffective. Properly sized rip-rap placed along the waterfront over a geotextile filter fabric is effective in dissipating wave action, and preventing soil particles from washing out while allowing land-based moisture to naturally percolate back into the waterbody.

- a) Preservation or enhancement of natural vegetated shorelines and buffers is encouraged.
- b) Softening of the shoreline is encouraged (vertical to sloped, unvegetated to vegetated).
- c) The preferred methods for shoreline stabilization, in order, are the retention of native shoreline vegetation, bio-engineering, and rip-rap.
- d) New sheet metal piling and concrete along the shoreline is discouraged.
- e) Excavation (in order to create gently sloped shorelines) will be encouraged to reduce encroachment into a waterbody and to minimize the placement of fill within the flood plain.
- f) Erosion control measures shall not be placed or encroach beyond the existing toe of the shoreline slope
- g) Rip-rap erosion control designs should meet the following requirements:
 - I. The works will follow the existing profiles and contours of the shoreline.
 - II. The material is clean angular stone or rock that is taken or imported from land, not from a lake or river bottom.
 - III. A geotextile filter fabric will be installed under and behind the rock.
 - IV. A 3:1 (H:V) slope ratio is preferred. A slope may not be steeper than 3:1 unless supported by an engineered design.
 - V. Excavation of the upland slope to create the appropriate slope angle shall occur. Filling, excavation or dredging of the lake or river bed to accommodate rip-rap is generally not supported (see 4.0 (e)).

- VI. Encroachment of rip-rap up to 1 metre onto the lake or riverbed may be supported if the encroachment is required to protect significant trees threatened by erosion, and the works would not result in the removal of significant natural shoreline vegetation.
- h) New vertical shore walls may only be considered where other methods of shoreline stabilization such as bio-engineering or rip-rap have been considered and found to be inappropriate due to site conditions (e.g. excessive wave or ice forces). Vertical shore walls should meet the following requirements:
 - I. The shore wall will be excavated upland of the high-water mark and encroachment on the bed of or into the waterbody will not occur to minimize placement of fill in the flood plain,
 - II. Filter cloth will be installed behind the shore wall to prevent the migration of fines into the water,
 - III. All backfill will be clean imported material;
 - IV. Any material excavated as part of construction should be removed off site in a contained manner and disposed of accordingly outside of the regulatory flood plain.

5.0 Guidelines for Inland Boat Slips

Inland boat slips, or wet slips, are small artificial slips or basins excavated into the shoreline bank that are intended to provide a protected mooring area for boats.

- a) Shoreline stabilization for the interior walls of existing boat slips shall normally be assessed in accordance with the shoreline stabilization policies in section 4 above.
- b) Any required maintenance dredging should be done to the natural substrate level of the adjacent water body and must meet associated dredging policies identified in the Guidelines for Implementing O. Reg. 148/06.
- c) Improvement of the substrate of the excavated area to match surrounding natural substrate conditions should be considered and addressed.

6.0 Guidelines for Boat Launch Ramps, and Marine Railways

The creation of a ramp usually includes excavating or cutting into the shoreline and placing gravel, rock or concrete to accommodate the launching of a boat. Use of communal public launches is encouraged to avoid the cumulative impacts of altering the shoreline.

- a) Concrete and wood may be used above the high-water mark. The in-water portion should be an aggregate mixture or a steel grid/grate.
- b) Ramps should take advantage of natural slope (upland and in-water) conditions and substrates.
- c) Marine railways are to be constructed and placed in a manner that will minimize the removal of shoreline vegetation and will not require substantial alteration to the shoreline.