

**Shoreline Protection Works**

The following checklist has been compiled to assist the applicant in preparing their application for approval pursuant to Ontario Regulation 162/06. This checklist is valid for a period of six months following issuance. The level of detail required in the application will be dependent on the proposed works as well as the natural hazards, natural heritage system, and environmental conditions on site. We recommend that applicants contact Conservation Halton staff prior to submitting the application to determine what level of detail is deemed appropriate. **Note: Please be advised that even after all the information requested below is submitted and the application is deemed complete, additional information may be identified as the review progresses or as a result of changes to regulatory requirements.**

This checklist **must be returned** with the Permit application indicating in the appropriate spaces that all required information has been provided.

PROJECT TITLE:	DATE:
LOCATION:	FILE #:
<b>TIMING WINDOW RESTRICTION:</b>	

		Applicable	Provided
<b>General Submission Requirements</b>			
Application Form	Completed and signed application form. <i>At a minimum, the landowner must sign the form. If an agent is representing the landowner, the agent must also sign the form.</i>	<input type="checkbox"/>	<input type="checkbox"/>
Application Fee	Non-refundable administrative fee as per category ___ on the fee schedule attached to permit application.	<input type="checkbox"/>	<input type="checkbox"/>
Electronically Submitted	All materials submitted electronically on a flash drive or through digital transfer.	<input type="checkbox"/>	<input type="checkbox"/>
Project Description/ Problem Statement	Description of, and rationale for, the proposed works. The existing problem shall be clearly defined and a need for proposed work justified.	<input type="checkbox"/>	<input type="checkbox"/>
Photographs	Current photographs of the shoreline inclusive of existing adjacent vegetation	<input type="checkbox"/>	<input type="checkbox"/>
Drawings	<u>Three</u> ( 3 ) hard copy sets and one (1) digital of all drawings, folded to 8½" x 11" in standard metric scale. See "Drawing Requirements" section.	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
Reports	_____ ( ) hard copies and one (1) digital copy of reports listed under “Technical Study Requirements”.	<input type="checkbox"/>	<input type="checkbox"/>
Qualified Persons	Shoreline Protection works shall be designed and accompanying reports signed and stamped by a P.Eng with experience and qualifications in coastal engineering; Slope stability analysis shall be carried out and accompanying reports signed and stamped by a P.Eng with experience and qualifications in geotechnical engineering; Property survey is required to be prepared by an OALA, or OLS, it must be stamped, dated and signed.	<input type="checkbox"/>	<input type="checkbox"/>
Digital Copies	Technical drawings and plans provided in the most recent version of AutoCAD and properly georeferenced to real world coordinates (i.e. NAD83, UTM, Zone 17). File formats in order of preference are dgn, dwg, and dxf.  GIS data and mapping should be submitted in an acceptable ESRI format and be properly georeferenced to real world coordinates (i.e., NAD83, UTM, Zone 17). It is highly desirable that mapping related data be submitted in ArcGIS Geodatabase format, containing all spatial, attribute, metadata and spatial joins/data rules. ESRI shape file format is an acceptable alternative.	<input type="checkbox"/>	<input type="checkbox"/>
Topographic Survey	Detailed topographic survey of the site by an OLS The survey is to identify/confirm/include items such as: <ul style="list-style-type: none"> <li>• Property limits</li> <li>• Water level at the date of survey</li> <li>• Existing infrastructure/utilities</li> <li>• Benchmarks</li> <li>• Existing shoreline protection,</li> <li>• Date surveyed, etc.</li> <li>• Trees and vegetated areas</li> <li>• Water lots , if any</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
Aerial Photograph(s)	Plan view of the proposed works, superimposed over top of a recent aerial photograph of the site. Please specify date of imagery.	<input type="checkbox"/>	<input type="checkbox"/>
Coordination with adjacent properties	Comments from adjacent properties owners	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
<b>Shoreline Processes and Characteristics</b>			
Geotechnical Details	The onshore and backshore soil and groundwater conditions	<input type="checkbox"/>	<input type="checkbox"/>
Bathymetry	Details of the nearshore bathymetry, site specific sounding survey	<input type="checkbox"/>	<input type="checkbox"/>
Nearshore Substrate	Nearshore substrate information inclusive of the surficial nearshore substrate and aquatic vegetation. Information on the type, quantity and quality of sediment and description/coverage of aquatic vegetation should be provided. The information shall also include the thickness of surficial sediments over the controlling substrate and the distance to which the surficial sediments extend out into the lake. Information related to aquatic community and habitat characterization.	<input type="checkbox"/>	<input type="checkbox"/>
Water Levels	100 year flood level and other water levels information, including return periods for monthly mean levels, peak instantaneous level, and wind set up values.	<input type="checkbox"/>	<input type="checkbox"/>
Wind and Wave Climate and Currents	Wind climate and deep water waves information, waves transformation, nearshore waves condition	<input type="checkbox"/>	<input type="checkbox"/>
Wave uprush and Overtopping	The limit of wave uprush and the wave overtopping characteristics at the shoreline must be evaluated	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
Littoral Processes/ Sediment Transport	Sediment transport information must include both cross-shore and alongshore sediment transport and their description shall include an estimate of the sediment supply/transport. Their interaction with nearshore shoreline structure shall be evaluated.	<input type="checkbox"/>	<input type="checkbox"/>
<b>Shoreline Protection Works Design Criteria</b>			
Structure Design Life	The design life is the length of time that structure, with routine maintenance, is able to safely and effectively perform its function. The structure design life shall be minimum 35 years	<input type="checkbox"/>	<input type="checkbox"/>
Shoreline Protection Alternative Concepts	Primary purpose of the works, potential impacts and identification of alternative solutions to the problem such as non-structural and structural protection (i.e., flexible revetments, cobble berms, groynes, attached and detached breakwaters, islands, cobble beaches).	<input type="checkbox"/>	<input type="checkbox"/>
Impacts of alternative concepts on coastal processes and other environmental processes.	Potential impacts to the physical shoreline processes and characteristics and the terrestrial and aquatic habitat. Identify and incorporate mitigative / restoration measures.	<input type="checkbox"/>	<input type="checkbox"/>
Selection of Preferred Design Concept	Evaluation of alternative design concepts and selection of preferred design concept. Provide the rationale underlying the selection of the preferred design concept.	<input type="checkbox"/>	<input type="checkbox"/>
Final Design	Finalize design details, quantities, materials. Provide method(s) and calculations for armourstone/cobble beach sizing, inclusive of computer modelling for cobble beach reshaping under different storms conditions.	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
Aquatic habitat-restoration features	Incorporation of aquatic habitat restoration/regeneration features into the final shoreline treatment.	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance access	The design and installation of protection works shall allow for access to the protection works for appropriate equipment and machinery for regular maintenance purposes and /or to repair the protection works should failure occur. The maintenance access shall be min 5 m wide and unobstructed	<input type="checkbox"/>	<input type="checkbox"/>
<b>Technical Drawings Requirements</b>			
Plan view(s) and cross-sectional view(s) of proposed shoreline treatment	Plan view(s) and typical cross-sections shall clearly illustrate the existing conditions and proposed development conditions. All technical information and details shall be included and shown on the drawings, and that shall include, but not be limited to, shoreline protection works elevations, armourstone and other materials specifications, appropriate water levels and other information relevant to the proposed treatment. Drawings must clearly illustrate the works and its interface with adjacent shoreline areas.	<input type="checkbox"/>	<input type="checkbox"/>
<b>Construction Information Requirements</b>			
Staging, Phasing and Access Route Plans	Details regarding the sequence of construction with consideration of site management, best management practices, and aquatic/terrestrial timing window restrictions. The construction sequence should consider: <ul style="list-style-type: none"> <li>• Vegetation removal,</li> <li>• In-water works,</li> <li>• Wildlife rescue plans,</li> <li>• Seasonal timing of landscaping and bioengineering,</li> <li>• Stockpiling operations, etc.</li> </ul> <p>The full limits of disturbance for access to the site must be delineated with details; efforts to minimize the extent of the disturbance must be demonstrated.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Erosion and Sediment Control Plans	Details regarding sediment and erosion control measures, site dewatering, equipment, materials, access to and from work area, monitoring, site supervision, etc. See <i>Erosion &amp; Sediment Guidelines for Urban Construction</i> prepared by the Greater Golden Horseshoe Area Conservation Authorities ( <a href="http://www.sustainabletechnologies.ca">www.sustainabletechnologies.ca</a> ) for additional guidance.	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
	Above plan is to be prepared by a qualified professional (i.e. CISEC, CPESC or an approved equivalent).	<input type="checkbox"/>	<input type="checkbox"/>
<b>Other Requirements</b>			
Fisheries Act	On November 25, 2013, amendments to the <i>Canadian Fisheries Act</i> associated Applications for Authorization (under Paragraph 35(2) (b) of the Fisheries Act Regulations) and Information Requirements Regulations came into force. Depending on the scale of works, as you will be conducting a project in/near water, the proponent has responsibilities under the Fisheries Act to ensure serious harm to fish is avoided. Please refer to the Department of Fisheries and Oceans (DFO) website for additional information. Alternatively, questions can be directed to DFO by phone 1 855 852-8320 or email <a href="mailto:fisheriesprotection@dfo-mpo.gc.ca">fisheriesprotection@dfo-mpo.gc.ca</a> .		
Endangered Species	Staff are aware that the Ministry of Environment, Conservation and Parks has outstanding concerns with respect to species listed on the Species at Risk in Ontario list as it pertains to the <i>Endangered Species Act</i> (ESA) in the immediate area around this project. Please contact MOECP directly to determine what detailed project information will be required to begin the ESA approval process: Aurora District: <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a>		
<b>Prepared by:</b> _____		<b>Signature:</b> _____	

<b>Additional Design Considerations</b>
<ul style="list-style-type: none"> <li>• Substrate material must be appropriate for the fish community.</li> <li>• In-water work with heavy machinery should be minimized.</li> <li>• Settling or filtering of water pumped from work area must be addressed.</li> <li>• In order to reduce the spread of invasive species, equipment should be thoroughly cleaned before being brought onsite. For guidance in this regard, please refer to the Clean Equipment Protocol for Industry, available online (<a href="http://www.ontarioinvasiveplants.ca/files/CleanEquipmentProtocol_Mar152013_D3.pdf">http://www.ontarioinvasiveplants.ca/files/CleanEquipmentProtocol_Mar152013_D3.pdf</a>).</li> <li>• Monitoring by the proponent after construction is crucial to verify the success of the project.</li> <li>• Works should adhere to the <i>Migratory Birds Convention Act</i>. Should vegetation removal be required within the core breeding bird season (April 1<sup>st</sup> to August 31<sup>st</sup>), consultation with Environment Canada - Canadian Wildlife Services should be completed.</li> </ul>