

**UNDERGROUND UTILITY CROSSING (OPEN CUT)**

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/utility company 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	Description of, and rationale for, the proposed works including discussion of other alternatives considered. If a replacement structure is proposed, details regarding the current conditions of the existing structure are requested.	<input type="checkbox"/>	<input type="checkbox"/>
Photographs	Photographs of the watercourse, banks, adjacent vegetation and/or representative vegetation communities (if applicable) during ice-free conditions.	<input type="checkbox"/>	<input type="checkbox"/>
Drawings	Digital drawings and ___ ( ) hard copy sets of all drawings, folded to 8½" x 11", in standard metric scale. See 'Drawing Requirements' section.	<input type="checkbox"/>	<input type="checkbox"/>
Reports	Digital reports and ___ ( ) hard copies of reports listed under 'Technical Study Requirements'.	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
Qualified Persons	Where a drawing or report is required to be prepared by a P.Geo., P.Eng., OALA, or OLS, it must be stamped, dated and signed.	<input type="checkbox"/>	<input type="checkbox"/>
<b>Drawing Requirements</b>			
Digital Copies	<p>Technical drawings and plans provided in pdf format unless requested otherwise (i.e. the most recent version of AutoCAD).</p> <p>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.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Topographic Survey	<p>Detailed topographic survey of the site by an OLS or qualified P.Eng. extending a minimum 15m upstream and downstream of the project footprint, with information collected at 1m intervals along the creek. The survey is to identify/confirm/include items such as:</p> <ul style="list-style-type: none"> <li>• Creek inverts, creek thalweg</li> <li>• Location of channel banks</li> <li>• Existing infrastructure/utilities</li> <li>• Observed water level</li> <li>• Dams/weirs/knick points</li> <li>• Slopes /valley walls/retaining walls (top and bottom of bank)</li> <li>• Limit of wetlands, staked by Conservation Halton</li> <li>• Ditch lines</li> <li>• Benchmarks</li> <li>• Date surveyed, etc.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
Plan View(s)	<p>Plan view(s) showing existing conditions and proposed development conditions including:</p> <ul style="list-style-type: none"> <li>• Detailed grading (clearly illustrate how the proposed works will blend in with the undisturbed areas)</li> <li>• Limit of work/disturbance</li> <li>• Location of open cut trench (with dimension)</li> <li>• Watercourse (bankfull width)</li> <li>• Culvert/Bridges</li> <li>• Habitat features</li> <li>• Vegetation</li> <li>• Conservation Halton staked Wetland limits</li> <li>• Structures/buildings</li> <li>• Utilities/infrastructure</li> <li>• Borehole locations</li> <li>• Location of cross-sections and profile views, etc.</li> <li>• Location of approximate regulated limits (ARL) and applicable natural hazards, specifically: _____</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
Aerial Photograph(s)	Plan view of the proposed works and limits of disturbance (or other, specifically _____), superimposed over top of a recent aerial photograph of the site. Please specify date of imagery.	<input type="checkbox"/>	<input type="checkbox"/>
Profile Views	Proposed profile view of the utility, trench and any mitigation measures (e.g. trench plugs), extending through the regulated area. Borehole logs, identifying soil conditions, if available should be provided on the drawing.	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
	For creek crossing, the thalweg of the channel or crossing structure inverts must be shown relative to the depth of utility crossing. The 100 year channel scouring should be delineated, if determined.		
Profile Views (Continued)	For crossing of wetlands, wetland bathymetry relative to the depth of utility crossing must be provided. <b>Accurate delineation of the wetland would be required in support of this information.</b>  Please consult with staff regarding the appropriate depth of the utility crossing.	<input type="checkbox"/>	<input type="checkbox"/>
Channel/ Wetland Restoration	Existing and proposed cross-sectional and longitudinal views of the natural feature, clearly illustrating restoration of the area to existing conditions or better. For creek crossings, creek invert, low flow channel, bank details, overall gradient, etc. must be shown).	<input type="checkbox"/>	<input type="checkbox"/>
Habitat Features	Plan, section and profile details of proposed habitat features (e.g. pools, riffles, etc., dead snags, woody debris, etc.), as well as tie-in to the proposed channel. Bank location (bankfull, low flow) must be clearly identified on the above noted plans.	<input type="checkbox"/>	<input type="checkbox"/>
Substrate Materials	Type, size/gradation and depth of appropriate substrate material. Supporting substrate sizing calculations must be provided. Details of granular mixtures proposed or native material to fill the void spaces must also be included.	<input type="checkbox"/>	<input type="checkbox"/>
Existing Vegetation	A vegetation inventory is required (including scientific names, and ELC community mapping to vegetation type). A Tree Preservation Plan is also required. Tree protection fencing location and details must be illustrated on the drawings. Follow Conservation Halton's <i>Landscaping and Tree Preservation Guidelines</i> , available at <a href="http://www.conservationhalton.ca">www.conservationhalton.ca</a>	<input type="checkbox"/>	<input type="checkbox"/>
Proposed Vegetation	Details on restoration, including a locally native, non-invasive seed mix for disturbed areas as well as compensatory trees and/or shrubs must be indicated on the drawings (including scientific names). Follow applicable municipal guidelines, by-laws and Conservation Halton's <i>Guidelines on Landscaping and Restoration Plans (2021)</i> , available at <a href="http://www.conservationhalton.ca">www.conservationhalton.ca</a> . unless as directed below:  _____ _____ _____	<input type="checkbox"/>	<input type="checkbox"/>
	Include a copy of the Landscaping Checklist (Table 5-1 Drawing Requirements). Follow Conservation Halton's <i>Guidelines on Landscaping and Rehabilitation Plans (2021)</i> , available at <a href="http://www.conservationhalton.ca">www.conservationhalton.ca</a> .	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
Staging, Phasing and Access Route Plans	<p>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:</p> <ul style="list-style-type: none"> <li>• Vegetation removal,</li> <li>• In-stream 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 regarding temporary crossings (if applicable). Efforts to minimize the extent of the disturbance must be demonstrated.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Erosion and Sediment Control Plans	<p>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.</p>	<input type="checkbox"/>	<input type="checkbox"/>
	<p>Above plan is to be prepared by a qualified professional (i.e. CISEC, CPESC or an approved equivalent).</p>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Technical Study Requirements</b>			
<i>(Studies pertaining to erosion hazards must be completed in accordance with the Ministry of Natural Resources &amp; Forestry (MNRF) Technical Guidelines (2002).)</i>			
Geotechnical Assessment (Soil/Bedrock Investigation)	<p>A geotechnical assessment by a qualified P.Eng for the purposes of verifying soil, bedrock and groundwater conditions, as well as the feasibility of the open cut crossing.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical Assessment (Slope Stability)	<p>A geotechnical slope stability assessment by a qualified P.Eng. to ensure the proposed works will not negatively impact slope stability of the valley wall.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Downcutting/ Scour Analysis	<p>Detailed analysis by a qualified licenced professional of the potential for downcutting/scour based on historical observations or acceptable modelling. Future channel migration and widening modifying the plan form of the creek should be considered.</p>	<input type="checkbox"/>	<input type="checkbox"/>
Hydrogeological Assessment	<p>A hydrogeological assessment by a qualified P.Eng or P.Geo. to study the potential impacts to surface/groundwater interactions related to dewatering and discharge activities. The assessment must provide adaptive management, mitigation and monitoring strategies with considerations for discharge (quality and quantity of water), construction phasing, etc.</p>	<input type="checkbox"/>	<input type="checkbox"/>

		Applicable	Provided
Hydrologic Evaluation	Assessment of the impact of hydrologic changes to wetlands using a multi-disciplinary approach by Qualified Person(s).	<input type="checkbox"/>	<input type="checkbox"/>
Commissioning Plans	Details regarding commissioning of the utility, particularly the flow duration, quality, and location of discharge of any water during this phase.	<input type="checkbox"/>	<input type="checkbox"/>
Aquatic Habitat Assessment	Detailed description and habitat map of in-stream and bank habitat features including bankfull width, pools, riffles, undercut banks, eroding banks, root wads and large woody debris, thalweg/low flow location, backwater areas, substrate type, etc. See the <i>Interim Environmental Guide for Fisheries (MTO, April 2020)</i> for further guidance.	<input type="checkbox"/>	<input type="checkbox"/>
Ecological Study	An Ecological Study. Reference must be made to Conservation Halton's <i>Guidelines for Ecological Studies</i> , available at: <a href="http://www.conservationhalton.ca">www.conservationhalton.ca</a> .	<input type="checkbox"/>	<input type="checkbox"/>

**Other Requirements**

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> .
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Endangered Species	Staff are aware that the Ministry of Environment, Conservation and Parks (MECP) may have outstanding concerns with respect to species listed on the Species at Risk in Ontario list as it pertains to the <i>Endangered Species Act (ESA)</i> in the immediate area around this project. Please contact MECP directly to determine what detailed project information will be required to begin the ESA approval process.: <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a>	Applicable
		<input type="checkbox"/>

Prepared by: _____	Signature: _____
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**Additional Design Considerations**

- Appropriate measures must be taken to ensure that groundwater flow patterns are not altered. For example, ensure that groundwater is not misdirected along pipe bedding through the use of cut off collars or alternative measures.
- For, high pressure oil pipelines, thermal mitigation measures should be considered.
- Current channel conditions should be replicated (i.e. hydrograph, habitat, slope, etc.) or rationale provided for changing these channel features.
- Substrate material must be appropriate for the fish community. Natural substrate should be utilized where appropriate. Voids of new substrate material should be filled to avoid subsurface flow.
- Instream work with heavy machinery should be minimized.
- Crossing of wetlands should be carried out in the winter, under frozen ground conditions.
- Work area should be isolated from flowing water. Phasing of works should allow construction to be performed in the dry.
- Settling or filtering of water pumped from work area must be addressed.
- For dewatering of the work area to facilitate construction, a Permit to Take Water (PTTW) is required from the Ministry of the Environment & Climate Change if dewatering is in excess of 50,000 litres per day [http://www.ene.gov.on.ca/environment/en/industry/assessment\\_and\\_approvals/water\\_taking/STDPROD\\_075554.html](http://www.ene.gov.on.ca/environment/en/industry/assessment_and_approvals/water_taking/STDPROD_075554.html)
- Existing crossing must be abandoned using appropriate techniques. Removal of existing utility should be carried out where feasible without greatly impacting the natural environment.
- 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 ([http://www.ontarioinvasiveplants.ca/files/CleanEquipmentProtocol\\_Mar152013\\_D3.pdf](http://www.ontarioinvasiveplants.ca/files/CleanEquipmentProtocol_Mar152013_D3.pdf)).
- Enhanced sediment and erosion controls should be implemented in sensitive areas.
- Monitoring by the proponent after construction is crucial to verify the success of the project.
- Works should adhere to the Migratory Birds Convention Act. 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.