

# Environmental Management System

## Procedural Documentation **Water Crossing Installations**

**1.0 Purpose:**

To provide a means whereby water crossings are located, installed, structure sizing, maintained and abandoned in a timely and appropriate manner, that minimizes the potential for any adverse impacts on the environment.

**2.0 Scope:**

This procedure applies to employees, contractors, overlapping licensees who are involved in the planning, installation, maintenance, replacement and removal of permanent and temporary watercourse crossing structures for roads, harvesting and silviculture

**3.0 Responsibilities:**

- 3.1 ORC Operations Forester or Designates
- 3.2 ORC Silviculture Forester or Designates
- 3.3 All Contractors and Sub-Contractors for ORC
- 3.4 Overlapping License Holder (OLL) and their Sub-Contractors or Designates

**4.0 Procedures:**

**4.1** The *ORC Operations Forester or Designates* shall ensure:

**Location:**

Step	Task
1	Determine the best location for the proposed water crossing by using information such as maps, aerial photographs and topographic maps. Once the location has been identified, an on -site inspection should be conducted to confirm the location and to check for features or values that may not have been identified previously.
2	Determine if the stream is fish bearing or is a tributary of a fish bearing stream by using available resources (NRVIS Values Maps) and / or consulting with Ministry of Natural Resources District Office in the area. Assess navigability of watercourse. If navigable contact Coast Guard and Department of Fisheries.
3	Whenever possible, photograph the water crossing site (preferably upstream, downstream and approach(s)). Ensure that the photos are identified by water crossing number and date
4	Determine the most suitable type of structure for the site (i.e. bridge, culvert, etc.). Consider: <ul style="list-style-type: none"> <li>• Fish habitat and fish passage if required.</li> <li>• Foundation for structure (i.e. rock, soft soil, hardpan).</li> <li>• The frequency of traffic and loading requirements.</li> <li>• The road class (i.e. primary road &gt;15-year lifespan, Secondary &gt;5 years but &lt; 15-</li> </ul>

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	<p>year life span, tertiary &lt; 5 years, etc.)</p> <ul style="list-style-type: none"> <li>Season(s) of use if less than one year.</li> </ul>
5	A water crossing analysis should be done (software program) to determine the flows for the water crossing and decide on final structure type for the applicable “year flood” (E.g.: 10yr, 25yr)
6	Check to confirm whether the water crossing design and methodology may result in a HADD. If there is potential for a HADD then reconsider the design, methodology, location, etc. If a HADD is unavoidable then approval must first be given by the Department of Fisheries and Oceans.
7	For culvert installation, ensure water crossing is approved in the Forest Management Plan and listed in the Annual Work Schedule.
8	Ensure that all proposed water crossings are approved in the FMP and AWS and, where applicable, all permits, plans and additional approvals are in place. NOTE: under certain circumstances, approval may also be required before operations commence with water crossing(s) on private land(s) (e.g.: Ministry of Natural Resources, Local Conservation Authority, Canadian Coast Guard)
9	Check with the local forester on particulars of water crossing if any special conditions exist and it is recommended that you get a written copy of the special conditions.
10	If an MOU is required, (memorandum of understanding) ensure that the removal strategy and timing (if applicable) are addressed before signing.

### Preparation for Installation:

Step	Task
1	Ensure that all applicable approvals are in place and conditions are Satisfied.
2	Ensure works to be performed are in the approved location(s)
3	Ensure that all personnel directly involved with the installation of water crossings have attended environmental training on water crossings before commencing work on a water crossing
4	Ensure that a water crossing spill kit is available and on-site for any water crossing where the absence of the kit could result in an adverse impact to the environment
5	Brief operator(s) and personnel directly involved with the installation on particulars of water crossing(s) including any special features or conditions
6	Ensure that Best Management Practices are followed, as outlined in the Operations Handbook.

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7	Ensure that road ROWs do not exceed the maximum allowable width, as per the relevant FMP, while approaching water crossing through an AOC. If a wider ROW is required to achieve stable slopes or because of safety related concerns, approval must first be granted by the OMNR
8	Ensure that grubbing is avoided whenever possible within 100 meters of the water crossing. If grubbing must occur within this zone, ensure that it is kept to an absolute minimum and measures are taken to minimize any potential for erosion or sedimentation.
9	Ensure that fill material is clean, relatively dry and appropriate in nature for its purpose, given the local and site conditions. Fill material is not to be extracted within 100 meters of a water crossing.
10	Ensure that all applicable signage is erected and all conditions of approval have been met (may include markers, warnings, notice of removal date)
11	Coordinate personnel and appropriate equipment to ensure that the work is done in a timely fashion, as per the approval(s) and that the installation is properly completed before leaving the site.

### Concerns and Considerations Insulations:

1	<ul style="list-style-type: none"> <li>• Prior to operating machine conduct circle check to ensure equipment is in good condition.</li> <li>• Throughout shift check machine for oil leaks. Attend to leaks immediately. If machine continues to leak, lock out and shut down till fix.</li> <li>• Follow Spill Emergency Plan Sticker Procedure to stop, contain, report, clean up and dispose of any contaminants to the environment.</li> <li>• Ensure transportation vehicles and production equipment are kept clean from contaminant buildup.</li> </ul>
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### Maintenance:

Step	Task
1	Ensure proper approvals are in place before repairs commence on a water crossing
2	Ensure that a water crossing spill kit is available and on-site for any water crossing where the absence of the kit could result in an adverse impact to the environment
3	Ensure that road maintenance crews are aware of best practices while working around water crossings (e.g.: grading techniques, keeping bridge decks clear of significant accumulations of gravel)

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### Abandonment:

1	Ensure that all applicable approvals are in place and that the Superintendent is notified, before works commence
2	Check to confirm whether the water crossing abandonment approved strategy and / or conditions applicable to the abandonment of the water crossing. If no strategy exists ensure that proper consultation and approval is sought before abandoning the water crossing. If any special conditions apply, obtain a written copy outlining the particulars of the abandonment
3	Ensure that all personnel directly involved with the abandonment of water crossings have attended environmental training on water crossings before commencing work on a water crossing
4	Ensure that a water crossing spill kit is available and on-site for any water crossing where the absence of the kit could result in an adverse impact to the environment
5	Coordinate personnel and appropriate equipment to ensure that the work is done in a timely fashion, as per approval(s). The watercourse must be restored to as close to its original state as is reasonably possible, stabilized with appropriate erosion controls and properly completed before leaving the site
6	Ensure that all applicable signage is erected, or removed as required

LRIA (Lakes and Rivers Improvement Act) Approval Requirements				
<i>Project Type</i>		<i>Land Ownership</i>		
		<i>Crown</i>	<i>Municipal</i>	<i>Private</i>
<b>BRIDGES</b>	Drainage area ≤5 sq km	R	NR	NR R
	Drainage area >5 sq km	R	NR	
<b>CULVERTS</b>	Length ≤20m and Drainage area ≤5 sq km	R	NR	NR R
	Length ≤20m and Drainage area >5 sq km	R	NR	R
	Length >20m	R	R	
<b>OTHER</b>	Dams, Channelling, Diversions In-stream ponds, Diversion ponds	R	R	R R
	Cables or Pipelines into lakes or rivers	R	R	R
		P	P	

R = work permit Required                      NR = work permit Not Required

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### Appendix B: TIMING RESTRICTIONS

\*\* For timing restrictions for in-stream work refer to the approved Forest Management Plan, or consult with the area forester \*\*

### References

Document / Form	I.D.#
Roads and Watercrossings	ORC-2PR-810- P -16

### Revisions

#	Purpose	Prepared by	Approved by	Date
N/A	Original version	Scott Russell	Pending	November 23, 2016
A				
B				
C				
D				
E				