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- Environmental Interactions


- Mitigation Measures

- Residual Effects



- Evolution of Mitigation
- Recent Developments
- Issues and Challenges

Evolution of Mitigation

General measures  More detailed,
longer lists  Incorporated into
project design  Environmental
Management Plans (Protection Plans) 
Best practices, codes of practice

5.7.4 Suggested Mitigation Measures

5.7.4.1 Habitat Alteration

- 1) Contingency plans for forest fire suppression should be developed for application during construction phases of the project.
- 2) Water crossing construction practices as outlined in Section 5.2.3 should be followed.

5.7.4.2 Disturbance of Mammals

- 1) Harassment of mammals by any means, including aircraft, should be prohibited at all times.

5.7.4.3 Attraction of Nuisance Animals to Camp Facilities

- 1) Garbage should not be allowed to accumulate. Wastes should be collected and incinerated on a regular basis with the residue being buried in disposal pits.
- 2) Feeding of animals should be prohibited.
- 3) All food should be stored inside buildings or in other secure locations.

5.7.4.4 Impacts on Small Mammals

- 1) No mitigating measures are necessary.

5.7.4.5 Exploitation of Mammals

- 1) No firearms should be allowed in construction camps with the exception of those under control of the camp superintendent.

Table 2.25 Environmental Protection Measures that are Part of Standard Good Practice in Construction

Construction Activities		Environmental Protection Measures	
1	Site Clearing (Vegetation Removal)	1.1	All cutting will be in compliance with a <i>Commercial Cutting Permit</i> , <i>Operating Permit</i> and <i>Permit to Burn</i> obtained from the Newfoundland Department of Forest Resources and Agrifoods.
		1.2	Vegetation removal will consist of cutting all standing trees to within 150 mm of the ground, and removing all trees, shrubs and debris.
		1.3	Chainsaws or other hand-held equipment will be used in clearing vegetation except where alternative methods of equipment are approved. Mechanical clearing methods (i.e. bulldozer) will be used only where it is demonstrated that there is no merchantable timber, and where the resulting terrain disturbance and erosion will not result in topsoil loss or sedimentation of watercourses and water bodies.
		1.4	All merchantable or forest product timber will be salvaged. This will be the property of the Newfoundland Transshipment Terminal.
		1.5	Cleared unmerchantable timber, slashings and cuttings will be burnt in compliance with the <i>Forest Fire Regulations (1993+Amendment)</i> , the Environmental Code of Practice for Open Burning and the Permit to Burn. Fires will not be left unattended.
		1.6	A buffer zone of undisturbed vegetation will be maintained between construction areas and all water bodies as outlined in DFO Fish Habitat Protection Guidelines (McCubbin et al., 1990). Any waterway disturbance will be done in consultation with Government Authorities.
		1.7	Trees, shrubs, slash and any other construction material or debris will not be permitted to enter any watercourse and will be piled above spring flood levels.
		1.8	Disturbed areas will be minimized. Clearing will be limited to the project area. All areas to be cleared will be clearly marked.
		1.9	All trees will be felled inward toward the work area to avoid damaging any standing trees adjacent to the work area.
		1.10	If any archaeological materials are encountered during the surface preparation and excavation, the area will be avoided and activities restricted to other parts of the construction site until instructions on how to proceed are obtained.

1.11 All personnel and contractors will be trained in the use of the Safety Plan and Environmental Protection Plan.

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CODES OF PRACTICE

MTO General Fish and Fish Habitat Protection Best Management Practice [Ontario MOT](#)

MTO Ditch Maintenance Best Management Practice [Ontario MOT](#)

MTO Culvert Replacement Best Management Practice [Ontario MOT](#)

Terrestrial Ecosystems (Wetlands/Vegetation/Wildlife) User guides
[Ontario MOT](#)

Alberta Environmental Protection and Enhancement Act Codes of Practice

[Code of Practice for Landfills](#)

[Code of Practice for Pits](#)

[Code of Practice for Sawmill Plants](#)

[Code of Practice for Small Incinerators](#)

[Code of Practice for Tanker Truck Washing Facilities](#)

[Code of Practice for The Release of Hydrostatic Test Water From Hydrostatic Testing of Petroleum Liquid And Gas Pipelines](#)

[Code of Practice for Wastewater Systems Consisting Solely of a Wastewater Collection System](#)

Best management practices for dust suppression during construction will be implemented based on the Ontario Ministry of the Environment Technical Bulletin "Review of Approaches to Manage Industrial Fugitive Dust Sources" (2004). These will include, but not be limited to:

- Periodic watering of unpaved (non-vegetated) areas and stockpiles;
- Limiting speed of vehicular travel and covering loaded haul trucks with tarpaulins;
- Use of water sprays during the loading and unloading of materials;
- Use of calcium chloride and road sweeping; and
- Sweeping and/or water flushing of the entrances to the construction zones and daily removal of excess soils from roads.

Current Directions

- ~ 2007, Stantec started rating project-environment interactions as:
 - 0 = no interaction
 - 1 = Interaction occurs; however, based on experience and professional judgment, the effect can be managed to acceptable levels through standard operating practices and/or through the application of best management or codified practices. As a result, no further assessment is warranted.
 - 2 = Interaction occurs, and effect may exceed acceptable levels without implementation of specified mitigation or enhancement measures; therefore, further assessment is warranted.

Current Directions

2013 guidance paper by Stratos:

S **FDUT!** **Q!** **FEFS** **NM** **OET!** Making a determination under section 67 of the *Canadian Environmental Assessment Act 2012*

Basic and non-basic projects

If effective and established mitigation measures, it's a basic project. Non-basic projects require more detailed mitigation and should be analysed in more detail.

A basic project may have non-basic effects.

Current Directions

Meikle Wind Energy Project

VC selection included:

- Is there a standard suite of best management practices or mitigation measures that would effectively mitigate effects to the VC?
- Are there subsequent permits and associated permit requirements that would effectively mitigate adverse effects that are potentially non-significant to the VC?
- Are there specific mitigation measures that could be applied through the Table of Conditions or Certified Project Description?

As a result, Heritage Resources, Fish and Aquatic Habitat, Amphibians and Reptiles, and Social and Economic Effects were not VCs.

Things to Think About

Can VCs be eliminated based on permit and licence requirements?

Compensation as a mitigation measure

- No destruction of fish habitat
- No net loss of wetlands

Challenges

Public Perception

- Are we screening out assessment of some interactions?
- Does compensation result in no residual effects?
- Can we really say 'no residual effects'?

Contact Information

