



Maritime Link Project

Environmental Protection Plan Minimum Requirements

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LIST OF ACRONYMS

AMP	Avifauna Management Plan
CBRM	Cape Breton Regional Municipality
CWS	Canadian Wildlife Services
DFO	Fisheries and Oceans Canada
E&AA	Environment and Aboriginal Affairs Group
EA	environmental assessment
ENL	Emera Newfoundland and Labrador
EPPs	Environmental Protection Plans
ERP	Emergency Response Plan
HADD	harmful alteration, disruption, or destruction (of fish habitat)
HDD	horizontal directional drilling
HVAC	high voltage alternating current
HVDC	high voltage direct current
IBA	Important Bird Area
KMKNO	Kwilmu'kw Maw-klusuaqn Negotiation Office
kV	kilo volts
LFN	low frequency noise
<i>MBCA</i>	<i>Migratory Birds Convention Act</i>
MBPs	mitigation best practices
MSDS	material safety data sheet
MW	megawatt
NL	Newfoundland and Labrador
NLDEC	Newfoundland and Labrador Department of Environment and Conservation
NLH	Newfoundland and Labrador Hydro
NS	Nova Scotia
NSDNR	Nova Scotia Department of Natural Resources
NSE	Nova Scotia Environment
NSEA	Nova Scotia Environment Act
NSPML	Nova Scotia Power – Maritime Link
NWPA	Navigable Waters Protection Act
NWPP	Navigable Waters Protection Program
OPEP	Oil Pollution Emergency Plan
PAO	Provincial Archaeology Office
PNAD	Park and Natural Areas Division
PPWSA	Protected Public Water Supply Area
PWSA	Public Water Supply Area
RoW	right-of-way
SAR	species at risk
<i>SARA</i>	<i>Species at Risk Act</i>
SOCI	species of conservation interest
TC	Transport Canada

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TOGA Transportation of Dangerous Goods Act
WHMIS Workplace Hazardous Materials Information System

1.0 INTRODUCTION

NSP Maritime Link Inc. (NSPML) [operating as Emera Newfoundland and Labrador (ENL)], a wholly owned subsidiary of Emera Newfoundland and Labrador Holdings Inc., is proposing to construct and operate a new 500 megawatt (MW) [+/- 200 kilo volts (kV)] high voltage direct current (HVDC) and high voltage alternating current (HVAC) transmission line, and associated infrastructure, between Granite Canal, Newfoundland and Labrador (NL), and Woodbine, Nova Scotia (NS) (the Project; the Maritime Link). The Project will link the provincial electrical power transmission systems of NL and NS.

1.1 ENVIRONMENTAL COMMITMENT

NSPML is committed to conducting business in a manner that is respectful of the environment. This commitment is articulated in NSPML's Environmental Policy (the Policy) provided below, which demonstrates a commitment to environmental protection, assurance of full compliance with legal requirements, and overall direction for regulatory compliance.

Environmental Policy

NSP Maritime Link Inc. operating as Emera Newfoundland & Labrador shares in the desires of its customers, shareholders, employees, and others, to enjoy the benefits of a sound economy in a healthy and sustainable environment. It is committed to meeting its business objectives in a manner which is respectful and protective of the environment, and in full compliance with legal requirements and Company policy.

This policy applies to all employees, visitors, contractors, vendors, and suppliers working at an Emera Newfoundland and Labrador workplace.

In delivering on this commitment, Emera Newfoundland & Labrador, an Emera Company will:

- Make environment an integral part of decision making, as it pursues sustainable development, environmental performance, quality service to customers and value to shareholders;
- Develop, verify and continually improve environmental management systems through strong leadership and employee commitment;
- Avoid environmental interactions when possible, if avoidance is not possible mitigate and follow-up to determine the effectiveness of mitigation and adjust where necessary;

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- Uses the Environmental Policy as the framework for setting and reviewing environmental objectives and targets;
- Work with employees and customers to promote the most efficient use of resources, products and services;
- Communicate with all stakeholders on environmental performance in a proactive and open manner.

NSPML employees are expected to have an understanding of the company's commitment to the environment and must endeavour to conduct their work in a manner consistent with this declaration. This expectation extends to those working on behalf of the company including short and long term contractors/consultants and service providers, as well as others who visit NSPML sites frequently and perform operations that could have an environmental impact.

1.2 ENVIRONMENTAL PROTECTION PLAN

The Environmental Protection Plan (EPP) – Minimum Requirements document (Project EPP) is the primary mechanism for the implementation of mitigation for all construction activities, as determined through the Environmental Assessment (EA) process and as required by applicable regulatory agencies through the permitting processes.

The Project EPP has been developed in consideration of the broad spatial (> 500 km) and temporal (> 3 years) boundaries for Project construction activities, to ensure effective and efficient implementation and compliance with regulatory and other requirements. The EPP will incorporate:

- means to comply with the requirements of relevant legislation;
- environmental protection measures identified as part of the EA ;
- environmental commitments made as part of the EA; and
- environmental conditions identified with the EA release.

1.2.1 Purpose and Scope

The purpose of this document is to describe all minimum requirements to be implemented by NSPML and Contractors to ensure environmental protection of human and ecological receptors during the construction phase of the Project. The environmental risks and activities will vary during construction and as such the Project EPP will evolve and will be updated as necessary for relevant changes such as regulatory requirements, changes in protection status of species of conservation interest (SOCI) and/or new updated wildlife protocols.

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This EPP includes mitigation best practices (MBPs), wildlife protocols and environmental constraints mapping associated with the Project. Environmental Project constraints that will be identified on the maps include wildlife, SOCI, wetlands, archaeology, rare flora and protected areas such as provincial parks.

Minimum EPP requirements will be provided to Contractors through the procurement process for each construction activity and each Contractor will be required to complete an activity specific Contractor EPP. Contractors will therefore be responsible, as a contract deliverable, to provide all specifics (descriptions and detailed mapping) of environmental protection pertaining to their scope of work by geographic region.

Contractor EPPs will incorporate the following:

- means to comply with requirements of relevant legislation;
- MBPs committed to in the EA Report (ENL 2013);
- environmental commitments identified as part of the EA,
- environmental conditions identified with the EA Release; and
- Contractor's work methods, procedures, and mitigation measures or controls to ensure the work complies with all environmental requirements/commitments.

NSPML will review the Contractor EPPs to ensure that the Contractor's work methods, procedures, and mitigation measures comply with NSPML's environmental requirements/commitments, and that it has been tailored specifically to the scope of work. EPP requirements will also be communicated to Contractors at environmental orientation sessions. The Contractor(s) have the responsibility to install, maintain, monitor and report to NSPML on control measures in place until the completion of the contract. NSPML intends to undertake routine compliance monitoring to ensure mitigation measures are being properly administered.

Furthermore, wildlife protocols described in Section 3 will also be incorporated into relevant activity specific EPPs. These protocols include:

- General Wildlife Protocol;
- Caribou Protocol;
- Pine Marten Protocol; and
- Avifauna Protocol (protocols will be included within the Avifauna Management Plan).

NSPML will be responsible for ensuring appropriate corrective actions arising from a failure to meet any EPP requirements are implemented.

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1.2.2 Structure

The Project EPP is structured to include detailed steps to avoid or minimize negative effects on the environment for all work elements involved in the applicable construction activity. This will include, but will not be limited to, the following construction specifications:

- land buffers;
- clearing, grubbing and disposal of vegetation;
- erosion and sedimentation control;
- blasting;
- waste management;
- storage and handling of hazardous materials; and
- noise and dust control.

1.3 PROJECT DESCRIPTION

1.3.1 Overview

The Maritime Link involves the construction and operation of a new 500 MW (+/- 200 kV) HVDC as well as a 230 kV HVAC transmission line, and associated infrastructure, between Granite Canal, NL, and Woodbine, NS.

The Project is divided into three distinct geographical regions; the island of Newfoundland, Cabot Strait, and NS. Each region is briefly described below but additional information is provided in Section 1 of the EA Report (ENL 2013).

1.3.1.1 Island of Newfoundland

The portion of the Project located on the island of Newfoundland includes a transmission line from Granite Canal to Cape Ray, of which 35 km will be new transmission corridor. At Granite Canal, a switching station will be constructed to accommodate termination and interconnection of the Granite Canal - Bottom Brook line into the Newfoundland and Labrador Hydro (NLH) system. The switching station will be constructed adjacent to the existing Granite Canal hydro development.

At Bottom Brook, a new converter station will be constructed and interconnected into the NLH system by expanding the existing sub-station. From this new converter station, the transmission line will follow the existing transmission corridor to the Cape Ray transition compound. A grounding line will originate at the converter station and be routed to a grounding facility in the

St. George's Bay area. From the Cape Ray transition compound, the overhead lines will extend as underground cables to the shoreline landfall site at Cape Ray.

1.3.1.2 Cabot Strait

Two subsea power cables will extend across the Cabot Strait from Cape Ray to an area near the Nova Scotia Power Inc., Point Aconi Generating Station in Cape Breton.

1.3.1.3 Nova Scotia

The NS portion of the Project includes a subsea cable landfall which will be located on the west side of the Point Aconi Generating Station. From the landfall location the cables will extend underground to the transition compound and will then run parallel to an existing transmission corridor, terminating at the converter station at Woodbine. The HVDC lines will connect to the existing Woodbine converter station via an underground connection. A transition compound, located approximately 600 m north of the substation, will transition the overhead lines to underground cables, within a buried conduit. From the Woodbine converter station, a grounding line will run to a grounding facility location in northeast Cape Breton County near Big Lorraine.

1.3.2 Construction Activities

Construction will take place over several years commencing in 2013, with completion planned for late 2016 and site exit late 2017, when fully commissioned. Construction will be timed to take advantage of seasonal conditions and in consideration of the potential environmental and socio-economic constraints that have been identified and incorporated into the planning and design of the Project. Construction activities will include:

- Site preparation: vegetation clearing of transmission corridors, grounding lines, static Project infrastructure such as converter stations, transition compounds and switchyards; and construction of permanent and temporary access roads, laydown areas and temporary accommodation facilities.
- Installation of transmission and grounding line infrastructure: preparation of foundations, tower assembly and erection, installation of counterpoise wire and stringing of conductor.
- Construction of the grounding facilities, including the creation of a breakwater structure and associated impoundment pond.
- Installation of subsea cables using a dynamically positioned cable laying vessel and involving horizontal directional drilling (HDD) for nearshore areas.

2.0 MINIMUM ENVIRONMENTAL REQUIREMENTS

The following is a description of the minimum environmental requirements to be implemented during Construction activities. The expectation is that only relevant requirements will be included in the activity specific Contractor EPPs.

2.1 GENERAL

- a) ENL and its Contractor(s) will abide and comply with all provisions, licenses, permits and approvals (as identified during the EA process and available in Appendix B of the EA report) throughout the construction and operation of the Project.
- b) Where a provision, statement or any correspondence made under this EPP is inconsistent or conflicts with a provision, term or condition of NL, NS or federal legislation, policy or guidelines, the provision, term or condition of the NL, NS or federal legislation, policy or guidelines shall have precedence over the provision, statement or any correspondence made under this EPP.
- c) The Contractor will ensure that work vehicles and/or heavy equipment brought to a site will be cleaned and inspected prior to use upon initial mobilization at a work site, and/or following transportation between sites, to prevent the introduction of weed/invasive/non-native species to terrestrial corridors. This excludes construction activities that occur in continuous manner along the transmission corridor.
- d) All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality. Spill kits should be kept on site at all times in case of emergency.
- e) Soil and aggregates required for construction of access roads, tower foundations and facility foundations will be sourced from existing approved pits and/or quarries. If new pits or quarries are required, the proponent will follow applicable regulations and standard industry practices.
- f) The Contractor will ensure that materials and debris will be removed from laydown areas when the activity is complete, and the areas returned to original land-use capability.

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- g) Construction may include additional stabilizing measures such as replacing in-situ materials to increase stability, sub-base preparation, and the use of guy-wires, as required.
- h) A communications plan for engagement with communities impacted by traffic will be implemented prior to commencement of construction activity.
- i) The Contractor shall retain copies of all permits/approvals on-site.
- j) Signage to delineate work areas will be implemented.
- k) In areas where temporary work is being completed, pre and post work pictures should be taken, kept on file and provided to NSMPL upon request.
- l) Only trained and licenced individuals will operate equipment.
- m) Clearing limits will be marked and Project activities will be limited to designated areas, where feasible. This will include identified environmental sensitive features such as watercourses, wetlands, and areas of high archaeological potential.
- n) The Approval Holder must obtain an approval from NSE for the application of herbicides on utility corridors, as specified in the Activities Designation Regulations.
- o) No treated wood poles will be used within known protected and unprotected water supply areas.
- p) Wood preservatives such as penta, CCA or other such chemicals must not be applied to timber near a body of water. All treated wood or timber must be thoroughly dry before being brought to any work site and installed. The use of creosote treated wood is strictly prohibited within 15m of all bodies of freshwater in NS and NL.
- q) Any work undertaken within the proposed EGSPA land parcel #222 that contains both the Little Lorraine and Big Lorraine grounding site options, will be contained within a small area and restricted to the southern-most corner of the parcel. All standard construction mitigation for wetlands, watercourses, and flora and fauna, including avifauna, will be implemented to reduce any potential environmental effects.
- r) If applicable, the Contractor's EPP must include a plan to address sulphide bearing materials and acid drainage.
- s) During Project construction, trails used by ATVs and snowmobiles may need to bypass active construction areas. NSPML will work with the Snowmobilers Association of Nova

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Scotia to identify appropriate bypass routes, if required. Appropriate signage will be used to notify trail users of any detours.

- t) In locations where the proposed project occurs within 100 m of or intersects a provincial protected area or other area of conservation interest, the proponent must consult with Nova Scotia Environment (NSE) regarding corridor placement and best practices for construction and maintenance to ensure ecological integrity of these areas is maintained.
- u) Protocols will be developed regarding corridor placement and best practices for construction, maintenance and vegetation control to ensure ecological integrity of provincial protected areas or areas of conservation interest, where the project occurs within 100 meters of such areas, in consultation with NL Parks and Natural Areas Division (PNAD).
- v) There are sections of transmission route that cross the parks [T’Railway and Barachois Pond Provincial Parks] and are within 500 m of the park boundaries. For any detours NSPML will employ a flagging crew and implement appropriate signage. Once specific access requirements are understood in areas where the transmission route will access or cross the T’Railway and/or Barachois Pond Provincial Parks, NSPML will engage the PNAD to review and provide appropriate mitigations.
- w) For project activities in areas where acid rock drainage (ARD) may be a concern, Contractor(s) should consider implementing measures to minimize the risk of ARD generation and adverse effects on water quality.

2.2 PROTECTED WATER SUPPLY AREAS

- a) Requirements laid out in the Policy for Land and Water Related Developments in Protected Public Water Supply Areas (PPWSA) (NLDEC 2002) will be followed in protected and unprotected water supply areas. Where required, permits will be obtained and all conditions followed.
- b) The Project crosses the provincially protected water supply watershed of Dribble Brook, NL which is protected under the Policy for Land and Water Related Developments in PPWSA under the NL Water Resources Act. Work undertaken within the Dribble Brook Watershed Protected Water Area will be done in compliance with the requirements specified in the Policy.
- c) PWSA are protected under provincial legislation and are considered sensitive due to the potential to affect water quality. The Project crosses the provincially protected water

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supply watershed of Pottle Lake in Cape Breton, NS. This PWSA is protected under the Pottle Lake Watershed Protected Water Area Regulations made under subsection 106(5) of the NS Environment Act. Work undertaken within the Pottle Lake Watershed Protected Water Area will be done in compliance with the requirements specified in the (Draft) Pottle Lake Source Water Protection Plan (CBRM 2010). These requirements are based on the following, applicable, documents:

- Pottle Lake Watershed Protected Water Area Regulations; and
 - Best Management Practices/Forest Planning in Municipal Drinking Water Supply Areas, Nova Scotia (NSE 2005).
- d) The disposal of wastes of any kind is prohibited in the Pottle Lake Watershed Protected Water Area except in accordance with the provisions of the Water Act, and the Public Health Act.
- e) Background water samples should be taken and analyzed by an independent laboratory prior to any major undertaking in watershed areas. Work is subject to additional stipulations in authorizations received.

2.3 TERRESTRIAL WILDLIFE AND WILDLIFE HABITAT

- a) A policy of no hunting or other harassment of wildlife by Project personnel will be developed which will prohibit possession of pets on the work site.
- b) Wildlife sightings close to roads will be reported and mitigation will be implemented in high risk areas (e.g., signage, lower speed limits). More detail is provided in Section 3.0 – Wildlife Protocols.
- c) Site preparations that include deforestation, clearing and grubbing must be undertaken between September 1st and March 30th in NS and August 1st to April 30th in NL in order to minimize impacts on breeding birds that may include endangered and threatened species listed under the *Species at Risk Act* and/or the *Nova Scotia or Newfoundland Endangered Species Acts*, unless otherwise approved by NSE or NLDEC.
- d) Project construction activities will not commence in areas where habitat characterization has not been completed.
- e) Removal of beaver dams will be undertaken only where required to facilitate construction or access. Beavers will be removed by a licensed control officer and dam removal will be in accordance with applicable permits and/or guidelines. NSPML commits to not altering beaver dams until waterfowl and/or waterbirds have raised

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their young, should they be using ponds created by beaver dams for nesting or raising young.

- f) The Contractor is required to comply with the Wildlife Habitat and Watercourses Protection Regulations under the NS *Forests Act*.

2.4 SENSITIVE AREAS

- a) The Contractor should note the presence of environmentally sensitive features that will be identified and clearly marked either in the field with flagging and/or staking, digitally with GPS, or both. These features include, but may not be limited to:
- watercourses and associated buffers;
 - wetlands and associated buffers;
 - areas of high archaeological potential;
 - legally protected property including parks and natural areas; and
 - arboretums and sensitive silviculture areas.
- b) Avoidance of all protected areas and proposed/candidate site boundaries are a priority. In cases where these boundaries must be crossed the Contractor must contact the NSPML Environment and Aboriginal Affairs Group (E&AA Group) who will obtain permission from NSE.
- c) Disturbance to potential bat hibernacula within the work areas must be avoided. NSPML will provide a mitigation plan, prior to activities that the Contractor must comply with.
- d) Stockpiled soils will not be placed in wetlands or watercourses or in buffer zones, or in the other sensitive habitats (*e.g.*, habitats of species at risk or SOCI).
- e) All work in the Pottle Lake Protected Watershed Area will be conducted in compliance with the requirements of the Pottle Lake Watershed Protected Water Area Regulations made under subsection 106(5) of the NS *Environment Act* and the Pottle Lake Source Water Protection Plan developed by the Cape Breton Regional Municipality (CBRM) (CBRM 2010).

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- f) All work in the Dribble Brook Protected Watershed Area will be conducted in compliance with the requirements of the Policy for Land and Water Related Developments in PPWSA under the NL Water Resources Act (NLDEC 2002).
- g) Any work undertaken within the proposed *Environmental Goals and Sustainable Prosperity Act* land parcel #222 that contains the Big Lorraine grounding site, will be contained within a small area and restricted to the southern-most corner of the parcel. All standard mitigation related to construction activities (*i.e.*, for wetlands, watercourses, and terrestrial flora and fauna) will be implemented to reduce any potential environmental effects.

2.5 ARCHAEOLOGY

- a) Any excavations, or similarly invasive work, undertaken in areas of high potential will be completed with a qualified archaeologist present.
- b) The mitigation of any archaeological sites discovered through further field work will be carried out by a permitted professional archaeological team conducted under permit by the Provincial Archaeology Office (PAO) in NL or the Special Places Coordinator, Nova Scotia Department of Communities, Culture and Heritage (Heritage Division) in NS.
- c) The Provincial Archaeology Office (PAO) and/or staff with the Geological Survey of NL, Department of Natural Resources or NSDNR and/or the NS Heritage Division paleontological staff will be provided the opportunity to examine any newly exposed bedrock known or suspected to contain fossils.
- d) If unexpected archaeological and heritage resources are encountered during construction activities, cease work and contact NSPML. NSPML will contact the NS Heritage Division or PAO in NL immediately upon discovery of an archaeological site or artifact unearthed during any phase of the proposed Undertaking. If the find is of certain or suspected Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO).
- e) The Contractor will be required to follow the Contingency Plan for Unexpected Archaeological and Heritage Resources provided by NSPML.
- f) Where avoidance of high potential areas for archaeological or heritage resources within the work areas is not possible, results of archaeological testing will be used to confirm if resources are present. Identified resources will be protected through avoidance, mitigation through archaeological recovery, or a combination of these measures. These

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activities will occur in advance of any Project-related ground disturbances, to the satisfaction of the PAO in NL for discoveries in NL or the Provincial Heritage Division and KMKNO for discoveries in NS.

2.6 WETLANDS

Guidance on wetland conservation in NS will adhere to the Nova Scotia Wetland Conservation Policy (NSE 2011).

Guidance on wetland conservation in Newfoundland will adhere to the Policy for Development in Wetlands in Newfoundland (NLDEC 2001).

Wetland avoidance is the primary objective in wetland habitat conservation and is achieved through mitigation by design (*i.e.*, routing of line to avoid wetlands to extent possible); however the following mitigation is also provided for wetlands:

- a) When wetland avoidance is not possible, vegetation clearing within habitats identified as sensitive will be done by hand, and will be limited to the removal of trees. These wetlands will be identified by NSPML as part of the constraints mapping.
- b) Trees will be removed within the portion of the cleared area passing through wetland habitat, with shrub cover being left intact, when feasible.
- c) To the extent feasible, access for the purpose of construction will utilize existing roads (*e.g.*, public roads, resource roads, trails) and the existing (cleared) transmission corridor. The Contractor will note that it is preferred that construction equipment and materials advance linearly along the existing (cleared) transmission corridor, to minimize the extent of disturbance.
- d) In situations where wetlands traverse the entire transmission corridor width, access will deviate around the wetland, where feasible, or the Contractor will be responsible for installing temporary mitigation measures, such as swamp mats or brush mats to cross the wetland. Since the mats distribute the load weight over a much larger area, it is expected that any disturbance will be minor (both spatial and temporally) in nature and will quickly rehabilitate to original conditions. The Contractor will ensure that any mats used will be removed at the end of the construction following the last piece of equipment.
- e) The Contractor will ensure natural vegetated buffers are maintained or will implement engineered sedimentation controls if tree removal activities are required within 30 m of a wetland, to prevent siltation of the wetland from areas of disturbed ground.

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- f) The Contractor will ensure that run-off from tree removal activities will be directed away from wetlands.
- g) No chips or debris will be left in wetlands or watercourses, or their buffers, or in coastal habitats (e.g. beaches, dunes).

2.7 WATER COURSE AND WETLAND CROSSINGS

Watercourse crossings will be executed in one of four ways depending on crossing width and length of the span required, hydrology, environmental sensitivities and engineering considerations. The four possible means for crossing watercourses are as follows:

- 1) Use of existing structures, where feasible.
 - 2) Use of temporary engineered structures where no permanent crossings are present. Clear span bridges are the preferred option and will be installed in accordance with applicable regulations.
 - 3) Winter ice crossings will be utilized where and when feasible. Winter mobilization and distribution of materials will be scheduled to take advantage of freeze-over conditions.
 - 4) Fording of watercourses, which is crossing the channel bed at stable, low gradient, low flow locations, will be considered as a last resort option under specific conditions and in accordance with regulatory requirements following approval from NSPML.
- a) For activities in NL, the DFO National Operational Statement for Clear Span Bridges will be followed and DFO will be contacted for advice, if required, during construction. When existing access and temporary crossings options are ruled out, fording will be considered as a last resort and only under unique and well-defined circumstances, following approval from NLDEC. Letters of Advice for Fording will be sought from DFO and the Environmental Guidelines for Fording (NLDEC 1992) will be adhered to. All fording activity that may be required will be carried out in compliance with the terms and conditions of a Permit to Alter a Water Body under Section 48 of the NL *Water Resources Act*.
 - b) In NS, watercourses will be crossed utilizing existing structures where feasible. Where no permanent crossings are present, temporary engineered structures will be used. Clear span bridges will be the preferred option. NSPML will follow the requirements of the NS *Environment Act (NS EA)*, and associated regulations, and the NSE document *Nova Scotia Watercourse Alteration Specifications – Temporary Bridge Specifications (2006)*. DFO will be contacted for advice, if required, during construction.

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- c) The DFO Operating Statement: Temporary Stream Crossing (DFO 2010) allows a temporary stream crossing without a DFO review when the following conditions are met:
- the bridge is no greater than one lane in width, and no part of its structure is placed within the wetted portion of the stream;
 - the work does not include realigning the watercourse;
 - for fording in flowing waters and temporary bridges, the channel width at the crossing site is no greater than 5 metres from ordinary high water mark to ordinary high water mark;
 - disturbance to riparian vegetation is minimized;
 - the work does not involve dredging, infilling, grading or excavating the bed or bank of the watercourse;
 - all crossing materials will be removed prior to the spring freshet, or immediately following project completion if this occurs earlier;
 - fording involves a one-time event (over and back) and will not occur in areas that are known fish spawning sites;
 - the crossing will not result in erosion and sedimentation of the stream, or alteration (*e.g.*, compaction or rutting) of the bed and bank substrates;
 - the crossing does not involve installation of a temporary culvert; and
 - protection of fish and fish habitat as described in the DFO Operation Statement (2010) under: *Measures to Protect Fish and Fish Habitat when Carrying Out a Temporary Stream Crossing* are incorporated.
- d) During freeze-up conditions, vehicles may cross watercourses via ice bridges, as per the most current DFO Operating Statement: Temporary Stream Crossing (DFO 2010). The Contractor must ensure that ice cover is sufficient to hold the weight of the vehicle and that the watercourse is not disturbed.
- e) New temporary crossings will be designed and constructed in accordance with hydrological conditions, span length, stream bank stability, weight restrictions and other criteria as defined by standard best practices.

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- f) The Contractor will ensure that watercourse crossings will be built to handle the expected load of equipment and materials, and will implement regular inspections to ensure that the crossing is maintained throughout the Project.
- g) Materials, equipment and personnel will be transported using track-mounted machines over existing terrain and within the bounds of the new corridor to the extent feasible. In situations where a wetland traverses the entire transmission corridor width, access will deviate around the wetland, where feasible, or temporary mitigation such as swamp mats or brush mats will be employed used to cross the wetland. Mats will be removed at the end of the construction following the last piece of equipment.
- h) Where feasible, wetland crossings during winter (frozen conditions) are recommended.
- i) Minimize wetland crossings, travel and construction during times of increased and long term precipitation, where feasible.
- j) The Contractor will ensure that the approaches to watercourse crossings are stabilized with brush mats, where necessary. The Contractor should also note that stream banks prone to erosion may require additional stabilization and will use material that is clean, non-erodible and not originate from the a stream bank or bed.
- k) The Contractor will ensure that all crossings are located in areas that exhibit a stable soil type and where grades approaching the crossings are not too steep.
- l) Watercourse crossings will not result in permanent diversion, restriction or blockage of natural flow.
- m) All wetland and watercourse crossings will be restricted to a single location, at the narrowest point, and occur at right angles to the wetland or watercourse.
- n) Temporary spans will be located at a narrow point on the watercourse.
- o) Any temporary bridge crossings will be removed following completion of construction pending NSPML consultation with applicable regulatory authorities.
- p) Any structure, device or thing, whether temporary or permanent, that may interfere with navigation, shall not be built or and placed in, on, over, under, through, or across any navigable waterway crossings unless it has been approved under the Navigable Waters Protection Act (NWPA) via NSPML. Transport Canada- Navigable Waters Protection Program (NWPP) should be contacted to determine the applicability of the NWPA.

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- q) Conductors will be drawn by hand or light vehicles such as ATVs across wetlands and winched into position in order to minimize damage to vegetation and substrate.
- r) When accessing temporary watercourse crossings, the Contractor will ensure the following requirements for clearing within the riparian buffer zones:
- clearing will be minimized to accommodate construction traffic requirements only, and will not span the full transmission corridor width;
 - cutting will be undertaken by hand or using equipment with a long-reach mechanical arm; and
 - at tower locations where grubbing is required, grubbed materials will be re-spread or stockpiled and as many stumps and roots as feasible will be left on the ground surface.

2.8 BUFFER ZONES

- a) The Contractor will avoid travel within watercourse buffers with machinery, where feasible, with the exception of temporary water crossing locations, unless allowed through regulatory permitting.
- b) With the exception of access to temporary watercourse crossing locations, a 30 m partially altered buffer will be retained on both sides of all waterbodies, including wetlands as per the Nova Scotia Watercourse Alteration Manual (2010).
- c) “Partially altered” is defined as vegetation of less than 2 m in height will remain. Vegetation over 2 m will be hand cleared to meet system reliability standards.
- d) In NL, in non-protected water supply areas, the minimum buffer zone width is 20 m for all waterbodies, including wetland, with slopes less than 30%. For slopes greater than 30%, the buffer distance will be determined using the formula: $20\text{ m} + 1.5\text{ m} \times \text{slope of the land (\%)}$ or 20 m, whichever is larger, as per the Guidelines for the Protection of Freshwater Fish Habitat in Newfoundland.
- e) The following buffer zones are required for protected water supply areas by the Policy for Land and Water Related Developments in Protected Public Water Supply Areas under the NL Water Resources Act:
- 150 m around intake pond or lake
 - 150m for a distance of 1 km upstream and 100 m downstream of a river intake

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- 75 m of a main river channel
- 50 m around a major tributary, lakes or ponds
- 30 m around other bodies of water

2.9 EROSION AND SEDIMENTATION CONTROL

For the Maritime Link, all erosion and sedimentation control measures will be temporary until natural re-vegetation occurs. Contractors will use the erosion and sedimentation control measures listed below at all sites where soil or sub-soil has been exposed and there is potential for erosion.

Considerations are as follows:

- a) The Contractor will ensure that both temporary and permanent control measures for erosion and sedimentation will be implemented in an appropriate time frame.
- b) The Contractor will ensure that appropriate (temporary) erosion and sedimentation controls will be implemented where soil or sub-soil has been exposed and potential exists for erosion, to stabilize the slopes/banks on either side of watercourses and prevent sediment run-off.
- c) During dewatering of excavated areas, the Contractor will involve measures to minimize and control the release of sediment-laden water by means of filtration through vegetation or engineered erosion control devices.
- d) The Contractor will ensure that the area of exposed soil will be limited, and that the length of time soil is exposed without mitigation (*e.g.*, mulching, seeding, rock cover) will be minimized through scheduled work progression. The Contractor will stabilize steeper slopes, susceptible to erosion, with rock, hydroseed, etc.
- e) The Contractor will be responsible for regular inspections and maintenance of all erosion and sedimentation control structures, on a quarterly basis and before and after severe storms events and forecasted heavy rain events, to ensure the effectiveness of erosion and sedimentation controls, unless otherwise approved by NSE. Results of the assessment must be submitted, at a frequency to be determined, to NSE.
- f) Site run-off from access roads and construction areas will be intercepted and diverted away from watercourses and wetlands as per the requirements of the NSEA and associated regulations. The quality of the water released from the site will be monitored so that it does not exceed the level of suspended solids specified by regulatory

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approvals and will follow the DFO Factsheet: Guidelines for the Protection of Freshwater Fish Habitat in Newfoundland and Labrador (Gosse *et al.* 1998). Results of the monitoring will be provided to the NSPML Environmental Engineer.

- g) Where necessary, mitigation measures will remain in place after work is completed and areas have stabilized. Erosion and sedimentation control measures will be temporary until natural re-vegetation occurs.
- h) Where required, the construction of landslide barriers and catch ditches in unstable areas will be used so that debris is contained.
- i) The Contractor will ensure that all (temporary) erosion and sedimentation control materials are eventually removed from the construction site.
- j) Silt curtains will be used during grounding site dredging and breakwater construction to minimize the transport of suspended sediments by water currents.
- k) Where required, the construction of landslide barriers and catch ditches in unstable areas will be used so that debris is contained before impacting infrastructure.
- l) Any material used to repair or stabilize stream banks will be clean, non-erodible and non-toxic and will not come from the watercourse bed or banks.
- m) Erosion protection material shall be clean, durable, non-ore bearing, non-toxic and obtained from a non-watercourse source.
- n) Silt-fencing, or other sediment barriers, shall be used to ensure silt or other harmful materials are not discharged into any watercourse.
- o) Sediment that has formed and been contained by the sediment containment barriers is to be removed and disposed of prior to the removal of the sediment barriers.

2.10 GENERAL REHABILITATION/SITE STABILIZATION

Upon completion of construction activities, sites should be returned to their original condition or to a better condition in which they were found.

- a) Materials not originating from the site must be of a similar nature as the in-situ material, and must be from clean sources as close to the rehabilitated area as possible. Should contamination be suspected, the material shall be analyzed prior to use. The number of samples, sampling locations and analytical parameters shall be approved by NSPML.

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- b) Rehabilitation/site stabilization should take place as soon as possible after completion of construction activity.
- c) Construction materials and debris will be removed from laydown areas when construction is complete, and the areas returned to original land-use capability.
- d) Where topography has been disturbed, the original contours shall be restored, if practical, to preferably grades 2H:1V or less.

2.11 VEHICLE TRAFFIC AND ACCESS ROADS

- a) Work areas and temporary access roads will be decommissioned to encourage a return to natural conditions.
- b) Where Nova Scotia Power Inc. or NLH or other access roads are utilized, the roads shall be maintained to either the same or a better condition than they were found.
- c) The location and construction details for any new access roads, staging areas, laydown areas, and associated infrastructure, and any other such information can be provided as required by NLDEC and NSE.
- d) To the extent possible, the Contractor will control and restrict access to Project-related roads and work areas to site personnel only. Speed in construction areas will be limited based on site conditions.
- e) Project-related equipment will follow traffic regulations and posted speed limits.
- f) In NS, any work areas created on provincially owned roads will conform with the Nova Scotia Temporary Workplace Traffic Control Manual (updated 2012).
- g) The information provided regarding Vehicle bans (under the *Motorized Snow Vehicles and All-Terrain Vehicles Act* and Regulations) will be adhered to for the beaches in the Grand Bay West to Cheeseman Provincial Park Important Bird Area (IBA) to protect nesting Piping Plovers from disturbance and destruction. If it is determined that other beaches could be accessed where piping plover or other bird species are present, similar avoidance measures will be implemented.

2.12 TREE REMOVAL

The Contractor is responsible for ensuring that the following commitments are implemented during tree removal activities:

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- a) Tree clearing activities will be executed in a manner that complies with the *Migratory Birds Convention Act* (MBCA) and the *Species at Risk Act* (SARA), specifically to avoid incidental take, as well as applicable provincial legislation.
- b) All work will comply with the Wildlife Habitat and Watercourses Protection Regulations under the *NS Forests Act*.
- c) Trees, inadvertently felled into a watercourse, will be removed immediately.
- d) Harvesting of timber on private lands will be subject to agreement of a legal interest in the land and/or a timber harvesting agreement.
- e) Permission to access areas for clearing purposes will be obtained from property owners by NSPML.
- f) Harvesting timber on Crown Land will be done in accordance with Provincial Crown requirements.
- g) A commercial harvesting permit will be obtained from the respective forest management district office prior to commencement of activities.
- h) All timber harvested under a commercial permit will be scaled and stumpage paid as per the timber royalty regulations.
- i) All timber will be harvested in accordance with the Cutting of Timber Regulations under the *Forestry Act* of NL.
- j) All watercourses will be kept free of chips and debris resulting from clearing activities.
- k) Vegetation greater than 2 m in height within a 20 m watercourse buffer area will be hand cleared (i.e., large machinery will not be used).
- l) Felling of trees adjacent to an energized transmission corridor will employ qualified personnel in regular scheduled contact with the energy centres and following appropriate protocols established by the respective utilities in both provinces.
- m) Clearing limits will be marked and Project activities will be limited to designated areas, where feasible.
- n) Stump heights will be kept as low as feasible for future vegetation management purposes.

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- o) An operating permit will be obtained from each forest management district in the fire season.
- p) Wood piles shall not restrict access or subsequent construction work on the right of way (RoW) or access road.
- q) Wood piles shall be stacked and arranged in a stable manner to prevent them from toppling over.
- r) In NL, ornamental, shade, fruit or Christmas trees shall be left uncut unless directed by NSPML.
- s) Non-compatible vegetation (brush) may be disposed of by chipping, matting, mulching or hauling away.
- t) Felled trees previously cut or uprooted trees or stumps within the designated limits must be properly disposed of by the Contractor.
- u) Damage to any facility (*e.g.*, fences, etc.) on or off the RoW caused by the Contractor as determined in the sole judgement of NSPML shall be repaired to the satisfaction of NSPML at the Contractor's expense.
- v) The following permits will be obtained from the relevant local or area office of the NS Department of Natural Resources (NSDNR), for work during forest bans and/or during the fire season:
 - o Woods Travel during Forest Closure Permit: required for travel on forest land while a travel ban (woods closure) is in force. Woods closure/travel bans usually occur when the forest is extremely dry, and the hazard of fire is extreme.
 - o Burn Permit: required to light a fire in or within 1000 feet (304 m) of the woods in NS during the fire season (*i.e.*, April 15th to October 15th, both dates inclusive).

2.13 BLASTING

- a) Should blasting be necessary for rock excavation, it will be conducted in accordance with provincial legislation and subject to terms and conditions of applicable permits.
- b) Should blasting be required on provincially owned roads in NS, a permit will be obtained from NS Transportation and Infrastructure Renewal's local Area Manager.

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- c) Potentially affected landowners will be notified of any blasting activities through a communication plan prepared by NSPML.
- d) All blasts are to be conducted and monitored by certified professionals.
- e) A pre-blast survey of all structures (*e.g.*, homes, wells, etc.) will be completed within 800 m of the point of blast. The survey must be conducted in accordance with the NSE Procedure for Conducting a Pre-Blast Survey and any water well impacts from the blasting must be corrected by the Approval Holder to the satisfaction of NSE. The survey will include, where applicable, analysis of well water quality and quantity (*e.g.*, chemistry, bacteria).
- f) Where blasting is planned within 500 m of residences, activities will comply with the requirements of existing by-laws (where applicable).
- g) Blasting near watercourses will only occur in consultation with DFO, and will follow the requirements of the *Fisheries Act* as well as the requirement of the DFO Factsheet: Blasting – Fish and Fish Habitat Protection (DFO 2010b); and/or the DFO Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (Wright and Hopky 1998), as applicable.
- h) Three hours prior to any blasting in NL, a visual reconnaissance of the area will be conducted to determine the presence of caribou; blasting will be delayed, where feasible, until caribou have left the area of their own accord.
- i) If blasting is required in protected or unprotected water supply areas, a hydrological assessment will be carried out and mitigation and monitoring will be developed in consultation with NSE and NLDEC.
- j) If blasting operations involve the use of ammonium nitrate, Contractors should note that this substance is listed in the Environmental Emergencies (E2) Regulations under the Canadian Environment Protection Act (CEPA) and appropriate mitigations should be applied.
- k) Blasting will not be carried out within the Protected Water Supply Areas of Pottle Lake, NS and Dribble Brook, NL.
- l) Protocols must be included for any proposed blasting within the area of the new transmission corridor in NL (between Granite Canal and Burgeo Highway) to avoid conflict with outfitting operations.

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- m) Contractor(s) will include a contingency plan for providing temporary water and replacing damaged wells should a water supply well be affected from blasting, in the unlikely event that this should occur.

2.14 WASTE MANAGEMENT

- a) All sites will be kept free from the accumulation of waste material and debris, and upon completion of the works, surplus materials and temporary structures will be cleaned from the sites.
- b) All solid waste, including waste construction material, will be properly sorted for recycling, reuse, composting, or landfilling in approved facilities.
- c) Segregated materials will be stored in a manner to prevent degradation, burning or burying on site until they are sent to the appropriate, provincially approved waste disposal, recycling or composting facility.
- d) Permanent storage areas for containers or drums will be clearly identified.
- e) Temporary on-site sewage systems required during construction activities will be installed and operated according to relevant provincial legislation.

2.15 STORAGE AND HANDLING OF HAZARDOUS MATERIALS

- a) Storage of all hazardous materials will comply with Workplace Hazardous Materials Information System (WHMIS) requirements. Appropriate material safety data sheets (MSDS) will be located at the storage site(s).
- b) Permanent storage areas for containers or drums will be clearly identified.
- c) Fuel storage areas will have approved secondary containment.
- d) Transportation of dangerous goods will comply with Transport Canada's *Transportation of Dangerous Goods Act*.
- e) Equipment will be kept in good working order, will be inspected regularly and any observed leaks will be repaired.
- f) Refueling in the field will not occur within 30 m of watercourses and water supply areas (including the known location of private wells). Where equipment is located near a wetland and must be refueled at that location, special precautions will be used to prevent spilled fuel from entering any sensitive receptors (e.g. absorbent pads located below nozzle and spill response kits fully stocked and located at the refueling location).

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- g) Contractor(s) will provide an emergency response plan (ERP) which will include emergency spill response procedures for potential release of diesel fuel, hydraulic oil and all other types of synthetic oil, drill muds and hazardous materials, and hazardous wastes. Procedure details should include staff and contractor training requirements, emergency contact numbers and fire responders.
- h) Spill containment equipment (*e.g.*, spill kits) and trained personnel will be present at site at all times.
- i) Refueling, clean-up kits and storage of fuel will follow permit stipulations under the Policy for Land and Water Related Developments in PPWSA under the NL Water Resources Act.
- j) The provincial governments have jurisdiction over the transportation of hazardous wastes within its province, as well as the licensing and permitting of authorized facilities undertaking disposal or recycling operations and authorizing carriers. Environment Canada (EC) is responsible for administering the Interprovincial Movement of Hazardous Waste Regulations (IMHWR) under CEPA (CEPA 1999). In addition, all hazardous wastes must be accompanied by a manifest or movement document. If hazardous wastes or hazardous recyclable materials are to be shipped for disposal or recycling outside Canada or imported into Canada, the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations [EIHWRMR] under CEPA would be applicable.
- k) The Interprovincial Movement of Hazardous Waste Regulations (IMHWR) have been in force since 2002. These regulations set out the conditions which must be met in order to monitor and track the transboundary movement of hazardous wastes in Canada to ensure that they are recycled or disposed of in an environmentally sound manner. Contractors should be aware that under the IMHWR, all hazardous wastes must be identified, appropriately packaged and transported by an authorized carrier within Canada.
- l) In the event of an emergency involving dangerous goods, call CANUTEC at 613 966-6666 or *666 (cell phone). Canutec is the Canadian Transport Emergency Centre and is operated by Transport Canada to assist emergency response personnel in handling dangerous goods emergencies. This national bilingual advisory centre is specialized in interpreting technical information, providing advice, and emergency response associated with the transportation of dangerous goods under the Transportation of Dangerous Goods Act (TOGA).

2.16 NOISE AND DUST CONTROL

- a) Construction equipment will be maintained in good working order and properly muffled.
- b) Noise control measures (*e.g.*, sound barriers, shrouds, enclosures) will be used where warranted.
- c) Noise-generating construction activities will comply with the requirements of existing by-laws (where applicable).
- d) NSPML will undertake a noise assessment where high-noise events and/or sustained noise-producing activities are planned (*e.g.*, converter stations, HDD locations). This assessment will identify noise receptors and quantify the potential effects of noise on those receptors.
- e) Noise abatement measures will be installed if deemed necessary in consideration of Health Canada guidelines for daytime and night time noise limits (Health Canada 2010) at HDD site locations.
- f) In the event of public complaints about low frequency noise (LFN) and/or vibration near the converter station or activities related to HDD, NSPML commits to implementing appropriate measures to mitigation the LFN and/or vibrations. Mitigation may include monitoring.
- g) Dust control will be employed as necessary, including limiting exposed soils (*e.g.*, through re-vegetation) and application of water or a suitable, approved dust suppressant, to dry and/or dust-prone soils, if required.
- h) Air emissions will be mitigated through regular equipment inspection and maintenance and restriction of engine idling.

2.17 MARINE ENVIRONMENT

The following conditions apply to activities occurring within the Marine Environment:

- a) Mitigation measures include prohibition of illegal dumping of bilge water/wastewater, and the rapid containment and cleanup of hydrocarbon spills.
- b) Fill material for the rock berms to be free of fines, debris and any substances that would be deleterious to the marine environment.

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- c) Vessel speeds will not exceed 26 km/hr (14 knots) where practical to reduce potential for collisions with marine mammals.
- d) Discharges from the Project will comply with Annex 1 of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and Pollution Prevention Regulations of the *Canada Shipping Act*.
- e) For marine work, Marine Atlantic and Transport Canada's Notice to Shipping offices will be notified of work activity and duration. A Notice to Mariners and Notice to Shipping will be published to inform vessel operators of navigational hazards during construction and operations.
- f) All marine-based work undertaken by Canadian-registered vessels will comply with the requirements of the *Canada Shipping Act*.
- g) All ballast water management activities will comply with the Ballast Water Control and Management Regulations (updated Oct 31, 2012), under the *Canada Shipping Act*, and the Canadian Ballast Water Management Guidelines.
- h) All marine activities will be undertaken in compliance with stipulations in the *Fisheries Act* authorizations for harmful alteration, disruption, or destruction (HADD) of fish habitat and Section 32 approval.
- i) In the event of seabird strandings on the cable laying vessel or at the HDD site, NSPML will adhere to handling protocols described in The Leach's Storm-Petrel: General information and handling instruction, as well as meeting necessary permit requirements.
- j) In recognition of the importance of the Bird Islands IBA, the cable laying vessel will commit to avoiding the islands.
- k) Operations in the marine environment require compliance with Section 36(3) of the Fisheries Act (and applicable CEPA Regulations) and the MBCA.
- l) With regards to birds which may be encountered in the offshore and along the coast and effects to these birds associated with oil spills, Contractors will develop a comprehensive ERP as part of their EPP.
- m) Use best management practices for reducing interaction with marine birds, including:
 - vessels travelling at reduced speeds to minimize underwater acoustic emissions and collision with marine mammals and marine reptiles;

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- restriction of boat traffic to construction zone where feasible;
 - minimizing the use of ship's whistles; and
 - restricting night lighting where practical and safe to do so.
- n) The area of ground disturbance for the subsea cables will be assessed for archaeological resources using available geophysical data (e.g., side scan sonar, magnetometer), during final routing. Avoidance of potential marine archaeological resources is the primary form of mitigation for the Cabot Strait.
- o) All Project-related vessels will have a shipboard Oil Pollution Emergency Plan (OPEP), as required by the International Convention for the Prevention of Pollution from Ships (MARPOL). Oil spill response and clean-up procedures will be developed in consideration of EC-CWS's Oil Response Procedures Manual and Oil Response Plan (CWS 1999). The OPEP will identify the person authorized to implement the plan and will also confirm that the vessel has an arrangement with a response organization certified by the Canadian Coast Guard.
- p) Storage of hazardous materials on vessels will be in accordance with applicable regulation.
- q) All marine spills will be reported to the Canadian Coast Guard.
- r) Any incident involving the spillage of oil or petroleum lubricating products into the marine environment must be reported immediately to the 24-hour Spill Report Centre (1-800-565-1633).
- s) All marine-based work undertaken by foreign vessels must be undertaken pursuant to a Coasting Trade Permit issued under the *Coasting Trade Act*, and will comply with applicable regulations under the International Maritime Organization Conventions including MARPOL.
- t) All marine Project activities will be conducted in accordance with the requirements of the Canadian Coast Guard Marine Communication and Traffic Services.
- u) If unexploded ordnances are encountered, emergency response procedures will be implemented as per the Contractor's ERP, including notification of appropriate personnel and agencies (e.g., Coast Guard, Department of Natural Defence).
- v) If a frac-out occurs, emergency response procedures will be implemented as per the Contractor's ERP. Following initial response, reclamation will be undertaken as necessary to restore damaged habitats. In particular, benthic surveys will be

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- conducted to determine the extent of spilled drill fluid in the marine environments. Habitat compensation works will be implemented for all harmful loss or alteration to fish habitat where required.
- w) All marine equipment used during construction will be examined and cleaned to prevent and control marine biofouling. All anti-fouling activities will comply with the Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals (2012), under the *Canada Shipping Act*, as well as requirements set out by Health Canada and the Pest Management Regulatory Agency regarding approved anti-fouling substances.
 - x) If required, a fish capture and relocation plan will be developed to ensure the safe removal of any fish trapped within the saltwater pond created during construction of the grounding elements. This plan will be referenced as a mitigative measure and will be available to DFO for review.
 - y) Any Project-related loss or harmful alteration of fish habitat will be addressed through application under the Fisheries Act, as applicable, including the requirement to comply with no-net-loss provisions of DFO policy and the DFO Policy for the Management of Fish Habitat.

2.18 GEOTECHNICAL/HORIZONTAL DIRECTIONAL DRILLING (HDD)

- a) The conditions laid out in the DFO Statement ‘High-Pressure Directional Drilling’ to protect fish and fish habitat, will be followed.
- b) For HDD, the rig layout will include containment facilities and specialized trucks at the entry borehole designed to contain a release of drilling fluid from the mud circulation system and prevent the release of drilling muds into the marine environment.
- c) The primary mitigation for the potential release of drilling fluid is controlling the mud system and drill bit steering (telemetry system). Following detailed design of the HDD exit location (*i.e.* drill short or drill through), mitigations such as altering drilling mud composition and the use of divers and/or suction equipment are options, depending on geological conditions and appropriate safe work conditions.
- d) If sulphide bearing materials are identified through pre-construction geotechnical surveys, these areas will be included in the Contractor’s EPP. Rock removal in known areas of elevated potential will conform to relevant legislation (*e.g.*, the Sulphide Bearing Material Disposal Regulation of the NS *EA*), and in consultation with relevant regulatory departments.

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- e) For HDD, the rig layout will include containment facilities designed to contain a release of drilling fluid from the mud circulation system.

2.19 ENVIRONMENTAL TRAINING

Environmental training and orientation will be mandatory for all staff and contractors prior to start of any construction activities.

All workers and supervisors will attend Orientation Training, in advance of arriving on site, which includes, but is not limited to:

- Contents of the Project EPP;
- Terms and Conditions of the Approval as issued by regulatory bodies; and
- Contents of the Contractor's Activity EPP.

The lead contractor will ensure that all of their on-site supervisors and those of any subcontracted operations adhere to the following standards:

- Issues of environmental concern will be included as a standard agenda item at Project meetings.
- The Construction Site Manager will arrange for inspections to ensure compliance to this document and subsequent approval (and any other approval issued).
- The Contractors will inform personnel of the requirement to report issues of non-compliance to the Construction Site Manager.
- Personnel will be informed that hazardous materials and Petroleum, Oils, and Lubricants will be used only by personnel who are trained and qualified in the handling of these materials, and only in accordance with manufacturer's instructions and government regulations. The WHMIS program will be implemented and all employees involved will be appropriately trained.
- All Project personnel will be made aware of the chemical and oil spill response procedures and incident reporting system, including the location and use of on-site spill response and firefighting equipment.

2.20 EMERGENCY RESPONSE PLAN/INCIDENT NOTIFICATION

A Project-specific Emergency Response Plan (ERP) will be developed by NSPML and implemented to minimize the extent and duration of effects from any major accident, in the unlikely event that such would occur.

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Contractors will be required to provide a copy of their Emergency Response Plan (ERP) and incident notification process that meets or exceeds the requirements outlined in the NSPML ERP. The Contractors ERP may include, but not be limited to, the following:

- Contingency plans to address accidents that include spill response procedures, fires, emergency contacts, and staff training.
- Procedures to be followed in case of an accident and will include staff and contractor training requirements as well as emergency contact numbers, including fire responders.
- Prevention and mitigation of fuel leaks from equipment in the case of spills including personnel training requirements.
- Procedures for responding to extreme climate conditions such as storms and flooding to protect workers and the public as well as the security and integrity of infrastructure.
- Signage identifying areas as ‘high risk’ will be implemented.
- Each work site will have staff trained in First Aid.
- Notification process to NSPML should an electrical hazard be discovered.
- Adherence to NSPML reporting timelines for incidents is required as outlined in the ERP.

3.0 WILDLIFE PROTOCOLS

3.1 GENERAL WILDLIFE

The construction phases of the Maritime Link Project are very likely to interact with wildlife. Given the scope of the work, a wide range of species and habitats will interact with this project. This project will minimize the risk of harm to wildlife through general avoidance measures where feasible and awareness training.

- Training and Awareness Procedures:
 - Present information to personnel on site about wildlife (e.g. why they are of concern, how to identify them and their behaviour, including safety protocols);
 - Personnel will be encouraged to report any wildlife sighting during daily commute on worksite;
 - Personnel operating company vehicles will possess a valid driver’s license, follow

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designated speed limits, and undergo safety training with particular emphasis on strategies to avoid wildlife-vehicle collisions;

- A “No harvesting or other harassment of wildlife” policy will be implemented, and there will be no firearms or pets on site;
- Public access will be restricted from temporary roads and work areas; and
- The Environmental Protection Plan (EPP) will be overseen using trained and experienced environmental monitors.

3.2 CARIBOU

Newfoundland caribou will be treated separately in this document as there is a high likelihood of encounters and a specific set of protocols to be implemented within known caribou calving habitats. These measures include:

- Temporal:
 - Modify timing of worksite activities within known caribou habitats to avoid calving, early-post calving, and late-post calving where possible.
 - Pre-calving season defined as April 1- May 19 annually
 - Calving season defined as May 20 - June 10 annually
 - Post-calving season define as June 11 – June 30 annually
- Spatial:
 - Modify or restrict location of worksite activities and during calving, early-post calving, and late-post calving; areas of high risk of occurrence within the project corridor will be identified on the project constraints maps.
 - Use existing access (i.e., logging roads, farm roads, and trails) for geotechnical program where feasible;
 - Post and enforce speed limits in known caribou calving areas (50km daylight, 30km dusk-dawn);
 - Install caribou warning signs along primary and secondary access roadways;
 - Align any new right of way placement and worksite activities to reduce effects to

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- known calving, early-post calving, and late-post calving areas;
- Limit the width, density, and length of access roads where possible to reduce habitat and landscape degradation; and
- Rehabilitate work areas no longer required in accordance with the EPP to encourage to return to natural conditions.
- Training and Awareness Procedures:
 - Present information to personnel on site about caribou (e.g. why they are of concern, how to identify them and their behaviour, how to report sightings on site using a caribou field card);
 - Personnel will be directed to report any caribou sighting during daily commute on worksite;
 - Personnel operating company vehicles will possess a valid driver's license, follow designated speed limits for caribou habitat, and undergo safety training with particular emphasis on strategies to avoid wildlife-vehicle collisions;
 - A "No harvesting or other harassment of wildlife" policy will be implemented, and there will be no firearms or pets on site;
 - Public access will be restricted from temporary roads and work areas; and
 - The Environmental Protection Plan (EPP) will be overseen using trained and experienced environmental monitors.
- On-Site Environmental Monitor will:
 - Complete daily visual scans for caribou activity at work sites; and
 - Drive access roads within **5 km** of work sites daily to identify caribou activity/presence by observation of animals or sign
 - If caribou activity is observed (**> 3km from work sites**), environmental monitor will advise personnel, activities will proceed with caution and continue to monitor.
 - If caribou activity observed (**<3km from work site**), the environmental monitor will advise the Wildlife Division.

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- Upon visual observations by project personnel they will:
 - **STOP** – turn off engines. Assess caribou response;
 - **WAIT** – 5 to 10 minutes for caribou to continue off the right-of-way or site;
 - **PROCEED** – quietly and cautiously, trying not to evoke flight response. If caribou reacts to proceeding, stop and continue to wait; and
 - **REPORT** – all caribou encounters on caribou response card and submit to on-site Environmental Monitor (see below).

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Caribou Encounter Report Form							
Date		Time		Location			
Caribou behavior at time of encounter		Bedded down		Travelling		Feeding	Other
Caribou reaction when encountered		No response		Curious, activity continued		Flight response	Other
Worker activity at time of encounter		Travelling		Actively working		Down time	Other

3.3 NEWFOUNDLAND (PINE) MARTEN

The Newfoundland population of American martens and their Critical Habitat are protected under the Newfoundland and Labrador *Endangered Species Act* and the federal *Species at Risk Act* since 2009. As a result, special care must be taken to avoid harming martens and their habitat. Part of the project transmission line crosses the Critical Habitat of the pine marten (see constraints map for delineation of the Critical Habitat). Similar to the caribou protocols described above, temporal and spatial measures should be implanted to reduce the risk of harm to American marten and their habitat:

- Temporal
 - Where possible, modify timing of worksite activities within known American marten Critical Habitat to avoid denning.
 - Denning season defined as April 1st - June 30th annually.
- Spatial
 - Modify or restrict location of worksite activities and during denning season; boundaries of the designated Critical Habitat within the project corridor will be identified on the project constraints maps.
 - Should any tree clearing be planned for the martin denning period, NSPML will consult with the NL Wildlife Division to identify a specific plan for identifying and avoiding denning locations prior to work. Given the relatively small area to be cleared along an existing RoW, and the low likelihood of interaction with the

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species.

- Training and Awareness Procedures:
 - Present information to personnel on site about American martens (e.g. why they are of concern, how to identify them and their behaviour, how to report sightings on site);
 - Personnel will be directed to report any marten sighting during daily commute on worksite;
 - Personnel operating company vehicles will possess a valid driver's license, follow designated speed limits for marten habitat, and undergo safety training with particular emphasis on strategies to avoid wildlife-vehicle collisions;
 - A “No harvesting or other harassment of wildlife” policy will be implemented, and there will be no firearms or pets on site;
 - Public access will be restricted from temporary roads and work areas; and
 - The Environmental Protection Plan (EPP) will be overseen using trained and experienced environmental monitors.

3.4 AVIFAUNA

The *Migratory Birds Convention Act* (MBCA), provides for the protection of migratory birds through the *Migratory Birds Regulations* and the *Migratory Birds Sanctuary Regulations*. The Migratory Bird Sanctuary Regulations grant sanctuary status to areas that represent habitat that is important to migratory birds. These regulations help protect the birds from hunting and all other disturbances while they are in breeding and other staging areas.

The construction phases of the Maritime Link Project will inevitably interact with avifauna (birds). Given the scope of the work, a wide range of bird species and habitats will interact with this project. As with other wildlife species, this project will minimize the risk of harm to birds through temporal and spatial avoidance measures. Several avifauna species are listed and protected under the Newfoundland and Labrador *Endangered Species Act* and the federal *Species at Risk Act* which will require special attention.

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- Risk of interaction
 - If construction occurs during the winter season in ice-free coastal areas near Cape Ray, there is potential for interaction with several species of overwintering sea ducks such as the Harlequin Duck. It is unlikely that the ML Project will interact with ducks outside of the Cape Ray area during winter. No mitigation should be required in the nearshore and coastal environments other than emergency response.
 - Tree clearing for the Maritime Link project is the most likely activity to impact nesting birds and their habitat. Given the relatively small area affected, along with the measures implemented, it is it likely that none of these activities will have measureable effects on bird populations.
- Mitigation

Construction activities will be executed in a manner that complies with the *MBCA* and *SARA*, specifically to avoid incidental harm to birds:

- primary mitigation of activities during breeding season will be achieved through Project planning and scheduling of clearing activities, on a best-efforts basis, to avoid the key migratory bird nesting period of May 1st to July 31st.
 - secondary mitigation will be the development and implementation of an avifauna management plan designed to reduce the likelihood of interaction; establish training protocols for personnel to identify active nests; and protocols for nesting surveys by trained ornithologists in advance of clearing activities.
 - If activities are planned in the nearshore/coastal environment in winter, monitoring will be undertaken to determine if Harlequin Duck or Barrow's Goldeneye use the area.
 - Where feasible, existing access (i.e., logging roads, farm roads and trails) will be utilized through design and routing decisions, to minimize the area to be cleared for new access.
- Training and Awareness Procedures:

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- Personnel operating company vehicles will possess a valid driver's license, follow designated speed limits for marten habitat, and undergo safety training with particular emphasis on strategies to avoid wildlife-vehicle collisions;
 - A "No harvesting or other harassment of wildlife" policy will be implemented, and there will be no firearms or pets on site;
 - Public access will be restricted from temporary roads and work areas; and
 - The Environmental Protection Plan (EPP) will be overseen using trained and experienced environmental monitors.
- The timing of any construction activities in the shoreline/ intertidal zone will consider Harlequin Ducks, Barrow's Goldeneye, and Red Knot, which may be utilizing the area near Cape Ray for wintering or migratory stopover purposes. Also, in recognition of protection measures for Piping Plover ENL will engage applicable regulatory departments following confirmation of Project design and schedule, and in advance of construction activities, ENL will engage applicable regulatory departments to review final details and determine if specific mitigation programs are required.
 - In areas where Bank Swallow burrows occur, mitigation measures will be implemented to ensure that nests are not adversely affected. This would include maintaining vertical river banks used for burrows (i.e. not allowing them to be collapsed or sloped away from a vertical orientation) and avoiding disturbance due to construction activities (For species such as Bank Swallows, the period when nests would be considered active would include not only the time when birds are incubating eggs or taking care of flightless chicks, but also a period of time after chicks have learned to fly since swallows return to their colony to roost).
 - Activities will be timed to ensure that waterfowl and/or waterbirds have raised their young, should young waterfowl and/or waterbirds be present in the area at that time.
 - To discourage migratory birds such as Bank Swallows from nesting in large piles of soil left unattended/unvegetated, measures will be taken to cover, or to deter birds from, these piles during the breeding season. If migratory birds take up occupancy of these piles, alternate measures will then need to be taken to reduce potential for erosion, and to ensure that nests are protected until chicks have fledged and left the area.

4.0 PROJECT ENVIRONMENTAL CONSTRAINTS MAPPING

Environmental constraint mapping for the Project is provided in Appendix A. These maps were developed using GIS software and highlight the environmental constraints along the transmission corridor and associated access roads. The environmental constraints include wildlife, wetlands, archaeology, rare flora and protected areas such as provincial parks.

These maps will be provided to Contractors to assist with the development of their activity specific EPPs. The maps will be updated as required and provided to Contractors when new detail is available or for design changes, should they occur.

5.0 REFERENCES

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APPENDIX A

Environmental Constraints Mapping