



Labrador-Island Transmission Link

Endangered Species Act - Listed Plants Impacts Mitigation and Monitoring Plan

ILK-PT-MD-0000-EV-PL-0002-01

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1.0 Purpose

In Newfoundland and Labrador, wildlife species at risk are managed under the *Newfoundland and Labrador Endangered Species Act* (NLESA), which was designed to complement the federal Species at Risk Act (SARA) legislation. The federal *Species at Risk Act* (SARA) was established to provide wildlife species additional protection against extirpation, extinction or endangerment (Government of Canada 2002, internet site). This includes protection from human activity. Species at risk are recommended for protection by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as extirpated, endangered, threatened or of special concern depending on the level of risk.

The *NLESA* protects wildlife species, subspecies or populations within the province that are considered endangered, threatened or vulnerable based on recommendations from COSEWIC or the provincial Species Status Advisory Committee (SSAC) (Government of Newfoundland and Labrador 2004, internet site). Under *NLESA* it is prohibited to disturb, harass, injure or kill any individual of a listed species, disturb or destroy the residence of listed species, or be in possession of individuals of a listed species (Government of Newfoundland and Labrador 2004, internet site).

This ESA Listed Plants Impacts Mitigation and Monitoring Plan (IMMP) is a requirement for the issuance of a section 19 Permit under the provincial Endangered Species Act (ESA). The application of this section 19 permit application is specific to the Shoal Cove area of the Labrador-Island Transmission Link. The remaining IMMP's for the LITL will be submitted as one document.

The ESA Listed Plants IMMP is required to be a standalone document that includes proposed measures to avoid, mitigate, and monitor impacts on the identified species at risk regarding the Labrador-Island Transmission Link. The intent of this document is to allow Nalcor Energy (NE) to evaluate and mitigate to the extent practicable the Project effects during construction and operations on disturbance to rare plants and their habitat, including increased access, and mortality of the plants. This ESA Listed Plants IMMP includes both the Long's braya (*Braya longii*) and Fernald's braya (*Braya fernaldii*).

To comply with regulatory requirements and commitments made in the Environmental Impact Statement (EIS) (Nalcor 2012), the ESA Listed Plants IMMP includes consideration of:

- Mitigation objectives – performance objectives in respect of each negative environmental effect;
- Mitigation – measures planned to achieve the mitigation objectives;
- Metrics and targets – specific, quantifiable, relevant and time constrained;
- Follow-up or Monitoring Programs – how the project will include follow-up or monitoring surveys to ensure that mitigation strategies are meeting the mitigation objectives; and
- Contingency – plan to be implemented should monitoring reveal that mitigation measures have not been successful.

NE's Listed Plants IMMP builds on existing information and commitments made in the EIS (Nalcor 2012), and conditions of permits and licenses for the Project. The purpose of this plan is to meet requirements for the issuance of a Section 19 permit under the ESA.

2.0 Scope

The Section 19, ESA Listed Plants IMMP addresses the required aspects of Listed Plants Impacts mitigation and monitoring for the design and construction phases of the Labrador-Island Transmission link of the LCP, at Shoal Cove (described in Section 6.0).

3.0 Definitions

Environmental Assessment: The evaluation of the Project's potential environmental risks and effects before it is carried out and identification of ways to improve project design and implementation to prevent, minimize, mitigate, or compensate for adverse environmental effects and to enhance positive effects. This includes the EIS (Nalcor 2009), subsequent Information Requests, and statements issued by NE during the course of the Environmental Assessment Hearings in 2011.

Environmental Management: The management of human interactions with the environment (e.g., air, water and land and all species that occupy these habitats including humans).

Environmental Management System: Part of NE's management system used to develop and implement its environmental policy and manage its environmental aspects.

Environmental Protection Plan: Document outlining the specific mitigation measures, contingency plans and emergency response procedures to be implemented during the construction or operations of the Project.

Environmental Effects Monitoring: Monitoring of overall Project effects to confirm the predictions of the EIS (Nalcor 2009) and to fulfill commitments.

Environmental Compliance Monitoring: Monitoring of Project activities to confirm compliance with regulatory requirements and commitments.

Integrated Project Delivery Team: The integration of the Nalcor Energy and SNC Lavalin Inc. Environmental and Regulatory Compliance Teams.

4.0 Abbreviations & Acronyms

ACCDC	Atlantic Canada Conservation Data Centre
CEAA	Canadian Environmental Assessment Act
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DND	Department of National Defense
EA	Environmental Assessment
ELC	Ecological Land Classification
EMP	Environmental Management Plan
EPP	Environmental Protection Plan
EMS	Environmental Management System
ERC	Environment and Regulatory Compliance
ERP	Emergency Response Plan

FMD	Forestry Management District
HSE	Heath Safety and Environment
HVac	High voltage alternating current
HVdc	High voltage direct current
IMMP	Impacts Mitigation and Monitoring Plan
KI	Key Indicator
LTA	Labrador Transmission Asset
LCP	Lower Churchill Project
LITL	Labrador Island Transmission Link
NE	Nalcor Energy
NLDEC	Newfoundland and Labrador Department of Environment and Conservation
NLESA	Newfoundland and Labrador Endangered Species Act
OSEM	On-Site Environmental Monitor
PEEMP	Protection and Environmental Effects Monitoring Plan
SARA	Species at Risk Act
SAR IMMP	Species at Risk Impacts Mitigation and Monitoring Plan
SOBI	Strait of Belle Isle
VEC	Valued Ecosystem Component
WD-DOEC	Wildlife Division – Department of Environment and Conservation

5.0 Reference Documents

LCP-PT-ED-0000-EA-SY-0002-01	Labrador-Island Transmission Link Environmental Impact Statement
LCP-PT-MD-0000-EV-PL-0010-01	LCP Integrated Project-Wide Environmental Protection Plan for Component 3 and 4a
ILK-PT-MD-8110-EV-PL-0001-01	Strait of Belle Isle Marine Crossing Environmental Protection Plan

6.0 Project Description

6.1 Labrador-Island Transmission Link

The LITL consists of the overland high voltage direct current (HVdc) Transmission system and associated HVdc converter station systems, the Strait of Belle Isle (SOBI) Marine Crossing and the new Synchronous condenser facility. Specifically it includes:

- Switchyard at Soldiers Pond;
- Muskrat Falls HVdc converter stations: HVdc bipolar converter station; 315 kV ac, converted to ± 320 kV dc; Pole capacity of 450 MW;
- Shoreline pond electrode located on the Labrador side of the Strait of Belle Isle. The Anse-au-Diable shoreline pond electrode will be connected to the converter station at Muskrat Falls with dual overhead conductors supported on a wood pole line from the pond electrode site to the HVdc transmission line Right of Way and from there on will be supported on the HVdc Line structures;
- Soldiers Pond HVdc converter station: HVdc bipolar converter station; 230 kV ac, converted from ± 350 kV dc; Pole capacity of 450 MW; and Shoreline pond electrode located on the east shore of Conception Bay;
- The Dowden's Point shoreline pond electrode will be connected to the converter station at Soldiers Pond with dual overhead conductors supported on a wood pole line;
- HVdc Transition Compounds for the Strait of Belle Isle submarine cable terminations
- 3 Mass Impregnated 450MW capacity each submarine cables crossing the SOBI protected using HDD boreholes and seabed rocking dumping;
- One transition compound for each side of the Strait of Belle Isle submarine cable crossing, with associated switch works to manage the junction of multiple submarine cables and the overhead transmission line;
- Overhead transmission line from the Muskrat Falls converter station to Soldiers Pond converter station (near St. John's, NL): 900 MW, ± 320 kV dc, bipolar line, single

- conductor per pole; Galvanized lattice steel guyed suspension and rigid angle towers; 1100 km long.
- New synchronous condenser at Soldiers Pond – 3 x 150 MVar units;
 - Conversion of Holyrood Thermal Units 1 & 2 to synchronous condenser support;
 - Breaker upgrades / replacements at the Sunnyside Terminal Station;
 - ECC Upgrades and fibre communication connections to Soldier’s Pond; and
 - Operations Telecommunication system.

Note: The LITL scope of work does not include any infrastructure or services associated with ECC upgrades, or the Holyrood conversions.



Figure 6.1 Labrador-Island Transmission Link

6.1.1 Scope of Work Summary – Shoal Cove

Specific to the Shoal Cove Area, the work will consist of the installation of a drill pad to support a directional drilling program. Three boreholes will be drilled to the sea floor for the marine cable installation. See Figure 6.2 for illustration. Three boreholes (one per cable) will be drilled in sequence for the shore approaches at Shoal Cove. It is expected that the HDD process will take place 24 hours a day, seven days a week and it is expected to take approximately 2.5 years to complete all boreholes.

In addition, a trench will be excavated from the drill pad to the transition compound. This trench will be created to lay cable that will transition from the marine cable, to an overhead transmission line. The land cable will be installed in the prepared land trench via rollers and cranes. The land cable will be installed through the allotted locations at the base of the transition compound for termination following the installation of the land cable into the trench. The completed land cable installation and termination will allow for the submarine system to be tested through to the termination once the transition joint between submarine and land cable is completed. A road will also be constructed for the transition compound. See Appendix A for a view of these aspects.

The civil work portion of the construction activities at Shoal Cove will include:

- Clearing and grubbing;
- Stripping and excavation of material;
- Excavation of rock and unsuitable materials, if required;
- Site preparation at HDD drill site including chain link fencing;
- Excavation of 2 m deep trench for cables from the transition compound to the drill site (approximately 600 m long);
- Installation of conduits/pipes for cable installation below Highway 430;
- Temporary traffic detour of Highway 430 during construction of cable trench, construction of cable crossing at Highway 430, removal of detour, and reinstatement of Highway 430;
- Two stream diversions during cable trench construction, two stream crossings; and
- Site remediation.

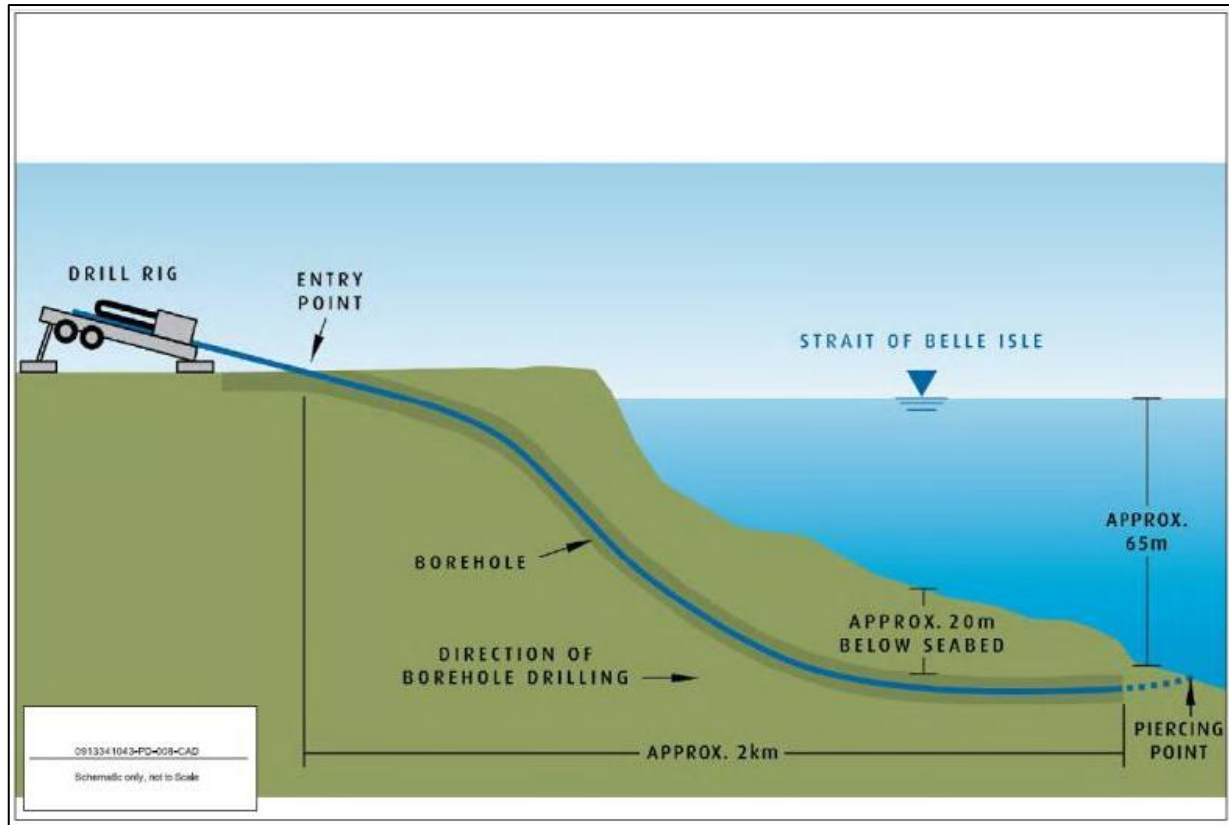


Figure 6.2 Side view of the Horizontal Directional Drill (HDD) Process

6.1.2 Construction Schedule

A summary schedule of construction activities is provided in the below Table 6.1. NE commits that any changes in Project schedule will be communicated to Wildlife Division, Department of Environment and Conservation (WD-DOEC).

Table 6.1 – Schedule of construction – Shoal Cove

Activity	Start Date	Completion Date
Civil Works		
Shoal Cove Site Preparation	As soon as possible	4-Nov-2013
Shoal Cove Cable Trench	22-Jul-2014	10-Sep-2014
Forteau Access Road(s)	7-Oct-2013	1-Mar-2013
Forteau Site Preparation	1-Mar-2014	1-Apr-2014
Forteau Transition Compound	1-Apr-2014	1-Jun-2014
Forteau Cable Trench	4-Jun-2014	14-Jul-2014
Drilling		
Shoal Cove Drilling	31-Jan-2014	16-Jul-2014
Forteau Drilling	20-Jul-2014	25-Dec-2014

7.0 Existing Information

Based on a review of the SARA Public Registry (EC 2010k, internet site), there are four listed Schedule 1 plant species known to exist within the Study Area for the Project: Fernald's milk-vetch (*Astragalus robbinsii* var. *fernaldii*); Long's Braya (*Braya longii*); Fernald's Braya (*Braya fernaldii*); and boreal felt lichen (*Erioderma pedicellatum*). Details of these species and their habitat requirements are provided in *Labrador – Island Transmission Link Regionally Uncommon Plant Potential Mapping* (Stantec 2010c). For the purposes of the Newfoundland and Labrador's Endangered Species Act (NLESA), only Long's Braya (*Braya longii*) and Fernald's Braya (*Braya fernaldii*) will be covered under this ESA Listed Plants IMMP for the Shoal Cove area. Fernald's Braya has an NLESA designation of "Threatened", while Long's Braya is designated "Endangered".

Fernald's Braya and Long's Braya are closely related members of the mustard family (*Brassicaceae*) and are similar in appearance. Long's Braya is a small, arctic-alpine-like plant, growing to a height of 1 to 10 cm; Long's Braya is similar to Fernald's Braya except for its pouch, which is hairless. Its petals are also larger, and its seedpods are not quite as purple (Limestone Barrens Habitat Stewardship Project 2010, internet site). Fernald's Braya is small; growing to a height of 1 to 7 cm. Fernald's Braya is a self-pollinating, perennial plant that lives for several years in ideal growing conditions (Limestone Barrens Habitat Stewardship Project 2010, internet site).

The distribution of Fernald's Braya and Long's Braya is well documented by the WD-DOEC. Both braya species are endemics, ranked G1 globally and restricted to the unique coastal limestone barren ecosystems of the Northern Peninsula in Newfoundland, from Port au Choix to Burnt Cape. Long's braya are found in five sites (along a 10 km stretch of land) and Fernald's Braya are found in 14 sites (approximately 150 km in length spanning the north-south axis of the Northern Peninsula's limestone barrens). The known range of both braya species within the Study Area is restricted to the limestone barrens along a few small areas around Sandy Cove and Anchor Point on the Northern Peninsula.

An overview of the aspects of Listed Plants in relation to the project are shown in Appendix A, and include:

- Critical habitat of Fernald's Braya and Long's Braya;

- Historic occurrences including results from rare plant surveys in 2011 conducted on behalf of Nalcor; and
- “No-Entry” zones as indicated by the (WD-DOEC).

Existing information regarding rare plants is summarized from data compiled for NE’s EIS for the Project (Nalcor 2012).

8.0 Cumulative Effects on Listed Plants

There are no known industrial or transitional activities anticipated in the area related to Listed Plants. See Table 8.1 for a summary of the cumulative effects assessment.

Table 8.1 Summary of the Cumulative Effects Assessment of Vegetation

Cumulative Environmental Effects Analysis	Shoal Cove
Current (Baseline) VEC Condition (reflecting the effects of past and ongoing projects and activities)	Vegetation in the LSA in this region remains largely in a natural state, although there has been influence by development (e.g., roads, transmission lines, communities) and timber clearing. The main habitat types are Conifer Forest, Open Conifer Forest and Scrub / Heathland/ Wetland Complex. Wetlands comprise 44 km ² : Approximately, 103 km of riparian habitat in the LSA is within PPWSAs and 975 km is outside. Locations of Listed Plants (e.g., braya species) are known to occur within the LSA, particularly in association with limestone barrens habitats in the area of Flower’s Cove; 36% of habitat was identified as having High or Very High potential for Regionally Uncommon Plant species. Timber Resources within the LSA were estimated at 1,689,210 m ³ of merchantable timber.
Likely Residual Environmental Effects of Labrador - Island Transmission Link (reflecting current VEC condition, as above)	Total area of ROW is 18 km ² , or 4% of the regional LSA in this region. The centre line ROW intersects no more than 4% of each Habitat Type available within the LSA, 3% (1 km) of Wetland habitat, 10% (10 km) of Riparian Shoreline habitat within PPWSAs and 6% (56 km) outside PPWSAs, and 7 km ² or 8% of High or Very High potential habitat for Regionally Uncommon Plants. Listed Plants (i.e., Long’s braya, Fernald’s braya) have been identified as potentially occurring within the ROW and will be avoided to the extent practical. The loss of Timber Resources is estimated to be 65,250 m ³ of merchantable timber.
Likely Cumulative Environmental Effects (within RSA) of Other Future Projects and Activities	Overlapping projects include general economic and Infrastructure development, commercial forestry activity, Parsons Pond oil and gas exploration drilling, and other land uses, particularly OHV use. Likely cumulative effects include loss or alteration of habitat as a result of clearing, displacement of native vegetation from the introduction or spread of nonnative and invasive species, and disturbance due to increased OHV use.
Cumulative Environmental Effects Summary	<p>Not Significant</p> <ul style="list-style-type: none"> Density of Listed and Regionally Uncommon Plant species is higher in this region than in any other region. Regulatory consultation has resulted in a particular focus on the limestone barrens in this region. While the contribution of the Project to cumulative environmental effects will likely extend through the life of the Project, they will be limited in scale to the RSA (relative to OHV access) and low in magnitude. Contributing projects have mitigation measures in place to minimize these adverse effects and access control measures will be implemented to address increased public <p>LCP-PT-MD-0000-QM-FR-0001-01 OHV Use.</p>

9.0 Avoidance of Listed Plants

Although alternatives to the Project were considered in Section 2.5, Volume 1 of the EIS (Nalcor 2009), the Lower Churchill Project was confirmed to be the optimal alternative to address NL power demand. Therefore, Project infrastructure as previously described is a requirement. Alternatives within the Project were considered throughout the planning and are ongoing. The Project footprint was minimized wherever possible.

Observations of Long's braya and Fernald's braya were made within areas of suitable habitat in an area of provincially identified "critical habitat" within the Shoal Cove Study Area. Long's braya and Fernald's braya are endemic to the Island of Newfoundland and therefore known only from this region of the province's Northern Peninsula. As a result of such range restrictions, additional occurrences of Long's braya and Fernald's braya are not anticipated within any other Study Area (i.e., L'Anse au Diable, Forteau Point and Dowden's Point) identified for the Project.

In terms of avoidance within the LITL Project construction at Shoal Cove, this goal will be achieved. Surveys for the Shoal Cove site were conducted to determine the exact locations of Listed Plants. Data acquired through further investigation was incorporated into the site design to ensure that the project footprint would be outside identified locations of Listed Plants.

To ensure protection of the Listed Plants at the Shoal Cove site, No-Entry zones were marked during the pilot borehole activity, in consultation with WD-DOEC based on the following:

- Critical habitat mapping provided by WD-DOEC
- Further surveying in 2011;
- Historic occurrences; and
- "No-Entry" zones established in consultation with WD-DOEC. The drill pad location was then selected in 2011 (See Appendix B)

Further opportunities for avoidance will be pursued where possible during the project execution should plants be identified.

10.0 Mitigation and Monitoring

To ensure the protection of Listed Plants in Shoal Cove, the following mitigation and monitoring measures will be included:

10.1 Drill Site

The perimeter of the drill pad will be enclosed with a fence. This will ensure all drilling activity is confined to this area. All area outside of this fence will be considered a restricted zone, in which no activity shall occur, even access by personnel. A 25 meter buffer will also be established on the outside of this fence.

As illustrated in Appendix B, the southern corner of the site is in close proximity to the “No-Entry” zone established by WD-DOEC. To ensure avoidance the location of the boundary will be field truthed and marked with a 25 m buffer to the “No-Entry” zone. This will be done in consultation with the WD-DOEC. The OSEM will be made aware of and closely monitor this area to ensure no incursion into the zone. Additional surveying will be conducted in June 2014, to confirm the extent of the “No-Entry” zone. Transect and survey protocol established in agreement with the WD-DOEC.

10.2 Trenching

As noted in the Project description (Section 6.0), a trench from the drill compound to the transition compound will be created. There will also be a road associated with the transition compound.

Prior to commencement of trenching in June 2014, detailed pre-construction surveys will be conducted for occurrences of Listed Plants. Survey protocols and appropriate transect spacing will be developed in consultation with the WD-DOEC based on habitat suitability for Listed Plants.

Should any individual Listed Plant species be identified, an appropriate mitigation strategy, in consultation with the regulatory agencies will be implemented. The determination of effective

mitigation will depend on site specific conditions such as terrain, available work space and access, as well as that of species sensitivity characteristics, including regulatory (SARA and NLESA) status and potential for transplant or propagation success. Where avoidance is not possible and no viable mitigations can be identified, in consultation with the WD-DOEC, the incident will be recorded.

10.3 Environmental Monitoring

An On-Site Environmental Monitor (OSEM) will be available at all times during the activities at Shoal Cove, to ensure regulatory compliance and adherence to this ESA Listed Plants IMMP. If new occurrences are identified, the OSEM will flag the area, and avoid where possible. However, if a plant is inadvertently affected or destroyed by the Project, it will be recorded and reported to the WD-DOEC.

An environmental monitor from the Provincial government will also be available on a full time basis during the extent of the construction activities at Shoal Cove. The OSEM will coordinate with the Provincial Monitor on a regular basis, and officially meet once a week. They shall meet as a group with site staff to discuss progression of the Project and mitigations once every 2 months.

10.4 Reporting

Daily reports will be produced by the OSEM, and a compilation of these reports will be submitted to the WD-DOEC on a monthly basis. This monthly report will provide a synopsis of completed activities, any new mapping or data plots, photographs as well as a monthly look-ahead. Any changes in timeline or schedule will also be communicated to WD-DOEC.

10.5 Training

To ensure the highest level of mitigation, awareness education of the Listed Plants in the Project area will be delivered during orientation, by the OSEM. This will ensure all employees are educated on the restricted and “No-Entry” zones, how to identify new occurrences, and overall protection of the species.

The training package will include photos and descriptions on how to identify the plants, the habitat they are found, and when they can be identified “in season”.

11.0 Environmental Effects Monitoring

This ESA Listed Plants IMMP contains follow-up programs to confirm the predictions of the EIS and to determine the effectiveness of any measure taken to mitigate the adverse environmental effects of the Project. Studies or surveys are also designed to determine whether the Project is implemented as proposed.

NE has committed to conduct baseline, follow-up and monitoring surveys for Listed Plants including Fernald's Braya and Long's Braya.

This would apply to the following, as appropriate:

- Baseline data collection (i.e., data collected prior to construction);
- Data collection during construction; and
- Data collection during operations.

Protocols for the various surveys are discussed below. Data collection includes metrics that are species specific, as appropriate, quantifiable, repeatable, relevant and time constrained. The goal would be to collect meaningful data in a focused, defensible, repeatable approach, within a timeline that is reasonable, to ensure that the mitigation is appropriate. Where it is determined that the mitigation is not appropriate, a contingency plan would be presented that NE could incorporate as per an adaptive management plan.

11.1 Baseline Data Collection

Baseline data collection refers to the determination of the presence of Listed Plants where Project activities are taking place. Baseline plant surveys have been conducted previously, most recently in 2011 through the Labrador-Island Link Transmission Line Project area. Baseline surveys conducted to date include:

- Listed and Regionally Uncommon Plant Survey: Strait of Belle Isle Cable Landing Sites And Shore Electrode Locations (2011); and
- Regionally Uncommon Plant Potential Mapping (2010).

Plant surveys were conducted over a seven-day period in early- to mid-July, employing a single field team consisting of a botanist and a vegetation ecologist. Targeted botanical surveys were conducted in the area of the proposed Project components, in part as follow-up to the completion of associated component studies (i.e., Regionally Uncommon Plant Potential Mapping report), in addition to that of general surveys of additional areas deemed to have the highest potential for such plant species.

In total, 317 vascular plant species were observed and recorded during the field survey. A search of the Atlantic Canada Conservation Data Centre (ACCDC) database (2010 ACCDC Provisional Scarcity Rankings) revealed that of these 317 species, 2 were listed and 12 identified as regionally uncommon plant species. *Braya fernaldii* (Fernald's braya) and *Braya longii* (Long's braya), listed under Schedule 1 of the SARA and / or pursuant to the NLESA and assigned a rank of S1 (extremely rare), were observed within the Study Area at Shoal Cove.

The results of these studies has increased knowledge and understanding of ecological relationships within the Study Areas. This information will be used to help analyze potential environmental effects of the Labrador-Island Transmission Link. The survey results are considered an integral part of the data analysis process during the follow-up program.

11.2 Data Collection during Construction

Nalcor will compile the results of the OSEM reports that reference any new occurrences, interactions and consequences that relate to Listed Plants during construction activities, and will include regulatory compliance tracking. As per section 10.2, Trenching pre-construction surveys will be conducted annually and results provided to regulatory agencies.

11.3 Data Collection during Operations

Data collected during the Operations phase of the LITL in Shoal Cove will be similar to that collected during the construction period, but will be collected by Nalcor's Inspection, Maintenance and other staff crews during the first five years of operation.

This data will be compiled once each year, and the data evaluated to determine if the observed effects of the Project on Listed Plants would require changes to the mitigation through Nalcor's Adaptive Management Plan. Any proposed changes would be communicated with the WD-DOEC prior to implementation. As during construction, Listed Plant interactions and consequences will be reported in a timely manner to the OSEM and the information distributed to crews to increase their level of awareness and caution to Listed Plants in the Project vicinity.

11.4 Follow-up and Monitoring

A final Follow-up and Monitoring Report will be generated that contains a section that compiles the information collected on Project interactions with Listed Plants as outlined above to address Follow-up (i.e., verification of EIS predictions) and a section to address Monitoring (i.e., regulatory compliance), as discussed in the following subsections.

11.4.1 Follow-Up

The follow-up portion of the Follow-up and Monitoring Report, within the ESA Listed Plants IMMP, will include the collation of all the data related to Project interactions with Listed Plants collected during the construction period and the first five years of operations. The Follow-up portion of the report will present the pre-construction Listed Plants baseline information, consider the data as a description of the effects collection on interactions with Listed Plants during the Project construction and operations time periods, and discuss the effects observed in relation to the effects predictions made in the EIS (i.e, no significant adverse residual effects on Listed Plants).

11.4.2 Monitoring

The Monitoring portion of the Follow-up and Monitoring Report will summarize the OSEM's observations and efforts related to the interactions of the Project components and activities with Listed Plants, to show that the Project was implemented as proposed, and that mitigation and compensation measures to minimize the Project's environmental effects were implemented appropriately. This will include a subsection to address Compliance Monitoring, also undertaken by the On-Site Environmental Monitors to ensure Project compliance with regulatory requirements and other environmental commitments made in the EIS, the responses Nalcor provided to the information requests, and conditions of EA release.

At this time, contingency plans are not anticipated and any changes to Nalcor's procedures or mitigation plans would be addressed through the Adaptive Management Plan, if and as appropriate. Any changes proposed by Nalcor would be based on the findings of the Follow-up and Monitoring Programs.

Nalcor will work with WD-DOEC to develop long term monitoring plot on the project site, comparable to existing monitoring sites outside the project area.

Table 11.1 Summary of the ESA Listed Plants Impacts Mitigation and Monitoring Plan

	Survey Type	Objective	Location	Timing	Frequency	Contingency (e.g., If listed plants are present)
Pre-Construction						
	Presence of Listed Plants	<ul style="list-style-type: none"> Determine if Listed Plants are present in the vicinity of the Project components prior to initiation of construction 	<ul style="list-style-type: none"> Shoal Cove 	<ul style="list-style-type: none"> Completed in 2011 	<ul style="list-style-type: none"> Completed 	<ul style="list-style-type: none"> Refer to Section 10.0 for mitigation measures.
Construction						
	Presence of Listed Plants	<ul style="list-style-type: none"> Confirmation of protection and mitigation of known locations of Listed Plants in the vicinity of the Project components during construction activities. 	<ul style="list-style-type: none"> Shoal Cove 	<ul style="list-style-type: none"> During construction activities, annual during 	<ul style="list-style-type: none"> Ongoing – during construction. 	<ul style="list-style-type: none"> Refer to Section 10.0 for mitigation measures.
Post-Construction						
	Presence and integrity of Listed Plants	<ul style="list-style-type: none"> Using coordinates of known locations of Listed Plants from previous mapping, to compare presence. 	<ul style="list-style-type: none"> Shoal Cove 	<ul style="list-style-type: none"> During construction and operations 	<ul style="list-style-type: none"> Annually 	<ul style="list-style-type: none"> Refer to Section 10.0 for monitoring and follow up measures.

12.0 External References

Government of Canada. 2002. *Species at Risk Act, 2002*. Available at:

<http://laws-lois.justice.gc.ca/eng/acts/S-15.3/page-1.html>. Accessed on: 12 April 2012.

Government of Newfoundland and Labrador. 2004. *Endangered Species Act, 2004*. Available at:

http://www.assembly.nl.ca/Legislation/sr/statutes/e10-1.htm#31_. Accessed on: 1 April 2012.

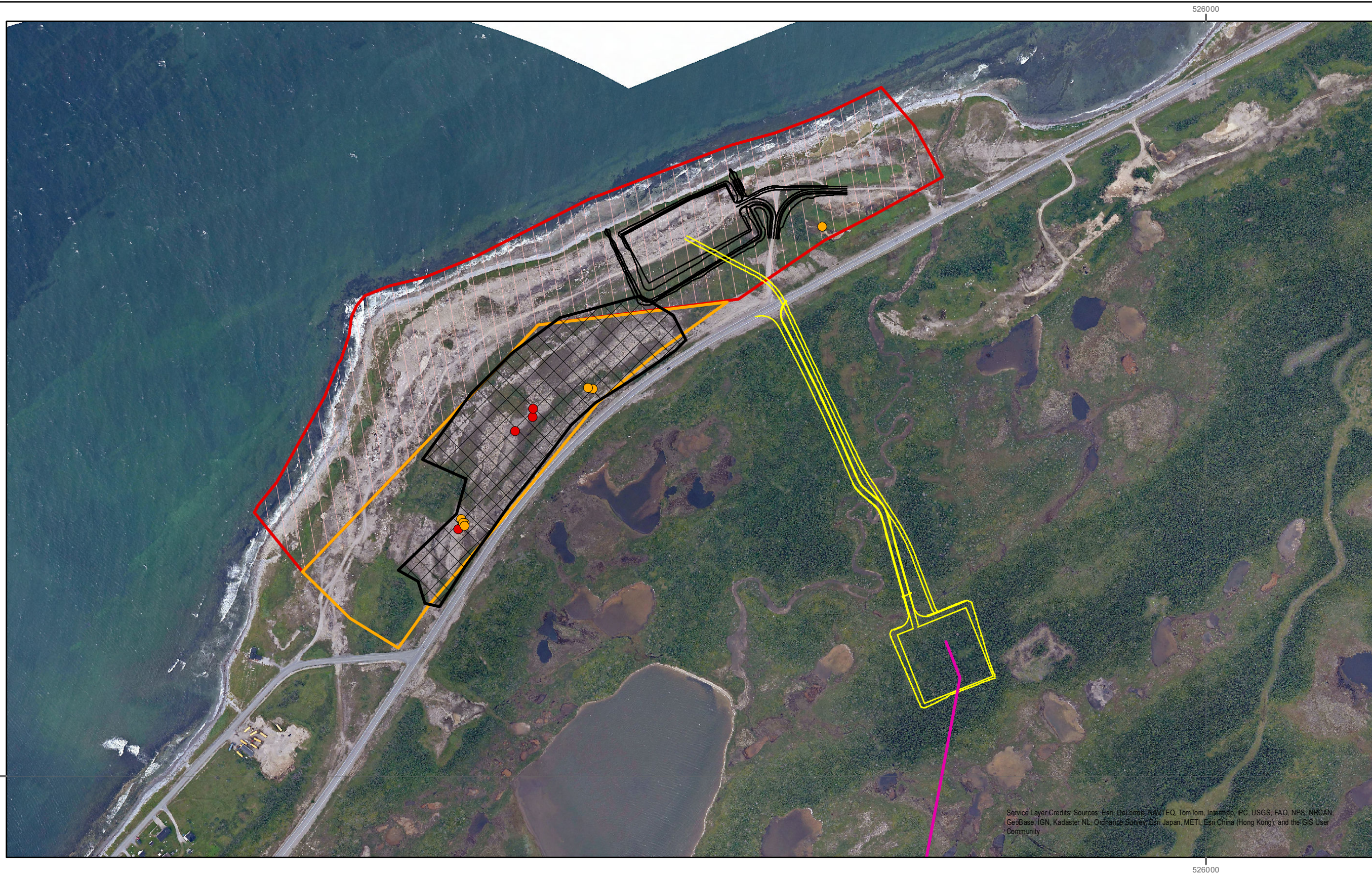
Government of Newfoundland and Labrador. 2013 *Species at Risk*. Available at:

<http://www.env.gov.nl.ca/env/wildlife/endangeredspecies/>. Accessed on: 18 September 2013

Stantec. 2012. 2011- *Listed and Regionally Uncommon Plant Survey: Strait of Belle Isle Cable Landing Sites And Shore Electrode Locations*

13.0 Appendices

Appendix A
Project information Overlay – Shoal Cove



LEGEND

Sara Listed Species Observations:

- Fernald's Braya Observations
- Long's Braya Observations

Sensitive Areas:

- ▭ CriticalHabitat - Fernald's Braya
- ▭ CriticalHabitat - Long's Braya
- ▭ Limestone Barrens (No Entry Site)

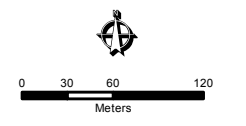
Infrastructure:

- Drill Site
- Access Road / Building Footprint
- HVdc Transmission Line

Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

Figure 1: Location of Preliminary Works in Relation to Habitat and Occurrence of Rare Plants

LOWER CHURCHILL PROJECT



Projection: UTM Zone 21N, NAD83
Datum: Geodetic

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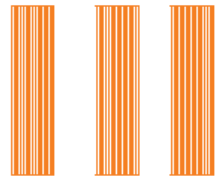
Appendix B
Drill Pad Layout – Shoal Cove



VEHICLE PARKING



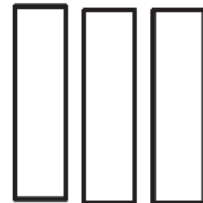
OFFICE TRAILER



PIPE STORAGE AREA



EQUIPMENT TRAILERS



MUD STORAGE TANKS

GENERATOR



CRANE



DRILL PIPE



CONTROL CABIN



DRILL RIG WITH SUPPORTS



BENTONITE STORAGE



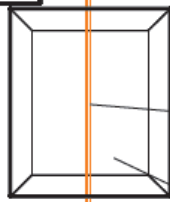
MUD TANK

MUD PUMPS

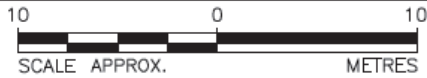


PROPOSED HDD ENTRY POINT

DRILLING MUD RETURN PIT



0913341043-PD-001-CAD



SCALE APPROX.

METRES