# Information Request Number: JRP16

# Composite Mapping (Land and Resource Use)

**Requesting Organization – Joint Review Panel** **Information Request No.: JRP16**

**Subject - Composite Mapping (Land and Resource Use)**

**References:**

EIS Guidelines, Section 3.2 (Presentation of the EIS).

Minaskuat Inc. 2009a. Current Land and Resource Use in the Lower Churchill River Area. Report prepared for the Lower Churchill Hydroelectric Generation Project.

**Rationale:**

The EIS Guidelines require the Proponent to provide charts, diagrams and maps "wherever useful to clarify the text" (p. 11).

Minaskuat Inc. (2009a) includes a series of individual maps depicting Innu and Other Aboriginal and Non-Aboriginal Persons land and resource use patterns within the Study Area.

**Requesting Organization – Joint Review Panel** **Information Request No.: JRP.16**

**Information Request:**

**In order to have a comprehensive understanding of the multiple and/or overlapping land and resource uses likely to be affected by the Project, the Proponent is asked to submit a composite map(s) of the Assessment Area as described in the EIS for the Land and Resource Use VEC, i.e. from the southern limit of the proposed reservoirs to the transmission lines corridor between Happy Valley-Goose Bay to Churchill Falls (Volume III, p. 2-7), including the following land and resource use descriptors, as appropriate:**

1. **Caribou Management Zone(s);**
2. **Moose Management Zone(s);**
3. **Waterfowl and Snipe Hunting Zone(s);**
4. **Furbearers Hunting Zone(s);**
5. **Fishing Area(s);**
6. **Angling Zone(s);**
7. **Crown Reserve and Cottage Development Area(s);**
8. **Forest Management District(s);**
9. **Innu Harvesting Area(s) for Caribou, Moose and Black Bear;**
10. **Innu Harvesting Area(s) for Fish and Small Game;**
11. **Innu Harvesting Area(s) for Furbearers Trapping;**
12. **Innu Harvesting Area(s) for Migratory Waterfowl;**
13. **Innu Harvesting Area(s) for Wild Fruit Gathering;**
14. **Hunting Area(s) (Other Aboriginal and Non-Aboriginal) for Caribou and Moose;**
15. **Areas where Inuit rights apply as per Schedule 12-E of the Labrador Inuit Land Claims Agreement;**
16. **Current Trapping Area(s) (Other Aboriginal and Non-Aboriginal);**
17. **Cabin locations; and**
18. **Labrador Snowmobile Trails**

**The composite map(s) to be submitted should show the maximum floodline within the Churchill River valley.**

**The composite map(s) should be at a scale that allows reviewers to associate effect predictions with precise locations. As such, the Proponent may want to divide the Assessment Area into smaller sections for clearer depiction. The map(s) should also indicate contributions from Aboriginal Knowledge and should include English and Innu place names, as appropriate. In order to facilitate public review of the information, the Proponent should discuss the feasibility of presenting these maps in an electronic interactive format, and if possible, do so.**

**Response:**

A series of four composite maps illustrating the locations of the descriptors are attached. As requested, the maps show the Land and Resource Use Assessment Area, as well as the maximum flood line along the Churchill River. English and Innu place names are included. Innu place names were taken from the Innu Traditional Knowledge (ITK) Report. The harvest activities layers were also developed from this report. The ITK Report did not directly illustrate on maps the locations of harvesting areas, and therefore are not illustrated on the attached map series.

The following areas do not occur within the Assessment Area, and therefore are not illustrated on the maps:

- Innu harvesting areas for caribou (please refer to Volume III-Figure 2-21 of the EIS for an illustration of Innu Caribou Harvesting Areas);
- Innu harvesting areas for wild fruit gathering (please refer to Volume III-Figure 2-29 of the EIS for an illustration of Innu Wild Fruit Harvesting Areas); and
- Cottage Development Area (please refer to Volume III-Figure 2-17 of the EIS for an illustration of potential Cottage Development Area).

# ATTACHMENT A

## Composite Land and Resource Use Maps

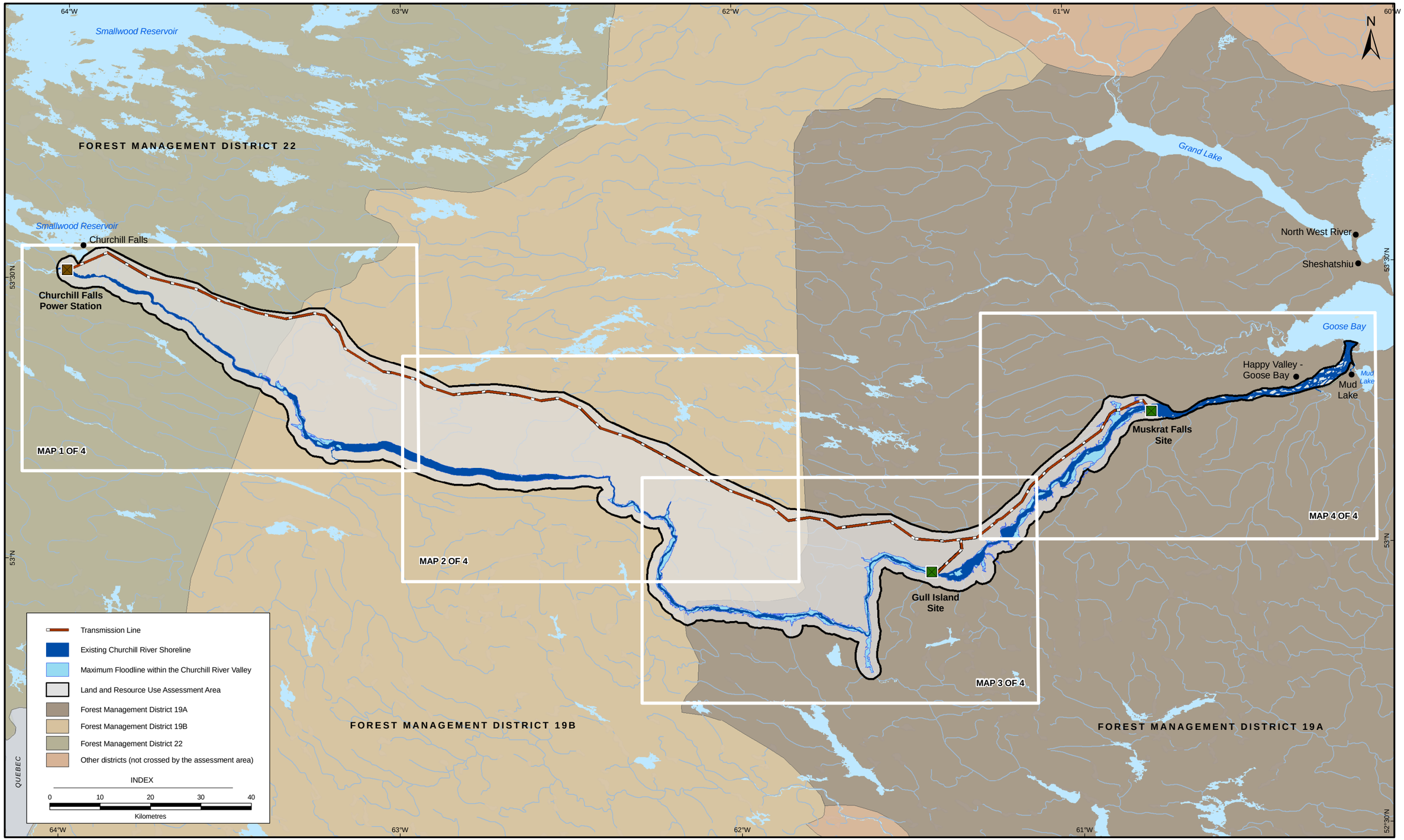
## INFORMATION RESPONSES
## LOWER CHURCHILL PROJECT
## CEAA REFERENCE NO.07-05-26178

JOINT REVIEW PANEL

**JRP.16**
**Composite Mapping (Land and Resource Use)**

**June 29, 2009**

nalcor energy
LOWER CHURCHILL PROJECT




| FIGURE NO: | | DRAFT DATE: |
|---|---|---|
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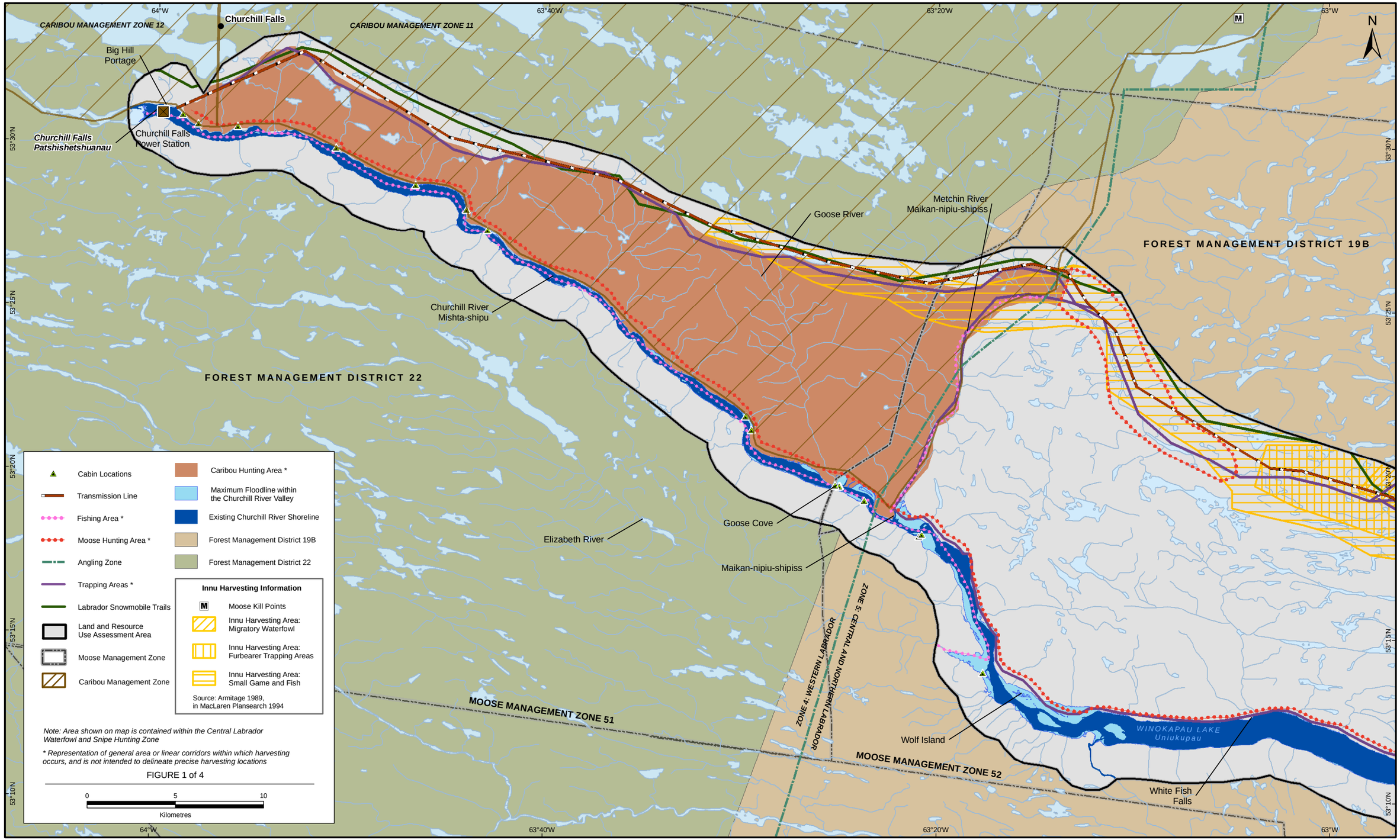
| | | REVISION DATE:<br>DD/DD/YYYY |




| FIGURE NO: | | DRAFT DATE: |
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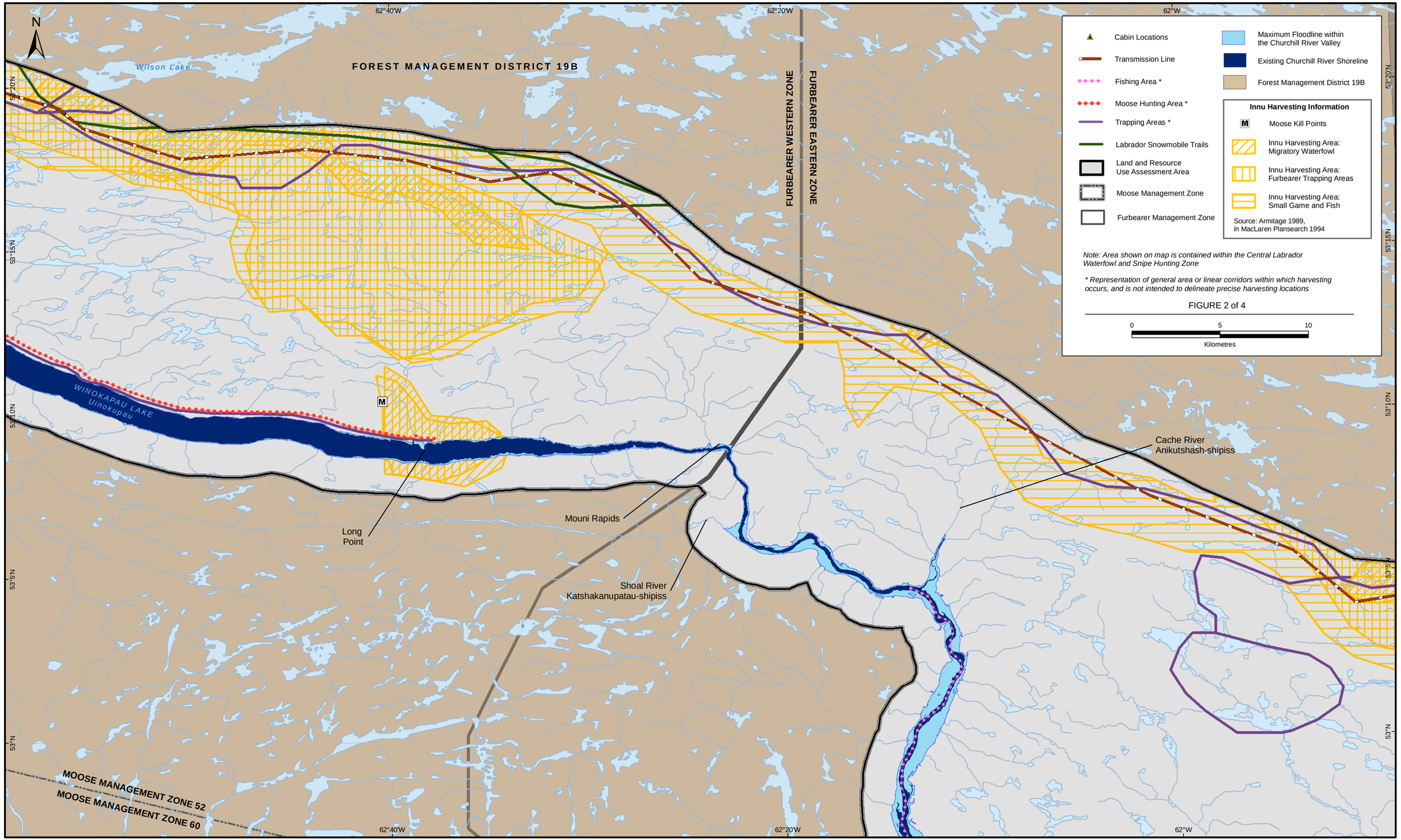
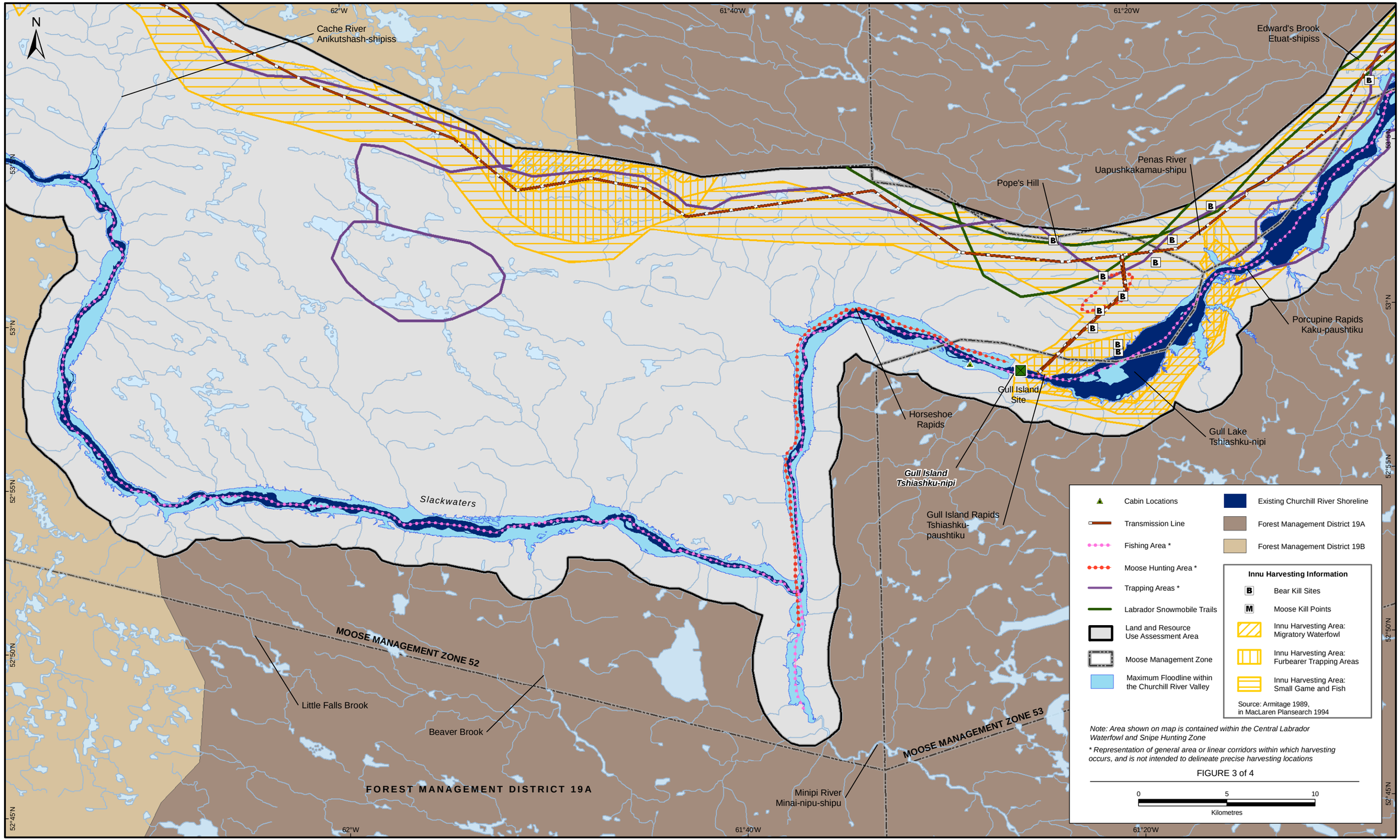
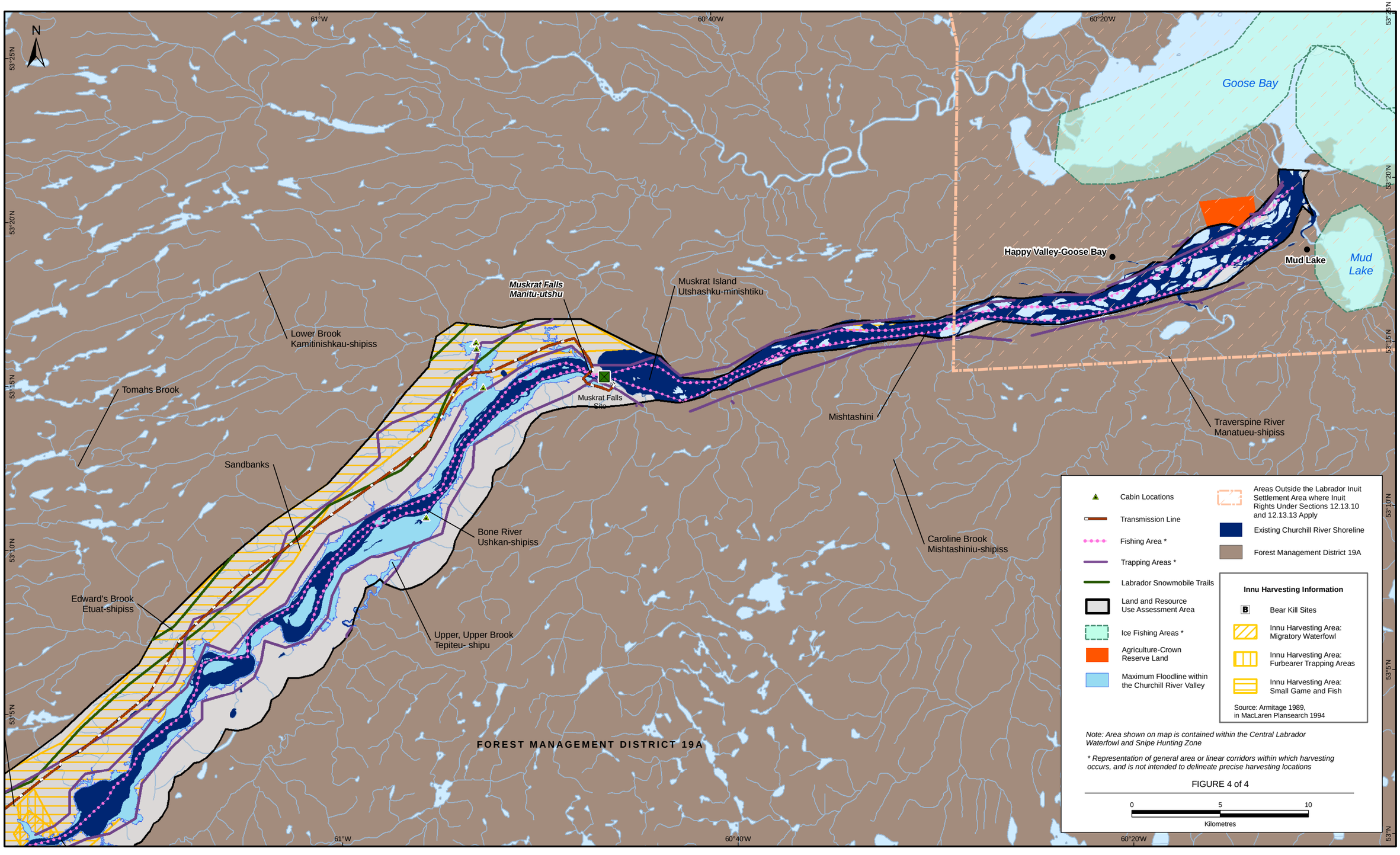
| 1 | **IR JRP.16**<br>**Land and Resource Use** | 20/05/2009 |
| | | REVISION DATE: DD/DD/YYYY |




| FIGURE NO: | | DRAFT DATE: |
|---|---|---|
| 2 | **IR JRP.16**<br>**Land and Resource Use** | 20/05/2009 |
| | | REVISION DATE: DD/DD/YYYY |




| FIGURE NO: | | DRAFT DATE: |
|---|---|---|
| 3 | **IR JRP.16**<br>**Land and Resource Use** | 20/05/2009 |
| | | REVISION DATE: DD/DD/YYYY |




| FIGURE NO: | | DRAFT DATE: |
|---|---|---|
| 4 | **IR JRP.16**<br>**Land and Resource Use** | 20/05/2009 |
| | | REVISION DATE: DD/DD/YYYY |

# Information Request Number: JRP.17

# Summary Table of Environmental Effects

**Requesting Organization – Joint Review Panel** **Information Request No.: JRP.17**

**Subject - Summary Table of Environmental Effects**

**References:**

EIS Guidelines, Section 4.7 (Residual Effects and Determination of Significance).

**Rationale:**

The EIS Guidelines require the Proponent to include "a summary table of the environmental effects, proposed mitigation and residual adverse effects" (p. 40).

**Requesting Organization – Joint Review Panel** **Information Request No.: JRP.17**

**Information Request:**

**For ease of review and to provide a comprehensive overview of the Project's anticipated environmental effects, the Proponent is asked to submit a single summary table containing the following headings:**

1. **Valued Ecosystem Component / Key Indicator**
2. **Contributing Project Activity or Physical Work**
3. **Description of Environmental Effect(s)**
4. **Mitigation Measure(s)**
5. **Residual Environmental Effect(s)**
6. **Assessment of Residual Environmental Effect(s)**
7. **Compensation Measure(s) (when applicable)**

**The summary table should be organized according to the different phases of the Project.**

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**Response:**

A single summary table of the anticipated environmental effects is provided below. The following describes how the specific requests associated with this information request have been addressed:

1. Valued Ecosystem Component (VEC) / Key Indicator (KI): The table is organized by VEC and KI (where applicable). A heading row indicates the beginning of each new VEC and/or KI.
2. Contributing Project Activity or Physical Work: This is provided in the second column of the table.
3. Description of Environmental Effect(s): This is provided in the first column of the table.
4. Mitigation Measure(s): Proposed Effects Management or Mitigation Measures are provided in the third column of the table.
5. Residual Environmental Effect(s): Descriptions of the residual environmental effects are provided in the fourth column of the table.
6. Assessment of Residual Environmental Effect(s): The EIS assesses the significance of residual environmental effects for each Project phase and not for each contributing Project activity of physical work. The significance of the residual environmental effect is therefore provided in a summary row at the end of each phase.
7. Compensation Measure(s) (when applicable): Where applicable, this is provided in the fifth column of the table

The summary table is organized according to the different phases of the Project. The table is organized first by VEC and KI and then by Project phase. Each phase is indicated by a header row.

## Residual Effects Summary Table

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Atmospheric Environment: Air Quality** | | | | |
| **Construction** | | | | |
| Change in Air Quality | Site Preparation and Construction of Site Buildings | Dust suppressants used where and when needed. Dust control measures implemented during windy conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Air Quality | Excavation and Installation of Generation Components | Dust suppressants used where and when needed. Dust control measures implemented during windy conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-Term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Air Quality | Concrete Production | Dust suppressants used where and when needed. Dust control measures implemented during windy conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Air Quality | Transmission Line Construction | Dust suppressants used where and when needed. Dust control measures implemented during windy conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Air Quality | Vehicular Traffic Onsite | Emissions of dust, combustion gases and GHG controlled by posted speed limits. Anti-idling policy will be implemented regarding vehicle operation. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Air Quality | Quarrying and Borrowing | Dust suppressants used where and when needed. Dust control measures implemented during windy conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Air Quality | Transportation and Road Maintenance | Emissions of dust, combustion gases and GHG controlled by posted speed limits. Anti-idling policy will be implemented regarding vehicle operation. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occasional<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** No measureable interaction | | | | |
| The environmental effects resulting from the operation and maintenance phase are assessed in Volume II-Section 3.3.2.2. A detailed environmental effects analysis was not conducted in accordance with the interaction rankings in Volume IIA-Table 3.2. The environmental effects analysis in Volume IIA-Section 3.3.2.2 concluded that during operation and maintenance, emissions of air pollutants are expected to originate only from vehicle traffic associated with commuting workers and from specific supplier and maintenance activities including inspection, maintenance and repairs along transmission line. These activities were assigned an interaction ranking of 1. These air pollutant emissions are expected to be low and would not add any substantive loading to the atmosphere. | | | | |
| **Aquatic Environment: Fish and Fish Habitat** | | | | |
| **Construction** | | | | |
| Change in Habitat Quantity and Quality | Excavation for and Installation of Generation Components | Environmental monitors will oversee EPP. Control of siltation, erosion and runoff will be in accordance with standard practices and guidelines from federal and provincial governments. *Fisheries Act* 35(2) Authorization and Compensation. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | *Fisheries Act* 35(2) Authorization and Compensation |
| Change in Habitat Quantity and Quality | Impounding | Follow EPP and Best Practices. | Nature: Positive<br>Magnitude: High<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Distribution and Abundance | Excavation for and Installation of Generation Components | Follow EPP and Best Practices. *Fisheries Act* 35(2) Authorization and Compensation. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | *Fisheries Act* 35(2) Authorization and Compensation |
| Change in Distribution and Abundance | Impounding | Follow EPP and Best Practices. | Nature: Positive<br>Magnitude: High<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Disturbed | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| | | | Level and Degree of Certainty of Knowledge: High | |
| **Assessment of Residual Environmental Effect for Construction:** Neutral, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat Quantity and Quality | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat Quantity and Quality | Operation of Generation Facilities | Environmental monitors will oversee EPP. Control of siltation, erosion and runoff will be in accordance with standard practices and guidelines from federal and provincial governments. *Fisheries Act* 35(2) Authorization and Compensation. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | *Fisheries Act* 35(2) Authorization and Compensation |
| Change in Distribution and Abundance | Water Management and Operating Regime | *Fisheries Act* 35(2) Authorization and Compensation. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | *Fisheries Act* 35(2) Authorization and Compensation |
| Change in Distribution and Abundance | Operation of Generation Facilities | *Fisheries Act* 35(2) Authorization and Compensation. | Nature: Adverse and Positive<br>Magnitude: High<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | *Fisheries Act* 35(2) Authorization and Compensation |
| Change in Health | Water Management and Operating Regime | *Fisheries Act* 35(2) Authorization and Compensation | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | *Fisheries Act* 35(2) Authorization and Compensation |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Neutral, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Terrestrial Environment: George River Caribou Herd** | | | | |
| **Construction** | | | | |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Environmental Monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. Follow EPP and Best Practices, stay within footprint. Implement a no harvesting policy and no other harassment by Project personnel; Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed (disturbed)<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Environmental Monitors will oversee activities. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. Follow EPP and Best Practices, stay within footprint. Implement a no harvesting policy and no other harassment by Project personnel. Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent ccurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way wherever possible. Implement a no harvesting policy and no other harassment by Project personnel; Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation and Road Maintenance | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur within the reservoirs where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work area to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | Implement a no harvesting policy and no other harassment by Project personnel. If used, herbicides will be applied from the ground, by hand. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation/Presence and Maintenance of Access Roads | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work area to be restricted to Project personnel | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Terrestrial Environment: Red Wine Mountains Caribou Herd** | | | | |
| **Construction** | | | | |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Environmental monitors will oversee activities. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. Follow EPP and Best Practices, stay within footprint. Implement a no harvesting policy and no other harassment by Project personnel. Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Environmental monitors will oversee activities. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. Follow EPP and Best Practices, stay within footprint. Implement a no harvesting policy and no other harassment by Project personnel. Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line construction | Maintain right-of-way adjacent to existing right-of-way where possible. Implement a no harvesting policy and no other harassment by Project personnel. Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. Work schedules will minimize travel in designated areas during calving and post-calving period, where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation and Road Maintenance | Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Mortality | Transportation/Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Moose** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing roads, quarries and other distributed areas will be used where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line construction | Maintain right-of-way adjacent to existing right-of-way wherever possible. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short Term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation and Road Maintenance | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| | Transportation / Presence and Maintenance of Access Roads | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Long-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Terrestrial Environment: Black Bear** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site<br>Access Roads | Existing roads, quarries and other disturbed areas will be used where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint, environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way whenever possible. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Waste Management | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Camp Operations | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation and Road Maintenance | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Health | Site Waste Management | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Camp Operations | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Camp Operations | Bears will first be relocated if they are attracted to camps and they become a hazard to employees. Bears will only be killed as a last resort. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Medium-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Reservoir Preparation | Follow best practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be redirected to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Waste Management | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Lines | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation, Presence and Maintenance of Access Roads | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Waste Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Health | Site Water Management | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Site Waste Management | Liquid waste treatment in accordance with provincial regulations. Solid waste stored in bear-proof containers, recycling program implemented. Temporary camps will also have approved waste management systems. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation, Presence and Maintenance of Access Roads | Employees will follow with posted speed limits and will not be permitted to harass animals. Project personnel maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Beaver** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing roads, quarries and other distributed areas will be used where possible. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line construction | Maintain right-of-way adjacent to existing, right-of-way whenever possible. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife, reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Mortality | Impounding | Relocate active Beaver colonies within reservoirs prior to impounding. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be kept similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Mortality | Transportation, Presence and Maintenance of Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Long Term / Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Marten** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing roads, quarries and other disturbed areas will be used where possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint, environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way wherever possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Porcupine** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing roads, quarries and other disturbed areas will be used where possible. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way wherever possible. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation and Road Maintenance | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur within the reservoirs where possible. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar to or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation / Presence and Maintenance of Access Roads | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Canada Goose** | | | | |
| **Construction** | | | | |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Transmission Line construction | Maintain right-of-way adjacent to existing right-of-way wherever possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Management Plan will reduce risk of disturbance to avifauna nests. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Lines | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Inspection, Maintenance, Repairs along Transmission Lines | If used, herbicides will be applied from the ground, by hand. Management Plan will reduce risk of disturbance to avifauna nests. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Terrestrial Environment: Surf Scoter** | | | | |
| **Construction** | | | | |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line construction | Maintain right-of-way adjacent to existing right-of-way wherever possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Management Plan will reduce risk of disturbance to avifauna nests. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel will maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and a t regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Lines | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Mortality | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Ruffed Grouse** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing road, quarries and other disturbed areas will be used where possible. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way whenever possible. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. Encourage formation of hardwood forest. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation and Road Maintenance | Access to roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Mortality | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. Encourage formation of hardwood forest . | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Lines | If used, herbicides will be applied from the ground, by hand. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transportation/Presence and Maintenance of Access Roads | Access roads and work areas to be restricted to Project personnel. Construction and reservoir clearing roads will occur with the reservoirs where possible. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Mortality | Transportation / Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Osprey** | | | | |
| **Construction** | | | | |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Replace physically disturbed Osprey nests with artificial platforms. Restrict activities within 200 m of active nests. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Replace physically disturbed Osprey nests with artificial platforms. Restrict activities within 200 m of active nests. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Replace physically disturbed Osprey nests with artificial platforms. Restrict activities within 200 m of active nests. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Replace physically disturbed Osprey nests with artificial platforms. Restrict activities within 200 m of active nests. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Management Plan will reduce risk of disturbance to avifauna nests. Replace physically disturbed Osprey nests with artificial platforms. Restrict activities within 200 m of active nests. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. Replace physically disturbed Osprey nests with artificial platforms. Restrict activities within 200 m of active nests. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Positive, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. Management Plan will reduce the risk of disturbance to avifauna nests. Current timing of impoundment avoids nesting season. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Terrestrial Environment: Wetland Sparrows** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing roads, quarries and other disturbed areas will be used where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Encourage formation of riparian marsh wetland. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Encourage formation of riparian marsh wetland. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way whenever possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to possible construction areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Management Plan will reduce risk of disturbance to avifauna nests. Encourage formation of riparian marsh wetland. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Regional<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-tTerm/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. Management Plan will reduce risk of disturbance to avifauna nests. Current timing of impoundment avoids nesting season. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Mortality | Transportation/Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Terrestrial Environment: Harlequin Duck** | | | | |
| **Construction** | | | | |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way whenever possible. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Short Term / Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Impounding | Follow EPP and Best Practices. | Nature: Adverse<br>Magnitude: High<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Inspection, Maintenance, Repairs Along Transmission Line | If used, herbicides will be applied from the ground, by hand. Management Plan will reduce risk of disturbance to avifauna nests. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Long-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Terrestrial Environment: Other Species of Concern** | | | | |
| **Construction** | | | | |
| Change in Habitat | Upgrading and Constructing Site Access Roads | Existing roads, quarries and other disturbed areas will be used where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Site Preparation and Construction of Site Buildings | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Excavation for and Installation of Generation Components | Follow EPP and Best Practices, stay within footprint. Environmental monitors will oversee EPP. Work areas and access roads no longer required will be rehabilitated in accordance with Plans and EPP to encourage formation of natural conditions. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Occurs once<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Transmission Line Construction | Maintain right-of-way adjacent to existing right-of-way whenever possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Habitat | Quarrying and Borrowing | Follow EPP and Best Practices. Identify locations as near as possible to construction areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Site-specific<br>Duration/Frequency: Short-term/Occurs on a regular basis and at regular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Reservoir Preparation | Follow Best Practices for clearing. Reservoir preparation will remove trees where safe and practical to do so such that surface and littoral zone will provide unimpeded access for wildlife. Reservoir preparation will avoid disturbing and/or clearing sensitive wildlife areas. Encourage formations of riparian marsh wetland, riparian vegetation left in place at selected areas during reservoir preparation. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Regional<br>Duration/Frequency: Short-term/Occurs once<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Reservoir Preparation | Follow Best Practices for clearing. Management Plan will reduce risk of disturbance to avifauna nests. Encourage formation of riparian marsh wetland. Riparian vegetation left in place at selected areas during reservoir preparation. Use existing right-of-way corridors for construction of transmission line where possible. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation and Road Maintenance | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to Project personnel. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Habitat | Water Management and Operating Regime | Fluctuations will be similar or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Habitat | Inspection, Maintenance, Repairs along Transmission Line | If used, herbicides will be applied from the ground, by hand. Management Plan will reduce risk of disturbance to avifauna nests. Current timing of impoundment avoids nesting season. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Health | Water Management and Operating Regime | Fluctuations will be similar to or less than existing conditions. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Occurs on a regular basis and at regular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Inspection, Maintenance, repairs along Transmission Line | Follow Best Practices for clearing. Avoid disturbing and/or clearing sensitive wildlife areas. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Developed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Mortality | Transportation/Presence and Maintenance of Access Roads | Project personnel to maintain posted speed limits. Implement a no harvesting policy and no other harassment by Project personnel. Access roads and work areas to be restricted to project personnel. | Nature: Adverse<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Short-term/Occurs sporadically at irregular intervals<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Economy, Employment and Business: Economy** | | | | |
| **Construction** | | | | |
| Change in Income and Government Revenue | Project Expenditures Employment | Implement IBA; Hydro Industrial Benefits Planning Strategy; engagement and benefits strategy. | Nature: Positive<br>Magnitude: Increase<br>Geographic Extent: Labrador/Province<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Positive, Significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Income and Government Revenue | Project Expenditures<br>Employment | Implement IBA; Hydro Industrial Benefits Planning Strategy; engagement and benefits strategy. | Nature: Positive<br>Magnitude: Increase<br>Geographic Extent: Labrador/Province<br>Duration/Frequency: Operation and Maintenance Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Positive, Significant | | | | |
| **Economy, Employment and Business: Employment** | | | | |
| **Construction** | | | | |
| Change in Employment Levels and Rates | Project Expenditures<br>Employment | Implement IBA; Hiring and training through Hydro Industrial Benefits Planning Strategy; engagement and benefits strategy. | Nature: Positive<br>Magnitude: Increase<br>Geographic Extent: Labrador/Province<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Positive, Significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Employment Levels and Rates | Project Expenditures<br>Employment | Hiring and training through Hydro Industrial Benefits Planning Strategy; Implement IBA; engagement and benefits strategy. | Nature: Positive<br>Magnitude: Increase<br>Geographic Extent: Labrador/Province<br>Duration/Frequency: Operation and Maintenance Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Positive, Significant | | | | |
| **Economy, Employment and Business: Business** | | | | |
| **Construction** | | | | |
| Change in Business Activity Levels | Project Expenditures<br>Employment | Implement IBA; Hydro Industrial Benefits Planning Strategy; engagement and benefits strategy. | Nature: Positive<br>Magnitude: Increase<br>Geographic Extent: Labrador/Province<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Positive, Significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Business Activity Levels | Project Expenditures<br>Employment | Implement IBA; Hydro Industrial Benefits Planning Strategy; engagement and benefits strategy. | Nature: Positive<br>Magnitude: Increase<br>Geographic Extent: Labrador/Province<br>Duration/Frequency: Operation and Maintenance Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Positive, Significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Communities: Physical Infrastructure and Services** | | | | |
| **Construction** | | | | |
| Change in Ability to Deliver Physical Infrastructure and Services | Employment | Accommodations complex; Infrastructure upgrades; normal supply/demand planning; provide Project updates and liaison with responsible authorities. | Nature: Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Ability to Deliver Physical Infrastructure and Services | Transportation and Road Maintenance | Infrastructure upgrades; normal supply/demand planning; provide Project updates and liaison with responsible authorities. | Nature: Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Positive, Significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Ability to Deliver Physical Infrastructure and Services | Employment | Infrastructure upgrades; normal supply/demand planning; provide Project updates and liaison with responsible authorities. | Nature: Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Operation and Maintenance Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Ability to Deliver Physical Infrastructure and Services | Transportation/ Presence and Maintenance of Access Roads | Infrastructure upgrades; normal supply/demand planning; provide Project updates and liaison with responsible authorities. | Nature: Positive<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Operation and Maintenance Phase / Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Positive, Not Significant | | | | |
| **Communities: Social Infrastructure and Services** | | | | |
| **Construction** | | | | |
| Change in Ability to Deliver Social Infrastructure and Services | Employment | Normal supply/demand planning; rosters; accommodations complex; provide Project updates and liaison with appropriate authorities. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Ability to Deliver Social Infrastructure and Services | Transportation and Road Maintenance | Normal supply/demand planning; rosters; accommodations complex; provide Project updates and liaison with appropriate authorities. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Ability to Deliver Social Infrastructure and Services | Expenditures | Normal supply/demand planning; rosters; accommodations complex; provide Project updates and liaison with appropriate authorities. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Construction Phase/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Neutral, Not significant | | | | |
| The socio-economic effects resulting from the operation and maintenance phase are assessed in Volume III-Section 4.4.1. A detailed environmental effects analysis was not conducted in accordance with the interaction rankings in Volume III-Table 4.1. The environmental effects analysis in Volume III-Section 4.1.1 concluded that during operation and maintenance, employment is expected to have a positive effect on Social Services and Infrastructure because some individuals may find employment, reducing demands on financial and other support from social services agencies. This is a positive socio-economic effect, but one that is likely to be too small to have any measurable effects on the overall demand for social services support. | | | | |
| **Communities: Community Health** | | | | |
| **Construction** | | | | |
| Change in Status of Community Health Determinants | Employment | Accommodations complex; normal supply/demand planning; supportive workplace environments. | Nature: Adverse and Positive<br>Magnitude: Low to Moderate<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Medium-term/Continuous<br>Level and Degree of Certainty of Knowledge: Moderate | Not Applicable |
| Change in Status of Community Health Determinants | Transportation and Road Maintenance | Normal supply/demand planning. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Medium-term/Continuous<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Status of Community Health Determinants | Expenditures | Normal supply/demand planning. | Nature: Adverse and Positive<br>Magnitude: Low to Moderate<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Medium-term/Continuous<br>Level and Degree of Certainty of Knowledge: Moderate | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Operation and Maintenance** | | | | |
| Change in Status of Community Health Determinants | Employment | Normal supply/demand planning; supportive workplace environments. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Permanent/Continuous<br>Level and Degree of Certainty of Knowledge: Moderate | Not Applicable |
| Change in Status of Community Health Determinants | Transportation/ Presence and Maintenance of Access Roads | Normal supply/demand planning. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Assessment Area<br>Duration/Frequency: Permanent/Continuous<br>Level and Degree of Certainty of Knowledge: Moderate | Not Applicable |
| Change in Status of Community Health Determinants | Water Management and Operating Regime | Establish exposure to methylmercury by local residents; liaise with government authorities to develop and post fish consumption advisories. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Regional<br>Duration/Frequency: Long-term/Continuous<br>Level and Degree of Certainty of Knowledge: Moderate | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |
| **Land and Resource Use** | | | | |
| **Construction** | | | | |
| Change in Land and/or Resource Use | Upgrading/Constructing Site Access Roads | Implement EPP; minimize footprint; implement IBA; rehabilitate roads. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Site Preparation and Construction of Site Buildings | Implement EPP; minimize footprint; implement IBA. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Excavation and Installation of Generation Components | Implement EPP; minimize footprint; implement IBA. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Land and/or Resource Use | Transmission Line Installation | Implement EPP; minimize footprint; implement IBA. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Quarrying and Burrowing | Implement EPP; minimize footprint; implement IBA. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Impounding | Replacement of access points and boat launches; replacement of inundated trails; implement IBA; compensation for documented established trap lines. | Nature: Adverse and positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Compensation for documented established trap lines |
| Change in Land and/or Resource Use | Vehicle Traffic On-site | Posted speed limits; implement EPP. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Medium-term/Occurs sporadically<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Reservoir Preparation | Minimize number of access points; allow public use of cleared timber; implement IBA; minimize loss of access to portage. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Employment | Implement IBA; schedule and rotation flexibility; provision of local country foods. | Nature: Adverse and Positive<br>Magnitude: Moderate<br>Geographic Extent: Local<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Change in Land and/or Resource Use | Transportation and Road Maintenance | Posted speed limits. | Nature: Adverse and Positive<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Camp Operations | Implement IBA; implement EPP. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Medium-term/Continuous<br>Reversibility: Reversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Change in Land and/or Resource Use | Water Management and Operating Regime | Implement IBA; establish ice monitors and public advisories. | Nature: Positive and Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Operation of Generation Facilities | Implement IBA; implement EPP. | Nature: Adverse<br>Magnitude: Low<br>Geographic Extent: Site-specific<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Inspection, Maintenance, Repairs along Transmission Line | Implement IBA; implement EPP. | Nature: Positive and Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Change in Land and/or Resource Use | Transportation/ Presence and Maintenance of Access Road | Implement IBA; implement EPP; posted speed limits. | Nature: Positive and Adverse<br>Magnitude: Low<br>Geographic Extent: Local<br>Duration/Frequency: Permanent/Continuous<br>Reversibility: Reversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| **Cultural Heritage Resources** | | | | |
| **Construction** | | | | |
| Loss/ Disturbance | Upgrading and Constructing Site Access Roads | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Loss/ Disturbance | Site Preparation and Construction of Site Buildings | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Loss/ Disturbance | Excavation and Installation of Generation Components | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Loss/ Disturbance | Transmission Line Construction | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Loss/ Disturbance | Camp Operation | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Loss/ Disturbance | Quarrying and Borrowing | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Loss/ Disturbance | Reservoir Preparation | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| Loss/ Disturbance | Impounding | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: 44 Historic and Archaeological sites and 1 cultural/spiritual site lost or disturbed as a result of Project<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Undisturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Construction:** Adverse, Not significant | | | | |
| **Operation and Maintenance** | | | | |
| Loss/ Disturbance | Transportation/ Presence and Maintenance of Access Road | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: No known sites lost or disturbed<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |

| Description of Environmental Effect | Contributing Project Activity or Physical Work | Proposed Effects Management (Mitigation measures) | Residual Environmental Effect | Compensation Measure |
|---|---|---|---|---|
| Loss/ Disturbance | Inspection, Maintenance, Repairs along Transmission Line | Avoidance; Systematic Data Recovery; Additional Field Recording; Systematic Field Recording; Subsurface Sampling. | Nature: Adverse<br>Magnitude: No known sites lost or disturbed<br>Geographic Extent: Site-specific<br>Duration/Frequency: Loss: Permanent/Occurs once<br>Duration/Frequency: Disturbance: Permanent/Occurs sporadically at irregular intervals<br>Reversibility: Irreversible<br>Ecological Context: Disturbed<br>Level and Degree of Certainty of Knowledge: High | Not Applicable |
| **Assessment of Residual Environmental Effect for Operation and Maintenance:** Adverse, Not significant | | | | |

**Definitions of Criteria and Descriptors**

Air Quality:

- nature: the long term environmental effects of the Project on Air Quality
  - adverse
  - positive
  - neutral
- magnitude: the extent of change in the Air Quality from the baseline state
  - low: within normal variability of baseline conditions, but is well below regulatory limits and objectives
  - moderate: increase or decrease with regard to baseline but near regulatory limits and objectives
  - high: increase such that the quality of the air is degraded to values that substantively exceed the regulatory limits and objectives
- geographic extent
  - local: Project footprint and adjacent 5 km
  - regional: environmental effects occur throughout the Assessment Area and beyond
- duration: the period of time the environmental effect will occur.
  - short term: one hour, 24 hour values over a period of zero to six months
  - medium term: six months to five years
  - long term: more than five years
  - permanent: will not change back to original conditions
- frequency: the number of times the Project may exceed the Provincial or Federal ambient air quality standards.
  - occasional occurrence: when the standards will not be frequently exceeded
  - frequent occurrence: when the standards will be exceeded more than one hour a week (1 hour standard) or one day per month (24 hour standard)
  - prolonged occurrence
- reversibility: whether the adverse environmental effects are reversible or irreversible.
  - reversible
  - irreversible
- ecological context: the general characteristics of the area with respect to existing levels of human activity in the Assessment Area.
  - undisturbed: area relatively or not adversely affected by human activity
  - developed: area has been substantially previously disturbed by human development or human development is still present
  - not applicable
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse environmental effect unlikely to occur
  - likely: significant adverse environmental effect likely to occur

Aquatic Environment:

- nature: the long term environmental effects of the Project on Fish and Fish Habitat.
  - adverse
  - positive
  - neutral
- magnitude: the extent of change in the quantity of Fish and Fish Habitat from the baseline state.
  - low: less than five percent change within the Assessment Area
  - moderate: five to 25 percent change within the Assessment Area
  - high: greater than 25 percent change within the Assessment Area

- geographic extent: the physical area within which interactions are expected to occur.
  - site-specific: confined to the Project footprint
  - local: confined to the lower Churchill River valley
  - regional: environmental effects occur throughout the Assessment Area and beyond
- duration: the period of time the environmental effect will occur.
  - short term: less than one generation
  - medium term: approximately one generation
  - long term: two or more generations
  - permanent: considered to exist in perpetuity
- frequency: the number of times the Project will have an environmental effect on Fish and Fish Habitat.
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
- reversibility: whether the adverse environmental effects are reversible or irreversible.
  - reversible
  - irreversible
- ecological context: the general characteristics of the area with respect to existing levels of human activity in the Assessment Area.
  - undisturbed: area relatively or not adversely affected by human activity
  - disturbed: area has been substantially previously disturbed by human development or human development is still present
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse residual environmental effect not likely to occur
  - likely: significant adverse residual environmental effect likely to occur

<u>Terrestrial Environment:</u>

- nature: the long term environmental effects of the Project on the KI
  - adverse
  - positive
  - neutral
- magnitude: the extent of change from the baseline state.
  - for Caribou:
  - low: no measurable change in habitat availability or population size relative to baseline conditions
  - moderate: measurable change in habitat availability or population size relative to baseline conditions that does not cause management concern
  - high: measurable change in habitat availability or population size relative to baseline conditions that does cause management concern

  - for other KIs:
  - low: <five percent of Assessment Area population or habitat will be exposed to the effect
  - moderate: five to 25 percent of Assessment Area population or habitat will be exposed to the effect
  - high: >25 percent of Assessment Area population or habitat will be exposed to the effect
- geographic extent: the physical area within which interactions are expected to occur.
  - site-specific: environmental effects confined to the Project footprint
  - local: environmental effects confined to the Assessment Area

  - regional: environmental effects occur throughout the Assessment Area and beyond
- duration: the period of time the environmental effect will occur.
  - short term: less than one generation
  - medium term: one or two generations
  - long term: occurring over several generations
  - permanent
- frequency: the number of times the Project will have an environmental effect.
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
  - not likely to occur
- reversibility: whether the adverse environmental effects are reversible or irreversible.
  - reversible
  - irreversible
- ecological context: the general characteristics of the area with respect to existing levels of human activity in the Assessment Area.
  - undisturbed: area relatively or not adversely affected by human activity
  - developed (disturbed): area has been previously disturbed by human development or human development is still present
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse residual environmental effect not likely to occur
  - likely: significant adverse residual environmental effect likely to occur

<u>Economy, Employment and Business</u>

- nature: the long term socio-economic effects of the Project on Economy, Employment and Business.
  - adverse
  - positive
  - neutral
- magnitude: the change in the KI from existing levels that are attributed to the Project.
  - reduction: reduces existing levels
  - neutral: adds nothing to existing levels
  - increase: adds to existing levels
- geographic extent: the area affected by the Project.
  - Upper Lake Melville area
  - Labrador
  - Province
- frequency: the number of times a socio-economic effect will occur.
  - not likely to occur
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
- duration: the period of time over which the socio-economic effect will occur.
  - construction phase
  - operation and maintenance phase
- level and degree of certainty of knowledge.
  - low: low level of certainty

  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse socio-economic effect not likely to occur
  - likely: significant adverse socio-economic effect likely to occur

Communities: Physical Infrastructure and Services and Social Infrastructure and Services

- nature: the ultimate long term socio-economic effects of the Project on the Physical Infrastructure and Services.
  - positive
  - neutral
  - adverse
- magnitude: the Project-related pressures (level of demand) on the physical infrastructure, social service, or heath systems.
  - low: within the capacity of system
  - moderate: exceeds capacity of system, but can be mitigated through normal planning procedures
  - high: exceeds system capacity, requires major investment to meet demands
- geographic extent: the physical area affected by the Project.
  - Assessment Area
  - regional: central and western Labrador
  - Labrador
- frequency: the number of times a socio-economic effect will occur.
  - not likely to occur
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
- duration: the period of time over which the socio-economic effect will occur.
  - construction phase
  - operation and maintenance phase
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - moderate: moderate level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse socio-economic effect not likely to occur
  - likely: significant adverse socio-economic effect likely to occur

Communities: Community Health

- nature: the ultimate long term socio-economic effects of the Project on the KI.
  - positive
  - neutral
  - adverse
- magnitude: the Project-related pressures (level of demand) on the physical infrastructure, social service, or heath systems.
  - low: status of determinants remain at or near existing levels
  - moderate: status of determinants change from existing levels over the short to medium term
  - high: status of determinants change from existing levels for the long term or permanently
- geographic extent: the physical area affected by the Project.
  - Assessment Area
  - regional: central and western Labrador

  - Labrador
- frequency: the number of times a socio-economic effect will occur.
  - not likely to occur
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
- duration: the period of time over which the socio-economic effect will occur.
  - short term: 0 to 2 years
  - medium term: 3 to 25 years
  - long term: 26 to 40 years
  - permanent
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - moderate: moderate level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse socio-economic effect not likely to occur
  - likely: significant adverse socio-economic effect likely to occur

Land and Resource Use

- nature: the long term environmental effects of the Project on Land and Resource Use.
  - adverse
  - positive
  - neutral
- magnitude: the extent of change in Land and Resource Use levels from the baseline state.
  - low: affects a small group of land and resource users
  - moderate: affects less than the majority of land and resource users across multiple activities
  - high: affects the majority of land and resource users across multiple activities
- geographic extent: the physical area within which interactions are expected to occur.
  - site-specific: environmental effects limited to Project footprint
  - local: within the Assessment Area
  - regional: beyond the Assessment Area
- duration: the period of time the environmental effect will occur.
  - short term: zero to two years
  - medium term: three to 25 years
  - long term: 26 to 40 years
  - permanent
- frequency: the number of times the Project will have an environmental effect on Land and Resource Use.
  - not likely to occur
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
- reversibility: whether the adverse environmental effects are reversible or irreversible.
  - reversible
  - irreversible
- ecological or social context: the general characteristics of the area with respect to existing levels of human activity in the Assessment Area.
  - undisturbed: area relatively or not adversely affected by human activity

  - disturbed: area has been previously disturbed by human development or human development is still present
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse environmental effect not likely to occur
  - likely: significant adverse environmental effect likely to occur

Cultural Heritage Resources

- nature: the ultimate long term effects of the Project on Historic and Archaeological Resources.
  - adverse
  - positive
  - neutral
- magnitude: the number of Historic and Archaeological Resources sites that will be lost or disturbed.
- geographic extent: the area within which the Project may affect Historic and Archaeological Resources.
  - site-specific: within the Project footprint
  - regional: beyond the Assessment Area
- frequency: the number of times the Project will have an environmental effect on Historic and Archaeological Resources. In the case of loss, the Project would affect each site only once; in the case of disturbance, an effect could occur more than once.
  - not likely to occur
  - occurs once
  - occurs sporadically at irregular intervals
  - occurs on a regular basis and at regular intervals
  - continuous
- duration: the period of time over which the environmental effect will occur.
  - permanent
  - short term
- reversibility: whether the adverse environmental effects are reversible or irreversible.
  - reversible
  - irreversible
- ecological and social context: the general characteristics of the area with respect to existing levels of human activity in the Historic and Archaeological Resources Assessment Area.
  - undisturbed: area relatively or not adversely affected by human activity
  - disturbed: area has been previously disturbed by human development or human development is still present
- level and degree of certainty of knowledge.
  - low: low level of certainty
  - high: high level of certainty
- likelihood.
  - unlikely: significant adverse environmental effect not likely to occur
  - likely: significant adverse environmental effect likely to occur

# Information Request Number: JRP.18

# Table of Concordance (EIS Guidelines and EIS)

**Requesting Organization – Joint Review Panel** **Information Request No.: JRP.18**

**Subject – Table of Concordance (EIS Guidelines and EIS)**

**References:**

EIS Guidelines, Section 3.2 (Presentation of the EIS) & Section 4.4.5 (Component Studies).

EIS, Volume IB, Appendix IB-E (EIS Guidelines, Table of Concordance and Key Subject Index).

**Rationale:**

Concordance that cross-references the EIS Guidelines so that information requirements identified in the Guidelines are easily located in the EIS (p. 11). A review of the Table of the Concordance by the Panel has revealed discrepancies and uncertainties between information referenced in the Table of Concordance and the location of that actual information in the EIS. For example:

> Section 4.4.4.3 (Terrestrial Environment – Bedrock and surficial geology, terrain and soil conditions) (p. 8): the sections of the EIS referenced in the Table of Concordance do not contain information on those particular topics (they contain information on slope stability and Ecological Land Classification)
>
> Section 4.4.4.3 (Terrestrial Environment – Composition, distribution and abundance of medicinal herbs and plants harvested by affected Aboriginal Communities) (p. 9): the Table of Concordance does not reference Volume IB, Appendix IB-H (Report of the Work of the TK Committee), where most of the information on this topic is presented
>
> Section 4.4.4.3 (Terrestrial Environment – Migratory patterns/river crossings) (p. 9): the section of the EIS referenced in the Table of Concordance is over 100 pages long and no specific section reference is given
>
> Section 4.4.4.3 (Terrestrial Environment – Mercury concentrations, mobility and fate (…)) (p. 9): the Table of Concordance refers to Volume IIA, Section 5.12.2 but there is no such section in Volume IIA

**Requesting Organization – Joint Review Panel** **Information Request No.: JRP.18**

**Information Request:**

**In order to facilitate the review of the EIS, the Proponent is asked to review the Table of Concordance for discrepancies and uncertainties between information referenced in the Table and information provided in the EIS, and appraise the level of detail provided. If necessary, the Proponent should submit a revised Table of Concordance to the Panel. Should the Proponent decide to re-submit the Table of Concordance, the Proponent may choose to also make reference to Component Studies where information contained in those is not otherwise provided in the EIS.**

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**Response:**

An augmented Table of Concordance is provided below, containing a new column that references appropriate Component Studies applicable to each of the Final Guideline requirements. These additional references have been provided to assist reviewers in identifying relevant Component Studies, should additional detail on a particular topic be required, thereby assisting in the review process. Where possible, additional detail has been added to EIS references within the Table of Concordance to more closely guide the reviewer to the appropriate section or sections in the EIS.

With respect to the four examples identified in the IR, they have been addressed as follows:

- Terrestrial Environment – Bedrock and surficial geology, terrain and soil conditions: additional references have been added to the Table of Concordance, including references to relevant Component Studies. Note that the references included in the Table of Concordance with respect to ecological land classification are relevant as descriptions of soil and bedrock conditions for each of the regions are incorporated within these sections.

- Terrestrial Environment – Composition, distribution and abundance of medicinal herbs and plants harvested by affected Aboriginal Communities: while the original reference is still considered applicable and has been retained, it is acknowledged that greater detail is contained within the appendix and reference to the appropriate appendix has been added here and in other appropriate places within the table.

- Terrestrial Environment – Migratory patterns/river crossings – the EIS reference originally given was to a large section as most of the KIs assessed within the Terrestrial Environment VEC are associated with either migratory patterns and/or river crossing, including caribou, moose, black bear and all migratory bird species. In response to the Panel request, each of these KI sub-sections has now been specifically referenced.

- Terrestrial Environment – Mercury concentrations, mobility and fate (…): Volume **IIA**-Section 5.12.2, was referenced in error. The correct reference is Volume **IIB**, same section (Section 5.12.2), which is now reflected in the table.

**Augmented Table of Concordance for the Environmental Impact Statement with Guidelines**

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **2.2** | **ABORIGINAL AND PUBLIC PARTICIPATION**<br>In preparing the EIS, the Proponent shall inform and consult with the affected Aboriginal and local communities, interested regional and national organizations and resource users. | Volume IA, Chapter 7 and Chapter 8 | |
| **2.3** | **ABORIGINAL TRADITIONAL AND COMMUNITY KNOWLEDGE**<br>Aboriginal traditional and community knowledge of the existing environment shall be an integral part of the EIS, to the extent that it is available to the Proponent. | Volume IA, Chapter 8 and Sections 9.1.1 and 9.1.2; Volume IB, Appendix IB-H and IB-J | |
| **2.4** | **SUSTAINABLE DEVELOPMENT**<br>The Proponent shall include in the EIS consideration of:<br>(a) The extent to which biological diversity is affected by the Project;<br>(b) The capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of present and future generations; and<br>(c) The extent, distribution and duration of social and economic benefits. | Volume IA, Section 9.11; Volume IIB, Sections 7.3 and 7.4.1; Volume III, Sections 8.3 and 8.4.1 | |
| **2.5** | **PRECAUTIONARY PRINCIPLE**<br>In applying the precautionary approach, the Proponent shall:<br>(a) Demonstrate that the proposed Project is examined in a careful and precautionary manner;<br>(b) Outline the assumptions made about the effects of the Project and the approaches to prevent and minimize these effects;<br>(c) Identify where scientific uncertainty exists in the predictions of the environmental effects of the Project; and<br>(d) Identify any follow-up and monitoring activities planned, particularly in areas where scientific uncertainty exists in the prediction of the effects of the Project. | Volume IA, Section 9.12; Volume IIA, Sections 3.10 and 4.15 and Appendix IIA-A; Volume IIB, Sections 5.14 and 7.4 and Appendix IIB-A; Volume III, Sections 3.8, 4.8, 5.6, 6.6 and 8.4 and Appendix III-B | |
| **3.1** | **STUDY STRATEGY AND METHODOLOGY**<br>The Proponent shall explain and justify all methods used in the preparation of the EIS. | Volume IA, Chapter 9 | |
| **3.2** | **PRESENTATION OF THE EIS** | | |
| | The EIS and all associated reports and studies shall use System International (SI) units of measure and terminology. | Volumes I, II and III | |
| | Where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms shall be included. | Volume IA, Chapter 12; Volume IIA, End of Volume; Volume IIB, Chapter 9; and Volume III, Chapter 10 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **3.2 Cont.** | The EIS shall include a Table of Concordance. | Volume IB, Appendix IB-E Table IB-E-1 | |
| | A key subject index is to be provided giving locations in the text by volume, section and sub-section. | Volume IB, Appendix IB-E Table IB-E-2 | |
| | The Proponent shall provide charts, diagrams and maps wherever useful to clarify the text, including a depiction of what the developed Project sites would look like from an aerial perspective. Maps shall use a limited number of common scales to allow for comparison and overlay of mapped features. Maps shall indicate common and accepted local place names. The Proponent shall present information, where technically feasible, using a standard Geographic Information System (GIS) mapping (digital) format with maps georeferenced. | Figures throughout Volumes I, II and III; Component Studies | |
| **4.1** | **EXECUTIVE SUMMARY** | Executive Summary | |
| **4.2** | **INTRODUCTION** | Volume IA, Chapter 1 | |
| **4.2.1** | **Identification of Proponent** | Volume IA, Section 1.1 | |
| | (a) Name of corporate body and mailing address | Volume IA, Section 1.1 | |
| | (b) Chief Executive Officer | Volume IA, Section 1.1 | |
| | (c) Principal contact person for purposes of environmental assessment | Volume IA, Section 1.1 | |
| | (d) Ownership of rights and interests in the Project and associated natural resources | Volume IA, Section 1.1.1 | |
| | (e) Corporate accountability for management of environmental and socio-economic effects. Operational arrangements and corporate and management structures, including the linkage of these factors between the Proponent, its parent companies and any other organizations with operational or ownership rights | Volume IA, Sections 1.1.1 and 1.1.2 and Figure 1-2 | |
| | (f) Environmental and community relations policies | Volume IA, Sections 3.2 and 3.4 | |
| | (g) Key elements of Newfoundland and Labrador Hydro's environment, health and safety management system and how the system will be integrated into the Project | Volume IA, Sections 3.3, 3.4 and 4.8 | |
| | The Proponent shall describe its history in Canada's hydroelectricity industry, with specific reference to the existing Newfoundland and Labrador Hydro hydroelectric generation project at Churchill Falls. | Volume IA, Section 1.1.1 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.2.2** | **Overview of the Project** | Volume IA, Section 1.2 | |
| **4.2.3** | **Purpose of the EIS**<br>The purpose of the EIS shall be described. | Volume IA, Section 1.3 | |
| **4.2.4** | **Relationship to Legislation, Permitting, Regulatory Agencies & Policies**<br>Pertinent government policies, such as land and water resources development and use policies that may influence environmental management in the project area, and the Project's compliance with respect to these policies are to be addressed. The EIS shall describe how project siting, design and management have been influenced by compliance with legislation and policies. | Volume IA, Sections 1.4 and 6.4; Volume IB, Appendix IB-G. Also addressed through discussion of Administrative Boundaries in Volume IIA, Sections 2.2.1, 2.3.1, and 2.4.1.2 and Volume III, Sections 2.3.1.3, 2.4.1, 2.5.1.3, 2.6.1, 2.7.1, 2.8.1.3 and 2.9.1.2 | |
| | The Proponent shall provide a comprehensive list of permits and regulatory approvals required for the undertaking. The list shall include the following details: | Volume IA, Section 6.4; Volume IB, Appendix IB-G | |
| | (a) activity requiring regulatory approval | | |
| | (b) name of permit or regulatory approval | | |
| | (c) name of legislation applicable in each case | | |
| | (d) regulatory agency responsible for each permit of approval | | |
| **4.2.5** | **Land Claim Agreements and Interim Agreements** | | |
| | The EIS shall identify any publicly available agreements or arrangements, including the *Interim Forest Agreement (2003)* and the *Labrador Inuit Land Claims Agreement*, entered into between the Proponent and/or the Government of Canada and/or the Government of Newfoundland and Labrador and/or Aboriginal group(s) in the context of land claims, and address how they may affect or be affected by the Project. | Volume IA, Sections 1.5 and 8.2 | |
| | With respect to the Labrador Inuit Land Claims Agreement (the Agreement), the EIS should include a determination of whether the Project may be reasonably expected to have adverse environmental effects on the Labrador Inuit Settlement Area for the purpose of determining the applicability of the Agreement. | Volume IA, Section 1.5 | |
| **4.2.6** | **Previous Registration and Environmental Assessment**<br>Describe previous registrations of proposed hydro developments on the Lower Churchill River, environmental assessment(s), the outcome of the assessment(s), and the reasons the project did not commence | Volume IA, Section 1.6 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.2.7** | **Other Registrations**<br>Indicate whether any other registrations are to be submitted for environmental assessment in the future as a result of this Project | Volume IA, Section 1.7 | |
| **4.3** | **THE PROPOSED UNDERTAKING** | | |
| **4.3.1** | **Need, Purpose and Rationale of the Project** | | |
| | This section of the EIS shall provide a comprehensive explanation of the need, purpose and rationale for the Project. The statement of the Project's justification shall be presented in both energy and economic terms, shall provide a clear description of methodologies, assumptions and conclusions used in the analysis, and shall include an evaluation of the following | Volume IA, Sections 2.2 to 2.4 | |
| | (a) Current and forecasted provincial electricity supply and demand | Volume IA, Section 2.4.4.5 and Table 2-3 | |
| | (b) Current and forecasted provincial electricity conservation | Volume IA, Section 2.5.1 | |
| | (c) Current and future provincial transmission line network | Volume IA, Sections 1.1.1 (Figure 1-3) and 1.7 | |
| | (d) Current exports by the Proponent to markets outside the Province | Volume IA, Section 1.1.1 | |
| | (e) Export market opportunities, forecasts and expected evolution | Volume IA, Section 2.4.4 | |
| | (f) Current energy and water management regimes | Volume IA, Sections 4.5.1.1 and 4.5.2.1 | |
| | (g) Risks to the Project, in-stream flow variability, market prices and schedule delays, interest rates and other risk factors relevant to the decision to proceed with the Project | Volume IA, Section 2.4.4.4 | |
| | (h) Projected financial benefits of the Project (including their distribution) as measured by standard financial indicators | Volume IA, Sections 2.4.2.5 and 2.4.5 | |
| | (i) Relationship with the Newfoundland and Labrador's 2007 Energy Plan | Volume IA, Section 2.4.2 | |
| **4.3.2** | **Alternatives** | Volume IA, Sections 2.5, 2.6 and 3.7 | |
| **4.3.2.1** | **Alternatives to the Project**<br>The EIS shall contain an analysis of alternatives to the Project, including the following | Volume IA, Sections 2.5 and 2.6 | |
| | (a) Management of electricity demand through utility-based energy efficiency and conservation initiatives | Volume IA, Sections 2.5.1 and 2.5.6 | |
| | (b) Alternative generation sources to the Project (e.g., hydrocarbons, wind, other hydro projects such as run-of-river projects) | Volume IA, Sections 2.5.2 and 2.5.3 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.3.2.1 Cont.** | (c) Combinations of alternative generation sources with hydroelectricity (e.g., hydro-wind) | Volume IA, Section 2.5.4 | |
| | (d) The addition by the Proponent of more capacity at existing generation facilities | Volume IA, Section 2.5.5 | |
| | (e) Status quo (no Project) | Volume IA, Section 2.5.7 | |
| | Among the alternatives to the Project to be considered, the Proponent shall pay close attention to how they would be integrated within Newfoundland and Labrador's 2007 Energy Plan | Volume IA, Section 2.5 and Table 2-6 | |
| | The analysis of alternatives to the Project is to include clearly described methods and criteria for comparing alternatives, and sufficient information for the reader to understand the reasons for selecting the preferred alternative and for rejecting others. This shall include a description of the conditions or circumstances that could affect or alter these choices, such as market conditions, regulatory changes and other power developments, either prior to construction or during the life of the Project | Volume IA, Sections 2.5, 2.6 and Table 2-6 | |
| | The EIS shall include a comparative analysis of the environmental effects and technical and economic feasibility of alternatives that led to the choice of the selected Project alternative. The comparative analysis shall indicate how the Proponent took into account the sustainable development objectives outlined previously in these Guidelines in determining criteria for selecting the preferred alternative. The Proponent shall include an evaluation of the thresholds for economic viability of the Project and considerations respecting the timing of phases and components of the Project. The Proponent shall also indicate under what circumstances a change in economic conditions may influence its selection of the preferred alternative | Volume IA, Sections 2.5, 2.6 and Table 2-6 | |
| **4.3.2.2** | **Alternative Means of Carrying Out the Project**<br>Alternative means of carrying out the Project, which are technically and economically feasible, and the environmental effects of any such alternative means shall be discussed, including the following: | Volume IA, Section 3.7 and Table 3-2 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.3.2.2 Cont.** | (a) Reservoir Preparation | Volume IA, Section 3.7.10 | • Reservoir Preparation Workshop<br>• Reservoir Preparation Report<br>• Forest Inventory |
| | (b) Transmission Line Route Selection | Volume IA, Section 3.7.8 | • Interconnecting Transmission Line Constraint Mapping Atlas (also provided in the EIS as Volume IB, Appendix IB-B) |
| | (c) Facility Layout and Siting | Volume IA, Sections 3.7.4 to 3.7.7 | |
| | (d) Generation Stations Optimization | Volume IA, Sections 3.7.6 and 3.7.7 | |
| | (e) Construction Sequence | Volume IA, Section 3.7.12 | |
| | (f) Construction Labour Force Accommodation | Volume IA, Section 3.7.9.2 | |
| | (g) Reservoir Management | Volume IA, Sections 3.7.11 and 3.7.13 | |
| **4.3.3** | **Project Description**<br>The Proponent shall describe the scope of the Project for which the EIS is being conducted. | Volume IA, Chapter 4 | |
| | To facilitate the understanding of the Project by the public, the Proponent shall produce a scale model and/or appropriate audiovisual materials describing the Project | Volume IA, Figures 1-4 and 1-5; Figures 4-2 and 4-3; Volume III, Section 5.5.5.2 and Figures 5-1 through 5-9 | |
| **4.3.3.1** | **Spatial and Temporal Boundaries** | | |
| | A precise description of the spatial boundaries of the Project shall be presented accompanied by map(s) of appropriate scale showing the entire Project area with the proposed principal structures and related works. The Proponent shall provide aerial images that illustrate representative habitats within each study area (see Section 4.4.2 – Study Areas) | Volume IA, Section 4.2 and Figures 4-1 to 4-4 and 4-9 | |
| | The proposed principal structures and related works to be described include but are not limited to the following: (a) The Gull Island and Muskrat Falls generating stations, including intakes, intake canals, dams, dykes, tailrace channels and spillways associated with each of these sites | Volume IA, Sections 4.2.1 and 4.2.2, including Figures 4-4 to 4-13 | |
| | (b) The transmission terminal facilities and transmission lines linking the two stations and interconnecting with Churchill Falls Station | Volume IA, Section 4.2.3 and Figures 4-14 and 4-15 | • Interconnecting Transmission Line Constraint Mapping Atlas (also provided in the EIS as Volume IB, Appendix IB-B) |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.3.3.1 Cont.** | (c) The reservoirs and their management | Volume IA, Sections 4.5.1.1 and 4.5.2.1 | |
| | (d) Related works and activities including all temporary facilities required for the construction and operation of the previously mentioned facilities, in particular:<br>(i) Temporary control structures and diversion works | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (ii) Work camps | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (iii) Permanent and temporary access roads | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (iv) Bridges and watercourse crossings | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (v) Infrastructure for wastewater treatment & waste management | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (vi) Energy supply for camps and worksites | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (vii) Drinking water supply | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (viii) Borrow pits and quarries | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (ix) Management and disposal of excavated material | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (x) Construction worksites and storage areas | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | The temporal boundaries of the Project shall cover all phases of the project: construction, operation, maintenance, foreseeable modifications and abandonment and decommissioning of works and the rehabilitation of the sites affected by the Project. If the Proponent does not believe the full temporal boundaries should be used for a phase of the Project, the report shall identify the boundaries used and provide a rationale for the boundaries selected | Volume IA, Section 4.3 and Figures 4-16 to 4-26 | |
| **4.3.4** | **Construction**<br>Includes but is not limited to the following: | Volume IA, Sections 4.4.1 and 4.4.2 | |
| | (a) Reservoir Preparation | Volume IA, Sections 4.4.1 and 4.4.2 | • Reservoir Preparation Workshop<br>• Reservoir Preparation Report<br>• Forest Inventory |
| | (b) Dams, Reservoirs and Generating Stations | Volume IA, Sections 4.4.1 and 4.4.2; Volume IIA, Sections 4.11.1 and 4.11.2 | |
| | (c) Access Infrastructures | Volume IA, Sections 4.4.1, 4.4.2, 4.4.3, 4.4.5 and 4.8.2.4 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.3.4 Cont.** | (d) Borrow Pits, Quarries and Spoil Areas | Volume IA, Sections 4.4.1, 4.4.2, and 4.8.2.4 | |
| | (e) Transmission Facilities | Volume IA, Section 4.4.3 | • Interconnecting Transmission Line Constraint Mapping Atlas (also provided in the EIS as Volume IB, Appendix IB-B) |
| | (f) Personnel Requirements | Volume IA, Section 4.9.1 | |
| | (g) Temporary Structures and Infrastructure | Volume IA, Sections 4.4.1, 4.4.2, and 4.8.2.4 | |
| | (h) Mitigation and Compensation Works | Volume IA, Sections 4.4.1, 4.4.2 and 4.8.2 | |
| | (i) Demobilization | Volume IA, Sections 4.4.1, 4.4.2 and 4.6.1 | |
| **4.3.5** | **Operation and Maintenance** | | |
| | (a) Operating Regime | Volume IA, Sections 4.5.1.1 and 4.5.2.1 | |
| | (b) Access Roads and Transmission Facilities | Volume IA, Sections 4.2.1.9, 4.2.2.10, 4.2.3, and 4.5.3 | |
| | (c) Personnel Requirements | Volume IA, Section 4.9.2 | |
| | (d) Fuel and Dangerous and Hazardous Products and Waste | Volume IA, Section 4.8.2.4 | |
| | (e) Operating Requirements | Volume IA, Sections 4.5.1 and 4.5.2 | |
| **4.3.6** | **Decommissioning** | Volume IA, Section 4.6 | |
| | Present an approach for the decommissioning phase which sets out a commitment to address: | | |
| | • Environmental planning and mitigation measures | | |
| | • Socio-economic mitigation measures | | |
| | • Public health and safety procedures | | |
| **4.4** | **ENVIRONMENT** | | |
| **4.4.1** | **Identification of Key Issues and Selection of Valued Environmental Components (VECs)** | Volume IA, Sections 7.5 and 9.2 | |
| **4.4.2** | **Study Areas** | | |
| | Each study area should be inclusive of the landscape necessary to predict the environmental effects of the Project on each VEC. For the purposes of assessing the Project's effects on the socio-economic environment, the study areas shall take into consideration the landscape used to support contemporary and historic Aboriginal and non-Aboriginal land use. The rationale used to delineate the boundaries of the study areas shall be provided | Volume IA, Section 9.3; Volume IIA, Sections 2.2.1, 2.3.1, and 2.4.1; Volume III, Sections 2.3.1, 2.4.1, 2.5.1, 2.6.1, 2.7.1, 2.8.1, and 2.9.1 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.2 Cont.** | The mapping and description of the study areas for each VEC may include the following information | Volume IA, Section 9.4; Volume IIA, Chapter 2; Volume III, Chapter 2; Component Studies | |
| | • The main ecological constraints of the environment | | |
| | • Land use | | |
| | • Local communities | | |
| | • The environmental significance and value of the Lower Churchill River Area | | |
| **4.4.3** | **Previous Development** | | |
| | Concise discussion of past hydroelectric generation projects, the environmental effects that have occurred, and the measures that have been taken to mitigate or manage those environmental effects | Volume IA, Sections 1.6 and 5.1; Volume IIA, Section 2.3.3 | |
| | Discussion of overlapping environmental effects should include consideration of the degree to which those mitigation measures have been successful | Volume IIA, Section 2.3.7.3 | |
| | Any long-term monitoring or follow-up programs of relevance to these overlapping environmental effects and the key results | Volume IA, Section 5.1.2; Volume III, Section 4.7.5.6 | |
| **4.4.4** | **Description of the Existing Environment** Detailed discussions shall be developed for the following environmental components: | | |
| | 4.4.4.1 Atmospheric Environment | Volume IIA, Section 2.2 | |
| | 4.4.4.2 Aquatic Environment | Volume IIA, Section 2.3 | • Habitat Quantification<br>• 2006 Fish & Fish Habitat Baseline Study: Catch-based Utilization Index Validation and Additional Habitat Surveys<br>• Aquatic Vegetation Study<br>• Lower Churchill River Fish Consumption and Angling Survey<br>• Seal Abundance and Distribution<br>• HADD Determination Methodology (Churchill River, Labrador)<br>• Biological Study of the Goose Bay Estuary<br>• Primary Productivity and Plankton Biomass<br>• Fish Migration & Habitat Use of the Churchill River<br>• Benthic Invertebrate Study of the Churchill River<br>• Fish & Fish Habitat |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4 Cont.** | 4.4.4.3 Terrestrial Environment | Volume IIA, Section 2.4 | • Moose (*Alces alces*)<br>• Caribou *(Rangifer tarandus* caribou*)*<br>• Black bear (*Ursus americanus*) Study in the Lower Churchill River Watershed<br>• Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report<br>• Moose and the Proposed Churchill River Power Project: A Literature Review<br>• Churchill River Power Project 1999 Environmental Studies: Winter Moose Survey<br>• Furbearer Winter Habitat Use<br>• Inventory of Beaver Colonies in the Lower Churchill River Valley<br>• Forest Songbird Surveys<br>• Waterfowl in the Lower Churchill River Area<br>• Inventory of Osprey, Bald Eagle and Golden Eagle Nest Sites in the Lower Churchill River Valley<br>• Churchill River Power Project Waterfowl<br>• Osprey and Bald Eagle Study<br>• Rare Plant Survey in the Lower Churchill River Valley<br>• Reservoir Preparation Workshop<br>• Reservoir Preparation Report<br>• Forest Inventory<br>• Herpetile Surveys in the Lower Churchill River Valley<br>• Project Area Ecological Land Classification<br>• Regional Ecological Land Classification |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4 Cont.** | 4.4.4.3 Terrestrial Environment Cont. | Volume IIA, Section 2.4 **Cont.** | • Wetland Assessment and Evaluation<br>• Interconnecting Transmission Line Constraint Mapping Atlas (also provided in the EIS as Volume IB, Appendix IB-B) |
| | 4.4.4.4 Land and Resource Use | Volume III, Section 2.8; Volume IB, Appendices IB-H and IB-J | • Lower Churchill River Fish Consumption and Angling Survey<br>• Current Land and Resource Use in the Lower Churchill River Area |
| | 4.4.4.5 Cultural Heritage Resources | Volume III, Section 2.9; Volume IB, Appendices IB-H and IB-J | • 2006 Historic Resources Overview and Impact Assessment of Muskrat Falls Generating Facility and Reservoir and the Muskrat Falls to Gull Island Transmission Line Corridor<br>• Sea Level History and Geomorphology of the Churchill River and Strait of Belle Isle<br>• Historical Resources (Labrador Study)<br>• Historic Resources Overview Assessment (Labrador Component)<br>• |
| | 4.4.4.5 Cultural Heritage Resources (cont.) | Volume III, Section 2.9; Volume IB, Appendices IB-H and IB-J (cont.) | • Historic Resources Potential Mapping, Volumes I and II<br>• Churchill River Power Project Historic Resources Overview Assessment 1998-2000 Volume 1 Interpretation Summary and Recommendations |
| | 4.4.4.6 Communities | Volume III, Sections 2.5, 2.6 and 2.7 | • Socio-economic Environmental Baseline Report<br>• Community Health Study |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4 Cont.** | 4.4.4.7 Economy, Employment and Business | Volume III, Sections 2.3 and 2.4 | • Socio-economic Environmental Baseline Report<br>• Forecasted Labour Resource Requirements by National Occupation Classification for Generation Projects |
| | A qualitative and quantitative description of the present and potential resource use and the identification of known data gaps are imperative. In addition, the EIS shall describe environmental interrelationships and sensitivity to disturbance. | Volume IA, Section 5.4; Volume IIA, Chapter 2; Volume III, Chapter 2 | |
| **4.4.4.1** | **Atmospheric Environment** | Volume IIA, Section 2.2 | |
| | (a) Climate and meteorology | Volume IIA, Section 2.2.4 | |
| | (b) Climate change | Volume IA, Section 10.4.10; Volume IIA, Section 2.2.4 | |
| | (c) emissions of greenhouse gases (e.g., $CO_2$, $CH_4$) including reservoir emissions in the context of provincial and regional emissions and targets | Volume IIA, Sections 2.2.3 and 3.9 | • Greenhouse Gas Fluxes<br>• Greenhouse Gas Emissions Study |
| | (d) Air Quality, including substantive emissions of conventional air contaminants (PM, $SO_2$, $NO_X$, VOCs) from Project-related sources | Volume IIA, Sections 2.2.5 and 3.9 | |
| | (e) Existing ambient noise level | Volume IIB, Section 5.11.1.2 | |
| **4.4.4.2** | **Aquatic Environment** | Volume IIA, Section 2.3 | |
| | (a) Hydrological features such as lakes and streams/rivers, watershed boundaries, river hydrology and hydraulics, bathymetry, surface water flow, flood zones, lake and river ice formation, dynamics and melt patterns; salinity, tides, freshwater mixing zones and delta formation | Volume IIA, Sections 2.3.3.3 to 2.3.3.5 and 2.3.5 | • Hydraulic Modelling of River<br>• Ice Dynamics of the Lower Churchill River<br>• Further Clarification and Updating of the 2007 Ice Dynamics Report |
| | (b) Geomorphology, including erosion, sedimentation, channel dynamics and sediment supply | Volume IIA, Section 2.3.3.3 | • Sedimentation and Morphodynamics Study<br>• Sea Level History and Geomorphology of the Churchill River and Strait of Belle Isle |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.2 (cont.)** | (c) Water quality and quantity from both surface and groundwater sources, including any saltwater intrusion up the Churchill River or into aquifers | Volume IIA, Sections 2.3.3.2 and 2.3.3.3 | • Water and Sediment Quality in the Churchill River<br>• Water and Sediment Modelling in the Lower Churchill River<br>• Water & Sediment Quality of the Churchill River<br>• Salt Water Intrusion 3D Model Study<br>• Salt Water Intrusion 3D Model Study, Addendum No. 1 |
| | (d) Sediment quality of watercourse | Volume IIA, Sections 2.3.3.3 and 2.3.7.3 | • Water and Sediment Quality in the Churchill River<br>• Water and Sediment Modelling in the Lower Churchill River<br>• Water & Sediment Quality of the Churchill River<br>• Sediment Plume Analysis |
| | (e) Important habitats found along the shoreline, banks, wetlands and floodplain | Volume IIA, Sections 2.3.3.1, 2.3.5, 2.4.2.1 and 2.4.2.2 | • Habitat Quantification<br>• 2006 Fish and Fish Habitat Baseline Study: Catch-based Utilization Index Validation and Additional Habitat Surveys<br>• Wetland Assessment and Evaluation<br>• Fish Migration and Habitat Use of the Churchill River<br>• Fish and Fish Habitat<br>• Project Area Ecological Land Classification |
| | (f) Aquatic riparian vegetation | Volume IIA, Section 2.3.3.1 | • Aquatic Vegetation Study |
| | (g) Biological diversity, composition, abundance, distribution, population dynamics and habitat utilization of aquatic species, including fish, semi-aquatic species and marine mammals such as ringed seals | Volume IIA, Sections 2.3.6 and 2.3.7 | • 2006 Fish and Fish Habitat Baseline Study: Catch-based Utilization Index Validation and Additional Habitat Surveys<br>• Fish and Fish Habitat<br>• Fish Migration and Habitat Use of the Churchill River<br>• Seal Abundance and Distribution |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.2 (cont.)** | (h) Mercury presence, mobility, fate and effects in the reservoir, including content in fish at representative levels in food chain as determined in an ecological risk assessment | Volume IIA, Sections 2.3.7.3 and 4.14 | • Calculation of Anticipated Consumption Advisory Levels of Fish in the Lower Churchill Area<br>• Assessment of the Potential for Increased Mercury Concentrations<br>• Existing Mercury Concentrations in Osprey and Ecological Risk Assessment<br>• Statistical Analysis of Mercury Data from Churchill Falls (Labrador) Corporation's Reservoirs<br>• Freshwater Fish Mercury Sampling, Churchill River, Labrador |
| | (i) Species of conservation concern (e.g., *Species at Risk Act*) | Volume IIA, Section 2.4.1.2 | |
| | (j) Human-environment interactions | Volume III, Section 2.8.5 | |
| **4.4.4.3** | **Terrestrial Environment** | | |
| | (a) Bedrock and surficial geology, terrain and soil conditions | Volume IA, Section 5.2.2 ; Volume IIA, Section 2.4.2 | • Interconnecting Transmission Line Constraint Mapping Atlas<br>• Project Area Ecological Land Classification |
| | (b) Regional seismicity | Volume IA, Sections 10.4.7 and 10.5.1.3 | |
| | (c) Reservoir-induced seismicity | Volume IA, Sections 4.4.1.2 and 4.4.2.2 (Impoundment) | |
| | (d) Pertinent physical and chemical properties of sediment and rock that might be affected by or have an effect on the Project | Volume IA, Sections 5.2.2 and 10.4.2; Volume IIA, Section 2.4.2 | |
| | (e) For areas that will be flooded, the levels of mercury and other potentially toxic metals in the soils, in particular for soils with high organic content and indurated soils (ortstein) | Volume IIA, Sections 2.4.2.11 and 2.4.2.12 | • Existing Mercury Concentrations in Osprey and Ecological Risk Assessment |
| | (f) Areas of potential ground instability such as slumping or landslides | Volume IA, Sections 10.4.2 and 10.5.1.1 | |
| | (g) groundwater movement and aquifer recharge zones | Volume IIA, Section 2.3.3.4 | |
| | (h) Permafrost conditions including areas of discontinuous permafrost, high ice content soils, thaw sensitive slopes and stream banks | Volume IA, Section 5.2.1 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.3 (cont.)** | (i) Terrestrial fauna, including mammals, avifauna (e.g., raptor, waterfowl and passerine/songbird surveys) and herpetiles | Volume IA, Section 5.2.3; Volume IIA, Sections 2.4.3 to 2.4.16 | • Moose (*Alces alces*)<br>• Caribou (*Rangifer tarandus* caribou)<br>• Black bear (*Ursus americanus*) Study in the Lower Churchill River Watershed<br>• Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report<br>• Moose and the Proposed Churchill River Power Project: A Literature Review<br>• Churchill River Power Project 1999 Environmental Studies: Winter Moose Survey<br>• Furbearer Winter Habitat Use<br>• Inventory of Beaver Colonies in the Lower Churchill River Valley<br>• Forest Songbird Surveys<br>• Waterfowl in the Lower Churchill River Area<br>• Inventory of Osprey, Bald Eagle and Golden Eagle Nest Sites in the Lower Churchill River Valley<br>• Churchill River Power Project Waterfowl<br>• Osprey and Bald Eagle Study<br>• Herpetile Surveys in the Lower Churchill River Valley |
| | (j) Terrestrial flora, including forest inventories and ecological land classifications | Volume IIA, Section 2.4.2 | • Project Area Ecological Land Classification<br>• Regional Ecological Land Classification<br>• Wetland Assessment and Evaluation<br>• Forest Inventory<br>• Rare Plant Survey in the Lower Churchill River Valley |
| | (k) Terrestrial habitat and ecotype alteration, disruption and destruction | Volume IIA, Section 2.4.2; Volume IIB, Section 5.11 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.3 (cont.)** | (l) Composition, distribution and abundance of medicinal herbs and plants harvested by affected Aboriginal communities | Volume 1B, Appendix 1B-H | |
| | (m) Wetland as classified using the Canada Wetland Classification System, and further characterized in terms of a functional analysis (e.g., habitat, water flow regulation, groundwater recharge) | Volume IIA, Section 2.4.2.2 | • Wetland Assessment and Evaluation |
| | (n) Migratory patterns/river crossings | Volume IIA, Section 2.4.3, 2.4.4 (pp. 102-107 in particular), 2.4.5 (seasonal movements), 2.4.6 (seasonal movements), 2.4.10, 2.4.11, 2.4.14, 2.4.15, and 2.4.16 | • Moose (*Alces alces*)<br>• Caribou (*Rangifer tarandus* caribou)<br>• Black bear (*Ursus americanus*) Study in the Lower Churchill River Watershed<br>• Waterfowl in the Lower Churchill River Area |
| | (o) Mercury concentrations, mobility and fate within the riparian ecosystem, with an emphasis on representative species at various levels of the food chain as determined in an ecological risk assessment | Volume IIB, Section 5.12.2 | • Calculation of Anticipated Consumption Advisory Levels of Fish in the Lower Churchill Area<br>• Assessment of the Potential for Increased Mercury Concentrations<br>• Existing Mercury Concentrations in Osprey and Ecological Risk Assessment |
| | (p) Species and areas of conservation concern (e.g., *Endangered Species Act*, *Species at Risk Act* ) | Volume IIA, Sections 2.4.1.2, 2.4.4, 2.4.15 and 2.4.16 | • Rare Plant Survey in the Lower Churchill River Valley<br>• Caribou (*Rangifer tarandus* caribou)<br>• Waterfowl in the Lower Churchill River Area<br>• Churchill River Power Project Waterfowl |
| | (q) Human-wildlife interaction (e.g., bear management plans) | Volume IIB, Sections 5.7, 5.9.1 and 5.9.3 | |
| | The following is the list of key indicators: | | |
| | (a) Beaver | Volume IIA, Section 2.4.7; Volume IIB, Chapter 5 | • Furbearer Winter Habitat Use<br>• Inventory of Beaver Colonies in the Lower Churchill River Valley<br>• Wildlife Habitat Associations in the Lower Churchill River Valley |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.3 (cont.)** | (b) Marten | Volume IIA, Section 2.4.8; Volume IIB, Chapter 5 | • Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report<br>• Furbearer Winter Habitat Use |
| | (c) Porcupine | Volume IIA, Section 2.4.9; Volume IIB, Chapter 5 | • Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report<br>• Furbearer Winter Habitat Use |
| | (d) Caribou | Volume IIA, Sections 2.4.3 and 2.4.4; Volume IIB, Chapter 5 | • Caribou (*Rangifer tarandus* caribou) |
| | (e) Moose | Volume IIA, Section 2.4.5; Volume IIB, Chapter 5 | • Moose (*Alces alces*)<br>• Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report<br>• Churchill River Power Project 1999 Environmental Studies: Winter Moose Survey<br>• Moose and the Proposed Churchill River Power Project: A Literature Review |
| | (f) Black bear | Volume IIA, Section 2.4.6; Volume IIB, Chapter 5 | • Black bear (*Ursus americanus*) Study in the Lower Churchill River Watershed<br>• Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report |
| | (g) Harlequin duck | Volume IIA, Section 2.4.15; Volume IIB, Chapter 5 | • Waterfowl in the Lower Churchill River Area<br>• Churchill River Power Project Waterfowl |
| | (h) Early breeding waterfowl (including Canada goose) | Volume IIA, Section 2.4.10; Volume IIB, Chapter 5 | • Waterfowl in the Lower Churchill River Area<br>• Churchill River Power Project Waterfowl |
| | (i) Late breeding waterfowl (including Scoters) | Volume IIA, Section 2.4.11; Volume IIB, Chapter 5 | • Waterfowl in the Lower Churchill River Area<br>• Churchill River Power Project Waterfowl |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.3 (cont.)** | (j) Upland game birds | Volume IIA, Section 2.4.12; Volume IIB, Chapter 5 | • Forest Songbird Surveys<br>• Wildlife Habitat Associations in the Lower Churchill River Valley EBR |
| | (k) Osprey | Volume IIA, Section 2.4.13; Volume IIB, Chapter 5 | • Inventory of Osprey, Bald Eagle and Golden Eagle Nest Sites in the Lower Churchill River Valley<br>• Osprey and Bald Eagle Study |
| | (l) Passerine/song birds (including Water thrush) | Volume IIA, Sections 2.4.14, 2.4.16; Volume IIB, Chapter 5 | • Forest Songbird Surveys |
| **4.4.4.4** | **Land and Resource Use** | | |
| | (a) Present and Potential Timber Resource Utilization | Volume III, Sections 2.8.9 and 5.5 | • Reservoir Preparation Workshop<br>• Reservoir Preparation Report<br>• Forest Inventory |
| | (b) Current use of land and resources (including aquatic resources) by Aboriginal persons for traditional purposes, including location of camps, harvested species and transportation routes | Volume IB, Appendix IB-H and IB-J; Volume III, Sections 2.8.16 and 5.5 | |
| | (c) Current use of land and resources (including aquatic resources) by other land users | Volume III, Sections 2.8.15 and 5.5 | • Lower Churchill River Fish Consumption and Angling Survey<br>• Current Land and Resource Use in the Lower Churchill River Area |
| | (d) Other rural land and resource use including existing and potential recreational and commercial fishing and hunting, gathering of country food and collection of plant propagules | Volume III, Sections 2.8.3 to 2.8.14 and 5.5 | • Lower Churchill River Fish Consumption and Angling Survey<br>• Current Land and Resource Use in the Lower Churchill River Area |
| | (e) Effects on navigation (e.g., vessel/boat traffic) and winter travel on the river | Volume III, Section 2.8.7 and 5.5 | |
| | (f) Unique sites or special features in the Study Area(s), including any Special Places candidate sites, Environmentally Sensitive Areas, reserves or protected areas, conservation agreement lands and habitat enhancement projects | Volume III, Section 2.8.11 and 5.5 | • Current Land and Resource Use in the Lower Churchill River Area |
| | (g) Landscapes, including aesthetic quality and effects on river aesthetics | Volume III, Section 5.5.5 | |
| **4.4.4.5** | **Cultural Heritage Resources** | | |
| | (a) Cultural heritage sites | Volume III, Section 2.9 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.5 Cont.** | (b) Historic and archaeological resources | Volume III, Sections 2.9.4 and 6.5 | • 2006 Historic Resources Overview and Impact Assessment of Muskrat Falls Generating Facility and Reservoir and the Muskrat Falls to Gull Island Transmission Line Corridor<br>• Historical Resources (Labrador Study)<br>• Historic Resources Overview Assessment (Labrador Component)<br>• Historic Resources Potential Mapping, Volumes I and II<br>• Churchill River Power Project Historic Resources Overview Assessment 1998-2000 Volume 1 Interpretation Summary and Recommendations |
| | (c) Paleontological resources | Volume III, Section 2.9.2 | |
| | (d) Architectural resources | Volume III, Section 2.9.3 | |
| **4.4.4.6** | **Communities** | | |
| | (a) Demographics | Volume III, Section 2.2 | • Socio-economic Environmental Baseline Report |
| | (b) Community services and infrastructure in Upper Lake Melville | Volume III, Sections 2.5, 2.6, 4.5 and 4.6 | • Socio-economic Environmental Baseline Report |
| | (c) Human health in Upper Lake Melville and Churchill Falls | Volume III, Section 2.5.3.5, 2.7, and 5.5.5 | • Community Health Study |
| | (d) Community health in Upper Lake Melville and Churchill Falls | Volume III, Sections 2.7 and 4.7 | • Community Health Study |
| | (e) Family life in Upper Lake Melville and Churchill Falls | Volume III, Sections 4.2.3, 4.2.4, 4.7.5.1, 4.7.5.2, 4.7.5.3, 4.7.5.5 and 4.8.3 | • Socio-economic Environmental Baseline Report |
| | (f) Safety in Upper Lake Melville and Churchill Falls | Volume III, Sections 4.2.3, 4.6.5.1, 4.6.5.3 and 4.6.5.4 | • Socio-economic Environmental Baseline Report |
| | (g) Culture in Upper Lake Melville and Churchill Falls | Volume III, Sections 2.8, 4.1, 4.7.5.5 and 5.5 | • Socio-economic Environmental Baseline Report<br>• Lower Churchill River Fish Consumption and Angling Survey<br>• Current Land and Resource Use in the Lower Churchill River Area |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.6 Cont.** | (h) Education and Training in Upper Lake Melville, Labrador and Province | Volume III, Sections 2.4, 2.6.5, and 4.6.5.2 | • Socio-economic Environmental Baseline Report |
| | (i) Housing and accommodation in Upper Lake Melville | Volume III, Sections 2.6.6 and 4.6.5.3 | • Socio-economic Environmental Baseline Report |
| | (j) Property value and land use in Upper Lake Melville and within and adjacent to future reservoirs | Volume III, Sections 2.8.1.3 and 4.5.6 | |
| | The Proponent shall assess the human health risk associated with mercury exposure. The Proponent shall identify the species of fish and specific portions of the fish that are consumed by humans and determine baseline mercury concentrations in the species and tissues expected to be consumed by humans. The Proponent shall also take into account the recommended consumption standards. In addition, the Proponent shall: | Volume III, Sections 4.2.5 and 4.7.5.6 | • Calculation of Anticipated Consumption Advisory Levels of Fish in the Lower Churchill Area<br>• Assessment of the Potential for Increased Mercury Concentrations<br>• Existing Mercury Concentrations in Osprey and Ecological Risk Assessment |
| | (a) Characterize the current fishing patterns, including fishing location, frequency, and variability in consumption between communities and within a single community and determine whether this pattern may change following the construction of the dams | Volume III, Sections 2.8.5 and 5.5.5 | • Lower Churchill River Fish Consumption and Angling Survey |
| | (b) Develop a baseline of MeHg exposure of the local human population in general and of groups at risk, in particular children and toddlers, and women of childbearing age, which can be accomplished through dietary surveys and human hair sampling | Volume III, Section 4.7.5.6 | |
| | (c) Present and justify the period deemed adequate to reduce the quantity of mercury ingested and consider the toxicological risk, on sensitive human populations, associated with the consumption of large quantities of fish (e.g., during a weekend of fishing) | Volume III, Section 4.7.5.6 | |
| | (d) Discuss the views of local human populations regarding mercury and its influence on the changes observed in their diet and consequently on their health in general | Volume IB, Appendix IB-I-8; Volume III, Section 4.7.5.6 | |
| | (e) Review the results of the research undertaken in the region as relevant. This review shall outline current knowledge and contribute to a better understanding of the evolution of mercury exposure among local human populations | Volume III, Section 4.7.5.6 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.6 (cont.)** | (f) Present the health effects of very long-term exposure to mercury at concentrations that are generally below those producing noticeable effects and discuss existing consumption standards | Volume III, Sections 4.2.5 and 4.7.5.6 | |
| | The collection of baseline data of MeHg exposure of the local human population should be completed, including a review by Aboriginal groups and appropriate government agencies, before the Proponent changes the conditions of the Churchill River in any way that could affect mercury concentrations | Volume III, Section 4.7.5.6 | |
| **4.4.4.7** | **Economy, Employment and Business** | | |
| | (a) Economy of Upper Lake Melville, Labrador and the Province | Volume III, Sections 2.3.2 to 2.3.4 and 3.5 | • Socio-economic Environmental Baseline Report |
| | (b) Employment in Upper Lake Melville, Labrador and the Province | Volume III, Sections 2.4.2 to 2.4.4 and 3.6 | • Socio-economic Environmental Baseline Report |
| | (c) Skilled and unskilled labour supply in Upper Lake Melville, Labrador and the Province | Volume III, Sections 2.4.2 to 2.4.4 and 3.6 | • Socio-economic Environmental Baseline Report |
| | (d) Expenditures in Upper Lake Melville, Labrador and the Province | Volume III, Section 3.5.5 | • Socio-economic Environmental Baseline Report |
| | (e) Availability of skilled and unskilled labour | Volume III, Section 3.6.5 | • Socio-economic Environmental Baseline Report<br>• Forecasted Labour Resource Requirements by National Occupation Classification for Generation Projects |
| | (f) Employment equity and diversity including under-represented groups (e.g., women, persons with disabilities, aboriginal groups) | Volume III, Section 3.6.5 | |
| | (g) Business capacity | Volume III, Sections 2.4.2 to 2.4.4 and 3.7 | • Socio-economic Environmental Baseline Report |
| | (h) Agriculture | Volume III, Section 2.8.13 | • Current Land and Resource Use in the Lower Churchill River Area |
| | (i) Outfitting | Volume III, Sections 2.8.6 and 5.5 | • Current Land and Resource Use in the Lower Churchill River Area |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.4.7 (cont.)** | (j) Eco-tourism | Volume III, Sections 2.8.6 and 5.5 | • Current Land and Resource Use in the Lower Churchill River Area |
| | (k) Trapping | Volume III, Sections 2.8.4 and 5.5 | • Current Land and Resource Use in the Lower Churchill River Area |
| | (l) Forest Resources Harvesting | Volume III, Sections 2.8.9 and 5.5 | • Current Land and Resource Use in the Lower Churchill River Area<br>• Reservoir Preparation Workshop<br>• Reservoir Preparation Report<br>• Forest Inventory |
| | (m) Mining and Mineral Exploration | Volume III, Section 2.8.10 | • Current Land and Resource Use in the Lower Churchill River Area |
| **4.4.5** | **Component Studies** | Under separate cover | |
| | (a) Large mammals | | • Moose (*Alces alces*)<br>• Caribou (*Rangifer tarandus* caribou)<br>• Black bear (*Ursus americanus*) Study in the Lower Churchill River Watershed<br>• Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report<br>• Moose and the Proposed Churchill River Power Project: A Literature Review<br>• Churchill River Power Project 1999 Environmental Studies: Winter Moose Survey |
| | (b) Furbearers | | • Furbearer Winter Habitat Use<br>• Inventory of Beaver Colonies in the Lower Churchill River Valley<br>• Wildlife Habitat Associations in the Lower Churchill River Valley Environmental Baseline Report |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.5 (cont.)** | (c) Avifauna | | • Forest Songbird Surveys<br>• Waterfowl in the Lower Churchill River Area<br>• Inventory of Osprey, Bald Eagle and Golden Eagle Nest Sites in the Lower Churchill River Valley<br>• Churchill River Power Project Waterfowl<br>• Osprey and Bald Eagle Study |
| | (d) Species at Risk | | • Rare Plant Survey in the Lower Churchill River Valley<br>• Caribou (*Rangifer tarandus* caribou)<br>• Waterfowl in the Lower Churchill River Area<br>• Churchill River Power Project Waterfowl |
| | (e) Fish and fish habitat (plankton, benthos, marine mammals) | | • Habitat Quantification<br>• 2006 Fish and Fish Habitat Baseline Study: Catch-based Utilization Index Validation and Additional Habitat Surveys<br>• Aquatic Vegetation Study<br>• Lower Churchill River Fish Consumption and Angling Survey<br>• Seal Abundance and Distribution<br>• HADD Determination Methodology (Churchill River, Labrador)<br>• Biological Study of the Goose Bay Estuary<br>• Primary Productivity and Plankton Biomass<br>• Fish Migration and Habitat Use of the Churchill River<br>• Benthic Invertebrate Study of the Churchill River<br>• Fish and Fish Habitat |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.5 (cont.)** | (f) Water (quality and quantity) | | • Water and Sediment Quality in the Churchill River<br>• Water and Sediment Modelling in the Lower Churchill River<br>• Sedimentation and Morphodynamics Study<br>• Water & Sediment Quality of the Churchill River<br>• Water Quality and Chlorophyll Study |
| | (g) Hydrology, ice dynamics, sedimentation, salinity and salt water intrusion) | | • Hydraulic Modelling of River<br>• Ice Dynamics of the Lower Churchill River<br>• Further Clarification and Updating of the 2007 Ice Dynamics Report<br>• Salt Water Intrusion 3D Model Study<br>• Salt Water Intrusion 3D Model Study, Addendum No. 1<br>• Sediment Plume Analysis |
| | (h) Mercury (both in terms of increased concentrations in ecosystems and in humans) | | • Calculation of Anticipated Consumption Advisory Levels of Fish in the Lower Churchill Area<br>• Assessment of the Potential for Increased Mercury Concentrations<br>• Existing Mercury Concentrations in Osprey and Ecological Risk Assessment<br>• Statistical Analysis of Mercury Data from Churchill Falls (Labrador) Corporation's Reservoirs<br>• Freshwater Fish Mercury Sampling, Churchill River, Labrador |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.5 (cont.)** | (i) Cultural Heritage Resources | | • 2006 Historic Resources Overview and Impact Assessment of Muskrat Falls Generating Facility and Reservoir and the Muskrat Falls to Gull Island Transmission Line Corridor<br>• Sea Level History and Geomorphology of the Churchill River and Strait of Belle Isle<br>• Historical Resources (Labrador Study)<br>• Historic Resources Overview Assessment (Labrador Component)<br>• Historic Resources Potential Mapping, Volumes I and II<br>• Churchill River Power Project Historic Resources Overview Assessment 1998-2000 Volume 1 Interpretation Summary and Recommendations |
| | (j) Timber Resources | | • Reservoir Preparation Workshop<br>• Reservoir Preparation Report<br>• Forest Inventory |
| | (k) Socio-economics | | • Socio-economic Environmental Baseline Report<br>• Forecasted Labour Resource Requirements by National Occupation Classification for Generation Projects<br>• Community Health Study<br>• Current Land and Resource Use in the Lower Churchill River Area<br>• Lower Churchill River Fish Consumption and Angling Survey |
| | (l) Air quality | | • Greenhouse Gas Fluxes<br>• Greenhouse Gas Emissions Study |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.4.6** | **Data Gaps**<br>Information gaps from a lack of previous research or practice shall be described indicating baseline information which is not available or which cannot accurately represent environmental conditions in the study area over four seasons. | Volume IA, Section 5.4; Volume IIA, Sections 2.2.1, 2.3.1, and 2.4.1.3 & Component Studies | |
| **4.4.7** | **Future Environment**<br>Describe the predicted future condition of the environment within the expected life span of the Project, if the Project were not to proceed, to distinguish project related effects from environmental change due to natural processes. This shall include a discussion of climate change.<br>Analysis of the socio-economic environment shall consider the likely trends in the area in the absence of the Project. | Volume IA, Sections 5.5 and 10.4.10 | |
| **4.5** | **ENVIRONMENTAL EFFECTS** | | |
| **4.5.1** | **General**<br>Contain a comprehensive analysis of the predicted environmental effects of each project alternative for the VECs.<br>Environmental effects predictions shall be explicitly stated and the theory or rationale upon which they are based shall be presented in terms of the following parameters: | Volume IA, Chapter 9; Volume IIA, Sections 3.5 and 4.5; Volume IIB, Section 5.5; Volume III, Sections 3.5.2, 3.6.2, 3.7.2, 4.5.2, 4.6.2, 4.7.2, 5.5.2 and 6.5.2 and Residual Effects Tables in Volume IIA, Appendix IIA-A; Volume IIB, Appendix IIB-A and Volume III, Appendix III-B | |
| | • Nature | | |
| | • magnitude (qualitative and quantitative) | | |
| | • geographic (spatial) extent | | |
| | • timing, duration and frequency | | |
| | • degree to which effects are reversible or mitigable | | |
| | • ecological context | | |
| | • cultural heritage and social context | | |
| | • level and degree of uncertainty of knowledge | | |
| | • the capacity of renewable resources that are likely to be significantly affected by the Project, to meet the needs of present and future generations | | |
| | • the extent to which biological diversity is affected by the Project | | |
| | • Environmental protection goals and objectives as set out in applicable legislation, regulations, policies, plans and programs | | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.5.1 (cont.)** | Among the effects of the Project to be assessed on the biophysical environment, effects on fish and fish habitat (e.g., fish mortality from construction and operation though gas bubble disease or entrainment), | Volume IIA, Sections 4.11 to 4.14 | |
| | The Proponent shall describe and analyze greenhouse gas emissions from the Project (including methane). This shall include provision of a greenhouse gas budget for emissions from all phases of the Project, including reservoir impoundment and operation, a description of specific greenhouse gas emissions that the Project will or could offset, the necessary conditions for that offset occurring, and a quantitative net estimate of potential greenhouse gas reductions or increases. | Volume IIA, Section 3.9 | • Greenhouse Gas Fluxes<br>• Greenhouse Gas Emissions Study |
| | The Proponent shall describe effects on the navigability and the navigation patterns of all waters existing, altered or created by the Project. Impacts on traditional (e.g., hunting, fishing) and current recreational and commercial waterway use should be identified and assessed. Particular attention should be paid to traditionally-used patterns to and from Mud Lake and throughout the watercourse. Surface hydrological modelling (i.e. flow dynamics) of impacts resulting from the Project, including for the upstream footprint limit of the reservoir and downstream of Muskrat Falls to Goose Narrows, should also be included. | Volume IIA, Sections 4.11 and 4.12; Volume III, Section 5.5.5 | |
| | In considering the local social and economic effects of the Project, particular attention shall also be paid to: | | |
| | (a) demographics | Volume III, Section 2.2 | |
| | (b) Human health | Volume III, Section 4.7 | • Community Health Study<br>• Calculation of Anticipated Consumption Advisory Levels of Fish in the Lower Churchill Area<br>• Assessment of the Potential for Increased Mercury Concentrations<br>• Statistical Analysis of Mercury Data from Churchill Falls (Labrador) Corporation's Reservoirs<br>• Freshwater Fish Mercury Sampling, Churchill River, Labrador |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.5.1 (cont.)** | (c) social and cultural patterns (particular attention shall be given to the comparative adverse and beneficial effects of a major base of employment away from the communities, rotational work schedules, and the presence of large numbers of transient employees and contractors in the region | Volume III, Sections 4.2.2, 4.2.3, 4.2.4, 4.6.5, 4.7.5.1, 4.7.5.5 and 5.5.5 | |
| | (d) services and infrastructure | Volume III, Sections 4.5 and 4.6 | |
| | (e) cultural heritage sites | Volume III, Section 6.5 | |
| | (f) land and resource use | Volume III, Section 5.5 | |
| | (g) local, regional and provincial economy | Volume III, Section 3.5 | |
| | (h) employment, education and training | Volume III, Section 3.6 | |
| | (i) governments | Volume III, Section 3.5 | |
| | (j) aboriginal issues | Volume III, Chapters 3, 4, 5 and 6 | |
| | (k) Experience gained from previous large developments in Labrador. | Volume III, Sections 3.2 and 4.2 | |
| **4.5.2** | **Accidents and Malfunctions**<br>Identify and describe the potential accidents and malfunctions related to the Project, including those associated with the following occurrences: | Volume IA, Section 4.11; Volume IIB, Chapter 6; Volume III, Chapter 7 | |
| | • dam failure | Volume IA, Section 4.11.3; Volume IIB, Section 6.2.1; Volume III, Section 7.2.1 | |
| | • fires | Volume IA, Section 4.11.4; Volume IIB, Section 6.2.2; Volume III, Section 7.2.2 | |
| | • waste management and disposal | Volume IA, Section 4.11.1 | |
| | • handling and use of chemicals and hazardous materials on-site | Volume IA, Section 4.11.2 | |
| | • any other project components or systems that have the potential, through accident or malfunction, to adversely affect the natural environment | Volume IA, Section 4.11 | |
| **4.5.3** | **Cumulative Effects**<br>Identify and assess the Project's cumulative environmental effects.<br>The Proponent shall consider the guidance described in the CEAA Cumulative Effects Assessment Practitioners Guide (1999) and other literature in framing the cumulative environmental effects analysis. | Volume IA, Section 9.9; Volume IIA, Sections 3.11 and 4.16; Volume IIB, Section 5.15; Volume III, Sections 3.5.6, 3.6.6, 3.7.6, 4.5.6, 4.6.6, 4.7.6, 5.5.6 and 6.5.6 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.5.3 Cont.** | Accordingly, the Proponent shall:<br>(a) identify and justify the environmental components that will constitute the focus of the environmental assessment. The assessment should emphasize the cumulative effects on the main VECs that could potentially be affected by the Project | Volume IA, Section 9.9; Volume IIA, Sections 3.11 and 4.16; Volume IIB, Section 5.15; Volume III, Sections 3.5.6, 3.6.6, 3.7.6, 4.5.6, 4.6.6, 4.7.6, 5.5.6 and 6.5.6 | |
| | (b) present a justification for the geographic and temporal boundaries of the cumulative effects assessment. The boundaries for the cumulative effects assessments will again depend on the effects being considered (e.g., will generally be different for different effects) and will also generally be different from (larger than) the boundaries for the corresponding Project effects | Volume IA, Section 9.9; Volume IIA, Sections 3.11 and 4.16; Volume IIB, Section 5.15; Volume III, Sections 3.5.6, 3.6.6, 3.7.6, 4.5.6, 4.6.6, 4.7.6, 5.5.6 and 6.5.6 | |
| | (c) describe and justify the choice of projects and selected activities for the cumulative effects assessment. These shall include past activities and projects, those being carried out and future projects or activities likely to be carried out | Volume IA, Section 9.9; Volume IIA, Sections 3.11 and 4.16; Volume IIB, Section 5.15; Volume III, Sections 3.5.6, 3.6.6, 3.7.6, 4.5.6, 4.6.6, 4.7.6, 5.5.6 and 6.5.6 | |
| | (d) describe the mitigation measures that are technically and economically feasible, determine the significance of the residual cumulative effects. The Proponent shall assess the effectiveness of the measures applied to mitigate the cumulative effects. | Volume IA, Section 9.9; Volume IIA, Sections 3.11 and 4.16; Volume IIB, Section 5.15; Volume III, Sections 3.5.6, 3.6.6, 3.7.6, 4.5.6, 4.6.6, 4.7.6, 5.5.6 and 6.5.6 | |
| | (e) assess the effectiveness of the measures applied to mitigate the cumulative effects. In cases where measures exist that are beyond the scope of the Proponent's responsibility that could be effectively applied to mitigate these effects, the Proponent shall identify these effects and the parties that have the authority to act. In such cases, the Proponent shall summarize the discussions that took place with the other parties in order to implement the necessary measures over the long term. | Volume IA, Section 9.9; Volume IIA, Sections 3.11 and 4.16; Volume IIB, Section 5.15; Volume III, Sections 3.5.6, 3.6.6, 3.7.6, 4.5.6, 4.6.6, 4.7.6, 5.5.6 and 6.5.6 | |
| **4.5.4** | **Renewable Resources**<br>Determine, based on the results of the assessment, whether the Project is likely to cause significant environmental effects on renewable resources and therefore compromise their capacity to meet present and future needs. Describe the renewable resources that may be significantly affected by the Project addressing the following points: | Volume IA, Section 9.11; Volume IIB, Section 7.4.2; Volume III, Section 8.4.2 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.5.4 Cont.** | (a) a brief description of the Project's environmental effects on the renewable resource | | |
| | (b) an indication as to the way in which the capacity of this resource was measured or evaluated | | |
| | (c) an indication of the temporal and geographic boundaries used to assess the capacity of the affected resource | | |
| | (d) a determination of the capacity of the resource to meet current needs | | |
| | (e) a determination of the capacity of the resource to meet future needs | | |
| | (f) a description of any other appropriate mitigation measures | | |
| | (g) a determination of the significance of the residual effects on the renewable resource and its capacity to meet the need of current and future generations | | |
| | (h) an identification of the risks and uncertainties that remain and the description of the next steps, if any, that will be required to address this effect | | |
| **4.5.5** | **Effects of Environment on the Project** Environmental changes and hazards that may occur and may affect the Project shall be described (e.g., wind, currents, waves, storm surges, severe precipitation events, flooding, extended dry periods, ice, earthquakes). The EIS shall take into account the potential influence of climate change scenarios (e.g., sea level rise, increased severity and frequency of storms and flooding). The influence that these environmental changes and hazards may have on the Project shall be predicted and described. The environmental effects that may occur as a result of the environment acting on the Project shall be assessed. | Volume IA, Chapter 10 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.6** | **ENVIRONMENTAL PROTECTION** | | |
| **4.6.1** | **Mitigation**<br>The EIS shall identify and discuss the proposed mitigation measures that are technically and economically feasible and that would mitigate the significant adverse effects of the Project and enhance beneficial effects, including the interaction of these measures with existing environmental management plans. The rationale for and effectiveness of the proposed mitigation and enhancement measures should be discussed and evaluated. Mitigation measures shall be described for the construction, operation and modification phases and shall include: | Volume IA, Section 4.8; Volume IIA, Sections 3.8, 4.10 and Appendix IIA-A; Volume IIB, Sections 5.10, 7.1 and Appendix IIB-A; Volume III, Sections 3.5.5, 3.6.5, 3.7.5, 3.8.4, 4.5.5, 4.6.5, 4.7.5, 4.8.4, 5.5.5, 5.6.1, 6.5.5, 8.1 and Appendix III-B | |
| | (a) Procedures that would be used to avoid environmentally sensitive areas or periods of the year | Volume IA, Sections 3.7.11 and 4.8.2; Volume IIA, Sections 3.8 and 4.10 and Appendix IIA-A; Volume IIB, Sections 5.10, 7.1 and Appendix IIB-A | |
| | (b) Contingency plans and procedures to respond to accidents, malfunctions & emergencies | Volume IA, Sections 3.4.1.3 and 4.11 | |
| | (c) Description of fish habitat compensation strategy | Volume IIA, Section 4.10.2 | |
| | (d) A description of the approach to determine, develop and maintain minimum flow requirements when describing mitigation measures for the construction, reservoir filling and operation phases of the Project, including fish habitat maintenance and fish passage such as the fish passage facility in the causeway across the Churchill River associated with the Trans Labrador Highway Phase III | Volume IIA, Sections 4.10, 4.11 and 4.12 | |
| | (e) Methods to control and manage sediment action and shoreline stability | Volume IA, Section 4.8.2.4; Volume IIA, Sections 4.10 and 4.12 | |
| | (f) Measures to ensure continued unrestricted and safe access and passage on land and sea for harvesting and travel by Aboriginal and non-Aboriginal local residents, and what alternatives shall be provided in the event of disruption | Volume III, Section 5.5.5 and 5.6.1 | |
| | (g) Methods of soil and vegetation preparation employed to mitigate the release of mercury and MeHg from flooded soils and vegetation | Volume IA, Sections 4.2.1.3 and 4.2.2.3 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.6.1 Cont.** | (h) Measures which would be taken to reduce or offset adverse effects of increased mercury and MeHg concentrations in fish, fish-eating wildlife, and human consumers of fish and fish-eating wildlife | Volume IA, Sections 4.2.1.3 and 4.2.2.3; Volume III, Section 4.7.5.6 | |
| | (i) Mitigation measures which would be taken to reduce or offset adverse effects on the life of the communities most directly affected by the Project | Volume III, Sections 4.5.5, 4.6.5, 4.7.5, 5.5.5, 5.6.1, 4.8.4 and 8.1 | |
| | (j) Mitigation measures which would be taken to reduce or offset adverse effects on local businesses most directly affected by the Project | Volume III, Sections 3.7.5, 3.8.4 and 8.1 | |
| | (k) Describe measures to enhance any beneficial environmental effects, such as economic benefits to businesses affected by the Project. The Proponent shall discuss the application of the precautionary Principle in the identification of mitigation measures. | Volume III, Sections 3.5.5, 3.6.5, 3.7.5, 3.8.4, 8.1 and 8.4.1. See also response to Final Guideline Section # 2.5 | |
| | (l) Measures to maximize labour market opportunities, including Aboriginal labour, and address labour challenges with an emphasis on strategies to enhance recruitment and retention and increase employment and participation. To this end, the Proponent must minimally describe a human resources plan that includes a description of objectives and strategies to address labour force availability, skilled trades recruitment, diversity in recruitment, training and employment equity. This plan should also minimally identify employment objectives and targets for women and other labour force groups if applicable | Volume III, Sections 3.6.5, 3.8.4 and 8.1 | |
| **4.6.1.1** | **Compensation**<br>Describe, in general terms, compensation programs and arrangements as follows: | | |
| | (a) Any compensation programs for damage caused by the Proponent's activities to the environment, to property, business operations, or to the land and resources of others. The Proponent shall describe any existing or proposed compensation programs for losses relating to property, use, access, harvests, added harvesting effort and costs that may be incurred by users of the land and its resource (e.g., tourism operators, trappers, subsistence hunters). A comparison with compensation programs for other projects and other resource development activities shall be provided | Volume III, Sections 5.5, 5.6.1 and 8.1 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.6.1.1 Cont.** | (b) Any compensation arrangements for local, public or private providers whose burdens and costs are increased or who incur losses as a result of the Project | Volume III, Sections 5.5, 5.6.1 and 8.1 | |
| **4.6.2** | **Emergency Response/Contingency Plans**<br>Describe its environmental management plans and Safety, Health and Environmental Emergency Response Plans (SHERP) to provide an overall perspective on how potentially adverse environmental effects shall be managed over time.<br>It shall show how the Project is consistent with sustainable development efforts in the region. Appropriate government agencies, aboriginal groups and local communities shall be involved in the development of the plans. | Volume IA, Sections 3.4.1.3 and 4.11 | |
| **4.6.3** | **Rehabilitation**<br>A plan of proposed rehabilitation measures is required with an explanation of how the measures shall reduce or eliminate various negative effects during construction, operation and maintenance. The plan shall discuss the rationale, objectives and procedures for proposed rehabilitation measures.<br>Restoration of areas disturbed by temporary activities such as access roads, off-loading facilities, construction camp(s), land clearing prior to inundation, etc., shall be detailed. A schedule for carrying out the work (seasonal requirements, etc.) shall be included in the plan. | Volume IA, Section 4.6.1 | |
| **4.6.4** | **Monitoring and Follow-up Programs**<br>Describe the environmental and socio-economic monitoring and follow-up programs to be incorporated into construction, operation and modification activities.<br>Monitoring programs will ensure that the Project is implemented as proposed, that the mitigation or compensation measures proposed to minimize the Project's environmental effects are effectively implemented, and that the conditions set at the time of the Project's authorization and the requirements pertaining to the relevant laws and regulations are met.<br>The follow-up program will verify the accuracy of the predictions made in the assessment of the effects as well as the effectiveness of the mitigation measures. | Volume IA, Section 9.10; Volume IIA, Sections 3.12 and 4.17; Volume IIB, Sections 5.16 and 7.3; Volume III, Sections 3.9, 4.9, 5.7, 6.7 and 8.3 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.6.4 Cont.** | The proposed approach for monitoring shall be described and shall include: | Volume IA, Section 9.10; Volume IIB, Section 7.3; Volume III, Section 8.3 | |
| | (a) The objectives of the monitoring program and a schedule for collection of the monitoring data required to meet these objectives | | |
| | (b) The sampling design, methodology, selection of the subjects and indicators to be monitored, and their selection criteria | | |
| | (c) The frequency, duration and geographic extent of monitoring, and justification for the extent | | |
| | (d) The application of the principles of Adaptive Environmental Management | | |
| | (e) Reporting and response mechanisms, including criteria for initiating a response and procedures | | |
| | (f) The approaches and methods for monitoring the cumulative effects of the Project with existing and future developments in the Project area | | |
| | (g) Integration of monitoring results with other aspects of the Project including adjustments to operating procedures and refinement of mitigation measures | | |
| | (h) Experience gained from previous and existing monitoring programs | | |
| | (i) The advisory roles of independent experts, government agencies, communities, holders of Aboriginal knowledge and renewal resource users | | |
| | (j) Procedures to assess the effectiveness of monitoring and follow-up programs, mitigation measures and recovery programs for areas disturbed by the Project | | |
| | (k) A communications plan to describe the results of monitoring to interested parties | | |
| | The Proponent shall explain how the public will continue to be involved, including participation in the design and implementation of environmental management and monitoring and follow-up programs. | | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
|---|---|---|---|
| **4.7** | **RESIDUAL EFFECTS & DETERMINATION OF SIGNIFICANCE**<br>List and contain a detailed discussion and evaluation of residual effects, which shall be defined in terms of the parameters outlined in section 4.5.1 and 4.5.3.<br>Contain a concise statement and rationale for the overall conclusion relating to the significance of the residual adverse environmental effects. The EIS will, for ease of review, include a matrix of the environmental effects, proposed mitigation and residual adverse effects. | Volume IIA, Sections 3.10, 4.15 and Appendix IIA-A; Volume IIB, Sections 5.14, 7.2 and Appendix IIB-A; Volume III, Sections 3.8, 4.8, 5.6, 6.6 and 8.2 and Appendix III-B | |
| **4.8** | **CONSULTATION WITH ABORIGINAL GROUPS AND COMMUNITIES**<br>In addition to the specific references to assessing potential effects of the Project on aboriginal governments, groups and communities in other parts of the Guidelines, the Proponent is to present aboriginal governments, group and community interests and concerns including those received in response to the Registration in a separate chapter of the EIS. | Volume IA, Chapter 8; Volume IB, Appendix IB-I | |
| | The Aboriginal groups and communities to be considered include, in Newfoundland and Labrador, the Innu Nation, the Labrador Métis Nation and the Nunatsiavut Government and, in Quebec, the Innu communities of Uashat Mak Mani-Utenam, Ekuanitshit, Nutaskuan, Unamen Shipu, Pakua Shipi and Matimekush-Lake John | | |
| | (a) Familiarizing the group with the Project and its potential environmental effects; | | |
| | (b) Identifying any issues of concern regarding potential environmental effects of the Project | | |
| | (c) Identifying what actions the Proponent is proposing to take to address each issue identified, as appropriate | | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.9** | **PUBLIC PARTICIPATION**<br>Public consultations/meetings are required of the Proponent to present the proposal and to record interests and concerns including those received in response to the Registration. These concerns shall be addressed in a separate chapter of the EIS. Protocol for this meeting shall comply with the legislation and with divisional policy included in Appendix B of the EIS Final Guidelines.<br>As a minimum, public consultation meetings must be held in the communities of Happy Valley-Goose Bay, Northwest River, Mud Lake, Rigolet, Churchill Falls, and in the region of Labrador West and St. John's. | Volume IA, Chapter 7;<br>Volume IB, Appendix IB-I | |
| **4.10** | **ENVIRONMENTAL PROTECTION PLAN**<br>Prepare an Environmental Protection Plan (EPP) for each main construction site and have them approved by the regulatory authorities before starting construction. They shall be stand-alone documents that shall target the site foreperson, the Proponent's occupational health, safety and environmental compliance staff, as well as government environmental surveillance staff. The EPPs shall address construction, operation and modification phases of the Project. A proposed Table of Contents and an annotated outline for the EPPs is to be presented in the EIS which shall address the major construction and operational activities, permit requirements, mitigation measures and contingency planning as follows: | Volume IA, Section 4.8.2,<br>Volume IB, Appendix IB-G | |
| | (a) Proponent's environmental policies | | |
| | (b) Objectives and voluntary commitments | | |
| | (c) Relevant human resource management plan | | |
| | (d) Environmental compliance monitoring | | |
| | (e) Environmental protection measures | | |
| | (f) Mitigation measures | | |
| | (g) Permit application and approval planning | | |
| | (h) Contingency planning for accidental and unplanned events | | |
| | (i) Statutory requirements | | |
| | (j) Revision procedures and contact lists | | |
| **4.11** | **REFERENCES CITED**<br>All references used during the preparation of the EIS shall be cited in the text and listed in this section. | Volume IA, Chapter 11;<br>Volume IIA, end of volume;<br>Volume IIB, Chapter 8;<br>Volume III, Chapter 9 | |

| Final Guideline Section | Final EIS Guideline Requirements | Where Addressed in EIS | Relevant Component Studies (Full References Provided Following the Table) |
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| **4.12** | **PERSONNEL**<br>The names and qualifications of all key professionals responsible for preparing the EIS and supporting documentation shall be included. | Volume IA, Authentication | |
| **4.13** | **COPIES OF REPORTS**<br>Prepare a complete and detailed bibliography of all studies used to prepare the EIS. Supporting documentation shall be referenced in the EIS and submitted in separate volumes or attached as an Appendix to the EIS. | Volumes I, II and III; Volume IA, Preface; Volume IB, Appendix IB-F | |

**References:**

**List of Relevant Component Studies by Topic as included in the Augmented Table of Concordance**

**Air Quality**

Greenhouse Gas Fluxes. Environnement Illimité Inc. and Environnement d'Hydro-Québec. 2007.

Greenhouse Gas Emissions Study. Minaskuat Inc. 2008.

**Fish and Fish Habitat**

Habitat Quantification. AMEC Earth and Environmental and Sikumiut Environmental Management Limited. 2007.

2006 Fish and Fish Habitat Baseline Study: Catch-based Utilization Index Validation and Additional Habitat Surveys. AMEC Earth and Environmental Limited. 2007.

Aquatic Vegetation Study. AMEC Earth and Environmental Limited. 2008.

Lower Churchill River Fish Consumption and Angling Survey. Minaskuat Inc. 2009.

Seal Abundance and Distribution. Sikumiut Environmental Management Ltd. 2007.

HADD Determination Methodology (Churchill River, Labrador). AMEC Earth and Environmental. 2001.

Biological Study of the Goose Bay Estuary. JWEL (Jacques Whitford Environment Limited). 2001.

Primary Productivity and Plankton Biomass. JWEL (Jacques Whitford Environment Limited). 1999.

Fish Migration and Habitat Use of the Churchill River. JWEL (Jacques Whitford Environment Limited). 2000.

Benthic Invertebrate Study of the Churchill River. JWEL (Jacques Whitford Environment Limited). 1999.

Fish and Fish Habitat. AMEC Earth and Environmental. 1999.

**Water Quality and Quantity**

Water and Sediment Quality in the Churchill River. Minaskuat Limited Partnership. 2007.

Water and Sediment Modelling in the Lower Churchill River. Minaskuat Inc. 2008.

Sedimentation and Morphodynamics Study. Northwest Hydraulic Consultants. 2008.

Water & Sediment Quality of the Churchill River. JWEL (Jacques Whitford Environment Limited). 1998.

Water Quality and Chlorophyll Study. JWEL (Jacques Whitford Environment Limited). 2001.

**Hydrology**

Hydraulic Modelling of River. Hatch. 2008.

Ice Dynamics of the Lower Churchill River. Hatch 2007; Further Clarification and Updating of the 2007 Ice Dynamics Report. Hatch. 2008.

Salt Water Intrusion 3D Model Study. Hatch 2008; Salt Water Intrusion 3D Model Study, Addendum No. 1. Hatch. 2008.

Sediment Plume Analysis. Hatch. 2008.

**Mercury**

Calculation of Anticipated Consumption Advisory Levels of Fish in the Lower Churchill Area. Minaskuat Inc. 2008.

Assessment of the Potential for Increased Mercury Concentrations. Tetra Tech Inc. 2008.

Existing Mercury Concentrations in Osprey and Ecological Risk Assessment. Minaskuat Inc. 2008.

Statistical Analysis of Mercury Data from Churchill Falls (Labrador) Corporation's Reservoirs. Jacques Whitford. 2006.

Freshwater Fish Mercury Sampling, Churchill River, Labrador. AMEC Earth and Environmental. 2000.

**Large Mammals**

Moose (*Alces alces*). Interim Report. Minaskuat Inc. 2009.

Caribou (*Rangifer tarandus* caribou). Westworth Associates Environmental Ltd on behalf of Minaskuat Inc. 2009.

Black bear (Ursus americanus) Study in the Lower Churchill River Watershed. Interim Report. Minaskuat Inc. 2009.

Wildlife Habitat Associations in the Lower Churchill River Valley. Minaskuat Inc. 2008.

Moose and the Proposed Churchill River Power Project: A Literature Review. Conor Pacific Environmental Technologies Inc. and Westworth Associates Environmental Ltd. 2000.

Churchill River Power Project 1999 Environmental Studies: Winter Moose Survey. Northland Associates (1995) Ltd. and JWEL (Jacques Whitford Environment Limited). 2000.

**Furbearers**

Furbearer Winter Habitat Use. Sikumiut Environmental Management Ltd. 2007

Inventory of Beaver Colonies in the Lower Churchill River Valley. Minaskuat Inc. 2008.

Wildlife Habitat Associations in the Lower Churchill River Valley. Minaskuat Inc. 2008.

**Avifauna**

Forest Songbird Surveys. Minaskuat Inc. 2008.

Waterfowl in the Lower Churchill River Area. LGL Limited. 2008.

Inventory of Osprey, Bald Eagle and Golden Eagle Nest Sites in the Lower Churchill River Valley. Minaskuat Inc. 2008.

Churchill River Power Project Waterfowl. AGRA Earth and Environmental and Harlequin Enterprises. 1999.

Osprey and Bald Eagle Study. JWEL (Jacques Whitford Environment Limited). 1999.

**Species at Risk**

Rare Plant Survey in the Lower Churchill River Valley. Minaskuat Inc. 2008.

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**Timber Resources**

Reservoir Preparation Workshop. Duerden and Keane Environmental Inc. 2007.

Reservoir Preparation Report. Sikumiut Environmental Management Limited. 2008.

Forest Inventory. Sikumiut Environmental Management Limited. 2009.

**Socio-economics**

Socio-economic Environmental Baseline Report. Minaskuat Inc. 2008.

Forecasted Labour Resource Requirements by National Occupation Classification for Generation Projects. Nalcor Energy. 2008.

Community Health Study. Aura Environmental Research and Consulting Ltd. 2008.

Current Land and Resource Use in the Lower Churchill River Area. Minaskuat Inc. 2009.

**Cultural Heritage Resources**

2006 Historic Resources Overview and Impact Assessment of Muskrat Falls Generating Facility and Reservoir and the Muskrat Falls to Gull Island Transmission Line Corridor. Minaskuat Inc. 2008.

Sea Level History and Geomorphology of the Churchill River and Strait of Belle Isle. JWEL (Jacques Whitford Environment Limited). 1998.

Historic Resources Investigations – Churchill River Power Project

- Historical Resources (Labrador Study). JWEL (Jacques Whitford Environment Limited) and IED Enterprises Inc. 2001.
- Historic Resources Overview Assessment (Labrador Component). JWEL and INEN (Jacques Whitford Environment Limited and Innu Environmental). 2000.
- Historic Resources Potential Mapping, Volumes I and II. JWEL (Jacques Whitford Environment Limited) and Innu Environmental. 2000.

- Churchill River Power Project Historic Resources Overview Assessment 1998-2000 Volume 1 Interpretation Summary and Recommendations. JWEL (Jacques Whitford Environment Limited) and Innu Environmental. 2001.

**Other**

Herpetile Surveys in the Lower Churchill River Valley. Minaskuat Inc. 2008.

Project Area Ecological Land Classification. Minaskuat Inc. 2008.

Regional Ecological Land Classification. Minaskuat Inc. 2008.

Wetland Assessment and Evaluation. Minaskuat Inc. 2008.

Interconnecting Transmission Line Constraint Mapping Atlas. AMEC Earth and Environmental Limited. 2008b. [also provided in the EIS as Volume IB, Appendix IB-B].

*An annotated bibliography is provided in Volume IB, Appendix IB-F.*