APPENDIX B

Part 4 Community Baseline Report, Community Baseline Amendment Report and EIS Integration Summary Table: Horse Lake First Nation

~~*The Horse Lake First Nation Community Baseline Report and EIS Integration Summary Table will be submitted at a later date in the environmental assessment process. The information received from the report will be reviewed against applicable sections of the Environmental Impact Statement and additional information will be provided as needed.*~~

BC Hydro received the Horse Lake First Nation Community Baseline report entitled "Horse Lake Community Baseline Profile" on June 18, 2013, after BC Hydro had submitted the EIS to the British Columbia Environmental Assessment Office and the Canadian Environmental Assessment Agency (January 25, 2013). "Appendix 1: Potential Site C Effect – Horse Lake First Nation Interest Interactions" has not yet been provided to BC Hydro. BC Hydro has inquired with Horse Lake First Nation and received confirmation from the First Nation that the appendix will not be available and references to it should be disregarded.

The Community Baseline Report, Community Baseline Amendment Report and EIS Integration Summary Table: Horse Lake First Nation are included here.

Please see Volume 3 Appendix B Part 1 Approach to Gathering and Integrating Community Baseline Information Rev 1 July 19, 2013 for additional information regarding the integration of information received after the inclusion of new information into the EIS was completed.

SITE C CLEAN ENERGY PROJECT

HORSE LAKE FIRST NATION COMMUNITY BASELINE PROFILE

Prepared for:

BC Hydro Power and Authority

<contact information removed>

Prepared by the Horse Lake First Nation:

<contact information removed>

HORSE LAKE FIRST NATION

COMMUNITY BASELINE PROFILE

Prepared for the Horse Lake First Nation and BC Hydro in Respect to the Proposed Site C Clean Energy Project

April 2013

Prepared by:

Jayme Savard

Jenny Geernaert

EXECUTIVE SUMMARY

BC Hydro (BCH) is preparing its Environmental Impact Statement (EIS) and Socio-Economic Impact Assessment (SIA) for the Site C Clean Energy Project (the Project); a proposed bank to bank hydro–electric facility on the Peace River near Fort St. John, British Columbia (BC). The Project will be subject to environmental review pursuant to the *Canadian Environmental Assessment Act* and *BC Environmental Assessment Act* and its scope and range of potential effects will trigger consultation and accommodation duties of the Crown pursuant to common and constitutional law principles and directives.

The Horse Lake First Nation (HLFN) has prepared this "Community Baseline Profile" to facilitate the assessment of the Project's potential socio–economic effects and impacts on the HLFN community. The HLFN is a host community with the Project falling within lands historically and currently utilized by the HLFN community. The Project also has the potential to effect and impact resources relied on upon by the HLFN community and HLFN interests. The HLFN has a wide range of environmental, cultural, sustenance, socio-economic, socio-cultural and other interests in relation to the Peace River, the Peace River valley and lands adjacent. The HLFN has clearly defined treaty rights which its community members have and continue to exercise in relation to fish, wildlife, forests, waters in and along the Peace River and Peace River Basin.

Hydro–electric facilities such as the proposed Project can result in an array of potential effects that can arise during its construction and ongoing operational phase. Within this report, the HLFN has considered the potential upstream and downstream effects and impacts of the Project and how these effects may intersect and converge with key HLFN interests and potentially impact its rights and interests. The range of potential upstream and downstream Project effects (along with the potential effects of supporting infrastructure) was systematically reviewed and considered against the range of HLFN interests such as hunting, fishing, trapping, gathering, overnight and cultural sites, culturally significant areas and the socio–economic and cultural interests that the HLFN has vested in the land and hosting eco-system itself. Going forward, the HLFN will work to engage BC Hydro, regulators and Crown agencies in the environmental review of the Project to address the issues and concerns highlighted in this report and that may arise in the upcoming EA review. The baseline report was based on primary research undertaken with HLFN council members, staff and community members and secondary sources such as the HLFN Ethno-Historical Review (2011) and the HLFN Traditional Land Use Survey (2011) and other relevant documents related to the impacts of hydro-electric development, the impacts of the Peace River hydro-electric system on the Peace River valued components and the state of the hosting Peace River and Peace River Basin.

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1 INTRODUCTION

1.1 Objectives

1.1.1 Community Baseline Profile Purpose, Objectives and Status

BC Hydro is advancing the Site C Clean Energy Project (the Project) and it is anticipated that the Project's Environmental Impact Statement (EIS) will be submitted to regulators by the winter of 2013. In addition to assessing the potential environmental or bio-physical effects of the Project, the EIS must also assess the range of potential socio – economic effects that may result from the construction and ongoing operation of the hydro – electric facility. The proposed Project is located within lands of the Horse Lake First Nation (HLFN) and may potentially affect lands and resources that the HLFN have and continue to rely upon for a range of sustenance, spiritual, socio–economic and socio–cultural purposes.

The purpose of this report is to scope and describe the potential interactions of potential Project effects with the interests of the HLFN, its families and community members. The specific objectives of the report are to:

- Conduct a review of BC Hydro's founding EIS documents and reports to determine the potential range of the Project's effects stemming from its construction and ongoing operation
- Prepare a baseline community profile of the HLFN as a host nation that set's the various interests and values that HLFN have and hold as a host nation
- Undertake a preliminary scoping of the potential range of potential project effects and how these may interact with the range of HLFN community interests
- Develop a data-base or listing of potential interactions to support BC Hydro's assessment of potential socio – economic effects arising as a result of the construction and operation of the Project
- Focus and support subsequent engagement efforts between the HLFN, BC Hydro and project regulators in relation to the Project
- Function as an assessment / communication tool that will better position the HLFN council and community to understand the potential array of potential Project effects and support HLFN's EIS review efforts once the EIS is formally submitted to regulators

The HLFN highlights the fact that this report is not intended to function as a socio – economic impact assessment of the Project. BC Hydro is charged with this task as a proponent, thus this report is intended to inform BC Hydro's assessment of socio – economic effects and the drafting of its EIS.

In engaging in the exercise, the parties reached a mutual understanding that BC Hydro is not bound to accept the views and findings reached by the HLFN within this report. Likewise, the HLFN is not bound to accept the methodology, eventual findings and conclusions reached within BC Hydro's Socio – Economic impact Assessment (SIA) and EIS. In reviewing each other's document, that parties have agreed to provide comments, discuss their views and document areas of both consensus and disagreement.

In addition, this report is one of several submissions that has and that will be submitted by the HLFN through the engagement, environmental review, regulatory review and consultation process. It has been prepared in the absence of a completed EIS that describes the full array of potential Project effects and prior to Crown agencies and the Joint Review Panel issuing their findings and reports in respect to the Project. Thus this report should not and cannot be taken as constituting a formal review of the Project's impacts by the HLFN and should not and cannot be taken as its final view in respect to the Project. Additional legal, technical and policy review work will need to be undertaken by the HLFN once BC Hydro formally submits its project application, during the environmental review process and any hearings conducted by the Joint Review Panel.

1.1.2 Report Structure

The report tracks the preferred methodology set out by BC Hydro and Golder and Associates and addresses the proponent's requested information requirements, with some modifications. In short, the report initially sets out and summarizes the cultural and historical setting of the Horse Lake First Nation, the range of anticipated potential effects that will arise as a result of the construction and operation of the Project, baseline community conditions for the HLFN as a host nation and the potential areas of interaction between potential Project effects and HLFN interests.

1.1.3 Report Structure in More Detail

The following baseline report is specifically organized in the following manner:

Horse Lake First Nation Background: This section sets out the scope and breadth of HLFN's historic and current land and resource use and occupancy patterns within the Peace River Basin and along the Peace River valley itself. **The HLFN is a multi – national group with its roots in the Cree, Beaver and Iroquois cultures and Nations.** The report considers some of the key factors and evidence that connects the present day HLFN and HLFN families with their ancestors who used and occupied areas through the Peace Basin and along the Peace River valley. In addition, information related to treaty signing, the establishment of HLFN reserves and the status of unresolved claims in relation to these lands are provided. Much of the information for this section is attributable to the HLFN 2012 Ethno – Historical Review conducted by Dr. Dorothy Kennedy and Randy Bouchard. The HLFN's current governance structure is set out along with key land use principles that guide HLFN interaction, engagement, consultation and negotiation actions with proponents and the Crown.

State of the Hosting Environment, Ecological Change and Stressors Effecting HLFN Utilization of Lands and Waters

Living with ecological and land use change has been a fact of the HLFN's existence and survival and some focus is provided to key ecological conditions and stressors that have acted and continue to constrain HLFN land and resource utilization. Key studies such as the "Northern River Basin Study" (NRBS) of the 1990's and a more recent review of Peace River eco-system conducted for the Mighty Peace Watershed Alliance were considered. These reports identified and assessed key stressors impacting Peace River water quality, quantity, flows and aquatic system health. These stressors are important to acknowledge and consider given that these stressors have and continue to place limitations on the HLFN's ability to rely on, and utilize the Peace River and its tributaries. HLFN's current day-to-day land and resource utilization patterns are a function of such constraints and stressors.

Listing and Statement of Potential Range of Relevant Potential Project Effects:

Within this section of the report, the HLFN relied on available information from various

sources which identify and categorize the potential range of effects and impacts that may arise as a result of the construction and ongoing operation of the Project. Identification of potential project effects was necessary to assist in determining potential interactions with key HLFN interests. Such potential effects and impacts can be grouped under or categorized into the following three distinct areas:

a) The Ongoing Operational Effects of the Existing Peace River Facilities

The HLFN opted to include a specific section in the report that considers the ongoing downstream effects and impacts that result from the operation from BC Hydro's existing Peace River facilities. The Site C Project will become part and parcel of this integrated operating system and its operational parameters and its operations will be driven by and must be consistent with the upstream facilities. Within this chapter, the HLFN is not providing consideration to the footprint and more immediate effects that resulted from the construction from WAC Bennett and Peace Canyon Dams nor the decision to build those original projects. Rather, HLFN is focusing on those set of ongoing effects that result from the year to year, month to month, week to week and day to day operations of the Peace River integrated system, of which Site C will become a part of.

BC Hydro's consideration, characterization and documentation of such ongoing operational effects and impacts occurred within the 1995 "Electric Systems Operation Review". The Peace River "Water Use Plan", approved in 2007, was designed to consider and address some of the same operational effects arising from the ongoing operation of the Peace River facilities, to confirm the preferred operational parameters of the Peace River facilities and to propose a series of potential mitigation measures to address some of these effects and impacts. Consideration of these ongoing operational effects and impacts within BC Hydro's Site C Environmental Impact Statement (ESI) and Socio – Economic Impact Assessment (SIA) may be significant and necessary given:

- that the *BC Environmental Assessm ent Act* and the *Canadian Environmental Assessment Act* requires consideration of the potential effects resulting from both the "construction" and "operation" of a proposed Project;

- that the Environmental Impact Statement (EIS) Guidelines prepared and approved for the Site C Energy Clean Energy Project considers both the potential effects arising from the "construction" and "operation" of the Project and the operational system that is part of;

- that environmental assessment as a science and practice, makes an assessment of the current baseline conditions. In this case, a relevant factor that determines the current bio – physical environment and state of ecology within and adjacent to the Peace River are the downstream flows governed by the upstream hydro – electric

facilities (and the operational decisions made on basin wide basis and a province wide basis which determine these flows);

- that an assessment of the potential cumulative effects is required within the context of this environmental review of the Site C Project and the scope of that review should include the effects of current projects;

- that the proposed Site C Project will be positioned between the existing Peace River facilities and the recently approved Dunvegan Hydroelectric Project and that an investigation of the potential meshing, aggregation and conflation of effects will need to be considered within the cumulative impact assessment for the Site C Project;

- that the Site C Project and its operations will require authorizations from the provincial Water Comptroller whereby the existing "Peace Water Use Plan" may need to be opened up and amended to include the operations of the Site C Project, or that a new parallel Water Use Plan will need to be prepared to govern Site C's operations and operational parameters, and

- that through the engagement process (the pre – application phase) BC Hydro has communicated to HLFN and other parties that the potential downstream incremental effects of Site C Project, as a run of the river project, will be indistinguishable from current Peace River flows. This is due to in part, to the reality that flows through the Site C Project will ultimately be determined and governed by flows though the WAC Bennett Dam. It is due to this reasoning, that BC Hydro has opted to not undertake any (or very limited level of) biophysical or downstream baseline studies downstream of the BC / Alberta border. If BC Hydro is correct, it follows that operations and operational effects of the WAC Bennett and Peace Canyon facilities will be that of the Site C Project and the operations and effects of the Site C Project will be that of WAC Bennett and Peace Canyon dams. Thus an assessment of the Site C Project's effects necessitates an assessment and consideration of ongoing operational effects from the WAC Bennett and Peace Canyon dams.

It is acknowledged that BC Hydro may not agree with the above views and reasoning, However, the HLFN is required to consider, identify and notify BC Hydro and other parties of Its views of what the potential effects and impacts of the Project will be on its rights and interests. Given that HLFN bears some responsibility for these actions as being part of the review and consultation process, it felt obliged to consider all of the relevant potential effects stemming from the construction and operation of the Site C Project. It is open and interesting in engaging with BC Hydro regarding the reasoning and views presented in this baseline report.

b) The Potential Incremental and Operational Effects of Proposed Site C Clean Energy Project:

The core purpose of the community baseline exercise is to undertake a scoping and initial identification of the potential interactions and intersections between the range of potential project effects and the range of HLFN interests. This proved challenging given that the report was prepared in the pre – application phase of the EA review and that HLFN was not in possession of a comprehensive description of predicted and categorized effects. HLFN will have access to such information once BC Hydro submits its EIS / Project application, as Crown agencies and other interested parties complete their assessment and file their comments and once the Joint Review Panel issues its Project Report to government decision makers. Thus in this section that HLFN attempted to predict potential project effects that are known (and documented) to stem from the construction and operation of hydro projects in northern British Columbia and western Canada.

c) Cumulative Impacts and Effects of Site C and the Approved Dunvegan Hydro Project

The Site C project will be situated between the upstream Peace River facilities and the planned and approved Dunvegan Hydro – Electric project. As an approved project, its effects will be considered in conjunction with the existing effects of existing Peace River facilities and the potential incremental effects of Site C. In HLFN's mind, there may be a meshing or conflation of effects within a certain zone along the Peace River resulting from the operation of WAC Bennett and Peace Canyon facilities, the approved Dunvegan project and proposed Site C Project.

d) First Nations Key Interest Areas

The balance of the report then proceeds to deal with key community interests. Emphasis is placed in the "Historic and Current Use of Lands and Resources", given that this appears be the one area where potential Project effects and the HLFN's rights and interests most clearly intersect. Other areas provided consideration include Community Demographics, Services and Infrastructure, Economics and Community Health, Culture and Wellness.

2.0 Scope and Methods

2.1 Regulatory and Policy Setting

In February 2012, the Government of Canada and the Government of BC came to an agreement on the conduct of a co-operative environmental to address the requirements of the *BC Environmental Assessment Act* and the *Canadian Environmental Assessment Act*.

The Project triggers a review under both acts and both contain provisions for the inclusion of First Nations in the EA review process and gathering information regarding potential effects on First Nations use of lands and resources and traditional knowledge held in relation to the hosting environment.

At the outset of this exercise, BC Hydro developed a list of information requirements – a listing of the information that it wished First Nations to consider and include in their community baseline reports. BC Hydro created a list of requirements that it believed, at the time, would meet the information requirements of both environmental assessment acts and the eventual information requirements in the EIS Guidelines themselves.

2.2 Specific Information Requirements

The specific information requirements to be considered within this baseline reports as agreed to by BC Hydro and the HLFN (for this specific exercise) include:

Categories	**Topics**
Community Background	Ethnographic, historic, linguistic background
Governance	Government structure / system, community planning
Historical and Current Use of Lands and Resources	Hunting, Fishing, Trapping, Earth Material Gathering, Special Places, Spiritual, Cultural Information
Community Demographics, Services And Infrastructure	Population, Housing, Infrastructure, Transportation

Categories	**Topics**
Community Demographics, Services And Infrastructure	Health and Social Services
	Emergency Services
	Childcare, Educations and Training Services

Economic	Labor Market
	Community Capacity
	Education and Skills
	Local business
	Regional Economic Development
Community Health, Culture and Wellness	Cultural Values, Transmission
	Community Consumption of traditional foods
	Contaminants Concerns
	Ecological Impacts and Cultural Loss

2.3 Spatial Boundaries

As BC Hydro's has yet to file its EIS, this baseline community report has been prepared without guidance in respect to the geographic bounds of a Local Study Area (LSA) or Regional Study Area (RSA). Notwithstanding, the Project can be compartmented in sensible geographic components and effect zones:

Project Component	**Associated Areas**
Upstream	Project impoundment area
	Areas between Site C and Peace Canyon
	Areas adjacent to the reservoir
	Tributaries from Site C and above and areas adjacent

Project Component	Associated Areas
Downstream	Immediate downstream area to Beatton River Confluence / BC – Alberta Border
Downstream	BC – Alberta border to Many Islands Many Islands to Dunvegan Dunvegan to Peace River Peace River to Peace / Notikewin confluence Downstream Peace River tributaries Areas immediately adjacent to Peace River and tributaries
Ancillary Facilities	Borrow Pit at Peace Reach (east side) Borrow Pit adjacent to dam site (south side) Access Road and Rail works (south side) Transmission Line Corridor Highway 29 Realignment
Other	Other areas within the HLFN's Traditional Territory that HLFN finds relevant to the Construction and operation of the project

2.4 Temporal Boundaries

Temporally, the First Nations Community Assessment will focus on making predictions of potential effects that are likely to occur during the construction and the ongoing operational phases of the Project. Due to the long-term nature of the operational phase of the Project, the current scope does not consider the potential effects associated with the decommissioning of the Project. In addition, the HLFN has not considered the immediate and initial historical effects and impacts arising from the construction of the WAC Bennett

and Peace Canyon dams. However, the present and ongoing operational effects of BC Hydro's existing Peace River facilities are considered for reasons noted within prior sections of this report.

2.5 Scoping and Intersection of Potential Effects and Interests

BC Hydro anticipates that it will submit its Project application / environmental impact statement in the winter of 2013. Thus as of yet, there is no comprehensive document setting out the potential range of potential effects or an assessment of the significance of those effects. Thus to determine how potential project effects and First Nations interests may potentially occur, the HLFN had to rely on the Project Description that has been filed with regulators, summaries of studies produced during BC Hydro's Phase 1 and Phase 2 consultation periods and documented effects that arise as a result of hydro – electric project construction and operation in western Canada.

There are two types of effects that are germane to this analysis. First, is that range of incremental effects and more immediate change that may result and stem from the construction of the Project and its associated works. The second are those ongoing effects that may arise from the operation of the Project and the flows that this facility will manage and transmit. The Project will receive flows and be operated as part of BC Hydro's Peace River integrated hydro – electric system that will result in an attendant range of ongoing operational impacts and change in downstream areas. In short, Site C's operational effects will become one and the same as that of the WAC Bennett and Peace Canyon dams. The converse also holds true; that the ongoing operational effects of the WAC Bennett and Peace Canyon dams will be that of Site C.

In setting out list of impacts and changes in the latter part of the document, the HLFN is not asserting that such impacts and changes will occur, however, it is using this list of potential impacts and changes as a higher level filter to determine potential areas of interaction between the main project components and key HLFN interests as a tool to assist in the identification of potential socio – economic / cultural effects on the HLFN.

Thus in working to identify potential interactions between potential project effects and the interests of the HLFN, it developed a matrix which included a list of approximately 100 potential effects (e.g. loss of fish habitat in upstream tributaries, total gas pressure below the dam when spillway in operation, change in ice flow regime downstream) and matched those against specific HLFN key land and resource use sub-values and interests such as "hunting", "fishing," "gathering", "culturally significant areas", "socio – cultural", "community health and well-being", "ecological / treaty interests" and "cumulative effects of the Dunvegan Project". Where potential interactions were determined to potentially arise or exist, these were marked and described in tracking matrix. **(Appendix 1: Tracking Matrix)**

2.6 Methods

This report is based on information and data collected from both primary sources based in the HLFN community and secondary sources based on written and publically available sources of information. **HLFN community members Jayme Savard and Jenny Geernaert conducted face to face interviews with key HLFN interview participants.**

2.6.1 Secondary Data Collection and Information Sources

The HLFN relied upon the following primary and secondary sources including:

<u>Horse Lake First Nation Cultural and Land Use Information</u>

- The 2011 Horse Lake First Nation Traditional Land Use Survey (SECONDARY)
- The 2011 Horse Lake First Nation Ethno – History Report (Bouchard and Kennedy) (SECONDARY)
- The 2012 HLFN Country Food Harvest Survey (PRIMARY)

<u>Historical Resource Utilization and Ecological Changes in the Peace River Basin</u>

- A Report of Wisdom Synthesized from the Traditional Knowledge Component Studies (Synthesis Report #12) Northern River Basins Study: 1996 (SECONDARY)
- Telling it to the Judge: Taking Native History to Court – Dr. Aurthur Ray: 2011 (SECONDARY)

<u>Information on the Site C Clean Energy Project and Potential Effects</u>

- The Site C Project Description (SECONDARY)
- Site C Environmental Assessment Guidelines (SECONDARY)
- Baseline and biophysical reports prepared in support of Site C by BC Hydro (SECONDARY)

Effects Arising from Relevant Hydro – Electric Project Developments

- Report of Joint Review Panel: Dunvegan Hydro Electric Project (2008) (SECONDARY)
- The Generic Environmental Impacts Identified From Water Impoundment Projects in the Western Canadian Plains Region (Sadar and Dirschl': 1996) (SECONDARY)
- A Holistic Model for the Selection of Environmental Assessment Indicators to Assess the Impact of Industrialization on Indigenous Health (Kryzanowski and McIntyre: 2011) (SECONDARY)
- Annihilation of both place and sense of place: The experience of the Cheslatta T'en Canadian First Nation within the context of large scale development projects (Windsor and MeVey:2006) (SECONDARY)
- Health Determinants in Canadian northern impact assessment (Bronson and Noble: 2006) (SECONDARY)

Information on the Operational Effects of BC Hydro Peace River Operations

- The Electric Systems Operation Review (1995) (SECONDARY)
- The Peace Water Use Plan (2007) (SECONDARY)

State of Environment of the Peace River Basin

- Aquatic System Health of the Peace Watershed Project – CharettePellPosente Environmental Corp. (2012) (SECONDARY)
- Northern River Basin Study Report (1996) (SECONDARY)

Community Demographic, Services and Infrastructure

- **Interview notes of Ms. Jenny Geernaert, HLFN Community Researcher (2012)**

2.6.2 Primary Data Collection

Primary data could also be considered as having coming from the HLFN 2011 Traditional Land Use Survey and the HLFN 2012 Country Food Harvest Survey given the number of direct interviews that occurred with community members. With that said, these documents could also be characterized as a secondary data source. Additional data was gathered through one–on–one interviews, community workshops and ad hoc interviews on specific matters.

2.6.3 Interviews

Interviews were conducted by Ms. Jenny Geernaert, who was retained by the HLFN as a community researcher. **Through July and August 2012, she conducted one on one interviews with key Horse Lake community contacts and stakeholders**.

2.6.4 Community Workshops

A draft version of this report was tabled with the HLFN Administration and Chief and Council on May 8, 2013 and with HLFN community members on May 9, 2013. The input and comments received during these session resulted in revisions and amendments that were incorporated into the current final version of this report transmitted to BC Hydro on June 4, 2013.

2.6.5 Input from Consultation

During the revision period of this document, comments, suggested revisions, additional information provided on the following topics and subject areas was addressed:

- Key valued ecosystem components for the Horse Lake community
- Clarification of key community interests
- The culture and history of the HLFN People
- Views on the nature of HLFN Governance
- Hunting practices and observations of ungulate movements to and from the Peace River

- Impacts currently experienced on the Peace River by community hunters and fishers
- Critical community use areas
- Community population statistics and demographics
- Community program priorities and new initiatives
- Ensuring effects / impacts are characterized as “potential” impacts and effects in the pre – application phase of the EA review
- Clarification of community harvest calculations and measurements
- Others that may be determined

3.0First Nations Background

3.1 First Nation Territory

As is the case with all First Nations who have entered into treaties with the Crown, there are a number of relevant geographic reference points, concepts of boundaries that need to be taken into account when discussing the concept of “traditional lands” or “traditional territory”. The following sub – sections describe these concepts and why they are relevant to the HLFN and the Site C Project:

3.1.2 Ancient and Historical Lands

From the HLFN’s viewpoint, the first important concept of territory is related to the historical and ancient homeland of the Beaver, Cree and potentially the Iroquois peoples. Given the predominate influence of the Beaver and Cree cultures within the HLFN, the HLFN’s ancient and historical lands can be held to include those areas that were historically occupied and utilized by the Beaver, Cree and potentially the Iroquois people through North America.

The HLFN take the view that prior to and at time of contact, the Beaver and Cree were in possession of a large area within north – eastern BC and north – western Alberta and constituted a distinct cultural and national group. The Iroquois were deemed to have come out at the time of contact or following the growth and establishment of the fur trade within the Peace River. The HLFN take the view that the Cree’s historical and ancient homeland extended from the areas near Lake Winnipeg as far west as the

Peace River area, in which they have a distinct and ongoing interest. The Beaver are deemed to have held the lands between the Rocky Mountains or Northern Rockies and areas to the north of the Peace River extending to the Ft. Vermillion / Peace Athabasca Delta. **(Source: Chief Rick Horseman – Personal Communication, 2013)**

There are varied and differing opinions amongst First Nations themselves about the geographic extent of these historic and ancient areas, the strength of the connection to these lands and at what time these areas were occupied. Oral tradition is important in this matter and further study is needed to obtain important information from the Horse Lake people themselves. Suffice it to say, there is consensus within the community, that at the time of contact and the earliest phases of fur trade, the Peace River Region was home to both the Beaver and Cree people with the Peace River and Smoky Rivers acting as an important meeting or meshing point between the two key cultures and national groups. **(Source: Chief Rick Horseman – Personal Communication, 2013)**

There are many and varied views in the academic and historical community about the extent of use and occupancy by the Beaver, Cree and Iroquois people. Many maps have been produced by anthropologists and historical geographers that set out the extent of use and occupancy by the Beaver and Cree people at the time of contact, at treaty signing and in subsequent years. One issue of some debate in the academic and legal community has been - were the Cree present at the time of contact? Generally, there seems to be agreement on the fact that the Cree migrated or moved westward through the 1700's and that there appears to have been conflict between the Beaver and Cree which ended in a pact, detent or peace reached at "Peace Point" on the Peace River. **(Source: Bouchard and Kennedy - HLFN Ethno Historical Review, 2012).**

A key point, from the HLFN's perspective, is that they are one and the same people as the Beaver and Cree people who held and occupied the Peace River region at the time of contact. The Iroquois are held to have been present in the Peace Region prior to the British Crown having established purported effective control of the region. (Source: Chief Rick Horseman – Personal Communication, 2013)

3.1.3 Treaty #8 Area

The HLFN adhered Treaty #8 in 1899 at Peace Landing. Treaty #8 guaranteed certain rights, including the right to fish, hunt, gather and practice their traditional vocations through the entirety of the Treaty # 8 area. This is a vast area that takes in portions of present day British Columbia, Alberta, the North West Territories and Saskatchewan. The map of the bounds of Treaty#8 was prepared by Crown officials. The map of the Treaty#8 area is set out in **Appendix 2: Treaty 8 Area Map.**

From HLFN's viewpoint, this means that their community members have the ability to exercise their rights anywhere within the Treaty #8 area, even if they have not elected to exercise such rights in a given location on a prior occasion. Thus within the treaty context, treaty rights are deemed to be portable and attached to the treaty beneficiary. The ability to travel and exercise such rights as and when needed and make a livelihood from the land is critical given key factors that can also determine when and how rights or traditional vocations can be practically exercised. The availability and abundance of fish and wildlife, the movements and migration of fish and wildlife populations, seasonal and longer term climatic trends and the growing influence and impact of development are all factors that make the totality of Treaty #8 lands important to, and of interest to the HLFN. HLFN members report that they have and do utilize ands and resources within areas in BC, covered by Treaty #8.

Thus HLFN community members have an established interest in the health of lands, waters and eco – system conditions that support the exercise of such rights and are necessary to the conduct of traditional vocations and livelihood. The proposed Project and its upstream and downstream impact areas are within the Treaty #8 area and within an area of interest to the HLFN.

3.1.4 Lands Within Alberta

The Natural Resources Transfer Agreement (NRTA) that applies to Alberta confirms that Status Indians have the legal right to hunt and fish through the geographic meets and bounds of Alberta. As is the case with the Treaty #8 territory, the exercise of vocational activities and the rights of Status Indians are portable and are exercised upon the discretion of individuals over the course of their lifetime. As such, HLFN members that are Status Indians are deemed to have an interest in lands and resources within Alberta such as fish and wildlife. Since the NRTA does not apply to British Columbia, it is uncertain whether a reciprocal arrangement exists through the non-treaty areas of BC for First Nations situated within Alberta. HLFN members have reported that they do utilize lands and resources through many parts of Alberta. Emerging case law supports the idea of portability of rights for Status Indians. The proposed Site C project's downstream impact area falls within this territorial boundary.

3.1.5 HLFN Traditional Territory

Like many First Nations, the HLFN has demarcated or set out a "Traditional Territory". There are of course many concepts of what a traditional territory constitutes and the basis for such a territory. In the case of the HLFN, the Traditional Territory tracks and incorporates areas of documented historical, ongoing and current use and utilization by HLFN members**.** Such maps are updated and revised as more research is conducted and more is known about the land utilization patterns of community members, which are in a consistent state of flux. **Historical and current day land and resource use and utilization patterns strongly demonstrate that the HLFN holds traditional lands and exercises rights within BC and Alberta, in the Peace River region, in BC and Alberta in the Peace River region and within the Project's impact zone and area of influence.**

The current Traditional Territory of the Map is set out in **Appendix 3: HLFN Traditional Territory Map.** The proposed Site C Project's downstream impact area falls within this territorial boundary.

3.1.6 Location of Horse Lake First Nation Reserves Along Peace River

IN THIS SECTIONS SUMMARIZE THE SETTING ASIDE OF IR LANDS FOR THE HLFN, THE SITUATION OF IRS, THE IMPORTANCE OF DUNVEGAN AND ANY RESOLVED / UNRESOLVED MATTERS PERTAINING TO IRS. POINT IS TO NOTE DISTANCE OF HLFN RESERVE INTERESTS ON AND ALONGSIDE PEACE RIVER TO SITE C DAM.

Historical sources document the ongoing presence of Cree, Beaver and Iroquois families. Numerous homesteads and villages within these areas were documented and the record strongly indicates a link between family names inhabiting the same areas and those that became affiliated or who were amalgamated into *one Band.* Many of the current families and family names of present day band members of the Horse Lake First Nation and the Horse Lake First Nation can be linked to the names of those Cree, Iroquois and Beaver families that that occupied a wide stretch of land (Source: Bouchard and Kennedy: HLFN Ethno Historical Review, 2012).

It was due in part to this pattern of occupancy, that the Crown officials intended to set aside a number of reserve/s Today, the HLFN only retains two.The matter of the other reserve parcels along the Peace River remains subject to unresolved claims and ongoing litigation. The location of the Horse Lake reserves on the Peace River is set out map in Appendix 4: HLFN Reserves on Peace River.

The lands which host the Clearhills reserve IS approximately 20km North of the Peace River and 60KM downstream of the proposed Site C project site and could be considered to be within the downstream impact zone.

3.2 Ethnographic, Historic and Linguistic Background

Linguistically, Cree is considered to be part of the "Algonquin" Language Family. The word "Cree" is a term attributed to all those people who speak the Cree language. French traders and missionaries adopted the use of the word Cree sometime in the 1700's. However the term Cree also has other roots such as the shortened form of the Ojibway word "*Knisteneaux"*. Early explorers David Thompson (1790 – 1797) and Alexander Mackenzie (1804) both documented that the Cree they encountered in western Canada referred to themselves as *"Na hath a way".* (Source: Bouchard and Kennedy - HLFN Ethno Historical Review, 2012).

There are differing views in respect to what specific Cree dialect was spoken at the Peace River in historic times. Some linguists take the view that Northern Plains Cree was the language spoken, whereas others take the view that Woods Cree or Woodland Cree was the dialect spoken by the Cree People along the Peace River. HLFN Rick Horseman is of the view that his and other Cree families and ancestors of the HLFN spoke a form of Woodland Cree (Source: Chief Don Testawich - Personal Communication, 2012). Within each main language grouping, there were sub – dialects with local and regional variation present.

While the Horse Lake is a multi – national group having its roots in the Beaver, Cree and Iroquoian peoples, the Horse Lake culture has come to be more generally associated with the Cree language and culture. It may also have to do with adoption of **Cree as the principle trading language. It is estimated that there are now numerous people within the HLFN community that are able to speak the Cree language and are more people that are able to understand what is being said in the Cree language. It is estimated that there are now only a handful of people within the HLFN community that are able to speak the Beaver language and are able to understand what is being said in the Beaver language. (Source: Chief Rick Horseman - Personal Communication, 2012).**

The other main culture present in the HLFN community is the Beaver or *"Dune – Za"* culture, a term used by Beaver people to describe themselves meaning the "real people". The term *"Beaver"* appears to have its roots with the Chipewayn name for

the Peace River – *"Chaw – hot – e – na Dez – za"* – the Beaver Indian river. Linguists deem that the Beaver language is part of the Athapaskan language family and that there appears to be a link between the languages spoken by the Beaver of north – east BC / north – western Alberta and the Slavey language spoken by the Dene Tha' of north – western Alberta and the North West Territories.

It is estimated that there are 0 fluent Beaver speakers at the HLFN today. With this said, there are some elders who can understand the Beaver language when it has spoken and who have retained a portion of the language.

The coming of the Iroquois, Six Nations or *"Haudenosaunne"* people from eastern Canada / United States is an interesting development and to some extent – their historic and present day existence in north – eastern Alberta and north western Alberta is somewhat of anomaly. However it is not without parallel. The Saulteau People of Moberly Lake BC, also travelled from the east, settled and inter – married with Cree and Beaver families of the region. Essentially, historians hold that the Iroquois speaking people ventured out with the fur trade. North – West Company records indicated the hiring of 100's of Iroquois speaking people to support fur trade guiding, and logistics. It appears that many of the Iroquois speaking peoples remained in the Peace Region and intermarried with Cree and Metis.

The history of Beaver and Cree people that used and occupied the Peace River and adjacent lands has not always been necessarily one of a peaceful co-existence. Many elders and community members from many Beaver and Cree communities along the Peace River are able to pass on oral history and stories that were transmitted to them about a time of hostility and conflict between the two cultures and nations.

Alexander Mackenzie was the first to document this history and the reaching of a "peace" or pact by numerous Cree and Beaver groups at Peace Point, Alberta. There are a number of historical sources that tie, the arrival of the Cree with the fur trade's spread across the west to rising hostilities between the Beaver and Cree in the Peace River area. Competition for furs, hunting grounds, position with rival fur trading blocks and the introduction fire arms appears to have fueled contention, hostilities and violence. Through the years, inter – marriage, co – settlement and the amalgamation of Beaver and Cree families into bands (such as the case with the Horse Lake First Nation and Horse Lake First Nation) has melded families and cultures. While Cree appears to have become the dominant language in these communities, it is important to point out the fusion of cultures, the historical contribution of all three cultures at HLFN and the ongoing existence of all three cultures.

<u>Connection of Present Day Occupants to Historical Occupants</u>

In terms of written and historical documentation, there appears to be a strong historical and ethno cultural correlation and link with the Cree, Beaver and Iroquois People that were situated along the Peace River from the BC / Alberta Border to Peace River Landing, to families that are now part of the Horse Lake First Nation and Horse Lake First Nations. The 2012 HLFN Ethno Historical Review documented prepared by Bouchard and Kennedy highlights the following observations about the historical occupants and their occupation of the Peace River region and Peace River valley:

- **During his 1792 / 93 trek along the Peace River, Alexander Mackenzie documented the existence of Beaver and Cree camps at Fort Forks (at the confluence of the Peace and Smoky Rivers) and at the confluence of Montagenuese Creek and the Peace River, just upstream of Dunvegan. Other subsequent explorers and surveyors documented similar patterns of Beaver and Cree occupation at Ft. Forks and along the "War Road" that connected the western end of Lesser Slave Lake to Ft. Forks.**

  The above are just some of the references that indicate an ongoing historical connection of to the Peace River from the BC / Alberta border area to Peace River Crossing by the Beaver, Iroquois and Cree People. The connection to this area by the same Beaver, Cree and Iroquois people appears to have been maintained and cemented through the years and is borne out given repeated observations of settlement by external parties, the adhesion to the treaty by the Horse Lake in the same area and the eventual survey and allotment of reserves by the Crown to the HLFN.

3.3 Treaty Signing, Establishment of Peace River Reserves and Unresolved Claims

In 1899*, Felix La Glace* adhered to Treaty#8 as *Headman of the Indians (Beaver and Cree) of Peace River Landing and adjacent Territory".* To date, little supporting documentation has been unearthed about the circumstances of the Horse Lake adhesion to Treaty #8. However, more exists in relation to the period in the aftermath of treaty signing regarding the establishment of reserves.

(Source: Personal Communication – Community Member, 2013)

3.4 Horse Lake Contribution to Establishment and Success of Fur Trade

The HLFN community has witnessed many changes since the time of the signing of Treaty#8. Waves of resource development have swept through the Peace Region bringing in successive waves of activity and people. Economic, societal, environmental, cultural and legal change has been a consistent reality that the community has had to live with, address and manage. The first wave of resource development experienced in the Peace Region could held to have been the fur trade.

Expansion of the fur trade was made possible by the support provided by Horse Lake and other indigenous families along the Peace River. The proficiency of the Beaver, Cree and Iroquois families in hunting, fishing and trapping made expansion in the fur trade realizable. Trading post records note such skills and the key role Indigenous People had in keeping the network of trade alive. As early as 1792 / 93, Alexander Mackenzie wrote of the successful hunting practices by the Beaver near Ft. Forks located at the confluence of the Peace and Smoky Rivers. **(Source: Bouchard and Kennedy - HLFN Ethno Historical Review, 2012).**

‘Homeguards” came into being, with specific families or groups provisioning specific forts along the Peace River. Ft. Forks, St. Mary’s, Dunvegan and Ft. de Pinette became the focus of trade and commerce along the Upper Peace and were positioned so as to be in close proximity to areas of game to supply pemmican to traders plying up and down river. The location of key fur trading posts on the Peace River in the Alberta portion of the Basin was documented in the Northern River Basins Study. **(Appendix 5: Trading Post Locations: Northern River Basins Study: 1996)**

For example, circa 1830, Ft. Dunvegan was taking in 30,000 – 40,000 pounds of wild game per year. As Buffalo vanished, deer, elk and moose became the staples for the forts and for Indigenous people of the region **(Source: Bouchard and Kennedy - HLFN Ethno Historical Review, 2012).** In fact, the hunting of beaver and of game to supply the trading posts was so successful that the numbers of beaver, buffalo and amount of game began to plummet through the late 1930’s and early 1940’s. Further, epidemics also severely impacted Beaver, Cree and Iroquois families likely curtailing their ability to provide for the forts as they once had. These developments occurred in parallel with a series of very severe winters which appears to have delivered the coup de grace to the remaining buffalo populations in the Peace River Region.

While buffalo populations in the area did not recover, moose, deer, elk, marten and beaver numbers did rebound along with a resurgence in fur populations and trapping into the 1870’s. The importance of trapping as a traditional vocation for trading and subsistence purposes was obviously still key, given its inclusion into Treaty # 8 in 1899 as an enshrined right along with the subsequent allocation of trapping areas or registered fur management areas through BC and Alberta.

Based on anecdotal reports within the HLFN community, it appears that HLFN families continued to actively trap with most people over the age of fifty being able to recall travelling to traplines, trapping along the rivers and that their families held traplines in various portions of the upper Peace Region. As with th e region as a whole, trapping as a commercial activity declined significantly after the 1960's. Cited reasons for this include unexplained changes in the watershed as whole, a decline in fur populations, the lessening of market demand and the taking up of other forms of work by HLFN families **(Source: Chief Rick Horseman- Personal Communication, 2013)**

Notwithstanding the alteration and decline of the fur economy through the 1900's, the HLFN continued to be rooted to the hinterland adjacent to the Peace River. A recent Traditional Land Use Survey (2011) conducted by the HLFN shows that despite economic, regional and landscape changes, the HLFN is a community that is still highly reliant on lands and resources within the Peace River Valley, adjacent lands and the adjacent hinterland. The survey indicates a clear pattern of ongoing community use and utilization centered on the Peace River that can be traced back seventy – eighty years within the lifetimes of a large group of people within the HLFN community. **(Source: HLFN 2011 Traditional Land Use Survey, 2011)**

Recent interviews conducted in the community bears witness to HLFN family's continued reliance on the Peace River and hinterland for a range of sustenance, cultural, socio – economic and spiritual purposes. However, the HLFN continue to do so in the face of mounting difficulties, challenges and constraints. The past 20 – 40 years can be characterized as period of cultural and socio – economic challenge given reported declines in fish and wildlife populations, increased land use disturbance and regulation.

Within the past decade, the HLFN have attempted to deal with this growing challenge and impact on their culture and rights through increased engagement with industry and government, litigation and attempts to address government policy in relation to the cumulative impact of development. **(Source: Chief Rick Horseman - Personal Communication, 2013)**

3.5Governance

The below sections set out a political understanding and position that has been advocated by Treaty #8 elders and such views are backed up by those who hold that the Horse Lake People constitute a sovereign nation and have the right to self determination. It is understood that the government and some that practice law within domestic sphere within the context of Canada may

not agree with such views. It is a political choice / statement that HLFN can make if they wish to make such a statement and if they feel it is relevant.

As with many other First Nations, the Horse Lake people hold the view that they continue to hold original or radical / root title to their lands and have never surrendered their rights, ownership of and jurisdiction over these lands. The HLFN takes the view that such rights were confirmed when the Horse Lake people entered into Treaty #8, a treaty of peace and co-existence signed with Crown representatives of the Dominion Government of Canada. The Crown and successive governments have, in contrast, come to hold the view that Treaty #8 is a document of mere historic interest which amounted to a surrender of sovereignty and title to lands.

Subsequent to the signing of the numbered treaties, the Dominion Government enacted legislation that sought to organize the Cree people (of which the HLFN are part), as other indigenous peoples, into administrative units under the authority of the federal government. The *Indian Act* and Indian Band Councils continue to exist to this day, and are the only delegated form of government that Canada will acknowledge, empower, or transfer payments to. The Horse Lake First Nation is an Indian Band within the meaning of the *Indian Act*.

Notwithstanding, the Horse Lake People maintain that they have the right to self – determination and the ability to govern themselves outside the purview of the Minister of Indian Affairs, Parliament and the *Indian Act*. However, the people of Horse Lake recognize that they have little choice at this time, but to work with the Indian Act system to meet their community's basic needs, until at such time the Government of Canada recognizes the need to repeal the *Indian Act* and recognize the rightful and legitimate authority of the Horse Lake people to govern their own lives and lands. Until at such time a traditional government is recognized and instituted, the Horse Lake First Nation continues to act as a steward and take steps to advocate for, preserve the rights of its people and work towards the re-establishment of their rightful government system.

Under the INAC Band Council system, the Horse Lake First Nation (Bands 451) is a "Section 11 Band" that has developed and administers its own custom election code or custom electoral system. Election are held every 4 years, with the next the election due in the fall of 2013. The current system creates one position for Chief or Chief Councillor with 4 other Councillor positions. For the most part, administrative and policy decisions are arrived by way of band council resolution. Other matters related to lands and trusts (e.g. matters such as the designation of reserve lands) sometimes carry the requirement for referendum.

The HLFN Council and the HLFN Community place a high priority on public involvement and engaging the community on an ongoing basis on key community governance, lands, environment and treaty related matters. Numerous community meetings are held through the year where industry and government agencies are

invited into the community so they can meet and work with council, HLFN staff and the community.

3.6 Land Use and Stewardship Principles

At this time, the HLFN has not developed or adopted a formal policy or set group of principles in respect to land use and stewardship. It however, has communicated and utilizes a set of working principles in its engagement with industry and Crown agencies. First and foremost, it is clear that First Nations, Crown and industry relations are being driven and shaped in part by the emerging principles and directives of Canada's courts.

HLFN recognizes that Canada's courts have issued judgments about the nature, scope and limitations of Section 35 of the *Canada Constitution Act* (1982) aboriginal and treaty rights. Notwithstanding HLFN's concerns about the limitations of these decisions (to date), HLFN acknowledges that the principles flowing from the courts provide direction to the Crown and its representatives in respect to land management and policy decisions. In summary, these cases establish that as a minimum:

Consultation is an ongoing process and is always required.

The Crown (and industry) must provide full information to First Nations on an ongoing basis, so that First Nations can understand the potential impact of any proposed decision on their rights and interests.

It is the content of the consultation, and not the amount of paper or number of meetings or telephone calls that is relevant in determining whether or not the Crown has met its obligations.

The Crown's duty to consult extends to both the cultural and economic interests of First Nations.

Crown Consultation must be meaningful and conducted in good faith.

Crown Consultation must take place early in the process, before important decisions are made.

The Crown must consult with First Nations about the consultation process itself.

The Crown must consult not only about the site specific impacts of decisions, but also about the cumulative or derivative impacts of decisions, including any potential injurious affection related thereto.

Consultation must occur in relation to all phases of a project's life span.

The Crown, acting honourably, cannot cavalierly run roughshod over Aboriginal interests.

The Crown must approach consultation with an open mind and must be prepared to alter a course of action depending on the input received through consultation with First Nations.

Note – that further legal principles may emerge and need to be applied given the evolution of the court's thinking on Section 35 rights.

In summary, the HLFN must be consulted and involved in any and all government decisions affecting the management of lands and resources. Governments must meaningfully consult with HLFN and that consultation must meet the standards and principles set down by the courts. If the government fails to do this, the HLFN can opt to challenge government decisions and project approvals such as oil and gas, tar sands, mining, hydro – electric, nuclear power, transmission line and pipeline, forestry plans and provincial and regional land use plans. The courts can and will strike down government approvals of resource development projects, where First Nations can demonstrate that government breached its duties to them and the Crown has failed to act honourably.

Notwithstanding the many challenges that HLFN faces in its dealings with the Crown and industry, the HLFN remains committed to working with these parties in good faith to resolve outstanding and emerging issues. Further, the HLFN is not opposed to all forms of resource development and is prepared to establish and build mutually beneficial working relations with industry and third parties. However the emphasis of such dealings is on ecological and cultural sustainability. To date, the HLFN has had some success with certain companies operating in their traditional territory where the companies have shown a willingness to work with the HLFN begin to address its environmental, cultural and socio – economic interests and well-being.

Such agreements do not alleviate the Crown of its obligation to consult, accommodate and reconcile the rights and interests of the HLFN with its assertion of sovereignty. However they can strengthen and support the process of consultation and accommodation such as it is. Further, such agreements do not constitute a form of compensation or redress for past impacts to the HLFN people, breaches of the Crown's duty or infringement of HLFN rights. Further such agreements do not provide for HLFN's consent, approval or lack of concern over varying forms of development. The HLFN is prepared to entertain forward looking and varying types of agreements with industry and third parties that address HLFN's environmental, cultural and socio – economic interests and wellbeing. Such agreements are often referred to as impact – benefit agreements.

The Horse Lake First Nation Framework for Impact Benefit Agreements is set out as follows:

Principles

- The Horse Lake First Nation is an adherent to Treaty # 8 which obliges the Crown to ensure that First Nations can continue to utilize their lands to sustain their culture, way of life and make a livelihood from their lands. The Governments of Canada, British Columbia and Alberta have yet to act on these commitments in any substantive way.

- In parallel, the courts have ruled that where First Nations rights risk being infringed, the Crown, and by extension third parties, may be required to accommodate the environmental and economic interests of First Nations. While the Crown directly bears such duties, in practice, government agencies generally delegate consultation, issue resolution and development of relationships to industry and First Nations.

- Further, a core principle that underlies environmental and socio – economic impact assessment is ensuring that impacts of development are mitigated and offset to the degree possible. Positive measures and agreements that offset impacts with benefits are often referenced and considered by regulators.

- The HLFN Traditional Territory has been heavily damaged, where there are few areas left to support the ongoing exercise of treaty rights in any meaningful form. The cumulative impact of development must be considered by the Crown and third parties when advancing new projects. As a result, accommodation of interests and the mitigation of socio – economic impacts is a reasonable consideration within most project development contexts.

- The negotiation of Impact Benefit Agreements (IBAs) is now a standard mechanism or feature of resource development within northern Canada, that provides both benefits to industry and First Nation communities.

- The HLFN encourages IBA's with industrial operators who have an established interest and ongoing operations within the HLFN Traditional Territory. Such agreements are voluntary. Parties enter them at their discretion and work to implement the components and provisions of the agreements as they are of the view that it's in their interest to do so. The key components of such agreements can include the following:

  Information Sharing and Consultation

The agreement can include mechanisms to improve and strengthen the lack of meaningful Crown consultation and the de-facto delegation of consultation duties by the Crown. The parties can opt to a move to a more proactive planning approach where proposed developments can be dealt with on a more constructive basis, weeks and months in advance. Other measures could include a Joint Committee or Working Group that would work to improve the information sharing and consultation process.

Project Review and Site Assessment

Under the agreement, the parties can establish an effective project review process where the proponents projects will be reviewed in a timely way by way of desk top review and field site assessments where warranted. Issues and written reports are produced to assist the parties in addressing community concerns and facilitating issue resolution. This process can remove the uncertainty of government processes, timelines and policies.

Capacity Support

The HLFN lacks the resources to address proponent's projects and development priorities in a timely and effective way. Governments refuse to, or do not provide adequate levels of funding to allow a First Nation to address and manage the numerous oil and gas, forestry, lands, environmental, mining and development applications that now must be forwarded to them as required by law. The agreement would provide for a reasonable level of funding that would allow the HLFN to engage with the proponent, build a strengthened working relationship, work on joint opportunities and provide focus and priority on the proponent's development priorities.

Dispute Resolution

Given that disagreements and disputes do arise, the agreement would contain provisions setting out the parties' intent and agreement to address issues in a constructive way with priority being given to resolving such matters amongst themselves, without having to appeal to outside parties (e.g. regulators and the courts)

Training, Education and Community Investment

There are numerous factors that have resulted in the array of socio –economic challenges that now face First Nations, including the HLFN. While industry is not responsible for addressing these in isolation, they can opt to take a proactive role in working with HLFN to address its socio – economic goals. Responsible investments in community training, human resource development and educational initiatives can help prepare a local work force to become future employees, contractors and take on a meaningful role within the resource sector of today and tomorrow.

Contract Procurement and Business Development

The resource sector invests heavily within the HLFN traditional territory, purchasing an array of services and goods from the local and regional area. The HLFN wishes to become involved as partners with industry and build and foster competitive businesses owned and run by community business people and at the First Nation level. The agreement can address how the parties wish to move forward on this goal and the principles that would guide how this takes place.

4.0 Baseline Conditions: State of the Hosting Environment, Ecological Change and Stressors Effecting HLFN Utilization of Lands and Waters

As noted, the Horse Lake culture, way of life, ability to exercise their rights and their utilization of lands and resources has altered in response to cultural, socio – economic and eco-system change. The resulting land use maps set out in the 2011 Horse Lake Traditional Land Use Survey reflect changing land and water use and utilization. While no such maps were prepared 100, 50 or 25 years ago, those maps would likely have been quite different in terms of the intensity and extensivity of use. No study has ever been conducted that has sought to document this change with the community.

Anecdotally, many HLFN elders and community members can recall the changes that occurred in the community as the fur based economy declined and as people began to become more involved in the wage economy. Another key factor driving altered community land use patterns were changes occurring in the regional eco-system, especially over the last forty year period. Again, no comprehensive study has been undertaken to document or verify such shifts and the causes for such land use change.

Notwithstanding the lack of study and data on this subject area, it is critical to consider the hosting environment in which the Horse Lake community have been undertaking their traditional vocations in and that which will play host to the Site C project.

4.1 Historical Availability of Fish and Wildlife Populations and Utilization

The HLFN, as other Indigenous communities within north – western Alberta and north – eastern British Columbia, utilized large areas through the Peace River Basin given the lower levels of biological productivity present. While fish and wildlife populations were present in large numbers they tended to distribute themselves widely over the landscape as an adaption and survival strategy. This required the Horse Lake people to travel large distances to follow game and anticipate where game might be at a given time of the season and in response to short term weather and longer term climatic cycles. This meant that the ancestors of the Horse Lake families utilized large areas through the northern Peace region and areas within their identified Traditional Territory.

Fish

Given the link between land and resource use and utilization and the presence, availability and health of fish and wildlife populations, some consideration needs to be provided to the changes in the availability of fish and wildlife over time and some of the factors that resulted in this changing state.

The HLFN does not have at its disposal, an historic record or inventory of the types of fish and wildlife resources it has historically relied on. However, the 2011 HLFN Ethno Historical Review does reveal some important indicators of the availability and relative importance of fish and wildlife populations and longer term trends in populations. Early written accounts indicate that healthy fish and wildlife populations were present within the Peace River Basin which clearly supported and sustained Indigenous People of the region.

Fish and fishing activity appears to have been important to the Cree, Beaver and Iroquois People along the Peace River. In 1913, linguist and anthropologist Pliny Goddard documented conversations with the Beaver People of Dunvegan where one Beaver person reported that the Cree had come to the region and Lesser Slave on account of the large fish populations within the lake and rivers that flowed into the lake. In 1793, Alexander Mackenzie recorded that the Cree which resided along the Peace River spear fished and weaved nets and travelled to and from fishing grounds in small groups, indicating the importance of fisheries to Indigenous People of the Peace Region.

There appears to be few historical documents in existence regarding the relative abundance of fish within the Peace River Basin and those that do exist are somewhat contradictory. An historical review undertaken as part of the Northern River Basin Study attempted to document some contemporary accounts of the fishery within the Peace / Mackenzie River Basin. One source from 1909 held that *"it is remarkable fact that…the Peace River country possesses but very few fish in its rivers and lakes.."*. Another source in 1908 records that *"…there are no fish of great value in the Peace, Smoky or Athabasca Rivers, or in the tributaries….they are too muddy for any but char or mud pouts…Eels might thrive…"*. **(Source: Synthesis Report #12 - Northern River Basins Study, 1996)**

On the other hand, the Northern River Basin Study also documented the importance of the fishery to the regions' Indigenous People and incoming fur traders and the system of trading forts that depended on the regions' fish and wildlife resources. "The Archives Database shows that Aboriginal people and the European fur trades and explorers depended heavily on fish for their own sustenance and that of their dogs. The records clearly show that if it had not been for fisheries resources, death by starvation during the winter would have occurred more commonly than it did." **(Source: Synthesis Report #12 - Northern River Basins Study, 1996)**

Historical archives document the existence of commercial sized fisheries on Lesser Slave Lake, Lake Athabasca and Lac La Biche which appear to be based on whitefish populations. **(Source: Synthesis Report #12 - Northern River Basins Study, 1996).** In the late 1980's Professor Arthur Ray undertook archival research with Department of Indian Affairs and Hudson's Bay Archives for the Horseman case about whether Treaty 8 conveyed a commercial right to harvest bear. His research revealed the ongoing resilience and importance of the fishery as a source of income between 1922 and 1935. While the fishery never had the economic impact that the trade in hunting and trapping it was an important source of protein for the posts within the area of the Lesser Slave Lake Agency. (**Source: Professor Arthur Ray -** "**Telling it to the Judge Taking Native History to Court", 2012)**

So, on one hand there appears to be some thinking in existence that holds that the Peace River Basin has never and could not support any substantial fishery. There are others views that indicate otherwise. A middle of the road and supportable proposition might be that the fish populations of the Peace were never great enough to support a commercial sized fishery. With that said, fish absolutely played a critical role and perhaps its relatively moderate size was absolutely critical in sustaining Indigenous People through key times of the year and while they were working to procure large game. There is some indication that the fishery was prominent enough to compel families to gather together at fishing locations and fish camps in the summer and fall season, prior to them moving back to the hinterland for the fall and winter round of activities. Clearly this is an area that requires additional literature and synthesis research and research to record the historic recollections of the HLFN and other First Nations along the Peace River.

Wildlife

Overall, the range of wildlife species and their respective populations appear to have been sufficient in size to have supported Indigenous People throughout the Peace Region. In his 1793 expedition, Mackenzie recorded that beaver, deer, reindeer (caribou), elk, grizzly and buffalo were readily available however it appeared that elk and buffalo supplanted caribou and caribou shifted towards the northern Rocky Mountain range. Mackenzie also noted the Beaver People's hunting skills and the large distances they travelled from the Peace River to hunting grounds in the hinterland. One such account recorded the Beaver People from the Ft. Forks on the Peace River, travelling to the Whitemud Hills to hunt.

The fur trade established itself along the Peace and expanded given the range of wildlife species and Indigenous People's hunting and trapping skills. Forts and traders travelling up and down the Peace became dependent on Indigenous hunters who kept them supplied in both fur for trade and game to eat. In 1873, Butler documented the trapping tools and success of Beaver people upstream of Ft. Dunvegan noting that one hunter / trapper brought in large numbers of marten per year. In the same year, Butler recorded that each of the four main trading forts along the Peace River had consumed 100 moose in that winter season and that 2000 moose hides had come out of the Athabasca District that year and that the moose populations seemed to have been the same as fifty years prior. Records for

Ft. Dunvegan note that Indigenous hunters were provisioning the fort with 30,000 – 40,000 pounds of meat per year, circa 1830. **(Source: Bouchard and Kennedy - HLFN Ethno – Historical Review, 2012).** Another way to consider the provisions being provided to Ft. Dunvegan at the time could be as follows – if a de-boned moose weighs 650lbs, Indigenous hunters killed between 46 – 62 moose that year.

Prior to the 1820's and 1830's, buffalo appear to have been present in vast numbers through the Peace Region. In 1879, Dawson observed the wallows that were scored into the ground at river crossings and lakes indicating the large numbers of buffalo that had been present for years. At the time of treaty signing, Commissioner Charles Mair also noted the evidence of wallows along the north side of the Peace River between Dunvegan and the Smoky River. The Northern River Basin Study attempted to document the importance of wildlife resources in the Peace and Mackenzie Basins. In the Upper Peace Basin in 1843 and 1860, moose, elk, buffalo, black bear, caribou, deer were considered to be "abundant" as opposed to "scarce". **(Source: Northern River Basins Study- Synthesis Report #12, 1996**). There is also some historic documentation (not available for this report) that indicates that many buffalo were hunted by settlers attempting to clear lands for agriculture and grazing. **(Source: Chief DFN - Personal Communication, 2012)**

The abundance and distribution of wildlife species appears to have been negatively affected with the presence of trading forts and the demand that they created. Buffalo populations began to plummet. The causes appear to be rooted in severe winters but also the demand induced by the forts along the Peace, and the efficiency of Indigenous hunters in supplying this new market. Dawson reported the accounts of Indigenous people in the Dawson Creek area noting that many of the buffalo had died out in prior hard winters. In December 1833, Chief Factor of the Peace Athabasca District reported that buffalo and deer were not nearly as plentiful as they had once been. The decline of buffalo appears to have started in the 1820's, in part due to a hard winter in 1829 / 1830. Bear, elk and moose appear to have replaced buffalo as a staple for both Indigenous people and traders dependant on the fort system. **(Source: Bouchard and Kennedy – HLFN Ethno – Historical Review, 2011)**

The decline in populations appears to have extended to other wildlife populations. Theforts along the Peace River began to document, that by 1836 / 37, the Cree and other Indigenous hunters had exhausted the best part of the Peace River region for large mammals. In 1841, the Hudson Bay introduced a quota system that favoured fur bearers other than beaver in an effort to allow beaver populations to recover. Moose, lynx and rabbit were also harder to come by. The declines were so marked that it created hardship for Indigenous People along the Peace. Governor Simpson reported in 1821 that many Dune – Za died of starvation and were required to depend on fort provisions, beaver skins, potatoes and their horses. **(Source: Bouchard and Kennedy – HLFN Ethno Historical Review, 2011)**

<u>Gathering</u>

There are some limited accounts that speak to the importance of gathering in the seasonal round of activities for Indigenous People of the Peace Region. In 1875, Alfred Selwyn – Director of the Geological Survey of Canada met with Cree People at Early Gardens upstream of Peace River where he documented considerable berry picking activity occurring and that people were surviving on berries and bear. In the 1903 Geological Survey of Canada, James Macoun documented the berry gathering activity at Pouce Coupe by Metis and other Indigenous People.

It seems clear that fishing, hunting and trapping were still viable and continued to function as key vocations to the life of Indigenous People in the north at the time of the signing of Treaty #8 in 1899.The treaty commissioners report in relation to the negotiations of Treaty #8 clearly establish that such vocations and the ability to continue to hunt, fish and trap were a key interest to the parties at the time. Thus, it can be inferred that if hunting, fishing and trapping were key vocations that warranted treaty protection, wildlife, fish and fur bearer populations were still viable at the turn of the century. The ongoing importance of hunting, fishing and trapping at the turn of the century and early part of the 20th century is evidenced by documents pertaining to the establishment of Indian reserves. The reserves were established to provide for permanent settlement and the pursuit of farming to supplement ongoing hunting, fishing and trapping vocations of Indigenous Peoples. The subsequent passage of the *Natural Resources Transfer Act* of 1930 also dealt squarely with the matter of preservation of “Indian” rights in relation to fish and wildlife providing clear indication that traditional way of life and vocations were still key to Indigenous People within Alberta, the Treaty #8 area and the Peace River Region.

Thus while historic documentation and sources are limited, the written record can provide snap shots of the importance of fish and wildlife to the Beaver, Iroquois and Cree ancestors of the Horse Lake people since the time of contact into the 20th century. The record also provides some indication of human influences on the availability and health of fish and wildlife populations and how that in turn affected the Horse Lake ancestors livelihood and ability to provide for their own sustenance and cultural needs. While the fur trade created some opportunity a new economy for Indigenous Peoples of the area to establish trade relations with newcomers, it also carried with it, negative consequences for the Horse Lake ancestors. The demand placed on fish and wildlife resources by the fur trading forts and trading network had pushed buffalo to the point of extinction where species such as beaver and moose were stressed and needed time to recover. Species recovery did occur, with Horse Lake families continuing to rely on fish and wildlife species from the time of treaty signing and the establishment of reserves to the present day. The Horse Lake socio – cultural needs and their ability to depend on terrestrial and aquatic resources of the Peace River Basin has again been affected and shaped by human influence in more recent times.

4.2 Eco – System Health of the Peace River and Peace Basin

The HLFN People continue to utilize lands and resources within the Peace River Basin and along the Peace River Valley for traditional purposes. However their ability to do has and

continues to be circumscribed by the overall health of the Peace River Basin / Peace River and the availability and health of fish, wildlife and plant communities. In understanding the ability of the HLFN to utilize the Peace River, its key tributaries and the overall Peace River Basin, consideration is required of the current state of the hosting eco – system and key factors or stressors effecting eco – system health.

According to AEW's 2007 "Summary Report on the Initial Assessment of Ecological Health of Aquatic Systems in Alberta", water quality in the Upper Reach of the Peace Basin (at the BC / Alberta border to the Smoky / Peace confluence was considered to be "good". With this said, the AEW Summary Report concluded that there is a lack of knowledge about the effects of climate change, pollution and flow regulation associated with hydro – electric development on aquatic habitat, fish populations, riparian habitats and channel morphology and maintenance due to sediment discharges.**(Source: Mighty Peace Watershed Alliance, 2012).**

The lack of long term data on fish populations, movement and distribution in the Peace River was a key issue that delayed regulatory approval of the Dunvegan Hydro – Electric Power project in 2003/4. The Northern River Basins Study concluded that many reaches of the Peace, Athabasca and Slave Rivers appear minimally affected by environmental stress. In other reaches, however, fish and other aquatic organisms are experiencing stress. For example, the NRBS concluded that the Wapiti / Smoky River systems are heavily stressed due to key factors such as high nutrient levels from the City of Grande Prairie and the Weyerhaeuser mill, sharp declines in under-ice dissolved oxygen, and high PCB concentrations in sediment and fish. While the NRBS considered the effects of regulation on river channel habitat, it did not undertake a comprehensive assessment of those effects on fish, wildlife and aquatic habitats**. (Source: Synthesis Report #12 - Northern River Basins Study: 1996).** It should be noted that when this study was tabled with NRBS funders, some funders subsequently ended their funding of the NRBS process.

Key factors at play in the Peace River Basin include point and non – point sources of pollution, habitat change, human activities, changes to the hydrological cycle and climate induced change. Key stressors effecting the health of the Peace River eco-system and the Duncan People's ability to utilize the Peace River, adjacent lands and the Peace Basin include linear features, agriculture, urban development, recreation, oil and gas, mining, hydro – electric development, water use and climate change and cumulative effects. Human activity and development has actively disturbed over 57% of the Peace River Basin and in Upper Peace Sub Basin (at the BC / Alberta border. **(Source: Mighty Peace Watershed Alliance, 2012)** The following summarizes the role that each of these stressors play:

Linear Features

The Peace River Basin hosts a high level of linear or anthropogenic features that give rise to a range of negative effects and outcomes. Access roads, permanent roads, pipelines,

power corridors and seismic lines criss-cross the Upper and Mid Peace Basin and represent a significant permanent or semi – permanent features on the landscape. There is over 300,000KM in cut lines and over 34,000 Km of pipeline alone in the Alberta portion Peace River Basin. **(Source: Mighty Peace Watershed Alliance, 2012)**

When roads are constructed and operated over a long term, they can act as a significant source of sedimentation a river basin and its tributaries. The same appears to hold true for the Peace Basin. Further, the construction of roads alters the natural course of water and has led to the cutting off and removal of fish habitat and has fragmented watersheds. habitat. For example, the high numbers of culverts and stream crossings in place in the Peace Basin have played a major role in restricting fish movement and habitat utilization.

The sheer level of linear corridors cut into the boreal forests of the Peace River Basin has had indirect effects on fish and wildlife habitat and populations. Terrestrial and aquatic habitats that were once remote are no longer such and human access and predation have contributed to a decline in numerous populations. Northern lakes and rivers tend to have lower levels of productivity and do not recover well or at all once they are heavily fished or fished out. Overall, the higher the level of road density, the greater the potential for that density to effect the biological integrity of fish communities. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Agriculture

Agriculture has been a main feature in the Peace River Basin, with a significant amount of land being cleared adjacent to the Peace River and Peace River valley for agricultural purposes. In some cases, up to 25% or more of certain lands within the Alberta portion of Peace River have been taken up for grain, vegetable, canola and hay crops and cattle farming. First and foremost, the sheer amount of forest that has been cleared for farming has been significant which has reduced habitat for wildlife and has impacted riparian areas and fish habitat. Loss of forested lands has reduced the ability of sub-watersheds to retain and keep Peace River tributaries watered throughout the year. Higher temperatures have also resulted from the loss of riparian forests limiting fish range and habitat utilization. Run off and sedimentation from cattle farming operations have contributed to nutrient loading from cattle waste, sloughing along water courses and increased sedimentation and turbidity impacting fish populations.

A key impact has been run off of farm fertilizers which have greatly contributed to eutrophication of Peace River tributaries and the Peace River itself. The shallower the water levels in the Peace River, the more heat is dispersed to organisms which leads to algae blooms in oxbows and back channels. The resulting nutrient enrichment has led to increased algae levels and depleted oxygen levels in water bodies which have affected cold and cool water fish species and benthic organisms that support fish populations. Water demands and withdrawals for farming operations are significant and likely to become a more significant factor accompanying the effects of climate change. The draining and use of

wetlands for agricultural purposes has its own range of attendant effects on fish and wildlife. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Forestry

Over 6.4 million cubic metres of timber was harvested within the Alberta portion of Peace River Basin in 2009/2010. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)** As noted, considerable timber harvesting has and continues to impact the Peace River Basin by altering watersheds' ability to hold and release waters in a natural manner that is both beneficial to the forest and receiving waters. Increased run off of soil water results. In addition, when a sufficient mass of forest is not present, waters are not retained in root systems and soils and are released more quickly, resulting in drier summer and fall season creek and river flows. Data indicates that watersheds which have been logged below 50%, tend to exhibit better eco – system health indicators than watersheds that have experienced forest harvesting 50% and above.

In more recent years, improved forest harvesting practices and regulation that attempt to mimic natural disturbance / conditions may provide some better protection for critical values such as riparian forests and riparian areas. However, the considerable cut level through the years, and road building have also impacted such areas in the past and current sustainable forest management practices may not be sufficient to offset the considerable impacts of the past. In several jurisdictions (e.g. Quebec and Ontario), governments are recognizing the need to conserve and protect large portions of the boreal forest to ensure that key values are maintained across landscapes such as wetlands, old growth forest and caribou habitat. Further, in some cases, current required minimum setbacks for forestry activities may not be sufficient to protect and help fisheries and fish habitat recover within riparian forests.

Pulp mill operations have and continue to act as a point source of pollution in the Peace River. At this time, there are up to five pulp mills that discharge effluent into rivers within the Peace River Basin. Prior to 1992, the effluent (e.g. dioxins and furans) from pulp mills was found to be acutely toxic posing high risks for downstream fish populations and potential risk for people that had high levels of fish consumption in their diet. Strengthened regulations brought down levels of such pollutants in the early 1990s, however there is ongoing concern about pollutants that still may be present in river and bottom sediments and the ongoing discharge of nutrients and organic matter that may act to impact river oxygen levels and fish habitat. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Urban Development

The Peace River Basin has experienced an upswing in activity and population over the past twenty years. Point source effluent discharge from water treatment plants and non-point

source pollutant contributions via sewer and storm water systems deposit nutrients, organic matters, suspended solids and bacteria which deletes oxygen, contributes to eutrophication and degraded fish habitat conditions. While all municipalities have moved to secondary treatment, continuous and intermittent discharge of treated waters occurs. While both BC and Alberta regulate municipal effluent discharges, not all effluents are regulated. Such is the case with nutrients. The attractiveness of home and cottage ownership along Peace River Basin water bodies has impacted foreshore and riparian areas. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Recreation

As noted, increased access has made once remote areas, more accessible to humans. The sheer number of linear corridors has allowed humans to access and place pressure on water bodies and intact habitat areas in a level never seen before. Increased population and ATV access has increased this trend resulting indirect effects on fish and wildlife populations. Further, the combined impact of increased habitat loss along with regulated and unregulated hunting and fishing has placed intense pressure on certain populations.

Cold water fish species in the Upper Peace Basin and cool and warm water species in the lower portion of the basin are all experiencing increased pressure. Walleye populations have declined significantly in certain watersheds in the Peace River Basin and fishing of this species is now regulated. Walleye fisheries collapsed in the 1980's and 1990's through northern Alberta, with increased access, lack of regulation and on the ground enforcement seen as being the key factors leading to the decline. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)** The Peace River Basin has a diversity of fish species including fish species of concern such as Arctic Grayling, Bull Trout and Large Scale Sucker. Provincial fish consumption advisories are in place at certain sites to protect residents from consuming harmful quantities of contaminants in fish. **(Source: Synthesis Report #12 - Northern River Basins Study, 1996)**

Although studies of fish populations have been undertaken by proponents and for government departments for sports fisheries, a BC – Alberta commissioned study concluded that little is known about the health of fish populations throughout the Peace River. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)** Restocking efforts have maintained fisheries for certain sport species however, cold and cool water species stocks have not been able to be bolstered through restocking.

Oil and Gas

Large scale conventional oil and gas development has been underway in the Peace River Basin for forty years. A vast number of wells have been drilled that are also supported by a network of temporary access roads, permanent access roads, power lines, pipelines and

facilities. There is well over 61,000 oil and gas wells in the Alberta portion of Peace River Basin and there is 6.6Km of seismic line and pipeline for each square km of non-agricultural land. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

The Peace Basin is criss-crossed with older 2-D seismic lines, intense grid works of 3–D seismic lines that have not regenerated well. The subsurface nature of resource and the competitive nature of the industry has meant that planning has tended to occur on an ad – hoc basis (if at all), resulting in a heavily fragmented land base in many portions of the Peace River Basin. Lands along the Peace River from Ft. St John to Peace River have been subjected to medium to high levels of oil and gas development. The aggregated effect of the oil and gas exploration along with other forms of development such as forestry and farming has intensified effects on fish, wildlife and plant communities. Run – off and site contamination has and continues to occur from oil and gas sites such as sumps and other facilities. Ongoing operational spills and leaks in addition to more but significant oil pipeline ruptures such as the 2000 Pine River Spill and the recent spill 100KM north of Peace River contribute hydrocarbons to the Basin tributaries.

As conventional supplies of oil and gas are peaking or about to peak, industry has moved to unconventional oil and gas resources such as coal bed methane, tight gas, shale gas and oil sands in the Peace River Basin. Shale gas is becoming an increasing feature in the upper portion of the Peace River Basin at the BC – Alberta border along with a major oil sands play at Peace River. These resources are driving the need for new infrastructure such as pipelines and power lines, which in turn giving rise to the increase in anthropogenic disturbance. Some views hold that these new unconventional hydro – carbon resources may pose issues for surface and subsurface water quality and quantity. **(Source: CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Mining

By the 1990's, the coal sector appeared to be on the decline, however growing demand in Asian markets has renewed interest in the vast coal resources in the upper portion of the Peace River Basin. New projects are coming on line with a significant number of new applications being advanced. Further, "clean coal", technology might spur on further coal mining to meet power production needs. Acid rock drainage and selenium effects are key issues of focus in environmental assessments for coal mines. In the past, surface mining has had a significant impact on sensitive high elevation areas in the northern Rockies impacting sensitive species such caribou, mountain goats, sheep and Grizzly Bear.

There are large iron sands deposits located north of the Clear Hills in Alberta, just due east of the Alberta – BC border. A company is actively advancing a large iron sands operation in the upper Notikewin River watershed, a key tributary of the Peace River. The company is proposing to construct rail lines from Alberta or a slurry line into BC to ship mined materials. (**CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Water Use and Climate Change

Water is taken from surface and ground water sources in the Peace to meet a wide range of residential and commercial needs. A significant amount of water volumes from withdrawals are not returned to the source and are often discharged via surface run off or surface water bodies. Net water losses to a water system can impact habitat quality for aquatic life. One major intra – basin water transfer has been approved, where Talisman obtained a water license to withdraw water from Williston Reservoir and transport via a pipeline to serve shale gas development needs near Hudson's Hope. With increased drought conditions in southern Alberta and the US, inter-basin water transfers may well be contemplated in the future. Bruce Nuclear Power's proposal for a major nuclear power plant north of the Town of Peace River has been suspended; however the company maintains that it has a long term interest in "Whitemud Site".

While consensus has not been achieved on the influence of human induced greenhouse gas emissions, the International Intergovernmental Panel on Climate Change (IPCC) projects that the effect of a warming trend will be more pronounced in northern latitudes with higher temperatures occurring in winter months. Over the long term, less ice cover is expected for the Peace River and in the mountains reducing the glacier, ice and snow melt contributions to the Peace River. (**CharettePellPesconte – for Mighty Peace Watershed Alliance, 2012.)**

Hydro – Electric Development

In the 1960's, as part of the BC Government's "Two River Policy", the Columbia and Peace River Basins were dammed extensively to address flood control and power generation needs. In 1968, the WAC Bennett Dam was completed flooding a vast area in the former Parsnip and Finlay River valleys in BC and altering flow regimes far downstream into Alberta. In the 1970's, BC Hydro completed "Site B", the Peace Canyon Generating station with plans to construct a new dam at "Site C", just south of Fort St. John.

BC Hydro and the BC Government have acted to partially address the historic foot print impacts of the construction of the Peace River facilities through the creation of fish and wildlife compensation program which funds fish and wildlife restoration work in the upper portion of the Basin in BC. BC Hydro has also negotiated compensation agreements with upstream and downstream First Nations impacted by the historic upstream impacts of the dams.

An array of ongoing operational downstream effects result from year to year, month to month and week to week decisions made by BC Hydro. BC Hydro operates its integrated electric system to meet a range of priorities and objectives. The ongoing operational effects from the existing Peace River facilities have been well studied and examined in various reviews and planning processes mandated by the Government of BC. These are examined in the following section. The ongoing hydro – electric operations of BC Hydro's Peace River facilities have ongoing effects on fish and fish habitat. Daily, monthly and seasonal fluctuations have immediate effects on fishing conditions within the river in downstream areas. While BC Hydro's water licence requires the Peace River facilities to operate within certain minimum parameters, BC Hydro has considerable ability and latitude to alter its operations. It generally elects not to do so, given the impact of foregone power and revenue generation benefits. These operational effects were the focus of BC Hydro's 1995 Electric Systems Operation Review (ESOR) and were again examined and considered by government agencies in the 2006 Water Use Plan, approved by the BC Water Comptroller - a plan that governs and clarifies BC Hydro's Peace River systems operations.

New power generation facilities have been approved and are under consideration for the Peace River including Trans Alta's Dunvegan Hydro – Electric Power Project and the BC Hydro's Site C Clean Energy Project – the focus of this community baseline profile. Alberta based ATCO was also examining a potential site near Notikewin Provincial Park and sought to obtain a licence of occupation for a bank to bank dam. Investigations are still underway.
The need for energy and the various energy options available to meet demand is set out in BC Hydro Integrated Resource Management Plan. Of note, is that the parties to the Columbia River Treaty (CRT) have the ability opt out of the CRT by 2024 at the earliest. Ten years notice by either party is required, thus BC will be in a position to notify US interests of whether it wishes to opt out or renew the CRT in 2014 – less than two years away. The ending of the CRT could mean that BC could obtain back 50% of the power benefits generated by the three treaty dams on the BC side of the Columbia River. That major increment of power could offset or negate the need for a major project such as Site C. Thus the BC Government's decision in respect to the CRT has ramifications for the Peace River and Peace River Basin and ultimate decision to move forward with Site C or not.

Cumulative Effects

All of the above noted effects can act in synergistic way resulting in a range of cumulative effects. Again, the Northern River Basin Study (NRBS) was one of the first attempts to identify and assess incremental, multiple source and multiple stressor impacts. The work and recommendations of the NRBS has in theory been continued through the Northern Eco-System Initiative (NERI) and Mackenzie River Basin Management Board (MRBMB). With this said, many of the key recommendations and concerns highlighted in the NRBS have yet to be implemented by any jurisdiction.

First Nations throughout the Peace River Basin have anecdotally reported that they have observed and experienced overall declines in fish and wildlife populations through the Basin

and within their traditional territories. Elders and land users of the Horse Lake First Nation have reported that is becoming increasingly difficult to hunt, fish, trap and gather successfully and in the preferred manner. This trend has appeared to become more pronounced over the past twenty years with the effect being most pronounced in areas that have experienced greater levels of resource development. HLFN elders and community members also report that it has become increasingly difficult to successfully fish in the Peace River and its key tributaries. **(Source: Personal Communication – Jayme Savard – HLFN Industry Relations Corporation, 2013)**

Throughout the Peace River Basin, First Nations have called for cumulative impact assessments, appropriate cumulative impact management frameworks, land use plans, protected areas, special measures and a regional strategic environmental assessment to address the combined, aggregated and synergistic effects resulting from multiple stressors in the Peace River Basin. While the BC and Alberta Governments have initiated pilot projects, sub regional plans and monitoring bodies, none as of yet have squarely dealt with the issue of cumulative impact on First Nations ability to utilize lands and resources, the ongoing taking up of lands and the impacts on First Nations rights and way of life.

Governments do require a limited form of cumulative assessment within the context of project specific environmental assessments. However such assessments are scoped narrowly to address the incremental effects of the applied for project, adjacent developments and any project that has been formally applied for. Such assessments are temporally and spatially limited and have not considered impacts on First Nations and their rights and interests. When environmental assessments are circumscribed in such way by government policy and only consider the incremental effects of a proposed project (with a base case set in the present day), it fails to consider the above range of stressors and the cumulative impact of these stressors. The HLFN's ability to hunt, fish, trap, gather and utilize the land has been heavily impacted and the current scope of their land use activities and resources results from the cumulative effect of development.

Thus when environmental assessments for major projects do not consider the cumulative impact of development and the limitations it places First Nations in a "Catch – 22 Situation". Environmental assessments end up evaluating the incremental effects of a new project, consider the resulting apparent limited First Nation use, then go on to conclude that the project will result in zero to little impact on First Nations rights and interests. An appropriate disturbance analysis is needed to place a project's effects in the correct context as experienced by the First Nation.

5.0 INTEREST AREA 1: BASELINE CONDITIONS - HISTORICAL AND CURRENT USE OF LANDS AND RESOURCES FOR TRADITIONAL PURPOSES

5.1Scope of the Assessment

At the outset of the socio – economic impact assessment data gathering exercise, BC Hydro established information requirements (under the *Canadian Environmental Assessment Act* and *BC Environmental Assessment Act*) that it believed would satisfy statutory and common law requirements. For Interest Area #1 (Land and Resource Utilization). These are as follows:

Topics

- Fishing, Hunting, Trapping, Earth Material Gathering, Overnight Sites and Culturally Significant Areas, Socio – Cultural, Ecological and Treaty Interest and Cumulative Interaction with the Dunvegan Hydro Electric Project

Key Indicators / Information Source

The HLFN has not undertaken any new research to assist in the preparation of the community baseline report. Rather it is relying on existing sources of information and reports that have been prepared in the past for Interest Area #1. Key documents that have been taken into account include:

- The 2011 Horse Lake First Nation Traditional Land Use Survey
- The 2011 Ethno – Historical Report prepared by Bouchard and Kennedy
- The 2012 Horse Lake First Nation Country Food Harvest Survey
- Personal communication with HLFN community members and council

5.2 Ongoing Land and Resource Utilization by the HLFN: Overview

Despite the considerable change that has occurred in the regional economy and the impacts that have been experienced by fish and wildlife populations, the HLFN continue to utilize and rely on the lands through the Peace Region, north – western Alberta and north –

eastern BC. Hunting, fishing, trapping and the gathering of earth materials are activities and vocations that are still practiced and extant rights that are exercised.

HLFN community members also undertake activities that are incidental to hunting, fishing, trapping and gathering practices such as building and maintaining camps and cabins. Some of the HLFN members trade and sell what they kill, catch and gather, thus there can be an economic aspect to these traditional vocations. In some cases, guide outfitting has also been incorporated into HLFN family's traditional round of activities.

As documented in the 2011 HLFN Ethno – Historical Review, the HLFN were required to cover vast distances travelling hundreds of miles every year from the Peace River into the hinterland. Today, the HLFN are again required to travel great distances given that many areas close to the Peace River have been cleared, heavily logged and fragmented through road building and petroleum development. Through the last forty years, many HLFN community members report that they often find it harder to successfully hunt, fish and gather in the areas in which they historically utilized and relied upon. **Jayme Savard is a lands and resources officer that works in the HLFN community. He was actively involved in the HLFN 2011 TLUS and the 2012 HLFN Country Food Harvest Survey. He notes that almost without exception, all community land users report the increasing difficulty that they have in hunting and fishing today. Overall, it is reported by many community members that it takes them longer to catch fish and kill wildlife than it did years ago, and that they appear to have the greatest challenge today in areas that have experienced heavier levels of disturbance and fragmentation. He also notes that many community members also report that they must cover more ground and cover greater distances as the years pass to find sign of animal and areas that host more wildlife. (Source: HLFN Community Member Jayme Savard - Personal Communication, 2013.)**

While the HLFN 2011 TLUS did not document the process of land use alienation, it appears from the transcripts, that the majority of community members raise the issue and cite it as being significant and limiting factor. In short, HLFN members are having to alter their hunting, fishing and gathering patterns given the effects of an increasingly industrialized landscape. On the ground, this means that many community members are having to shift their land and resource activities away from their usual and accustomed places for hunting, fishing and gathering to other more far flung areas. It also means that they are having to travel greater distances and undertake a greater number of trips to achieve the goal of providing for their immediate and extended family.

In fact, a fascinating but logical transition is occurring. The lack of fish and wildlife in close proximity to the community is requiring HLFN families to travel further afield. In the past, "old timers" travelled large distances on foot, with dog teams and by boat along the Peace

River. Trips of 100KM – 400KM where not infrequent (linear distance between points). So, the HLFN is now seeing a transition occurring where greater distance is having to be covered once again by community members, where current land use patterns are more closing resembling historic patterns. Of course today, HLFN members travel to these areas using their vehicle to spend time in a given area. It is surmised that a similar transition is underway with other First Nations within the Peace River Basin, given the levels of development and similar ecological stressors that they must contend with.

The sites identified within the HLFN 2011 TLUS reflect *examples* of *some* land and resource use sites that could be recalled by HLFN community members within living memory – reflecting both recent past, current and ongoing use. The HLFN maps depict community land and resource use "extensively". The HLFN "All Sites" Map within the TLUS depicts the outer bounds of the HLFN land and resource use by those community members interviewed. **(Source: 2011 HLFN Traditional Land Use Survey, 2011)**

Thus based on available information at this time, the HLFN community collectively travels from the reserve community at Clearhills and Horse Lake to utilize lands and resources as far out as the following example locations:

- **as far east as Wabasca**
- **as far west as Williston Lake**
- **as far north as Fort Vermillion, and**
- **as far south as areas within the upper Jasper Park watersheds in BC and Alberta**

A concentration or locus of traditional use activity is evident extending from Hudson Hope to South of Grande Prairie.

A clear and consistent pattern of community land use and resource utilization is also clearly evident all along the Peace River extending from the Site C location, to the BC – Alberta border, to Dunvegan, to Peace River.

Sub clusters or nodes of land use and resource utilization are also evident at the following locations / areas:

- **South of Clearhills along the Peace**
- **South of Taylor**

The HLFN has proposed to BC Hydro to conduct a TLUS Density Analysis (aka "Heat Mapping") using an agreed to, transparent and defendable mapping methodology. Areas

would be coded as “Important”, “Significant” and “Critical” based on the concentration. This may or may not be undertaken during the EA Review of the Site C Project. If it is, clear patterns of TLUS Density would emerge and be suggestive of the relative importance of certain areas to HLFN members over their lifetime. However, the ongoing shift in land and resource use patterns that is occurring (due to the increasing difficulty of hunting, fishing and gathering) also needs to be kept in mind.

5.3Reliance on Country Foods and Bush Commodities by the HLFN

As noted, the HLFN has not had the opportunity to undertake a significant amount of cultural – socio – cultural research however, it has been afforded some limited opportunity to do so with the support of BC Hydro in relation to the Site C project. The HLFN has undertaken a Country Food Harvest Survey that clarifies species relied upon and those country foods that have and continue have key socio – economic and cultural value to the HLFN. In the following section, species of cultural importance, cultural values and key interests to the HLFN community are described. In a later chapter, the relative importance of these species and the role they play within the diets of the community and culture of the HLFN is also discussed and elaborated on.

Thus the 2011 HLFN TLUS reveals that the following species are of cultural, socio – economic and socio – cultural relevance and interest to the HLFN are but not limited to:

MAMMALS

1) Moose
2) White Tailed Deer
3) Mule Deer
4) Elk
5) Bear (Grizzly and Black Bear)
6) Other Ungulate (Includes Caribou, Mountain Goat, Sheep)

BIRDS

1) Waterfowl
2) Upland Birds

FISH

1) Trout (Bull Trout and other species of Trout)

2) Northern Pike
3) Walleye
4) Whitefish
5) Other Fish
6) Grayling

BERRIES (TYPES)

1) Saskatoon Berry
2) Wild Raspberry
3) Blueberry
4) Wild Strawberry
5) Choke Cherry
6) Low Bush / High Bush Cranberry
7) Other

Following the conduct of the 2011 HLFN TLUS, the HLFN conducted a supplementary Country Food Harvest Survey. The HLFN opted to use a survey model and template based on the “Nunavut Wildlife Harvest Survey”, with some modifications.

The HLFN retained a community member to undertake the 26 surveys on a one–on–one basis with the identified head of each household. A sound balance of gender and age groups was achieved among the selected respondent group. Overall, the recognized or designated heads of households were invited to participate. Overall the 26 respondents that participated reported on the consumption patterns of up to 125 people within the HLFN community (on reserve). The interviews took place through August and September of 2012. The same questionnaire was administered in every interview to ensure that every question was asked of the same respondent in the same way. Respondents were asked to report on their consumption of country foods within the past year or over past three years.

The results of the survey were tabulated into a matrix where results were compiled. The Matrix is listed as **Appendix 6: HLFN 2012 Country Food Harvest Survey.**

In reviewing all completed questionnaires, it is evident that the exercise was conducted according to expectations and instructions. With this said, some examples were noted where deviations occurred in recording of data and some evidence exists indicating that questions and or answers may not have been completely understood. Specifically, the following potential issues should be taken into account when reviewing and considering the results of the HLFN 2012 Country Food Harvest Survey:

- While instructions were provided to respondents to report on current country food consumption within the past year or average over the past three years, there is some limited evidence that a few respondents may have cast further back in time as evidenced as citing trapping as a current activity and higher levels of caribou consumption than expected.
- Whenever there was any doubt or ambiguity in reported consumption amounts, a conservative amount was used. For example, where they may have been some uncertainty over an amount of food being consumed, the likely lowest amount of 3 0z or one “palm” was assumed.
- In many cases, respondents reported on the seasonal or occasional (as available) consumption of foods (e.g. rabbit, ducks, geese). Where this occurred, these amounts were not factored into the total given the difficulty in estimating such amounts. Thus the survey really tracks staples within the community diet that can be more readily tracked on a week by week basis. However, it must be noted that seasonal foods such as ducks and geese do play an important role within household diets given times and given seasons. The same held true where people fished in certain limited periods. Thus, the reported consumption levels are skewed downwards as a result.
- There appears to have been some confusion in some limited cases where there was inappropriate recording of consumption per person occurs and consumption per week. If the information was clearly incomplete and not having any substantive basis, the result (amounts) were deleted and not tallied in the matrix. Such occurrences appears to be the exception and not the rule, however such occurrences should be taken into account when reviewing the results. Overall, the approach taken would result in the dampening or under – recording of community consumption.

Thus the results of the 2012 HLFN Country Food Harvest Survey can be viewed on Appendix 6.

Concerns Related to Country Foods and Consumption

- Most consistently expressed concern in relation to harvesting country foods is contamination in fish and wildlife and water quality / pollution in water (which also includes Peace River flows and fluctuation in flows)

The results of the HLFN 2012 Country Food Harvest Survey could be extrapolated to the entire community, however the HLFN has not elected to do this at this time. In doing so, HLFN might present a skewed picture of country food consumption within the reserve community. This might overlook that some households might not consume any country foods or very little for various reasons. With that said, the results of the harvest survey are quite compelling in providing some confirmation that the HLFN, in spite of its population and location within the heavily developed Peace Region, could still be characterized as a community still attached to its traditional land base and in need of country foods that it provides.

Clearly the survey provides some indication that hunting and the consumption of wild game is a key socio–economic and socio–cultural activity within the community that continues to the present day. Fishing comes second with gathering, earth and plant materials third. While putting food on the table for a variety of pragmatic reasons is a clear priority in the community, maintenance of a traditional way of life, maintaining a connection with the land and transmitting the culture to the next generation are also key values to the community.

The results could and should be compared with other First Nations in the Peace Region and north–eastern BC and north–western Alberta. While the HLFN might not consume as much in terms of country foods compared to their relatives to the north and in the North West Territories, the bush foods and commodities that are brought into households are significant and serve an important function for a small community.

It appears that the slowing down of the traditional economy in the community stems from several factors. It appears that the sheer level of industrial development and displacement or declining fish and wildlife populations are key factors contributing to this downward trend. There is some degree of concern over contamination in fish and wildlife and especially in regards to fish populations in the Peace River. Declining water quality and quantity was also raised by several people as limiting their fishing activity in the Peace River. Further, Hydro – Electric operations and fluctuating levels were also mentioned in some interviews.

The HLFN has opted to not monetize the value of country foods, given it thinks the caution should be applied to the initial results obtained from the harvest survey. The HLFN would caution that a second survey should be conducted on the same population or a different

group to compare results. With this complete and should the results be consistent an exercise to determine the replacement costs of country foods might be warranted.

5.4 Hunting

The HLFN's culture is one based on the long practiced art and vocation of hunting. As documented within the HLFN Ethno – Historical Review, it was evident that the Horse Lake relationship with the land and mammals was key to their ongoing survival and the perpetuation of their culture and way of life to the present day. Early written accounts of the Beaver, Cree and Iroquois ancestors of Horse Lake noted their proficiency as hunters and a mode of life that was based on the seasonal round, following and anticipating where game would be.

All manner of animals were hunted, however it is clear that large mammals such as buffalo, caribou, moose, elk, deer and bear were sought after given their ability to feed a family efficiently from large kills. Other smaller animals and fur bearers sustained Horse Lake families as they travelled and in need. Ducks, geese and grouse also played a key role for Horse Lake families. Today, moose appears to be the most sought after ungulate / large mammal and is preferred by most families, however elk and deer is also important.

Most hunting activity is conducted to provide sustenance for families, however, several Horse Lake members have utilized their renowned hunting skills in the guide out fitting industry in north – eastern BC and Alberta. Also, some HLFN members report that they trade killed wildlife with groups from the Fraser River and the BC coast for salmon and steelhead fish. With this said, hunting appears to generally occur to address family and community sustenance and socio – economic needs, however hunting is also linked to the desire and need to be in "bush" by many, thus hunting is closely tied to cultural, social and spiritual needs and obligations.

Based on anecdotal reports and emerging interview evidence, it is clear that hunting activities have declined somewhat over the last 20 – 30 years due to predominance of the cash economy in the community, habitat changes and impacts and shifts and drops in wildlife populations. Notwithstanding, a large percentage of Horse Lake families reported that they continue to hunt numerous species and rely on country foods.

Based on the 2011 TLUS and 2012 County Food Harvest Survey it appears that a significant number of people within the community have hunted over their life time and continue to hunt mammals and birds. Key species hunted include:

- Moose
- White Tailed Deer

- Mule Deer
- Elk
- Caribou
- Bear (Grizzly and Black Bear)
- Other Ungulate (Includes Caribou, Mountain Goat, Sheep)
- Waterfowl (Geese and Ducks)
- Upland Birds (Prairie Chicken)
- Rabbit
- Porcupine
- Beaver

A significant number of moose kill sites are reported and the number of kill sites (examples) suggest that moose have and continue to be heavily hunted by community members. This survey documents such practices as occurring as far back as the 1940's and continuing the present day (the practice obviously existed beforehand, however other sources of information are needed to support this). Moose appears to a species that HLFN community members prefer to procure, highly value and acts as key staple in the HLFN diet. **.** A significant number of kill sites (examples) are also recorded for Mule Deer, White Tailed Deer, Elk, Bear, other mammals, Upland Birds and Waterfowl. Some caribou kills sites are documented within this mix of species. **(Source: HLFN 2011 TLUS, 2011)**

In respect to the HLFN's territory, it is clear that Peace River acts as a critical habitat for ungulate populations. Ungulates move to and with sources of water thus community hunters tend to find moose moving along the Peace River and along its main tributaries. In the fall, HLFN hunters have observed that moose can be found along the Peace River in August through to October. As winter sets they tend to migrate back away from the Peace River into the hinterland through November to January. There is a marked movement of moose back to the Peace around February.

(Moose cross and attempt to cross the Peace in winter months. HLFN hunters believe that moose favor the slopes of the Peace valley given the thermal cover afforded by both dense forests and the grade of the valley slopes, where colder air tends to flow to the bottom of the Peace valley. In the summer, moose appear to gravitate and are seen on islands in the Peace and back channel areas given the protection that these islands provide for birthing and rearing of young from predators. Notwithstanding the fact that the much of land has been cleared to the very crests of the Peace Valley on both sides, the steepness of the valley has in many instances been a deterrent to development and forested lands remain. The steepness also limits truck access along the Peace River from into Alberta. As such community hunters report that when they go into the valley, they find that they are more secluded as are ungulates.

The vast majority of the community share the concern over the decline in the quantity and quality of wildlife habitat through the Peace Region. Since the 1920's, the HLFN has come to be surrounded by cleared and fenced agricultural lands, requiring community members to travel further distances as the years progress. HLFN community members travel from 50KM to 300KM away from the community to find suitable places that still support moose populations. In general, HLFN hunters observe that they tend to experience more success in less disturbed areas that they do in areas that have higher levels of forestry, oil and gas development and linear corridors. Auditory, habitat loss, fragmentation, human access and increased predation by humans and wolves are seen as key factors in driving the decline of moose populations through the Peace River. Both in BC and Alberta, wildlife officials maintain that ungulate populations are healthy and thriving however such views do not appear to match up with community repeated and on the ground observation of this trend. **(Source: Personal Communication – Chief Rick Horseman – HLFN, 2013)**

Over the past four years, the HLFN have taken action to place the Crown on notice about its observations of the decline of game within heavily developed areas and its concerns about the overall pace and scope of development within its traditional territory. The community has raised the issue of this decline and cumulative effects and impacts within the context of regulatory reviews and has requested that the Crown undertake a cumulative impact assessment of the region that considers the overall impact on the exercise of HLFN rights and the way of life of the HLFN people. At this time, no proponent or agency has agreed to enact to undertake a disturbance analysis that would allow all key parties to understand both the incremental and cumulative effects of a project within an appropriate context. **(Source: Personal Communication – Chief Rick Horseman, 2013)**

Thus, the community finds that its hunting patterns are having to shift given the low moose populations found in areas that they have traditionally hunted in the earlier part of their lives. For example, HLFN hunters report that they now travel to more intact areas such as:

- **List newer / less disturbed areas that some HLFN members are now travelling to hunt, given the amount of disturbance and lack of wildlife that is now found in traditionally favored hunting areas – e.g. areas north of the Clear Hills reserve, into BC near Monkman falls and into the high ground areas to west into BC – be as specific as possible, Pink Mountain etc) me**

(Source: Jayme Savard - HLFN Lands and Resources Officer, 2013)

Some hunters travel the Peace by boat favoring to hunt in the style that their parents used. Two families in the community have used boats to travel up and down the Peace to hunt for moose and other species. Several community members documented one such trip in the

past three years where they travelled upstream from Dunvegan to hunt along the shores up to Many Islands and back down river.

It appears that moose tend to favor the backwater areas and side channels and wetland areas found along the Peace River and they are often sighted and taken in such environments. However, some community members note that the numbers of moose found along the Peace River have declined substantially over the last two decades, however they can still be found there with some degree of success.

While elk and deer are not sought after as much as moose, they are hunted and contribute to the country foods based diet of Horse Lake families. Community members observe that deer and elk are found in more diverse habitats species and are becoming more habituated to farmer's fields over the years and are developing an understanding that they can find some degree of protection near farmer's houses and out-buildings. Elk and deer are not a preferred species by community members as their meat has taken on grain fed taste and texture over the years.

It appears that caribou were once a preferred form of game, however, declining numbers has all but eliminated the HLFN's hunt of caribou. Many hunters report that they elect not to hunt them due to their low numbers and their hope is that the species will recover through their former ranges. With this said, community hunters would like to continue the hunt, should their populations be restored. Community hunters fear that moose will become a species at risk like caribou if current habitat and overhunting trends continue. **(Source: Jayme Savard - HLFN Lands and Resources Officer. 2013)**

Overall, the community appears to continue to have a relatively heavy reliance on game procured by way of hunting. Given the level of impact and rate of urban and industrial expansion, the HLFN culture appears to be very resilient with a high percentage of the community being active hunters or reliant on community hunters. A culture of sharing what is taken from the bush is still in effect, with families sharing game with each other when a kill is made. The 2012 Country Food Harvest Survey confirms the key role of game in the diets of a large number of community households.

The skills and hunting of culture is clearly being passed along with the HLFN. HLFN elders can name younger men and women that are showing an interest in hunting, learning about hunting and being in the bush with their family. The 2011 HLFN TLUS incorporated interviews with people of the younger generation. Based on these interviews, it appears that the younger generation of the HLFN now appear to be accompanying their families into the bush and are now going into the bush by themselves. This finding was confirmed by responses of community households strongly indicating that the next generation are taking on an active role in hunting and that bush skills are being passed onto them.

The 2011 HLFN Traditional Land Use specifically sought to obtain spatial data from respondents on examples of where specific wildlife species have been killed. The survey documents *examples* of *some* of the wildlife kill sites of a *limited* number of community members. The following locations are demarcated on the category (e.g. Moose Kill Sites) and thematic maps (e.g. Mammal Kill Sites) prepared from interview Bio – Maps:

Moose Kill Sites in Peace River Related Locations

Clear Hills Area along the Peace River

Fort Vermillion along Peace River

Elk Kill Sites in Peace River Related Locations

Clear Hills Area along the Peace River

Fort Vermillion along Peace River

Deer Kill Sites in Peace River Located Locations

Clear Hills Area along the Peace River

Fort Vermillion along Peace River

5.5 Fishing

At this time, no detailed research has been undertaken in relation to the historic fishing practices of the Horse Lake People and this has been due to the funding to needed to research historic fishing practices. The 2011 HLFN Ethno – Historical Review enabled the HLFN to undertake a scoping level of research to determine publically available sources regarding land use and occupancy patterns and uses. The Ethno – Historical Review points to some historic evidence of the importance of fishing within the Peace Region. For example, the Cree opted to settle at Slave Lake given significance of the fishery. Another source noted the modes of fishing adopted by the Cree along the Peace. **(Source: Bouchard and Kennedy - HLFN Ethno – Historical Review, 2012)**

The ecology of the north and region dictated that the Horse Lake families were required to break up into smaller sub groups or family groups through the winter to pursue game and

trap. In summer months, larger family groups and families would come together along the Peace and at key lakes at fishing grounds and fish camps.

It appears that fishing has been undertaken as an activity unto itself – where a community member opts to go onto the rivers and lakes to catch fish. Fish is also undertaken incidentally while people are in the bush hunting and undertaking other activities.

Eureka River

The 2011 HLFN TLUS documents numerous people within the community who have and continue to fish and who are able to recall some examples of sites they caught fish species within the Peace River watershed and Peace River related locations. These include:

Wabasca River, Beaver Ranch River and Horse Creek

Northern Pike / Jackfish fishing was documented occurring in the following Peace River locations:

Walleye fishing was documented occurring in the following Peace River locations:

Bull trout fishing was documenting occurring in the following Peace River locations:

(Note – Bull Trout kill sites further downstream may be a result of mistaken species identification – may be other form of trout)

Other species are noted at being caught in the upper reaches of the Kiskatinaw River

Community fishers report that they have the best chance of catching fish in the Peace River at the confluence of the rivers where there is a mixing of water flows. Also, they note that the side and back channels of the Peace River also appear to be preferred by fish and they have a good chance of success in such areas, however often, these pools will get too low later in the summer. Pools and riffles and runs over cobble along the side channels of the Peace River are also reported to be good places to catch fish, when there is sufficient water flowing. **(Source: Jayme Savard – HLFN Lands and Resources Officer, 2013)**

While HLFN community members appear not to fish as much as they hunt, it is clear that fishing continues to play an important sustenance, socio – economic, cultural and spiritual role in the life of the community. Species fished include but are not limited to:

- Trout (Bull Trout and other species of Trout)
- Northern Pike
- Walleye
- Whitefish
- Other Fish (e.g. Burbot)
- Grayling

The HLFN 2012 Country Food Harvest Survey found that the following species are currently harvested by numerous community households:

USE COUNTRY FOOD HARVEST SURVEY FIGURES AND LIST NUMBERS OF HOUSES REPORTING CATCHING AND EATING THE FOLLOWING SPECIES.

- Whitefish – 15
- Northern Pike / Jackfish – 15
- Walleye / Pickerell – 8
- Trout – 5
- Grayling – 1
- Burbot - 1

Many community member note that they have stopped fishing due to their concerns about changes in water quality and the fish themselves over the years. Where rivers once used to run clear and seem to have many more fish in them, the rivers have become more sediment laden. Community members have noted that this is true of the tributaries that feed the Peace River and site the Wabasca River, Beaver Ranch River and Horse Creek.

Community members also note that the flesh of the fish they catch has changed over time with the flesh not being as firm and tasting different than it did prior to the last two or three decades. Some say fish taste “muddy” now. River levels are noted to have dropped significantly and consistently over the last 20 – 30 years, with many creeks and rivers (that once used to have water running year through) now do not reach the Peace River. The Beaverlodge River was once clear, or not so clear example of this trend. The opportunity and will to fish in such areas has of course diminished. **(Source: Jayme Savard - HLFN Lands and Resources Officer, 2013)**

In respect to the Peace River, elders and the mid generation community members can recall water conditions in the Peace River from the 1940’s to the 1960’s and recall how flows changed and natural seasonal flow patterns were reversed. Community members have also noted how their success of fishing has declined over time where fewer fish can be caught now than once was. Water flows in the summer were clearer, there was more water and back and side channels dried up that once held much more fish. **(Source: Jayme Savard: HLFN Lands and Resources Officer, 2013)**

Numerous community members report they have stopped fishing due to their concerns about pollution in the Peace River and the Wapiti / Smoky Rivers. This in part due to their views that fish contain toxins from pulp mills, sewage outlets and chemical used in the resource and farming industry. It is reported that people used to fish downstream of Peace River however this practice stopped given people's fears about dioxins and furans and that fish seemed to eventually disappear downstream after the DMI Pulp Mill came into existence. While new pulp mill technologies have eliminated the bulk of pollutants, people are still concerned about other effluent that is still discharged into the river from the mill. The Smoky and Wapiti Rivers are seen as being in very bad shape and Horse Lake people appear to have reservations about pulp mill, industrial and agricultural run-off. **(Source: Jayme Savard - HLFN Lands and Resources Officer, 2013)**

The HLFN is interested in seeing watershed management and restoration plans developed that will address their water quality, fish and fish habitat concerns. Community members have noted that they would fish if more fish were present as they once did and they knew that it was safe to consume them. The HLFN is interested in getting engaged in watershed restoration projects, building their capacity to engage in fisheries management and in establishing a fisheries restoration program for the Peace River Basin**. (Source: Jayme Savard - HLFN Lands and Resources Officer, 2013)**

5.6 Trapping and Traplines

Trapping of fur bearers was a key activity that was core to the HLFN's way of life and culture. The HLFN Ethno – Historical Review documents the role that the Horse Lake ancestors played in establishing and supporting the growth of the fur trade along the Peace River. **(Source: Bouchard and Kennedy - HLFN Ethno – Historical Review, 2011)**

Generally, it appears that many Horse Lake members over the age of 50 took part in the trapping economy along the Peace River and through the Peace Region until the industry went into decline through the 1950's to the 1970's. Some HLFN families continued to trap into the 1980's for commercial purposes. The HLFN 2011 TLUS did not attempt to map trapping activity given the complexities involved, however it did take note of who had trapped within living memory. Under the HLFN 2012 Country Food Harvest Survey, some community members report trapping activity, however this may have been confused with past and historic activity. Additional follow up will be required with each respondent to confirm this.

Numerous HLFN members can recall that they travelled out to traplines and stayed in trapline cabins in years past and recall that their relatives told them that they held traplines.

Plans are underway to purchase two to three traplines near the Peace River to assist in re-establishing the practice and vocation of trapping with younger generations. There is a great deal of community support for this. **(Source: Chief Rick Horseman, 2013)**

With this said, people report that from time to time they hunt fur bearers and snare and trap fur bearers out on the land when they make an extended stay on the land. This is generally done for sustenance and spiritual purposes. The HLFN is concerned about the loss of pine forests from the beetle infestation from BC and fear that the loss of pine will impact many fur bearers that rely on pine stands for habitat. Even though the HLFN may not have a current and substantial interest in fur bearers for trapping / commercial purposes, fur bearers play a key role in the food chain and their presence and absence can affect other populations. For example, the Government of Alberta has discovered that wolf populations may be on rise and opt to come into an area, based on the numbers of beaver available. As a by-product of this change, other ungulates such as caribou and moose are killed due to the increased number of wolf packs and the size of wolf packs.

HLFN members report that they have trapped and killed the following fur bearers:

(LIST THE FUR BEARERS AND OR ANIMALS TRAPPED LISTED IN THE 2011 HLFN TLUS)

- Marten
- Wolverine
- Link
- Otter
- Beaver
- Fox
- Wolf
- Coyote

5.7 Plant and Earth Material Gathering Sites

Horse Lake families have always and continue to look to the land to meet their many socio – economic and socio – cultural needs. Everything that was needed by a family could be obtained from the land and many continue to rely on the forests of the Peace Region to provide food, medicines, plants and materials for sacred purposes, logs for building homes

and cabins, fire wood and drinking water just to name some examples. The 2011 HLFN TLUS documented and mapped some examples of sites where HLFN community members have procured plant and earth materials which included:

- Berries
- Food Plants
- Medicine Plants
- Sacred Plants
- Construction Logs
- Fire Wood
- Specialty Rock
- Drinking Water
- Other Plant/Earth Materials

Given the importance and spiritual nature of medicine plants, the HLFN has opted to not describe their purpose or specific locations within this report. Plants play a key role in the cultural, spiritual and medicinal life of the community and elders stress that not all culturally significant plant communities occur uniformly across the landscape. Rather some occur only in relatively select settings and conditions. The HLFN does work with proponents to develop an understanding of the role of certain plants, however this can only be done in strict confidence. Some of the important medicinal plants of importance to the HLFN are found within riparian areas / forests and wetland areas.

Berries and berry picking has always played an important role in the HLFN community. HLFN members travelled to and gathered in summers in areas where berries were abundant**.**

(Source: Bouchard and Kennedy – HLFN Ethno Historical Review, 2012)

The 2011 HLFN TLUS documented that following species of berries that are procured with some degree of frequency (listed from more frequent to least):

- Saskatoon Berry
- Wild Raspberry
- Blueberry
- Wild Strawberry
- Choke Cherry
- Low Bush / High Bush Cranberry
- Other Berry

(Source: HLFN Traditional Land Use Survey, 2011)

As part of the 2012 HLFN Country Food Harvest Survey, a high number of community households reported consumption of the following plants:

Households Reporting the Use of the Following Plants and Earth Materials

See Attached Survey

(Source: HLFN 2012 Country Food Harvest Survey, 2012)

Earth and Plant Material Gathering by the HLFN occurs through BC and Alberta. The map reveals a high degree of correlation of gathering sites and the Peace River, its key tributaries with gathering occurring on or near the banks of rivers. Plant and earth material gathering was documented as occurring in the following Peace River related locations:

- NOTE ALL BERRY PICKING LOCATIONS OCCURING ALONG THE PEACE RIVER **and UP KEY TRIBUTARIES**

(Source: HLFN Traditional Land Use Survey, 2012)

5.8 Overnight and Cultural Sites

It is important to note and appreciate the differences between Indigenous cultures and how those cultures adapted to address their hosting environments and ecological conditions. The Beaver, Cree and Iroquois People of the Peace Region moved across the landscape, planning and anticipating the movement and location of game. The seasonal round of activities required families to move to different locations to undertake different activities. Thus in some cases, families returned to certain locations (to gather berries, trap and fish) time and again. In other cases they travelled to where an abundance of resources could be found hunting, trapping, snaring, fishing and gathering as they went. Thus, the HLFN, like other Beaver, Cree and Iroquois cultures of the north did not leave an abundance of fixed sites on the land such as permanent settlements like other Indigenous cultures did.

With this said HLFN community members can identify numerous cabins, overnight camps, hunting and fishing camps special places, spiritual locations birth and burial sites throughout the Peace Region in BC and Alberta. In the 2011 HLFN TLUS, examples of Overnight Sites were documented as occurring in the following Peace River related locations:

NOTE LOCATIONS WHERE OVERNIGHT CAMPING OCCURS ALONG THE PEACE RIVER FROM 2011 TLUS

Between the Peace River (Cultural places were documented as occurring in the following Peace River related locations:

NOTE SPECIAL SITES / CULTURAL SITES OCCURING / IDENTIFIED ALONG THE PEACE RIVER by HLFN MEMBERS in the 2011 TLUS

(Source: HLFN Traditional Land Use Survey, 2011)

5.9 Lands of Ecological and Socio – Cultural Importance to the Horse Lake Community

In addition the above, as part of the socio – economic impact assessment, the HLFN Lands and Environment Office participated in a meeting where it identified areas of "cultural value", areas of "critical community use", areas containing high "ecological values", areas with "high wildlife habitat values, areas where "wildlife is more consistently to be found" and areas where the community wish to be "preserved and or have limited levels of development". These ratings are based on the numerous contacts that the HLFN Lands Staff has had with community members during the numerous meetings and workshops it has with various government and company agencies.

These areas are determined as critical by the community given the amount of development that has occurred through the balance of their traditional territory, trapping areas and the Peace region as a whole. In general, these lands are determined to be of high cultural and ecological value as they have not been fragmented to the degree that other areas have and have generally experienced less development than other areas. These include:

A) **NOTE EXAMPLES OF AREAS WHERE CONISERABLE COMMUNITY USE OCCURS ALONG THE PEACE RVER OR LANDS AJDACENT TO THE PEACE RIVER EG. The Peace River Valley from the Beatton River to the Notikewin / Peace River confluence. It was noted that while much of land has been cleared and fragmented up to the Peace Valley on each side, the valley plays a critical role for wildlife and is a critical corridor for wildlife movement. The valley sides of the Peace River are seen as critical ungulate habitats. Moose are observed to return to the valley sides during the coldest winter months. Denser areas of timber on the slopes and warmer temperatures are seen as providing important thermal values that help moose in the coldest periods of the winter. Community members also feel that ungulates gravitate to and rely on islands in the Peace. Side channels and back channels areas and synes are also seen as important as they are closer to the sides of the valley and are**

a water source preferred given the closer location to cover. The sheer drop of the valley sides has also tended to inhibit development, leaving the valley bottom somewhat remote where community members can still feel they can practice their culture in relative isolation.

6.0 Baseline Conditions in the Peace River: The Ongoing Operational Effects of Peace River Facilities

There is an important distinction between the impacts that arose as a result of the construction of a hydro – electric project, and those effects that arise from its ongoing operation through time. Over the past twenty years, BC Hydro was directed by the BC Government to undertake consultations with the public and First Nations to identify the range of operational effects that arise from the operation of its integrated electric system / hydro facilities. Both the BC Government and BC Hydro were able to delineate, very carefully, those historical effects that arose from construction of the dams from the effects that arise as a result of ongoing operational decision making and operations of the same dams.

BC Hydro makes decisions on a yearly, monthly, weekly and daily basis that determine how specific facilities and basins are operated. The decisions that BC Hydro makes results in a given operating regime. Each operating regime carries or results in range of ongoing effects. This is true of the operations of BC Hydro's Peace River facilities. In the 1994 Electric Systems Operation Review and the Water Use Planning exercise completed five years ago, BC Hydro carefully identified and categorized the range of effects that result from a preferred operating scenario/s for its Peace River facilities.

The HLFN takes the view that a description of ongoing operational effects are needed and need to be taken into account, given that the current operating regime and resulting conditions in the Peace River set the base case against which the Site C Project must be assessed. The Site C Project will be inserted into this hosting environment and its potential incremental effects need to be measured against the back drop of current Peace River operations. In addition, the EA process will require consideration of both the construction and operational effects of the project. Further, the effects of the Peace River facilities also are a key determinant of aquatic eco-system health, which are key in considering the HLFN's current hunting and fishing activities along the Peace River and Peace River Valley.

The WAC Bennett and Peace Canyon dams in the upper portion of the Peace River Basin effectively reversed the natural hydrological regime of the Peace River causing higher flows in the winter and lower flows summer. While the annual volume of water flowing out of the Peace River hydro – electric facilities are the same as before the dams were in place, the timing of the flows are changed. The dams release significantly greater volumes of water during winter months and then holds back water to refill the reservoir summer months **(Northern River Basins Study, 1996)**

This change has a pronounced effect on the river from Hudson's Hope as far down the Peace River as Peace Point. For example, at Hudson's Hope the mean monthly flow is reduced by nearly 80% in summer months and increased by 500% in winter months. These effects diminish further downstream given the flows contributed by tributaries such as the Pine, Beatton and Wapiti / Smoky Rivers. However, notwithstanding the flows of a large tributary such as the Smoky River, average peak flows at the town of Peace River are 71% per cent of historical levels. **(Northern River Basins Study, 1996)**

The timing of flows is also altered immediately downstream of the Peace Canyon dam. Today, at Hudson's Hope, average seasonal low flows occur in June instead of March and average high flows occur in December instead of June. Prior to regulation, summer flows at Hudson's Hope were roughly twice that of winter flows. Following regulation, summer flows have been cut in half and winter flows are four times greater. The situation is less pronounced further downstream. At Peace Point, summer flows are 66% of historic levels, while winter flows have increased by 250%. **(Northern River Basins Study, 1996)**

In light of the higher winter flows on the Peace River, the relative importance of tributaries to the overall flow volume is greatly reduced during this period. Prior to regulation, tributaries would double the winter flow between Hudson's Hope and Peace Point. The same volume of tributary flow now accounts for only 20% of the winter flow at Peace Point. In contrast, tributaries now have an added significance during the summer months. **(Northern River Basins Study, 1996)**

River temperatures have also changed with cooler waters being released from the facilities in the summer with warmer water being passed down river in the winter. Regulation slows the rate of summer river flows which has consequences for temperatures, fish habitat and fish populations. Some scientists have advanced the view that higher river temperatures may induce the eggs of fall-spawning fish to hatch prematurely, which could affect survival.

The upper Peace hydro facilities also alter the extent and timing of ice formation. Where ice cover occurs, key winter habitats along shores can be covered with frazil ice reducing available fish habitat. Further higher flows in the winter can result in thicker ice cover which can impact critical fish habitat and diminish open water sections on the Peace River which provide overwintering fish habitat. On the positive side, the resulting lack of ice cover in the upper reaches of the Peace River is beneficial and has created additional winter habitat for fish and wildlife that require open water such as beaver. (**Northern River Basins Study, 1996)**

Most sediments are added to the Peace River from downstream tributaries. However, the way in which BC Hydro operates its facilities affects the Peace River's ability to scour and transport the sediments that build up each year. Sands and silts continue to build up in key sections of the river changing the shape of the river channel which also alters vegetation and wildlife habitat. Changes experienced along the river vary from location to location and are dependent on several factors. The river narrows as silts and sand build up along the shores. Islands and sand bars are also growing in size and in number. Vegetation is taking

root in these areas. Further many of the Peace River's side channels and backwater areas are being cut off and not being re-watered, leading to a drying trend. The drying trend is also evident across the low land areas next to the Peace River with new vegetation colonizing these areas. **(Northern River Basins Study, 1996)**

The NRBS acknowledged that the effects being experienced along the main stem of the Peace River have both negative and positive impacts and that these effects differ from location to location. The drying of side and back channels, wetland areas and synes along the Peace results in a net loss of important fish habitat. The drying of these areas also impacts waterfowl, shorebirds, amphibians and other species. However, this transition and the growth of shrubs and vegetation in these areas has created additional habitat for moose, deer and some species of birds. (**Northern River Basins Study, 1996)**

In 1993, BC Hydro was directed by the BC Government to conduct the Electric Systems Operation Review which (ESOR). In summary, the ESOR undertook a comprehensive review of BC Hydro's integrated operations, the operating regimes of all of BC Hydro's facilities, identified the impacts associated with those operating regimes and investigated the costs and benefits of altered operations. BC Hydro worked with a consultative group and key agencies and identified ongoing impacts and issues that arise as a result of Peace River system operations. These include:

<u>Fish</u>

- Dewatering of side and back channel habitats
- Fish stranding due to low in-stream flows
- Fish stranding, high temperatures and side and back channel de-watering
- Low reservoir levels causing fish mortality through entrainment at dam sites
- Low stream inflows below the Peace Canyon dam can impact fish and fish habitat
- Reduced access to tributaries due to low summer stream inflows
- Reverse of normal thermal conditions

<u>Wildlife</u>

- Difficulty for beaver trapping due to fluctuating downstream levels
- Drowning of wildlife due to high winter flows and open water in the winter
- Low in stream flows can impact wildlife and wildlife habitat
- Reduced habitat for fur bearers
- Moose and bear stranding on islands in the Peace River due to high water
- Ungulate birthing habitat on islands open to increased predation during low flow conditions
- Permanent loss of waterfowl habitat in back and side channels of the Peace
- Reduced waterfowl nest production and nesting habitat

Recreation, Navigation and Fishing

- Decreased tourism and recreation potential from lower flows
- Difficulty in launching boats during low flows in spring
- Large daily fluctuations in river flows can affect boating and localized fishing conditions

Water Use and Water Quality

- Hydrologic regime change due to ice jam at Peace River
- Reduced dilution of pollution downstream of pulp facilities and sewage treatment outlets
- Water supply for industrial and municipal users

(Electric Systems Operation River: 1995)

In the late 1990's, BC Hydro received direction from the BC Government to develop water use plans for all of its facilities, including BC Hydro's Peace River facilities. In this context, the Water Use Plan is a technical document that defines how BC Hydro's facilities are to be operated. Management Plans set out operating and non – operating actions to address identified impacts resulting from BC Hydro's facilities and ongoing hydro – electric operations. BC Hydro developed the draft WUP through consultative committees that involved key government agencies. The Peace WUP was tabled with the BC Comptroller of Water Rights in 2003 and the WUP was finalized and formally approved by 2007, five years ago.

The Peace WUP Management Plan made recommendations for improvements and monitoring work that would only apply to the BC portion of the Peace River (more specifically, the stretch of the river from the Peace Canyon Dam to the Pine River.

- Peace Side Channel – To increase fisheries habitat by physically enhancing side channels to allow them to be effectively watered. Successful implementation of the demonstration side channel enhancement would reduce or remove the need for an increased base flow.

- Peace Ramping Plan – To increase fishery productivity by implementing physical work solutions (e.g. physically complex side channel habitat, dig deeper channel inverts etc.) and testing and monitoring the results. If successful, ramping rate changes would not be required.

- Peace Flood Pulse Plan – To improve fisheries productivity and riparian habitat for flora and fauna by investigating the feasibility of periodic flood pulse events to maintain side channel and riparian habitat downstream of the Peace Canyon Dam. If it is determined that a flood pulse is required to maintain the vegetative community

the frequency, magnitude, duration and seasonal timing of planned (and unplanned) events will be investigated.

(BC Hydro Peace Water Use Plan, 2007)

The above noted mitigation measures were recommended in the WUP based on the range of downstream impacts resulting from BC Hydro's ongoing operations on the Peace River. As with case with Electric Systems Operation Review, while the Water Use Plan considered a range of alternative operating regimes, BC Hydro and the BC Government were generally only prepared to consider lower cost operating and non - operating mitigation measures given the significant costs associated with foregone generation and revenues. The Peace WUP will be a subject to a full renewal 10 years following the implementation of the WUP. The WUP will either have to be opened up and amended to account for operations for the new Site C Project / facility or a new WUP will need be developed in parallel to the Peace WUP to govern the operations of the Site C Project. BC Hydro officials have confirmed that the operations of Site C will be determined by operations and flows coming out of the WAC Bennett and Peace Canyon dams.

7.0 The Potential Incremental and Ongoing Operational Effects of Proposed Site C Clean Energy Project

BC Hydro's proposed Site C Clean Energy Project will be located on the Peace River, south of Fort St. John. The bank to bank dam will be over a 1000 metres long and 60 metres high and generate in excess of 1000 megawatts. The foot print impact of the project includes the creation of 83KM long reservoir backing up the Peace, Moberly, Halfway and other smaller tributaries, a 77KM transmission line on the south side of the Peace River, require realignment of sections of Highway #29 on the north side of the Peace River and require three borrow pit areas. Key project components are depicted on maps prepared by BC Hydro **(Appendix 7: Site C Project Components)**.

BC Hydro anticipates that it will submit its project application / environmental impact statement in the winter of 2013. Given this, there is no complete or as of yet, comprehensive document setting out the potential range of potential effects or an assessment of the significance of those effects. Thus, to determine potential project – First Nations interest interactions for this exercise, the HLFN had to rely on the Project Description that has been filed with regulators, summaries of studies produced during BC Hydro's Phase 1 and Phase 2 consultation rounds and known documented effects that arise with major dam construction and operation in western Canada.

In setting out the following list of impacts and changes, the HLFN is not asserting that such impacts and changes will occur, however, it is using this list of potential impacts and changes as a higher level filter to determine potential areas of interaction between project components and HLFN interests.

There are two types of effects that are to be considered to be germane to this analysis. First, are those range of incremental effects and more immediate changes that will result and stem from the construction of the dam and associated works. The second are those range of ongoing operational effects stemming from the operation of the Site C Project. The Site C dam will receive and manage flows and will become part of BC Hydro's Peace River integrated system of hydro – electric works that will potentially contribute to, and convey an attendant range of ongoing operational impacts and change in downstream areas. In short, Site C's operational effects will become one and the same as that of the WAC Bennett and Peace Canyon dams. The converse also holds true – that the ongoing operational effects of the WAC Bennett and Peace Canyon dams will be that of Site C.

To assist in the identification of possible intersection between potential Project effects and HLFN interests, the HLFN grouped effects according to the following separate impact areas. These include:

- Potential Incremental Upstream Impacts: Initial Foot Print Impact and Initial Ecological Change
- Potential Incremental Downstream Effects: Initial Foot Print Impact and Initial Ecological Change
- Potential Downstream Effects: Ongoing Operational Impacts and Ecological Change
- Impacts Associated with Transmission Line, Highway 29 Alterations and Borrow Pits

The specific range of potential effects for each area is detailed as follows:

Potential Incremental Upstream Impacts: Initial Foot Print Impact and Initial Ecological Change

The potential incremental upstream impacts are anticipated to be:

Terrestrial and Vegetation

- Loss of old growth forests / forest in valley bottom and slopes
- Loss of high conservation value forest on river valley slopes and bottom

- Loss of riparian areas and wetland areas
- Potential for elevated levels of methyl mercury following flooding and associated bio - accumulation / magnification issues

Wildlife and Wildlife Habitat

- Loss of high value and unique habitat area within Peace region
- Loss of islands, back channels, side channels, flood plain habitat for ungulates
- Change in wildlife dynamics (movement, distribution, density, breeding, birthing areas, survival and mortality)
- Injurious affections of adjacent wildlife habitat in which Peace River plays integral role
- Loss of thermal cover / critical winter habitat for ungulates on valley slopes
- Localized climate change effects on valley slopes / critical habitat
- Loss of connectivity for wildlife
- Potential water barrier cutting off access for some species
- Limited upstream fluctuations impact of aquatic fur bearer habitat
- Limited upstream fluctuations impact on waterfowl habitat
- Increased hunting levels in Peace valley, adjacent lands and region during construction period
- Increased wildlife mortality due to influx of vehicles along Peace valley, adjacent lands and region during construction period
- Shift of populations away from construction zone during construction period

Aquatics, Fish and Fish Habitat

- Change from natural (albeit regulated) river system to reservoir (Lotic / Lentic shift)
- Loss of fish habitat in main stem of Peace and tributaries
- Alteration of fish habitat in upper reaches of tributaries
- Barrier to fish moving upstream / downstream

- Shift in fish species composition, abundance and distribution
- Entrainment / mortality of fish via turbines
- Entrainment / mortality of fish via spillway when in operation
- Limited reservoir fluctuations impacting littoral zone
- Frazil ice formation impacting near shore habitat
- Upstream ice front impact to over wintering habitat
- Increased fishing levels in Peace River, tributaries, regional water bodies during construction period
- Oxygen depletion in deeper parts of reservoir / stratification

Heritage and Archeological

- Loss of archeological and heritage sites (known and unknown)
- Loss of portion of river having historical and ethno – historical significance
- Loss of historic habitation sites and preferred habitation areas

Socio – Cultural

- Loss of camp locations
- Loss of unique area to utilize, use and occupy
- Loss of free flowing segment of Peace River
- Altered cultural landscape
- Aesthetic / visual impacts of altered river regime and dam

Human Health and Safety

- See methyl mercury / bio-magnification – accumulation issues under fish section

- Sudden flow changes from Peace Canyon could impact fishers / boaters immediately downstream
- Debris in reservoir could impact fishers / boat hunters and trappers
- Change in ice conditions / freeze up for ice fishers

Potential Incremental Downstream Effects: Initial Foot Print Impact and Initial Ecological Change

The potential incremental downstream effects of the Site C project are anticipated to be:

Terrestrial and Vegetation

- Erosion of river channel below dam

Wildlife and Wildlife Habitat

- Possible shift of populations away from construction zone during construction period

Aquatics, Fish and Fish Habitat

- Fish can't access upstream / downstream spawning / critical habitat
- Loss of fish habitat in areas below dam
- Seasonal temperature and flow changes to alter downstream ice formation
- Reduced natural variability in river may affect fish populations
- Increase in methyl mercury in larger fish species below dam
- Fish mortality due to Total Gas Pressure during spill events
- Change in water quality downstream - temperature
- Change in water quality downstream - sediment transport)
- Change in flow levels and timing

- Change in downstream sediment load and river bed mobilization

Heritage

Socio – Cultural

- Loss of free flowing segment of Peace River
- Altered cultural landscape
- Aesthetic / visual impacts of altered river regime and dam

Human Health and Safety

- See methyl mercury / bio-magnification – accumulation issues under fish section
- Sudden flow changes from Site C could impact fishers / boaters immediately downstream
- Change in ice conditions / freeze up for ice fishers
- Change in timing and thickness of ice at Shaftesbury crossing

Potential Downstream Effects: Ongoing Operational Impacts and Ecological Change

The ongoing operational effects of the Site C dam are anticipated to be:

Terrestrial and Vegetation

- Changes in vegetation succession patterns
- Lack of recharge of flood plain wetlands
- Narrowing of main stem of Peace River

Wildlife and Wildlife Habitat

- Loss of wildlife habitat downstream due to change in plant communities
- Losses in aquatic fur bearer population

- Fluctuating levels impacting beaver lodges
- Drowning of wildlife due to high winter flows and open water in the winter
- Low in stream flows can impact wildlife and wildlife habitat
- Reduced habitat for fur bearers
- Moose and bear stranding on islands in the Peace River due to high water
- Ungulate birthing habitat on islands open to increased predation during low flow conditions
- Permanent loss of waterfowl habitat in back and side channels of the Peace
- Reduced waterfowl nest production and nesting habitat

Aquatics, Fish and Fish Habitat

- Decrease in annual variation in river level
- Hydrologic regime change due to ice jam at Peace River
- Drying and dewatering of backwater / side channels / syne habitats
- Infilling of Peace – tributary confluences with sediments
- Fish stranding due to low in stream flows and high flow events
- Fish stranding, high temperatures and side and back channel de-watering
- Reduced access to tributaries due to low summer stream inflows
- Reverse of normal thermal conditions
- Reduced dilution of pollution / organic effluent downstream of pulp facilities and sewage treatment outlets
- Near shore winter habitat impacted by frazil ice formation
- Higher winter flows result in thicker ice cover and diminishing open water that provides over wintering habitat
- Daily fluctuations in flows can quickly alter habitat / feeding conditions

Heritage

Socio – Cultural

- Decreased tourism and recreation potential from lower flows
- Difficulty in launching boats during low flows in spring
- Low flows can impact boat hunters / fishers in navigating and accessing all reaches of river
- Large daily fluctuations in river flows can affect localized fishing conditions

Human Health and Safety

- See methyl mercury / bio-magnification – accumulation issues under fish section

Impacts Associated with Transmission Line, Highway 29 Alterations and Borrow Pits

The impacts associated with the transmission line, highway realignment and borrow put components of the project are anticipated to be:

Transmission Line

- Disturbance to wildlife during construction
- Direct loss of forest resources and vegetation
- Increased access on T/L and indirect effect on wildlife populations from predation
- Fragmentation and increased linear disturbance in area of high wildlife habitat values (Peace Moberly Tract) and within Peace Region
- Raised potential for other industrial users to twin corridor, widening disturbance and area of effect

Highway 29

- Disturbance to wildlife and wildlife during construction
- Direct loss of forest resources and vegetation
- Loss of thermal cover on slopes
- Highway straightening may lead to increased highway speeds / increased mortality

Borrow Pits

- Disturbance to wildlife during construction
- Direct loss of forest resources and vegetation
- Increased wildlife mortality due to numbers of trips to and from pit along access routes and approaching highway

As noted, the sources for the above potential effects and impacts are derived from and checked against the following relevant resources:

- Section 11.0 “Preliminary Synopsis of Project Effects” from the BC Hydro’s Site Project Description
- BC Hydro’s Electric Systems Operation Review
- BC Hydro’s Water Use Plan
- Northern River Basins Study
- Generic Environmental Impacts Identified from Water Impoundment Projects in the Western Canadian Plains Region (Sadar and Dirschl’)
- Joint Review Panel Project Report on the Dunvegan Hydro Electric Project

8.0 The Potential Cumulative Effects of Site C and the Approved Dunvegan Project

In recent years, the Dunvegan Hydro – Electric Project was assessed by way of a harmonized environmental review. The report of the Joint Review Panel is available and its deliberations and findings are relevant and helpful to the analysis of downstream effects and impacts for the Site C Project. Trans Alta has deferred construction of the project and no timeframe has been publically announced for construction start.

The run of the river project would be located approximately 1KM upstream of the Dunvegan Bridge (across the Peace River) and would result in backing of water or the creation of a reservoir or head pond 26KM upstream at a point on the Peace River. The point where this backing effect is curtailed occurs at approximately 20Km downstream of Many Islands on the Peace River. The HLFN does not intend to examine the effects of Dunvegan within the context of this SIA baseline profile exercise. With that said, some of the confirmed effects and impacts of the Dunvegan project have the potential to interact cumulatively with the effects of the Site C project. The HLFN is concerned that there may be a meshing and aggregation of effects for both projects along a zone on the Peace River, which may act cumulatively to impact on aquatic and fisheries resources.

Both the proponent of the Dunvegan project and the Joint Review Panel acknowledged that there would be some intersection of effects between the two projects and that Site C was to be included in the list of projects to be considered within the proponent’s consideration of cumulative effects. The Joint Review Panel concluded that “while BC Hydro’s Site C Dam has been announced, specific details are not available for analysis and that the cumulative effects of the two facilities would be considered at the time of a review process for Site C”. At the hearings, BC Hydro made the argument that as no decision had been made to build, the Site C project should not be considered within the cumulative effects assessment for the Dunvegan project. **(Source: Report of the Joint Review Panel - Dunvegan Hydro – Electric Project, 2008).**

Given that cumulative effects were not assessed within the context of the Dunvegan review and that BC Hydro has yet to filed its Environmental Impact Statement, it is difficult to identify what impacts and effects may occur as a result of the construction and operation of both projects. However, based on a cursory review of the Panel Report and data provided by BC Hydro (pre – EIS information) to date, on the face of it, there appears to be an array of potential interactions and linkages between the two projects that will affect Valued Eco – System components common to both hosting environments.

In respect to Site C, BC Hydro has noted that it believes that downstream effects will be felt along the Peace River, however such affects become attenuated further downstream due to contributions from tributaries. The Dunvegan dam head pond extends 26KM upstream and the project's EIS considered a range of effects within a Local Study Area and Regional Study Area for species that utilize the full range of the Peace from the BC / Alberta border downstream of the Town of Peace River. Dunvegan's studies identified 10 species of sports fish and 13 species of non - sports fish were present in the LSA and RSA where the following sports fish species were found to be most common (listed from highest to lowest)

- Mountain Whitefish
- Burbot
- Walleye
- Goldeye
- Northern Pike
- Kokanee
- Grayling
- Lake Whitefish
- Rainbow Trout

From an aquatic health perspective, Dunvegan is considered to be a significant area on as it marks the transition zone on the Peace for warm and cool water fish species. Knowledge and baseline data for fish movements along the Peace was a key issue that was acknowledged by the proponent and regulators and was one of the key reasons of why project approval was deferred at an earlier period. The EIS and Panel Report for the project documents the long distance migratory habits of some fish species present in the Peace River. For example, Goldeye migrate along the Peace River from BC / Alberta border down to the Notikewin River and Walleye migrate between the Pouce Coupe River and the Smoky River. Within the EIS, the proponent determined that the there was a potential for significant effects for several species with the head pond altering upstream habitat. *The proponent deemed while the potential effects for fish upstream were significant, upstream fish habitat was deemed to be low quality due to limited habitat complexity and fluctuating Peace River flows which are largely determined by outflow from BC Hydro's upstream facilities.* **(Source: Report of the Joint Review Panel - Dunvegan Hydro – Electric Project, 2008)**

Effects on moose and ungulates was a factor considered in the scope of the assessment with the proponent acknowledging changes that will ensue upstream and downstream

creating challenges for wildlife to cross the river in certain locations. In addition, flow changes that will result in the loss of islands (critical habitat for ungulates) in the Peace River or low flows that facilitate predator access to these islands would force ungulates to find other rearing areas, however within a landscape area with limited secluded habitat. Effects on ice formation was another strategic issue considered at length by the proponent and regulators with the project creating a shift to a two front ice system. In fact it appears that the two projects will shift the Peace from a one front system to a four front system between Peace River the upstream areas above Site C.

Thus the zone of interaction between two projects (between BC / Alberta border and Many Islands and Many Islands to Peace River) appears to warrant careful consideration for cumulative effects and their interaction with HLFN's rights, uses and interests.

9.0 Potential Project Interactions: Land and Resource Use

As noted in the Methodology section of this report, the overall objective of this socio – economic scoping exercise is to determine the potential for interactions between potential Project effects and HLFN interests. A potential interaction is deemed by the sum or a given convergence between a given project effect and an extant HLFN interest.

These potential interactions were determined by creating a matrix that set out the range of potential Project effects on the "X' or down axis of the matrix and a range of HLFN interests on the "Y" or cross axis. Where interactions were posited to occur, these were entered into the matrix. Thus the matrix sets out the key information that BC Hydro and Golder Associates wished to obtain for the socio – economic impact assessment. This includes:

- Identification of the potential project effect(s)
- Provision of a reasonable level of description for the potential project effect(s)
- Identification of the potential Horse Lake First Nation interest (e.g. activity) that is present that may be affected by the project and its predicted attendant effects
- Provision of a reasonable level of description of the interest present and how that interest may be affected by the project and its predicted attendant effects
- Assigning a ranking or numbering of the potential interaction

In ranking an interaction as "2", an interaction is deemed to be substantial and meriting further investigation and analyses in BC Hydro's socio – economic impact assessment.

Often, First Nations resource use is understood and described in terms of activities such as "hunting, fishing, trapping and gathering" and other activities undertaken incident to these

activities such as camp and cabin building. The HLFN has and continues to currently undertake these activities, however the HLFN has an interest in the land itself which is tied to ecological health that goes beyond the actual activities themselves.

The ability of the HLFN to exercise a right (e.g. hunting) is contingent upon a healthy population (e.g. wildlife), which in turn requires a healthy habitat or eco-system (e.g. old growth forest or unfragmented forest). Thus in this socio – economic scoping exercise, the HLFN has opted to track where the Site C project may also intersect with the following additional interests, values or where an impact on activity (e.g. hunting) may translate into an impact on the following interests:

- Socio – Cultural
- Community Health and Well Being
- Ecological and Treaty Interests

In the following sections, HLFN provides a narrative summarizing the potential range of interactions, which are detailed in the matrix. **(Appendix 1: "Potential Site C Effect – Horse Lake First Nation Interest Interactions)**

9.1 Hunting

9.1.1 POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE - HUNTING

The HLFN considered those potential impacts that are related to the upstream footprint of the Project, the immediate ramifications of the Project's construction and the initial ecological change that will arise as a result in the upstream component of the Site C Project. These are broken down by key value or potential project effect:

Terrestrial and Vegetation

For the HLFN, a key concern relates to the removal of forest and vegetation along the Peace River Valley and the permanent loss of forest and vegetation following inundation. As noted in the HLFN 2011 TLUS, some examples of HLFN hunting activity are documented as occurring along the Peace River to the north – west of Hudson's Hope. The forest and vegetation along the Peace River valley on the north side of the Peace Valley functions as important ungulate habitat and contains key wildlife attributes and values. This is true even though this side of the Peace Valley has experienced farming and timber harvesting. The loss of forest and terrestrial resources has the potential to significantly

impact forests that moose and ungulate populations rely on. This has the potential to translate into an impact on the HLFN's ability to successfully hunt in this area well into the future.

Wildlife and Wildlife Habitat

The clearing and creation of the upstream reservoir will have a considerable impact on wildlife and wildlife habitat. The Peace River Valley has and continues to play a key role that governs regional wildlife movement and acts as anchor to regional ungulate populations. The islands in the Peace, its back and side channels, the riparian zone, the slopes of the valley and adjacent lands are all components of a complex interplay of habitat attributes. The area hosts significant ungulate populations that are of key interest to the HLFN. The 2011 HLFN TLUS documents examples of hunting that occurs along the upstream inundation zone and in adjacent areas. HLFN moose and elk hunting occurs in an arc from the upper Halfway River watershed to Hudson's Hope to Moberly Lake and around the Upper and Lower Pine watershed.

Immediate impacts from construction are possible with the sheer level of activity and disturbance resulting in a shift of ungulate populations out of the area. The presence of a large workforce in the area, could also have an indirect effect on wildlife populations through a marked increase in hunting and mortality via vehicle collisions.

The longer term impact may stem from the loss critical habitat attributes such as valley slopes which provide critical thermal cover and gradient in winter months and the loss of islands in the Peace which are utilized by ungulates for calving in the spring and summer months. Back and side channels would also be flooded. While moose can swim large distances, they are reported to prefer short spans thus the reservoir could create a barrier to ungulate movement and impact migration and connectivity. Given the range of moose, the effect may go beyond the immediate valley, but to adjacent areas (into the Peace Moberly Tract) and the region as a whole.

9.1.2 POTENTIAL INCREMENTAL DOWNSTEAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE - HUNTING

The HLFN considered those potential impacts that are related to the immediate downstream consequences and ramifications of the project's construction and the initial ecological change that may arise in the downstream component of the Site C project. These are broken down by key value or potential project effect.

Wildlife and Wildlife Habitat

It is possible given the scope of work being undertaken during the construction phase, effects on wildlife may occur in the areas downstream. The HLFN 2011 TLUS documents some examples of HLFN hunting occurring at the confluence of the Pine and Peace Rivers. It is possible that populations may shift out of the area due to auditory and human disturbance. Ungulate populations could also experience a decline due to additional hunting pressure from the large influx of workers.

Human Health and Safety

Many HLFN community members utilize the Shaftsbury Ferry in summer and winter months. Many hunters travel to the south of the community in winter months to hunt on the south side of the Peace River north of Tangent and Watino. They do so, given that this area is in close proximity to the community and the ferry allows the most direct access. Otherwise HLFN hunters have to travel west to the Dunvegan Bridge crossing back country or travelling east to the Town of Peace River and back. The ferry permits relatively quick access to this area that supports a strong wildlife population in winter months. Hunters can rely on the access and save fuel, which is also another factor of they opt hunt on the south side of the Peace River. The 2011 HLFN TLUS documents the number of ungulate kills that occurs in this area. The HLFN are concerned about timing and strength of the ice flow at this important crossing close to the community.

Community members also use the Shaftsbury crossing to save time and fuel when travelling south to Slave Lake and Edmonton in winter months via highways 740 and 49. Changes and uncertainty around freeze up and the condition of the crossing is of interest to some of the community given the additional time and fuel costs involved in going by way of Dunvegan and the Town of Peace River.

9.1.3 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL IMPACTS AND ECOLOGICAL CHANGE - HUNTING

The HLFN considered those potential impacts that are related to the ongoing operation of the Site C project and the role it will play in BC Hydro's integrated Peace River electric systems operations. BC Hydro has maintained that Site C's operations and its attendant effects will be one and the same as that of the WAC Bennett and Peace Canyon facilities. Thus the following identifies the ongoing operational effects and their potential interaction with HLFN interests in downstream Peace River areas. These are broken down by key value or potential project effect:

Terrestrial and Vegetation

Year by year the main stem of the Peace is becoming narrower becoming more confined to a single channel, while back channel, sides channels and synes are dewatering and drying. Further, every year, the tributaries further silt in / silt up given the year to year decisions to release a given amount of water from Williston Reservoir. This overall ongoing impact

results in a change of vegetation and plant communities in the riparian zone and flood plain. The loss of backwater areas and the vegetation found in such areas is being lost and impacting ungulates. The presence of water, forage, cover and escape are important elements that govern habitat utilization by moose. With this said, other types of plant communities are coming into the dried areas, however these communities appear to be favouring and supporting elk and deer browse and habitat conditions.

The potential shift in vegetation may in turn have effects on the HLFN and their preference of hunting moose from boat and long the shores of the Peace River and its tributaries. The 2011 HLFN TLUS documents some examples of hunting occurring along the Peace River that is experiencing the shift in vegetation communities. This includes the Peace River from the BC / ALTA border to Smoky / Peace River confluence to Cadotte/Peace River confluence to Notikewen /Peace River confluence.

Wildlife and Wildlife Habitat

The changes to plant communities as a result of the operation of BC Hydro's Peace River facilities along with the Site C project will potentially impact ungulate populations along the Peace River (as set out in the preceding section). The 2011 HLFN TLUS documents some examples of hunting occurring along the Peace River that is experiencing the shift in vegetation communities. As noted above, the Peace River Valley is a key hunting area for the HLFN with examples recorded along the Peace River from the BC / ALTA border to Smoky / Peace River confluence to Cadotte/Peace River confluence to Notikewen /Peace River confluence.2.

While no formal traditional knowledge study or change analyses has been conducted to document this yearly shift, most HLFN community members are able to discuss the change that is occurring, the drying of important moose habitat along the Peace and the displacement of moose by elk and deer along the Peace River.

As noted the Peace River acts as an important anchor for moose and other ungulate species. Moose tend to be found along the Peace River in the fall months and then move back to the hinterland and high ground areas to the east and west of the Peace River from November to January / February. Depending on winter conditions, moose are found to migrate back towards the Peace River utilizing the slopes for thermal cover purposes and crossing ice covered sections or swimming open water sections. BC Hydro's year to year decision to release higher flows can lead to drowning of moose and other ungulates. Changes to ice formation may affect movement corridors in winter months.

Further in the summer, the islands in the Peace River are utilized by moose and other ungulates given the protection and isolation they afford during calving season. BC Hydro's year to year operating decisions and resulting operating regime results in lower summer flows which can expose the islands to increased predation. This trend could impact on

ungulate populations from the BC / Alberta border to the Notikewin / Peace River confluence where some examples of HLFN hunting on the Peace are documented.

Year to year changes in downstream flows and preferred operating regimes can impact waterfowl nesting and nest production. This could include the drying and dewatering of side and back channels and synes. The 2011 HLFN TLUS documents bird hunting along the Peace River upstream of the confluence of the Peace River and the Clear River and the stretch of the Peace River between the Lieth and Peace River confluence to the Smoky and Peace River confluence.

Most HLFN families can recall hunting and fishing along the Peace River by flat bottomed boats and canoes. Today, HLFN people have and wish to use power boats to support shore based hunting and fishing. Some community members have anecdotally reported on the difficulties in accessing shores and back water areas, due to low flows during the peak of their preferred hunting season in the late summer and early fall. In general, boaters have trouble in reaching near shore areas along the Peace River with boats with outboard motors. Ideally, a shallow draft river boat is now more suited to the conditions on the Peace River, however these craft are cost prohibitive to HLFN families. The change in the river (with low summer flows) has all but reduced HLFN families ability to use boats to hunt in their preferred manner. Further low wages and the lack of employment in the community has barred boat ownership for most. However, in recent years three families have purchased smaller boats which they have to assist them in hunting and fishing. BC Hydro's year to year operating decisions and operating regime (with low flows in summer) has and continues to hamper HLFN access and travel along the Peace River – their once preferred mode for fishing and hunting. One community member has access to a river boat and he undertakes a considerable amount of net fishing and hunting, providing fish and game to HLFN houses.

9.1.4 POTENTIAL IMPACTS ASSOCIATED WITH TRANSMISSION LINE, HIGHWAY 29 ALTERATIONS AND BORROW PITS - HUNTING

The construction and ongoing existence of the transmission line from the Site C dam, through the Peace Moberly Tract to the Peace Canyon dam could have ramifications for wildlife populations and especially that of ungulates. The construction of the transmission line over a two year period may result in a displacement of wildlife populations for a period of time. The transmission line will widen and existing transmission corridor. This will in turn widen a corridor in an area containing substantial wildlife habitat attributes which is far less fragmented and disturbed than other areas within the Peace Region and adjacent to the Peace River.

The Transmission Line ROW may result in increased fragmentation and promote access which could lead to an increased level in ungulate kills. Once BC Hydro has widened this corridor, other companies will be interested in twinning that corridor (e.g. TCPL's recent

plans to build a pipeline along the same ROW corridor). The 2011 HLFN TLUS documented some examples of HLFN hunting occurring in and adjacent to the Peace Moberly Tract.

One concern related to the alteration of Highway 29. It is possible that a straightening of the road could lead to increased traffic speeds and a greater level of vehicle / ungulate collisions over time.

An additional concern arises in relation to the borrow pit that is proposed for the east end of the Peace Reach. It is possible that the sheer number of truck trips to and from the pit and dam site could result in an increased level of ungulate / vehicle collisions.

9.2 FISHING

9.2.1 POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE - FISHING

The HLFN considered those potential impacts that are related to the upstream footprint of the project, the immediate ramifications of the project's construction and the initial ecological change that will arise as a result in the upstream component of the Site Project. These are broken down by key value or potential project effect.

Terrestrial and Vegetation

BC Hydro proposed to harvest up to 1 million cubic meters of timber from the upstream area of the reservoir and remove as much vegetation from the valley slopes and floor as possible. Given this, the potential for methyl mercury releases will be much less than what has occurred with reservoirs where the land base was logged and cleared less. However, it is anticipated that there will be spike in methyl mercury that will be present for some period of time. There is a reasonable concern for the potential for bio accumulation / bio-magnification issues that need to be addressed.

The 2011 HLFN TLUS documented some examples of HLFN fishing in the Peace River downstream of the Peace Canyon dam. There is potential for impact to fisheries resources in this area that has been fished by the HLFN.

Aquatics, Fish and Fish Habitat

The construction of the Site C dam and the 82KM reservoir will result in marked and immediate changes for the upper Peace River in respect to water quality conditions, fish and fish habitat. The mere change of a natural river system from a lotic state to a reservoir in lentic or semi – lentic state may have effects on fish populations. This change may result

in a shift in fish species composition, their abundance and distribution in the new reservoir and tributaries. The natural river system and habitat in place will be lost and or altered with differences in water temperature / oxygen levels / stratification effects potentially arising.

Overall a shift in fish species composition, abundance and distribution may potentially occur. While the new reservoir will not function as a storage reservoir, there may be some fluctuation in reservoir levels impacting littoral zones. The creation of a bank to bank dam may pose issues for upstream and downstream fish passage and limit habitat for fish. Fish mortality may arise from entrainment of fish via the turbines and spillway, when in operation.

The 2011 HLFN TLUS documents some examples of community fishing activity occurring on the Peace River downstream of Farrell Creek, at the confluence of the Peace and Moberly River and at Moberly Lake.

Human Health and Safety

Methyl Mercury issues may arise in the area upstream of the Site C dam thus there are concerns regarding bio – magnification and bio – accumulation. The 2011 HLFN TLUS documents some examples of community fishing activity occurring on the Peace River downstream of Farrell Creek, at the confluence of the Peace and Moberly River and at Moberly Lake.

9.2.2 POTENTIAL INCREMENTAL DOWNSTEAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE - FISHING

Aquatics, Fish and Fish Habitat

As is the case with the upstream scenario, the Site C dam may give rise to upstream and downstream fish passage issues. Fish will be passed through the turbines and over the spillway, when in operation. Discharge from the dam may alter aquatic conditions and conditions for fish from areas immediately downstream of the Site dam to the BC – Alberta border and beyond. Total Gas Pressure (TGP) issues may arise if and when water has to be passed via the spillway. The dam will result in the change of a one front ice system on the Peace to a two font system. If the approved Dunvegan dam is factored in, then the Peace may witness a four front ice system in place and the timing and change in ice formation (extent and thickness) may result in impacts of over wintering habitat for fish and create near shore habitat issues with frazil ice formation.

Existing effects from BC Hydro’s operations are anticipated to be transferred / transmitted further downstream with the placement of the new dam. The reduced natural variability in the river may affect fish and fish habitat. Change in downstream water quality and

temperature is also anticipated which may have ramifications for downstream fish populations. Reduction of downstream flushing flows may continue the effect of sediment build up at tributary confluences and reduction in the main stem of the Peace will impact and reduce the overall habitat available to fish.

The 2011 HLFN TLUS documented some examples of HLFN community fishing occurring on
north bank of the Peace River upstream of Talyor bridge; in the lower reaches of Pine River; at the confluence of the Beatton and Peace River, at Charlie Lake and in the upper Beatton River; on the Peace River at BC / ALTA border; at the confluence of the Clear and Peace River; on the Peace River at Many Islands and at the Fourth Creek - Peace Confluence.

The above noted changes, consequences and effects may have the potential to interact cumulatively with changes, consequences and effects that may arise as a result of the construction and operation of the Dunvegan Hydro – Electric Project. The effects could be both bio physical in nature as well as effecting the HLFN socio – cultural reliance on waters, fisheries and the aquatic environment.

Human Health and Safety

Concerns for methyl potentially arise in areas immediately downstream of the Site C dam. Two community fishers have anecdotally reported that they like to fish below the Peace

Canyon dam given that Bull Trout appear to congregate there. These larger species may tend to feed on fish that have been entrained through the Peace Canyon dam thus bio accumulation / bio – magnification concerns may arise if community fishers begin catching and taking home Bull Trout and larger fish species from the area below the Site C dam.

9.2.3 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL IMPACTS AND ECOLOGICAL CHANGE - FISHING

Aquatic, Fish and Fish Habitat

As noted, the Site C facility will become part of integrated Peace River system, where operating decisions are made about how those facilities should be operated on a yearly, monthly and daily basis to address electricity demand. Given these demands, Site C, along with WAC Bennett and Peace Canyon dams will be operated in a way that reverses that

natural hydro-graph of the Peace River. This results and will continue to result in annual variation in river flows, with much higher flows in the winter and lower flows in the summer and fall. One key issue is the lack of higher water events that mobilizes sediments. As a result the Peace River and lower reaches of Peace tributaries will fill with more sediment year by year. This impacts and reduces fish habitat. This effect is particularly troubling given that such these zones provide the best opportunities left on the Peace River to HLFN fishers.

Natural pulse events (high water flow events) that occurred naturally no longer occur and as a result, side and back channels have and will dry out as a result, further eliminating the riffle habitat where fish once used to utilize. When higher flows do occur and fish to migrate into side and back channels, they can become stranded when levels drop again or stressed and killed with raising temperatures in these areas.

Normal thermal conditions have and will continue to be reversed affecting fish and fish habitat. Downstream ice formation will change and alter and impact on overwintering habitat and near shore fish habitat. The Peace River my move to a four front ice system with two each possibly being created for Site C and Dunvegan, which will play a role in the location and may result in shifts in overwintering habitat. Near shore frazil ice formation may also impact fish and fish habitat in winter months.

Fish feeding patterns and periods within the mainstem of the Peace River are altered by flow changes. HLFN fishers will choose a day within a given season to go out and fish. While conditions may initially appear optimal, flow fluctuations within the course of that day can occur which can all but eliminate the ability to successfully fish within that day.

The 2011 HLFN TLUS identified some examples of HLFN fishing activity occurring from the Site C location to the BC / Alberta border, from the BC / Alberta border to Many Islands on the Peace River, from the Many Islands to Dunvegan, from Dunvegan to the confluence of the Peace and Smoky Rivers and from there north to the south end of Notikewin Park on the Peace River.

Socio – Cultural Resources and Values

The ongoing siltation of tributaries and drying of back channels and side channels and low flow conditions in the summer and fall can create challenges for HLFN community members to launch their boats and accessing the reaches of the river that tend to contain more fish.

Community Health and Well Being

HLFN members continue to have a fear about fishing downstream of the DMI Mill on the Peace River. Even though improvements have occurred to reduce pollutants and effluent,

community fishers not their concern about water quality and fish downstream and believe that fish and river sediments are not to be trusted. Thus community members avoid the downstream area, however report that few fish tend to be found in this area now. Effluent, suspended sediments and organics are still released from the DMI mill which may result in reduced oxygen levels in this area, which may become more of a limiting factor under low flow conditions. **(Source: HLFN Lands and Environment Director, 2012)**

Cumulative Interaction with Dunvegan

The above noted changes, consequences and effects may have the potential to interact cumulatively with changes, consequences and effects that may arise as a result of the construction and operation of the Dunvegan Hydro – Electric Project. The potential effects could be both bio physical in nature as well as potentially effecting the HLFN's socio – cultural reliance on waters, fisheries and the aquatic environment.

9.3 Trapping

In the 2011 HLFN TLUS, the HLFN made an active decision not to document trapping given the complexity in marking trapping activity so as not to detract from its primary research objective and degrade data quality. The consequence of this decision, is that HLFN does not currently have any data on trapping activity.

From an historical perspective, the ancestors of the HLFN were heavily engaged in the trapping trade along the Peace River. Through TLUS interviews, some participants were able to recall trapping into the 1980's and can recall travelling to trapping areas to trap. Further research is required to determine what traplines were historically held by HLFN members and how these devolved to other parties or were clawed back by government agencies.

The HLFN is currently undertaking planning to set up trapping training program to train interested community members and to buy back available trapline areas along the Peace River. The course is planned for this coming winter and spring. Two existing trapline holders in BC and Alberta are actively involved in discussions with the HLFN regarding the sale of traplines to the HLFN.

The HLFN are actively seeking research funding and a research partner to study the relationship of the decline of First Nation trapping, the rise of predators such as wolves (and their raised predation of ungulates) and the rise of beaver populations and the commensurate effect on water quality. It is possible that HLFN and other First Nations may need to become actively engaged in trapping to maintain wolf and beaver populations to address the resource management objectives of a large and healthy moose population and

to increase water quantity and quality in key Peace River tributaries. **(Source: HLFN Lands and Environment Director, 2012)**

9.4 Earth Material Gathering

9.4.1 POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE – EARTH MATERIAL GATHERING

Terrestrial and Vegetation

The creation of the reservoir will result in the loss of old growth forest and high conservation value forests on the valley floor and slopes. Alteration and loss of such forests changes ground vegetation and plant communities that tend to favour the unique growing conditions offered by the Peace River valley. Changes are underway, given the Pine Beetle infestation that has run through the area in the past decade. The HLFN 2011 TLUS documented an example of a plant gathering site Peace River north of Peace/Halfway confluence.

9.4.2 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL IMPACTS AND ECOLOGICAL CHANGE – EARTH MATERIAL GATHERING

Terrestrial and Vegetation

The Peace River system, which will include the WAC Bennett, Peace Canyon and Site C dams will continue to give rise to the drying of the downstream flood plain, back channels, side channels and synes. The vegetation and plant communities within these areas are undergoing transformation which may including culturally significant vegetation to the HLFN.

The 2011 HLFN TLUS identifies earth and plant material gathering at Clear and Peace River confluence; at Many Islands on Peace River, at the Peace River - Hines Creek confluence and the area stretching from the Lieth Creek and Peace River confluence to Cadotte and Peace River confluence.

10.0 Overnight Sites and Culturally Significant Areas

10.1.1 POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE - Overnight Sites and Culturally Significant Areas

Overnight Sites and Culturally Significant Areas

One overnight site was documented between Boucher Lake and the Peace River on the south bank of the Peace River. It appears that this site would not be disturbed, however the surrounding area would be dramatically altered.

Socio - Cultural Resources / Values

The node of cultural activity that occurs north-west of Hudson's Hope suggests that overnight camping is an important incidental activity that is needed to support those activities or rights. Even though only one example of an overnight site was documented, the loss of these lands will eliminate the opportunity to undertake many cultural activities and largely preclude camping along the free flowing stretch of the river.

Heritage and Archeological Resources

While the HLFN has not had the opportunity to review the archeological impact assessment for the Site C project, it understands that the focus of the investigations has been in the dam footprint area and upstream flood impact zone. It is possible that an altered flow regime downstream of the dam may result different currents that could impact and expose archeological and heritage resources downstream over time. This would have the highest likelihood of occurring at where the Peace River bends to the north. The HLFN would have an interest in impacted archeological sites should this effect be borne out.

10.1.2 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL IMPACTS AND ECOLOGICAL CHANGE - Overnight Sites and Culturally Significant Areas

Culturally Significant Areas

As noted in the baseline section of the report, there are few areas left within the Peace Region and within the HLFN Traditional Territory that have not been heavily fragmented and impacted by access roads, oil and gas infrastructure, timber harvesting, power corridors and agricultural clearing. This means that there few areas that are still intact that still provide strong connectivity for wildlife and that support HLFN hunting, that contain rivers that hold healthy fish populations and that are isolated or buffered sufficiently where the HLFN feel that they can still go to practice their culture and traditional vocations. The key values of water, wildlife, fish, wetlands and relative isolation are key to HLFN's ongoing use and utilization of the Peace River. The importance of this valley and aquatic system health within the Peace River is crucial given the losses that have been incurred in other regional water bodies and overall declines in fish and wildlife populations.

The Peace River Valley is one of the key areas left within the HLFN's traditional territory that still supports these above key values. This is notwithstanding the fact that much of lands have been cleared to the bench lands above the Peace. The depth of the valley and the steep slopes along the Peace from the Beatton and Peace confluence down to the Notikewin and Peace confluence have acted as a deterrent to development, and the residual forested areas provide a sufficient buffer and connectivity for wildlife.

Given the drying out of and poor water quality conditions in Peace River tributaries and the impact to fisheries in more accessible rivers and lakes (e.g. "Figure 8 Lake", "Sulphur Lake, Boundary Lake"), HLFN members can still catch fish where the tributaries meet the Peace and when and where backwater and side channels in the main stem still have adequate water in them. The importance of what remains in the Peace River Valley needs to be understood within this overarching context.

The valley itself still hosts critical values that act as a biophysical and cultural anchor or center point. On a review of the HLFN 2011 TLUS, it is clear that a concentration of HLFN activities occur along the Peace River and this concentration of activity occur due the many values present that have and continue to support the exercise of treaty rights by the HLFN.

11.0 Socio – Cultural

11.1.1 POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE – SOCIO – CULTURAL VALUES AND RESOURCES

Heritage and Archeological Resources

As described in the 2011 HLFN Ethno – Historical Review, the HLFN have a long established relationship with the Peace River prior to, during and after the fur trade. The HLFN, along with other Indigenous People along the Peace River, were key to the fur trade's expansion and success. BC Hydro has been conducting archeological investigations that have resulted in the identification and recovery of pre and post contact heritage and archeological resources. The HLFN is unsure at this point whether field investigations have been carried out the at Ft. De Pinette site or not. All First Nations along the Peace River, including the HLFN a shared interest in sites and resources that were not identified will be lost as a result of flooding.

Socio – Cultural Values and Resources

There are some effects of projects that are hard to identify and quantify in measurable terms. The Site C Project may result in effects and change to the Peace River and the Peace River Valley that are in some ways measurable and in other ways that are not. An example can be seen in relation to the expansion of oil and gas fields near the Peace River. While community members can point to examples of change and impact, the most prevalent statement about such areas is, “it’s no longer the same”, “we can longer use the area anymore like we did”,” there is no point in going to the place anymore – it’s lost to us”.

Such comments are often based on perception of change about an industrially altered landscape and also based direct observation of an eco-systems response to stressors (e.g. there are less fish in this area than there once was, the water is less clear in the fall than it used to be etc.). The construction of the Project, the shift of natural river system to a reservoir and the overall alteration of the Peace River valley will potentially impact the HLFN’s use and utilization of the river and valley and their long term relationship with the river valley itself. It is unlikely that any HLFN hunter, fisher, gatherer or family will opt to spend time in the Peace River above the Site C dam given the change dramatic shift that will occur.

11.1.2 POTENTIAL INCREMENTAL DOWNSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE – SOCIO – CULTURAL VALUES AND RESOURCES

The 2011 HLFN TLUS documents a node of cultural use activities and sites occurring between the Peace River and Pine River confluence and the Peace River and Beatton River confluence. There are numerous potential Project effects that potentially come into play in the immediate downstream area. Some examples of hunting and fishing occur within this area. Given the proximity of this area in the immediate downstream impact zone and the nodes of activity, a potential nexus of Project effects and HLFN socio – cultural values and resources is deemed to exist which merits further investigation within the SIA.

11.1.3 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL EFFECTS/IMPACTS AND ECOLOGICAL CHANGE- Socio – Cultural Values and Resources

When viewing the HLFN 2011 Ethno – Historical Review and the 2011 HLFN TLUS a clear pattern of ongoing use and occupancy along the Peace River emerges for the community. All examples of traditional and cultural use activities are anchored to the Peace River and its tributaries. The range of community land and resource use examples depicted in HLFN maps occur there due to the eco-system values held within and supported by the Peace River. Thus aquatic system health and any stressors affecting Peace River aquatic system health can and do place limits on HLFN's ability to utilize the river and river valley.

Most notable are the ongoing effects of reduction in seasonal variability, very high flows in the winter, low flows in the summer, an altered temperature regime the loss of river width, the drying out and loss of back and side channels and synes, the infilling of tributary confluences and changing ice conditions. All of these bio – physical effects can and do translate into habitat limitations for fish and wildlife and even some plant communities.

This either potentially means a decline in populations of shifting away of populations to other areas, if they are able to make that shift. Given the opportunity, the HLFN community could identify the real world effects and change that occurs year to year on the river and how this can affect their use of the river, its banks, floodplain and valley.

One example of how these effects play out on a year to year basis is for moose. As noted, the Peace River plays a critical role or acts as anchor for moose populations and movement. Historically, the moose come to the Peace River to take advantage of habitat attributes that the Peace River provides such as shelter, nearby cover for escape, connectivity via sloughs and valleys, and more secluded back and side channels that contain both water and aquatic plants. The loss or reduction of watered back and side channels, synes and former wetland areas along the Peace River reduces available and preferred habitat for moose and is causing moose to select other habitat areas. What this means for the HLFN is that their historical patterns of river hunting have also had to change as their preferred species to hunt is not as frequently found in the preferred places to hunt.

Another example can be provided for fishing. Community fishers report that their ability to successfully fish in the main stem of the Peace River has been reduced. The preferred time to fish in the Peace River has been the late summer and early fall. Lower water levels in the Peace have reduced the watered run and riffle habitats that fish used to be caught in. More often than not, Horse Lake fishers now tend to rely on and fish at the confluence of the Peace and cooler and clearer tributaries. Horse Lake members report that they have the best chance of catching fish where the waters mix. However, as the confluences of rivers have built up with silt and the silt is not moved or flushed out on a year to year basis, this critical remaining habitat for fish has declined and less fish are caught.

The approval, construction and operation of both the Site C Clean Energy Project and the Dunvegan Hydro – Electric Project introduces a large question in the minds of the HLFN, of how the effects of both projects will mix, blend and interact? A key portion of the First Nations' traditional use area and traditional use activities centers on the Peace River in the

zone where there may be this conflation of effects could occur impacting the socio – cultural interests of the HLFN.

Further, the losses or limited ability to rely and utilize the Peace River by the HLFN also needs to be considered in a regional of watershed context. The Peace River Basin and the Peace River Region has been impacted by various degrees by various forms of development and human activity, of which hydro – electric power production is one form. The stressors from multiple activities have acted in a manner to reduce and place additional stress on fish and wildlife populations in the Peace Rivers, in tributaries or sub – basins. For example poor water quality in the Clear River and possible overfishing has all but eliminated fish from this Peace River tributary. The same can be said of the Kiskatinaw River. Thus in HLFN's viewpoint, all of the potential effects from the Site C Project need to be considered within this socio – economic and socio - cultural context.

As noted within the upstream effect section of the report and matrix, the very knowledge that the Peace River is being further altered, regulated and that its free flowing span is being reduced may have an effect and impact on the HLFN's willingness to use that river. In many community members lifetime, the river has been changed and their relationship and use of the river has been altered as a result. The extension of regulation down river and works down river, may further affect the HLFN's existing and increasingly tenuous relationship with the Peace River.

Further changes in and reduction in fish and wildlife habitat and presence in and along the Peace may very well lead to the HLFN relying less on the Peace River and Peace River Valley as an area of critical community and cultural use. The project's construction and ongoing operation may carry attendant effects that have the potential to alter the very relationship that the HLFN have had with the river. Such risks and potential changes are hard to measure, quantify and document and are often seen as "soft effects". However such change can and does affect a community's perception of an area including its utility, integrity, natural state, health and function and a place where people wish to go to and spend time in.

Given the above reasons, the HLFN added "socio – cultural" as a value or sub – interest under the overarching heading of Land and Resource Utilization. In this case, the HLFN thinks this value needs to be considered and where intersections between potential Project effects and the HLFN's socio – cultural interests potentially occur, the HLFN believes that such interactions require investigation under the Socio – Economic Impact Assessment, within the Environmental Assessment.

12.0 Community Health and Well Being

As can be seen, there are different ways of viewing, classifying and considering potential Project effects and the intersection with the key HLFN value of Lands and Resource utilization. The vast majority of this document attempts to identify how potential bio –

physical effects play themselves out and potentially impact on HLFN various uses of the land. In the preceding section, it was noted how the same potential bio – physical effects can also translate into another range of effect and impact under the rubric of “socio – cultural effects. Another sub – interest or value in need of consideration is that of “Community Health and Well Being”.

In this case “Community Health and Well Being” goes beyond conventional descriptions of community health and wellness (e.g. the presence or absence of physical health issues and the infrastructure and services in place to address community health needs). Rather, this sub-interest and value relates to the long term relationship that the HLFN have had with the lands and waters in the Peace Region and how this translates into a critical aspect of community health and wellbeing.

Mainstream environmental assessment often inadequately addresses health, social and cultural impacts of concern by Indigenous People affected by resource development. In recent years, more attention is being paid to the inability of conventional environmental assessment and socio–economic impact assessment to address the long term and systemic impacts of historical environmental dispossession in Indigenous People and how this translates in to real world health impacts and health inequities. **(Source: Windsor and Mcvey, 2006).**

While statutory requirements pertaining to the conduct of EA’s have come some way in mandating the assessment of health effects with an project specific assessment, significant limitations still exist within environmental assessment as currently practiced. Generally, their focus and concentration remains fixed on bio – physical effects and not the socio – cultural ramifications of major projects on Indigenous People. **(Source: Bronson and Noble, 2006)** While EA frameworks are moving to acknowledge the need to address such issues, the scoping of EA’s and the practice often results in EAs that do not address the issues of most significance to Indigenous People – that of the cultural, social and health effects that stem from the cumulative impact of development of currently proposed projects viewed against a back drop of increasing industrialization and the process of alienation of the land by Indigenous Peoples. **(Source: Kryzanowski and McIntrye, 2011)**

With the above background providing some context, the HLFN has some backing for its assertion that the further hydro – electric development of the Peace River could result in effects to community health and wellbeing. The HLFN experience has been similar to that of other Indigenous People within Canada. It could be said it has in some ways been worse given the layering of development around the core community and through its traditional territory through the years and members have discussed and talked at length about the following consequences of land use alienation and dispossession on the culture, health and wellbeing of the community:

- The surrounding of the community by cleared and fenced farmlands for many miles has contributed to a sense of isolation and being cut off from their traditional lands and culture. This has given rise to a sense that “the old way of life” is no longer relevant and created conflict in views on the importance of culture in the present
- Large portions of HLFN’s traditional territory have been taken up by forestry, oil and gas, road and energy infrastructure. Elders have a feeling of “being lost” when they go out into the bush as travel routes, forests and geographic landmarks have been altered so dramatically. This contributes to a sense of loss, anger and bewilderment in the community and elders having difficulty in passing on culture to the next generation.
- Community members have and increasingly experience a difficult time in locating fish, wildlife populations and plant communities compared to decades earlier. It has resulted in community members having to travel greater distances and new areas with lower degrees of success. This contributes to a sense of frustration, anger and that hunting, fishing and gathering is no longer viable and the investment in time and resources is not helping feed families.
- The Peace River, once acted as the heart of the community’s culture and territory, however, the shrinking of forests around the Peace River, the decline of fish and wildlife resources in and alongside the Peace and river water quality is impacting people’s view of the river as healthy and vibrant and an isolated place where they desire to go to.
- Some people have stopped consuming country or bush foods and commodities given their concerns about toxins in the environment that could affect their families. This resulted in a loss of cultural skills and knowledge to the next generation, increased costs and a diet that may not be best suited to a people and culture that has been attached to the land for thousands of years and used to bush foods.
- The introduction of government regulations, no access areas, fenced lands, the trapline system and other forms of hard boundaries and real barriers contribute to a sense of a loss of freedom and that all that remains are small islands of forest and unfragmented lands which still affords some limited ability to HLFN families to exercise their rights and practice their culture.
- Many community members feel that there is a need to re-strengthen family’s connection with their land as people can “clear their mind” and have “a sense of wellbeing when they are in the bush”.

- Those in council feel that successive administrations and generations lost time and the ability to put a stop to unfettered development when they were not able to appeal to the courts, did not have the resources to seek remedies and did not have the research and evidence to assert their rights and the impact to their rights.
- There is shared sense of anger in the community over how slow corporations and government are to address the real concerns of the community in relation to development. The community is tired of engaging in consultations and environmental assessments that generally always find that no significant effect arises from any project, that there are no cumulative effects at play that affect their use of lands and resources and culture and the bounds that are placed on the discussion, process and study. All the community sees is successive government approvals against a backdrop of a damaged and an increasingly degraded environment and rights that aren't being acted on and enforced by government.
- Community members are frustrated given that they are generally left to live with the consequences of the impacts while other parties gain the substantive benefits of resource development
- All of the above issues contribute to a sense of repression and dispossession. Many in the community feel that the rise in in drug and alcohol use through the last twenty years has been brought about by the sense of dispossession and powerlessness people have felt. There is a sense that this has contributed to internalized oppression and lateral conflict and violence in the community.
- There has been an awakening in the community and understanding of the above relationship between resource development, the colonial relationship, ecological impacts, social relations, a sustained culture and the maintenance and strengthening of community well-being and health and personal health and community health. There is a clear understanding of this relationship and the HLFN has committed to re-strengthening family and community relationships and an overall connection to their land base through planning, strategy, community consultation, cultural programs backed up with an investment in resources

(Source: Chief Rick Horseman, 2013)

The above information is set out as the HLFN takes the view that Community and Well Being is a sub – interest and value of overall land and resource use. There is a sense that the EA for the Site C Project will mirror that of other past and more recent project

assessments that simply doesn't take into account this critical facet of the community's life and reality.

An alternate framework to the EA process in general that considers such ramifications would be helpful and is needed, however, based on past experience, is not likely to occur in relation to the Site C Project. With that said, the further regulation of the Peace River and conversion of the river into a managed eco – system (with its attendant effects) may further exacerbate the alienation of the HLFN people from the Peace River and Peace River Valley. Thus HLFN takes the view that there will be an intersection between potential Project effects and community health and wellbeing and this intersection should be considered within the context of the environmental impact statement and socio – economic impact assessment.

13.0 Ecological / Treaty Area Interest

Environmental assessments consider effects of projects. The *BC Environmental Assessment Act* and *Canadian Environmental Assessment Act* contain statutory provisions that generally mandate the gathering of information to assess effects on Aboriginal people's use of land and resources. At this time, proponents are not directed to determine a project's impact or effect on the exercise of aboriginal and treaty rights. In theory the Crown is supposed to conducted separate consultations to determine this. In practice, the Crown uses the proponents EA and the results of the EA review process to make a judgment on the potential infringement of and impact to First Nations rights and interests. Thus, intersections between potential projects effects and information about the existence and exercise of rights are then identified to highlight the potential for the risk of infringement and impacts.

Whether this is a correct framework and approach or not, the project's potential effects on the First Nations' rights and interests needs to be considered. Thus within this document and the associated matrix, the HLFN has included a section on "Ecological and Treaty Interests" of the HLFN. Where a potential Project effect and impact is identified, the HLFN deems that an intersection also occurs with their ecological and treaty interests.

The justification for this is, is as follows:

- The HLFN has a clearly established treaty right to wildlife, fish, vegetation populations and communities
- The right to these resources can only be exercised and or reasonably exercised if there are sufficient populations available

- Sufficient populations are largely determined by habitats of sufficient quality and quantity or to support populations which rights are predicated upon
- Thus the First Nation treaty right goes beyond the mere undertaking of an activity – the interest is based on healthy populations, healthy habitats and any impact or effect that may affect the bio – physical environment

Another consideration needs to be taken into account. What has come into practice is a school of thought and action that only take into account effects and impacts where a First Nation can demonstrate historic and ongoing use and occupancy. While it is important to consider this, what also must be considered is the potential area over which rights can and may need to be exercised. As has been noted, the sheer level of impact that has been experienced in the Peace River Basin and Peace River Region is requiring HLFN members and families to turn to far flung areas and areas considerable distance from their community. As has been noted, Indigenous People from Saskatchewan and the High Level area now come south to the Notikewin and Whitemud watersheds and the Sulphur Lake area given the numbers of caribou and moose that can be procured there. These people are having to travel further as they have run out of moose and other preferred resources close to their home and in their usual and accustomed hunting and fishing locations. The HLFN are having to do the same. Thus the area where someone has fished, hunted and gathered in the past may no longer be able to support the need of a given family in the present and into the future.

Given this, even though a HLFN member may not have hunted in the Rocky Mountain House area or Pink Mountain area, they may very well need to. They certainty have the right to do so, thus they also have an interest in any effects that projects may have on the bio – physical environment – even if it is an area where they have not exercised a given right.

The needs of the next generation must be considered in this context. The areas their mother and fathers have used and have shown them how to use, may not necessarily be the areas that they will use or need to have access to in their lifetime. Thus within this exercise the HLFN created an additional sub – interest and sub – value under Lands and Resource Use, labeled “Treaty and Ecological Interest”. The HLFN deems that where the Site C Project results in a potential bio – physical effect, an intersection exists with this HLFN interest. These have been conservatively employed in the accompanying matrix.

14.0 Cumulative Interactions with Dunvegan Hydro Project

The HLFN has contemplated the effects of the approved Dunvegan Hydro – Electric Project and how the combined, aggregated effects of both projects may potentially interact and jointly intersect with the HLFN Lands and Resources Interest and the listed sub-values and interests. The run of the river project would be located approximately 1Km upstream of the Dunvegan Bridge and would result in backing of water or a head pond of 26KM upstream at a point on the Peace River due west of Fairview and approximately 20Km downstream of Many Islands on the Peace River.

In respect to Site C, BC Hydro has noted that it believes that there will be potential downstream effects felt along the Peace River, however such affects will become attenuated further downstream due to the flow contributions of downstream tributaries. The Dunvegan dam head pond extends 26KM upstream and that project's EIS considered a range of effects within a Local Study Area and Regional Study Area for species that utilize the full range of the Peace from the BC / Alberta border downstream of the Town of Peace River. Dunvegan's studies identified 10 species of sports fish and 13 species of non - sports fish that were present in the LSA and RSA. The following sports fish species were found to be most common (listed from highest to lowest occurrence)

- Mountain Whitefish
- Burbot
- Walleye
- Goldeye
- Northern Pike
- Kokanee
- Grayling
- Lake Whitefish
- Rainbow Trout

Dunvegan is considered to be significant as it marks the transition zone on the Peace for warm and cool water fish species. Knowledge and baseline data for fish movements along the Peace was a key issue that was acknowledged by the proponent and regulators and one of the key reasons of why project approval was deferred at an earlier period. The EIS and Panel Report for the project documents the long distance migratory habits of some fish species present in the Peace River. For example, Gold eye migrate along the Peace River from BC / Alberta border down to the Notikewin River and Walleye migrate between the Pouce Coupe River and the Smokey River. Within the EIS the proponent determined that the there was a potential for significant effects for several species with the head pond altering upstream habitat. The proponent deemed that while there was a potential for significant effects for upstream fish populations, upstream fish habitat was deemed to be low quality due to limited habitat complexity and fluctuating Peace River flows(which are largely determined by outflow from BC Hydro's upstream facilities**). (Source: Report of the Joint Review Panel - Dunvegan Hydro – Electric Project, 2008)**

Effects on moose and ungulates was another factor considered in the scope of the assessment with the proponent acknowledging changes that would ensue upstream and

downstream creating challenges for wildlife to cross the river in certain locations. In addition, flow changes resulting in the loss of islands (critical habitat for ungulates) in the Peace River or low flows that facilitate predator access to these islands would force ungulates to find other rearing areas, however within a landscape area with limited secluded habitat.

Effects on ice formation were another strategic issue considered at length by the proponent and regulators with the project creating a shift to a two front ice system. In fact it appears that the two projects will shift the Peace from a one front system to a four front system between Peace River the upstream areas above Site C.

Thus the zone of interaction between two projects (between BC / Alberta border and Many Islands and Many Islands to Peace River) appears to warrant careful consideration for cumulative effects and their interaction with HLFN's rights, uses and interests.

15 & 16 Interest Area 2: Community Demographics, Services and Infrastructure

Horse Lake First Nation
Band #449

Community Geographic Location (2 Reserves):
Clear Hills 152C: Loc. 5 km N.W. Fairview (165 km E Fort St John)
Hectares: 1547.1
Horse Lakes 152B: Loc. 60km NW Grande Prairie (148 km NE Fort St John)
Hectares: 1552
Governance:
Custom Electoral System
Quorum (3) 4 year term October 2009-2013
Directly Federally funded programs and services: INAC-Admin, Element, Sec, Post Sec, Ec Dev, Indian Gov't Support, infrastructure, Social assistance, Social Support Health Canada: Community Health Services CMHC Non-profit on res housing, HRDC
Funding Summary:

HORSE LAKE FIRST NATION
Schedule 17 - Schedule of Federal Government Funding
For the year ended MARCH 31, 2010

Federally Funded Programs and Services Directly Funded by the Government of Canada	Federal Funding Received	Unexpended Funding Beginning of Year	Adjustments	Total Funding Available	Total Expenditures (Option 2)	Unexpended Funding End of Year
INAC:						
- Administration						
- Elementary/Secondary Education	1,371,313	-	-	1,371,313	1,478,646	-
- Post-Secondary Education	978,698	-	-	978,698	831,305	-
- Economic Development	72,255	-	-	72,255	572,480	-
- Indian Government Support	544,706	-	-	544,706	4,746,346	-
- Community Infrastructure	584,202	-	-	584,202	899,545	
- Housing	265,751	-	-	265,751	1,544,369	-
- Social Assistance	342,966	-	-	342,966	354,471	-
- Social Support	211,436	-	-	211,436	155,758	-
HEALTH CANADA:						
- Community Health Services	642,990	-	-	642,990	709,509	-
CMHC:						
- Non-profit On-reserve Housing	223,907	-	-	223,907	158,682	-
HRDC:	185,537	-	-	185,537	265,171	-
TOTAL	5,423,761	-	-	5,423,761	11,716,282	-

POPULATION

Primary Sources: Band Manager / Band Administrator / Band Membership Clerk
Secondary Sources: INAC / STATS CAN / AB People's Census data

Population and dwelling counts	Horse Lakes 152B, IRI			Alberta		
	Total	Male	Female	Total	Male	Female
Population in 2011 1	402	...	...	3,645,257†	...	...
Population in 2006 1	335	...	...	3,290,350†	...	...
2006 to 2011 population change (%)	20.0	...	...	10.8	...	...
Total private dwellings 2	111	...	...	1,505,007	...	...

Population and dwelling counts	Horse Lakes 152B, IRI			Alberta		
	Total	Male	Female	Total	Male	Female
Private dwellings occupied by usual residents 3	103	...	...	1,390,275	...	...
Population density per square kilometre	27.8	...	...	5.7	...	...
Land area (square km)	14.44	...	...	640,081.87	...	...

Age characteristics	Horse Lakes 152B, IRI			Alberta		
	Total	Male	Female	Total	Male	Female
Total population by age groups 4	400	205	200	3,645,260	1,827,815	1,817,440
0 to 4 years	60	30	30	244,880	125,665	119,210
5 to 9 years	50	25	20	218,990	112,005	106,990
10 to 14 years	50	25	25	220,920	113,415	107,505
15 to 19 years	45	20	20	238,205	122,065	116,145
15 years	10	10	5	46,985	23,995	22,995
16 years	10	0	5	47,235	24,330	22,910
17 years	5	0	5	47,280	24,370	22,910
18 years	5	5	0	47,780	24,435	23,345
19 years	5	0	5	48,920	24,935	23,985
20 to 24 years	40	20	15	258,475	131,510	126,965
25 to 29 years	25	15	15	288,735	146,330	142,405
30 to 34 years	30	15	15	274,390	138,600	135,795

Age characteristics	Horse Lakes 152B, IRI			Alberta		
	Total	Male	Female	Total	Male	Female
35 to 39 years	15	10	10	260,135	131,810	128,325
40 to 44 years	20	10	15	258,515	130,630	127,890
45 to 49 years	15	10	5	280,635	140,575	140,060
50 to 54 years	10	5	10	279,705	141,370	138,335
55 to 59 years	15	10	10	233,785	118,750	115,030
60 to 64 years	10	10	5	182,160	90,975	91,185
65 to 69 years	5	5	5	125,700	61,790	63,905
70 to 74 years	5	5	0	94,775	45,220	49,555
75 to 79 years	0	0	0	76,040	35,205	40,835
80 to 84 years	0	0	0	57,725	24,810	32,915
85 years and over	0	0	0	51,485	17,095	34,390
Median age of the population 5	20.1	18.5	21.5	36.5	35.9	37.1
% of the population aged 15 and over	59.7	58.2	62.7	81.2	80.8	81.6

What is total status Indian registered population of First Nation? 600
What is total band membership of First Nation? 405
What is total community population? Approximately 600

Prior to undertaking a review of the HLFN statistics, it should be noted that there are discrepancies in what is noted within the tables prepared by Statistics Canada (Stats Can) and the Indian and Northern Affairs Canada (INAC) and that of the band. The HLFN Administration notes and cautions that any party should confirm statistical information directly with HLFN.

Given this, this document will rely on the overall population figure provided by HLFN but will utilize the various statistical profiles prepared by Stats Can and INAC use to set out

important demographic trends. A full study to understand the gaps and deficiencies in government analysis and methodologies are required however is beyond the scope of this document and report.

Currently, the total HLFN membership population is estimated to be around 600 people with approximately 500 people living on-reserve. 30 people of Metis ancestry are recorded as being resident with the HLFN community. INAC and Stats Can report that there is a total registered population of 335 with 165 males and 170 females.

According to Stats Can the total population can be broken down as follows by key age group:

- Ages 0 – 14: 130
- Ages 15 – 29: 105
- Ages 30 – 54: 70
- Ages 54 – 84: 30

The mean average age of the HLFN population is 20.6%, which compares to 26.0% of the overall Alberta population, which points to a demographically younger population compared to the provincial average.

The vast majority of band members reside on the reserve with some living within the region and within Edmonton and Calgary. INAC and Stats Can's statistics are not considered to be helpful in identifying the actual location of band members however indicate that ten band members live outside of Alberta and ten live within Alberta but in another statistical reporting and outside of the region in which HLFN is situated.

Similar to the national Aboriginal demographic trends, the HLFN have a very high youth population: the median age being around 25, and getting younger. The youth population has grown over 10% in the past 10 years and now makes up around 50% of the on-reserve population (this is consistent with the national Aboriginal statistics of 48% under 25 and a median age of 27).

HLFN, like other First Nations face an immense challenge in the coming years. They are facing an increasingly young and growing population with needs for increased services, supports, education and employment opportunities.

What # / % of the Total Population does the First Nation regard as elders? Is this defined by age and by other means?

Anyone 55 and over

What # / % of the Total Population does the First Nation regard as youth? 13-20

Does the on reserve population fluctuate? What is the seasonal variation? Is there a time of year that this tends to occur?

Not too much, a little in the summer when families leave for traditional trips

What is the community's birth rate?

Compare above statistics to regional and Alberta averages

See table above

What can be said about the population of the First Nation? Are there some marked trends? What is important about the First Nation's population makeup to the community / to you as the researcher?

Younger population growth meaning more services will be needed in community.

What challenges / opportunities do the First Nations' program managers see in respect to the population of the community?
More of a demand for daycare services and more local employment opportunities.

HOUSING

Primary Sources: Band Manager / Band Administrator / Housing Manager
Secondary Sources: INAC / STATS CAN / AB People's Census data
Potential Interview Questions:

The majority of family residences on the HLFN reserve are single homes; however there are two four-plexes that have been recently added to the housing stock. As with most reserves, titles for the land that homes are situated on are vested with the Crown. Approximately 500 of the total 600 band members reside on reserve in 120 of the homes on the reserve. 25 houses were built prior to 1986 and 45 units were constructed between 1986 and 2006.

In terms of housing needs, HLFN's housing stock is need of ongoing maintenance and repair with 35 units in need of minor repair and 30 in need of major repair. HLFN housing has approximately 6 rooms per housing unit, which is relatively average with when compared to the region and Alberta. However, where HLFN differs with provincial average is with the number of residents per room which is approximately four times the provincial average.

Like many other First Nations, the HLFN faces significant challenges in respect to building and maintaining its housing stock to meet a growing population. Income levels also make housing affordability and issue for the community as a whole.

Current homes 111 pop. 600

Household and dwelling characteristics	2006
Household type	
Total - All private households	70

One family households	55
Couple family households	30
Female lone parent households	20
Male lone parent households	0
Multi-family households	15
Non-family households	10
Median household income ($)	37,376
Selected Occupied Private Dwelling Characteristics	
Total number of Dwellings	70
Dwellings constructed more than 10 years ago	50
Dwellings constructed within the past 10 years	25
Dwellings requiring minor repairs only	35
Dwellings requiring major repairs	30

How does the community finance construction of housing?
What INAC / CMCH programs are in place to support community housing
Construction?
Because the *Indian Act* protects property of a First Nation borrower located on reserve from Mortgage and seizure, First Nation members have difficulty accessing housing loans. CMHC
Offers lenders three creative loan insurance options to help First Nation member's on-reserve
Buy, build or renovate homes. Loan insurance protects lenders, including banks, credit unions,
Trust companies and insurance companies, against losses in the event of borrower default.
Loan Insurance with Ministerial Loan Guarantee:
A Ministerial Loan Guarantee (MLG) is a guarantee provided by the Minister of Indian and Northern Affairs to a lender to guarantee the repayment of a housing loan made to a First Nation borrower. To qualify for a CMHC-insured loan secured by an MLG, the borrower must have a minimum down payment of 5 per cent of the lending value of the home. The borrower must meet CMHC credit standards in order to get a loan. No CMHC loan insurance premiums are payable for loans secured by an MLG.
On-Reserve Leasehold Lending in Designated Lands
Where a mortgage of a leasehold interest in designated reserve lands is granted by a First Nation borrower, lenders can offer CMHC-insured loans for up to 90 per cent of the lending value of the property. The 10 per cent minimum down payment must come from the borrower's cash savings, which must show a record of having been saved over a period of time, a Registered Retirement Saving Plan (RRSP), or proceeds from the sale of another

property CMHC's standard leasehold lending terms and conditions apply, including CMHC loan insurance premiums. The lease must be submitted to CMHC in advance for qualification.

The program may assist Band Councils or First Nation members living on-reserve in accessing financing for the construction, purchase and/or renovation of single-family homes or multiple residential rental properties. CMHC provides loan insurance to the Approved Lender (banks, Aboriginal Capital Corporations, credit unions, etc.) to make loans on residential homes or projects located on-reserve.

- Security for the loan is made by a loan agreement with the Approved Lender, secured by a Band Council Resolution and a Ministerial Loan Guarantee obtained through Aboriginal Affairs and Northern Development Canada (AANDC). If the agreed repayment of the loan is not made, the outstanding balance is paid out to the Approved Lender through the Ministerial Guarantee by INAC on behalf of the applicant. AANDC will then require repayment from the Band.
- The loan application process is carried out with the help of the Band Council who can assist in obtaining the necessary approvals.
- The Approved Lender works with the borrower in preparing the application package, and when complete, submits the application to CMHC for approval.

On-Reserve Non-Profit Housing Program (section 95)

This program assists First Nations in the construction, purchase and rehabilitation, and administration of suitable, adequate and affordable rental housing on-reserve. CMHC provides a subsidy to the project to assist with its financing and operation. All First Nations are eligible to apply. Indian and Northern Affairs Canada (INAC) must approve a First Nation's application for a Ministerial Guarantee. Canada Mortgage and Housing Corporation (CMHC), INAC and First Nations work in partnership nationally and at the regional level to determine allocations of funds for eligible reserves.

- CMHC delivers the program and may provide direct loans for First Nations to construct, purchase and rehabilitate projects. These loans, for up to 100 per cent of the total eligible capital cost of a project, are insured under the National Housing Act and are guaranteed by the Minister of DIAND.
- Approved lenders such as Aboriginal Capital Corporations (ACC), banks, trust companies and other financial institutions may also act as lenders in some cases.
- A subsidy is provided to the First Nation for a maximum of 25 years or the duration of the project loan amortization period, whichever is less. The amount of subsidy is determined as follows: Project Subsidy = Loan Repayment + Operating Expenses - Revenue.
- Interest-free, repayable loans under Proposal Development Funding are also available from CMHC to assist First Nations in developing a project
- First Nations are responsible for determining who lives in the project.

Canada Mortgage and Housing Corporation's Direct Lending Program provides financing and renewals for eligible social housing projects and offers the lowest average financing rate available. All loans that are financed or renewed at the same time and for the same term receive an identical rate regardless of the size of the loan or the location of the project. CMHC commenced Direct Lending to finance new commitments and renewals for social housing projects in order to reduce subsidy expenditures and make the best possible use of financial resources.

1.2 Who is eligible?

Band Councils or sponsors of eligible social housing projects are eligible to apply for Direct Lending financing for new project commitments or for renewal of existing project loans.

1.3 How does it work?

For new commitments and renewals, Band Councils or eligible sponsors have a choice to finance their project through Direct Lending with CMHC, with an Aboriginal Capital Corporation, where applicable, or through Approved Lenders. For renewals, Band Councils or sponsors will receive an information package reminding them of the upcoming renewal. If the loans for the existing projects are in arrears, the loan must be brought current before transferring to Direct Lending. Note: for Band Council Section 95 commitments, the interest rate cost plays a role in determining the amount of subsidy a Band Council will be eligible to receive and for new construction, the number of units they can build. In this regard, a lower interest is better.

What is the current yearly average level of funding allocated by INAC for
New home construction? $300,000
In a normal year Horse Lake will construct two houses a year.
Over the past decade, what has been the yearly average level of funding
Allocated by INAC for new home construction $300,000
Does the community have any housing stock off reserve?
No but it rents out homes off reserve on its private land.
Describe how homes are held / owned by community members and the FN?
They are all band owned homes.
What is the average monthly payment that community house owners / holders
Make to the band to pay for their homes?
They don’t.
What other options are being considered by government / FN to fund new
Home construction?
Horse Lake has available financing with CMHC for at least 3 new homes a year as long as past projects are complete.
What current plans does the FN have in place for new home construction?
Keep on building homes

INFRASTRUCUTRE

Primary Sources:	Band Manager / Band Administrator / Public Works Manager / Chief or Council Portfolio Holder for Infrastructure
Secondary Sources:	INAC / Community Plan / Community Infrastructure Plans / Community Development Plans / Recent Community Infrastructure Proposals

WATER SUPPLY

Does the community have access to a potable water supply?

yes

How long has the community had access to a potable water supply?

Three more years with the current supply.

What is the source of the potable water supply? (e.g. ground water, water main, trucked source, other)

Ground Water with Small System Treatment Class.

Its piped (low pressure) to the houses. Population served approximately 540 piped to 100 homes.

Is the community deemed to experience or have water quality issues?

Yes there is a concern that the current supply will run out in three years

Has the community and or government had to issue water quality warnings (e.g. boil advisories) within the past ten years? What issue prompted this warning? Does this issue repeat itself? What are the reasons for this?

No

For how many years will the current water supply option meet community needs?

Three more years

What options are the FN / government considering meeting future water supply needs of the community?

Piped from Brainnord Lake or the Village of Hythe

How is water infrastructure paid for and maintained?

The Federal Government; the treatment Storage and distribution System was constructed in 1985 designed with a capacity to hold 907 (m3 / d) of water where's it actual capacity is 690 m3/d. The maximum daily volume is approximately 480 m3/d and it is also disinfected.

Does the community deem that it receives enough funding to pay for its water supply infrastructure?

Yes, it has enough now but will need to construct a new system soon. A proposal is being developed to meet this demand.

WASTE WATER

How is waste water handled and dealt with in the community? Is there is sewer system or septic system in place?

Yes there is a lagoon. Receiver type: River,

Is there a waste water treatment plant in place on the reserve (e.g. sewage lagoon, other)?

Level 1 Treatment Class.

For how many years will the current waste water system meet community needs?
This septic system can barely handle the amount of load it has in the community.
Are there any current environmental or health issues or concerns with the current waste water management system in place?
There is concern in the community that the current system is too small.
What options are the FN / government considering meeting future waste water management needs of the community?
There is a plan to commit to address this issue from the federal gov't.
How is waste water infrastructure paid for and maintained? Federal Government pays for this
Does the community deem that it receives enough funding to pay for its waste water infrastructure?
Yes

SOLID WASTE MANAGEMENT
How is solid waste management handled on reserve?
There is one garbage truck with two personnel for residential pickup twice a week. There is also disposal bins around the reserve, approximately 15.

Does the community have an agreement in place with neighbouring governments / jurisdictions for solid waste management? If so, describe that arrangement? The reserve dumps at the local county landfill.

Are there any old dump sites on reserve lands that are a source of safety, health and environmental concern? What steps are being taken to address these and or monitor or remediate the site?
They have been cleaned up.

Does the community have a recycling system in place for solid household waste? If not, what plans are in place to put one into effect? If not, what barriers or challenges exist to implementing a community recycling plan?
Currently no, but residence can haul their recycling goods to Hythe at their own expense.
Are there any plans in place for improving or strengthening current solid waste management system in the community?
A couple years ago a waste facility was built intended to create an on reserve recycling and transfer station. The facility is there but is not in operation.

RECREATIONAL FACILITIES
Does the community have an all-purpose recreational facility, gym or community building? If so what kinds of events and activities occur there?
Yes, there is a Community Recreation Centre that has a full sized gym inside, two bathrooms a kitchen and a room on the side that is utilized for the Head-Start program. The Building was built approximately 20 years ago and is not in the best condition. It is also used for workshops, training, round dances, bingos and other community gatherings.

How old is this facility? 10 years
Is the facility in need of upgrading, repair or replacement?
Yes, it needs some renovations to the kitchen and bathrooms due to water damage.
Does the community have plan in place or estimates for upgrades, repairs or replacement cost? If so describe?
Yes, an estimate was conducted to apply for funding but has not yet been approved and implemented.
Are there sports fields, playgrounds or arenas located in the community? If so describe?
The Horse Lake Multiplex was built in 2006. It is a top of the line Arena that includes a cafeteria, eating area, 300 people heated seating area (bleachers), equipped weight room, steam room, 30 man hot tub, numerous offices and storage areas and sound system.
The Head-Start and Day Care Centre have playground for children.
There are ball fields above the community with nighttime lighting where tournaments can be hosted. A campground is right beside the fields.
There is also a Mud Bog pit just above the ball fields that is used for two rallies a year.
Are these facilities utilized by the community (all ages, Youth etc.)? Why or why not?
The arena is used by all ages in the community namely for hockey. The playgrounds are used by children in the centres, year round. The ball fields are used by all the adult teams in Horse Lake and out of town players when there are tournaments. The Mud Bog has at least 4 Horse Lake Competitors in the rallies twice a year.
What plans does the community have in place to build, upgrade its recreational facilities?
The Arena is in good shape and no new upgrades are planned. No other plans are in the works for recreation just to continue to improve on sports programming in the community and maintain areas for each event.
What value do these facilities provide to the community or why are existing and proposed recreational facilities important to the community?
The community of Horse Lake loves their sports; hockey and ball especially. The Horse Lake Chiefs did very well last year winning silver at the Allan Cup. The minor hockey program was also winning most of their games.
The ball team is going to the Native World Series in Calgary this year.
These sports give the community spirit and something to look forward to each year.

SERVICES AND UTILITIES
How is heat supplied to community homes and buildings?
Natural Gas, pipelines

Who is the service provider?
Atco Gas
Who supplies electricity to the community?
Atco Electic
What is the average electricity bill per home per month / year?
$150/month
What is the average gas bill per home per month / per year?

$0, there is an agreement with Natural Gas Service provider to supply Horse Lake apart of the land claim settlement.

Do households still rely on firewood as a source of fuel?

Few, many cabins off reserve do though

Are there any oil and gas facilities on reserve? If so, who holds the tenures rights to these resources or what companies operate the wells and oil and gas infrastructure?

Yes there is. Encana and Delphi Energy.

Does the community utilize any of the energy produced at these sites for domestic purposes? (e.g. gas for community buildings and homes). If not, why not?

No, all gas is piped in through ATCO.

What is the average electricity bill that the FN has to pay for community buildings per month / per year?

Quite high. Arena is the highest.

What is the average gas bill that FN has to pay for community buildings per month / per year?

$0, Heating apart of the agreement.

Does the FN have any goals / aspirations / plans to generate its own power in the future or is it working to create a power production partnership? If so, describe.

No.

Does the band have cellular coverage for the community / portions of the community? If so, describe

Yes there is a tower in the middle of the reserve

Does the band and community as a whole of internet or connection to the internet? How well does this service currently perform? If there are issues, what plans are in place to improve service? What challenges are in place preventing better connection?

Yes, GPN Network is the service provider. Service is constant and some residences have their own towers off the town site.

Do students and youth have access to computers and internet in the community? Are the services provided reliable enabling year round access? If not, what issues are in place preventing access?

Yes

COMMUNITY INFRASTRUCTURE: GENERAL

HLFN has an advisory service department from Western Cree Tribal Council. It is cpomproised of the following to help wioth on reserve public works needs:

The Technical services staff has the responsibility to provide technical support and services to the member First Nations when requested. We will strive to establish a network of consultants in the areas of Engineering, Surveying, Environmental Health, Drafting for Housing and Fire Prevention (training) to ensure that all Western Cree Tribal Council reporting requirements are met as per the Multi-year agreement.

Mandate:

To provide Technical Services and assistance to the member First Nations when required.
To provide supplemental services to technical staff of the First Nations when required.
To provide Technical Services where the First Nation does not have the technical persons when required.
Provide technical support and access engineering expertise for work requested by the member First Nations in relation to Government Agencies.
Provide environmental assessments for construction projects and/or Land use.
Provide technical support and information on infrastructure.
Provide housing inspections for First Nations as requested.
Provide facility inspection reports in conjunction with the First Nation and at the First Nations required.
Assist in the preparation of terms of reference for consultants and to work closely with consultants selected by the First Nations.
Work closely with engineering or architect firms retained by the First Nations.
Identify Capital Asset Inventory Updates (CAIS) when notified by the First Nation and Aboriginal Affairs of Northern Development Canada (AAND).
Submit necessary forms such as certificate of completion/Project Descriptions to AAND.
Provide fire protection advice and training to member First Nations.
Provide awareness workshops, Fire safety in the home, escape plan, etc.(First Nation Firefighters Association, FNFFA), (First Nation Technical Advisory Group, FNTSAG)/
Provide fire inspection of member First Nation buildings. (FNFFA – FNTSAG)
Extinguisher demonstrations (safe handling) FNFFA, FNTSAG.
Annual school visits (Fire Prevention Week), FNFFA, FNTSAG.
Objectives

Ensure adequate training of staff if applicable, including support for further education.
Endeavor to have staff/consultants qualified under applicable provincial governing bodies, i.e. Professional Engineer, Certified Technologist etc.
Aim for versatility.
Assist the First Nations in preparing submissions to Funding Agencies for Capital Projects.
Assist in the preparation of multi-year capital plans for planning and submission to the Department of Indian Affairs.
Be responsible for the distribution of funds under the terms and conditions of the Multi-year Agreement and in accordance with the policies as set by WCTC.
Secure professional Engineering services support to the member First Nations, this includes buildings, water supply systems, sewage waste disposal, roads and bridges.
Inspection of levels of hazardous gas.
Provide for the required fire-fighting training to all volunteer fire departments with the assistance of First Nations Firefighters Association (FNFFA) and the First Nations Technical Services Advisory Group (FNTSAG).
Assist the Western Cree Tribal Council member First Nations in acquiring funding from Federal and Provincial grants in regards to Capital Projects.

TRANSPORTATION

Primary Sources: Band Manager / Band Administrator / Public Works Manager / Chief or Council Infrastructure Portfolio Holder

Secondary Sources:

ROAD WAY CONDITIONS

What is the current state of the roadways on reserve leading to and from community (e.g. gravel, sealed, pavement etc.)?

Roads are gravel from main Hwy 43, Township road to reserve, in and around all gravel.

Are these roads in good repair? Do these roads create issues for the upkeep of community vehicles or result in higher community member maintenance costs as a result of the condition of the roads?

Roads are maintained with a grader. The county looks after Hwy 43 to Reserve boundary. The reserve looks after on reserve roads with a grader and backhoe.

How are these roads maintained? Who maintains them? How much does it cost to maintain these roads on a yearly basis?

Grader work is contracted out to a member owned company. Grader works at an hourly rate year round. A member owned Backhoe and gravel truck also work on road repair.

Are there any safety issues posed by the roads coming in and going of the community? (E.g. wash out flooding, limited visibility, high speeds, and heavy use by industrial traffic)

Steamer is hired to come in and unblock culvert in the winter. Generally people go slowly to prevent any accidents.

What is the state of roads within the community that people use to travel on and get to their homes and travel about the community?

Roads are rough gravel but again people drive to conditions.

Are these roads in good repair? Do these roads create issues for the upkeep of community vehicles or result in higher community member maintenance costs as a result of the condition of the roads?

Defiantly gravel roads are harder on vehicles than paved.

How are these roads maintained? Who maintains them? How much does it cost to maintain these roads on a yearly basis?

Contracted out, hourly rates.

Are there any plans in place to improve the system of roadways the serve and are within the community? If so, describe and provide a cost estimate for this work

Graveling is important to up keep of road. More gravelling around reserve is planned.

TRANSPORTATION LINKS TO SURROUNDING AREAS AND ACCESS

What is the distance between the reserve and the nearest commercial centre? What are the nearest two major centres? (E.g. where people shop, bank, access services etc.)

There is a convenience/gas store on reserve owned by a member. Other than that, Hythe is very close about a seven minute drive. Hythe has grocery, gas, bank, school and other services. Grande Prairie would be the closest city to us with all services. It's about 45 minutes away.

Is there a bus system in place that community members can access to move about the community or get to the nearby communities to access services? Does the community have

a suitable mini bus to transport the elderly and other community members to local communities to access services? If so, describe?

Not right now. Community used to have busses for hockey and Elders trips. Busses are not in very good condition.

Are children and youth bussed to local / nearby schools? Does the band provide this service or is it provided by another jurisdiction? Does the community have a suitable bus to transport children and youth in?

Yes, Peace Wapiti School Division has a contract with Horse Lake First Nation to deliver bussing from Horse Lake to Hythe and Beaverlodge for elementary and secondary students. There are currently 3 busses.

Of the Total Population how many people of legal driving age have driver's licenses? Express by approximate number or as a percentage

The percentage is considerably lower than other communities.

Of the Total Population how many people of legal driving age have vehicles?

Due to lower income levels and driver licence possession on reserve, the amount of vehicles owned is lower.

What reasons are cited of why a segment of the community population does not have driver's licences?

Fines

What reasons are cited of why a segment of the community population does not have vehicles?

They do not have drivers licence and have lower incomes

What actions or plans does the community have to support community members in being able to obtain drivers licenses?

The community cannot help a person get out of their fines.

Does lack of access to transport act as a barrier to employment for community members? If so, describe.

Absolutely, most employment opportunities are off reserve and require transportation to and from work site.

What ideas, options or plans exist that would address the lack of access to transport? What might this entail? Describe.

HEALTH AND SOCIAL SERVICES

Primary Sources:	Band Manager / Band Administrator / Health Manager / Social Services Manager/ Chief or Council Portfolio Holder for Health and Social Services
Secondary Sources:	INAC / Community Plan / Community Health / Social Services Plans / Community / Recent Community Health and Social Reports Discussion Papers and Proposals

HEALTH SERVICES

What medical services are provided directly in the community?

The Wellness Centre has numerous services.

Is there a medical services building in the community? If so please describe? What services are provided here at this site?

Fulltime diabetes program, drop in nurse, clinic capabilities with equipment, immunization conducted drop in basis, Drug and Alcohol Program, and Councillor coming in once a week.

What medical professionals / practitioners are situated within or resident within the community? (E.g. Doctor, nurse, community health worker)

There is a Community Health Rep., Councillors and Nurses will come in once a week.

What medical professionals / practitioners spend regular hours in the community? If so, name and describe time / days they spend within community? (E.g. clinic hours)

Clinic Hours are from 8:30 to 4:30. Dietician, CHR and D&A Councillor are there full time.

If someone is injured or is need of immediate medical attention for a serious health situation, how is the person treated on reserve and transported to the nearest medical centre? What is the nearest centre? How long does it take, on average for an ambulance to respond to a call and get a community person to an appropriate medical centre for treatment?

Person would be treated at clinic and an ambulance would be called coming in from Beaverlodge taking close to 20 mins.

What off reserve hospitals / health centres do the FN members general utilize? Note name of facility, town it's located in and approximate distance from community.

Hythe has a Clinic with a Doctor. There is a pharmacy there as well. Beaverlodge has emergency services, maternity, x-ray and clinic and pharmacy. Grande Prairie also has full services including Cancer treatment unit and Surgery Unit.

Is there a dentist that comes to the community or do community members have to access dental services in nearby communities? Is there a dental clinic on reserve during the set times during the week or month?

Are mental and counselling support services provided in the community? Pleases describe in an appropriate level of detail?

Yes there are councillors that come in once a week to meet with clients.

What other types of health services available to community members in the community or in nearby communities?

The school also has counselling for the children in Hythe and Beaverlodge.

Is there any health services delivered to elders, families and infants directly to community homes and families? If so, please describe.

Some families perform Sweats which for healing and physical well-being.

WCTC Child, youth and family enhancement:

Overview:

A tri-partite agreement was signed by the Federal Government, Provincial Government and Western Cree Tribal Council in 2000 and officially became operational in 2001.

The Tribal Council consists of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation. The program oversees all Child Welfare Inquiries for the three Nations. The Child Youth & Family Enhancement Board is established with members appointed by the Chiefs from all three Nations.

Mission Statement:

Working together to enhance the ability of families and communities to develop nurturing and safe environments for children, youth and individuals.

Vision Statement:

"Strong children, youth, fam ilies & communities."

Continue to value, nurture, love, support and preserve their children, youth, families and communities by enduring relationships, healthy families and safe communities. Inspire children, youth, family and communities to enhance/gain sense of belonging, sense of stability, and self respect. Promoting healthy communities for children, youth and families.

Mandate & Description of Program:

The mandate of Western Cree Child, Youth & Family Enhancement Program is based on the agreements and memorandum of understanding that WCTC and the member First Nations have with the province of Alberta. This is all subject to the funding agreement with INAC. The authority of WCTC Child, Youth and Family Enhancement arises from the Three WCTC member First Nation's Band Council Resolutions and the delegation to the entity, which operates the CYFS program. The goal of the CYFS program is to assist the WCTC Member First Nation communities in providing culturally sensitive child and family services to families in need.

Specific Services Available:

- Advocacy
- Parent education
- Parent aide
- Respite
- 24 hour response
- Child protection
- Out of home placement services (place of safety, alternative care, person of sufficient interest, family support home).

Program criteria including age group served:

- When families are unable to fully carry out their responsibilities, the program provides protection and well being of children

WCTC Education

The Western Cree Tribal Council assists member First Nations education systems with programming that is consistent with the Spirit and Intent of the treaties.

- Planning of new schools
- Planning of programs and curriculum – literacy, special needs
- Assist in embedding First Nations content and perspectives in program and curriculum
- Updating policies for boards and schools

Education unit provides assistance to three First Nations bands in education, youth, sports, culture and recreation

Health

The people of the First Nations within the Western Cree Tribal Council area obtain healthcare oversight from the Health Director at the Tribal Council who works to provide guidance and advice in the delivery of programs and in policy implementation. The Tribal Council personnel work very closely with the community Health Directors in each of the First Nations as they have begun to build the needed capacities to deliver Healthcare services over the years. Some services delivered by the Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation include: Medical Transportation

Coordination/Delivery, Public Health Nursing Services, Prevention and Health Services and National Native Addictions and Drug Awareness.

The National Native Alcohol and Drug Abuse Program (NNADAP) is an example of a Health Canada program now largely controlled by First Nations communities and organizations. Since its origins in the 1970s, the program's goal has been to help First Nations and Inuit communities set up and operate programs aimed at reducing high levels of alcohol, drug, and solvent abuse among on-reserve populations.

NNADAP supports a national network of 52 residential treatment centers, with some 700 treatment beds. You can get basic information on these treatment centers, as well as those funded by the National Youth Solvent Abuse Program (NYSAP), through the directory of treatment centers, compiled and updated as part of these programs.

Background and activities

NNADAP originated in the mid-1970s as part of a national pilot project to address alcohol and drug abuse. The program was made permanent in 1982 because of the "urgent and visible nature of alcohol and drug abuse among First Nations people and Inuit". This stability enabled NNADAP to better coordinate with other programs in the promotion of community health and sober lifestyles.

Today, NNADAP provides over 550 prevention programs with over 700 workers - almost all employed by First Nations and Inuit communities. Program activities vary, based on the size and needs of each community and the availability of skilled workers, but they generally fall into three key areas:

Prevention activities, aimed at preventing serious alcohol and other drug abuse problems, include:

Public awareness campaigns;
Public meetings;
Public speaking;
Developing content for schools on alcohol and drug abuse;
School programs;
News media work; and
Cultural and spiritual events.

Intervention activities, aimed at dealing with existing abuse problems at the earliest possible stage, include:

Recreation activities for youths;
Discussion groups and social programs; and
Native spiritual and cultural programs.

Aftercare activities, aimed at preventing alcohol and drug abuse problems from reoccurring, include:

Counselling;
Sharing circles;
Support groups;
Crisis intervention;
Support visits;
Outreach visits;
Treatment referrals;
Detox referrals;
Social service referrals;
Medical referrals; and
Band services referrals.

The Non-Insured Health Benefits (NIHB) Directorate is responsible for managing the Non-Insured Health Benefits (NIHB) Program which provide, to registered Indians and recognized Inuit, a limited range of medically necessary health-related goods and services which supplement benefits provided through private insurance plans, provincial/territorial health and social programs. The non-insured health benefits include:

Mental Crisis Counseling (short term mental health crisis intervention)
Dental Benefits;
Drug Benefits;
Vision Care Benefits;
Medical Supplies and Equipment Benefits;
Medical Transportation; and
Provincial health premiums (Alberta and British Columbia).

Does the community have the appropriate facilities to provide long term / palliative / other forms of residential care to elders and the elderly so that they can remain in the community?

No, but there is a Home Care program that hires workers to come in and assist elderly with cooking and cleaning.

EMERGENCY SERVICES

HLFN has an advisory service organization that helps with maintenance of Emergency Systems, water and other needs. The First Nations (AB) Technical Services Advisory Group (TSAG) is a not-for-profit organization that provides technical services and training for Alberta First Nations in the Treaty 6, Treaty 7 and Treaty 8 areas. Our goal is to assist First Nation communities in achieving and maintaining high standards in technology and services. We never stop collectively delivering better solutions with greater benefits, thereby providing community members with a solid foundation for healthy living.

Does the FN have a policing agreement in place with the police force? (e.g. RCMP)

Yes, Horse Lake has a tri-partite agreement with Beaverlodge RCMP.

Are law enforcement officers generally resident and available in the community all the time , intermittently or as needed?
RCMP randomly patrol reserve, conducting check stops, and enforcing the law on reserve where it has to be.
What role are the police playing in the community in addressing community safety needs and overall community goals and aspirations? Are there any new or planned community policing initiatives aimed at resulting in a safe community?
Absolutely, the police were not mandated to come on reserve two years ago. This changed with the new council elected.
Are there any community members that are police officers or have received law enforcement training?(So not provide names)
no

FIRE SERVICES
How are fire incidents / emergency incidents responded to in the community? Are there fire protection services in place in the community or are they provided from off the community via agreement? Please describe
Yes, Horse Lake is in the Hythe District of the County for Fire Protection Services. As well there is an on reserve Fire Truck and 2 Fire Chiefs delegated to maintain fire hydrants, truck and other fire equipment.
Does the community have a volunteer fire department in place?
Yes there are about 6 volunteers along with the two fire chiefs. There is always someone on reserve at all times that has access to fire extinguishing equipment in case of emergency.
What firefighting equipment is in place within the community for firefighting purposes?
Fire Hall, Fire truck w/hose and pump. Fire Hydrants all over reserve.
Has response time to a fire emergency / incident ever presented issues to the community in the past? If so, what new arrangements are in place to speed up response times and ensure public safety?
no
Are there any community members trained as fire fighters? If so provide number and level of training attained (Type 1, Type 2 etc)
Yes there are approximately 6.

AMBULANCE SERVICES
See prior questions

EMERGENCY PREPAREDNESS AND EMERGENCY RESPONSE PLANS

Does the community have a disaster plan in place or emergency / disaster response / evacuation plan in place? What group or person within the community oversees the implementation of that plan? Please describe.

Yes, in house plan held by Health Centre and Fire Chiefs.

CHILDCARE, EDUCTION and TRAINING SERVICES

Primary Sources:	Band Manager / Band Administrator / Health Manager / Childcare, Education and Training Program Managers/ Chief or Council Portfolio Holder for Childcare / Lands Manager
Secondary Sources:	INAC / Community Plan / Childcare / Education and Training Plans / Recent Community Childcare,Education and Training Plans.

Potential Interview Questions:

CHILDCARE

What programs are in place on reserve that provides day care services for community families? What is the name of this program?

Yes, there's a daycare funded by HRDC on reserve.

How many children are enrolled in this program? What age groups are attending the day care?

Ages 0-6 can attend daycare. 10 children max.

Is there a special focus to this program and who funds the program? HRDC

What special conditions must be met on reserve to have a childcare program in place?

Space and Personnel regulations in place to adhere to.

Are there any community members that are have the training and qualifications to run and manage the day care? Are there any community members currently enrolled in post-secondary education to obtain their credentials to take on such work?

Yes, there are two qualified people on reserve to run daycare.

What challenges exist in setting up, maintaining and running a licenced day care?

Availability of staff and money to operate program efficiently.

Does the lack of space or limited resources for day care inhibit and or prevent family members from attending school, training courses or taking on work? If so, describe.

Yes, if staff does not show up for work, children cannot be dropped off. This is currently a concern.

If a community member obtained a job in a nearby town / urban centre, what daycare options / resources would be available to them in that town? What challenges would exist with such an option?

There are daycare services available off reserve all over. These services cost a lot and sometimes are not even worth the amount of money that is being made by parent.

Are there any plans to expand or start new childcare programs if so, please describe?

No. An increase in budget would be nice.

EDUCATION: PRE SCHOOL / EARLY CHILDHOOD EDUCATION

What early childhood education programs or pre – school programs are run in the community? Please describe.
HEADSTART

The Aboriginal Head Start On Reserve Program funds activities that support early intervention strategies to address the learning and developmental needs of young children living in First Nations communities. The goal is to support early child development strategies that are designed and controlled by communities.

AHSOR Programming is centered around six components: education; health promotion; culture and language; nutrition; social support; and parental/family involvement.

Children in the Aboriginal Head Start On Reserve Program gain opportunities to develop self-confidence, a greater desire for learning, and an excellent start in their journey towards becoming successful people.

Parents, guardians and other family members are the most important teachers in a child's life. The Aboriginal Head Start On Reserve Program knows this and provides support. It helps parents and other caregivers learn and improve skills that contribute to healthy child development. It also works with families to help strengthen family relationships.

The Aboriginal Head Start On Reserve Program encourages parents, families and community members to play an important role in running the Program. The Program also builds relationships with other community programs and services so that children get the best care.

Linkages with Federal Child Development Programs

The Aboriginal Head Start On Reserve Program is part of the federal network of programs that directly address early learning and healthy development for First Nations children living on-reserve. These programs include: Human Resources and Skills Development Canada's (HRSDC) First Nations and Inuit Child Care Initiative (FNICCI) and Indian and Northern Affairs Canada (INAC) - funded daycares in Alberta and Ontario.

The Program complements the Aboriginal Head Start in Urban and Northern Communities Program, which is a Public Health Agency of Canada-funded early childhood development program for First Nations, Inuit and Métis children and their families living in urban and northern communities. Both Aboriginal Head Start programs share similar program mandates and objectives, as well as the six program components.

Accountability/Evaluation

The Aboriginal Head Start On Reserve Program is part of four community-based programs* aimed at improving the health status of First Nations and Inuit individuals, families and communities through strengthened maternal and child health services and support.

The Cluster Evaluation Report, which includes the Aboriginal Head Start On Reserve Program, was completed in 2009-10 to address the 2006 Federal Accountability Act requirements that the relevance and effectiveness of all grant and contribution programs be reviewed on a five-year cycle.

How many children attend these programs?

What is the focus of these programs and what agency funds the program?
see above
What requirements must in place to set up, maintain and run an early childhood education program, pre – school on reserve? Does the community meet these requirements?
Yes, health Canada funds this; currently HLFN meets the building size requirement for the Head Start program and personnel to operate this program.
Is there a community member hired as pre-school supervisor or teacher for this program? Are there. Are there any community members currently enrolled in post-secondary education in a field that would allow them to run and administer such programs?
Yes, community runs the program on reserve.
What challenges exist that the community must contend with to keep its pre – school and early childhood education programs in place, running and serving community needs?
The building needs to be upgraded
EDUCATION: K – 12
Is there a school on reserve for any grades between kindergartens – Grade 12? If so describe?
There isn't a school; there is a distance learning center.

How many students attend this program? 22

How many years has this program been running? This is the first year

What is required to set up, maintain and run K – 12 programs on reserve?
Funding, leadership support, students and staffing.
Does a community member run and teach this program or are involved as teacher's assistants?
Yes, there is one member acting as the centre's mentor for the students.
Are there any plans or proposals in place to enhance the delivery of K – 12 programs in the community? If so, describe
The E-Learning Centre has been set up to meet the needs of students who are not enrolled in the off reserve schools. Currently there courses being offered from grade 8-12 then one

post-secondary course. Expansion to this centre on reserve could happen depending on commitment from the gov't and community.

What off reserve schools to community students attend? What is the name of the school, what communities are the schools situated in?
The closest off reserve school is Hythe Regional School which offers public education to grades K-9. Beaverlodge Secondary is where most members attend for High School. Dawson Creek, Fort St John, Edmonton and Grande Prairie are also places where members attend.
What is the distance of these schools from the community and are the students transported by the FN to the schools?
Hythe is approximately 10 kms from Horse Lake; Beaverlodge, 24 and Dawson Creek around 50 kms as well as Grande Prairie.

17.0 CLOSURE

The Horse Lake First Nation has prepared this report for the sole benefit of BC Hydro and the HLFN for the purpose of conducting a First Nations Community Assessment as part of the Socio-economic Assessment for the Environmental Impact Statement for the Site C Clean Energy Project. The report may not be relied upon by any other person or entity, other than for its intended purposes, without the express written consent of the HLFN and BC Hydro.

The Horse Lake First Chief and Council wishes to thank and acknowledge those community members who contributed their time and knowledge to assist in making this community profile reflect the priorities and values of our community.

The HLFN Chief and Council also wish to thank all HLFN staff members who participated in the research and who helped in providing and excellent overview of the work and initiatives of their department and responsibility areas.

The HLFN Council also wish to thank and acknowledge Audrey Lawrence and Mel Lawrence for their substantial contribution and input into this document and for their ever careful and respectful approach they take in working with community elders and community members.

Finally the HLFN wishes to thank and acknowledge the BC Hydro Site C Team and Golder Associates for supporting this research initiative and working with the HLFN to produce a document that will help contribute to a more informed view of the Site C Clean Energy Project and the interests of the HLFN in relation to the Project.

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PERSONAL COMMUNICATIONS

LIST ALL THOSE WHO PROVIDED COMMENTS AND INFORMATION TO RESEACHERS. EXAMPLE LISTED BELOW

Savard, J. 2013. Horse Lake First Nation Lands and Resources Unit. Personal Communication.

19.0 Appendices

- Appendix 1: Potential Site C Effect – Horse Lake First Nation Interest Interactions
- Appendix 2 Treaty 8 Area Map

  (Source: HLFN Ethno-Historical Review)
- Appendix 3: HLFN Traditional Territory Map

  (Source: Horse Lake First Nation)
- Appendix 4: HLFN Reserves

  (Source: HLFN Ethno-Historical Review)
- Appendix 5: Trading Post Locations: Northern River Basins Study

  (Source: Northern River Basins Study)
- Appendix 6: HLFN 2012 Country Food Harvest Survey
- Appendix 7: Site C Project Components

  (Source: BC Hydro Site C Project Description)

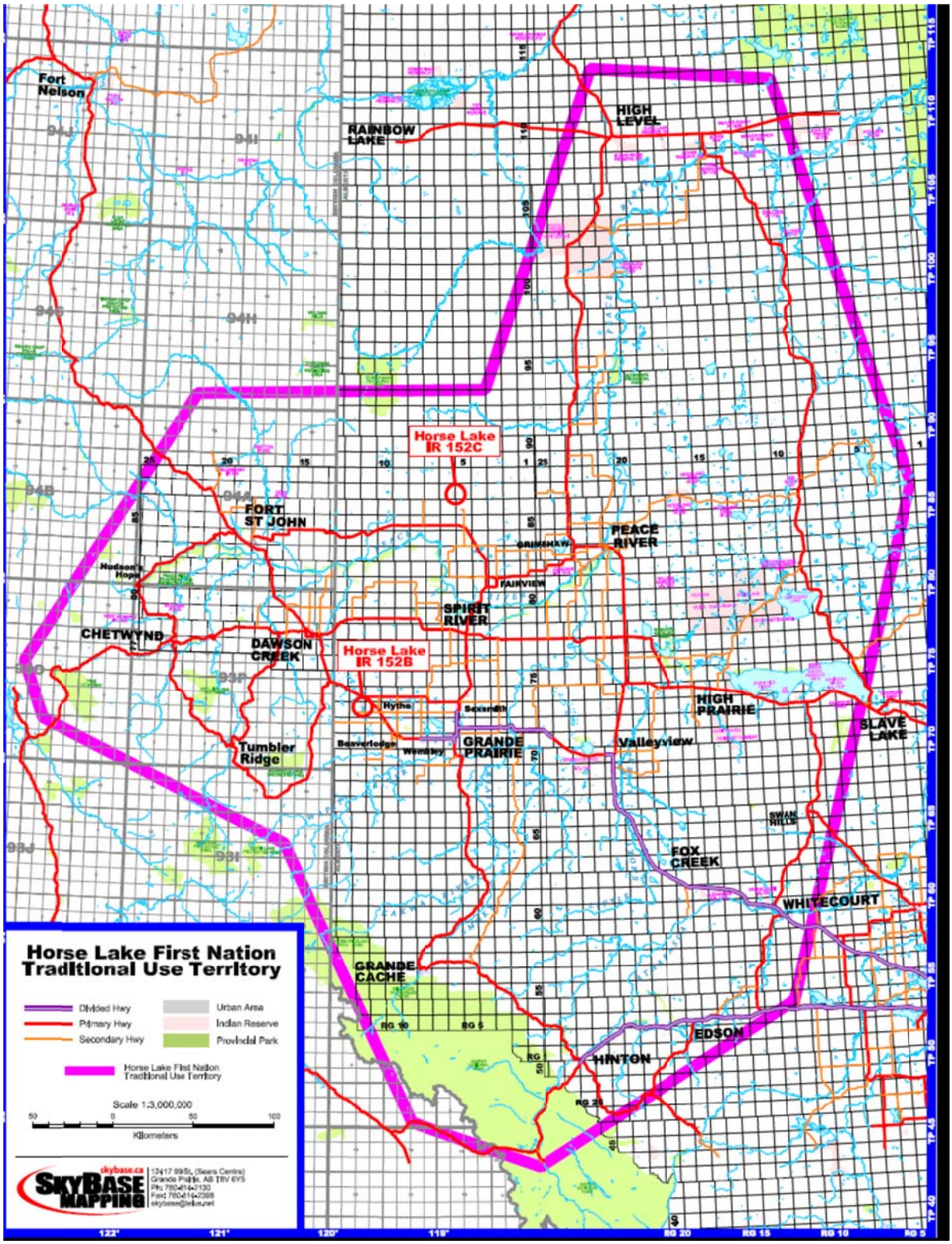
Appendix 1: Potential Site C Effect – Horse Lake First Nation Interest Interactions

See Attached Electronic File

Appendix 2: Treaty #8 Area Map

Appendix 3: HLFN Traditional Territory Map

Note: The above "HLFN Traditional Territory Map" is being produced in an updated format and will be provided to BC Hydro and regulators as a supplementary document.


Horse Lake First Nation
Traditional Use Territory
Divided Hwy
Primary Hwy
Secondary Hwy
Urban Area
Indian Reserve
Provincial Park
Horse Lake First Nation Traditional Use Territory
Scale 1:3,000,000
Kilometers
Fort Nelson
RAINBOW LAKE
HIGH LEVEL
Horse Lake IR 152C
FORT ST JOHN
PEACE RIVER
GRIMSHAW
FAIRVIEW
SPIRIT RIVER
Hudson's Hope
CHETWYND
DAWSON CREEK
Horse Lake IR 152B
Hythe
Sexsmith
Beaverlodge
Wanham
GRANDE PRAIRIE
Valleyview
HIGH PRAIRIE
SLAVE LAKE
Tumbler Ridge
SWAN HILLS
FOX CREEK
WHITECOURT
GRANDE CACHE
EDSON
HINTON

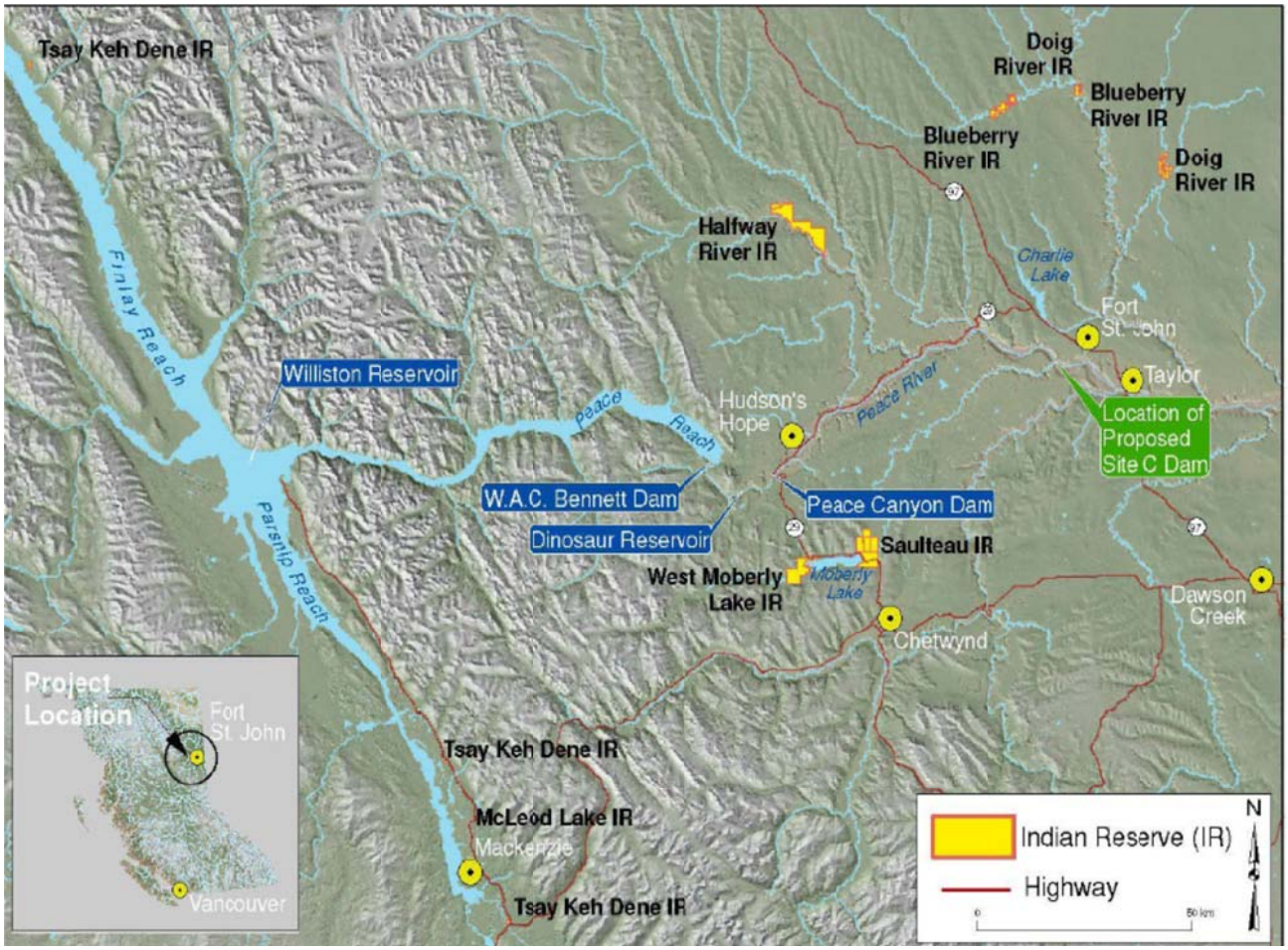
Appendix 5: Trading Post Locations: Northern River Basins Study

Currently Unavailable

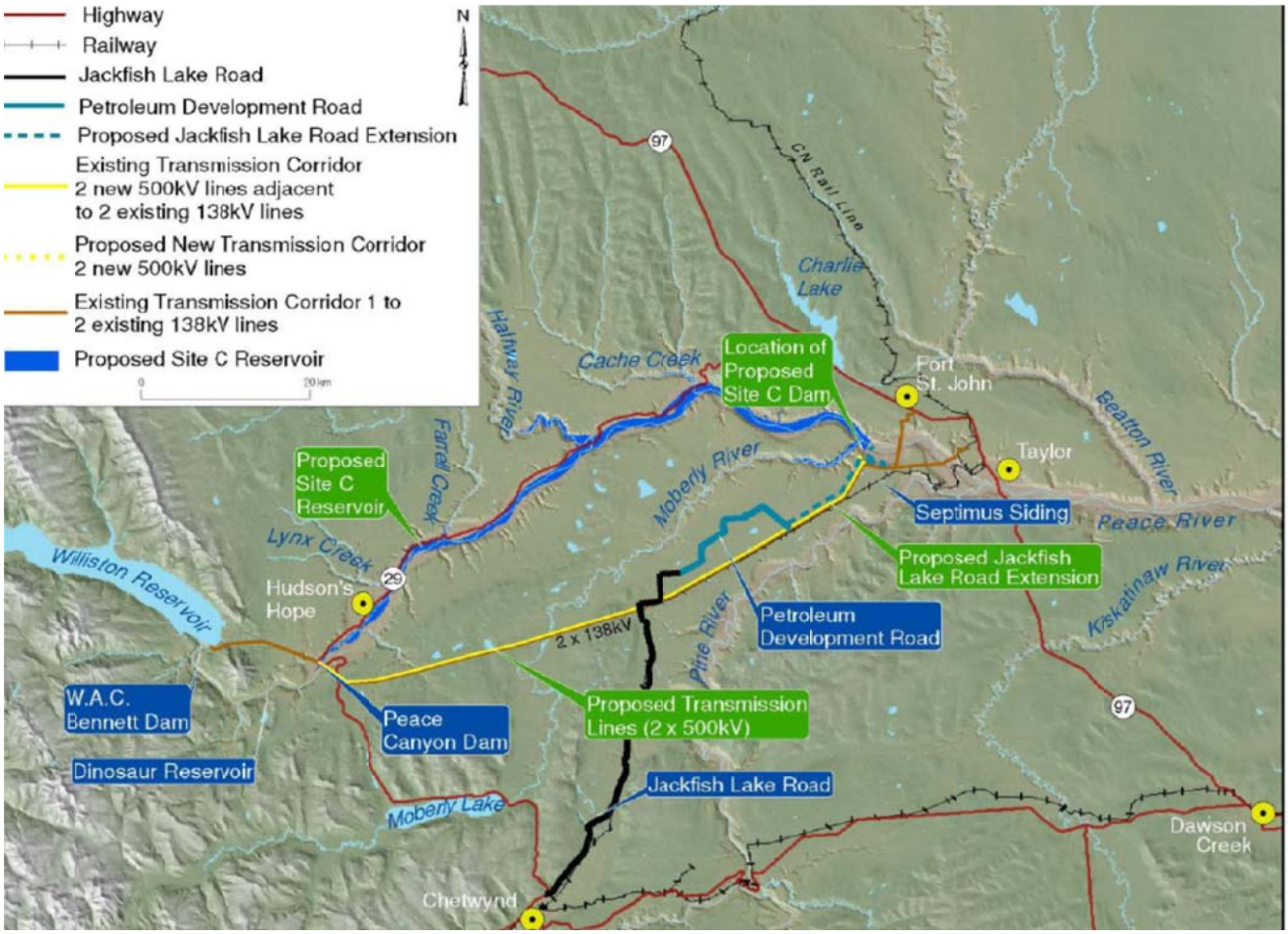
Appendix 6: HLFN 2012 Country Food Harvest Survey

See Attached Electronic File

Appendix 7: Map of Site C Project Components



Appendix 7: Map of Site C Project Components


Highway
Railway
Jackfish Lake Road
Petroleum Development Road
Proposed Jackfish Lake Road Extension
Existing Transmission Corridor
2 new 500kV lines adjacent
to 2 existing 138kV lines
Proposed New Transmission Corridor
2 new 500kV lines
Existing Transmission Corridor 1 to
2 existing 138kV lines
Proposed Site C Reservoir
N
CN Rail Line
Charlie Lake
Halfway River
Cache Creek
Location of Proposed Site C Dam
Fort St. John
Beatton River
Taylor
Farrell Creek
Proposed Site C Reservoir
Moberly River
Septimus Siding
Peace River
Lynx Creek
Williston Reservoir
Hudson's Hope
Proposed Jackfish Lake Road Extension
Kiskatinaw River
Pine River
Petroleum Development Road
2 x 138kV
W.A.C. Bennett Dam
Peace Canyon Dam
Proposed Transmission Lines (2 x 500kV)
Dinosaur Reservoir
Jackfish Lake Road
Moberly Lake
Dawson Creek
Chetwynd

Respondent #	Sex	Age	Preffered Plants	Personal Plant Consumption/Week(X's)	Preffered Wildlife Species	Personal Consumption/ Meals Per Week(X's)	# of People in Household
A	M	21-40			Moose Rabbit Chicken ELK	Moose - 4/week Rabbit - 4/year Chicken - 4/year Elk-4/year	4
B	M	41-60	n	n	Moose	Moose - 3 times, 3 palms	4
C	M	Over 60	Berries Ratroot teas medicines	Berries - 4 Medicines-4	Moose	Moose - .25 once a week Elk-.25 Cariobou-.25 Deer-.25	9
D	M	21-40	Berries	berries 6 times a year	Moose Elk Deer Caribou	Moose - .25 once a week Elk-1/year Cariobou-1/year Deer-1/year	9
E	M	21-40	n	n	Moose Elk chicken Rabbbit	Moose - 3 /2 palms Elk - 1 Birds - 1 Rabbit - 1 /week	3
F	m	over 60	Berries Huckle, raspberries , cranberries	all year long	Moose Elk, chicken n rabbits	Moose - 4/week 2 palms Elk-.25 Chicken n rabbits-.1 /week	2
G	F	21-40	berries	pick once per season	Moose Elk Rabbits Chicken	Moose - 3 Chicken - .25 Elk - .005 Rabbit- .25 (two palms)	2
H	M	21 - 40	n	n	Moose	everyday/2 palms	3
I	M	21-40	saskatoons, raspberiies	once a week	moose elk other	twice a week moose, once a week elk, 2 a week other (2 palms)	5
J	M	60 over	n	n	moose	1 a week (1)	3
K	m	41-60	various	10 times a year/3 palms	Moose rabbits Elk Ducks Chicken	Moose -1/3 Elk -2 a year/3 Rabbit -3 year/1 Ducks - 3 year/1 Chicken -3 year/1	7
L	m	21-40	n	n	moose, elk	5 times a week/2 palms	5
G	M	21-40	n	n	moose	everyday/2 palms	2
H	m	41-60	n	n	moose, chicken, rabbits	6 times week/4 palms, chicken 2/1	7

Respondent #	Sex	Age	Preffered Plants	Personal Plant Consumption/Week(X's)	Preffered Wildlife Species	Personal Consumption/ Meals Per Week(X's)	# of People in Household
I	M	41-60	huckleberries	per season	moose 7/3.5 deer 2/year 31/2	Moose - 1 1 Elk - 1 (Occassional) Rabbitt	3
J	m	21-40	huckleberries	per season	moose 7 times per week 2 paqlms, elk 10 tiomes per year 2 palms	Moose - 1 1 Deer - 1 Occasional Caribou - Bear - Occasional Elk - Seasonal Seasonal Duck - Seasonal Prairie Chicken -	3
K	F	41 - 60	Blueberries Strawberries	Blueberries - 3 Strawberries - 3	Moose Deer Duck Geese Rabbit Chicken	Moose -1 1 Deer - 1 - Seasonal (2x week in fall) Duck Geese - Seasonal (2X week in fall) Rabbit - Occassional Chicken - Occasional	1
L	m	21-40	n	n	moose 7 times per week 3 palms, elk once per week 3 palms		1
M	F	21-40	n	n	moose 4 week 1 palm, chickens 1 month 1 palm	Moose - 1 1 Deer - 1 Seasonal Caribou - Bear - Once a year Elk - Seasonal Once per month Chicken - Rabbit - Once per month	6
N	m	21-40	medicinal purposes	privaleged information	Moose bear (medicinal/ceremony) Duck Geese Rabbit Caribou Elk	moose 4 times a week, 2 palms, rabbit 4/year, chicken10/year, duck 4/year, geese 4/year	9
O	m	21-40	huckleberries, saskatoons	1 of each perseason	moose 3 times aweek 3 palms, elk chicken	Moose - 1 1 Per Month (or .25 X Week) Deer - 1 Caribou - 2 Times Per Month in Fall Elk - Occasional Bear - Occasional Summer Rabbits - 1 in Summer (Seasonal) Ducks - Fall and Spring	8
P	M	21-40	n	n	Moose , elk, chicken, rabbits	Moose 1 5times a week, elk 2 twice a year, chicken/rabbits 1 5 times a year	5
Q	M	over 60	n	n	moose	5 times a week/2 palms	6
R	M	21-40	saskatoons,	2 per season	Mooose Elk Rabbit chicken	Moose- 3 times per week 1 palms, elk 1 per week 1 palm	6
S	M	41-60	saskatoon	2 per season	Mooose Elk Rabbit chicken	Moose- 3 times per week 1 palms, elk 1 per week 1 palm	7

Respondent #	Sex	Age	Preffered Plants	Personal Plant Consumption/Week(X's)	Preffered Wildlife Species	Personal Consumption/ Meals Per Week(X's)	# of People in Household
T	m	21-40			moose 5 /week, 2 palms, elk 1/year 2 palm	moose 5 times a week, elk once a year	5
TOTALS							
26 Households on HLFN Reserve Surveyed	**3 Women Men**	**23**		**Households Reporting the Consumption of the Following Plants and Earth Materials** Berries (Undetermined) - 5 Medicines (Undetermined) - 4 Saskatoon Berries - 4 Blueberries - 1 Huckleberries - 4 Strawberries - 1	**Prefferred Wildlife Species Consumption by Household** Moose - 26 Elk - 15 Rabbit - 11 Chicken - 12 Deer - 2 Duck - 3 Bear - 1 Caribou - 2 Geese - 2		**Total People Reported in Households Surveyed - 125**
		Representation from Age Groups: **21-40: 16** **41-60: 5** **Over 60: 5**					

Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.

Peace Reach Pit - DFN Hunting N/W of Hudson's Hope.

Respondent #		Total Oz of Wildlife Consumed Per Week / Yr. by Household (#of people X #of meals X total oz consumed/person	Total Household Fish Consumption - Meals Per Week /Yr	Total Oz of Fish Consumed Per Week / Yr by Household (#of people X #of meals X total oz consumed/person
A			Jackfish -.5 Perch- .5	
B			n	n
C			Jack 6 times a year	9 palms
D			.03/4	4 times year/9 palms
E				n
F	2 palms (all)		10 times year	jack, pickeral
G			Jack 12 times a year (2 palm)	
H			no	NA
I			trout- occasional	NA
J				
K	one palm for younger		jack trout	jack-4 times a year 1 palm
L	5 times week		trout- 5 times/2 jack- 5 times 2palms	Whitefish - Seasonal (2 X Fall) Northern Pike - Seasonal (2 X Fall)
G			n	n
H	8/week		n	n

Respondent #	Total Oz of Wildlife Consumed Per Week / Yr. by Household (#of people X #of meals X total oz consumed/person	Total Household Fish Consumption - Meals Per Week /Yr	Total Oz of Fish Consumed Per Week / Yr by Household (#of people X #of meals X total oz consumed/person
I		various 2/year 1/2, 4,4	
J			
K		Whitefish - Seasonal Northern Pike- Seasonal	Whitefish - Seasonal Northern Pike- Seasonal
L			
M		northern pike, Pike 6, 2 palms	
N	moose- 4 times a week 15 palms per meal, other 22/year- 20 palms	3-4 per year, 8 palms	NA
O			
P	moose 6 palms, 5 per week, elk 5 per year, rabit/chicke 5 times a year 9 palms	n	n
Q	just him	n	n
R	six palms 3 times a week, 1 palm once a wekk other	n	n
S	moose 10 palms, 3 /week, elk 2 palms once a week	jackfish- 1 palm per week	

Respondent #		Total Oz of Wildlife Consumed Per Week / Yr. by Household (#of people X #of meals X total oz consumed/person	Total Household Fish Consumption - Meals Per Week /Yr	Total Oz of Fish Consumed Per Week / Yr by Household (#of people X #of meals X total oz consumed/person	
T	times 2				
TOTALS					
26 Households on HLFN Reserve Surveyed	**Total Reported Meals Per Week Containing Widlife for All Surveyed Households: 243 Total Reported Meals Per Year Containing Wildlife for All Surveyed Households: 21870**	**Total Reported Wildlife Consumed By All Surveyed Households by Weight: 4908 oz / week Total Reported Wildlife Consumed By All Surveyed Household by Weigth: 235591 oz / year**	**Total Reported Meals Per Week Containing Fish for All Surveyed Households: .25 /2.25 onz Total Reported Meals Per Year Containing Fish for All Surveyed Households: 12 /108 onz**		**0**
			Reported Fish Species Caught - By Household Whitefish - 2 Northern Pike / Jackfish - 8 Walleye / Pickerell - 2 Trout - 3		
Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.					

Respondent #	Total Protein Per Household (Wildlife and Fish) Oz Per Week / Oz Per Year	Trad. Use Activity Participation Reported Per Household	Reported Barriers to Hunting	Reported Barriers to Fishing	Favorite / Frequent Place to Hunt
A		Hunting - 1 Fishing - 1 0 Traps - 0 Gathering -	None	None	Spring Lake Area
B	n	Hunting -1	n	n	all over
C		Hunting - 2 Trapping-2 Gathering - 2 Fishing-8	none	None	Pink Mountain
D		Hunting - 5 Trapping-1 Gathering - 4 Fishing- 7	Doesn’t have licence	NA	surrounding area
E	n	Hunting - 1 0 Gather - 0 Trap - Fish - 1	n	n	north of reserve
F		Hunting - 1 Trap - 0 Gather - 2 Fish - 1	go with my sons and nephews when I can	None	all over
G		Hunting - 2 Fishes - 2 Trap - 0 Gather - 2	n	n	various
H	n	Hunting - 1 Fish - occasional Gather - 0 Trap - 0	little money for ongoing costs	n	spring lake area
I		Hunting - 1 Fishing - 1 Gathering - 2 Trapping - 0	None	n	all directions from reserve
J		Hunting - 1 0 Gathering 0 Trapping - Fishing - 0	lack of equipment and little time due to no childcare	n	all over
K		Hunting - 1 Trapping - 0 Gathering-1 Fishing - 1	little money for ongoing costs, little time, changes in wildlife	Time, Difficult to access good places, Changes in population health and abundance	pink mountain/saddle hills
L		Hunting - 1 Trapping - 0 ocasionally n Fishes - Gathering -	None	NA	all over
G	n	Hunting - 1 Fishing - 1 0 Trapping - 0 Gathering -	None	n	saddle hills/spring lake
H		Hunting - 1 Fishing - ocasional Gathering - 0 Trap - 0	None	None	saddle hills, south of gp, south of reserve

Respondent #	Total Protein Per Household (Wildlife and Fish) Oz Per Week / Oz Per Year	Trad. Use Activity Participation Reported Per Household	Reported Barriers to Hunting	Reported Barriers to Fishing	Favorite / Frequent Place to Hunt
I		Hunting - 1 Fishing - 1 Traps -0 Gathering - 2	n	None	all over
J		Hunting - 1 Fishes - 1 Trapping - 0) Gathering - 0	None	None	all over
K		Hunting - 1 Fish - 1 Trap - No Gather - 1	None	None	Along the Peace River Valley / South of DFN IR
L		Hunting - 1 Fish - 1 Trap - 0 Gather - 1	n	n	all over
M		Hunting - 1 Fishing - 1 Trap - No Gathering - 1	None	None	saddle hills
N		Hunt - 2 Fish - 2 Trap - 1 Gather - 2	little money for on going costs	n	saddle hills, all over south of reserve of gp, tumbler ridge and in clearhills area
O		Hunt - 1 Fish - 1 Trap -0 Gather - 1	None	lack of equipment, little money	saddle hills, south of gP, west of Kelly Lake
P		Hunt - 1 Fish - 1 Trap - 1 Gather - 1	n	n	all over I have a lot of favorite places to hunt depands on time of year
Q		Hunt - 1 Fish - 1 Trap - 0 Gather - 2	None	n	all over
R	n	Hunt - 1 Fishes - 1 Trap -0 Gather - 1	None	None	no
S		Hunt - 2 Fish - 1 Trap - o Gather - 1	None	None	n

Respondent #	Total Protein Per Household (Wildlife and Fish) Oz Per Week / Oz Per Year	Trad. Use Activity Participation Reported Per Household		Reported Barriers to Hunting		Reported Barriers to Fishing		Favorite / Frequent Place to Hunt
T		Hunt - 2 Fish - 1	Trap - o Gather - 1	n		n		all over
TOTALS								
26 Households on HLFN Reserve Surveyed	**Total Reported Protein (Fish and Wildlife) Intake for All Surveyed Households: 4910.25 oz / Week** **Total Reported Protein (Fish and Wildlife) Intake for All Surveyed Households: 235,699 onz**	**Traditional Use Activities In Order of Activity** **Hunting** **Fishing** **Trapping**	**Gathering**	**Top Cited Barriers to Hunting by Household :** **Cost - 3** **Limited Time - 4** **of Equipment - 2** **1**	**Lack** **Changes in Wildlife-**	**Top Cited Barries to Fishing by Household:** **of Equipment - 1**	**Lack** **Lack of time- 1**	**Saddle Hills Ranked as One of Top Places to Hunt**
Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.								

Respondent #	Favourite / Frequent Place to Fish	Sharing of Harvest With Family Out of Household	Bartering (Y)-Commodities	Children Btwn. 5-18 being taught to hunt	Children Btwen 5-18 being taught to fish
A	Various	Y - 90%	No	Y	Y
B	n	Y - 90%	NA	Y	Y
C	Various	Y-50%	NA	Y	Y
D	Various	Y - 10%	NA	Y	Y
E	NA	Y - 50%	NA	Y	Y
F	n	Y - 90%	NA	n	n
G	n	Y - 90%	NA	n	n
H	not perfereed place	Y - 50%	NA	y	n
I	no	Y - 15%	No	Y	Y
J	n	Y - 50%	n	n	n
K	n	Y - 50%	NA	Y	Y
L	n	Y - 90%	No	Y	n
G	n	Y - 90%	No	n	n
H	n	Y - 50%	No	Y	`Y

Respondent #	Favourite / Frequent Place to Fish	Sharing of Harvest With Family Out of Household	Bartering (Y)-Commodities	Children Btwn. 5-18 being taught to hunt	Children Btwen 5-18 being taught to fish
I	all over	Y - 50%	No	Y	Y
J	all over	Y - 90%	No	Y	Y
K	Peace River	Y - 75%	No	Y	Y
L	n	y-90%	No	n	n
M	swan lake	Y - 90%	No	Y	Y
N	No	Y - 50%	No	Y	Y
O	n	Y - 50%	No	Y	Y
P	n	Y - 50%	No	Y	Y
Q	n	Y - 90%	n	Y	Y
R	no	Y - 50%	No	Y	Y
S	n	Y - 50%	No	Y	Y

Respondent #	Favourite / Frequent Place to Fish	Sharing of Harvest With Family Out of Household	Bartering (Y)-Commodities	Children Btwn. 5-18 being taught to hunt	Children Btwen 5-18 being taught to fish
T ***TOTALS***	n	Y-50%	n	y	y
26 Households on HLFN Reserve Surveyed	**Various locations, Swan Lake**	**Majority of Households Report Sharing of Country Foods with Extended Family - Other Households**	**All Households Report That They Do Not Barter with Country Foods**	**All Households Reporting that next generation is being taught to hunt and taken into the bush to learn how to hunt**	**All Households Reporting that next generation is being taught to fish and taken into the bush to learn how to fish**
Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.					

Respondent #	Any Householder Employed 6 Months and Over	Perceived Community Favourite Country Foods	Perceived Community Children Favourite County Foods	Concerned Re Health of Country Foods
A	Y	Moose, Fish, ELK	Moose, Elk, fish	no
B	Y	Moose	Moose	n
C	No	Moose, drymeat, fish smokes	Moose	No
D	No	Moose, Fish,	Moose, Fish	no
E	No	moose	moose, berries (when given)	n
F	y	Moose, Berries, Fish	n	n
G	No	moose	n	n
H	y	moose	moose	n
I	Y	Moose	Berries	n
J	Y	moose	berries	n
K	Y	moose meat	moose	some animals depends on the location they are killed at
L	y	moose	Moose	n
G	y	moose	n	n
H	y	moose	moose	n

Respondent #	Any Householder Employed 6 Months and Over	Perceived Community Favourite Country Foods	Perceived Community Children Favourite County Foods	Concerned Re Health of Country Foods
I	Yes	moose	moose	No conerns
J	y	moose	moose	No concerns
K	No	Moose, Chicken, Fish, Berries	Moose (Dry Meat), Chicken	n
L	No	moose	n	n
M	y	Moose, elk, fish chicken	Moose, chicken	n
N	No	everything we kill and collect	moose, berries	concerned about what moose are eating at lease sites, fracing sites
O	Yes	Moose, elk, raspberries, huckle berries, saskatoons	blueberries, huckle berries, dry meat	number of gas operated boats on lake
P	yes	moose, mint tea	Moose, chicken	n
Q	Yes	moose	moose	n
R	no	Moose, elk	n	n
S	Yes	Moose, Elk, Berries	n	NA

Respondent #	Any Householder Employed 6 Months and Over	Perceived Community Favourite Country Foods	Perceived Community Children Favourite County Foods	Concerned Re Health of Country Foods
T	no	moose	moose	n
TOTALS				
26 Households on HLFN Reserve Surveyed	**17 households reporting that no one in house holds works more than 6 months**	**Percieved Most Favourite / Consumed Country Foods in Community: Moose - 26 Berries - 4 Fish - 5 Elk - 5 Chicken - 1 mint tea- 1**	**Percieved Most Favourite Country Foods Consumed by Community Youth: Moose - 18 Berries - 5 Fish - 1 Chicken - 2 Elk - 1**	**Expressed concern in relation to harvesting country foods is contamination in fish and wildlife and water quality / pollution in water**
Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.				

Respondent #	Do You Consume More/Less Country Foods Than Prior Yrs	Do You Consume As Much Country Food As You Would Like	Why is Harvesting Country Foods Important to You
A	same/15 years	Yes	Part of culture and tradition
B	same/30 years	yes	Like to eat it
C	5Yrs - less / 15Yrs - same / 30Yrs - same	Yes	n
D	5yrs - Same / 15 Yrs - same / 30 Yrs - more	Yes	n
E	5Yrs - same / 15 yrs - same	Yes	always eaten it
F	5Yrs - Same / 15 Yrs - same / 30 Yrs - same	Yes	traditional, its what we've always been eating throughout our lives
G	5yrs - same / 15yrs - Same	Yes	way they were brought up
H	5Yrs - same / 15Yrs - same - 30 Yrs - same	yes	grew up on it
I	5Yrs - less / 15Yrs - less / 30 Yrs - less	No	culture
J	5Yrs - same / 15 Yrs - same / 30Yrs - same	Yes	like eating it
K	5Yrs - less / 15Yrs - Less / 30 Yrs- more	No	wildlife food is more healtier
L	5Yrs - same / 15Yrs - same	Yes	always ate it
G	5Yrs - Same / 15 Yrs - Same / 30 Yrs - less	Yes	because I like to eat moose mewat
H	5yrs - same / 15yrs -same / 30Yrs - same	Yes	traditional, like country foods

Respondent #	Do You Consume More/Less Country Foods Than Prior Yrs	Do You Consume As Much Country Food As You Would Like	Why is Harvesting Country Foods Important to You
I	5yrs - Same / 15yrs - Same / 30 Yrs - same	Yes	the way I always ate
J	5yrs - Same / 15yrs - Same	No	Have eaten this way whole life, Cheaper than store bought food
K	5 yrs - Less / 15yrs - Same / 30 Yrs - Less	Yes	the way my dad and grand parents showed me
L	5Yrs - same / 15Yrs - same / 30 Yrs - same	Yes	the way I was brought up
M	5Yrs - same / 15yrs - same - 30Yrs - same	Yes	our tradition
N	5 Yrs - more / 15yrs - same / 15Yrs - same	No	that’s our lifestyle and its free
O	5 Yrs - Same / 15 Yrs - same Ago / 30 Yrs - Same	Yes	that’s our tradtion to go out and get food for the family, part of our culture.
P	5Yrs - less / 15 Yrs Ago - less / 30 Yrs - less	No	it’s the way I was brought up
Q	5Yrs - same / 15Yrs - same / 30 Yrs Ago - Same	Yes	its good
R	5Yrs - Same / 15Yrs - Same / 30 Yrs - same	Yes	tradtional
S	5Yrs - same / 15Yrs - same / 30 Yrs - same	Yes	tradition

Respondent #	Do You Consume More/Less Country Foods Than Prior Yrs	Do You Consume As Much Country Food As You Would Like	Why is Harvesting Country Foods Important to You
T	5Yrs - same / 15Yrs - same / 30 Yrs - same	yes	just like it
TOTALS			
26 Households on HLFN Reserve Surveyed	**about 70% do the same amount**	**2 Households Reporting That They Do Not Consume as much Country Foods as They Would Like 24 Households Reporting That They Are Consuming as much Country Foods as They Would Like**	**Top Reasons for Contuining to Consume Country Foods by Surveyed Household: Healthier / Promotes Health and Well Being - 1 Cost / Cheaper Than Store Bought Foods - 2 Part of Culture and Way of Life - 17 Like the taste - 5**
Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.			

HORSE LAKE FIRST NATION

COMMUNITY BASELINE AMENDMENT REPORT

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July 2013

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1. INTRODUCTION

1.1 Consideration of New Information

The Environmental Impact Statement (EIS) presented Aboriginal issues, interests, concerns and baseline information received prior to the finalization of the EIS including information submitted by Horse Lake First Nation. The information was presented in the relevant EIS valued component (VC) sections and in Volume 1 Appendix H: Aboriginal Issues, Concerns, and Interests Tracking Table in accordance with the EIS Guidelines.

Horse Lake First Nation prepared the "Horse Lake Community Baseline Profile" (HLFN Community Baseline Profile) for consideration in the Site C Clean Energy Project (the Project) environmental assessment. The report was submitted to BC Hydro on June 18, 2013, after BC Hydro had submitted the EIS (on January 25, 2013) and the Aboriginal Group Amendment Report (on May 24, 2013) to the British Columbia Environmental Assessment Office and the Canadian Environmental Assessment Agency.

Because the report was received later than anticipated, a placeholder was included in EIS Volume 3 Appendix B Part 4 stating that, "the Horse Lake First Nation Community Baseline Report and EIS Integration Summary Table will be submitted at a later date in the environmental assessment process. The information received from the report will be reviewed against applicable sections of the Environmental Impact Statement and additional information will be provided as needed."

The HLFN Community Baseline Profile report is presented in its entirety in Volume 3, Appendix B Part 4.

BC Hydro prepared the following two documents as part of the review and consideration of the HLFN Community Baseline Profile:

- Horse Lake First Nation EIS Integration Summary Amendment Table (HLFN EIS Integration Table) which presents a table which cross-references the HLFN Community Baseline Profile information with baseline information categories and the related section of the EIS, and,
- Horse Lake First Nation Community Baseline Amendment Report (HLFN Amendment Report) which presents new key issues and concerns or new baseline information by VC

The HLFN EIS Integration Table and the HLFN Community Baseline Profile were provided to the Technical Leads for all Project valued components (VCs) for review and consideration. Issues and concerns presented in the HLFN Community Baseline Profile that were also raised during the pre-Application phase or in the Saulteau or Blueberry River First Nations Community Baseline Profile Reports are addressed in the EIS (January 25, 2013) or the Aboriginal Group Amendment Report (May 24, 2013) and are not repeated in this report. New issues and concerns or new baseline information identified in the HLFN Community Baseline Profile that was not raised during the pre-Application phase or in the Saulteau or Blueberry River First Nations community baseline profile reports is presented in this report by VC. VCs for which new baseline information was identified were carried through the VC effects assessment in accordance with the EIS Guidelines and the methodology described in EIS (Volume 2

Assessment Methodology and Environmental Effects Assessment Section 10 Environmental Assessment Methodology) to determine if changes were required to the results described in the EIS VC sections.

For additional information on BC Hydro's approach to integrating First Nations information into the EIS, see EIS Volume 3 Economic and Land and Resource Use Effects Assessment Appendix B First Nations Community Baseline Reports Part 1 Approach to Gathering and Integrating Community Baseline Information.

1.2 Summary of Results

The consideration of the HLFN Community Baseline Profile resulted in the following updates to the information provided in the EIS or the Aboriginal Group Amendment Report (May 24, 2013). Sections not listed did not include new information or changes.

New key issues or concerns were identified for the following VCs:

- 19 Current Use of Lands and Resources for Traditional Purposes
- 25 Outdoor Recreation and Tourism

New baseline information was identified for the following VCs:

- 12 Fish and Fish Habitat
- 19 Current Use of Lands and Resources for Traditional Purposes
- 33 Human Health

No updates were required to the effects assessment, mitigation, residual or cumulative effects as described in the EIS for any VC.

2. CONSIDERATION OF NEW INFORMATION BY VC

The VCs are presented below using EIS section order and numbering for consistency. Each VC section identifies any new issues and concerns or new baseline information identified in the HLFN Community Baseline Profile for that section. Each section also identifies if changes are required to the results of the assessment as described in the EIS based on the new information if any, provided for the VC.

12. FISH AND FISH HABITAT

12.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related to the fish and fish habitat VC.

12.2 Baseline Conditions

Information provided in the Horse Lake First Nation Traditional Land Use Study (TLUS) was summarized in Table 12.6 of EIS section 12.3. The HLFN Community Baseline Profile describes additional information about fishing locations that was not contained in Table 12.6 in the EIS. Specifically, the HLFN Community Baseline Profile describes the Wabasca River, Beaver Ranch River, Horse Creek, and the Upper reaches of the Kiskatinaw River as areas where Horse Lake First Nation members catch fish that were not identified in the TLUS.

The HLFN Community Baseline Profile describes trout (bull trout, as well as other species of trout), whitefish, and grayling as additional species harvested that were not identified in the TLUS.

12.3 Effects Assessment and Mitigation

All species identified in the HLFN Community Baseline Profile are already accounted for in the fish and fish habitat baseline conditions described in EIS section 12.3. Consequently, the information does not alter:

- the assessment of the potential for the Project to result in adverse effects described in EIS sections 12.4 and 12.5;
- the requirements for, the scope of, or the effectiveness of, the mitigation measures described in EIS section 12.5.

The baseline information regarding fishing locations identified above (Section 12.2) pertains to the current use of lands and resources for traditional resources VC. It is presented in Section 19.3 of this report and was taken into account in EIS section 19.4 Current Use of Lands and Resources for Traditional Purposes.

12.4 Residual Effects

No changes are required to the residual effects section for the fish and fish habitat VC in EIS section 12.6 because the effects assessment has not changed.

12.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the fish and fish habitat VC in EIS section 12.7.

12.6 Follow-up Programs

No changes are required to the monitoring and follow-up for the fish and fish habitat VC in EIS section 12.8.

13. VEGETATION AND ECOLOGICAL PLANT COMMUNITIES

13.1 Key Issues and Identification of Potential Effects

The HLFN Community Baseline Profile did not identify new key issues related to vegetation and ecological plant communities.

13.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to vegetation and ecological plant communities.

13.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the vegetation and ecological plant communities VC, described in EIS section 13.3.

13.4 Residual Effects

No changes are required to the residual effects for the vegetation and ecological communities VC in EIS section 13.4 because the effects assessment has not changed.

13.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the vegetation and ecological communities VC in EIS section 13.5.

13.6 Monitoring and Follow-up Programs

No changes are required to monitoring and follow-up for the vegetation and ecological communities VC in EIS section 13.6.

14. WILDLIFE RESOURCES

14.1 Key Issues

Most of the wildlife species mentioned within the HLFN Community Baseline Profile were either directly assessed (beaver, deer, elk, moose, ducks, geese and grouse (chicken) or were considered and excluded for various reasons (bison, black bear, marten, wolverine, lynx, caribou, snowshoe hare (rabbit), mountain goat). Baseline studies for sheep were conducted in the Peace River Valley to address comments from the Blueberry River First Nations. No sheep were documented in the Peace River Valley and this species was not considered further in the EIS. Porcupine, fox and otter have not been considered in the EIS. The process for identification of key issues, key species groups, and key indicators is described in Section 14.1 of the EIS. These species were not identified at any step of that process.

The HLFN Community Baseline Profile did not identify new key issues related to wildlife resources.

14.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to wildlife resources.

14.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the wildlife resources VC, described in Section 14 of the EIS.

14.4 Residual Effects

No changes are required to the residual effects for the wildlife resources VC provided in EIS section 14.5 because the effects assessment has not changed.

14.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the wildlife resources VC in EIS section 14.6.

14.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the wildlife resources VC in EIS section 14.7.

15. GREENHOUSE GASES

15.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related to the greenhouse gases VC.

15.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe baseline conditions related to greenhouse gases.

15.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the greenhouse gases VC, described in EIS section 15.

15.4 Residual Effects

No changes are required to the residual effects assessment for the greenhouse gases VC in EIS section 15.4.

15.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the greenhouse gases VC in EIS section 15.5.

15.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the greenhouse gases VC in EIS section 15.6.

16. LOCAL GOVERNMENT REVENUE

The local assessment area (LAA) and regional assessment area (RAA) for the local government revenue VC do not include the Horse Lake First Nation.

The LAA for local government revenues includes the City of Fort St. John, the District of Taylor, the District of Hudson's Hope, the District of Chetwynd, the City of Dawson Creek, and the PRRD (Electoral Areas B, C, D and E) (EIS section 16, Table 16.4 and Figure 16.1). First Nation communities are excluded from this analysis (EIS section 16.1.5.1, page 16-4, lines 9-12).

The RAA is the local municipal governments in the PRRD, including the City of Fort St. John, the District of Taylor, the District of Hudson's Hope, the District of Chetwynd, the City of Dawson Creek, and the PRRD, but excluding First Nation communities (EIS section 16.1.5.1, page 16-4, lines 15-17).

17. LABOUR MARKET

The LAA and RAA for the labour market VC do not include the Horse Lake First Nation.

The LAA for labour market is defined as the Peace River Regional District (PRRD) and the Northern Rockies Regional Municipality (NRRM), which, together, are known as the Northeast Development Region (NEDR).

The First Nations with communities situated within the boundaries of the LAA include the Doig River First Nation, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry First Nation, Saulteau First Nations, and Fort Nelson First Nation.

The Regional Assessment Area (RAA) for labour market is the LAA plus the Fraser Fort George Regional District (FFRD). The First Nations communities in the RAA include the First Nations communities in the LAA and the McLeod Lake Indian Band (EIS Section 17 pages 17-5, 17-6).

18. REGIONAL ECONOMIC DEVELOPMENT

The LAA and RAA for the regional economic development VC do not include the Horse Lake First Nation.

The LAA for the regional economic development is the PRRD and the Northern Rockies Regional Municipality (NRRM), which together comprise the boundaries of the B.C. Northeast Development Region (NEDR). This is the geographical area where project interactions with the regional economic development VC will occur.

The borders of the Northeast Development Region and First Nations traditional territories and Indian Reserve communities do not precisely overlap. The First Nations with communities and businesses situated within the boundaries of the LAA include the Doig River First Nation, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry First Nation, Saulteau First Nations, and Fort Nelson First Nation. Although the McLeod Lake Indian Band is located outside the boundaries of the LAA, because their businesses, (i.e., the McLeod Lake Indian Band Development Corporation and a band-owned construction business) are headquartered in Chetwynd, they are included in the LAA (EIS Section 18 page 18-5).

19. CURRENT USE OF LANDS AND RESOURCES

19.1 Key Issues

Table 19-1 outlines key issues related to the current use of lands and resources for traditional purposes raised by Horse Lake First Nation in the HLFN Community Baseline Profile, and BC Hydro's approach to addressing the issues.

Table 19-1 Key issues: Current Use of Lands and Resources for Traditional Purposes

Key Issues	Approach to Addressing Key Issues
Concerns about impacts of past and future industrial activities have on traditional use of lands and resources	• A cumulative effects assessment is undertaken in EIS Section19 Current Use of Lands and Resources for Traditional Purposes (Section 19.6, pages 19-108 to 19-114).
Concern the potential shift in vegetation may affect hunting moose from boat and along the shores of the Peace River and its tributaries.	• Potential effects on riparian forests are assessed in EIS Section 13 Vegetation and Ecological Communities. • Potential effects on wildlife populations and wildlife habitat are assessed in EIS Section14 Wildlife Resources. • Using the baseline information described in EIS Section 19.2, and the assessment in EIS Sections 13 and 14, EIS Section 19 Current Use of Lands and Resources for Traditional Purposes provides an assessment of the potential effects of the Project on the current and reasonably anticipated future use of lands and resources for traditional purposes, including the potential effects on hunting and trapping activities.
Concern the overall alteration of the Peace River valley will potentially impact use and utilization of the river and valley and impact long term relationships with the river valley itself.	• The effect of changes to access on Aboriginal land and resource use is assessed in Volume 3 Section 19 Current Use of Lands and Resources for Traditional Purposes.

19.2 Baseline Conditions

The HLFN Community Baseline Profile provides information on consumption of country foods. This information is discussed in Section 33 Human Health of this report.

The HLFN Community Baseline Profile discusses the importance of hunting, fishing and gathering to HLFN members and identifies harvested species and harvesting locations.

The HLFN Community Baseline Profile provides additional detail on the use of traditional language, indicating that numerous people within the HLFN community speak the Cree language and an increasing amount of people are able to understand it. Few people are able to speak or understand the Beaver language (HLFN 2013: page 18).

The HLFN Community Baseline Profile also provides additional detail with respect to concerns regarding the community's ability to maintain its culture and traditional activities in the face of regional industrial development. Elders and land users of the

Horse Lake First Nation reported that is becoming increasingly difficult to hunt, fish, trap and gather successfully and in the preferred manner and that it has become increasingly difficult to successfully fish in the Peace River and its key tributaries. (HLFN 2013: page 40). The HLFN Community Baseline Profile further notes that many community members must travel further than in the past to hunt and fish (HLFN 2013: page 42).

HLFN families are reported to continue to rely on the Peace River and hinterland for a range of sustenance, cultural, socio-economic and spiritual purposes. Some HLFN members trade and sell what they harvest and viewed this as an economic aspect of their traditional vocations (HLFN 2013).

Additional detail presented in the HLFN Community Baseline Profile regarding current hunting, fishing, trapping and other land and resource uses is provided below.

Current Hunting and Trapping

The HLFN Community Baseline Profile indicates that HLFN families continue to hunt actively. These skills are passed on from elders to youth, who are showing an interest in pursuing traditional activities (HLFN 2013). No new hunting locations or harvested wildlife species are listed in the HLFN Community Baseline Profile.

According to the Community Baseline Profile, the Peace River Valley from the Beatton River to the Notikewin / Peace River confluence and the islands in the Peace are critical critical ungulate habitat.

According to the HLFN Community Baseline Profile, the HFLN do not have a "current and substantial interest in fur bearers for trapping / commercial purposes", but furbearers are recognized as playing "a key role in the food chain" (HLFN 2013: page 56). The HLFN is planning to establish a trapping training program to train interested community members and to buy back available trapline areas along the Peace River. Two existing trapline holders in BC and Alberta are actively involved in discussions with the HLFN regarding the sale of traplines to the HLFN (HLFN 2013: page 85). The locations of the traplines were not specified in the Community Baseline Profile.

Current Fishing

The HLFN Community Baseline Profile indicates that fishing is still an activity of importance to community members. However, many HLFN members report that they

have stopped fishing due to concerns about water and fish quality. The HLFN is interested in engaging in watershed restoration projects, building their capacity to engage in fisheries management and in establishing a fisheries restoration program for the Peace River Basin.

No new fishing locations or harvested fish species are identified in the HLFN Community Baseline Profile. According to the report, community members indicated that successful fishing in the main stem of the Peace River has been reduced and that they tend to rely on fish at the confluence of the Peace and cooler and clearer tributaries (HLFN 2013) Fishing locations are not specified.

Trails, Places and Other Cultural Features

According to the Community Baseline Profile, HLFN Lands Staff reported that certain areas are of high cultural and ecological value and critical community use. As noted above, the Beatton and Notikewin confluences with the Peace River, and the islands in the Peace River are critical ungulate habitat. No further information was provided about these or other areas.

19.3 Effects Assessment and Mitigation

The information set out above provides greater detail on baseline conditions already described in EIS section 19 regarding the importance of hunting, fishing, and culturally-valued areas by HLFN members. The detail does not alter:

- the assessment of the potential for the Project to result in effects described in EIS sections 19.4 and 19.5; or
- the requirements for, the scope of, or the effectiveness of, the mitigation measures described in EIS section 19.4 and 19.5.

19.4 Residual Effects

No changes are required to the residual effects for the current use of lands and resources for traditional purposes VC in EIS section 19.6.

19.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the current use of lands and resources for traditional purposes VC in EIS section 19.7.

19.6 Monitoring and Follow-up

No changes are required to the monitoring and follow-up described in EIS section 19.8.

20. AGRICULTURE

20.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the agriculture VC.

20.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to agriculture.

20.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the agriculture VC, described in EIS section 20.

20.4 Residual Effects

No changes are required to the residual effects for the agriculture VC in EIS section 20.5.

20.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the agriculture VC in EIS section 20.6.

20.6 Monitoring and Follow-up

No changes are required to the monitoring and follow-up described in EIS section 20.7.

21. FORESTRY

21.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the forestry VC.

Key issues and concerns are raised regarding the potential cumulative effects of forestry and other development activities on the Peace River eco-system and the ability of Horse Lake First Nation to continue to use the lands and resources in the Peace River, adjacent lands and the Peace Basin (HLFN 2013, Section 4.2). An assessment of cumulative effects of the Project on current use of lands and resources for traditional purposes was undertaken in EIS section 19.6 following methods explained in EIS Volume 2 Section 10, and the Response to Working Group and Public Comments on the Site C Clean Energy Project Environmental Impact Statement Technical Memo: Cumulative Effects Assessment (May 8, 2013).

21.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to the forestry VC.

21.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the forestry VC, described in EIS sections 21.4 and 21.5.

21.4 Residual Effects

No changes are required to the residual effects assessment for the Forestry VC in EIS section 21.6.

21.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the Forestry VC in EIS section 21.7.

21.6 Monitoring and Follow-up

No changes are required to the monitoring and follow-up described in EIS section 21.8.

22. OIL, GAS, AND ENERGY

22.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the oil, gas and energy VC.

Key issues and concerns are raised regarding the potential cumulative effects of oil and gas and other development activities on the Peace River eco-system and the ability of Horse Lake First Nation to continue to use the lands and resources in the Peace River, adjacent lands and the Peace Basin (HLFN 2013, Section 4.2). An assessment of cumulative effects of the Project on current use of lands and resources for traditional purposes was undertaken in EIS Section 19.6 following methods explained in EIS Volume 2 Section 10, and Response to Working Group and Public Comments on the Site C Clean Energy Project Environmental Impact Statement Technical Memo: Cumulative Effects Assessment (May 8, 2013).

22.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to oil, gas, and energy VC.

22.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the oil, gas, and energy VC, described in EIS sections 22.4 and 22.5.

22.4 Residual Effects

No changes are required to the assessment of the residual effects for the oil, gas, and energy VC in EIS section 22.6.

22.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the oil, gas, and energy VC in EIS section 22.7.

22.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the oil, gas, and energy VC in EIS section 22.8.

23. MINERALS AND AGGREGATES

23.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the minerals and aggregates VC.

Key issues and concerns are raised regarding the potential cumulative effects of development activities including mining, urban development, and linear features on the Peace River eco-system and the ability of Horse Lake First Nation to continue to use the lands and resources in the Peace River, adjacent lands and the Peace Basin (HLFN 2013, Section 4.2). An assessment of cumulative effects of the Project on current use of lands and resources for traditional purposes was undertaken in EIS Section 19.6 following methods explained in EIS Volume 2 Section 10, and Response to Working Group and Public Comments on the Site C Clean Energy Project Environmental Impact Statement Technical Memo: Cumulative Effects Assessment (May 8, 2013).

23.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to the minerals and aggregates VC.

23.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the minerals and aggregates VC, described in EIS section 23.4.

23.4 Residual Effects

No changes are required to the assessment of the residual effects for the minerals and aggregates VC in EIS section 23.5.

23.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the minerals and aggregates VC in EIS section 23.6.

23.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the minerals and aggregates VC in EIS section 23.7.

24. HARVEST OF FISH AND WILDLIFE RESOURCES

24.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the harvest of fish and wildlife resources VC.

24.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to the harvest of fish and wildlife VC. Baseline information related to the harvest of fish and wildlife for traditional purposes is presented in Section 19 of this amendment report.

24.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the harvest of fish and wildlife VC, described in EIS section 24.4 and 24.5.

24.4 Residual Effects

No changes are required to the assessment of the residual effects for the harvest of fish and wildlife VC in EIS section 24.6.

24.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the Harvest of Fish and Wildlife VC in EIS section 24.7.

24.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the Harvest of Fish and Wildlife VC in EIS section 24.8.

25. OUTDOOR RECREATION AND TOURISM

25.1 Key Issues

Table 25-1 outlines one new key outdoor recreation and tourism issues identified in the HLFN Community Baseline Profile, and BC Hydro's approach to addressing it.

Table 25-1 New Key Issue: Outdoor Recreation and Tourism

Key Issues	Approach to Addressing Key Issues
Decreased tourism and recreation potential from lower flows	EIS Section 25 Outdoor Recreation and Tourism (Section 25.4.2.1, pages 25-30) describes the proposed public access restrictions proposed for safety reasons. EIS Section 26 Navigation (Section 26.4.5.1, page 26-19) describes potential navigation hazards in waterways during operations. Projected water and ice conditions on the Site C reservoir were presented in EIS Section 11.4 Surface Water Regime and Section 11.7 Thermal and Ice Regime Clearing the Site C reservoir and managing debris to support boating on the Site C reservoir was described in EIS Volume 1 Executive Summary, Introduction, Project Planning and Description, and Volume 3 Appendix A Vegetation, Clearing, and Debris Management Plan A Public Safety Management Plan to identify public communications procedures for public safety hazards, and access restrictions and closures during construction and operation of the Site C reservoir was described in EIS Volume 5 Asserted or Established Aboriginal Rights and Treaty Rights, Aboriginal Interests Information Requirements Section 35 Summary of Environmental Management Plans (35.3.1.2 Public Safety Management Plan).

25.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to the outdoor recreation and tourism VC.

25.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the outdoor recreation and tourism VC, described in EIS section 25.4 and 25.5.

25.4 Residual Effects

No changes are required to the assessment of the residual effects for the outdoor recreation and tourism VC, described in EIS section 25.6.

25.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the outdoor recreation and tourism VC in EIS section 25.7.

25.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the outdoor recreation and tourism VC in EIS section 25.8.

26. NAVIGATION

26.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the navigation VC.

26.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to navigation.

26.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the navigation VC, described in EIS section 26.4 and 26.5.

26.4 Residual Effects

No changes are required to the assessment of residual effects for the navigation VC in EIS section 26.6.

26.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the navigation VC in EIS section 26.7.

26.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the navigation VC in EIS section 26.8.

27. VISUAL RESOURCES

27.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the visual resources VC.

27.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to visual resources.

27.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the visual resources VC, described in EIS section 27.5 and 27.6.

27.4 Residual Effects

No changes are required to the assessment of residual effects for the visual resources VC in EIS section 27.7.

27.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the visual resources VC in EIS section 27.8.

27.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the visual resources VC in EIS section 27.9.

28. POPULATION AND DEMOGRAPHICS

The local assessment area (LAA) and regional assessment area (RAA) for the population and demographics VC does not include the Horse Lake First Nation.

The LAA is the Peace River Regional District (PRRD). While the majority of existing residents in the PRRD are within commuting distance of the Project, the majority of new residents would likely live in communities in close proximity to the Project work site. Therefore, the assessment specifically focuses on potential population changes in Fort St. John (EIS Section 28, page 28-4).

Where available, baseline population and demographic information in the EIS is specifically presented for First Nations communities and the Aboriginal population of the LAA. The First Nations with Indian Reserve communities situated within or near the boundaries of the LAA are the Doig River First Nation, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry River First Nations, and Saulteau First Nations (EIS Section 28, page 28-4).

The RAA is the same as the LAA, as it includes the area where other projects may result in changes to labour market and associated regional population levels. Projects outside the RAA would not lead to population or demographic change in the RAA (EIS Section 28, page 28-5).

29. HOUSING

The local assessment area (LAA) and regional assessment area (RAA) for the housing VC does not include the Horse Lake First Nation.

The LAA is the Peace River Regional District (PRRD) as noted in Table 29.5 and Figure 29.1 of the EIS, which aligns with the assessment areas for Volume 3 Section 17 Labour Market Effects Assessment and Volume 4 Section 28 Population and Demographics.

Baseline housing information is presented in the EIS, where available, for First Nations with Indian Reserve communities situated within or near the boundaries of the LAA (Doig River First Nations, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry River First Nation, and Saulteau First Nations) (EIS Section 29, page 29-5).

The RAA is the same as the LAA and is the spatial boundary where communities share similar socio-economic characteristics, including a region-wide housing market. It is also the area where other projects may result in changes to the labour market, associated regional population, and housing levels (EIS Section 29, page 29-5).

30. COMMUNITY INFRASTRUCTURE AND SERVICES

The local assessment area (LAA) and regional assessment area (RAA) for the community infrastructure and services VC does not include the Horse Lake First Nation.

The LAA includes the City of Fort St. John, the District of Taylor, the District of Hudson's Hope, the District of Chetwynd, the City of Dawson Creek, and the Peace River Regional District (PRRD). Given the proximity of the City of Fort St. John, the District of Taylor, the District of Hudson's Hope, and associated rural areas to the Project, these communities could experience demand on services. The LAA is also the area where potential project effects on water and sewer infrastructure may occur (EIS Section 30, page 30-7).

Baseline infrastructure and services information is presented in the EIS, where available, for First Nations with Indian Reserve communities situated within or near the boundaries of the LAA (Doig River First Nation, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry River First Nations and Saulteau First Nations) (EIS Section 30, page 30-7).

The geographical area of the RAA is the same as the LAA (EIS Section 30, page 30-7).

31. TRANSPORTATION

The HLFN Community Baseline Profile does not raise any new issues or concerns related directly to the transportation VC.

31.1 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to the transportation VC.

31.2 Effects Assessment

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the transportation VC, described in EIS section 31.4 and 31.5.

31.3 Residual Effects

No changes are required to the residual effects for the transportation VC in EIS section 31.6.

31.4 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the transportation VC in EIS section 31.7.

31.5 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the transportation VC in EIS section 31.8.

32. HERITAGE RESOURCES

32.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related to the heritage resources VC.

32.2 Baseline Conditions

The HLFN Community Baseline Profile does not describe new baseline conditions related to heritage resources.

32.3 Effects Assessment and Mitigation

No new baseline information was presented in the HLFN Community Baseline Profile and as such no changes are required to the assessment of the heritage resources VC, described in EIS section 32.3.

32.4 Residual Effects

No changes are required to the residual effects for the heritage resources VC in EIS section 32.4.

32.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the heritage resources VC in EIS section 32.5.

32.6 Monitoring and Follow-up

No changes are required to the monitoring and follow-up for the heritage resources VC in EIS section 32.6.

33. HUMAN HEALTH

33.1 Key Issues

The HLFN Community Baseline Profile does not raise any new issues or concerns related to the human health VC.

33.2 Baseline Conditions

1.1.1 Human Receptors

The HLFN Community Baseline Profile references cabins, overnight camps, hunting and fishing camps and spiritual sites identified in the HLFN TLUS (HLFN, 2011). No new information on temporary habitation or overnight sites was presented in the HLFN Community Baseline Profile.

1.1.2 Fish Consumption

The HLFN Community Baseline Profile states that HLFN members hunt more than they fish; however, fishing plays an important subsistence, socio-economic, cultural, and spiritual role in their community. Species of fish that are caught and consumed include:

Trout (Bull Trout and other unspecified species of trout)

Northern Pike

Walleye

Whitefish

Other fish (e.g. Burbot)

Grayling

According to the HLFN 2012 Country Food Harvest Survey, which surveyed 26 on-reserve HLFN households, the following species are most commonly harvested and consumed:

Whitefish – 15 households

Northern Pike / Jackfish – 15 households

Walleye / Pickerel – 8 households

Trout – 5 households

Grayling – 1 household

Burbot - 1 household

According to the Country Food Harvest Survey, fish consumption is estimated to be between 0.25-2.25 ounces of fish per household per week from all sources (HLFN, 2013). The Country Food Harvest Survey does not specify whether this is fish caught and consumed from the Peace River. The HLFN Community Baseline Profile references

the 2011 HLFN TLUS which documented examples of HLFN community fishing at the following locations:

Upstream of the Site C Project:

- On the Peace River, downstream of Farrell Creek
- At the confluence of the Peace and Moberly River and Moberly Lake

Downstream of the Site C Project:

North bank of the Peace River upstream of Talyor Bridge

In the lower reaches of Pine River

At the confluence of the Beatton and Peace River

At Charlie Lake and in the upper Beatton River

On the Peace River at BC / Alberta border

At the confluence of the Clear and Peace River

On the Peace River at Many Islands and at the Fourth Creek - Peace Confluence.

33.3 Effects Assessment and Mitigation

The information set out above provides greater detail on baseline conditions already described in EIS section 33 for Horse Lake First Nation, other Aboriginal groups in the LAA, and Aboriginal peoples at the aggregate level.

Section 33.4.9 Effects Assessment – Operations – Changes in Country Foods and Effect on Human Health states that commonly consumed species of fish could be continued to be consumed by even the most sensitive age group at least twice a week without exceeding Health Canada's Provisional Tolerable Daily Intake (pTDI) for methylmercury. Comparing these results to reported baseline consumption frequencies of fish from the HLFN Country Food Harvest Survey, it is anticipated that members of HLFN will not be required to change frequency of consumption of fish caught in the local assessment area (LAA) for Country Foods.

The potential effects of the Project on Aboriginal Peoples described in EIS section 33.3 applies to HLFN. The detail provided in the Community Baseline Profile does not alter:

- the assessment of the potential for the Project to result in effects described in EIS section 33.4 and 33.5; or
- the requirements for, the scope of, or the effectiveness of, the mitigation measures described in EIS section 33.4.2, 33.4.4 and 33.5.

33.4 Residual Effects

No changes are required to the residual effects for the human health VC in EIS section 33.6.

33.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the human health VC in EIS section 33.7.

33.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the human health VC in EIS section 33.8.

34. ASSERTED OR ESTABLISHED ABORIGINAL RIGHTS AND TREATY RIGHTS, ABORIGINAL INTERESTS AND INFORMATION REQUIREMENTS

34.1 Potential Impacts on the Exercise of Treaty Rights – Treaty 8 First Nation Signatories

Based on the review and consideration of baseline conditions related to the current use of lands and resources VC provided in the HLFN Community Baseline Profile, the baseline and effects assessment described in EIS Section 19, and BC Hydro's understanding of established Aboriginal rights and treaty rights set out in Section 34.3, no changes are required to the assessment of potential impacts on the exercise of treaty rights for Horse Lake First Nation, as described in EIS section 34.3.3.

34.2 Aboriginal Accommodation

No changes are required to the Aboriginal Accommodation described in Section 34.4 of the EIS.

34.3 Outstanding Aboriginal Issues

No changes are required to the discussion of outstanding Aboriginal issues in Section 34.5 of the EIS.

EIS Integration Summary Amendment Table– Horse Lake First Nation

1 INTEGRATION OF COMMUNITY BASELINE PROFILE: SUMMARY TABLE – HORSE LAKE FIRST NATION

The Horse Lake First Nation EIS Integration Summary Amendment Table (Table 1) was prepared to support the review and consideration of the Horse Lake First Nation Community Baseline Profile (HLFN Community Baseline Profile):

Table 1 includes the following information:

- Column 1 – Lists the baseline information categories used to categorize the results of the Community Baseline Profiles received from First Nations (e.g., Traditional Use of Lands and Resources, Community Demographics, Services and Infrastructure, Economics, Community Health, and Non-Traditional Use of Lands).
- Column 2 – The location of baseline information in the HLFN Community Baseline Profile for each category.
- Column 3 – Identifies the EIS section associated with the information.

Please see the Volume 3 Appendix B Part 4 Horse Lake First Nation Community Baseline Amendment Report for further information regarding the receipt and consideration of the HLFN Community Baseline Profile.

The HLFN Community Baseline Profile is presented in its entirety in Volume 3 Appendix B Part 4.

Table 1 Summary Review Table – Horse Lake First Nation

Baseline Information Category	Baseline Information Summary	EIS Section Number and Name
Current Use of Lands and Resources for Traditional Purposes	Fish and Fishing: S. 4.2,5.2, 5.5, 9.1.3, 9.2 9.2.2, 9.2.3, 10.1.2, 11.1.3	Section 19 Current Use of Lands and Resources for Traditional Purposes Section 12 Fish and Fish Habitat Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
	Fish - concern regarding methyl-mercury: S.9.2.1, 9.2.2	Section 33 Human Health
	Wildlife / Hunting and Trapping: S. 4.2, 5.2, 5.4, 5.6, 5.9, 9.1.1, 9.1.1.2, 9.1.3, 9.3, 11.1.3	Section 14 Wildlife Resources Section 19 Current Use of Lands and Resources for Traditional Purposes Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
	Gathering plant and earth materials: S 4.2, 5.2, 5.7, 9.4	Section 13 Vegetation and Ecological Communities Section 19 Current Use of Lands and Resources for Traditional Purposes Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
	Harvesting and Consumption of country foods (fish, wildlife, berries, plants, beach foods): S.5.3, 5.4, 5.5, 5.7	Section 12 Fish and Fish Habitat Section 13 Vegetation and Ecological Communities Section 14 Wildlife Resources Section 33 Human Health Section 19 Current Use of Lands and Resources for Traditional Purposes Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
	General traditional land use: S.3.4, S. 5.2; value of Peace River" S.11.1.1, 11.1.3	Section 19 Current Use of Lands and Resources for Traditional Purposes
	Overnight and cultural sites: S.5.8,10,	Section 19 Current Use of Lands and Resources for Traditional Purposes Section 33 Human Health

Community Demographics, Services and Infrastructure	Population data: S. 15 and 16	N/A. The LAA and RAA for the Population and Demographics VC do not include Horse Lake First Nation
	Housing data: S. 15 and 16	N/A. The LAA and RAA for the Housing VC do not include Horse Lake First Nation
	Health and Social Services: S. 15 and 16	N/A. The LAA and RAA for the Community Services and Infrastructure do not include Horse Lake First Nation
	Childcare, Education and Training Services: S. 15 and 16	N/A. The LAA and RAA for the Community Services and Infrastructure do not include Horse Lake First Nation
	Emergency Services: S. 15 and 16	N/A. The LAA and RAA for the Community Services and Infrastructure do not include Horse Lake First Nation
	On-reserve services and infrastructure: S. 15 and 16	N/A. The LAA and RAA for the Community Services and Infrastructure do not include Horse Lake First Nation
	Transportation: S.15 and 16	N/A. The LAA and RAA for the Community Services and Infrastructure do not include Horse Lake First Nation.
Community Health	Cultural vitality: transfer of knowledge; language: S. 3.2, 5.3. 5.4	Section 19 Current Use of Lands and Resources for Traditional Purposes
	Effects of land use alienation on culture and community health and well-being	Section 19 Current Use of Lands and Resources for Traditional Purposes Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
Heritage	Concern regarding impacts to archaeological and heritage sites – S. 10.1.1, 11.1.1	Section 32: Heritage Resources
Non-traditional use of the land	Effects of development on Peace River Basin (urban development, mining, oil and gas forestry, agriculture, hydro, recreation): concern regarding effects of development on current use of lands and resources: S. 4.2	Section 19: Current Use of Lands and Resources for Traditional Purposes - cumulative effects assessment
Other - vegetation and plant communities	Changes to vegetation and plant communities; linkage with wildlife: S. 9.1.3	Section 13 Vegetation and Ecological Communities Section 14 Wildlife Resources

Other – wildlife	Wildlife observations along Peace River – S. 9.1.3, 11.1.3 Potential project effects on wildlife – S.9.1.4; Concern regarding traffic effects on ungulates	Section 14 Wildlife Resources
Other – fish	Potential project effects on fish and fish habitat – S. 9.2.1, 9.2.2, 9.3	Section 12 Fish and Fish Habitat

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