APPENDIX B

Part 2 Community Baseline Report, Community Baseline Amendment Report and EIS Integration Summary Table: Blueberry River First Nations

~~*The Blueberry River First Nations 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 Blueberry River First Nations Community Baseline report entitled "Blueberry River First Nations Community Baseline Profile" on January 4, 2013, after BC Hydro had completed integrating new information into the EIS prior to submission to the British Columbia Environmental Assessment Office and the Canadian Environmental Assessment Agency.

The Community Baseline Report, Community Baseline Amendment Report and EIS Integration Summary Table: Blueberry River First Nations are located in the Aboriginal Group Amendment Report (submitted May 24, 2013). The Blueberry River First Nations Interest Interaction Matrix was omitted in error from the Aboriginal Group Amendment Report and is 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.

BLUEBERRY RIVER FIRST NATIONS

APPENDIX 3

BLUEBERRY RIVER FIRST NATION COMMUNITY BASELINE PROFILE REPORT

BLUEBERRY RIVER FIRST NATION COMMUNITY BASELINE PROFILE

FOR BC HYDRO'S SITE C CLEAN ENERGY PROJECT

Prepared for:

BC Hydro Power and Authority

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Prepared by:

Blueberry River First Nation

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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 Blueberry River First Nation (BRFN) has prepared this "Community Baseline Profile" to facilitate the assessment of the Project's potential socio–economic effects and impacts on the BRFN community. The BRFN is a host community with the Project falling within lands historically and currently utilized by the BRFN community. The Project also has the potential to effect and impact resources relied on upon by the BRFN community and BRFN interests. The BRFN 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 BRFN 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 the 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 BRFN has considered the potential upstream and downstream effects and impacts of the Project and how these effects may intersect and converge with key BRFN 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 BRFN interests such as hunting, fishing, trapping, gathering, overnight and cultural sites, culturally significant areas and the socio–economic and cultural interests that the BRFN has vested in the land and hosting eco-system itself. Going forward, the BRFN 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 BRFN council members, staff and community members and secondary sources such as the BRFN Traditional Land Use Study (2011), the BRFN Traditional Territory Report 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 2012. In addition to assessing the 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 Blueberry River First Nation (BRFN) and may potentially affect lands and resources that the BRFN have and continue to rely upon for a range of sustenance, spiritual, socio–economic and socio–cultural purposes. The Project is located in close proximity to the BRFN community and will be situated on lands and an eco-system that the BRFN have a substantial interest in.

The purpose of this report is to scope and describe the interactions and convergence of potential Project effects with the interests of the BRFN, 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 BRFN as a host nation that sets out the various interests and values that BRFN has and holds 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 BRFN community interests
- Develop a data-base or listing of potential interactions to facilitate 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 BRFN, BC Hydro and regulators in relation to the Project
- Function as an assessment / communication tool that will better position the BRFN Council and community to understand the potential array of Project effects and support BRFN's EIS review efforts once the EIS is formally submitted to regulators

The BRFN 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 facilitate and 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 BRFN within this report. Likewise, the BRFN 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 documents, 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 BRFN 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 or findings of the Project's impacts by the BRFN 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 BRFN once BC Hydro formally submits its project application, during the environmental review process and in 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 Blueberry River 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 BRFN as a host nation and the potential areas of interaction and convergence between potential Project effects and BRFN interests.

1.1.3 Report Structure in More Detail

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

Blueberry River First Nation Background: This section sets out the scope and breadth of BRFN's historic and current land use and occupancy patterns within the Peace River Basin and along the Peace River valley. The BRFN is a multi – national group with roots in the Beaver and Cree cultures. The report considers some of the key factors and evidence that helps connect the present day BRFN and BRFN families to its ancestors' who used and occupied areas through the Peace Basin and along the Peace River valley in the pre – contact period, at contact and through modern history. In addition, information related to treaty signing, traplines and the establishment of BRFN reserve is outlined. Much of the information in this section is attributable to the 2011 "Blueberry First Nation Traditional Territory Report" and the 2011 "Blueberry River First Nation Traditional Land Use Report" prepared by Dr. Dorothy Kennedy and Randy Bouchard. The BRFN's current governance structure is set out along with key land use principles that guide BRFN interaction, engagement, consultation and negotiation activities with proponents and the Crown.

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

Living with ecological and land use change has been a fact of the BRFN's existence and survival and some consideration is given to key ecological conditions and stressors that constrain BRFN land and resource utilization. The effects of industrial disturbance on the traditional lands and resources of the BRFN was considered and analyzed in the MSES industrial disturbance analysis prepared for the BRFN, with the support of BC Hydro. The key views and findings of the MSES report are re-presented here given their significance to the health of lands and resources relied upon by the BRFN. Key studies such as the 1990s "Northern River Basin Study" (NRBS) and a more recent review of the Peace River aquatic eco-system health conducted for the Mighty Peace Watershed Alliance were also considered. These reports identified and assessed key stressors impacting Peace River water quality, quantity and aquatic health. These stressors are important to acknowledge and consider given that they have and continue to place limitations on the BRFN's ability to rely on, and utilize the Peace River and its key tributaries. BRFN's current day-to-day land and resource patterns are a function of such constraints and stressors. Further, such

stressors shape the current hosting environment and set the base case against which potential Project effects are assessed and measured.

Listing and Statement of Potential Range of Relevant Project Effects:

Within this section of the report, the BRFN 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 and linkages to BRFN lands, resource and ecological interests. Three main potential effect / impact categories were identified. These are listed below:

a) The Ongoing Operational Effects of Existing Peace River Facilities

The BRFN opted to include a specific section in the report that considered the ongoing operational effects and impacts that result from the operation of BC Hydro's existing Peace River facilities. The Site C Project will become part and parcel of BC Hydro's integrated electric system and its operational parameters will be driven and largely determined by the upstream Peace River facilities. Within this chapter, the BRFN 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, the BRFN is focusing on that set of ongoing effects that result and arise 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 part.

BC Hydro's consideration, characterization and documentation of 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 a range of identified operational effects resulting from 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 ongoing operational effects and impacts from the Peace River hydro – electric operations within BC Hydro's SIA and EIS for the Project may be significant and necessary given:

- that the *BC Environmental Assessment Act* and *Canadian Environmental Assessment Act* require consideration of 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 effects arising from the "construction" and "operation" of the project and the operational system that it is / will be 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

- that an assessment of cumulative effects is required within the context of this review of the Site C Project and the scope of the review includes the effects of current projects and their attendant effects

- 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 of both projects will need to be considered within the cumulative impact assessment for the Site C Project

- that the Site C hydro-electric facility 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 its operations and operational parameters

- that through the engagement process (pre – application),BC Hydro has communicated to BRFN and other parties that the 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 are 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 BRFN 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 BRFN bears some responsibility for these actions as being part of the review and consultation process, it felt obliged to consider all of the relevant effects stemming from the construction and operation of the Site C Project, as regulators and

Crown agencies are bound to do. 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 the 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 BRFN interests. This proved challenging given that the report was prepared in the pre – application phase of the EA review and that BRFN was not in possession of a comprehensive description of predicted and categorized effects. BRFN 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 in relation to the Project, and once the Joint Review Panel issues its Project Report to government decision makers. Thus in this section, the BRFN attempted to identify potential project effects that are known to arise and stem from the construction and operation of hydro projects in northern British Columbia and western Canada.

It should be noted that this list of potential effects is neither meant to be exhaustive nor comprehensive and that the BRFN may need file supplementary materials should it be made aware of further potential project effects and impacts not listed within this document.

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 need to be considered in conjunction with the existing effects of existing Peace River facilities and the incremental effects of Site C. In BRFN's mind, there may potentially be a meshing, interplay 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 the 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 BRFN's rights and interests most clearly intersect.

It should be noted that this report focuses on the land use, resource, ecological and treaty right interests of the BRFN and does not include a profile for community demographics, infrastructure, services, health, education, capacity, economic development data and information for the BRFN community. The BRFN, if it wishes, could supplement this report with this information at a later date if it finds it has the time and resources to do so.

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 assessment 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.

The specific information requirements to be considered within this baseline reports as agreed to by BC Hydro and the BRFN (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
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

As noted, this report deals with the first four categories and not the latter four subject or interest areas.

2.2 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 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 BRFN's Traditional Territory that BRFN finds relevant to the Construction and operation of the project

2.3 Temporal Boundaries

Temporally, the First Nations Community Assessment will focus on identifying potential interactions between BRFN interests and the potential effects and impacts that may arise during the construction and operational phases of the Project. Due to the expected operating life of the Project, the current scope does not consider the potential effects associated with the decommissioning of the Project. In addition, the BRFN has not considered the immediate and initial historical effects and impacts that arose as a result 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.

2.4 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 intersect, the BRFN 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 have arisen 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 (e.g. highway upgrades, borrow pits and transmission line). The second are those ongoing effects that will 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 the list of impacts and changes in the latter part of the document, the BRFN is not asserting that such impacts and changes will occur, rather it is using this list of potential impacts as a higher level filter to determine potential areas of interaction and linkage with key BRFN interests.

Thus in working to identify potential interactions between potential Project effects and the interests of the BRFN, 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 key BRFN 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 a tracking matrix. **(Appendix 1: Potential Project Effects / BRFN Interests Interaction Matrix)**

2.5 Methods

This report is based on information and data collected from both primary sources based in the BRFN community and secondary sources based on written and publically available sources of information.

2.5.1 Secondary Data Collection and Information Sources

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

<u>Blueberry River First Nation Cultural and Land Use Information</u>

- Blueberry River First Nation Traditional Land Use Survey: 2011 (Prepared in Relation to the Site C Clean Energy Project, Bouchard and Kennedy (SECONDARY)
- Blueberry River First Nation - Traditional Territory Report: 2012, Bouchard and Kennedy
- Effects of Industrial Disturbance on the Traditional Resources of the Blueberry River First Nation: 2012, MSES
- Maps and Dreams: 1988, Hugh Brody

Historical Resource Utilization and Ecological Changes in the Peace River Basin

- 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)

Information on the Site C Clean Energy Project and Anticipated Effects

- 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 – Aquatic System Health of the Peace Watershed, 2012 Environmental Corp. (2012) (SECONDARY)
- Northern River Basin Study Final Report (1996) (SECONDARY)
- Effects of Industrial Disturbance on the Traditional Resources of the Blueberry River First Nation – MSES (2012) (SECONDARY)

2.5.2 Primary Data Collection

Primary data could also be considered as having coming from the 2011 Blueberry River First Nation Traditional Land Use Survey. 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.

2.5.3 Interviews

Interviews were conducted by Ms. Sherri Dominic, who was retained by the BRFN as a community researcher. Through July and October, she was to conduct one on one interviews with Blueberry council members, staff members and community members.

In the lead up the reporting of this baseline report, Matthew General conducted one on one interviews with two assigned contacts on the BRFN Council and within the BRFN staff.

2.5.4 Finalization of Community Baseline Report

A draft version of this report was tabled with the BRFN Chief and Council on December 12, 2012. Input and comments received though the latter part of December 2012, with a finalized document being transmitted to BC Hydro in January 3, 2013. BC Hydro has informed the BRFN that it will be submitting a second edition of the EIS in the latter part of 2013 and that BRFN can submit supplementary information that could be attached to the follow up submission to regulators. Thus, should the BRFN have additional comments or clarifications to make in relation to this document, this can be submitted to BC Hydro as supplementary information or in the format of a revised community baseline document.

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 or 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 BRFN and the Site C Project:

3.1.1 Ancient and Historical Lands

From the BRFN’s viewpoint, the first important concept of territory is related to the historical and ancient homeland of the Beaver or Dune – Za People. Given the predominate influence of the Dune – za culture within the BRFN, the BRFN’s ancient and historical lands can be held to include those areas that were historically occupied and utilized by the Beaver or Dune – Za People within a large section of present day north – east BC, north – western Alberta and a portion of the North West Territories.

Past ethnographers such as Robin Riddington have made attempts to map the approximate territorial extent of the Beaver land use in the late 1800’s and early 1900’s. In 2011, the firm of Bouchard and Kennedy delineated the approximate extent of BRFN land use in the period from the 1850’s to the 1930’s. Both of these boundaries are set out in the attached map in Appendix 2**. (Appendix 2: Approximate Land Use by Beaver People and BRFN Ancestors: Circa 1900)**

The BRFN take the view that prior to and at time of contact, the Dune Za were in possession of a large area within north–eastern BC and north–western Alberta and constituted a distinct cultural and national group of people situated between the Sikanni People to west in the Rocky Mountains and the Cree People to the west.

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 by the Beaver People. Oral tradition is important in this matter and further study is needed to obtain important information from the Blueberry 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 and Peace River Valley was clearly used and occupied by the Dune – Za. A key point, from the BRFN’s perspective, is that they are the one and the same people

as the Beaver People who held and occupied the Peace River region at the time of contact. **(Source: Chief Joe Apssassin– Personal Communication, 2012).**

3.1.2 Treaty #8 Area

Some of the ancestors of contemporary BRFN families adhered to Treaty #8 at Fort St. John on May 30th, 1900. 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 geographic bounds of Treaty #8 was prepared by Crown officials. The map of the Treaty #8 area is set out in Appendix 3. **(Appendix 3: Treaty#8 Area Map)**

From BRFN'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 particular location and area 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 to 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 BRFN. BRFN members report that they have and do utilize ands and resources within areas in BC, and Alberta covered by Treaty #8.

Thus BRFN 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 are within an area of interest to the BRFN.

3.1.3 Lands Within British Columbia and Alberta

The BRFN take the view that they have and continue to have an ability to hunt, fish, trap and undertake other vocational and incidental activities where need takes them – which could take them out of the bounds of the Treaty #8 territory. In the past, such arrangements were arrived at with adjacent nations and cultures though dialogue, agreement and seeking permission according to ancient laws, custom and agreement between families. Either

agreement was reached or it was not and at times conflict ensued, where agreement was not reached. This custom continues to this day with Treaty #8 people procuring resources in non–treaty areas and non-treaty people procuring resources within the Treaty 8 area.

The British Columbia *Wildlife Act* is a law of general application and applies to all persons in B.C. unless they are specifically exempted from its operation by legislation. First Nations people are exempted from the application of the *Wildlife Act* in certain circumstances as a result of the recognition in section 35(1) of the *Constitution Act, 1982* (Canada) of existing aboriginal and treaty rights. Court decisions have confirmed that the constitutionally protected First Nations right to hunt and fish for food, social and ceremonial purposes takes priority over non-First Nations uses of wildlife resources. In recognition of this right, First Nations people are not restricted to specific seasons or to bag limits when hunting, fishing or trapping within or outside of their traditional hunting areas for food, social, or ceremonial reasons.

In respect to lands within Alberta, the BRFN clearly used and occupied lands within Alberta and the Peace River and the Peace River valley was an important area to the ancestors of the BRFN. Bouchard and Kennedy's 2011 "Blueberry River First Nation Traditional Land Use Report" documents the ancestors of current BRFN families utilizing the land as far east as Dunvegan and the Clear Hills in Alberta. BRFN members anecdotally report that they do continue to hunt and fish along the Peace River valley and hunt in other areas across the border into Alberta. This is reasonable prospect and occurrence given the proximity of the community to the BC – Alberta border. It should be noted that Bouchard and Kennedy's 20ll Blueberry River Traditional Use Study utilized a study area boundary that only considered land use activities of the BRFN to an area between the Pine and Kiskatinaw Rivers. However, community fishing activities were documented in the study to the BC – Alberta border.

3.1.4 BRFN Traditional Territory

Like many First Nations, the BRFN 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 BRFN, the Traditional Territory tracks and incorporates areas of documented historical, ongoing and current use and utilization by BRFN members. The BRFN have recently confirmed the bounds of their Traditional Territory based on numerous sources of information, including the recently completed "Blueberry River First Nations: Traditional Territory Report", prepared by Dr. Dorothy Kennedy and Randy Bouchard. The area that BRFN's traditional territory is extensive and extends as far:

- north as the confluence of the Sikkani River and the Ft. Nelson Rivers;
- west as Sikanni Chief Lake and Peace Reach on the Williston Reservoir
- south as Tacheeda Mountain and Quintette Mountain, and
- east to the BC – Alberta border with the reasonable prospect of the territory extending into the Peace region within Alberta

At this time further research is being undertaken in respect to the extent of the BRFN territory within Alberta. Based on information gathered to date, it is clear that the BRFN travelled to, stayed in and hunted and fished as far east as the Clear Hills and Dunvegan on the Peace River. Numerous BRFN members have also reported ongoing use of lands and resources along the Peace River into Alberta.

Traditional Territory maps are updated and revised as more research is conducted and more is known about the land utilization patterns of community members. Emerging information indicates that BRFN community members exercise rights within the Peace River Basin, the Peace River region, the Peace River valley and within the Project's impact zone and area of influence. The current BRFN Traditional Territory of the Map is set out in Appendix 4. **(Appendix 4: BRFN Traditional Territory Map).** The proposed Site C Project's upstream and downstream impact area falls within this territorial boundary.

3.1.5 Location of Blueberry River First Nation Reserves Near the Peace River

Following the BRFN's ancestor's adhesion to the treaty, Crown representatives first established a reserve for the Fort St. John Band (aka "Beaver Indians of the St. John Band", "St. John's Band of Indians" and the "Fort St. John Beaver Band" at Montney, approximately 10 miles north of the Peace. The BRFN were relocated further to the north in the 1940's to the present day reserve. The location of the past and present locations of Blueberry Reserves are set out on a map marked as Appendix 6. **(Appendix 6: BRFN Reserve Locations Relative to Peace River).**

As shall be discussed in more detail, there is considerable evidence that places the ancestors of BRFN along the north and south bank of the Peace River and adjacent lands and links the family names inhabiting the same areas and those that became affiliated or who were amalgamated into the Fort St. John Band (aka the "Beaver Indians of the St. John Band", or the "St. Johns Band of Indians" or the "Fort St. John Beaver Band"). Many of the current families and family names of present day band members of the Blueberry River First Nation can be linked to the names of those Beaver families that occupied the stretch of

land between Hudson's Hope and Dunvegan along the Peace River and lands adjacent **(Source: BRFN Traditional Land Use Study: Site C Clean Energy Project, 2011).**

3.2 Ethnographic, Historic and Linguistic Background

The current BRFN community has cultural roots in the Beaver and Cree cultures that were present within the Peace Region. The BFN acknowledges the influence and existence of both cultures in the present day community, however from the BRFN's perspective, they are primarily defined by their Beaver or Dane – Za heritage. **(Source: Chief Joe Apsassin – Personal Communication, 2012**) This view is also congruent with a large body of ethno – historic documentation that exists in relation to the present day families of the BRFN and their ancestors.

The Beaver of the BRFN refer to themselves as the "*Dane-za" or "Dane – zaa"* which is translated into meaning the *"real people".* The term "Beaver" is said to have been derived from the Chipewyan term for the Peace River, "*Chaw hot-e-na Dez-za* or "Beaver Indian river." **(Source: BRFN Traditional Use Study: Site C Clean Energy Project, 2011).** There are numerous historical sources (from earliest contact forward) and accounts which fix the Beaver People along the Peace River and within the Peace River region between current day Hudson's Hope, downstream into the Peace Athabasca Delta.

Considerable ethno-graphic work on the Beaver People has been undertaken by numerous anthropologists and ethnographers which found a very close and possibly an indistinguishable link between the Beaver of the Upper Peace River at Hudson's Hope and the neighbouring Sekani people to the west. The similarities between language and culture are so marked, that several academics have concluded that the Beaver of Hudson's Hope could equally be considered Beaver or Sekani. Chief Joe Apsassin of the BRFN holds that, some of the present day families are descended from the Hudson's Hope Beaver, and while there are very close linkages between the two cultures, the Beaver are distinct from Sekani in respect to their history, culture and use and occupancy patterns along the Peace River. **(Source: Chief Joe Apsassin – Personal Communication, 2012**)

The BRFN's Beaver language is known as "*Dane-zaa záágé" and is* classified by linguists as one of the Athabascan languages of the Athapaskan Language Family. Beaver is spoken both in northeastern BC and in northwestern Alberta. **(Source: BRFN Traditional Use Study: Site C Clean Energy Project, 2011).** The Cree language is also spoken in the BRFN community. **"***Cree*," is a term that is held to come from the Ojibwa whole called the Cree, '*Knisteneaux*." Some BRFN members are descended from the *Haudenosaunne* or *"Iroquois"* people that are held to have come west during the expansion of the fur trade into the Peace Region in the 1790s and early 1800s. The North West Company and the XY Company hired many "Iroquois" to trade and provision the network of forts along the Peace River. Many of these Iroquois hunters stayed in the west and married Cree and Métis women.

The social organization of the ancestors of the BRFN was developed to address the harsh elements of the Peace Region. The ancestors of the BRFN themselves had a concept of their immediate families, extended families and larger collective as *"wadane",* meaning the "people of". Anthropologist Robin Riddington spent considerable time in researching and documenting this form of social organization and working with Beaver People to understand the central role of the wadane in their family's history and lives. The Beaver-speaking people in earlier times understood themselves to be members of both a collective of individuals comprising the *Dane-zaa* ('real people') and as members of smaller, family-like groups recognized with names containing the element *wadane* "people of", or *ne* ' people. The term *wadane* is applied to groups of diverse size, and could be comprised of a cluster of groups. **(Source: BRFN Traditional Use Study: Site C Clean Energy Project, 2011)**

A key feature of this concept and form of organization was flexibility, where groups would break off into smaller groups to pursue game and trap when conditions were more challenging and re-congregate in more favourable conditions. Smaller groups would meet up again to form larger groups at key locations for summer/fall hunting and fishing. One such example of this is where the Blueberry People would come together for a large fish camp at Charlie Lake and along Fish Creek for the summer fishing. While there have many changes in the BRFN way of life and land use patterns, the wadane is still held to be in operation and functioning, albeit in a modified manner. (Source: Chief Joe Apsassin – Personal Communication, 2012)

In a review of Robin Riddington's research, Kennedy and Bouchard summarize the evidence that certain wadane were associated with certain hunting and trapping areas with defined territorial rights. Riddington documented that permission was sought and given by wadane to use the identified territory of another wadane's area. In the 1960's, Beaver People working with Riddington, documented up to 17 historical wadane that hunted and trapped though north – eastern BC and north western Alberta. The following wandane were identified as being associated with areas near Fort St. John in late 1890's and early 1900's:

- *Tashcu*: The "Beaver living near Fort St. John" that lived between the headwaters of the Laird River and the confluence of the Beatton and Peace Rivers

- *Klue – la:* The fish people refers to the Blueberry People that lived at the current Blueberry reserve and formerly at Fish Creek near Fort St. John

- *Tsipedunne:* "The muskeg people" who lived in the upper Beatton watershed and into Alberta and north of Peace River Alberta

- *YeklezI:* Named after a one of the prominent leaders of the Beaver People within the Peace Region

- *Tache:* "The running water" people who lived at the current Doig River reserve location where Osborn Creek meets the Doig River

- *Kleze-Ne*: The people who lived south of the Peace River around Pouce Coupe and Dawson Creek who are said to have lived on Grizzly Bear

- *Yakwonne:* "The lousy house people" who camped at Fish Lake east of Prophet River

- *Kinchongwa:* Referring to the Dogrib people that migrated south into the Peace River region

- *Dodachin:* The people who lied at the west and east end Moberly Lake

- *UchUchianne:* Meaning the people little down the river referring to the people who were located near Mcleod Lake

- *Klugnachi:* The big prairie people of the mid Peace River who moved up river

- *Sasusan:* Referring to the "black bear people" Ft. Grahame people or people on the north – west Finlay River

- *Na'ane:* Referring to the "people from a long way north", possibly referring to the Kaska People

- *Tsa-dze-a:* Referred to the people that were at Fort Vermillion

- *Tse-ta-ma-wonne*: "This side of the mountain people", referring to the people living on the east side of the western Rockies living at Hudson's Hope and near Halfway River

(Source: Blueberry River First Nation: Traditional Territory Report, 2011)

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

In terms of the written historical record, there appears to be a strong historical and ethno cultural correlation between the Beaver People that were situated along the Peace River and within the Peace River region to the present day families who now live in the same area and are registered as band members with the BRFN. The 2011 report entitled "Blueberry River First Nation Traditional Territory" prepared by Kennedy and Bouchard reviews some of the available historical record of where early explorers, traders and surveyors encountered and observed the Beaver occupants of the Peace:

- When in the Athabasca Region, Peter Pond prepared a map that depicted his understanding of the relative locations of aboriginal cultures of the time as of 1785. His maps depict the Beaver being situated up the "River of the Peace"

- Through 1790 – 1792, Hudson Bay Company surveyors (Turnor and Fidler) undertook a mapping survey of the Athabasca area. One of Fidler's maps prepared in 1792 labels the Peace River as the "Beaver Indian river" and places the Beaver as occupying both sides of the lower Peace River

- Alexander Mackenzie likely prepared maps of his expeditions in the late 1700's and early 1800's. One map that was held to be prepared prior to 1816, lists the "Tza – Dene" or Beaver Indians being present next to Ft. Forks at the confluence of the Peace and Smoky Rivers

- Alexander Mackenzie maintained journals of his expeditions into the wes. In 1792, he was encamped at Ft. Forks and had various dealings with indigenous trading partners that identified themselves as "Rocky Mountain Indians". In his 1793 expedition up the Peace River, Mackenzie documented that he encountered a "Beaver" hunting party at Dunvegan and at Montageneuse River, about 60KM downstream of the present BC – Alberta border

- The North West Company established the Rocky Mountain Fort on the Peace River near the mouth of the Moberly River. A fort journal documents the period from 1799 to 1800. One man referred to as “Cigne” was from a band that was encamped near the fort. Robin Riddington holds that “Cigne” (Cygne –French for swan) was the chief of the Rocky Mountain people who occupied lands in the former Peace River canyon area. Some scholars hold that Cigne may have been derived from Sekani. If this is the case, it can be reasonably inferred that Sekani were present along the Peace River near Ft. St John and Hudson’s Hope at 1800. This may also co-oberate some views about the close cultural links and interconnection between the Beaver and the Sekani along the Peace.
- Simon Fraser documented a people called the Meadow Indians – a group of people who called themselves, “Les Gens du Large” (People of the Wide One) – being present along the Peace River between Rocky Mountain Portage House and the “beaver” of Moberly River. Some information suggests this group was situated at where the Halfway River meets the Peace. In 1806, Fraser took a census of the Meadow Indians, and it was reported that the Beaver and Rocky Mountain Indians continually took (possibly meaning adopted, intermarried or physically removed family members) from them. This documentation provides some strong indication that the Sekani, Rocky Mountain and Beaver people were present along the Peace River in the early 1800’s.
- North West Company trader Daniel Harmon encountered “Siccanies” or Sekani in the vicinity of the Rocky Mountain Portage. This group reported that they spent summer on the west side of the Rockies and winters on the east side and that they were formerly affiliated with the Beaver, further downstream on the Peace River. Harmon held that the Beaver were the only tribe to be situated on the Peace River downstream of the Peace River Canyon.
- In 1806, a man identified as “L’Homme Suel” approached the North West Company and asked that a fort be established in the core part of his band’s lands at the confluence of the Beatton River and the Peace River so that his band could trade without having to travel through the lands of the Sekani or the Cree.
- In 1823, the Hudson Bay Company became the predominate trading company on the Peace River and it opted to close forts it thought to be redundant. The fort located at the Peace and Moberly confluence was closed to facilitate trade with the Sekani further upstream and the Cree and Beaver at Ft. Dunvegan downstream. The Beaver of the Fort St. John area were reported to have protested this action and conflict ensued. The deaths of five people from the fort were attributed to the

Beaver. An investigation into the matter occurred revealing that tensions were in place amongst the “Rocky Mountain Indians”, who were from time to time, recognized as being affiliated but separate from the upstream Sekani. The Rocky Mountain Indians were held to be in control of the Peace at locations along the Peace at the Beatton River and up to Peace Canyon.

- George Dawson explored the Upper Peace River in 1879 for the Geological Survey of Canada. He documented that the Beaver Indians hunt westward toward the sources of the Pine River and encountered a group of Beaver Indians near present day Dawson Creek. Dawson latter chronicled, *“Both Beaver and Cree are now found on this part of the Peace River, through the country really belongs to the former. The extent of the Beaver territory is as follows – northward to the Battle River, eastwards to the Smoky and Simonette Rivers, southwards to Grand Coup Plat, a tributary of the Smoky River, westward to the Portage of the Mountain of Rocks on the Peace River (Rocky Mountain Portage), where they mingle with the Siccanies. On the Pine River and other southern – western streams, the Beaver country extends to the mountains…”.* Dawson produced maps of what he held to be Beaver territory and these maps were published in 1884.
- Riddington interviewed many Blueberry River First Nation members in the 1960’s. In one such interview, BRFN member Johnny Chipesia noted that Blueberry families would migrate south of the Peace River to hunt moose south of the Smoky River and around Pouce Coupe and Dawson Creek. This account supports various Hudson’s Bay Company journal accounts.
- In 1893, an account by Somerset and Pollen notes that the country between Pouce Coupe‘s Prairie and the Pine Pass (on the south side of the Peace River) were the favorite hunting grounds of the Beaver and the Cree
- In 1873, the Hudson Bay opened up the new Fort St John on the north bank of the Peace River. The journals of the post are held to be very informative as to the composition of the hunting groups that would come and trade with the fort in the nineteenth and early twentieth centuries. Some of the names recorded in fort journals were identified as the wadane who together formed the “Beatton North Pine) River bands”. BC records from 1866 to 1870, and 1875 to 1895 make numerous references to the Beatton watershed and areas south of the Peace River as being the favored hunting grounds of the Beaver Indians.
- The journals of Frank Beatton document that the direct ancestors of contemporary Blueberry families were hunting on both sides of the Peace River and through the

Beatton watershed. Beattons's journals also note that old "montagnie" (mutain) often camped at Montney Prairie, that now bear his name.

- In reviewing HBC fort journals and the accounts of others, he found that the ancestors of present day Blueberry families were hunting and trapping at Moose Lake, Cache Creek, west of Charlie Lake, along the Clearwater River, in the Clear Hills and at Grande Prairie, south of the Peace River and east of the Pine River, up the "Cutbank" or the Kiskatinaw River, east to the Montageneuse River, the headwaters of the Blueberry River, Aitken Creek and areas as far north as Mile 181 on the Alaska Highway and Ft. Nelson. The names of "Mutain", "Wolf" and "Big Charlie" figure prominently in the post records of this time.
- Inspector Conroy of the Treaty 8 Commission documented that in 1909, that Fort St. John's Beaver travelled on both sides of the Peace River and generally did their hunting in the foothills of the northern Rockies

(Source: Blueberry River First Nation: Traditional Territory Report, 2011)

The above are samples of the numerous references that assist in establishing an ongoing connection to the Peace River region by the Beaver People and the ancestors of the BRFN. In viewing historical references and accounts, BRFN family names begin to emerge and take a key place in the history of the region and the fur trade. Through the passage of time the same BRFN families enter into the narrative of treaty signing and in the establishment of the BRFN reserves.

3.3 Treaty Signing and Establishment of Peace River Reserves

In 1898, the Crown appointed commissioners to treat with Indigenous People in north – western Canada, following the completion of Treaties 6 and 7. Charles Mair, documented the negotiations that took place between Crown officials and the Indigenous parties to the treaty. In the summer of 1899, treaty officials travelled up the Peace River and attempted to treat with Indigenous People, however they missed the Beaver of Fort St. John, as they had gone to their summer hunting grounds. In the following year, a special commission was issued to J.A. Macrae of the Indian Office to obtain adhesions in the following summer of 1900. The Beavers of Ft. St John were reported to adhere to the treaty at the Hudson's Bay post. Federal sources and the written text of the treaty note that treaty negotiations were entered into and concluded with the *"Beaver Indians of the Upper Peace River and the country thereabouts"* at Fort St. John. According to Crown accounts, forty – six people of the "Fort St. John Beavers" adhered to the treaty via the following headmen*: "Mutckithay", "Aginaa", "Dislisici", "Tachea", "Appan", "Attachie", "Allalie" and "Yatoose."*

There are of course two very different interpretations as to what was agreed to in the negotiations in relation to Treaty#8. From the BRFN's perspective, what their ancestors agreed to was a treaty of peace, co-existence and non – interference agreed to by allies or two sovereign parties. The elders of the BRFN (as elders from across Treaty#8 do) take the view that what Crown representatives obtained under the treaty was akin to a head lease – an ability to settle and put the land to certain limited uses. In the BRFN's view, its people still retain root, or radical title to their ancient lands and this was confirmed by way of treaty. **(Source: Chief Joe Apsassin – Personal Communication, 2012)**

On the opposite side of spectrum, the Government of Canada holds Treaty #8 to be a document of "mere historic interest" that confirms that the adherents surrendered title, if such title was ever deemed to exist. Further, the Government of Canada holds that the treaty, along with Indian Act, confirmed the supremacy of parliament and its right to pass laws in relation to Indian people and Indian lands.

Irrespective of the matters related to title and sovereignty, First Nations, government and the courts agree that Treaty# 8 confirms and guarantees certain rights such as the right to fish, hunt, trap, gather and other vocational and livelihood activities. The BRFN continue to undertake activities that are considered rights under the treaty and that are afforded constitutional affirmation and recognition. The 2011 BRN Traditional Use Study (2011), among other sources of evidence, confirm the ongoing exercise of such rights by BRFN community members.

Following the BRFN's adhesion to Treaty#8, the Dominion government and the ancestors of the BRFN entered into discussions in respect to the establishment of a reserve. In 1916, the Fort St. John Indian Reserve (I.R..# 172) was set aside at "Montney", approximately 10 miles north of the Peace River. The Montney reserve was situated at an ancient gathering placed known in the Dane – zaa language as *"Where Happiness Dwells"*. In the 1940's, increased interest and competition for agricultural lands led the Department of Indian Affairs (DIA) to relocate the BRFN to their present location. In 1948, DIA sold the Montney Reserve to the Department of Veterans Affairs, which in turn auctioned off land to soldiers returning from World War II. The location of the Fort St. John reserve is set out on the map marked as **Appendix 6. (Appendix 6: BRFN Reserve Locations Relative to the Peace River).** This transaction and Crown conduct was the subject of specific claims and litigation and the matter was resolved by way of negotiations in the late 1990's.

3.4 Blueberry Contribution to Establishment and Success of Fur Trade

The BRFN 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 repeated 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 could held be the fur trade.

Expansion of the fur trade was made possible by the support provided by Blueberry and other indigenous families along the Peace River. The proficiency of the Beaver 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 in keeping the network of trade alive.

‘Homeguards” came into being, with specific families or groups provisioning specific forts along the Peace stretching from the Moberly River, Ft. Dunvegan, and Ft. Vermillion and to Lake Athabasca. These forts 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 in the Alberta portion of the Basin was documented in the Northern River Basins Study. **(Attachment 7: Trading Posts: Northern River Basins Study – TEK Synthesis Report, 1996)**

The success of Indigenous hunters was documented in various fort journals which provided some detail and insight into the amount of fish and game that the Beaver, Cree and Iroquois People brought into the forts. In 1823, Ft. Dunvegan recorded that it took in 21,940 pounds of fresh game and 4, 472 of dried game. **(Source: Northern River Basins Study – TEK Synthesis Report: 1996).** The importance of buffalo to the forts and fur trade supported by the Beaver and other Indigenous People has also been inferred from archeological evidence obtained at forts. One prominent archeologist documented the amount of buffalo remains found at Rocky Mountain Fort dating to 1779. This was compared to remains found at the St. Johns post dating to 1823. A marked decline was documented indicating the significance of the buffalo hunt by Indigenous People prior to 1800. **(BRFN Traditional Territory Report, 2012).**

As buffalo vanished, deer, elk and moose became the staples for the forts and for Indigenous people of the region. In fact, the hunting of beaver and game to supply the trading posts was so successful that the numbers of beaver, buffalo and other species began to plummet through the Peace River Basin and Peace Region in 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 as an enshrined right along with the subsequent allocation of trapping areas or registered fur management areas through BC and Alberta.

BRFN families continued to their traditional vocation of trapping well into the 20 century, despite the decline of the fur trade and made a successful income in providing furs to the market. The BRFN continued to trap through their traditional territory notwithstanding the establishment of registered trapline system and the clearing of a substantial amount of lands on the north and south side of the Peace River. Some BRFN families applied for traplines further north of Fort St. John and the Peace River. **(BRFN Traditional Territory Report, 2012).**

Notwithstanding the alteration and decline of the fur economy through the 1900's, the BRFN continued to be rooted to the hinterland adjacent to the Peace River. Recent interviews conducted in the community bears witness to BRFN family's continued reliance on the Peace River and hinterland for a range of sustenance, cultural, socio – economic and spiritual purposes. However, the BRFN continue to do so in the face of mounting difficulties, challenges and constraints. The past 20 – 40 years can be characterized as period of socio– economic and socio-cultural challenge given reported declines in fish and wildlife populations, increased land use disturbance and regulation.

3.5Governance

Subsequent to the signing of the numbered treaties, the Crown enacted legislation that sought to organize the Beaver People (of which the BRFN are part) and other indigenous peoples, into administrative units under the authority of the federal government through the *Indian Act.* 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 Blueberry River First Nation is an Indian Band within the meaning of the *Indian Act*.

Notwithstanding, the Blueberry 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 Blueberry 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 Blueberry people to govern their own lives and lands. Until at such time a traditional

government is recognized and instituted, the Blueberry River 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 and appropriate government system.

Under the INAC Band Council system, the Blueberry River First Nation (Bands 547) is a "Section 11 Band" that has developed and administers its own custom election code or custom electoral system. Elections are held every two years. The current system creates a position for Chief along with four councillor positions. For the most part, administrative and policy decisions are arrived by way of band council resolution.

The BRFN Council and the BRFN 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, BRFN staff and the community.

3.6 Land Use and Stewardship Principles

The BRFN is working to develop and adopt a formal policy or set group of principles in respect to land use and stewardship to guide its dealings with Crown agencies and industry. 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.

BRFN 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 BRFN's concerns about the limitations of these decisions (to date), BRFN acknowledges that the principles flowing from the courts provide direction to the Crown and its representatives in respect to land and resource management activities 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 BRFN must be consulted and involved in any and all government decisions affecting the management of lands and resources. Governments must meaningfully consult with BRFN and that consultation must meet the standards and principles set down by the courts. If the government fails to do this, the BRFN can opt to challenge government decisions and project approvals such as oil and gas, mining, hydro – electric, transmission line and pipeline projects, 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 BRFN faces in its dealings with the Crown and industry, the BRFN remains committed to working with these parties in good faith to resolve outstanding and emerging issues. Further, the BRFN 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.

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

As noted, the Blueberry People's 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. Anecdotally, many BRFN 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. However, overall change in the eco-system also played a key and if not more significant role.

The work undertaken by Brody and Weinstein with BRFN researchers in 1979 and 1980 went some way in documenting the shifts underway and the effects of land use alienation on BRFN families. The most recent 2011 TLUS study conducted by Kennedy and Bouchard also goes some way in describing the changes in BRFN land and resource utilization patterns in response to land use changes. Clearly additional qualitative and quantitative research is needed to more fully understand the impact of settlement and regional development on the rights, way of life and ability of BRFN families to utilize the land. Notwithstanding the dearth of study, existing information sources can assist in understanding shifting BRFN community land use patterns in response to ecological change and the state of eco-system that will play host to the Site C project.

4.1 Historical Availability of Fish and Wildlife Populations and Utilization

The BRFN, as other Indigenous communities within north – eastern British Columbia and north western Alberta utilized large areas through the Peace River Basin given the lower levels of biological productivity present. While fish and wildlife populations were present in relatively large numbers they tended to distribute themselves widely over the landscape as an adaption and survival strategy. This required the Blueberry 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 Blueberry families utilized large areas through the northern Peace region and areas within their identified Traditional Territory.

<u>Fish</u>

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 BRFN 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 BRFN Traditional Land Use Study 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 healthy fish and wildlife populations 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 Beaver 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. In 1793, Alexander Mackenzie recorded that the Cree, who resided along the Peace River, spear fished, 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: Northern River Basins Study – TEK Synthesis Report, 1996)**

The 1930 Pacific Great Eastern Railway exploration party noted the poor state of the fishery in the area and that the Dolly Varden and Grayling taken from the larger rivers *"were far from plentiful".* Riddington was of the opinion that fish seem to have acted as "emergency rations". Other accounts, such as that of McLean and Bird (that were part of the Pacific Great Eastern Railways Lands 1930 Survey of Resources), found that fish were *"moderately plentiful"* in the Peace River and its tributaries. On the other hand, Charlie lake and Fish Creek that flows into the Peace were held to be full of Suckers – the site of a major fish camp where the BRFN wadane, would congregate in the summers. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)**

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: Northern River Basins Study – TEK Synthesis Report, 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: Northern River Basins Study – TEK Synthesis Report, 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 hunt bear. His research revealed the ongoing resilience and importance of the fishery as a source of income between 1922 and 1935. He also confirmed that 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: Telling it to the Judge - Taking Native History to Court, 2012)**

In his 1980 Union of BC Indian Chiefs research, Brody along with BRFN researchers, documented that the Beaver communities of north – east BC utilized up to 15 species of fish. The Beaver word *"Klue – la"* means "fish people" and was a term that Beaver used to describe the wadane of Fort St. John, who camped at Fish Creek, that runs from Charlie Lake into the lower Beatton River. Numerous BRFN members can recall fishing at Charlie Lake and in Fish Creek, constructing a weir out of willows and using nets and gunny sacks to catch the large numbers of fish present. **(Source: BRFN Traditional Land Use Study, 2011).**

So, on one hand there appears to be some thinking in existence that holds that the Peace River has never and could never have 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 high grounds 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 BRFN and other First Nations along the Peace River.

<u>Wildlife</u>

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. In referring to the lands at and near the confluence of the Pine and Peace Rivers, Mackenzie stated *"this spot would*

be an excellent location for a fort or factory, as there is plenty of wood and every reason to believe that the country abounds in beaver. As for the other animals, they are in evident in abundance, as in every direction the elk and the buffalo are seen in possession of the hills and plains." **(Source: BRFN Traditional Land Use Study, 2011).**

Prior to the 1820's and 1830's, buffalo appear to have been vast in numbers through the Peace Region. In 1879, Dawson observed the wallows scored into the ground at river crossings and lakes indicating the large numbers of buffalo that had been present for years prior. 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- TEK Synthesis Report, 1996)**

It is clear that prior to the mid – 1850's, buffalo were a key staple in the diet of the Beaver People and other Indigenous People along the Peace River and adjacent prairies and woodland areas. Moose, caribou, sheep and goats were important and sought after species, with smaller species helping to meet immediate sustenance needs during the hunt. 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. The declines were noted in the journals and ledgers of Fort Dunvegan. Archeological investigations at the earlier Rocky Mountain Fort and the latter St John's post revealed the marked decline in buffalo between 1799 and 1823. One cotemporary account marked the difference between the conservation based approach to hunting taken by the Beaver and the hunting practices of newcomers to the Peace region. **(Source: BRFN Traditional Land Use Study, 2011)**

Following the decline of the buffalo, moose and caribou became key species to the Beaver People along the Peace River and the Peace Region. It appears that the Beaver practiced a form of indigenous burning and forestry management to enhance browse for ungulates and regenerate forests. **(Source: BRFN Traditional Land Use Study, 2011)** Other carefully thought out hunting strategies and tools were developed and utilized by the Beaver to enhance their success in killing large game such as deadfalls and with sinew corrals. **(Source: BRFN Traditional Land Use Study, 2011)**

Gathering

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. As part of the 1930 resource survey for Pacific Great Eastern Railway lands, survey's marked the level and productivity of berries within the Peace River Block. In a 1890 HBC journal, an entry documents and

makes reference to women picking berries on each side of either the Peace River or Beatton River. **(Source: BRFN Traditional Land Use Study, 2011)**

It seems clear that fishing, hunting and trapping were still viable and were central vocations to the life of Indigenous People in the Peace River Basin at the time of the signing of Treaty #8 in 1899. Records and accounts made at the time of the treaty signing clearly establish that the ability to continue to hunt, fish and trap into the future was 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 must have still been viable. 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. For the BRFN, there is some indication in the written record that that reserve at Montney (set as aside for the Fort St. John Band) was intended to provide for permanent settlement, facilitate farming and to support the ongoing hunting, fishing and trapping vocations of Indigenous Peoples. **(Source: BRFN Traditional Land Use Study, 2011)**

Thus while historic documentation and sources are limited, the written record provides a snap shot of the importance of fish and wildlife to the ancestors of the Blueberry 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 Blueberry 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 Blueberry ancestors. The demand placed on fish and wildlife resources by the fur trading forts and trading network appears to have been a key factor that pushed buffalo to the point of extinction and placed stress on others species such as moose and beaver. Species recovery did occur, with Blueberry 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 Blueberry Peoples 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 BRFN 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 BRFN 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.

In considering the state of the environment or the hosting environment for the proposed Site C Clean Energy Project, there is no one source that comprehensively considers the state and health of lands in the BRFN traditional territory that spans both BC and Alberta. The 1996 Northern River Basins Study considered some aspects of aquatic system health and stressors acting on the Peace River in both BC and Alberta. The Alberta based "Mighty Peace Watershed Alliance" is working to prepare a state of the environment report for the Peace River Basin, however this assessment will largely focus on the condition of that portion of the Peace Basin that lies within Alberta. However, the Mighty Peace Watershed Alliance's (MPWA) 2007 "Summary Report on the Initial Assessment of Ecological Health in Alberta" considers aquatic system health in the Peace River system at the BC / Alberta border, thus being a relevant document. Given that BRFN's traditional territory extends to the BC – Alberta border (and very likely into Alberta) and BRFN rights are exercised into Alberta, consideration of downstream areas is both relevant and important.

According to MPWA's 2007, "Summary Report on the Initial Assessment of Ecological Health of Aquatic Systems in Alberta", water quality in the upper reaches of the Peace River (from the BC / Alberta border to the Smoky / Peace confluence) was considered to be *"good".* With this said, the MPWA Summary Report concluded that there was 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 of the mid 1990's concluded that many reaches of the Peace, Athabasca and Slave Rivers appeared to be minimally affected by environmental stress. In other reaches, however, the NRBS concluded that fish and other aquatic organisms were experiencing stress. For example, the NRBS concluded that the Wapiti / Smoky River systems were 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. **(Northern River Basins Study – TEK Synthesis Study, 1996).**

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 Blueberry 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 the Upper Peace Sub Basin (at the BC / Alberta border). **(Source: Mighty Peace**

Watershed Alliance, 2012) The following describes and 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 and fish and wildlife habitat. For example, the high numbers of culverts and stream crossings in place in the Peace Basin have played a major role in influencing 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 and human access and over fishing have contributed to a decline in 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 impact the biological integrity of fish communities. **(Source: Aquatic System Health of the Peace Watershed, 2012)**

Within the BRFN formerly identified consultation area (an area taking in a substantial portion of the Peace River Basin in BC), the MSES group calculated that from 1993 to 2011, that there was a total of 31, 089 km of linear representing a linear disturbance density of 1.58 km/km^2. **(Source: Effects of Industrial Disturbance on the Traditional Resources of the Blueberry River First Nation, 2012)**

Agriculture

Agriculture has been a main feature of Peace River landscape for many decades, with a significant amount of land being cleared adjacent to the Peace River 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 must be 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 tributaries watered throughout the year. Higher temperatures have also resulted with 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. Farming is a key feature within that portion of the BRFN's traditional territory within BC.

A key impact has been run off of farm fertilizers which have greatly contributed to eutrophication of water bodies, Peace River tributaries and the Peace River itself. 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: Aquatic System Health of the Peace Watershed, 2012)**

Forestry

Over 6.4 million cubic metres of timber was harvested within the Alberta portion of Peace River Basin in 2009/2010. **(Source: Mighty Peace Watershed Alliance, 2012).** While no data was available for the harvest levels in the BC portion of the Peace Basin, it is understood that several million cubic metres of forested lands are harvested each year. As noted, considerable forest harvesting has and continues to impact the Peace River Basin by altering a 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 where watersheds 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 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 undertaken through past decades 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 reduce annual cut levels to ensure that key boreal forest values are maintained across landscapes such as wetlands, old growth forest and caribou habitat. No

such conservation measures have been implemented in the BC and Alberta portions of the Peace River Basin. 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: Aquatic System Health of the Peace Watershed, 2012)**

Urban Development

The Peace River Basin has experienced an upswing in development 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 as nutrients. The attractiveness of home and cottage ownership along Peace River Basin water bodies has impacted foreshore and riparian areas. **(Source: Aquatic System Health of the Peace Watershed, 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 Peace River Basin are all experiencing increased pressure. **(Source: Aquatic System Health of the Peace Watershed, 2012)** Walleye populations have declined significantly in certain watersheds in the Peace River Basin resulting in the first regulations limiting catches. However, many 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. 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 too many fish that may contain higher levels of contaminants. **(Source: Northern River Basins Study – TEK Synthesis Report, 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: Mighty Peace Watershed Alliance, 2012)** Restocking efforts has maintained sports fisheries for certain 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 have been served by a network of temporary access roads, permanent access roads, powerlines, 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: Mighty Peace Watershed Alliance, 2012).**

The Peace Basin is criss-crossed with older 2-D seismic lines and intense grid works of 3–D seismic lines that have not regenerated well. New "Low Impact Seismic" 3-D programs are creating similar issues, with hunters and ATV users using the narrow lines to access the bush. 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 high to intense levels of oil and gas development. While government agencies are now requiring proponents to use existing access and to twin existing corridors where possible, such efforts will not likely offset the sheer level of anthropogenic edge that has accumulated over decades within the forests of the BRFN traditional territory.

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. Runoff 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 development is on the rise within the upper portion of the Peace River Basin at the BC – Alberta border and within the BRFN traditional territory. These resources are driving the need for new infrastructure such as pipelines and powerlines, which in turn are giving rise to the increase in anthropogenic disturbance. Some views hold that these new unconventional hydro – carbon resources create a large demand on surface and ground water supplies. **(Source: Aquatic System Health of the Peace Watershed, 2012)**

Mining

By the 1990's, the coal sector appeared to be on the decline, however growing demand in Asia has renewed interest in the vast coal resources in the upper portion of the Peace River Basin. Numerous new projects are coming on line with a significant number of new applications being submitted for new projects. Further, "clean coal", technology might spur on further coal mining to meet electric generation 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. **(Source: Aquatic System Health of the Peace Watershed, 2012)**

Water Use and Climate Change

Water is taken from surface and ground water sources in the Peace to meet a wide range of industrial, residential, commercial purposes. A significant amount of water withdrawals are not returned to the source and are 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 from the Peace River may be contemplated.

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. **(Source: Aquatic System Health of the Peace Watershed, 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 First Nations impacted by the historic upstream and downstream impacts of the dams.

An array of ongoing operational downstream effects occur within the Peace River resulting from the multiyear, 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 BC Government. 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, parameters and preferred operating regime.

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. **(Source: Aquatic System Health of the Peace Watershed, 2012)**

The need for energy and the various energy options available to meet demand is set out in BC Hydro's 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 key 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 project 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 Basins Study (NRBS) was one of the first attempts to identify and assess incremental, multiple source and multiple stressor impacts in the Peace Basin. 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 Blueberry River First Nation have reported that is becoming increasingly difficult to hunt, fish, trap and gather successfully and in the preferred manner. This trend appears to be getting more pronounced through the past twenty years with effect being most pronounced in areas that have experienced greater levels of resource development. Such comments were manifest in many of the interviews undertaken as part of the 2011 BRFN TLUS. **(Source – BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)**

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 at play 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 impacts / effects on First Nation's ability to utilize lands and resources, their 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 or approved. Such assessments are temporally and spatially limited and have generally not considered impacts on First Nations, their rights and the ecological thresholds that must be avoided to sustain such rights. When environmental assessments are circumscribed in such a 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 on the biophysical environment and the ecological limits and challenges that First Nations must contend with. The BRFN'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.

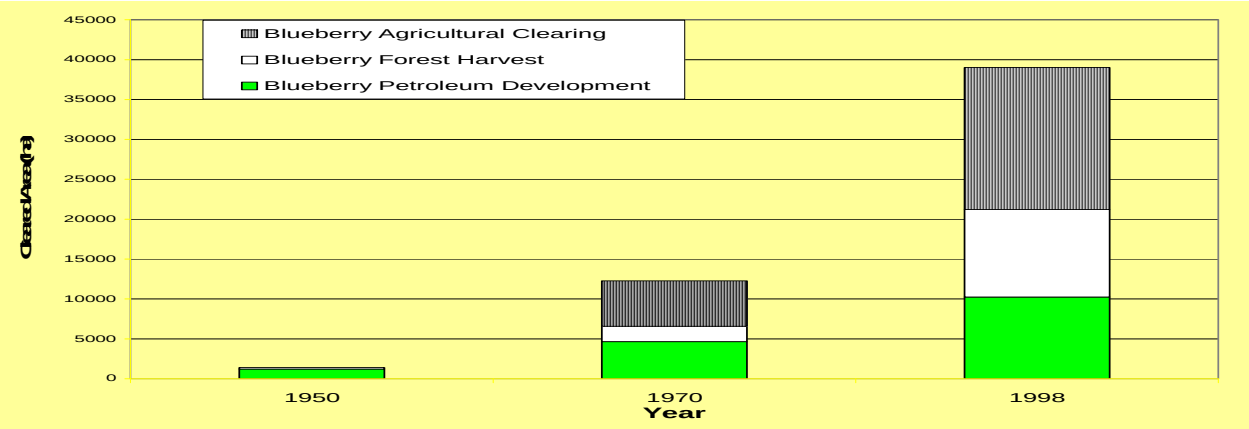
Thus when environmental assessments for major projects do not consider the cumulative impact of development, it places First Nations in a "catch – 22 situation". Environmental assessments end up evaluating the incremental effects of a new project, consider the resulting limited First Nation use, then 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. Further EA's need to be appropriately scoped to include and consider past, present and reasonably foreseeable / projected effects on First Nation as well as the applied for project.

4.3 Industrial Disturbance Within the BRFN Identified Consultation Area

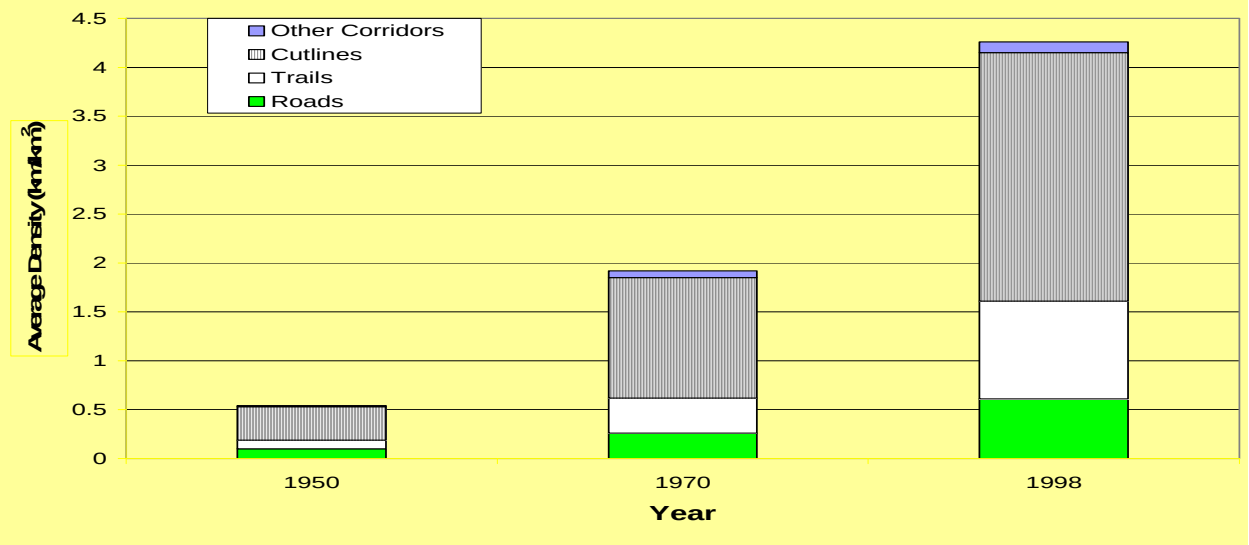
For many years the BRFN have been gravely concerned about the sheer pace and scope of resource development around their current reserve, their traditional lands and within the Peace River Region. Through the late 1990's and into the next decade, the BRFN made numerous requests to Crown agencies to address the cumulative impact of development on their family members and community's ability to exercise their rights. The BRFN community has been literally surrounded with oil and gas and other forms of development. Between 2002 and 2005, a research project was undertaken on of the Apsassin family trapline ("the Apsassin Trapline Study") that documented the sheer level of industrial disturbance that had occurred within one specific BRFN trapline. Maps were produced that documented the amount of lands taken up and impacted through clearing and linear development. In 2004, certain members of the BRFN were involved in an on the ground conflict with an oil and gas company that wished to undertake further exploratory activity within the 'Wolf / Davis" trapline. Relentless Energy attempted to obtain and injunction, however its request was denied by the BC Supreme Court given that no tangible effort had been made by the Crown or the proponent to address the community members / trapper's concerns about the cumulative impact of development within the trapline area and to consult directly with the family. **(Source: Councilor Malcolm Apsassin- Personal Communication, 2012)**

In 2003, the BC Oil and Gas Commission commissioned two pilot studies to model the cumulative impact of development within north-east BC. One of the study areas, was the "Blueberry Area", an area that took in a 2690 KM2 area north – east of Wonowon. The below graphs depict the cumulative disturbance in terms of overall clearing and the amount

of access or linear disturbance between the period of 1950 – 1998. Under both categories, a marked increase was documented in the "Blueberry Area". The study went onto to conclude the establishment of cautionary and critical thresholds to better address the cumulative impact of development within the north-east region of BC.



CLEARING TRENDS WITHIN THE BLUEBERRY AREA



ACCESS TRENDS WITHIN THE BLUEBERRY AREA

(Cumulative Effects Indicators, Thresholds and Case Studies – Prepared for the BC Oil and Gas Commission and the Muskwas – Kechika Management Board, 2003)

Given the BRFN's concerns about the cumulative impact of development and its interest in ensuring that significance of effects of the Project could be understood in a context relevant to the BRFN, BC Hydro agreed to fund an industrial disturbance

analysis. The BRFN engaged Management and Solutions in Environmental Science (MSES) to undertake a time-series disturbance analysis of parts of its identified Consultation Area as demarcated as of 2012 (it should be noted that this area differs from the currently demarcated area of the BRFN Traditional Territory). MSES compiled and reviewed data regarding past and present availability of undisturbed lands within the study area to develop a more informed understanding of how the same area had been impacted to date, and how impacts of further development will act in a cumulative fashion on BRFN's to utilize the area going into the future.

MSES considered and calculated the rate of conversion from natural land surfaces to industrial ones between 1993 and 2011 within the BRFN Consultation Area. Landsat5 satellite imagery and SPOT image analysis was undertaken to calculate how fragmentation effects could lead to changes in the eco-system to set out current and plausible future scenarios for traditional resource availability and use in the study area. In short, the MSES Disturbance Analyses concluded that:

"if the change in land cover moves the ecosystem to a different state, then First Nation traditional resource use may become unsustainable."

(Source: Effects of Industrial Disturbance on the Traditional Resources of the Blueberry River First Nation, 2012)

Specifically the MSES report arrived at the following views and conclusions in respect to the cumulative impact of development within a portion of the BRFN's Traditional Territory:

- The Landsat image analysis indicates that as of 2011, 59% of the land in the study area is either directly disturbed by industrial activities, or within 250 m of an industrial feature. However, the fine resolution SPOT image analysis indicates that the Landsat images underestimate the actual disturbance and that as of 2011, 66% of land cover in the BRFN study area was disturbed as a result of the high density of linear industrial features and land clearing.

- The linear disturbance density in the study area is 1.58 km/km^2. Given the level of land disturbance and linear density, populations of traditional wildlife species could exist at low densities or may have ceased to be viable.

- We estimated (multiplying the Landsat time series results by a correction factor based on the underestimation derived from the SPOT image analysis) that in the past 18 years, an average of 136 km^2 of undisturbed area has been removed each year from the BRFN study area as a result of industrial activity and development. At this rate, by the year 2060, there will be no land left in the BRFN study area that is farther than 250 m from any industrial feature.

- The landscape disturbance process in the BRFN study area is likely approaching an asymptote of maximum fragmentation. Further development in the BRFN study area is anticipated and current land management decisions will determine whether future regional landscapes will maintain functional ecosystems for the continued practice of Treaty rights.

- Disturbed lands are unlikely to be reclaimed to pre-disturbance conditions. There is very little similarity in terms of species composition between reclaimed sites and natural stands. Reclaimed sites show an unnaturally low diversity of species.

The MSES analysis is critical in that it shows the land and resource constraints and challenges the BRFN has faced through the past two decades, today and into the future. Current BRFN land and resource utilization is now dictated by this landscape and the limitations it imposes. The reality for the BRFN is that there are less fish to fish, less animals to hunt, less undisturbed forests from which to procure goods from and less undisturbed spaces where families can go to practice and pass on their culture. In this context, the effects and impacts of new projects, even if somewhat limited, can be significant to the BRFN. For example, if the Site C Clean Energy Project results in some limited effect to fish and wildlife populations, the effect could be significant given the level of impact sustained and impacted fish and wildlife populations elsewhere in their territory. The prospect of being told to go somewhere else, is simply legally incorrect and no longer plausible for the BRFN.

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 BRFN 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 Blueberry River First Nation Traditional Land Use Study – Site C Clean Energy Project
- The 2011 Blueberry River First Nation Traditional Territory Report
- Personal communication with BRFN community members and council

5.2 Ongoing Land and Resource Utilization of the Peace River Valley, Peace Region and Adjacent Lands by the BRFN: 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 BRFN continue to utilize and rely on the lands through the Peace Region, north – eastern BC and north – western Alberta. Hunting, fishing, trapping and the gathering of earth materials are activities and vocations that are still practiced and extant rights that are exercised.

BRFN land use and occupancy patterns have shifted through the years in response to various factors. As has been noted, the ancestors of the BRFN lived on and adjacent to the Peace River, hunting and fishing on both sides of the Peace River as far north as Ft. Nelson and as far south as Dawson Creek and Pouce Coupe. This pattern of land use and occupancy that was hinged to the Peace River, was further strengthened with the coming of the fur trade, the establishment of the fur trading forts and the mutual benefit that arose from the Beaver's skills in procuring furs, fish and game to provision the forts and traders plying the Peace River.

Following the signing of the treaty and the establishment of the Montney Reserve, land use patterns did not change significantly, as the Beaver families continued to spend the vast majority of the time in the bush and away from the allotted reserve. The absence of housing / shelter and the Beaver families on the reserve was one of the reasons considered by Crown when it opted to sell the Montney Reserve, that was only 15KM north of the Peace River. Thus one of the factors that resulted in an alteration of Blueberry land use patterns (shifting way from the Peace River), was due to selling off of the reserve and the establishment of the reserve (I.R. # 205) at the current location 54 KM north of the Peace River.

There were other significant factors at play that forced the ancestors of the BRFN to shift their land use patterns to the north away from the Peace River. As settlement and agricultural clearing occurred adjacent to the Peace River and within the Peace River Block, it appears that the Blueberry families began to shift their activities to the north given that there more animals were to be found in the less disturbed forests in the north Beatton watershed and areas west. In addition, in the north the ancestors of the BRFN found themselves to be in less direct competition with the influx of trappers that flooded into the south Peace area. A 1933 letter written by the Inspector of Indian Agencies stated, *"the White people who have settled in that part of the country have driven the Indians away from the Fort. St. John Reserve and it is necessary for them go away up North for the purpose of hunting".* **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).** Records indicate that through the 1930's, numerous BRFN families (including the Apsassin, Wolf and Yahey families) applied for traplines in the northern portion of the Beatton watershed.

As documented in the Kennedy and Bouchard TLUS Report, development once again caught up with BFRN families through the 1960's and 1970's in the north Beatton area. Following the move to the new reserve location near Buick Creek, BRFN land use patterns began to coalesce around the new reserve and adjacent trapline areas. Farmland, forestry and oil and gas activity surrounded the Buick Creek reserve impacting and inhibiting community access to their new hunting grounds and trapping areas, and alienated those lands in turn. This once again, required the BRFN families to alter their patterns and travel greater distances once again to less disturbed areas. This second shift was highlighted and its causes were reviewed by Martin Weinstein in his testimony before the Northern Pipeline Agency Public Hearings in 1979.

Thirty years after Weinstein and Brody's research work with the BRFN, BRFN land use patterns have shifted and increased in scope and distance again due to the increased pressure on the landscape by industrial growth and other human activities. BRFN members are once again altering their hunting, fishing and gathering patterns given the effects of an increasingly industrialized landscape. On the ground, this means that many community members are shifting their land and resource activities away from their usual and

accustomed places within the Beatton watershed. 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. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

So, the BRFN is now seeing a transition occurring where greater distances must be covered by community members, where current land use patterns are more closing resembling historic patterns. Of course today, BRFN members travel to these areas using their vehicles. 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.

In preparation for participation in the EA review of the Project, the BRFN and BC Hydro entered into an agreement to fund a BRFN traditional use study. The firm of Bouchard and Kennedy was retained to plan and implement the study with the community. Between October 2011 and October 2012, up to 40 community BRFN community members were interviewed about the use of lands and resources and traditional knowledge pertaining to the Project area, areas in the vicinity of the Project, the Peace River valley and areas adjacent. Specifically the study area extended as far north as the existing BRFN reserve, as far west as the Nabeshe River half way up Peace Reach, as far south as Moberly Lake and as far east as Beatton / Peace River confluence. Community members and interviewers marked areas on maps where they hunted, fished, gathered and undertook other cultural activities. Use areas were marked as polygons, lines and sites.

In general, in viewing the resulting TLUS maps, the following community land and resource utilization and use patterns and trends emerge:

- The furthest BRFN community usage occurs west from the Site C Dam location at Nebecshe River and the Williston Reservoir, approximately 136KM away
- The furthest BRFN community usage occurs east of the Site C Dam location at the BC – Alberta border, approximately 56KM away
- The furthest BRFN community usage occurs south of the Site C Dam location in the headwaters of the Kiskitinaw River, approximately 26KM away
- The furthest BRFN community usage occurs north of the Site C Dam location at the BRFN Reserve, approximately 58KM away
- A concentration or locus of BRFN traditional use activity occurs on the south bank of the Peace River between the Taylor Bridge and Maurice Creek within the Peace Moberly Tract

- A concentration or locus of BRFN traditional use activity occurs on the north bank of the Peace River between the Taylor Bridge and Lynx Creek that flows into the Peace River, to the west of Hudson's Hope
- A considerable amount of land and resource activity occurring with Pine River watershed, Moberly River watershed, in the Beatton River watershed, in the Cache Creek watershed, in the Halfway River watershed, in the Farrell Creek watershed, the Dunlevy watershed and the Graham watershed

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

5.3Reliance on Country Foods and Bush Commodities by the BRFN

There is a clear historical record regarding the importance of country foods to the Beaver People and BRFN families through time. Their culture, way of life and social structure was bound up and intertwined with the understanding and study of, stewardship and management of fish, wildlife and other commodities from the forests, wetlands and prairies within the Peace Region. The seasonal round of activities is well understood and has been the focus of considerable study by cultural anthropologists. In reviewing Brody and Weintstein's work, Bouchard and Kennedy note the five key seasons in which key resource procurement and management activities took place. These included:

- *Fall:* When larger wadane broke into small hunting cells to hunt larger game to make "dry meat" and grease for the coming winter
- *Early Winter:* When the wadane into smaller groups would disperse to the winter hunting and trapping areas for fur bearing animal
- *Late Winter:* When the focus of hunting and trapping would shift to species such as marten, lynx, fox, squirrel, fisher and wolverine
- *Early Spring:* When winter furs were traded and hunting shifted to beaver, and
- *Summer:* When the smaller wadane would regroup into larger groups at summer fishing, berry picking and hunting camps

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).

In 1978/79, Brody and Weinstein's research with BRFN researchers determined that the BRFN community consumed over 3,000 pounds of meat per year per hunter of bear, moose and deer. The beaver harvest totaled 230 pounds of edible meat per hunter. When small animals where factored in, researchers concluded that the average BRFN household

consumed 3,500 lbs of meat per year. **(Source: BRFN Traditional Land Use Study – Site Clean Energy Project, 2011).**

As noted, the BRFN has not had the opportunity to undertake a significant amount of socio–cultural research in recent years 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 BRFN was provided the financial resources to undertake a Country Food Harvest in support of Socio – Economic Impact Assessment exercise. As of January 2013, this work had not been completed. Thus, the BRFN Community Baseline and Socio – Economic Impact Assessment for the Project will need to rely on information synthesized from other available sources.

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

MAMMALS

- Moose
- Elk
- Caribou
- Deer
- Mountain Sheep
- Mountain Goat
- Buffalo
- Black Bear
- Beaver
- Muskrat
- Porcupine
- Rabbit
- Whistler
- Squirrel
- Lynx
- Marten
- Fisher
- Wolverine
- Wild Horses (Not for eating purposes)

BIRDS

- Ducks

- Geese
- Trumpeter Swan
- Prairie Chicken
- Spruce Hens

FISH

- Northern Pike (“Jackfish”)
- Walleye (“Pickerel”)
- Whitefish
- Dolly Varden
- Bull Trout
- Whitefish
- Grayling
- Burbot (“Ling Cod”)
- Sucker
- Rainbow Trout
- Lake Trout
- Kokanee
- Northern Pikkeminnow (“Squawfish”)
- Grayling

FOOD PLANT AND MEDICINE PLANTS

- Saskatoon Berry
- Wild Raspberry
- Blueberry
- Wild Strawberry
- Choke Cherry
- Low Bush / High Bush Cranberry
- Huckleberries
- Chokecherries
- Blackberries
- Mint
- Labrador Tea
- Wild Rhubarb
- Cow Parsnip

- Wild Carrot
- Wild Potatoes
- Poplar

The above noted country foods and commodities were identified by BRFN participants as foods that they have procured from the bush over their lifetime. All of these species / resources have had, continue to have and will have ongoing socio–economic, socio–cultural and a spiritual importance to the BRFN. The BRFN 2011 TLUS opted to focus on a sub–set these valued cultural components in interviews and mapping. These include:

- Moose
- Elk
- Deer
- Caribou
- Bear
- Food Plants (Many Species)
- Fish (Many Species)
- Mountain Sheep
- Wild Horses (Not for eating purposes)

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).

5.4 Hunting

The BRFN's culture is one based on the long practiced art and vocation of hunting. As documented within the BRFN TLUS, it was evident that the Beaver People and the ancestors of the BRFN had a relationship with the land and large mammals were key to their ongoing survival. Notwithstanding the ecological and land use challenges that have ensued, the BRFN's ongoing relationship with the land and ongoing dependence on hunting as a way of life has resulted in the perpetuation of the distinct Beaver culture and way of life to today.

Early written accounts by settlers, traders and government officials documented the Beaver and the ancestors of BRFN 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 efficiently feed a family and the

wadane. Smaller game and the meat from fur bearers sustained Blueberry families as they travelled, when on the hunt and in need. Ducks, geese and grouse also played a key role. 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. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

Most hunting activity is conducted to provide sustenance for families, however, several Blueberry members have utilized their renowned hunting skills in the guide outfitting industry in north – eastern BC and Alberta. 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 change and loss and a reported decline in wildlife populations. Such reports by the community are confirmed by numerous studies that consider habitat and population declines in moose. The BC Oil and Gas Commission (BCOGC) 2003 "Blueberry Case Study" documents the decline in the harvest of moose as being attributable to environmental factors, regulation changes and improved access. The study concluded that hunting:

"success is inversely related to level of disturbance" and "directly related to amount of core (undisturbed) habitat". **(Source: BC Oil and Gas Commission / Cumulative Effects Case Studies, 2003)**

Notwithstanding the challenges and declines the BRFN now face in relation to hunting, a large percentage of Blueberry families report that they continue to hunt numerous species and rely on country foods. The drop in wildlife populations has been dramatic around the BRFN reserve, areas adjacent to the reserve and areas to the east of the Alaska Highway. It was for this reason that BRFN, yet again, broadened their hunting and cultural land based practices to the west of the Alaska Highway towards the Northern Rockies over the past ten years. The BRFN purchased a ranch at Pink Mountain to facilitate and support BFN family cultural and traditional pursuits in a less disturbed area. The community supports cultural camps at and around its Pink Mountain ranch to support BRFN families being in a less disturbed area and so that cultural skills can be passed onto the next generation**. (Source: Chief Joe Apsassin - Personal Communication, 2012)**

In respect to the BRFN's territory, it is clear that Peace River Valley, key Peace River tributaries and adjacent lands play an integral role in and functions as critical habitat for

ungulate populations. Ungulates move with, and to sources of water thus community hunters tend to find moose moving along the Peace River and along its main tributaries.

In the fall, BRFN hunters have observed that moose can be found along the Peace River in August through to October. As winter sets in 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 and its key tributaries as moose tend to seek out large stands of dense forest along the slopes of the Peace down to the river bank**.**

Moose cross and attempt to cross the Peace River in winter months. BRFN hunters believe that moose favor the slopes of the Peace 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 towards, and are seen on islands in the Peace and back channel areas given these areas habitat attributes and the protection they provide from predators during key birthing and rearing periods. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project)**

The following community observations were documented in relation to moose behavior and utilization of the Peace River and key tributaries through the year:

- *"Moose are close to the river in the spring – calving time – March – May…April is when they calve. They (will) go to an island to have their calves"*
- *"All wetlands are calving areas – muskeg and stuff like that. It keeps the predators from smelling them when they have them in a moist spot. These are calving areas along the Beatton – there are a lot of wet areas along the Beatton that are calving areas"*
- *"When they are calving, they go to thick bushes; and in springtime, when the rivers are opened up, they go there for drinking water"*
- *"X community member has observed calves on the Peace River islands….X community member emphasized the importance of the habitat's importance for moose"*

(Source: BRFN Traditional Land Use Study – Site Clean Energy Project, 2011)

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 in such areas over the last two decades, however they can still be found in such areas.

While elk and deer are not sought after as much as moose, they are hunted and killed and contribute to the country foods based diet of Blueberry families. Community members report that deer and elk are found in more diverse habitats with each species becoming more habituated to farmer's fields over the years given the source of browse they provide in addition to protection. Elk herds are found along the Peace and in adjacent lands along the Peace, and their populations are increasing. On the north side of the Peace, ranchers invite First Nations hunters to take elk within their fields, given increasing crop damage and losses from elk and deer.

Following the decline and disappearance of the buffalo herds, caribou and moose became highly important species to the Beaver and ancestors of the BRFN. In fact, is has been posited that Beaver's social and family organization and the structure of the wadane changed, given the different hunting strategies involved with the caribou and moose hunt. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).** Caribou herds have declined significantly and their population crash has been the subject of considerable study and policy discussion. There is a high level of consensus regarding this decline and its causes that is shared by the BRFN, other Treaty#8 First Nations, government resource managers and academic circles. BRFN members (via the 2011 BRFN TUS) were able to confirm the historic ranges of the caribou within the Peace Region and their contemporary range, which now appears to be confined to areas where less habitat fragmentation has occurred. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).** A limited number of community members report that they still hunt and kill the occasional caribou in the 'Butler Ridge" range or at "Caribou Mountain" north of the Williston Reservoir / Peace Reach. Overall, BRFN community members elect not to hunt caribou due to their low numbers and in the hope that that the species will recover through their former ranges. Notwithstanding the fact that the BRFN don't hunt caribou as much as they once did and choose not to exercise their right, the BRFN can be said to have an acute interest in caribou (and by extension caribou habitat and recovery)given its engendered and threatened status. **(Source: Chief Joe Apsassin - Personal Communication, 2012)**

There has clearly been a decline in the number of active hunters in the BRFN over the years. There are different factors for this including habitat and population decline, more people obtaining work and aging elder population. A culture of sharing of what is taken from the bush is still in effect, with families sharing game with each other when a kill is made. However, such declines need to be viewed within the appropriate perspective, where a large percentage of the community remaining reliant on procurement of game and bush

commodities. Game is shared between and amongst families. Numerous community hunters or “meta–hunters” will undertake a considerable amount of hunting providing for their extended family and elders and families that aren’t able to spend time hunting to meet their own needs. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

Hunting skills and the hunting culture of the BRFN are being passed on and transmitted to the new generation. BRFN elders all can name younger men and women that are showing an interest in hunting, learning about hunting and being in the bush with their family. It appears that the younger generation of the BRFN now appear to be accompanying their families into the bush and are now going into the bush by themselves. The BRFN purchased the ‘Pink Mountain Ranch” to support and facilitate this cultural trend and priority in the community and the BRFN hosts cultural camps each year in support of maintaining family and community cultural connections to the BRFN traditional territory. **(Source: Malcolm Apsassin - Personal Communication, 2012)**

5.4.1 Excerpts from BRFN TLUS Regarding Key Past and Present Hunting Areas

The 2011 BRFN Traditional Land Use specifically sought to document geo-spatial data to determine if community members hunt on, near and within the vicinity of the Project area. The Peace River Valley and adjacent areas was a key geographic focus of the study prepared by Kennedy and Bouchard. While many areas within the Peace Region and within the BRFN traditional territory are important, some areas emerged as highly valued hunting areas to the BRFN respondents interviewed. As noted, the Pink Mountain area has re-emerged as an important hunting area for the BRFN out of necessity, given the loss of suitable lands along the Peace River and within the Peace River Block.

Community members also appear to favor driving along the north side of the Peace River and scouting upwards and downwards on the slopes of the Peace River Valley in the areas between Farrell Creek and Cache Creek. Community members also drive up into the Farrell Creek, Halfway and Cache Creek watersheds to hunt. The south side of the Peace also figures prominently with BRFN hunters where hunters frequent the Kiskatinaw, Pine and Moberly River watersheds and the more isolated hunting grounds near the Peace Boudreau ‘protected area” and within the area known as the “Peace Moberly Tract”.

As part of the 2011 TLUS, the Kennedy and Bouchard research team reviewed all TLUS interviews with BRFN community members and highlighted specific instances where hunting in the study area was specifically referenced. The references were organized by established geographic areas:

Taylor and Old Fort

- SyA started hunting in areas close to the Peace River with his — dad [John Calahaison] and uncles when he was 6, 7 years old [in early 1970s]. His dad taught him to hunt and skin properly. They don‘t segregate themselves to just one area (SyA-11-10).

- The most recent time SyA was hunting around Peace River area was two years ago, in 2008. He got a cow moose with no horns and no baby, about 10 miles southwest from Taylor and about 3 miles south from Pine River (SyA-11-10).

- GrD doesn‘t go much farther downriver past Bear Flats--hunted from Taylor down; mostly private property, so got permission to hunt there a couple of times (GrD-02-11). Grandfather [Edward Apsassin] said when they used to stay at Taylor Flats. They would have to trap for beaver. In those days, beaver was worth more than anything else (SyA-11-10)

- First time I moved to Taylor, I used to go to snare rabbits. That‘s on the Peace River. Used to snare rabbits there – get up before the White Man get up (RA-10-10)

Pine River Area

- Significant moose and elk hunting at mouth of Pine: lots of moose, elk, deer (CuA-05-11; StA-10-10; MlA-11-10).

- Elk and moose hunting in area between Pine and Moberly rivers (SyA-11-10; CuA-05-11).

- StA hunts there with Blueberry people and with Moberly people (StA-10-10).

- Moose on both sides of Pine River; SyA uses quad in this area for hunting during day-trips from BR (SyA-11-10).

- Elk on south side of Pine; always get one here (SyA-11-10).

- South side of Peace River, west of Pine, use of boggy area: Lakes and creeks used for hunting beaver, muskrats, geese (CA-11-10).

- Rabbits snared, especially around the "Honey Farm," Del Rio and "anywhere" along south side of Peace River in 1970s (VA-10-10; RA-10-10);

- Hunting by Pine River and north to Moberly: both elk and moose in here by the Pine. There‘s elk in there all over, elk and moose. Mule and white tail deer in there as well. (StA-11-10).

- Get bear on northwest side of Pine in Monias area, as well as Stewart Lake and between Pine and Moberly (LC-05-11; LC-10-11; TP-*)

- "Lots" of elk seen and killed in area south of Peace Island Park. Accessible by roads; killed one here as recently as 2008 (SyA-11-10)

- Pine River: moose and elk can be seen here all year round Elk are coming back - never seemed to be very many a few years back, now they are coming back (StA-10-10). Hunting on East Side of the Pine: Moose – (drawing area all the way down to the river on both sides.) Steep land. (HA: lotta elk) Lotsa elk in here, this area in here. South side (WA & HeA -11-10).

- In early 1900s**,** old Joe Apsassin trapped on Taylor Flats and up the Pine and Kiskatinaw rivers (CA-11-10; RA-10-10)

- Grandfather [Joe Apsassin] trapped up the highway and up and down the Peace River. They used to also trap along the Kiskatinaw River, up towards Moberly (RA-10-10). Beaver Trapping on South Side of Peace River: Monias or Kiskatinaw River. RA says Kiskatinaw (MaM-10-10)

Bear Flats and Cache Creek

- Common area for hunting moose and elk on the upper Cache Creek Road which comes out at Bear Flat. Shooting from the road (StA-10-10; LW-11-10).

- Area east from Cache Creek has lots of deer, but few people hunt them (StA-10-10). StA hunts on upper Cache Creek Road which comes out at Bear Flat. Moose and elk. Also deer, both mules and some white tail. Hunt elk there because the elk destroy the feed, hay, and sometimes the farmers and ranchers will call them and ask them to take a few (StA-11-10).

- PtY hunts in Bear Flats/Cache Creek area. Good deer hunting, lotta elk and deer, moose too, but have to ask for permission from farmers there, as they want someone to shoot the animals because the animals damage their fields, oats, barley, just lay in it (PtY-05-11).

- Further up Cache Creek we hunt sometimes for elk, too (GrD-02-11).
  Dad and mom in the 60's used to work for Bentley who owned land on Bear Flats.

- Dad used to hunt there--for moose--at Bear Flats (CA-11-10).

- RiA has hunted deer in hills behind Bear Flats/Cache Creek area a couple of times. Usually goes to lower Cache Creek for moose and deer (RiA-05-11).

- We used to go to Bear Flats out towards Hudson‘s Hope and do monitoring and hunting. TP went with her husband, Bobby Paquette and his Dad, Robert Paquette. Hunted for moose. Last time TP was in there hunting moose with them was 1997 (TP-05-11)

- Lots of elk, moose, deer and wolves near Cache Creek (SD-10-11).

Halfway River and Attachie

- *Birds?* We hunt Ducks and lots of geese in springtime mostly in the Halfway area (GrD-02-11).

- *Rabbits: DK: Getting many? I know they go in cycles.* GRD: Certain areas, there‘s lots. There‘s lots this year, Halfway every road we go on. Shoots them in fall times. Right now we snare them (in February). Can‘t sell their fur. The older people they used to use them to insulate gloves, mukluks...

That much I know. Still eating them. Gets 15-20 year. When hunting for elders if they want rabbits, get them 4 or 5. (GrD-02-11).

- Straton got some rabbits for his mother-in-law (MaA-10-10).

- RA: I used to go up to Halfway to make dry meat -- this summer we didn‘t go, too much activity up there. Gas wells, logging, it‘s just one big mess (RA-10-10). In 2009, SyA shot a moose about 2 miles downriver from Attachie (SyA-11-10). Moose hunting near mouth of Halfway River (LC-05-11).

- *Hunting Along Bear Flats to Attachie*: (Draws) They hunt up and down the road, because the private land owners don‘t want them on the land. When he used to live in town, they would hike up and down the hills hunting for deer (JoD-11-10).

- *Hunting Area*: (Hudson‘s Hope map) Halfway, they protect that one area. I hunt there – it‘s good for everything. There‘s lots of elk around here. *Get one a year?* I get elk anytime I‘m hungry. I go to hunt and I get meat. We got to look around for the right kind to, if you know how to hunt. You can go kill anything. *DK indicates Halfway Ranch*. We hunted all around the Halfway River, Birch Creek, this whole area. Right on top, that‘s where I got my sheep. Rocky Mountain foothills. Butler Ridge – mountain sheep. (JD-11-10).

- *Elk and Moose Hunting on West Side of River*: Gets elk as well on the west side of the river. There‘s starting to be a lot of elk in there too. It‘s quite boggy, but they hunt with horses, we cross. Sometimes they camp down here – right across form Halfway, there‘s a well site that goes quite a bit, this one Brownridge [?}We hunt this area quite a bit. Elk and moose. Grandbridge, there‘s a lake here. We hunt all this area, all the way down, close to the Peace. (GrD-02-11).

- *2010 Moose Take*: (DK asks where SyA has killed moose this year) He has killed 7 moose so far this year. He‘s feeding a lot of people, feeds his mom‘s family—his Dad died in 1992—also feeds Herbie Apsassin, his other sisters, his brothers and all his own 5 sons. His youngest son is 17; his oldest, 24. (DK asks if any of the moose he killed this year were from the present study—close to the Peace River). SyA: "No, not this year." (DK: What about last year?) Last year [2009], SyA shot a moose over here (indicates site on map, on north side of Peace, about 2 miles upriver from Attachie, which is at the confluence of the Halfway River with the Peace). On top of the hill there, going towards that look out thing, before that you turn off, going toward the

upper and lower Cache [Cache Creek]. There‘s *lots* of elk in this whole area through here [presumably this is where he was indicating the area south from the lower portions of Pine River, on the south side of the Peace]. And this is a moose kill site [referring to site near Attachie]. (DK asks when this was). SyA responds that it was in "end of July, first week of September, something like that." (DK asks is moose are close to Peace River at certain time of year). SyA responds that this happens in springtime. (SyA-11-10).

Farrell Creek

- *Farrell Creek Road* –hunts moose around the Halfway (CuA-05-11).
- Starts on road west of Farrell Creek, and then back in there, that direction - another moose area (StA-10-10)
- *Farrell Creek Road:* Moose area. Take you all the way back into the Halfway Reserve. We go hunting along the Farrell Creek road once in awhile too. One part of it is called Haystack Road. Eventually take you out to the Halfway (StA-11-10).
- *Hunting at Farrell Creek:* Yep. We hunt all over. Sometimes we go from Farrell Creek, go through the Halfway Reserve and come out Alaska Highway. We all hunt in this area (indicating). West side of the lower Halfway. Moose and elk (WD-02-11). Farrell Creek: Hunting along there (JoD-22-10).
- *Personal Hunting Practices:* Hunted from his truck in this (indicating) area (hills around Farrell Creek/ Cache Creek). Hunted for moose. Last did it two years ago. He mostly goes north now. Got a couple of cow moose down on Farrell Creek. Got a cow moose. (DC-05-11).
- *Plans for Hunting up the River:* Past Farrell Creek, there‘s a bank –you glance across and see a sheep trail is down to the river. Cause mostly sheep licks are down by the river (DA and RiA05-11).
- *North side of Peace– Farrell Creek:* Shot record deer here – —second biggest buck of that year in northern BC 2008/09. Scored in at 9X8." (SD-10-11). Shot moose and elk at the headwaters of the Farrell Creek. —Took one moose here last year." (SD-10-11).

Butler Ridge

- *Use of Peace River*: I do hunt around Butler Ridge, Hudson‘s Hope area. Hunts all over lower Halfway Reserve and across all the way down. Good hunting area. (JD-1110).

- *Hunting together*: We hunt together when we do a study on sheep, that‘s when I got my sheep. I will never forget that day [I got that sheep]. It‘s the best meat you can get.(JD-11-10).

- *Hunting*: Hunting at Hudson‘s Hope to Butler Ridge, behind Butler Ridge. When we go with Garnet, we used to take use horses. Now we use quad. Uses quad quite a bit. Get a little bit away from Hudson‘s Hope because of the farmers, get permission from the farmers‘ lands.(JD-11-10).
- Getting sheep on the ridge. See these mountains. In winter, sheep come down low – Hackney Hills. (JD-11-10).

- *Sheep at Butler Ridge*: Goes down Butler Ridge for sheep. We went out there--that‘s where my brother got a nice ram two years ago or a year ago. There‘s some big rams there we like to get, but. I was up in... before I went to the mountains, me and Wayne Yahey and Leon, my nephew, went over there and try to get those ram and we couldn‘t find them. They are bush rams, they are hard to hunt – they stay in the timber all the time. (WD-02-11).

- Butler Ridge is good for sheep. We saw this trail on the side of the hill. We walked all this area—saw the sheep trail when they were doing the windmill study. Windmill folks said they saw sheep droppings. They didn‘t see a sighting. We were talking about coming up this ridge and walking along here to see if there is any game.(DA and RiA-05-11).

- *Porcupine* – there‘s no porcupine right now. They just disappear. I do eat it. Last week I went hunting up to Butler Ridge and I see a porcupine track, I want to go back for it. Porcupine cooking methods: you have to burn it first. When we burn it, take all the quills off. Then boil it up by itself, with salt. Good meat. It‘s definite taste, but it is good. A little strong. Lot of peoples like it but the taste is strong. (JD-11-10).

- *Porcupine*: disappearing. Last year I only see maybe 3 in the Butler Ridge area. Porcupine, the elders like it. I notice that there‘s more porcupine in M_____ Lake area, up the highway past Fort Nelson. The last time we went there, in a day, we see three big ones.(GrD-02-11).

- *Sheep*: Got a ram in the Butler Ridge area. Usually hunt sheep 171 area, Nora Pass. Last year, got two rams. My uncle got one last year (GrD-02-11).

- *Sheep Hunting at Butler Ridge*: Before that we go further towards Butler Ridge, we camped in there too for two weeks, I think, we camped in there (July). They hunt sheep in there (GrD-02-11).

- *Hunting at Halfway River and Butler Ridge*: That is Farrell Creek Road – usually goes to hunt around the Halfway – he marks the area on the map. My Brother lived at Halfway so we would hunt there. There‘s the Halfway Ranch, Farrell Creek Road, and Butler Ridge, Kobus Creek – walk along the top of Butler Ridge looking for sheep.

- *East of Butler Ridge*: Lots of moose and elk in the area east of Butler Ridge.(CuA-5-11).

- There are ―bush rams‖ on Butler Ridge; they are hard to hunt as they stay in the timber all the time (WD-02-11)

- *Hunting caribou near Butler Ridge*: Camped on "Other side of Butler Ridge, up the creek, just behind Butler Ridge, in between Butler ridge and Caribou Mountain. Lots of caribou."(PY-02-11)

- Calls this "Caribou Mountain" Gives Beaver name for the caribou. There are some caribou there.(PY-02-11).

- Two areas he hunted frequently: Ridge west of Caribou Mountain and along Butler Ridge. (PY-02-11).

- Last hunted there in 1978-79 with his brothers, Jerry and Joe. Stay over night. Five or 6 of them went, left the vehicle and went up to the ridge after sheep. Camped out. Hunted mountain sheep but didn’t get any. Lots of sheep in there.(PY-02-11). Went in there in 1982-83. Got animals there during that trip (unclear how many). "Kids hunt there now." Accessed this area with a quad – "4-wheeler." Wayne/Sherri/Guy go there now (MA) Coal miners are in there, so there are lots of roads. Use quad.(PY-02-11).

Hudson's Hope

- Shawn Davis: DK: Do you hunt down in the Peace? Hunts there 4 or 5 times per year along the north and south side. Last 5 years –1 deer from the north side of the Peace; 2 moose, 1 elk from the south side of the Peace. North side of Peace, hunts near Hudson Hope. Goes here every year. Last at Butler Ridge earlier this year for moose, elk and sheep. (SD-10-11).

Moberly River Area and Del Rio Area

- *Berry Picking at Moberly Lake*: We used to go hunting over here and then there‘s that...where‘s Moberly here... This is Moberly right? Oh, yeah, see, right even here, Moberly Lake, around here, we went picking berries right here, with my GM Boudrie, along here and we picked a lot of blueberries. (TP-05-11).

- *Fishing at Stuart Lake/Hunting and Berry Picking Between Moberly and Pine*: We go fish over there, Stuart Lake. (DK: here‘s the Moberly). It must be somewhere here. I think it‘s in here somewhere. Goes between Pine and Moberly for deer and elk. Good fish in Stewartt Lake. We still go over there, we look for bear. Bear grease is good for moose hides. It‘s a good thing GP is gone, cause he‘d be sad. Going into Stuart Lake on Rio Grande? Not Kiskatinaw, Braden Road we use. Rainbow, that‘s all they got last time, but they say there‘s all different kind of fish. Stewart Lake for fish and between Moberly and Pine for bear and berries (saksatoons and choke cherries). My husband like choke cherries cause when he was growing up there‘s lots in that area. Goes in that area for elk and deer. Everywhere you go, there‘s farmers‘ fields. That‘s why we have to go far away to go hunt. (LC-05-11).

- *Hunting Between Moberly and Peace*: Does a lot hunting between the Moberly and the Peace. Marshy area. "Just day quad trips, coming from the Moberly – there‘s a bunch of cut lines he and his buddies from Moberly go down. Do a lot of hunting in this area down here too (indicating); all these roads here –gas line roads—we go down with quads – moose. (CuA-05-11).

- *Hunts on Peace between Pine River and the Moberly River:* Hunting moose and elk. Came close to river and far away, used cut lines back in there - cut lines for seismic or mining or forestry, logged out areas in there. Has hunted here with Blueberry people and with Moberly people over the last 15 years (StA -10-10).

- *Hunting by Jack Fish Road*: Hunts on the Peace between the Pine River and Moberly River. Moose and elk. Elk are coming back. Used cut lines, mining and forestry roads. Hunts with Blueberry people and people from Moberly. Dotted line is an old trail along the Pine River, eventually it hits a high grade road near the RR tracks, back in here somewhere, from the RR tracks to Chetwynd, it‘s all high grade road. High grade means all weather road, graveled with culverts. First part near the Taylor Ditches is not an upgraded road, used winter and late fall. Can‘t get across unless the ice freezes up on the Pine River. You gotta get across the Pine River, there‘s a road up the hill there. Cross the Peace, take the trail on the south side, cross the Pine. Drive across the ice. Hunts there in the wintertime. Goes in the summertime, we come around this way but can‘t get all the way in. Between Chetwynd and Moberly Lake, Jack Fish Lake Road. Two trails, kind of a Y, cut across the Moberly River, another once goes straight on. This is westernmost hunting. Hunts to the west and down in here along the road. Doesn‘t know exactly where that road is. This red one going back across this way is a road going across the Moberly River. Comes straight up and then back – there‘s a Y there. (DK following StA‘s pencil line.) Didn‘t hunt very far off the road, unless quad or skidoo – mostly getting from the truck. Quad hunts once in a while, in the fall time. (StA-11-10).

- *Beaver?* Lot of it in Long Lake and Moberly River – Grand Father cabin in on Long Lake. Used to trap Beaver there and up the Moberly. They‘d canoe it. Grand Father showed him where he used to snare a lot of beaver, because they have beaver dams all up and down the Moberly (WiA-11-10)

- *DelRio*: Where it crosses the Moberly River, it‘s all bush, there‘s a lot of moose in there. The Moberly Lake First Nations people go to hunt through that whole area. (HA: you and your grandpa Albert did too). (DK: request that WA draw the area on map.) Follow the river all the way up the Pine. And even some across here somewhere. I‘m just going to...all this in here. It‘s all bush. (WA & HeA 11-10)

- *Hunting Near Grandfather's Cabin*: My Grandpas trap line, his cabin is right here (indicating) and that‘s where he hunts, all in this area. Right down through the south bank of the Peace and hooking back to the Pine again. There‘s a trail that leads right to the Moberly, to his IR here. Horses and stuff, back in the day, I used to go there when I was a kid, back in the day. We used to drive and go hunting for moose all over this area. Especially close to the river, that‘s where they hang out. Moose, deer, even some rams here, up in these high areas. The elders call mountain sheep ―timber rams‖. Has seen the rams, but has not gone ram hunting. Had the meat once, didn‘t really like it – he‘s a
moose eater. Hunted near Grandfather‘s cabin when he was young, late 90s and early 2000. (WA & HA 11-10).

- *2010 Moose Take Near Grandfather's Cabin/Family Camp Out*: We pulled 7 moose out of this area and 1 elk. We were camping there for two weeks (he was there for 2 weeks, family stayed for close to 1 month). This happened just this past summer, 2010, like in August. Made dry meat and moose hides out of the meat of the moose. Pretty good hunting back there. Myself, mom, some from Blueberry and cousins from Saulteau– about 30 of us out there. Pulled in tents and trailers and went camping out there. Shared the meat amongst the group – everybody gets their share. Didn‘t get any other moose. Never went back, because of the hunting season. We don‘t hunt moose as a trophy, more for the meat, hide, clothing, footwear, plus practice traditions and culture while you are doing it.(WA & HA 11-10).

- *Annual Moose Take in Del Rio Area*: This year, he personally got 8 moose, 2 elk, couple of deer – just him. Gives it away to other people who need it. He helps other people out, skinning and hauling. Imagines some people got 10 moose this year. Get them in the fall, before they start to rut – people hunt them there while they are still fat. (WA-11-10).

- *Activities at Grandfather's Cabin*: Drawing racks set up – 4 moose hides going every summer. 4 moose hides sometimes going in one day. (WA-11-10).

- *Del Rio*: Brother- in-law, Herbie Apsassin‘s dad, used to live in Taylor, we used to go hunting with him. Cross that river. We used to cross that ice (?) bridge, to the Del Rio area. Don‘t know what it‘s like there now – maybe farm lands, logging blocks in that area. (MIA-11-10).

- Moberly Lake. There‘s a road across that Taylor Bridge, as soon as you cross the RR bridge, you turn to your right, right at the end over, where you cross that river. (All reviewing map, looking for, Taylor, RR bridge). RR is somewhere up here. Don‘t go across the RR bridge, go across the main bridge, across the main bridge, at the end of the main bridge you turn to your right. The minute you cross that main bridge, you turn to your right, and then you cross this creek here, somewhere (MlA-11-10). (HeA: Del Rio area is mega wealth now, oil wells, roads. Wells, roads, everything. Getting a lot of natural gas and oil out of there. When it rains, you don‘t want to be back in there, once you get stuck in there, you never come out. The roads are just. The mud is just sliding all over the place sticks to your tires. I hunted all over out there – Boudreau Lake all the way to the Peace River. Quading around over there. Many years.)(HeA-11-10).

- MlA: Indicates bridge on map. There used to be houses in here. (HA and MA: Go up the river, cross right here and then go that way, where this red line is, that‘s the road.) MA: I remember, it was a long time ago. Anyways we cross this river and go around here like this and the hunting area was north of the Pine River. (MlA-11-10).

- (RB asks MA to circle the hunting area on map) All hunting area over here. The whole area. Right here, that‘s where they kill moose (right here). When we come down this area, used to be Winter Road, that‘s where we kills moose, somewhere around here. MA: That whole area, the people hunt in that Moberly Lake area, and trap. There may be someone‘s trap line from Moberly Lake is in that area (RB: Desjarlais) Hunted there with his Herbie‘s Dad in the early 80s. (Del Rio is where MA drew that circle.) That‘s the only area south of the Peace where he went hunting. That‘s the only area he went hunting because, we had to hunt from HA‘s Dad‘s place. When we are home, we hunt closer to home, go further north, until it was clear-cut by Dept. of Lands, clear-cut logging areas. People go quadding around and chase animals out. Too many pipelines, too many open areas. From Old Reserve right over here, we used to hunt in this area, and people used to live here in log houses. (MlA-11-10). Hunting: There are both whitetail and mule deer [in that area north from eastern end of Moberly Lake] but mostly mule deer. "Oh, and then besides that, I‘m the hunter in our family. That‘s right, yes I am. I hunt *everywhere* – you name it, I‘ve been there. If I likes an area, I go there." He hunts in Del Rio [name of oil & gas field area; see further discussion below], across from Taylor—you go across [the Peace River

from] Taylor here, below Park, and down to the southwest. He remembers wherever he kills a moose or elk. (SyA-11-10).

- *Highway 29* [which follows right along north side of Peace River, between Hudson Hope and Bear Flat, and crosses Peace at Hudson Hope and proceeds down to Moberly Lake] -- killed a big bull moose this summer, moose hit their car, almost killed them— this was just past "Cameron Lake"[on 1:250,000 topo, this is the lake indicated along west side of Hwy. 29, and its northern end extends almost to the Hudson‘s Hope District Municipality Line]—there‘s a moose lick there. HA confirms this, and notes there‘s another moose lick nearby; SA points out that HA knows about this because his wife used to live at East Moberly, and HA lived there with her.(SyA-11-10).

- *Hunting around Del Rio*: This is awesome, wicked for elk. South side of the Pine, Peace Island Park [just downriver from where Pine River empties into the Peace]. Roads all over the place. (DK asks him to draw a circle around hunting area). He said he hunted all through there, on horseback, foot and using quads [all-terrain vehicles]. Some places it is too swampy for quads. Lots of muskeg. They would make their way through the swampy area to get to a really good hunting area. Hunted moose, elk—lots of elk in that area.(SyA-11-10)

- *Shawn Davis:* (looking at Charlie Lake Map): "Good hunting on the South side of the Peace for moose, elk and deer." Goes there with father-in-law. "Seen lots of animals there." Last there in 2008 (SD-10-11). "On the south, I go through the Chetwynd side." Hunts there with father-in-law (non-native, wife is from Driftpile (Alberta) –Shawn is married to their daughter). No quads, so doesn‘t go down to the river. (SD-10-11).

Peace Reach and Above

- *Activities Farther along the Reach: Schooler Creek: elk/sheep/moose/*whistler: With horses, they camp back in here. For elk, they planted elk in there. They take horses back in there, up Schooler Creek. Elk up on this area here, unnamed mountain west of Butler Ridge. Elk, sheep and moose here. The elders got some whistler up there (GrD-02-11).

- StA: Around Williston lake, there‘s only lots of elk. Moose have moved away from there – they need to look for swamps for calving and there are no

islands for them to have their calves. They calve in the swampy areas (StA-11-10).

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

5.4.2 Key Past and Present Large Mammal Harvesting Areas Mapped by Respondents

As part of the interview process with BRFN interview participants, the Kennedy and Bouchard research team developed mapped biographies - individual map sheets where the researchers and interview participants identified key resource use and utilization areas on maps. Resource use areas were demarcated with large polygons. The individual map biographies were then collated onto different thematic maps for specific themes such as "Moose Harvesting". When one views each of these maps, the following key past and present harvesting areas can be identified and categorized. These areas general conform to the areas described by interview participants in the prior section 5.4.1 of this document. As set out in the 2011 BRFN TLUS, there is a category for each key value that was mapped for moose, elk, deer, caribou, bear and mountain sheep:

<u>Moose Harvesting Areas in Peace River Related Locations</u>

- South side of Peace River adjacent to the Project site extending downstream on the Peace River to the Beatton River Provincial Park, on the south side of the Peace River
- South side of Peace River adjacent to the Project site extending downstream on the Peace River to the confluence of the Pine River and the Peace River
- South side of the Peace River adjacent to the Project site extending up the Pine River on the eastern side and within the eastern portion of the Pine River watershed
- South side of the Peace River adjacent to the Project site extending up the Moberly River watershed on the western side and within the western portion of the Moberly River watershed
- South side of Peace River adjacent to the Project site extending upstream along the Peace River, up the west side of the Moberly River watershed and taking in the

series of lakes extending from Boudreau Lake to Boucher Lake within the Peace Moberly Tract

- South side of the Peace River Valley (half way up valley) extending south west to Maurice Creek and south to the Saulteau First Nation reserve and Cameron Lakes
- North side of the Peace River from the Cache Creek – Peace River confluence and northwards into the headwaters of the Cache Creek watershed
- North side of the Peace River from the Halfway River – Peace River confluence and northwards into the Hallway River watershed and north to the Halfway River First Nation reserve
- North side of the Peace River from the Farrell Creek – Peace River confluence and northwards into the lower portion of the Farrell Creek watershed
- North side of Williston Lake (Peace Reach), on the east side of the Dunlevy Creek watershed and extending onto the west side of Butler Ridge
- North side of the Williston Lake (Peace Reach), taking in the Adams Creek watershed

Elk Harvesting in Peace River Related Locations

- South side of Peace River adjacent to the Project site extending downstream on the Peace River to the Pine River – Peace River confluence and extending south into the east side of the Pine River watershed
- South side of Peace River adjacent to the Project site extending downstream on the Peace River to Pine River – Peace River confluence and extending south into the west side of the Pine River watershed
- South side of the Peace River adjacent to the Project site extending up the Moberly River watershed, half way of the watershed on the east and west side
- The islands in the Peace River and the south side of the Peace River (across from Attachie), extending up the Peace River Valley to Boudreau Lake
- The south side of the peace River extending southwards into the Peace Moberly Tract to the SFN reserve on Moberly Lake
- North side of the Peace River from the Cache Creek – Peace River confluence extending through the Cache Creek watershed and into its headwaters

- North side of the Peace River from the Halfway River – Peace River confluence and extending from the Farrell Creek – Peace River confluence extending into the Farrell Creek and Halfway River watershed, north to the Halfway River First Nation reserve
- North side of the Williston Reservoir (Peace Reach) at the north end of Dunlevy Creek and at the north end of Butler Ridge

Deer Harvesting in Peace River Related Locations

- South side of Peace River adjacent to the Project site extending south in an area between the Pine River and Moberly River
- North side of the Peace River at the confluence of Red Creek and the Peace River (Bear Flats) extending into the Red Creek watershed
- North side of the Peace River at the confluence of Cache Creek and the Peace River extending into the Cache Creek watershed and into the headwaters of the Cache Creek watershed

Caribou Harvesting in Peace River Related Locations

- North side of Peace River, in the upper portion of the Halfway River watershed on the east side
- North side of the Williston Reservoir (Peace Reach) on the height of land between Dunlevy Creek and Adams Creek
- North side of the Williston Reservoir (Peace Reach) in the Graham River watershed, east of the Hackney Hills

Bear Harvesting in Peace River Related Locations

- North side of the Peace River, along the Peace River between the Halfway – Peace River confluence and the Farrell Creek – Peace River confluence, extending from the Peace River, up the slopes of the Peace River valley and onto the bench lands above the Peace River
- South side of the Peace River, halfway up the Moberly River watershed on the east side

<u>Mountain Sheep Harvesting in Peace River Related Locations</u>

- North side of the Williston Reservoir (Peace Reach) on the east side of the Dunlevy Creek watershed extending up into the west side of Butler Ridge
- North side of the Williston Reservoir (Peace Reach) in the Adams Creek watershed and extending northwards into the Graham River watershed

The above locations correspond the consolidated map that appears in the 2011 BRFN TLUS.

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

5.5 Fishing

As noted earlier in this report – there are two differing views on historical presence and availability of fish within the Peace River Basin and the importance of the fishery resources to the Beaver, ancestors of the BRFN and other Indigenous People in the Peace region. One view holds that Peace River system was never capable of supporting a large fishery and as such, the fishery resource could never have been that significant to the Beaver People and other Indigenous People who lived and travelled along the Peace River. Another view holds that while fish populations were found in low to moderate levels in the Peace River system, there were rivers and lakes that did support sizeable fisheries and these were frequented and relied upon by the Beaver and BRFN families. One such fishery was Charlie Lake and Fish Creek which supported sizeable sucker and whitefish populations. The *Klue – La* or "fish people" (one of the identified wadane of the BRFN) was associated with this area and congregated there in summers at a fish camp. An example of one of these fish camps is featured in a picture taken circa 1930, highlighted in the 2011 BRFN TUS. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

While not reported, it suspected that if large populations of suckers were present in Charlie Lake and Fish Creek, there would also likely be a sizeable jack fish (Northern Pike) population in the same system or further downstream. A similar system and relationship existed within "Boucher Lake" or "Sucker Lake" (as the lake was known as by the Beaver and Cree families that fished there) that can be found within the Peace Moberly Tract.

While perhaps not as important as large game, the fish resources of the Peace River Basin clearly did and continues to play an important role in the diet of the ancestors of the BRFN

and the contemporary community. Further, fish played a key a role in the hunting economy by sustaining families and the wadane as they travelled to and from hunting grounds and while on the hunt.

Within BC and across Canada, there is a general view amongst resource managers that only considers commercial or large sized fisheries as having significance to First Nations. The salmon fishery within the Columbia system in the US and in the Fraser system set the bench mark for such fisheries, where smaller scale fisheries and populations of the interior are taken to have less significance. While the fish populations of the northern interior and the Treaty #8 area of north – eastern BC, might be smaller in comparison to coastal rivers with anadramous fish populations, they were still vitally important to the Beaver and other Indigenous People. The fishery of the Peace River and its tributaries still holds considerable cultural and sustenance value to the BRFN.

Within the interviews conducted for the 2011 BRFN TLUS, two community members recount going to Charlie Lake and Fish Creek with their families where they can recall catching fish in large numbers to dry. In one instance, a BRFN family member can recall how her family constructed a basic fish weir out of willows to channel and trap fish. In another case, a BRFN community member could recall using gunny sacks sewn together to make a form a net to catch a larger number of fish. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

As summarized within the BRFN TLUS, in 1978/79, Brody and Weinstein recognized the importance of up to fifteen species of fish to the Beaver and Cree communities of north – eastern BC. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).** Based on information presented by community members, Bouchard and Kennedy maintain that that the Peace River and Peace River fisheries lessened in significance for BRFN families when they were relocated from the Montney reserve to their present reserve location near Buick Creek in the 1950's and 1960's. However, they take the view that this was countered as more and more community members purchased vehicles through the 1970's and 1980's that allowed them to travel to their former hunting and fishing grounds that their families and ancestors frequented. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

In some cases, fish is also sought and obtained from other locations in BC, where some community members report that they barter or trade game for salmon and steelhead with Indigenous People from the BC coast and the interior.

Based on the interviews undertaken as part of the 2011 BRFN Traditional Use Study, it is clear that fishing continues to be important and may be experiencing a resurgence in the community. In general several BRFN community members report fishing in the following locations:

- One community member references a camp 25KM upstream of the Peace in the Farrell Creek watershed that he and other community members use as a base camp when hunting and fishing rainbow trout in Chinaman Lake and at the confluence of the Halfway River and at the Peace River
- One community member spends his weekends fishing along the Peace River and main tributaries in the summer. He launches a boat at Taylor and fishes upstream and fishes the back eddies and back channels and stops with the people he fishes with to fish from the shore. The report a high degree of success at the confluence of the Halfway River and the Peace River catching Grayling, Bull Trout or Dolly Varden, Sucker and Trout
- Another community member notes that he wished he could fish with a net at the mouth of the Halfway River where it meets the Peace River given the large numbers of Jackfish (Northern Pike), Grayling, Walleye and Rainbow Trout
- Numerous community members interviewed note the excellent fishing conditions at the mouth of the Halfway at the Peace River
- Another community member notes the excellent fishing at the confluence of the Peace River and Halfway River, Cust Creek, Gravel Creek and Dunlevy Creek
- One community member reports driving along the Peace River and fishing along the Peace River from Taylor up to Hudson's Hope – where they note that the challenge is not fins a good fishing spot, but an isolated camping spot
- Some community members report fishing for Bull trout and other species in the Blueberry River and the upper reaches of the Halfway River. just south of Pink Mountain
- Fishing is reported at the mouth of the Beatton and Peace River
- Walleye fishing is reported occurring from the Beatton – Peace River confluence and areas down towards the BC – Alberta border
- People have found that fishing has become so poor in the Blueberry River due to river conditions, that they now opt to fish in the Peace River in place
- One or more community member report fishing in the Williston Reservoir in Peace Reach
- Fishing is also reported in Gwilliam Lake and Moberly Lake

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

5.5.1 Excerpts from BRFN TLUS Regarding Key Past and Present Fishing Areas

As was done in the case of hunting, the Kennedy and Bouchard research team reviewed all TLUS interviews with BRFN community members and highlighted specific instances where fishing in the study area was specifically referenced. The references were organized by established geographic areas:

Peace River and Beatton River

- SD gets rainbow, grayling and bull trout. Caught suckers too, but let them go. Fishes where the Halfway hits the Peace. Also fishes at Lynx Creek, near Hudson‘s Hope – gets rainbow, dolly, grayling here. Mostly catches rainbow. Caught some whitefish on the Peace, but too small to keep (SD-10-11).

- Where the Beatton River comes into the Peace, there's a fishing spot that is real good for pickerel, a.k.a walleye; other Native fish you get it in the Peace River are pike, grayling, and trout--they are caught in the same way the Whiteman catches them, with a hook (StA-10-10)

- Farther downstream [on the Peace] from the Beatton there is fairly good fishing, any place on the Peace (StA-11-10)

- I personally fished on the Peace and all over the place--I fished anywhere there is access to the River along the Peace; just about anywhere, there‘s not just one spot (MlA-11-10)

- Wherever there are camping areas along the Peace – they would camp where they would go fishing or hunting from there. They [Blueberry people, including MlA's parents, Edward and Norah Apsassin] would do a combination of things (MlA-11-10) Mouth of Beatton is also a good fishing area—they catch the same kinds of fish here as they do at the mouth of the Halfway (SyA-11-10)

- Other than Charlie Lake, we fish usually on the Beatton (LC-05-11)

Pine River Area

- Pine River fishing hole: Cross the Taylor Bridge and there‘s a road going up the [Pine] river. Go up the road, and you can walk in there and there‘s a good fishing hole where they get all kind of fish in there. Fished there last year [2010] and year before [2009] (PtY-05-11).

Fort St. John and Charlie Lake Area

- Charlie Lake is a well-known place for suckerfish; caught in gunny sacks and willow blockades placed in streams here (PtY-05-11; EA-11-10).

- GrD doesn‘t fish in Charlie Lake. Too polluted (GrD-10-11).

- Somebody put carp in Charlie Lake and they kinda took over (StA-11-10)

Bear Flats and Cache Creek

- Bear Flats fishing area good for rainbow trout (CuA-05-11);

- Yes, camping, most time stay the night or the weekend on the Bear Flat area (GrD-02-11).

- Dolly and rainbow found at the mouth of Cache Creek. Cache Creek is the farthest downriver from the Halfway that GrD fishes (GrD-10-11).

Halfway River and Attachie

- Good fishing for Dolly Varden and rainbow at mouth of Halfway River (LC-05-11) Halfway is a significant fishery for: jackfish, pike, pickerel, Dolly Varden, bull trout, rainbows, all kinds of fish. SyA goes there often to fish (SyA-11-10).

- Any place on the Halfway River is good for Dolly Varden, trout, pike, brown trout , grayling, walleye (StA-10-10; StA-11-10).

- Grandpa [Charlie Yahey] and dad used to go down there [to mouth of Halfway]. Used to take the wagon there. PY fished there with his family when he was about 13 (PY-02-11).

- PtY often fishes where the Halfway hits the Peace River. Lotta people fish in there all the time. Popular spot; PtY was just over there about 2 weeks ago [i.e. mid-May, 2011], but the water was a little too dirty (PtY-05-11).
- Lots of fishing at the mouth of Halfway – Dolly Varden, suckers, trout, Arctic grayling and white fish; a lot of whitefish. It‘s a particularly good place for whitefish. We usually drive up to Halfway and go up the Cameron here, there‘s a few good spots down there—Halfway. That‘s where the fish travel (DA-05-11).

- Down Halfway there‘s a lot of places for fishing, ice fishing. We went ice fishing last week. Four Dollies. No nets used at Halfway; use ice augers. Drop a line. A lot of these areas coming down to Peace have good fishing holes we used. But River changes every year. Getting rainbows and Dolly Vardens. Gets Dollys all year, winter time, last week ice fishing they caught four. But they are going down every year. Last year, one day I caught 13, about this time (GrD-02-11).

- Fished for Dolly Varden at Halfway River. Cameron River, where it hits the Halfway – about ten miles from where the Halfway joins the Peace River. *DK. Fish during other winter months?* Fish for dolly varden during January and February. Uses ice auger. Rivers start freezing in November. *DK. Other species targeted when ice fishing?* Harvests rainbow during October in the Halfway River. (GrD-10-11).

- *Ling cod.* Fish for Ling cod in Halfway River when it‘s dirty during July. "They like the dirty water." *DK. Fish for ling cod in the Peace? “*June-July is the only time we get ling cod – when the river comes up" (GrD-10-11).

- *Sucker*: Found in the Halfway River and Cameron River. Doesn‘t intentionally catch them – "too many bones." *DK. Do you recognize different kinds of sucker fish, or is there just one kind of sucker fish?* "Just one type I know of... It‘s kind of blackish on the top, whitish on the bottom." *DK. How long do they get? “*Get some big ones in Halfway." As long as 18 inches. Use them for wolverine and beaver bait in the wintertime. "We grind them up." Harvested during July-August. (GrD-10-11).

- *Kokanee*: "You do get Kokanee up here...They‘re reddish fish...We get them in Halfway, where peace hits Halfway, or Cameron hits Halfway, in that area." Not harvested directly in the Peace River. *RB. Native word for Kokanee?* "Not that I know of." Get kokanee in July-August. (GrD-10-11).

- *Rainbow:* Harvests during August, September and October before the river freezes. "Get them in Halfway – Chawode and the Peace River." Doesn‘t get them in the spring. "Never caught a rainbow when ice fishing – just dolly varden." (GrD-10-11). *Whitefish*: "Chowade‘s got lots. We don‘t really take whitefish." *DK. take them for bait?* "We don‘t catch them that often." Halfway River has whitefish too. "My auntie, Marianne [Adekat], and her husband, Stratton, go to High Level [Alberta] every year and bring whitefish back." Whitefish caught in June, July and August – further up Chowade (GrD-10-11).

- *Grayling*: Found in the Halfway River and the Cameron River. Use hook and line to catch them in July and August. "They have a high fin in the back." (GrD-10-11). *Pike.* Pike in Halfway a long time ago, but not anymore. (GrD-10-11).

- *Jackfish*: Jackfish found in Halfway. "Lots of bones." Harvests them in July-August. Doesn‘t get them often. "Sometimes, they swim into a back channel, and then we block them off with a log, and just use rocks to hit them...Most people cook them with bacon, like pike." Not a popular fish. (GrD-10-11).

- *Fishing on Peace*: Go fishing up the Halfway and all the way up to Pink Mountain. Fish are disappearing in the Blueberry River—whiteman pollution. Has fished in Peace River – hook and line and in Peace Reach and up to Williston Lake, up the streams. Dolly Varden, Rainbow (JD-11-10).

- *Fishing along the Peace*: Hudson‘s Hope/Taylor; we fish from the Halfway, by Attachie. Usually we go in from this side, there‘s a break there, all in this area we... Then the other.... Mostly we get Dolly Varden, rainbow. Then we get fish from Moberly Lake. Dolly Vardens they got in September (LC-05-11).

- *Fishing and Hunting on Moberly Lake Side/Attachie*: He would hunt more on Moberly Lake side. On this side, Taylor Bridge, up along the river, they

would fish there a little bit. Where the Halfway River comes in to the Peace River, they would fish there. Halfway too. Attachie. They got suckers – Mom used to make sucker soup (MlA-11-10).

Farrell Creek

- General fishing at mouth of Farrell Creek (TP-05-11; CuA-05-11) .

- Used to go fishing at Farrell Creek area. (Marks map). Hook and line fishing. Usually go hunting along the hilltops back here in the fall time (marks map) – hunts for deer; there‘s plenty there. (CuA-05-11).

- Farrell Creek*:* ―Farrell Creek, they‘ve got rainbow and grayling and...squaw fish – in the Halfway too. They‘re like a sucker." Tornado-force wind hit Farrell Creek area last year. A place ―Halfway people use a lot." (GrD-10-11).

Hudson’s Hope

- JA: Fishing along the Peace, yes. Up from Hudson Hope (JA-10-10)

- *Mention Fishing locations?*: Fish from Ft. St. John you can fish all the way up to Hudson Hope. Wherever its good and you want to stop – doesn‘t have to be one spot. Fishing with hook and line, fishing rod. All kinds of fish – whatever‘s there. Rainbow, whitefish, grayling... (GY-05-11).

- *Fish at Dunlevy (*RW-02-11)

- *Fishing along the Peace River:* Wildred Davis—sometimes go from here over there. Fished there after the dam was constructed at Hudson Hope. Camped over night on the River. Caught Dolly Varden and Rainbow. Good spot near the waterfall at the confluence of Dunlevy Creek and Dresser Creeks. ―Fish can’t go up, so it’s good." (PY-02-11).

Moberly River Area and Del Rio Area

- *Fishing at Stuart Lake/Hunting and Berry Picking Between Moberly and Pine*: We go fish over there, Stuart Lake. (DK: here‘s the Moberly). It must be somewhere here. I think it‘s in here somewhere. Goes between Pine and Moberly for deer and elk. Good fish in Stewartt Lake. We still go over there, we look for bear. Bear grease is good for moose hides. It‘s a good thing GP is gone, cause he‘d be sad. Going into Stuart Lake on Rio Grande? Not Kiskatinaw, Braden Road we use. Rainbow, that‘s all they got last time, but they say there‘s all different kind of fish. Stewart Lake for fish and between Moberly and Pine for bear and berries (saksatoons and choke cherries). My husband like choke cherries cause when he was growing up there‘s lots in that area. Goes in that area for elk and deer. Everywhere you go, there‘s farmers‘ fields. That‘s why we have to go far away to go hunt. (LC-05-11).

- Shawn Davis : DK: Do any fishing in the Moberly? ―Just in the lake. Never tried in the river.‖ (SD-10-11).

- South Side of Peace River ? : Sometimes goes for fishing on south side. (GrD-02-11).

- *Moberly*: "My dad used to fish there (Robert Paquette [?])...Used to set out nets with some of the elders from Halfway." Used nets in Moberly Lake to get lake trout. "They told me there‘s another lake below Moberly. They‘d catch pike up there. Used to be a lot of pike up there." Rainbow in the Moberly. Cousins fish there often.(GrD-10-11).

Peace Reach and Above

- All these inlets [Williston lake reservoir] can be used for ice fishing (Gravel Hill Cr./ Cust Cr.); caught a huge ling cod, 1.5 ft round, lake trout that are 3 feet long (GrD-02-11).

- Fish Dolly Varden in spring as well (RW-05-11)

- Some people say they got a lot of mercury in them [Peace Reach]. So we usually let them go, take the smaller ones, like the dollies. The bigger ones, we let them go, they got too much mercury in them. (GrD-02-11).

Fishing in Dinosaur Lake (LC-05-11).

- *Williston Lake:* Fishes at Williston Lake where Dunlevy Creek runs in. —Ice fishing in fall time." Sets out lines at night and takes them out in the early morning. —Too much mercury right now they‘re saying...They look like catfish...3-4 feet long...We let them go." (GrD-10-11).

- *RB: High levels of mercury because of the dam:* —Because of the dam flooding out the spruce, made the mercury high." Takes lake trout here in January-February. —Big dollies here too." Catfish only fish affected by the mercury from the flooding caused by the dam. —Pat Yahey might know...Outfitter from Hudson hope...When they let the dam go – like they stopped the water flow – the go in there, and they pick fish from below the dam there. The live one‘s they pick up." (GrD-10-11).

- *Dunlevy Creek*: Ice fishing for Dolly Varden. (GrD-10-11; RW-02-11).

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

5.5.2 Key Past and Present Fish Harvesting Areas Mapped by Respondents

As was done with hunted game, the Kennedy and Bouchard research team developed mapped biographies - individual map sheets where the researchers and interview participants identified key resource use and utilization areas on maps. Resource use areas were demarcated with large polygons. These maps were then collated onto different thematic maps for specific themes such as “Fish Harvesting”. Unlike harvesting for mammals, specific fish species were not broken out into, or subdivided into species specific categories in the 2011 BRFN TLUS. This creates some challenges for the BRFN and resource managers, thus only a generalized approach can be taken to determining what species are being mapped. However this issue can be potentially be bridged by matching the maps with the specific fish species reporting set out in section 5.5.1.

Peace River and Beatton River

- Along the Peace River from the BC / Alberta border to the WAC Bennett Dam
- At the confluence of the Peace River and Beatton Rivers

Pine River Area

- At the confluence of the Peace and the Pine Rivers

Fort St. John and Charlie Lake Area

- Along the Beatton River from its confluence with the Peace River north to the confluence of the Doig and Beatton Rivers and north to the headwaters of the Beatton River
- Along St. John Creek from the confluence of the St. John Creek and Beatton River to the headwaters of St; John Creek
- Along Stoddart Creek from the confluence with St. John Creek and through Charlie Lake

Bear Flats and Cache Creek

- At the confluence of Cache Creek and the Peace River

Halfway River and Attachie

- At the confluence of Halfway River and the Peace River and northwards on Halfway River to the upper portion of the Halfway River Reserve

Farrell Creek

- At the confluence of Farrell Creek and the Peace River

Peace Reach and Above

- In the Williston Reservoir / Peace Reach from the WAC Bennett Dam westwards on Peace Reach
- Up Dunlevy Creek
- Up the Nabesche River

The above locations correspond the consolidated map that appears in the 2011 BRFN TLUS.

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011, 2011).

5.6 Trapping and Traplines

Prior to contact and the establishment of the fur trade with Peace Region, the hunting and trapping of small mammals and fur bearers played a critical role in the maintenance of the Beaver society. Small mammals and fur bearers were important sources of protein while the Beaver wadane hunted for large mammals, played a key role in the diet in the winter and spring and provided a range of goods and highly valued commodities such as furs for clothing and medicine. Following the establishment and growth of the fur trade, an additional socio – economic aspect was added to the pre-existing cultural attachment to small mammals and fur bearers. As has been noted, the Beaver, the ancestors of the BRFN and other Indigenous People along the Peace River were instrumental in allowing the industry to grow and expand given their considerable skill in procuring furs and in supplying the forts and maintaining supply lines with fish and game through the year. BRFN family groups did not trap the same area or the lines that were established as they practiced a form of conservation and resource management that allowed areas to recover and replenish. Trapping shelters and cabins supported the wadane when they broke up into smaller sub family groups to hunt and trap through the winter and spring.

Journals of the forts and trading posts stationed along the Peace River provide considerable and detailed insight into the trapping activities and locations of the Beaver, ancestors of the BRFN and BRFN families. For example, fort journals document Joe Apsassin (grandfather to the current Chief) as supplying the Ft. St John post from furs and game that he procured south of the Peace River and up into the northern Beatton watershed. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

Through the 1920's and 1930's, the trade of trapping was seen as lucrative and it attracted many new settlers and individuals to the region. Soon the Beaver and BRFN families were besieged with competing trappers along the Peace River and areas adjacent. Pressure for allocating trapping areas to newcomers and settlers grew. In addition, the clearing of lands

south and adjacent to the Peace River forced the BRFN families to pull back from the Peace River and shift their hunting and trapping activities to more isolated areas to the north and in the headwaters of the Beatton watershed. Prior to the 1940's the areas along the Peace River and around Fort Saint John formed part of the core trapping and hunting area for BRFN families, prior to their removal to their current reserve location at Buick Creek. Once the Montney reserve (Fort St. John I.R. 172) had been sold off by the federal government, this (along with land clearing and increased trapping competition) also served to weaken BRFN's connections to the historic and accustomed trapping and hunting areas along the Peace River.

In 1925, the BC Government developed the trapline registration system under the provincial *Game Act.* Considerable debate arose amongst public officials as to whether the system of trapline registration should apply to the Indigenous People of the north – east BC and elsewhere. It quickly became apparent that the system would not work and did not produce the desired results for various reasons. In some cases, the Beaver and Cree of the north – east did not avail themselves of the registration system as they simply did not see it as applying to them or understand the rationale of it applying to an area that they already hunted and trapped in. Further, the system was inconsistent with the Beaver's natural systems and approach to trapping and conservation, where it made no sense to trap one area out repeatedly. Further where some Beaver and Cree families did apply for and take up registered lines, it was reported that the headmen found it hard to control younger hunters and trappers who did not wish to confine their activities to a given area. **(Source: BRFN Traditional Territory Report, 2011)**

Many trapline areas along the Peace were signed away to non-Beaver and BRFN trappers notwithstanding the fact that the Peace and adjacent areas had been a core part of their traditional hunting and trapping areas. A list of trappers granted licenses between July 1927 and October 1927 included residents of Taylor and Bear Flats, areas traditionally associated with the *Dane-zaa* but alienated early in the history of Peace River settlement, *circa* 1912 and 1917, respectively.

In the 1930's the Department of Indian Affairs (DIA) implemented a policy to buy back or purchase lines from non–native trappers, when they became available. "Dr. Brown", a name familiar to all elders in Treaty 8 First Nations of north east BC, was assigned by DIA to attempt to reconcile the various pressures and conflicts that arose as a result of BC's imposition of registered traplines. Notwithstanding the many challenges and conflict, several

BRFN families did apply and obtain registered traplines in areas north of the Peace River, Fort St. John and the Montney Reserve. In 1930 and through the ensuing decade, the Yahey, Wolf and Apsassin families applied for lines in the upper Beatton Watershed and areas to the west and east of the Beatton watershed. **(Source: BRFN Traditional Territory Report, 2011).**

The new core trapping and hunting areas were documented by Brody and Weinstein with the assistance of BRFN researchers in preparation for the Alaska Highway Pipeline hearings. For a time, these areas were somewhat immune from the various waves of resource development that swept through the region, however, oil and gas and forestry development did begin to occur within the newly formed core lands of the BRFN. Through the 1940's – 1960's, BRFN families accessed this new core area and their trapline areas with dog teams, wagon teams, horses and ski – doo. As more BRFN families began to acquire vehicles, there range of harvesting activities began to expand again. BRFN members involved in Brody and Weinstein's research caution that areas identified in Brody's latter "Maps and Dreams" book reflect the trapline areas registered to BRFN members at the time and hunting areas that did not overlap with those of neighboring First Nations. **(Source: BRFN Traditional Territory Report, 2011)**

Given the history of traplines and the historical and policy context that BC's trapline policy was instituted in, it is easy to see why there are varied and at times contradictory views on what these lines meant to First Nations in an historical and present day context. In some quarters, some view the imposition of the trapline system as an illegal instrument that was designed to cut off the Beaver and Treaty 8 communities from their historic and ancient lands. Those that take this view, also have the view that traplines are redundant and do not take precedence over the trapping rights guaranteed under Treaty#8. In other quarters, some have very strongly held feelings, views and attachments to their "lines" and see the trapline system as a bulwark that maintained Beaver and Cree culture and connection to the land through very challenging times and circumstances. At times there is perceived conflicting views of both parties vis a vis the rights granted to the individual holder of a trapline and those that see Aboriginal and Treaty rights being vested in the collective of the First Nation and collectively held by that First Nation. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

In many ways the traplines held by the Beaver and Cree communities of north east BC have come to be seen as "community held" or "family" hunting territories that are of great significance. In the Alaska Highway Pipelines hearings, Hugh Brody attempted to summarize the contemporary importance of traplines and the how the Beaver communities

of the north – east have worked to reconcile views in respect family and band held traplines:

> “They [Peace River First Nations] feel very strongly about the traplines] but they don't represent the idea of an area which is exclusively for one person, nor do they represent the idea that this is a trapping area. They feel, partly because I think they were encouraged so to feel during the registration process, that the trapline is their land, for their exclusive use for hunting and trapping. So in a way, the Indians often understand a trapline as something like a family hunting territory and the combination of traplines is something like a Band hunting territory. This means that when people challenge the Indians for not having trapped for two years, say on a trapline and therefore clearly not using it and not needing it, they are misunderstanding what traplines are about. Similarly, when people seek to compensate people for loss of traplines because they are losing the furs from the trapline, they are failing to understand what the trapline is all about. You can't compensate a trapper who thinks that his trapping area is a hunting area by giving him the price of the furs that he would have been harvesting, were he to continue to do so. There is therefore, a tremendous confusion over the whole trapline business that exists in the region. When Indians at the hearings got up and said, "Don't spoil our traplines", or "The pipeline is going to wreck our traplines", they weren't thinking simply of marten or squirrel. They were thinking of the assault upon the one area that they feel is still theirs as an exclusive hunting region.”

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project 2011).

The traplines registered to the BRFN and BRFN families continue to be highly valued and cared for. The more recent resource development waves that have swept through north – east BC have also swept through and impacted the trapline areas and BRFN families ability to depend on these areas. As noted, the impacts within many lines from forestry and oil and gas have been so significant that it has prompted special studies and at times and conflict on the ground and in the courts.

At this time, the BRFN and BRFN families holds a block of traplines in an area north of the Peace River in an area as far:

- south as Rose Prairie
- east as the Beatton River
- west as Pink Mountain along the Alaska Highway
- north as the confluence of the Sikanni Chief and Gutah Rivers

Based on available information, it is understood that the registered traplines held by the BRFN / BRFN members include:

- TR0747T005
- TR0747T001
- TR0746T003
- TR0745T004
- TR0745T002
- TR0745T007

The distance from the BRFN community's southern most boundary of its southern most trapline (TR0745T007) is approximately 34KM away.

5.6.1 Excerpts from BRFN TLUS Regarding Key Past and Present Trapping Areas

The 2011 BRFN Traditional Land Use specifically sought to document spatial data demonstrating where respondents trap within the study area. The following summaries are taken from the 2011 BRFN TLUS, where Bouchard and Kennedy listed information for trapping hunting and large game resource gathering related to specific areas referenced within community interviews. These are as follows:

Taylor and Old Fort

- GrD doesn‘t go much farther downriver past Bear Flats--hunted from Taylor down; mostly private property, so got permission to hunt there a couple of times (GrD-02-11). Grandfather [Edward Apsassin] said when they used to

stay at Taylor Flats, they would have to trap for beaver. In those days, beaver was worth more than anything else (SyA-11-10)

- First time I moved to Taylor, I used to go to snare rabbits. That‘s on the Peace River. Used to snare rabbits there – get up before the White Man get up (RA-10-10)

Pine River Area

- In early 1900s, old Joe Apsassin trapped on Taylor Flats and up the Pine and Kiskatinaw rivers (CA-11-10; RA-10-10)

- Grandfather [Joe Apsassin] trapped up the highway and up and down the Peace River. They used to also trap along the Kiskatinaw River, up towards Moberly (RA-10-10). Beaver Trapping on South Side of Peace River: Monias or Kiskatinaw River. RA says Kiskatinaw (MaM-10-10)

Moberly River Area and Del Rio Area

- *Beaver?* Lot of it in Long Lake and Moberly River – Grand Father cabin in on Long Lake. Used to trap Beaver there and up the Moberly. They‘d canoe it. Grand Father showed him where he used to snare a lot of beaver, because they have beaver dams all up and down the Moberly (WiA-11-10)

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

5.6.2 Present BRFN Held Trapline Areas

Bouchard and Kennedy opted to not map historic or present trapping areas or create thematic maps for trapping in the 2011 BRFN TLUS. In its place, the present day registered traplines are indicated on the Map on Appendix 8. **(Appendix 8: Current BRFN Traplines)**

5.7 Plant and Earth Material Gathering Sites

The Beaver and ancestors of the BRFN have always looked to the land to meet many of their socio – economic and socio – cultural needs. Everything that was needed by families could be obtained from the land including food plants, medicines plants, sacred plants,

drinking water, rock, construction logs, wood for basic wares and tools, transportation and firewood.

There appears to be some limited documentation about the historical gathering activities of the Beaver and the ancestors of the BRFN. During the 1930 survey of the Peace Block, surveyors recorded the wide variety and amount of berries found along the region's rivers and creeks: *"Strawberries, blueberries, raspberries and Saskatoons are a few of the varieties of wild fruit found growing in the Block. Strawberries attain a fair size and raspberries of a flavour generally excelling that of the cultivated variety grow luxuriantly in all burns along the river and creek bottoms and on the bare slopes. Saskatoons are found on the river slopes and are of good size and flavour. Blueberries of the low bush type seem to favour the sandy soils but size and flavour that they do in some other parts of the province. Cranberries and soapberries also occur throughout the area."*

The Fort St. John HBC journals recorded amount of berries present at Montney Prairie which was frequented by many people of the area. There is also a journal entry of the same for noting that Indigenous women were seen picking raspberries on both side of either the Peace or Beatton River. Berries were dried for winter use, utilized in the making of pemmican. Berries harvested included Saskatoon, huckleberries, blueberries, raspberries, gooseberries, crowberries and cranberries, generally from mid-July to September. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

During Bouchard and Kennedy's interviews of BRFN community members, all community members reported consumption of food plants, the use of medicine plants. The 2011 BRFN TLUS documented and mapped some examples of sites where BRFN community members have procured which included:

- Berries
- Food Plants
- Medicine Plants
- Sacred Plants
- Construction Logs

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).

BRFN community members generally gather berries in August and September when the fruit is ripe. Many families will consume berries when they are fresh, freeze them or can them. Numerous community members noted how favourite berry picking areas have been lost through forestry, road building, farming and oil and gas development. There is particular concern about the how spraying of herbicides in logging blocks, on transmission and pipeline rights-of-way. **(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).**

5.7.1 Excerpts from BRFN TLUS Regarding Key Past and Present Gathering Areas

The 2011 BRFN Traditional Land Use specifically sought to document spatial data demonstrating where respondents gather within the study area. The following summaries are taken from the 2011 BRFN TLUS, where Bouchard and Kennedy listed information for gathering related to specific areas referenced within community interviews. These are as follows:

Peace River and Beatton River

- L.C. also mentioned the area north of Montney and Charlie Lake as being particularly good for Saskatoon berries, as well as low bush blueberries but she and others pointed out that berries are plentiful in the whole Peace River Valley.

- S.A. opined that the chokecherries are bigger around the Peace River than around Blueberry River. His grandmother, mother and his wife all preserve chokecherries, often putting away ten gallon of this fruit for winter use (SyA-11-10).

- M.A. eported that berry picking was generally combined with other activities. With reference to the Peace, he stated: "Wherever there are camping areas along the Peace – they would camp where they would go fishing or hunting from there, [but] they would do a combination of things, including berry picking" (MlA-11-10).

- Other plant foods mentioned during the TLUS interviews included: "wild rhubarb" (TP-05-11) or cow parsnip and water parsnip or "wild carrot," a plant common around the Peace region‘s creeks (MaM-10-10; VA-10-10; RA-10-10).

- R.A. mentioned that earlier generations dug "wild potatoes" along the Peace River, but her elders never said precisely where (RA-10-10).

Taylor and Old Fort

- T.P. recalled picking with her mother in the area south of Taylor Park. Moberly Lake and the area to the north were the areas where she picked berries with her grandmother (TP-05-11).

Pine River Area

- On the south bank of the Peace, Saskatoon and chokecherries are said to be abundant in the Monias area (LC-05-11).

- S.A. stated that raspberries, Saskatoons, blueberries and high bush cranberries are all plentiful along the Pine River. In quick time he could harvest a dozen quarts of Saskatoons, but would need a longer time for strawberries, and raspberries would require being there just when the berries were ripe, and no later, for they would simply fall apart (StA-11-10).

Fort St. John and Charlie Lake Area

- L.C also mentioned the area north of Montney and Charlie Lake as being particularly good for Saskatoon berries, as well as low bush blueberries, but she and others pointed out that berries are plentiful in the whole Peace River Valley.

- L. W. spoke about the large quantities of cloud berries that would be picked in the Charlie Lake area, particularly along Fish Creek, a place no longer available or productive. "They used to eat lots of cloud berries, the white berries, a cluster of white berries," she stated. "My grandmother said they used to make baskets for those from birch trees. Then they would pick the cloudberries and then used horses to pack them out" (LW-11-10).

Bear Flats and Cache Creek

- Some BRFN members reported picking berries along the Peace River. L.C. said that she picks chokecherries and Saskatoons around Bear Flats every year. They grow abundantly close to the road. She puts away sufficient quantities that "About this time [May], I have to get rid of them, so I give them away to my family cause there‘s new ones coming" (LC-05-11).

- Blackberries are picked along the hillsides on the north side of Bear Flats (GrD-02-11). The berries once grew so abundantly here, said P. Y. who picked berries here with his family when he was a boy, that the ground looked burnt, for it was so black with berries (PtY-02-11).

Halfway River and Attachie

- The banks of the Halfway River are mentioned for the availability of mint and Labrador tea, both used for brewing beverages (GrD-02-11) .

Butler Ridge

- Farther to the west, around Butler Ridge, can be found huckleberries and high bush blueberries…..(GrD-10-11).

Hudson's Hope

- Farther upstream, low bush cranberries can be found in the Hudson's Hope area (LC-0511).

Moberly River Area and Del Rio Area

- NA

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).

5.7.2 Key Past and Present Gathering Areas Mapped by Respondents

As was done with hunted game, the Kennedy and Bouchard research team developed mapped biographies - individual map sheets where the researchers and interview participants identified key resource use and utilization areas on maps. Resource use areas were demarcated with large polygons and in the case of gathering - lines. These maps were then collated onto different thematic maps for specific themes such as "Gathering". Unlike harvesting for mammals, a specific break down was not made for different plant species or categories such as medicine plants or food plants. This creates some challenges for the BRFN and resource managers, thus only a generalized approach can be taken to determining what species are being mapped.

Peace River and Beatton River

- At confluence of the Peace River and Cache Creek

Pine River Area

- Along the Pine River , starting approximately 10KM upstream from the confluence of the Peace and Pine Rivers, southwards to an area near Jackfish Lake

Fort St. John and Charlie Lake Area

- Through the St. John Creek watershed
- Through the Stoddard Creek watershed north of Charlie Lake
- An area north of Fort St. John taking in the old Montney Reserve and extending northwards west of the Beatton River

Bear Flats and Cache Creek

- A stretch of land between at the top of the bench lands above the Peace River Valley and south of Highway 29
- From the confluence of the Peace River and Cache Creek in into the lower portion of the Cache Creek watershed

Halfway River and Attachie

- Mid way on east side of the Halfway River and at the confluence of the Halfway and Cameron River

Farrell Creek

- At the confluence of Farrell Creek and the Peace River

Moberly Lake

- Within the Peace Moberly Tract within the headwaters of Maurice Creek

Butler Ridge / Dunlevy

- A large area running north – south covering Butler Ridge

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011).

6.8 Overnight and Cultural Sites

Overnight Sites / Camps

In the 2011 BRFN TLUS, Bouchard and Kennedy opted to not create a discreet mapping category for historic and current sites or for burial, cultural and sites of special cultural significance. With the said, some overnight sites (camps, cabins, lean-tos', other) were marked on these maps and identified in interviews undertaken with community members.

It is important to note and appreciate the differences between Indigenous cultures and how those cultures were created in response to their hosting environments and ecological conditions. The Beaver 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 BRFN, like other Beaver and Cree cultures of the north did not leave an abundance of fixed sites on the land such as permanent settlements as some other Indigenous cultures did.

Special Cultural Sites

It should be noted that if one where to ask most people, if they know about the location and importance of any "special cultural places or sacred places", they would respond and be correct in responding – "it's all special and sacred". The discipline of ethnography and traditional use research often strives to pin point specific areas that are of special historical

and cultural significance to an Indigenous community. Sites, places and larger areas can all of significance to the community, a family and an individual and they are often difficult to break out and map given everyone's differing definition of what is significant.

With that said, Bouchard and Kennedy did attempt to identify areas of significance, sites of cultural significance, burial sites, sites remembered with Beaver place names and places where families lived. Such areas were not mapped in the BRFN 2011 TLUS, but they were highlighted where references occurred in the interviews. The following section sets out special places, sites and places and sites of cultural significance to the Blueberry People.

6.8.1 Excerpts from BRFN TLUS Regarding Key Past and Present Camping Sites and Sites of Cultural Significance

Peace River and Beatton River

- E.A [CA's grandfather] used to talk about his father, Joe Apsassin, camping around mouth of the Beatton where it empties into the Peace; E.A also camped all over this area here. Can't pinpoint just one area (CA-11-10).

Taylor and Old Fort

- Grandfather [Edward Apsassin] said when they used to stay at Taylor Flats, they would have to trap for beaver. In those days, beaver was worth more than anything else (SyA-11-10)
- Taylor Hills known by the place name 'Saskatoon-On-the-Side-of-the-Hill' due to the abundance of these berries (CA-11-10);

- Name of 40-50 acre upper bench above Taylor called a term in Dane-zaa language meaning 'Butt-Sticking-Out'(CA-11-10);

- Fording site at Taylor called Long-Distance-River' (RA-10-10; MaM-10-10).

- Old Joe Apsassin‘s camping and trapping on the Peace River near Taylor, and up the Kiskatinaw and Pine rivers is an important aspect of the Apsassin family history (RA-10-10; CA-08-11).

- Old Joe Apsassin Camping Areas: Camped at the mouth of the Beatton, at Taylor Flats, at Baldonnel and in Ft. St. John. The people camped both on the Old Fort [north] side of the Peace, and on the south side of the Peace. The people were camping here before the Fort was built, that‘s why they made the fort there, so they could trade back and forth with the people (SyA-11-10).

- Across from the Old Fort, Old Joe Apsassin [RA's grandfather] had a cabin (RA in MaM-10-10).

- CA's other grandfather told him they used to live around Taylor Flats, trap around the Peace River and up in Kiskatinaw to look for beaver and stuff like that (CA-11-10).

- My mom [Virginia Apsassin] used to camp all over the place with her parents, Nora and Edward [Apsassin]. They used to camp around in that area, at Taylor, a long time ago--my grandmother [Norah] old me they always used to be camping there (TP-05-10)

- Site of Taylor Rodeo grounds: in at least the 1940s-1960s, BRFN families included camping here as part of their annual round and attended the Taylor rodeo--Tommy Wells came along – he had a rodeo down in Taylor Flat, Lawless Rodeo, they call it. Our people used to travel from all the communities to Taylor (CA 11-10)

- Camped here on way to Dawson Creek rodeo in the 1940s-1950s (SyA-11-10);

- Old Fortll is said to be where the Dane-zaa people stopped the White gold miners [Klondikers] from ascending the river (MaM-10-10).

Fort St. John and Charlie Lake Area

- Indigenous name for IR 172 [at Montney, about 10 miles north from Fort St. John] means, in Beaver language, 'Where-Happiness-Dwells' (LW-10-10; EA-11-10; SyA-11-10)

- The people got together [at Montney] for powwows, celebrations, marriages, back then. At these gatherings, elders selected who you were going to marry (CA-11-10).

- Charlie Yahey‘s family graveyard is somewhere on the North side of Charlie Lake. It was never pointed out exactly; GY thinks the people buried here died around the time of the flu [1918] (GY-05-11).

- Camping was North of Charlie Lake. Every spring, for fish here, people camp from all over, like Doig, at the North End of Charlie Lake, fishing, before her time. In her time, already they became little Bands(LC-05-11)

Bear Flats and Cache Creek

- SD has camped at Bear Flats, 2-3 days at a time (SD-10-11).

- My father [Pete Davis] used to camp where Cache Creek comes into the Peace on the east side (MaA)

- Bear Flats used for Elders/ Youth Summer Camp: ―That‘s when we go to that park – Bear Flats. We cook over there, there‘s about 4 of us, 5 of us. All these people are gathered there. Kids and elders. And they have drumming, signing and activities they do there...They used to do that all the time and so they opened it up again. They get that tradition happening again. It‘s so nice, tents all over‖ (VA-10-10).

- Most of the time the kids are in school and it‘s hard for them to get traditional teachings except in summertime, so they have a camp, elders gather, load up everybody and they all go. That‘s one of the purposes of the Bear Flats elder‘s camp (WA-1110).

Halfway River and Attachie

- *Graveyards on Attachie Reserve*: …..Attachie. This what they call Attachie Reserve. Lots of old -timer die in there….Nobody know where the graveyard is. But now, it's right there, right by the river. They used to be had a school in there…. They make a big airstrip in there too…..Maybe that Hudson Hope road—maybe it`s top of that graveyard. It's by the road, maybe the highway go through top of graveyard. Nobody knows (AD-10-10).
- Chief Attachie is buried near the confluence. Imagines there‘s a lot more burials. Back in the old day, they weren‘t buried, they were up in the air (JoD-11-10);

- My grandfather told me that there was a dreamer, Attachie, that was why they call that place Attachie. He was buried somewhere in the hills, don‘t know if on the east or west side of river (DA-05-11).

- *Attachie Graveyard*: …Jerry Attachie, his dad, his great grand pa is buried in there somewhere…..they call Attachie on the map. That‘s why Jerry Attachie go see us when we camp in there, he say his grandpa was buried in there (MyA-05-11)

- *…that Old Attachie, long time he buried over there. ….* That Attachie school, gotta be a lot of guys buried around there too. Used to be sign, Attachie School. Highway sign right there. (JA-08-11).

- *Graves where Halfway runs into the Peace*: We went down there, quite a ways up, with a boat, rubber boat. Halfway River down there, Holy Shit, that rocky mountains --any kind of other boat don‘t make it, but we got a little boat, little boat can make it (JA-08-11)..
- *Attachie*: Attachie was named after his Grandma Nora‘s relatives; Nora‘s cousin, Alice Attachie, married Murray Attachie. (SyA-11-10).

- *Camping at Halfway River*: We used to go camping up the Halfway River with the Halfway people. They‘d tell us to ...we‘re going to go this day, go set up camp. We‘ll be there a week later – they used to pack horses. (TP-05-11)

- *Hunting and Camping up Halfway*: This is Halfway right? This is Attachie, Bear Flats... Halfway River. We used to go way up this way, here somewhere. We‘d have to cross… `cause the Reserve Was on this side. I think we went way over here somewhere, about here, camping for

the summer. She would camp for the whole summer, until the end of August, until school would start again. That‘s where I learned how to do moose hides, make dry meat, and scrape flesh, berries. We used to camp with the Ackla, Hunters (Annie Hunter and her husband Bob from Halfway), Louise Jackson, Lois Wokeley (TP-05-11).

Farrell Creek

- *Camping in Farrell Creek Area*: Camped out there two times, me and the boys camp hunting sheep…. (WD-02-11).

- *GRD’s Hunting Areas/Camping and Hunting at Farrell Creek*: Halfway‘s right here - all this area going doing towards Peace, where Cameron runs into Halfway, along the river all the way down.... There‘s another road comes into Hudson‘s Hope, Farrell Creek. (GrD-02-11).

- *Farrell Creek Camp/Moose and Deer*: Camp down at Farrell Creek, there‘s a road in there somewhere. All this area we hunt it, from Halfway along the West side of the river, on horses. Camp sometimes at these little lakes. On top there, there‘s a road turn-off. I hunt that area. Hunts moose and deer. Camping in the fall for game, late July – August, sometimes right through September. Last year, they were three weeks in there. (GrD-02-11).

- *Three Week Hunting Trips/Elders Participate*: *DK. Day trips for hunting around Farrell Creek?* GRD: No, hunting trips last pretty much two-three weeks, camping and hunting. A lot of the elders come from Halfway to camp with them (GrD-02-11). (GrD-10-11).

- *DK. Camp members?* GRD: Clifford Akla [?], his uncle Jerry Davis, Richard Okie, Freddy Akla [?]. Mom and them camp with us too, and Lorena Okie. We do the hunting and they do the drying. *DK. Staying in tents or cabins?* GRD: We just bring tents – no cabins there. Sets up drying rack. Got pictures of it – what we do (GrD-02-11).

Butler Ridge

- *Butler Ridge:* He and his uncle Jimmy…. camped there…Went back and told his grandmother. Recalled people living there a long time ago. A lot of people got sick and died there years ago. —Lots of trapping here." Recalls CMTs in the area – —people marked trees". Doesn’t know the Beaver name

for Butler Ridge. Pat used to camp here. Moose also calved near Butler Ridge. (PY-02-11).

Hudson's Hope

- *Graveyard:* Lower section of Hudson‘s Hope where old Hudson‘s Hope is. There is a Wagon trail on the opposite side of the river. Theresa‘s grandfather told her the story when she was a teenager. Chief wasn‘t alive then. He was already buried somewhere. Probably 100 years ago.(CA-08-11).

Moberly River Area and Del Rio Area

- *Graveyard: DK…* She used to tell me the Moberly River come this way, Peace River hit right on the hill somewhere, that‘s where there‘s burial grounds. And nobody‘s supposed to touch that….here‘s Peace River, here‘s Moberly. Moberly hits that River here (points to map)….*On the South….*Right here on the hill somewhere. It‘s not on top of the hill, its right here somewhere…I‘ve never seen it. But I know the story, that‘s where he‘s buried. The Great Leader, that‘s what they used to call him. Yeah, he‘s a Dreamer. He‘s like Charlie "Yahee". (CA-08-11).

- And they buried this…man. He‘s a Dreamer….was buried …cross the…the Peace River. They used to call it, not (Cree word) "saskatoons"..”on the side of the hill"….And from there, that‘s how I know where the old fort is. The old fort down below, over there. They used to cross just above there, and then they‘d hit the Moberly River that comes down like this, and it was shallow there, and that‘s how they used to cross. And they used to have to build rafts to put the wagons on and pull them across, and that‘s how they did it. So anyways, he‘s buried there somewhere, this great leader. He wasn‘t the Chief really. He was just a leader of the People, because he was a Dreamer and he knew that, and that‘s how he knew those guys were coming back.

- And they used to live in Taylor Flat all over there, and there‘s Buffalo jump, just -- they call it buffalo jump, just down Taylor somewhere, I don‘t know where exactly. Jerry —Attachie will know that better than me. And that‘s another place they used to call the Buffalo jump, they chased the buffalo over the hill. And that was a long time ago when they didn‘t have any guns. This Dreamer was from over here. He was one

of the leaders that stopped the gold rush days. He was a Dunne-za. I wouldn‘t know if he was Sekani, my mom didn‘t tell me that. He was just our people. That‘s how you would describe him (CA-08-11);

- JA: ….Charlie Lake, anyway, somewhere in that area. A lot of [people] buried old days. ….(JA-08-11).

(Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

6.8.2 Mapped Overnight Site Locations

As noted, the 2011 BRFN 2011 did not contain a discreet category or mapped layer for camps. Rather the camps appear on every thematic map that Bouchard and Kennedy assembled. The camps are marked with an camp type icon and can viewed on the attached map at the mapped overnight sites are located and indicated on the attached map at **Appendix 9 (Appendix 9: Some of the Identified BRFN Overnight Site Locations).** The locations for these camps can also be described in the following way:

Peace River and Beatton River

- On the south side of the Peace River, approximately .5KM downstream from the Peace / Moberly River confluence

Fort St. John / Charlie Lake

- Far to the north of Fort St. John at top of of St. John Creek, just south of the Blueberry community

Bear Flats and Cache Creek

- On the north side of the Peace River, to the west of Bear Flats at the Peace River / Red Creek confluence (east side of Red Creek)

Halfway River and Attachie

- Approximately 2 – 2.5 KM north of the Peace River / Halfway River confluence on the east side of the Halfway River

- At the confluence of the Halfway River and the Cameron River to the north of the where the rivers meet

- Two camps between upstream of the Halfway River confluence on the north side of the Peace River

Farrell Creek

- Two camps in the Farrell Creek watershed – one being just upstream of the Farrell Creek / Peace River confluence on the east side and one being in the upper part of the watershed off the Farrell Creek Rd

Moberly Lake

- One camp in the upper Moberly River watershed on the south side of Big Lake

Butler Ridge / Dunlevy

- One camp on the east side of where Dunlevy Creek empties into Williston Reservoir / Peace Reach

- One camp in the Dunlevy watershed on the western side of Butler's Ridge

(Source: BRFN Traditional Land Use Study – Site Clean Energy Project, 2011)

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

There is an important distinction between the impacts that arise 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 government agencies, First Nations and the public to identify the range of operational effects that arise from the operation of its integrated electric system / hydro-electric facilities. Both the BC Government and BC Hydro were able to delineate, very carefully, those more immediate 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 are operated. The decisions that BC Hydro makes results in a given operating regime a given system / basin (e.g. the Columbia River Basin, the Peace River Basin) and facility within that basin. Each operating regime carries or results in range of ongoing effects. 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 BRFN 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 measured and assessed. Given that the majority of historical and current BRFN use occurs downstream of the Peace Canyon dam (and the Site C dam if approved and built), focus in this report is focused on operational downstream impacts.

In addition, the EA process and the EIS Guidelines issued for the Project require consideration of effects arising from the “construction” and “operation” of the Project. Further, the effects of the Peace River facilities have an important bearing on aquatic eco-system health in the Peace River. Overall aquatic health in turn plays a significant role in dictating how, where and when the BRFN are able to exercise their rights in and along the Peace River and its key tributaries.

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 hold back water to refill the reservoir summer months**. (Source: Northern River Basins Study - Final Report, 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 experiences a 500% increase in flows in winter months. These effects diminish further downstream given the flows contributed by tributaries such as the Pine, Beatton and Wapiti / Smoky Rivers. Notwithstanding the contribution of downstream tributaries, peak flows are lower than they once were. For example, where the Peace River flows by the Town of Peace River, peak flows are on average 71% per cent of historical levels. **(Source: Northern River Basins Study - Final Report, 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 approximately 66 % of historic levels, while winter flows have approximately increased by 250%. **(Source: Northern River Basins Study – Final Report, 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 winter flows 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. **(Source: Northern River Basins Study – Final Report, 1996)**

Temperatures are also changed with cooler waters being released from the facilities in the summer with warmer water being passed down river in winter months. 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 as it can create additional winter habitat for fish and wildlife that require open water**. (Source: Northern River Basins Study – Final Report, 1996)**

Most sediments are added to the Peace River from downstream tributaries. However, the way in which BC Hydro opts to operate 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. **(Source: Northern River Basins Study – Final Report, 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 moose, 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. **(Source: Northern River Basins Study – Final Report, 1996)**

In 1993, BC Hydro was directed by the BC Government to conduct the Electric Systems Operation Review (ESOR). In summary, the ESOR involved a comprehensive review of BC Hydro's integrated operations, the operating regimes of all of BC Hydro's facilities, identification of 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 downstream impacts and issues that arise as a result of Peace River system operations. Consultation with First Nations was also mandated. Some of the downstream operational effects identified along the main stem of the Peace River included:

<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

(Source: BC Hydro Electric Systems Operation Review, 1995)

In the latter part of the 1990's, BC Hydro received direction from the BC Government to develop water use plans for all of its facilities, including those on the Peace River. 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 Peace Water Use Plan through a consultative committee that involved key government agencies. Consultation with First Nations was mandated. The draft Peace Water Use Plan was tabled with the BC Comptroller of Water Rights in 2003 and was finalized and formally approved in 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.

(Source: BC Hydro Peace Water Use Plan, 2007)

The above noted mitigation measures were recommended in the Peace Water Use Plan based on the range of identified downstream impacts resulting from BC Hydro's ongoing operations on the Peace River. The Peace WUP is to be subject to a full review 10 years following the implementation of the WUP. The Peace WUP will either have to be opened up and amended to account for operations for the new Site C facility or a new WUP will need be developed in parallel to the Peace WUP. In addition to a WUP, the new Site C facility will require a water license. It is clear that the Peace WUP will need to be revisited based on three (and possibly more) factors:

- The significant changes and altered eco –system that will result upstream of the Site C dam post construction

- The altered aquatic conditions below the Site C dam extending downstream into Alberta, and

- The need to engage and consult BRFN on upstream and downstream effects and impacts resulting from the integrated operations of the Bennett, Peace Canyon and Site C hydro–electric facilities

8.0 The Potential Incremental and Ongoing Operational Effects of the 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 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 areas. Key project components are depicted on maps prepared by BC Hydro as set out in Appendix 10. **(Appendix 10: Project Area and Key Components: Parts I and II)**.

BC Hydro anticipates in submitting 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 – BRFN interest interactions for this exercise, the BRFN 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 BRFN is not asserting that such impacts and changes will occur, however, it is using this list of potential impacts and changes as higher level "filter" to determine potential areas of interaction between project components and BRFN interests as a tool to assist in the identification of potential socio – economic / cultural effects on the BRFN.

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 creation of the dam will essentially convert the Peace River between the Peace Canyon dam to the Site C dam from a free flowing river to a reservoir or highly regulated river system.

The second range of effects are those ongoing operational effects stemming from the operation of the Site C facility. The Site C dam will receive 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.

For purposes of this report, the BRFN has characterized and grouped such potential effects in the following way:

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 have been 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

9.0 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 germane to the analysis of downstream effects and impacts for the Site C Project. Trans Alta (the new owner of the project / future asset) 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 and would result in backing of water or the creation of a reservoir 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 BRFN 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 BRFN 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 move forward with the Site C Project, it could not be considered as a reasonably foreseeable and should not be considered within scope of the cumulative effects assessment for the Dunvegan project. **(Report of the Joint Review Panel: Dunvegan Hydro – Electric Project: 2008).**

Given that cumulative effects of Site C and Dunvegan were not assessed together, 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 Dunvegan 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 will be attenuated further downstream due to contributions from tributaries. The Dunvegan dam reservoir 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 to areas 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 with the following sports fish species found to be most common:

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

From an aquatic health perspective, Dunvegan is considered to be significant area on the Peace River as it marks the transition zone for warm and cool water fish species. The lack of 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 potential for significant effects for several species with the head pond reservoir altering upstream habitat. The proponent deemed that 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 - unvegan 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, it was determined that flow changes would result in loss of islands impacting critical habitat for ungulates. In addition, low flows would potentially facilitate predator access to remaining islands which would potentially force ungulates to find other secluded rearing areas near rivers, however having to do so in a landscape with limited alternatives.

Effects on ice formation was another strategic issue considered at length by the proponent and regulators with the Dunvegan Project creating a shift to a two front ice system.

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

10.0 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 key BRFN interests. A potential interaction is deemed to be the sum of, or a convergence between a given Project effect and an extant / known BRFN interest.

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 BRFN interests on the "Y" or cross axis. Where interactions were posited to potentially 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 Blueberry River First Nation interest (e.g. activity) that is present that may be affected by the Project and its 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 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. The “2” ranking appears in the attached matrix in Appendix 1. **(Appendix 1: Potential Project Effects / BRFN Interests Interaction Matrix)**

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

The ability of the BRFN 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 BRFN 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 BRFN interests:

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

In the following sections, BRFN provides a narrative summarizing the potential range of interactions, which are detailed in attached matrix in Appendix 1. **(Appendix 1: Potential Project Effects / BRFN Interests Interaction Matrix)**

10.1 Hunting

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

The BRFN 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

The Peace River has and continues to have certain physio-graphic and micro-climatic characteristics that has favoured and supported the growth of certain types of vegetation, which has historically attracted ungulates (and people) to the valley and along the river. The riparian forests along the Peace River bench lands, slopes and river banks also tend to contain and support higher levels of bio – diversity than other areas. It is no surprise then, why a high level of traditional and cultural use activity of the BRFN occurs in this area given these factors. The densely forested stands (some of which is old growth forest) on the south side of the Peace River valley also has important thermal values and provides thermal protection to moose and other ungulates in the colder winter months, as observed by BRFN community members. The same is true for remnant forests on the north side of the Peace River valley.

Another important terrestrial feature and value that will be potentially impacted are the grades, sloughs and draws that ungulates utilize to travel down to the river. The angle of approach, slope and natural areas of interaction between the valley sides and the water's edge will potentially be altered, reducing this important habitat attribute that has served ungulates. Few such areas are likely to remain potentially limiting ungulate utilization of the valley. Ongoing sloughing following inundation may potentially mean that it will take a long time before the terrain adapts and suitable grades, sloughs and draws re-form that again be utilized.

An additional concern relates to a potential spike in methyl mercury levels in the new reservoir area. While the issue will be mitigated through logging and clearing of the Peace River valley above the dam, mercury levels are expected to be elevated for a period of time.

<u>As documented in the BRFN 2011 TLUS, community members hunt moose, elk, deer and bear on north and south side of the valley floor and on the north and south valley slopes. Fishing is also documented as occurring through the Peace River above the proposed Site C dam site. An interaction is deemed to exist between potential Project effects and this interest.</u>

<u>Interaction Level – 2 (Potential interaction requires assessment in SIA)</u>

Wildlife and Wildlife Habitat

The creation of the upstream reservoir will potentially 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, as evidenced by the large ungulate populations documented in the area. The islands in the Peace, its back and side channels, the riparian zone, the slopes of the valley and adjacent lands are components of a complex interplay of critical habitat attributes. The importance and unique habitat and habitats contained within the Peace River valley cannot be understated and the direct loss of all or significant portions of this area between Hudson's Hope and the Site C dam may have direct and serious ramifications for wildlife populations.

The overall loss and or loss of significant sections of the Peace River Valley also needs to be understood within a landscape and regional context. As documented within the MSES Disturbance Analysis report, lands through the south Peace Region are being altered and impacted through multiple forms of development and clearing, limiting and impacting other available habitat areas for moose and other ungulates.

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.

<u>The 2011 BRFN TLUS documents moose, elk, deer and bear hunting on the dam site, adjacent to the dam, on the south and north banks of the Peace River and slopes of the Peace River. High levels of hunting also occur on adjacent lands such as within the Del Rio area, the Peace Moberly Tract and in the Farrell Creek, Halfway River and Cache Creek watershed and areas north of Bear Flats. An interaction is deemed to exist between potential Project effects and this interest.</u>

<u>Interaction Level – 2 (Potential interaction requires assessment in SIA)</u>

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

The BRFN 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

A substantial amount of civil work is proposed within the "Dam Site Area" and in areas below and adjacent to the dam. The area on the south side of the Peace River is of particular interest. The Dam Site Area appears to include the foot of the dam, terrain contouring, access roads, a rail head and it appears that it will function as a significant construction staging area. This area will extend into the western portion of the Pine River watershed. At this time, this area contains high value habitat area and is in a relatively undisturbed state. The island to the south of the dam on the south side of the Peace contains various habitat attributes favoured by moose.

Given that the Dam Site Area will be an important nexus for Project activity over the life of Project's construction, it is possible that ungulate and wildlife in general will opt to shift away from the area given level of auditory and human disturbance that will occur. Ungulate populations in this downstream area could also experience a decline due to additional hunting pressure from the large influx of workers.

<u>The BRFN 2011 TLUS documents some examples of BRFN hunting occurring at the confluence of the Pine and Peace Rivers. A substantial level of moose and elk hunting is documented as occurring on the Dam Site Area and areas adjacent and within the lower Pine River watershed. An interaction is deemed to exist between potential Project effects and this interest.</u>

<u>Interaction Level – 2 (Potential interaction requires assessment in SIA)</u>

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

The BRFN considered those potential impacts 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 BRFN 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 decision 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 plant communities appear to be favouring and supporting elk and deer browse and habitat conditions.

The 2012 BRFN TLUS established a study area that extends as far west to an area between the Pine and Kiskatinaw River, documenting hunting occurring downsteam of the Site C dam. The BRFN TLUS and BRFN Traditional Territory Report prepared by Bouchard and Kennedy makes it clear that this BRFN historically hunted through the Peace Region into an areas as far east as Dunvegan and the Clear Hills. The new BRFN Traditional Territory that was prepared as a result of these studies clearly extends to lands either side of the Peace River to the BC – Alberta border and is highly suggestive of historic and current use extending along the Peace River into Alberta. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

Wildlife and Wildlife Habitat

The manner in which the Site C and its sister facilities on the Peace system will be operated will result in array of downstream effects and impacts.

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 areas downstream of the Site C dam, to the BC / Alberta border, to Dunvegan and areas downstream.

The operating regime can and will result in drying of back and side channels and synes, leading to a decline in plant communities that tend to grow in such areas that are favoured by moose. Such areas contain both a food and water source on the edge of the river with shorter distances for cover and escape.

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 2012 BRFN TLUS established a study area that extends as far west to an area between the Pine and Kiskatinaw River, documenting hunting occurring downsteam of the Site C dam. The BRFN TLUS and BRFN Traditional Territory Report prepared by Bouchard and Kennedy makes it clear that this BRFN historically hunted through the Peace Region into an areas as far east as Dunvegan and the Clear Hills. The new BRFN Traditional Territory that was prepared as a result of these studies clearly extends to lands either side of the Peace River to the BC – Alberta border and is highly suggestive of historic and current use extending along the Peace River into Alberta. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

10.1.4 IMPACTS ASSOCIATED WITH TRANSMISSION LINE, HIGHWAY 29 ALTERATIONS AND BORROW PITS

The construction and ongoing existence of the transmission line from the Site C dam, from the Pine / Moberly River watersheds, through the Peace Moberly Tract to the Peace Canyon dam could have ramifications for ungulate populations. The construction of the transmission line over a two year period may result in a displacement of wildlife populations. The transmission line will widen an existing transmission corridor. The overall effect of this will be to widen a corridor in an area hosting la healthy ungulate population and critical / important wildlife habitat. This area that also takes in the Peace Moberly Tract has far less fragmented and disturbed than other areas within the Peace Region.

The Transmission Line corridor may result in increased habitat fragmentation and promote access into the area which could lead to an increased level in ungulate mortality from natural predation and human hunting. 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).

As noted in the downstream impact section, the borrow pit and other works within the Dam Site Area will also potentially impact wildlife habitat and potentially force wildlife to shift away from the area for some time given amount of activity that will occur in this area over the key construction period.

One concern is 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. While the loss of ungulate habitats on top of the bench lands above the Peace River will be dwarved by the loss of habitat in the valley itself, some important habitat areas at Bear Flats / Cache Creek and Halfway Creek may potentially be impacted.

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. However this effect may be partially mitigated given the potential shift of populations from the valley during clearing and forest harvesting.

The BRFN 2011 TLUS documented moose, elk and deer hunting as occurring along the proposed transmission line corridor extending from the lower Moberly watershed and extending into the Peace Moberly Tract. Moose and elk hunting also occurs in the Dam Site Area. Moose, elk and deer hunting also occurs between Farrell Creek and Cache Creek along the Highway 29 route. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

10.2 FISHING

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

The BRFN 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

BC Hydro proposes 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 may be much less than that

has occurred with the creation of other reservoirs where the land base was logged and cleared less. However, it is anticipated that there will be a 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 related to fish and human consumption of fish.

The 2011 BRFN TLUS documented fishing activity in the main stem of the Peace River and in the lower reaches of key tributaries downstream of the Peace Canyon dam down to the Site C dam. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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 potentially result in an array of effects on fish populations and fish habitat. These changes 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 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the Peace Canyon dam and the location of the Site C dam in addition to the lower reaches and mouths of Farrell Creek, the Halfway River and Cache Creek. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the Peace Canyon dam and the location of the Site C dam in addition

to the lower reaches and mouths of Farrell Creek, the Halfway River and Cache Creek. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

10.2.2 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. Entrainment may be an issue where fish will also be passed through the turbines. 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 impacting downstream fish populations. The dam may also shift the ice regime from a one front ice system to a two font system. If the approved Dunvegan dam is factored in, then the Peace will potentially have 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 will 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 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 BRFN socio – cultural reliance on waters, fisheries and the aquatic environment.

The 2011 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the location of the Site C dam to the BC – Alberta border. It has been documented that BRFN exercised its rights into Alberta to locations as far east as the Clear Hills and Dunvegan on the Peace River. While the BRFN study did not attempt to document fishing activity across the BC – Alberta border there is a high likelihood that fishing does occur over along the Peace River into Alberta. Should the Site C dam be built, BRFN fishers may opt to fish in downstream areas near or across the border with the loss of the

free flowing section of the Peace above the dam, An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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. In 2003, BC Hydro attempted to curtail fishing between the toe of the dam and to the “fingers” given safety concerns by fencing off the area.

The 2011 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the location of the Site C dam to the BC – Alberta border Should the Site C dam be built, BRFN fishers may opt to fish in areas downstream of the Site C dam. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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

Aquatic, Fish and Fish Habitat

As noted, the Site dam 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.

Natural pulse events that occurred 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 will move to a four front ice system with two each 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 main stem of the Peace River are altered by flow changes. BRFN fishers will choose a day within a given season to go out and fish. While conditions may optimal, daily fluctuations appear to occur which can all but eliminate the ability to successfully fish within that day.

As noted, it is highly possible / probable, that BRFN fishers and community members will opt to fish downstream of the Site C dam, given the shift in populations and the preference to fish along a more naturalized river system. Some of the preferred species caught by BRFN fishers will be more likely to be found downstream of the dam. While such a shift in community patterns is somewhat difficult to predict (as the effects of the Project are as well), it is something that BC Hydro, the BRFN and regulators cannot rule out. Given this the downstream operational effects of Site C and its sister facilities are germane and need to be taken into account.

<u>The 2011 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the location of the Site C dam to the BC – Alberta border. It has been documented that BRFN exercised its rights into Alberta to locations as far east as the Clear Hills and Dunvegan on the Peace River. While the BRFN study did not attempt to document fishing activity across the BC – Alberta border there is a high likelihood that fishing does occur over along the Peace River into Alberta. Should the Site C dam be built, BRFN fishers may opt to fish in downstream areas near or across the border with the loss of the free flowing section of the Peace above the dam, An interaction is deemed to exist between potential Project effects and this interest.</u>

<u>Interaction Level – 2 (Potential interaction requires assessment in SIA)</u>

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 BRFN community

members to launch their boats and accessing the reaches of the river that tend to contain more fish.

The 2011 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the location of the Site C dam to the BC – Alberta border. It has been documented that BRFN exercised its rights into Alberta to locations as far east as the Clear Hills and Dunvegan on the Peace River. While the BRFN study did not attempt to document fishing activity across the BC – Alberta border there is a high likelihood that fishing does occur over along the Peace River into Alberta. Should the Site C dam be built, BRFN fishers may opt to fish in downstream areas near or across the border with the loss of the free flowing section of the Peace above the dam, An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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 effects could be both bio physical in nature as well as effecting the BRFN socio – cultural reliance on waters, fisheries and the aquatic environment.

The 2011 BRFN TLUS documents BRFN fishing as occurring along the main stem of the Peace River between the location of the Site C dam to the BC – Alberta border. It has been documented that BRFN exercised its rights into Alberta to locations as far east as the Clear Hills and Dunvegan on the Peace River. While the BRFN study did not attempt to document fishing activity across the BC – Alberta border there is a high likelihood that fishing does occur over along the Peace River into Alberta. Should the Site C dam be built, BRFN fishers may opt to fish in downstream areas near or across the border with the loss of the free flowing section of the Peace above the dam, An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

10.3 Trapping

The BRFN clearly trapped along the Peace River and its key tributaries in the past, however the sheer level of clearing, the taking up of lands and permitting of increased level of trapping and regulation of the industry, forced BRFN families to trap and take up trap lines further to the north. The research team that conducted the BRFN 2011 Traditional Use Study considered historic aspects of trapping along and adjacent to the Peace River

however appear to not have considered contemporary trapping activities given that the traplines currently held by the BRFN fall outside of the study area set be the researchers.

As noted earlier within this report, the southern-most point of the southern-most trapline held by a BRFN family / the BRFN is located approximately 34KM from the Project (dam site). Thus in one sense, it could held that the Project would not likely result in any potential effect to BRFN traplines, trapping activities and interests. The southern-most group of traplines lie within the mid – Beatton River watershed. With that said, the BRFN is not currently in the possession of any data or information that documents that relationship between the Peace River and tributaries in respect to furbearer populations, habitat, the food source for fur bearers and recruitment into tributaries from the Peace River. It is possible that the alteration of the Peace River through dam construction could impact fur bearer utilization in the lower reaches of the Beatton watershed. The BRFN will consider information that BC Hydro puts forward in its EIS

Potential Interaction Level 1 – Low / possible interaction with BRFN interest that requires follow up and confirmation.

10.4 Earth Material Gathering

10.4.1 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. Potential alteration and loss of forests and changes to ground vegetation and plant communities that tend to favour the unique bio-climatic conditions offered by the Peace River valley floor and slopes. Changes are underway in the forest composition given the Pine Beetle infestation that has run through the area in the past decade.

The BRFN 2011 TLUS documents examples of a plant gathering along the Peace River on the north bank at and around the confluence of the Peace River and Cache Creek. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

10.4.2 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL EFFECTS/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 include culturally significant vegetation to the BRFN. Rat root along the Peace River is one example of culturally significant vegetation to the BRFN that requires wetted areas (synes, back channels and oxbows) along the river to exist and propagate.

The BRFN 2011 TLUS study area extends to half way between the Pine River and Kistkatinaw River. As such, it is not known whether earth material gathering occurs along the Peace River in downstream areas. There is some evidence it does, given the example documented on the south side of the Peace River approximately 1KM south of the river in the lower portion of the Pine River watershed. The BRFN 2011 Traditional Territory Report documents historical use by the BRFN into Alberta into the Clear Hills and Dunvegan. It is plausible that BRFN did and continue to gather materials along the Peace River into Alberta. However further study will be required to document this. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA.

10.5 Overnight Site and Culturally Significant Areas

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

Overnight Sites and Culturally Significant Areas

The alteration and flooding of the Peace River valley above the dam would likely impact on BRFN community members ability to utilize and camp in or adjacent to the valley. Preferred camping locations could potentially be eliminated along with the potential elimination of the attributes, values and purposes for camping in and along the Peace River. So the sites, the areas that supports the sites and the values and resources that the area contain (which prompt people to set up camps).

The BRFN 2011 TLUS documented five overnight sites were documented as occurring along the Peace River on the north bank of the Peace River between the confluence of Farrell Creek and the Peace River and Cache Creek and the Peace River. These sites may or may not be inundated and their exact location will need to be confirmed with BRFN and BC Hydro. Whether or the not the sites are directly impacted, the larger issue is that the core reason for camps being set up and utilized is the Peace River Valley acts as a critical use area for BRFN members. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA.

Socio - Cultural Resources / Values

As discussed above, the very reason that camps exist within the Peace River valley given the values that valley currently supports, the habitat it provides, the historical connection the BRFN have had with the valley and the aesthetic beauty of the valley itself. The camps support community traditional and cultural pursuits and they are a by-product of the overall relationship and the high level of community use that occurs through the valley. The flooding and extreme alteration of the valley will likely negate some of the very reasons of why the BRFN travel to and use this area.

Irrespective or the camps, the Peace River valley is a critical community use area for the BRFN, ranking as one of the preferred areas that the BRFN like to travel to and spend time in. The significant ungulate populations that are anchored to the Peace River valley and key tributaries and watersheds are highly valued by the BRFN and are of key interest. The loss of the valley (and or significant portions of the valley) and the effect on adjacent lands will potentially impact the values and key reasons of why the BRFN continue to come to the Peace River valley to hunt, fish, camp and undertake other activities. The loss of this unique valley itself may have a significant impact on the BRFN through time and deprive the BRFN of exercising their rights in a preferred manner and area.

The BRFN 2011 TLUS documents overnight stay sites, gathering, hunting and fishing occurring through the Peace River valley and adjacent lands. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA).

Heritage and Archeological Resources

While the BRFN 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. The known and unknown cultural artifacts and resources will be impacted along with the historic sites these resources are associated with. The location of the fort at the confluence of the Moberly River and the Peace River may be impacted and flooded. Simply recovering artifacts and storing them in a repository may not be deemed as an appropriate mitigation measure or a respectful way to deal with the cultural heritage of the BRFN and other Dene – Za communities of the north – east. Other options may need to be examined to deal with those heritage and cultural resources that have been identified and recovered. However, the very sites that played host to these resources may potentially be lost to the BRFN and other Treaty 8 communities for all time.

A potential interaction is deemed to arise between this potential Project effect and this BRFN interest area. With this said the BRFN is interested in understanding the results and limitations of the archeological investigations undertaken to develop a complete understanding of the potential losses that will occur through Project development.

Interaction Level – 2 (Potential interaction requires assessment in SIA).
Potential Interaction Level 2.

10.5.2 POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL EFFECTS/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 BRFN 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 BRFN hunting, that contain rivers that hold healthy fish populations and that are isolated or buffered sufficiently where the BRFN 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 BRFN'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 BRFN'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

Dunvegan and further downstream have acted as a deterrent to development, and the residual forested areas provide a sufficient buffer and connectivity for wildlife. The drying out of synes, backwater areas and side channels due to the operations of Site C and its sister facilities could impact the important habitat attributes that moose need and seek out along the Peace River and within the valley floor.

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, BRFN 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 BRFN 2011 TLUS study area extends to half way between the Pine River and Kistkatinaw River. As such, it is not known whether earth material gathering occurs along the Peace River in downstream areas. There is some evidence it does, given the example documented on the south side of the Peace River approximately 1KM south of the river in the lower portion of the Pine River watershed. The BRFN 2011 Traditional Territory Report documents historical use by the BRFN into Alberta into the Clear Hills and Dunvegan. It is plausible that BRFN did and continue to gather materials along the Peace River into Alberta. However further study will be required to document this. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA.

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 BRFN Ethno – Historical Review, the BRFN have a long established relationship with the Peace River. BC Hydro has been conducting archeological investigations that have resulted in the identification and recovery of pre and post contact heritage and archeological resources. All First Nations along the Peace River, including the BRFN a shared interest in sites and resources that have been identified and documented as part of the investigations. It is also likely that other cultural resources have not been

identified and may be lost via inundation. As a result, the BRFN's historic connection with the Peace River and the Peace River valley will potentially be altered and impacted for the long term or in perpetuity.

The BRFN will consider information forthcoming from BC Hydro in relation to this matter.

Interaction Level – 1.

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 will result in effects and change to the Peace River and Peace River Valley that are both measurable and that are not. An example can be seen in relation to the expansion of oil and gas fields within the Beatton River watershed. Within the 2011 BRFN Traditional Use Study, the majority of community interview participants pointed to examples of land use alienation – where areas cannot be utilized as they once were. In cases where change has been so dramatic, community members stated that there is no longer any point in attempting to go to such areas.

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, it is nearly impossible to find animals and successfully hunt them in a given area etc.). The construction of the dam, the shift of natural river system to a reservoir and an overall change in the valley will alter the very state of the valley which may in turn significantly alter the BRFN's use and utilization of the river and valley. In the face of such dramatic change, it is possible that BRFN members will opt to not hunt, fish, camp, gather or spend as much time as they once did in upstream areas (areas above the dam).

The BRFN 2011 TLUS documents a considerable amount of hunting, fishing, gathering and overall community use along the Peace River valley between Farrell Creek / Peace River confluence and the Cache Creek / Peace River confluence. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA.

11.1.2 POTENTIAL INCREMENTAL DOWNSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE – Socio – Cultural Values and Resources

The 2011 BRFN TLUS documents a node of cultural use activity 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. Given the proximity of this area in the immediate downstream impact zone and the nodes of activity, an area of project effects and BRFN socio – cultural values and resources is deemed to exist which merits further investigation within the SIA.

The BRFN documents moose, elk and deer hunting and gathering in the areas below the dam in the Dam Site Area and adjacent areas in the lower Pine River watershed and the south bank of the Peace River between the Pine and Kiskatinaw Rivers. Fishing is also documented as occurring downstream of the dam to the Peace – Alberta border. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA.

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

Aquatic system health and any stressors that effecting Peace River aquatic system health can and do place limits on BRFN'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.

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; shelter, nearby cover for escape, connectivity via sloughs and valleys that descend down the Peace River and more secluded back and side channels that contain both water and 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 BRFN 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. Higher winter flows and alteration in ice formation may also potentially impact moose populations.

Another example can be provided for fishing. The preferred time to fish in the Peace River appears to be in the late summer and early fall. 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.

As has been noted in other sections, the alteration and or the loss of the Peace River Valley may very well likely prompt BRFN members to shift their Peace River based hunting, fishing and other cultural activities further downstream of the new dam given it will be the only remaining stretch of the Peace River that is still free flowing and non – inundated. Thus the potential effects of the Project on current BRFN use in addition to future use needs to be factored into the Project's assessment and decision making in relation to the Project.

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 BRFN, of how the effects of both projects will mix, blend and interact?

Further, the losses or limited ability to rely and utilize the Peace River by the BRFN 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 Pouce Coupe River and possible overfishing has all but eliminated fish from this Peace River tributary. Thus in BRFN's viewpoint all of the potential effects from Site C 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 BRFN's willingness to use the 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 BRFN'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 BRFN 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 will carry attendant effects that have the potential to alter the very

relationship that the BRFN 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 BRFN added “socio – cultural” as a value or sub – interest under the overarching heading of Land and Resource Utilization. In this case, the BRFN thinks this value needs to be considered and where intersections between potential project effects and the BRFN’s socio – cultural interest potentially occur, the BRFN believes that such interactions require investigation under the Socio – Economic Impact Assessment, within the Environmental Assessment.

The BRFN 2011 TLUS study area extends to half way between the Pine River and Kistkatinaw River. As such, it is not known whether earth material gathering occurs along the Peace River in downstream areas. There is some evidence it does, given the example documented on the south side of the Peace River approximately 1KM south of the river in the lower portion of the Pine River watershed. The BRFN 2011 Traditional Territory Report documents historical use by the BRFN into Alberta into the Clear Hills and Dunvegan. It is plausible that BRFN did and continue to gather materials along the Peace River into Alberta. However further study will be required to document this. An interaction is deemed to exist between potential Project effects and this interest.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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 BRFN 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 BRFN 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 effects and impacts 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 BRFN 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: 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. The Geographic Journal. Volume 171, 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 – economic ramifications of major projects on Indigenous People**. (Source: Health Determinants in Canadian Northern Impact Assessment. Polar Record, 1996)** 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. There is a need to view and assess proposed projects viewed against a back drop of increasing industrialization and in tandem with the process of land use alienation. **(Source: A Holistic Model for the Selection of Environmental Canadian Journal of Public Health, 2011)**

The above information is set out as the BRFN 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 which simply fail to 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) will further exacerbate the alienation of the BRFN people from the Peace River and Peace River Valley. Thus BRFN 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.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

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 arrive at such determinations. 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 identify the potential risk of infringements and impacts.

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

The justification for this is, is as follows:

- The BRFN 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 takes 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 BRFN members to travel to areas further from the community.

As has been noted in this documented, in the late 1800's and early 1900's, lands along the Peace River were heavily cleared, requiring BRFN families to hunt, trap and fish in the Beatton and upper Beatton watershed and area less disturbed areas to the north of the Peace River. Then through the 1960's to the present day, other forms of development have again acted to displace the BRFN from areas around the community and the northern trapline areas. As a result, the BRFN are now having to shift their activities to a broader area now taking in the areas such as Pink Mountain, the Northern Rockies and the Muskkwa – Kechika area towards the Williston Reservoir.

Given this, even though a BRFN member may not have hunted on Akie River, 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 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 BRFN created an additional sub – interest and sub – value under Lands and Resource Use, labeled "Treaty and Ecological Interest". The BRFN deems that where the Site C project results in a potential bio – physical effect, an intersection exists with this BRFN interest. These have been conservatively employed in the accompanying matrix.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

14.0 Cumulative Interactions with Dunvegan Hydro Project

The BRFN 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 BRFN 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.

On the face of it, the combined or cumulative effect of the Site C Project and the approved Dunvegan should have be listed as a “potential” effect included with the list of other effects within the attached matrix. The BRFN initially considered this, however opted to include it as a distinct interest given the lack of information that the BRFN has at this time in relation to the project cumulative effects of both projects. It also opted to do so, given the serious ramifications of having increasingly regulated river and two new major dams being constructed on the Peace River between Hudson’s Hope and the Dunvegan bridge in Alberta.

In respect to Site C, BC Hydro has noted that it believes that will be downstream effects experienced downstream, however such affects will be attenuated further downstream due to downstream tributary flows. 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
- Goldee
- 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, 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 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 while the potential effects for fish upstream was 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 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 BRFN's rights, uses and interests.

Interaction Level – 2 (Potential interaction requires assessment in SIA)

15.0 CLOSURE

The Blueberry First Nation has prepared this report for the sole benefit for the BRFN and BC Hydro 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 BRFN and BC Hydro.

The Blueberry 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 and the 2011 BRFN Traditional Land Use Study reflect the priorities and values of the community and nation.

The BRFN Council also wish to thank and acknowledge the excellent work of Dr. Dorothy Kennedy and Mr. Randy Bouchard for their careful and respectful work undertaken on the 2011 BRFN Traditional Use Study and 2011 Traditional Territory Report. This community baseline report references and heavily relies on the work undertaken under the auspices of that research undertaken for the Blueberry River First Nation.

Finally the BRFN wishes to thank and acknowledge the BC Hydro Site C Team and Golder Associates for supporting this research initiative and working with the BRFN 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 BRFN in relation to the Project. Specifically we wish to acknowledge the collaborative efforts of BC Hydro Site C Team Members Trevor Proverbs,

Debbie Seto-Kitson, Michelle Macdonald, Erin Harlos and Pascale Mera of Big Sky Consulting.

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PERSONAL COMMUNICATIONS

Apsassin, J. 2012. Chief: Blueberry River First Nations

Apsassin, M. 2012. Councillor: Blueberry River First Nation Council

17.0 Appendices

- **Appendix 1: Potential Project Effects / BRFN Interests Interaction Matrix**

- **Appendix 2: Approximate Land Use by the Beaver People and BRFN Ancestors Circa 1900**

  (Source: BRFN Traditional Study Report – Site C Clean Energy Project, 2011)

- **Appendix 3: Treaty #8 Area Map**

  (Source: BRFN Traditional Territory Report, 2011)

- **Appendix 4: BRFN Traditional Territory Map**

  (Source: BRFN)

- **Appendix 5: BRFN Reserve Locations Relative to Peace River**

  (Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

- **Appendix 6: Trading Post Locations: Northern River Basins Study**

  (Source: Northern River Basins Study – TEK Synthesis Report, 1996)

- **Appendix 7: Current BRFN Traplines**

  (Source: Unknown)

- **Appendix 8: Some BRFN Overnight Site Locations**

  (Source: BRFN Traditional Land Use Study – Site C Clean Energy Project, 2011)

- **Appendix 9: Project Area and Key Components**

  (Source: BC Hydro Site C Project Description)

Appendix 1:
Potential Site C Effect – Blueberry River First Nations Interest Interactions

See Attached Electronic File

	POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE			POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE	POTENTIAL INCREMENTAL UPSTREAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE					
BRFN Interest >	**Hunting**	**Fishing**	**Trapping**	**Gathering**	**Overnight Site and Culturally Significant Areas**	**Socio - Cultural**	**Community Health and Well Being**	**Ecological and Treaty Interest**	**Cumulative Interaction w/ Dunvegan Hydro Project and DFN Interest**	**nd BRFN Interests**
Potential Project Effect						Y	Y	Y		
Terrestrial and Vegetation										
Loss of old growth forest and high conservation value forest on Peace River Valley Floor	Moose hunting on south side of Peace River valley at adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake area Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek Bear hunting on north side of Peace River valley between Halfway RIver and Farrell Creek		Undetermined	Earth / plant material gathering on north bank of the Peace River upstream of Cache Creek and in lower watershed area of Cache Creek / Bear Flats area	4 camps on valley floor and or slope	Y	Y	Y		
Loss of old growth forest and high conservation value forest on slopes of Peace River valley	Moose hunting on south side of Peace River valley at and adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek Bear hunting on north side of Peace River valley between Halfway RIver and Farrell Creek		Undetermined	Earth / plant material gathering on north bank of the Peace River upstream of Cache Creek and in lower watershed area of Cache Creek / Bear Flats areaEarth / plant material gathering on north bank of the Peace River upstream of Cache Creek and in lower watershed area of Cache Creek / Bear Flats area and arch on upslope and on benchlands at top of north bank of Peace River valley	4 camps on valley floor and or slope	Y	Y	Y		
Loss of riparian vegetation and wetland areas	Moose hunting on south side of Peace River valley at adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence		Undetermined	Earth / plant material gathering on north bank of the Peace River upstream of Cache Creek and in lower watershed area of Cache Creek / Bear Flats area		Y	Y	Y		
Alteration of natural slope and grade between valley sides and new reservoir and loss of sloughs, cuts and draws leading down reservoir. Issue of ongoing sloughing and time required to reform new natural approaches	Moose hunting on south side of Peace River valley at adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence					Y	Y	Y		

Methyl Mercury / Bio-Accumulation and Bio Magnification		Fishing downstream of Hudson's Hope. And Site C dam.	Undetermined			Y	Y	Y		
Wildlife and Widlife Habitat										
Loss of unique and high value ungulate habitat / habitat attributes in Peace Valley and Peace Region	Moose hunting on south side of Peace River valley at adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek		Undetermined			Y	Y	Y		
Loss of islands, back channels, side channels, flood plain habitat for ungulates and fur bearers	Moose hunting on habitat attributes, through Peace Valley and adjacent areas and in areas where habitat attributes play an important role		Undetermined			Y	Y	Y		
Change in wildlife dynamics in Peace Valley and adajacent landscape area (movement, dynamics,distribution, density, breeding, birthing)	<u>Peace Valley:</u> Moose hunting on south side of Peace River valley at adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek Bear hunting on north side of Peace River valley between Halfway RIver and Farrell Creek <u>Adjacent Areas :</u> Moose hunting In Pine and Moberly River watersheds, within Peace Peace Moberly Tract and at Cameron Lakes Moose hunting in Cache Creek, Halfway River and Farrell Creek watersheds Elk hunting in Pine and Moberly River watersheds and in Peace Moberly Tract Elk hunting in Dry Creek, Cache Creek, Halfway and Farrell Creek watersheds Deer hunting in Pine and Moberly River watersheds Deer hunting in Dry Creek, Cache Creek, Halfway River and Farrell Creek watersheds Bear hunting in Moberly and Pine River watersheds		Undetermined			Y	Y	Y		
Loss of thermal cover / critical winter habitat on Peace Valley slopes	Moose hunting on south side of Peace River valley at and adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek					Y	Y	Y		

Localized climate change effect in Peace Valley and remaining non - innundated/ undermined slopes)	Moose hunting on south side of Peace River valley at and adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek		NA			Y	y	Y		
Loss of connectivity / impact to wildife corridor from creation of reservoir in summer / winter	Peace Valley: Moose hunting on south side of Peace River valley at and adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek Bear hunting on north side of Peace River valley between Halfway RIver and Farrell Creek Adjacent Areas : Moose hunting In Pine and Moberly River watersheds, within Peace Peace Moberly Tract and at Cameron Lakes Moose hunting in Cache Creek, Halfway River and Farrell Creek watersheds Elk hunting in Pine and Moberly River watersheds and in Peace Moberly Tract Elk hunting in Dry Creek, Cache Creek, Halfway and Farrell Creek watersheds Deer hunting in Pine and Moberly River watersheds Deer hunting in Dry Creek, Cache Creek, Halfway River and Farrell Creek watersheds Bear hunting in Moberly and Pine River watersheds					Y	Y	Y		
Limited fluctuation in resevoir levels impact on fur bearers and fur bearer habitat			Undetermined							
Increased hunting levels in Peace Valley, adjacent area and hosting landscape area due to influx of construction workfore	Moose hunting on south side of Peace River valley at and adjacent to dam site Moose hunting on south side of Peace River valley west of dam site to area north of Boudreau Lake Moose hunting on south side of Peace river valley at north end of Peace Mobelry Tract Moose hunting on north side of Peace River valley between Bear Flats and Farrell Creek Peace River confluence Elk hunting south side of Peace River valley at and adjacent to dam site, at outlet of Boudreau Creek and area across from Cache and Farrell Creek Deer hunting on north side of Peace River valley between Bear Flats and Cache Creek Bear hunting on north side of Peace River valley between Halfway RIver and Farrell Creek					Y	Y	Y		
Increased mortaility for ungulates due to influx of traffic from construction workforce expansion	Moose and elk hunting on south side of the Peace River in Del Rio, Septimus, Jackfish Lake road approach and access Moose, elk and deer hunting Moose, elk and deer hunting on south side of Peace in Pine River watershed adjacent to highway 97 corridor Moose and elk hunting on south side of Peace River in Peace Moberly Tract adjacent to Highway 29 Moose, elk and deer hunting on north side of the Peace River adjacent to to Highway 29					Y	Y	Y		

Shift of wildlife populations away from construction zone due to auditory disturbance / increase human activity	Moose, elk and deer hunting on south side of the Peace River at and and adajcent to dam site, between Pine and Moberly Rivers in lower Moberly watershed		Undetermined							
Aquatics, Fish and Fish Habitat										
Change from natural river system to reservoir (Lotic / Lentic shift)		Fishing in maintstem of the Peace from Peace Canyon Dam to Site Dam				Y	y	Y		
Loss of fish and fish habitat from Peace River mainstem and tributaries		Fishing in maintstem of the Peace from Peace Canyon Dam to Site Dam Fishing at confluences and lower reaches of Cache Creek, Halfway River, Farrell Creek and fishing along Halfway Ri ver into upper ots upper reaches				Y	Y	Y		
Alteration of fish population dynamics in fish that utilize mainstem of Peace and that move in and out of tributaries		Fishing in mainstem of the Peace River and Halfway River from Peace Canyon Dam to Site C Dam				Y	Y	Y		
Barrier to upstream/downstream fish movement and migration		Fishing in mainstem of the Peace River and Halfway River from Peace Canyon Dam to Site C Dam and in Halfway River				Y	Y	Y		
Shift in fish species composition, abudance and distribution		Fishing in mainstem of the Peace River and Halfway River				Y	Y	Y		
Entraiment / mortality of fish via turbines		Fishing in maintstem of the Peace from Peace Canyon Dam to Site Dam				Y	Y	Y		
Entraiment / mortality of fish via spillway when in operation		Fishing in mainstem of the Peace River from the Peace Canyon Dam to Site C Dam				Y	Y	Y		
Limited reservoir fluctuations impact to littoral zone fish habitat / feeding		Fishing in mainstem of the Peace River from the Peace Canyon Dam to Site C Dam				Y	Y	Y		
Frazil ice formation impacting near shore fish habitat / feeding		Fishing in mainstem of the Peace River from the Peace Canyon Dam to Site C Dam				Y	Y	Y		
Upstream ice front effects on / reduction of overwintering habitat for fish		Fishing in mainstem of the Peace River from the Peace Canyon Dam to Site C Dam				Y	Y	Y		
Increased fishing levelson Peace River, tributary fishery and regional water bodies by increased workforce population		Fishing in mainstem of the Peace River from the Peace Canyon Dam to Site C Dam				Y	Y	Y		
Oxygen depletion in deeper portions of reservoir / stratification and impact to fish		Fishing in mainstem of the Peace River from the Peace Canyon Dam to Site C Dam				Y	Y	Y		
Heritage and Archeological Resources										
Loss or arch sites (known and unknown)						Undetermined - Refer to AOA / AIA Studies	Y - If Arch resources impacted	Y - If Arch resources impacted		

Socio - Cultural Resources / Values							Y	Y		
Loss of significant span of Peace River - River of historical and ethno - historical significance						Y - Impact to / permanent loss of significant portion Peace - core to BRFN cultural landscape	Y	Y		
Loss of overnight sites/habitatation sites and preffered areas to utilize and occupy					2 preffered community camping locations upstream of Site C dam on north bank of Peace River between Farrell Creek and Halfway River outlets to potentially be innundated 3 camps (On Farell Creek, Halfway River and at Bear Creek) at higher elevations to potentially be impacted	Y	Y	Y		
Loss of free flowing segment of the Peace River					2 preffered community camping locations upstream of Site C dam on north bank of Peace River between Farrell Creek and Halfway River outlets to potentially be innundated 3 camps (On Farell Creek, Halfway River and at Bear Creek) at higher elevations to potentially be impacted	Y - Permanent loss of free flowing segement of Peace River that is core of BRFN's territory	Y	Y		
Visual impact of altered river / natural flow and creation of bank to bank dam						Y - General use and experience of upper Peace forever altered and change.2.	Y	Y		
Human Health and Safety										
Methyl Mercury / Bio-Accumulation and Bio Magnification		Fishing in maintstem of Peace River between Peace Canyon dam and Site C dam, in Halfway River and in lower reaches of Farrell Creek, Halfway River, Cache Creek, Dry Creek				Y	Y	Y		
Sudden flow releases from Peace Canyon could endanger fishers in downstream area		Shore and boat based fishing in maintstem of Peace River between Peace Canyon dam and Site C dam, in Halfway River and in lower reaches of Farrell Creek, Halfway River, Cache Creek, Dry Creek								
Debris in reservoir could pose hazard to boating fishers/ hunters		Boat based fishing in maintstem of Peace River between Peace Canyon dam and Site C dam, in Halfway River and in lower reaches of Farrell Creek, Halfway River, Cache Creek, Dry Creek								

Change in ice conditions and freeze up could impact flows for ice fishers		Fishing in lower reaches of Halfway River and at confluences of of Peace River and Farrell Creek, Cache Creek and Dry Creek								
POTENTIAL INCREMENTAL DOWNSTEAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE				**POTENTIAL INCREMENTAL DOWNSTEAM IMPACTS: INITIAL FOOT PRINT IMPACT AND INITIAL ECOLOGICAL CHANGE**						
Terrestrial and Vegetation										
Increased sedimentation during upstream valley clearing and coffer dam and dam construction		Fishing below Site C dam downstream to Pine and Peace River confluence and potentially further downstream								
Erosion and River Channel Below Dam						Potential impact to identified and unidentified arch resources on outer bends of Peacce River - consult AOA / AIA studies				
Wildlife and Widlife Habitat										
Loss of and distrurbance to lands on south bank of Peace River by Dam Site Area (foot of dam, borrow area, rail head and staging area)										
Disturbance to/ displacement of wildlife from main constuction area	Moose hunting on south side of Peace River Valley below dam and in lower portion of Moberly and Pine River watersheds Elk hunting on south side of Peace River Valley below dam and in lower portion of Moberly and Pine River watersheds Deer hunting in lower portion of Moberly River watershed					Y	Y	Y		
Aquatics, Fish and Fish Habitat										
Dam creates barrier to upstream/downstream fish passage		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watersend and to BC - Alberta border				Y	Y	Y		
Loss and change to fish habitat below dam		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y		
Seasonal temperature and flow changes alter downstream ice formation and affect over wintering habitat availability and near shore habitat		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y		
Reduced natural variability in river affect in fish and fish populations		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y		
Increase in methyl mercury / bio-accumulation and magnification issues in larger fish below dam		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y		

Fish mortaility from total gas pressure during spill events		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y		
Change in downstream water quality and temperature and impact to fish and fish habitat		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on DFN interests	
Change in flows and timing and impact to fish and fish habitat		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on DFN interests	
Change in downsteam sediment load and river bed mobilization		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on DFN interests	
Creation of two ice fronts (four with Dunvegan) and altering ice regime down Peace to Peace River and impact and alteration of over wintering habitat and near shore habitat with frazil ice		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confirmation needed as 2011 TLUS only considered fishing to border								
Heritage and Archeological Resources										
High Water Discharge Events					Potential for uncovering of downstream and impact to indentified and unidentified archeaological sites on river bank and terrace areas during high water discharge events - Consult AOA and AIA	Y	Y	Y		
Socio - Cultural Resources / Values										
Loss of free flowing segment of the Peace River					One camp on south bank of Peace River below Site C dam	Y - Area of critical community use on south side of Peace River downsteam of dam to Sixth Creek and extending into Moberly and Pine River watersheds and fishing to BC - ALTA border and potentially into Alberta	Y - Area of critical community use on south side of Peace River downsteam of dam to Sixth Creek and extending into Moberly and Pine River watersheds and fishing to BC - Alberta border and potentially into Alberta	Y	Potential Site C - Dunvegan effects / impact conflation on BRFN interests - Peace River becomes articifially bound and regulated between Site C and Dunvegan projects	

Altered cultural landscape						Y - Area of critical community use on south side of Peace River downsteam of dam to Sixth Creek and extending into Moberly and Pine River watersheds and fishing to BC - ALTA border and potentially into Alberta	Y - Area of critical community use on south side of Peace River downsteam of dam to Sixth Creek and extending into Moberly and Pine River watersheds and fishing to BC - Alberta border and potentially into Alberta	Y	Potential Site C - Dunvegan effects / impact conflation on BRFN interests - Peace River becomes articifially bound and regulated between Site C and Dunvegan projects	
Asthetic / visual impact of altered river regime and new dam in river valley					One camp on south bank of Peace River below Site C dam	Y - Area of critical community use on south side of Peace River downsteam of dam to Sixth Creek and extending into Moberly and Pine River watersheds and fishing to BC - ALTA border and potentially into Alberta	Y	Y	Potential Site C - Dunvegan effects / impact conflation on BRFB interests - Peace River becomes articifially bound and regulated between Site C and Dunvegan projects	
Human Health and Safety										
Methyl Mercury / Bio-Accumulation and Bio Magnification		Shore and boat Fishing below dam to Pine River					Y	Y		
Sudden flow releases from Peace Canyon could endanger fishers in downstream area		Shore and boat Fishing below dam to Pine River								
Change in ice conditions and freeze up could impact flows for ice fishers										
	POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL EFFECTS/IMPACTS AND ECOLOGICAL CHANGE			**POTENTIAL DOWNSTEAM EFFECTS: ONGOING OPERATIONAL IMPACTS AND ECOLOGICAL CHANGE**						
Terrestrial and Vegetation										
Change / shift in vegetation in flood plain, riparian area	Pontential shift in species may alter forage for ungulates in flood plain / riparian areas in turn impact BRFN's hunting of ungulates to BC - ALTA border and potentially into Alberta					Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Lack of recharge in flood plain, back channels, side channels and synes altering / shifting vegetation patterns	Pontential shift in species may alter forage for ungulates in flood plain / riparian areas in turn impactin BRFN's hunting of ungulates to BC - ALTA border and potentially into Alberta					Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Narrowing of main stem of Peace River and expansion of grassland environment in riparian areas		Narrowing of river channel reduces fish habitat in downstream areas impacting fishing from downstream of Site C to BC - Alberta border and potentially into Alberta				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Wildlife and Widlife Habitat										
Loss of wildlife habitat in downstream areas with reduced and dissappearing back channels, side channels and synes	Pontential shift in species may alter forage for ungulates in flood plain / riparian areas in turn impacting hunting of ungulates in these downstream of Site C to BC - Alberta border and potentially into Alberta					Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Reduced waterfowl nest production and nesting habitat	Potential impact in downstream areas however waterfowl hunting not mapped as category in 2011 TLUS					Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	

Impact to fur bearer population and potential losses to fur bearer population			Undetermined					Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Changed flows and fluctuations may impact beaver lodges along Peace River and in lower reaches of tributaries			Undetermined			Y		Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Drowning of wildlife due to high winter / spring flows and more open water in winter	Moose hunting downstream of Site C dam on south side of Peace River and potentially to BC - Alberta border and into Alberta					Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on DFN interests	
Low summer flows can expose ungulate birthing areas and moose cows and calves on Peace River islands to increased predatation	Moose hunting downstream of Site C dam on south side of Peace River and potentially to BC - Alberta border and into Alberta									
Aquatics, Fish and Fish Habitat										
Decrease in annual variation in river levels		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confirmation needed as 2011 TLUS only considered fishing to border					Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Hydrologic regime change due to ice jams at Peace River / Shift from one front ice formation to four with Site and Dunvegan		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Drying and dewatering of back channels, side channels and synes		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Infilling of Peace River / tributary confluences with sediments due to elimination / reduction of flushing flows that historically mobilized sediments		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	

Fish stranding due to to low instream flows and high water events in side and back channels		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Reduced access for fish to tributaries during summer low flow conditions in Peace River.		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Reversal of normal thermal conditions in Peace River.		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Reduced dillution of pollution/organic effluent downstream of pulp and sewage treatement outfalls		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFNinterests	
Near shore fisheries winter habitat impacted through frazil ice formation		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Higher winter flows on Peace River can result in thicker ice cover diminishing open water areas that provides overwintering habitat areas for fish		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	

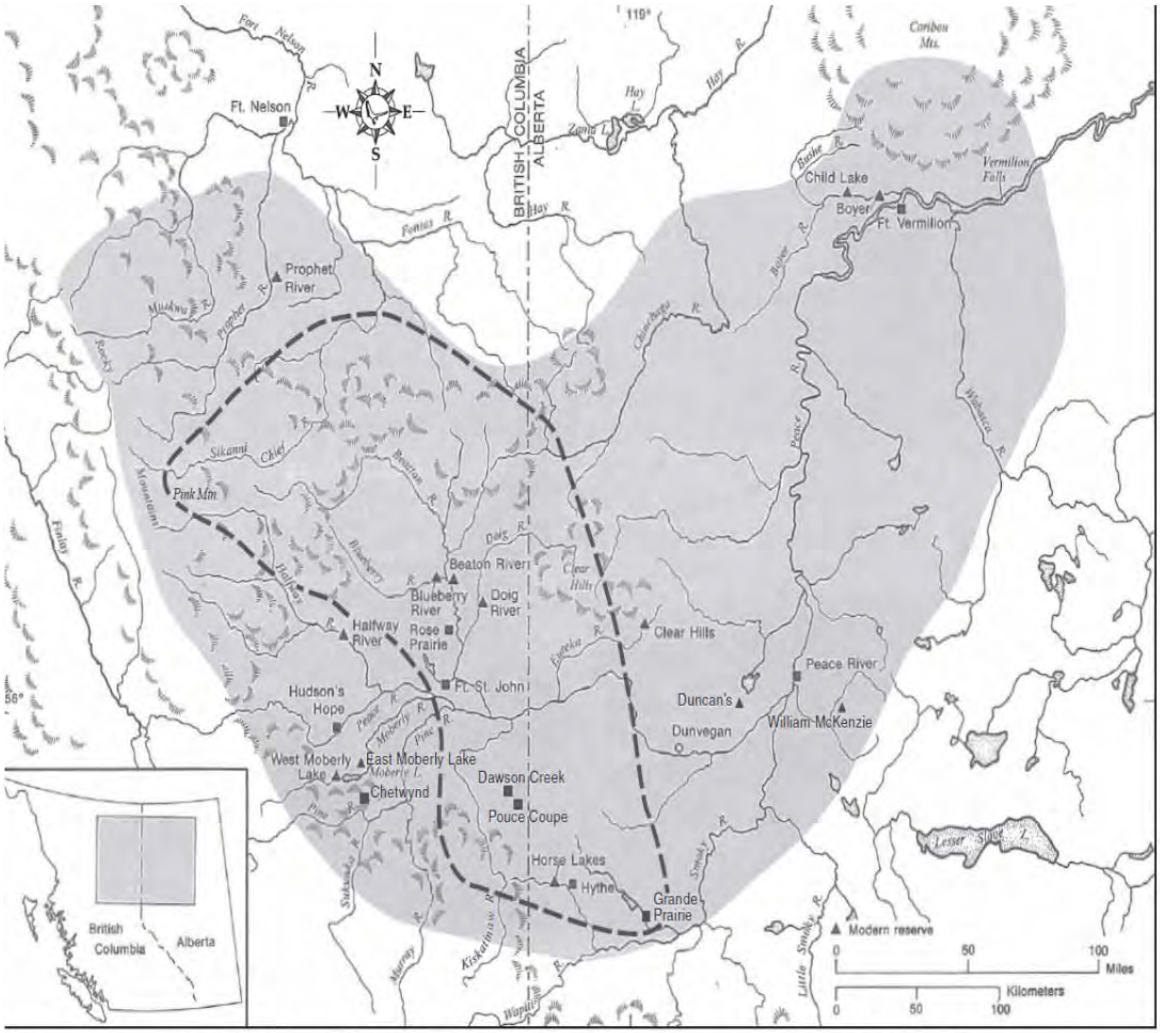
Daily flow fluctuations and inflows can quickly alter fish feeding behaviour / beneficial conditions		Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir								
Socio - Cultural Resources / Values										
Difficulty in launching boats used for hunting and fishing in lower summer / fall flow periods	Undetermined	Fishing below Site C dam downstream to Pine and Peace River confluence and in Beatton watershed and to BC - Alberta border High potential that community fishes in Peace River downstream of BC - ALTA border however further confir				Y	Y	Y	Potential Site C - Dunvegan effects/ impact conflation on BRFN interests	
Human Health and Safety										
	IMPACTS ASSOCIATED WITH TRANSMISSION LINE, HIGHWAY 29 ALTERATIONS AND BORROW PITS			**IMPACTS ASSOCIATED WITH TRANSMISSION LINE, HIGHWAY 29 ALTERATIONS and BORROW PITS**						
Transmission Line										
Direct loss of forest and vegetation to clearing and widening of existing ROW Corridor	Moose and Elk hunting in Moberly watershed and in Peace Moberly Tract					Y	Y	Y		
Disturbance to/ displacement of wildlife from clearing and construction activities	Moose and Elk hunting in Moberly watershed and in Peace Moberly Tract					Y	Y	Y		
Increased access effect on wildlife populations through increased predation by humans and predators	Moose and Elk hunting in Moberly watershed and in Peace Moberly Tract					Y	Y	Y		
Increased fragmentation and increase of anthropogenic edge within Peace Moberly Tract - area containing critical ungulate habitat and values	Moose and Elk hunting in Moberly watershed and in Peace Moberly Tract									
Increased potential for creation of energy corridor with other proponents and operators seeking access to area and twinning existing corridor	Moose and Elk hunting in Moberly watershed and in Peace Moberly Tract					Y	Y	Y		
Highway 29 Alterations										
Disturbance to wildlife during construction combined with clearing in adjacent reserovir area and dam site	Moose hunting along upper benchlands and upper Peace River valley (north side) from Farrel Creek to Bear Flats									
Direct loss of forest resources and vegetation in area that has been impacted by farming and recent wave of Pine Beetle infestation	Moose hunting along upper benchlands and upper Peace River valley (north side) from Farrel Creek to Bear Flats									
Straightened highway may lead to increased highway speeds on completed highway leading to increased ungulate mortality	Moose hunting along upper benchlands and upper Peace River valley (north side) from Farrel Creek to Bear Flats									
Borrow Pits (Peace Reach/Del Rio Pits)	Moose, Elk and Deer hunting on south side of Peace River adjaecnt to dam, at south Borrow Pit area and areas in viciity of Borrow Pit									

Disturbance to wildlife during gravel extraction operations	Moose, Elk and Deer hunting on south side of Peace River adjaecnt to dam, at south Borrow Pit area and areas in viciity of Borrow Pit									
Increased mortality of ungulates due to #'s of trips to and from pits along key access routes and approaches.	Moose hunting along upper benchlands and upper Peace River valley (north side) from Farrel Creek to Bear Flats									

Appendix 2:

Approximate Land Use by Beaver People and BRFN Ancestors:

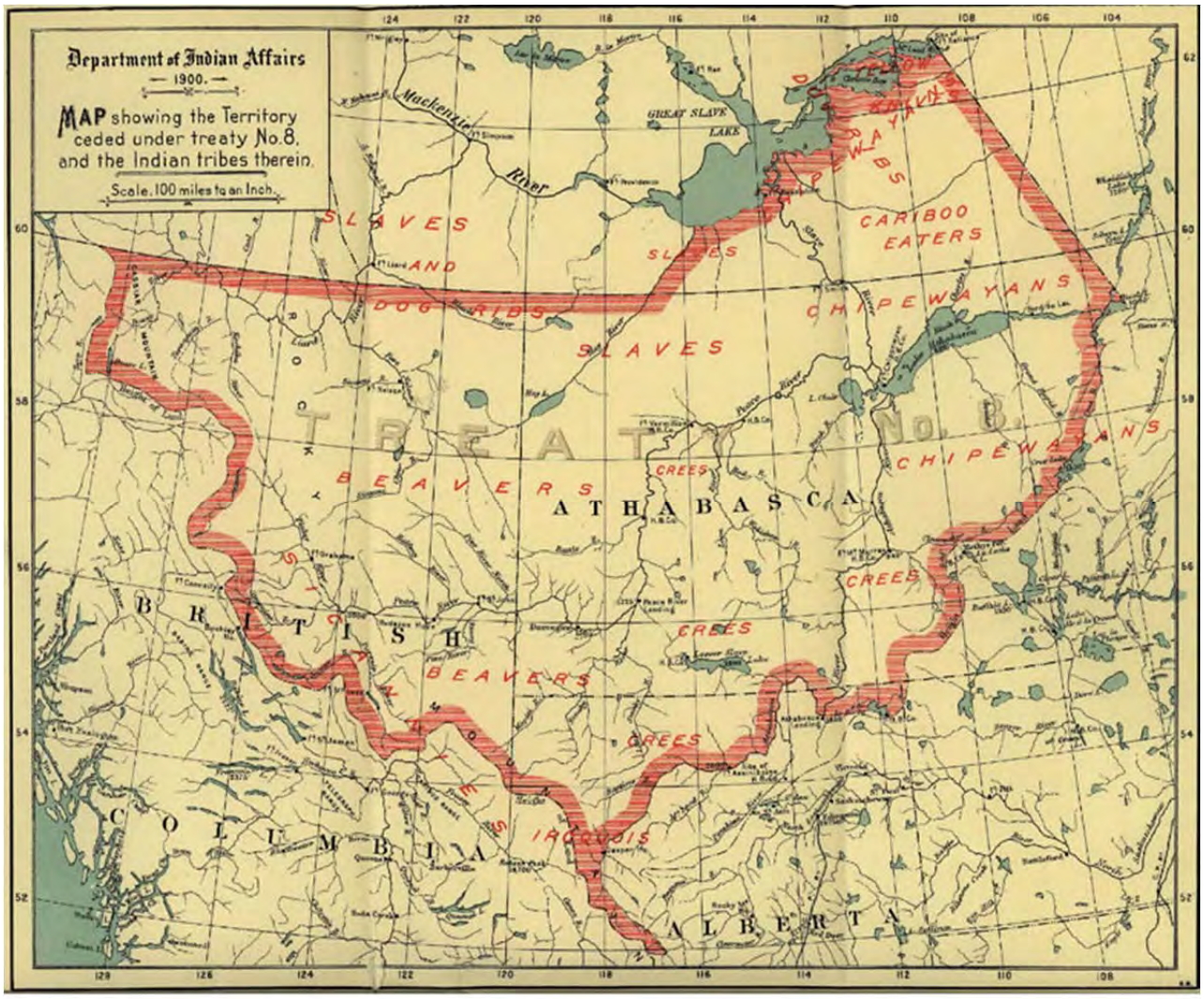
Circa 1900)



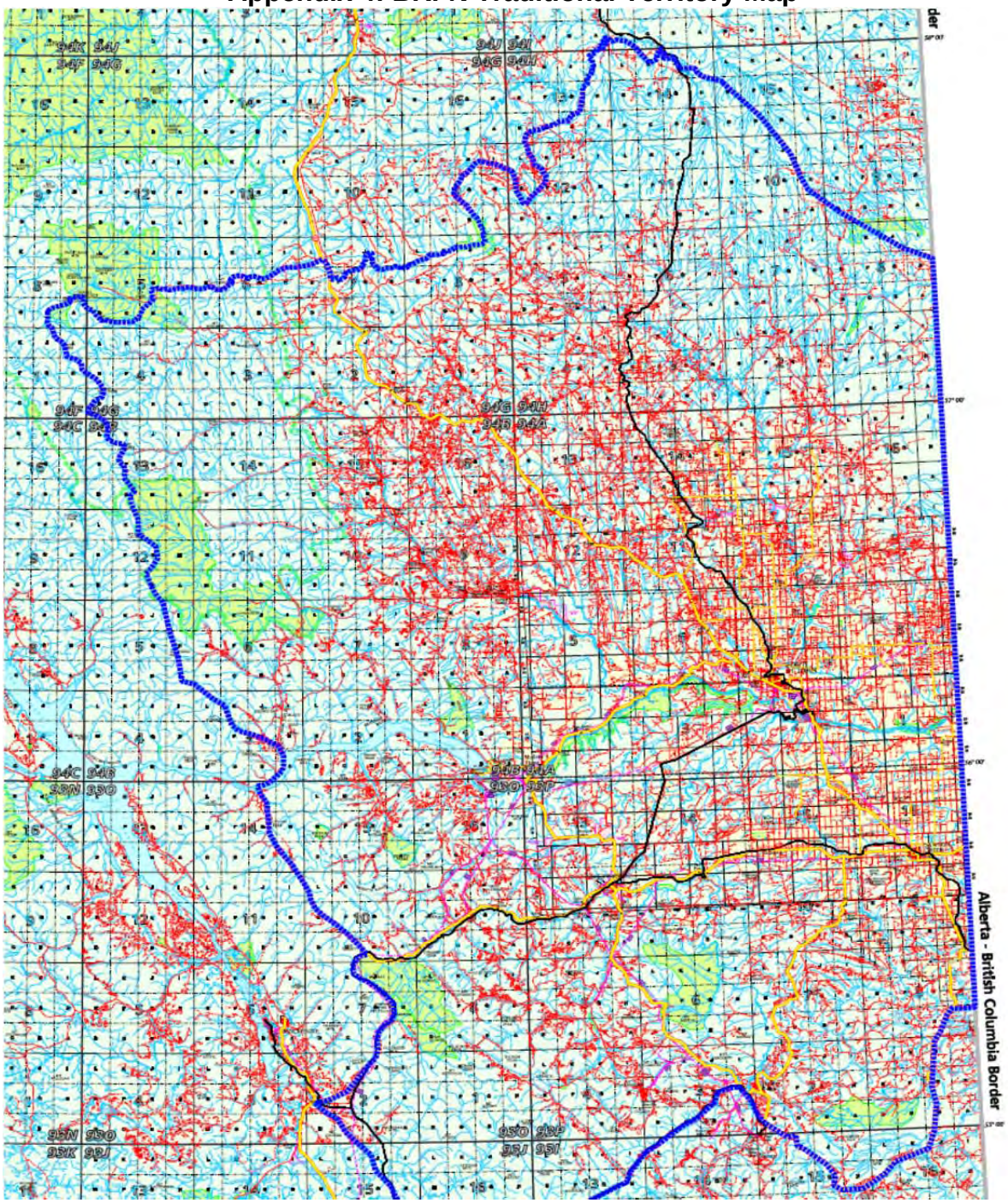
The added line delineates the approximate overall area used 1850s-1930s by the ancestral family groups comprising the contemporary Blueberry River First Nations, based on documentary sources. Overall map of Beaver Territory adapted from Ridington (1981:351).

Source: BRFN Traditional Land Use Study: Site C Clean Energy Project – Bouchard and Kennedy

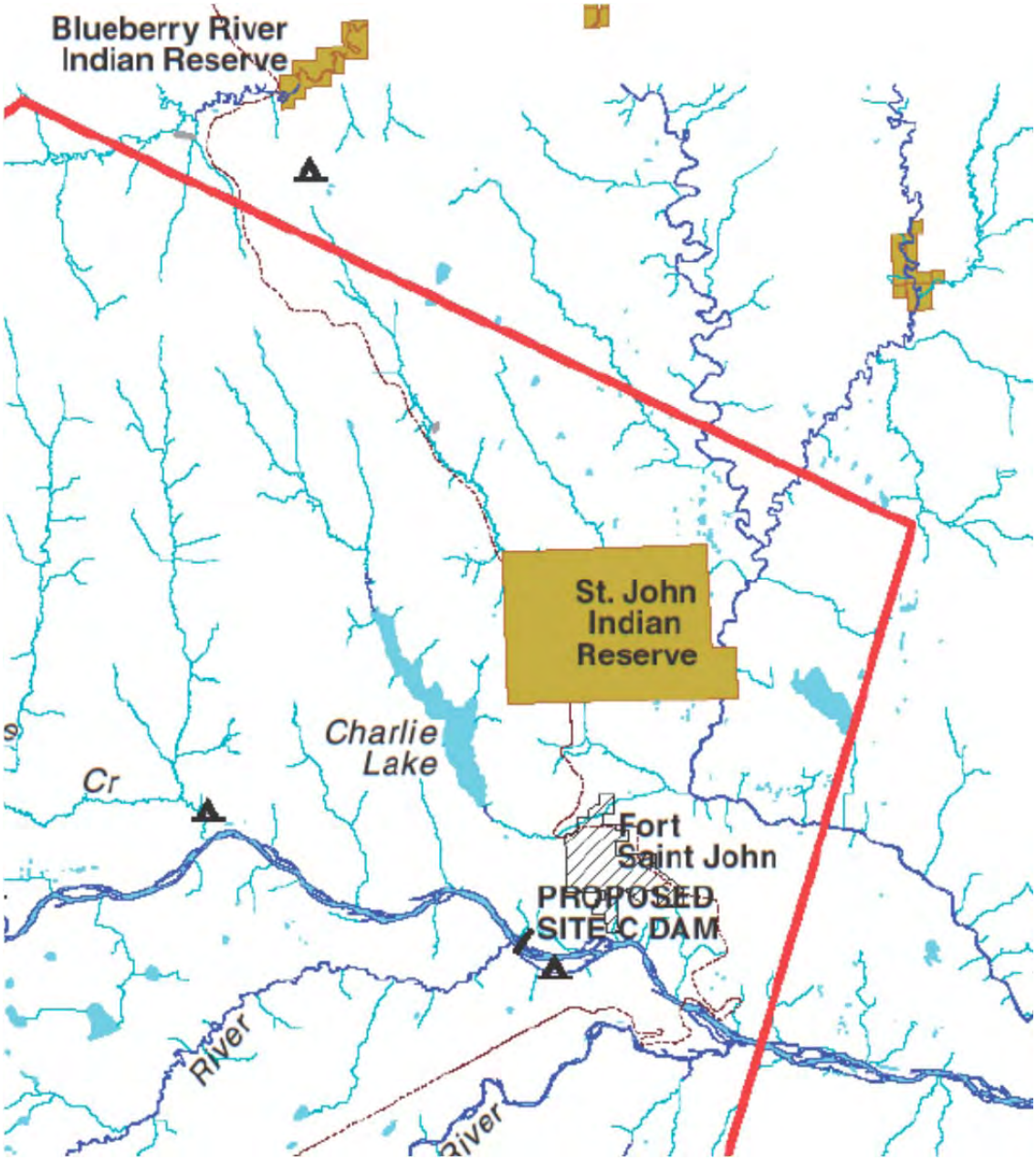
Appendix 3: Treaty #8 Area Map



Appendix 4: BRFN Traditional Territory Map



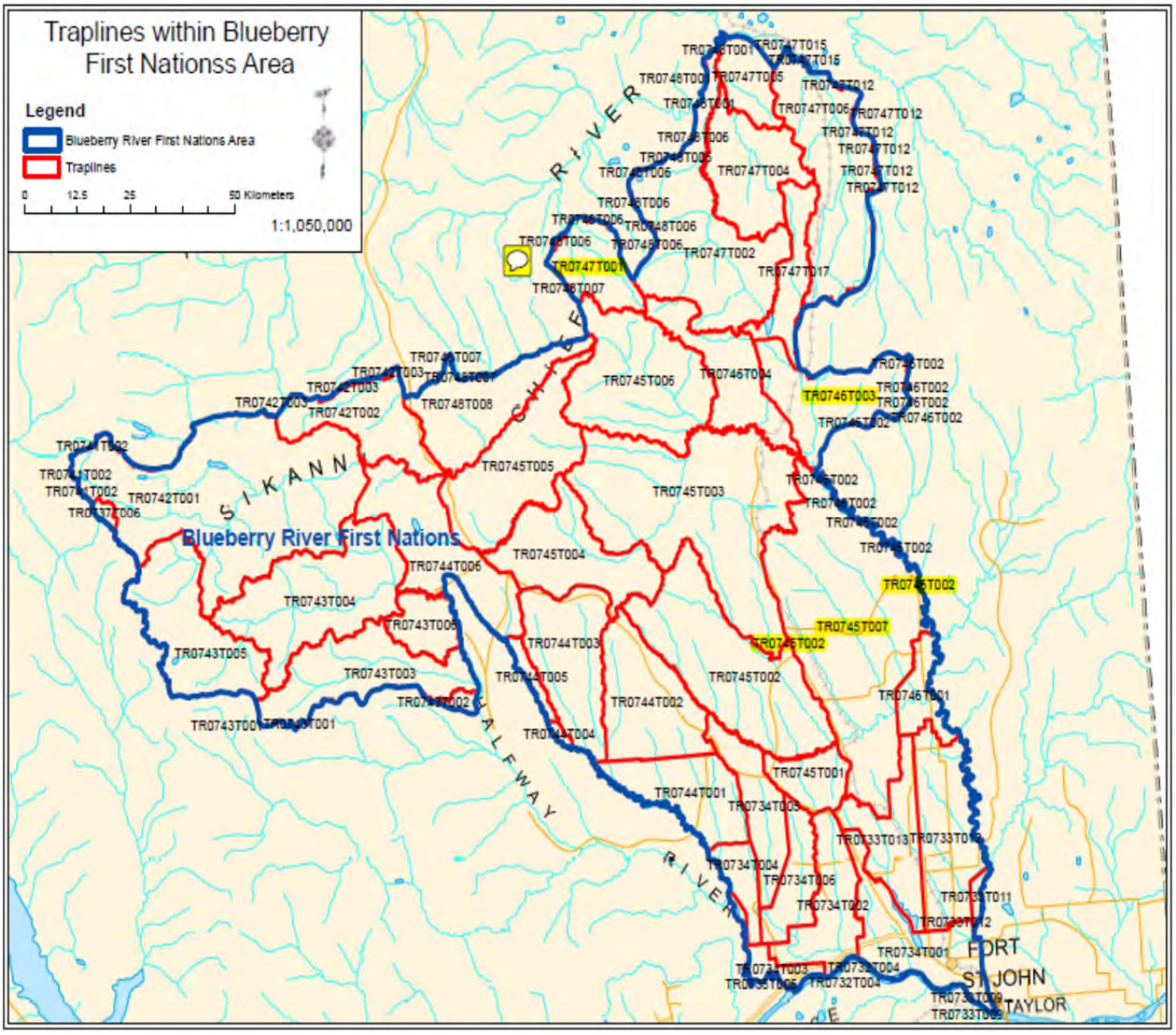
.Appendix 5: BRFN Reserve Locations Relative to Peace River



Attachment 6: Trading Posts: Northern River Basins Study – TEK Synthesis Report, 1996

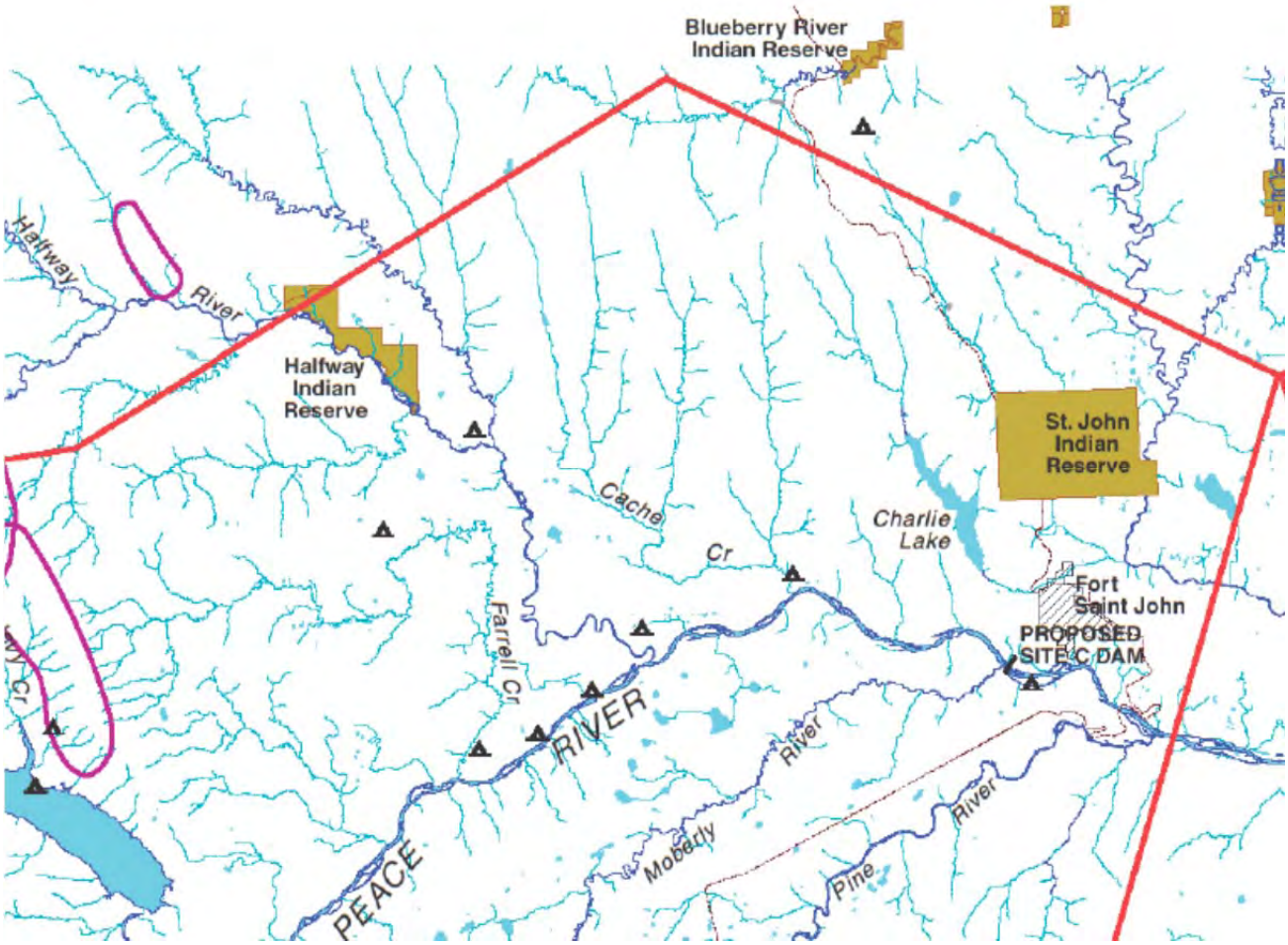
Currently Unavailable

Appendix 7: Current BRFN Traplines

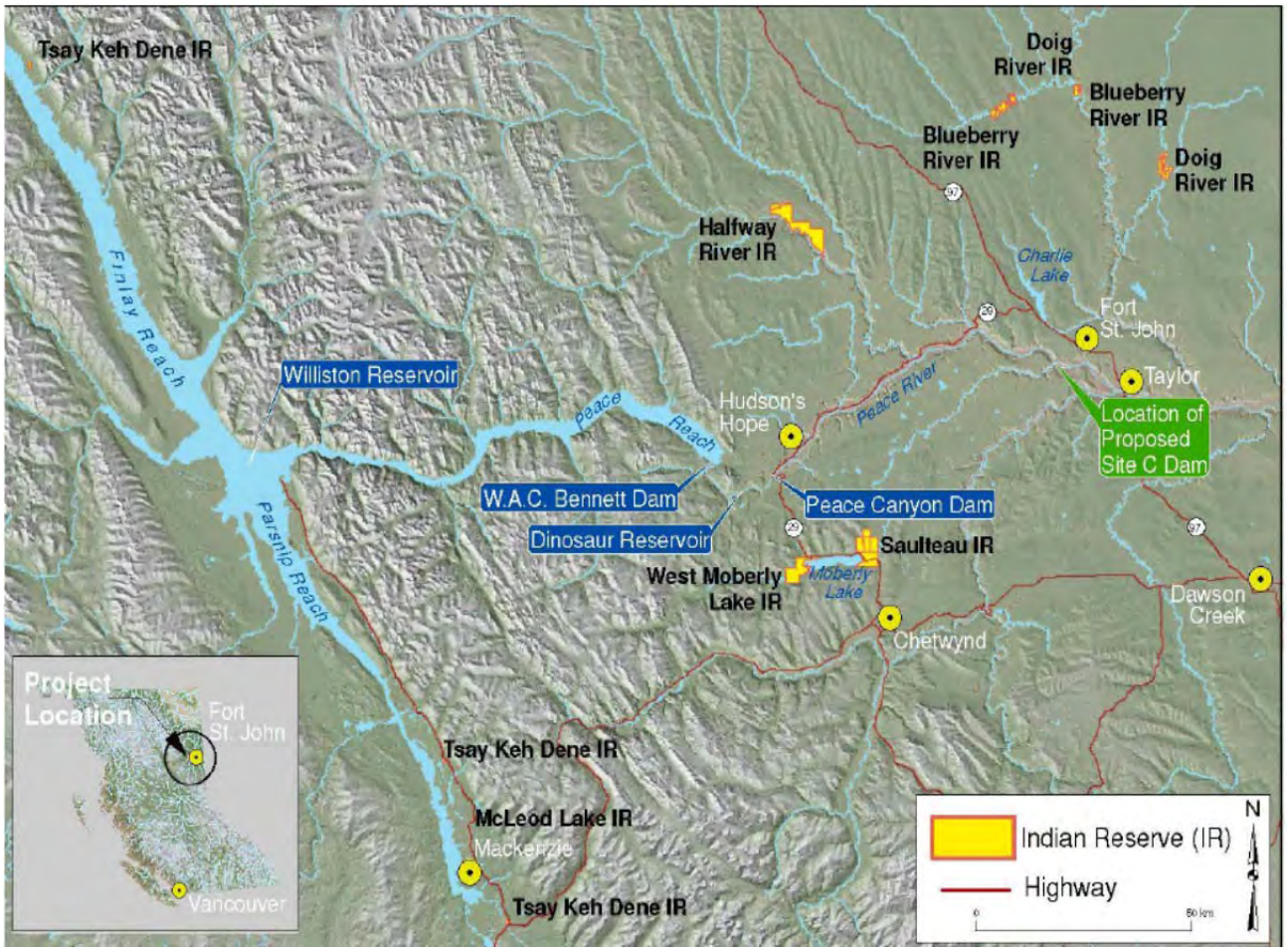


Note: BRFN Currently Held Traplines Marked in Yellow

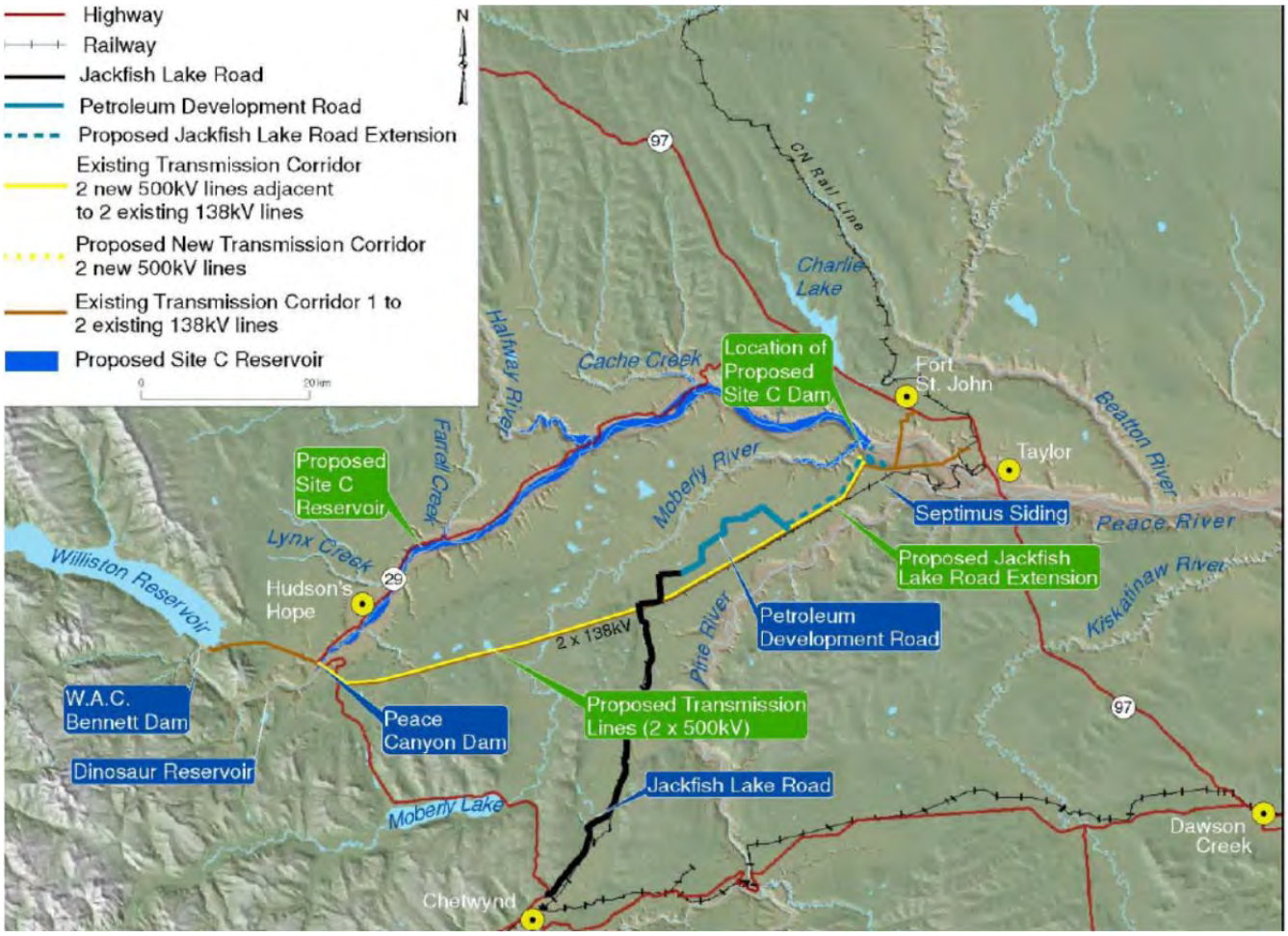
Appendix 8: Some of the Identified BRFN Overnight Site Locations.



. **Appendix 9: Project Area and Key Components: Part I**



Appendix 10: Project Area and Key Components: Part II



SITE C CLEAN ENERGY PROJECT

BLUEBERRY RIVER FIRST NATIONS

COMMUNITY BASELINE AMENDMENT REPORT

Prepared for:

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May 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 Blueberry River First Nations. 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.

Blueberry River First Nations prepared the "Blueberry River First Nations Community Baseline Profile" (BRFN Community Baseline Profile) for consideration in the Site C Clean Energy Project (the Project) environmental assessment. The report was submitted to BC Hydro on January 4, 2013, after BC Hydro had completed integrating new information into the EIS prior to submission 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 2 stating that, "the Blueberry River First Nations 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 BRFN Community Baseline Profile is presented in its entirety in the Aboriginal Group Amendment Report: Blueberry River First Nations Community Baseline Profile Amendment Report.

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

Blueberry River First Nations EIS Integration Summary Amendment Table (BRFN EIS Integration Table) which presents a table which cross-references the BRFN Community Baseline Profile information with baseline information categories and the related section of the EIS, and,

Blueberry River First Nations Community Baseline Profile EIS Integration Amendment Report (BRFN EIS Integration Report) which presents new key issues and concerns or new baseline information by VC

The BRFN EIS Integration Table and the BRFN 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 BRFN Community Baseline Profile that were also raised during the pre-Application phase are addressed in the EIS (January 25, 2013) and are not repeated in this report. New issues and concerns or new baseline information identified in the BRFN Community Baseline Profile that was not raised during the pre-Application phase 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 BRFN Community Baseline Profile resulted in the following updates to the information provided in the EIS. Sections not listed did not include new information or changes.

- New key issues or concerns were identified for the following VCs:
  - 13 Vegetation and Ecological Communities
  - 14 Wildlife Resources
  - 19 Current Use of Lands and Resources for Traditional Purposes
  - 20 Agriculture
  - 24 Harvest of Fish and Wildlife Resources
  - 25 Outdoor Recreation and Tourism
  - 26 Navigation
  - 27 Visual Resources
  - 31 Transportation
- New baseline information was identified for the following VCs:
  - 13 Vegetation and Ecological Communities
  - 19 Current Use of Lands and Resources for Traditional Purposes
- 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 BRFN 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 BRFN 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 Blueberry River First Nations Traditional Land Use Study was summarized in Table 12.6 of EIS section 12.3. All of the fish species identified in the BRFN Community Baseline Profile have been accounted for in the Fish and Fish Habitat baseline conditions in EIS section 12.3.

12.3 Effects Assessment and Mitigation

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the fish and fish habitat VC, described in EIS section 12.

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 because the residual effects have not changed.

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 BRFN Community Baseline Profile raises the new key issues or concerns listed in Table 13-1 related to the vegetation and ecological communities VC and the approach to addressing these issues.

Table 13-1 New Key Issues: Vegetation and Ecological Communities

Key Issue	Approach to Addressing Key Issues
Loss of old growth forests / forest in valley bottom and slopes	Considered by assessing the loss of older forest types that are identified as structural Stage 7 in the vegetation and ecological communities assessment.
Loss of high conservation value forest on river valley slopes and bottom	Considered by assessing the loss of rare and sensitive ecosystems in the vegetation and ecological communities assessment.
Loss of riparian areas and wetland areas	Considered by assessing the loss of riparian and wetland ecosystems in the vegetation and ecological communities assessment.
Changes in vegetation succession patterns	Considered under habitat alteration and fragmentation in the vegetation and ecological communities assessment.
Lack of recharge of flood plain wetlands	Considered in the LAA under habitat alteration and fragmentation in the vegetation and ecological communities assessment.
Direct loss of forest resources and vegetation	Considered in the assessment under habitat alteration and fragmentation in the vegetation and ecological communities assessment.
Erosion of river channel below dam	Potential changes in fluvial geomorphology and sediment transport due to the Project are described in EIS section 11.8. The baseline information and predicted changes described in the section were used in the effects assessment on VCs, as relevant.
Narrowing of mainstem of Peace River	Potential changes in fluvial geomorphology and sediment transport due to the Project are described in EIS section 11.8. The baseline information and predicted changes described in the section were used in the effects assessment on VCs, as relevant.

13.2 Baseline Conditions

Table 13-2 presents new Aboriginal plant species of interest identified in the BRFN Community Baseline Profile not already included in the baseline information for the vegetation and ecological communities VC in EIS section 13.2.

Table 13-2 Aboriginal Plant Species of Interest Occurrence in Terrestrial Ecosystems

Plant species	Terrestrial Ecosystem
Wild ginger	This species was not recorded during ecosystem mapping surveys

Poplar	Upland and floodplain forests, wetlands
Wild carrot	This species was not recorded during ecosystem mapping surveys

13.3 Effects Assessment and Mitigation

The species of plants identified above were not specifically addressed in the EIS. The potential effect of the Project on these species is included in the assessment on general vegetation found in EIS section 13.3. Consequently, the information does not alter:

- the assessment of the potential for the Project to result in adverse effects described in EIS section 13.3.1; or
- the requirements for, the scope of, or the effectiveness of, the mitigation measures described in EIS section 13.3.2.

13.4 Residual Effects

No changes are required to the residual effects for the vegetation and ecological communities VC provided 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

New key issues were identified during the review of the BRFN Community Baseline Profile. Table 14-1 lists the new key issues and the approach to addressing these issues.

Table 14-1 New Key Issues: Wildlife Resources

Key Issues	Approach to Addressing Key Issues
Loss of high value and unique habitat area within Peace region	The loss of high value and unique habitat areas within the Peace Region is part of the Wildlife Resources assessment under habitat alteration and fragmentation.
Loss of wildlife habitat downstream due to change in plant communities	Loss of wildlife habitat downstream due to change in plant communities is part of the Wildlife Resources assessment under habitat alteration and fragmentation.
Loss of islands, back channels, side channels, flood plain habitat for ungulates	Effects on ungulate habitats are part of the Wildlife Resources assessment under habitat alteration and fragmentation.
Change in wildlife dynamics (movement, distribution, density, breeding, birthing areas, survival and mortality)	Changes in wildlife dynamics are part of the Wildlife Resources assessment under habitat alteration and fragmentation, disturbance and displacement and mortality.
Injurious affections of adjacent wildlife habitat in which Peace River plays integral role	Effects on adjacent wildlife habitat is part of the Wildlife Resources assessment under habitat alteration and fragmentation
Moose and bear stranding on islands in the Peace River due to high water	The potential for moose and bear stranding is part of the Wildlife Resources assessment under disturbance and displacement and mortality.
Ungulate birthing habitat on islands open to increased predation during low flow conditions	Effects on ungulate birthing habitat on islands are part of the Wildlife Resources assessment under habitat alteration and fragmentation.
Loss of thermal cover / critical winter habitat for ungulates on valley slopes	Effects on ungulate habitats are part of the Wildlife Resources assessment under habitat alteration and fragmentation.
Localized climate change effects on valley slopes / critical habitat	Localized climate change effects are not part of the Wildlife Resources assessment in accordance with the EIS Guidelines.
Loss of connectivity for wildlife	Wildlife connectivity is part of the Wildlife Resources assessment under habitat alteration and fragmentation and disturbance and displacement.
Permanent loss of waterfowl habitat in back and side channels of the Peace	Loss of waterfowl habitat is part of the Wildlife Resources assessment under habitat alteration and fragmentation and disturbance and displacement
Reduced waterfowl nest production and nesting habitat	A reduction in waterfowl nest production and nesting habitat are part of the Wildlife Resources assessment under habitat alteration, fragmentation and disturbance and displacement and mortality
Limited upstream fluctuations impact of aquatic fur bearer habitat	Effects of upstream fluctuations on aquatic furbearer habitat for beaver are part of the Wildlife Resources assessment under habitat alteration and fragmentation and disturbance and displacement

Fluctuating levels impacting beaver lodges	Effects of fluctuating levels on beaver lodges are part of the Wildlife Resources assessment under habitat alteration and fragmentation and disturbance and displacement
Losses in aquatic fur bearer population	Losses in aquatic furbearer populations are considered for beaver in the Wildlife Resources assessment.
Limited upstream fluctuations impact on waterfowl habitat	Effects of upstream fluctuations on waterfowl habitat are part of the Wildlife Resources assessment under habitat alteration and fragmentation and disturbance and displacement
Drowning of wildlife due to high winter flows and open water in the winter	Potential drowning is considered in the Wildlife Resources assessment associated with disturbance and displacement, and mortality.
Increased wildlife mortality due to influx of vehicles along Peace valley, adjacent lands and region during construction period, highway straightening and Project related traffic; increased wildlife mortality due to the numbers of trips to and from the pit along access routes and approaching highway	Changes in wildlife mortality are part of the Wildlife Resources assessment.
Low in stream flows can impact wildlife and wildlife habitat	Low instream flows are not expected due to the Project and are not addressed in the Wildlife Resources assessment.
Increased access on T/L and indirect effect on wildlife populations from predation	Effects of increased access are part of the Wildlife Resources assessment under disturbance and displacement and mortality.
Fragmentation and increased linear disturbance in area of high wildlife habitat values (Peace Moberly Tract) and within Peace Region	Fragmentation and increased linear disturbance are part of the Wildlife Resources assessment under habitat alteration and fragmentation, disturbance and displacement and mortality.
Raised potential for other industrial users to twin transmission line corridor, widening disturbance and area of effect	No projects of this type were identified in the cumulative effects assessment and are not considered in EIS section 14.6.
Increased hunting levels in the Peace valley, adjacent lands and region during construction period.	The potential for increased hunting levels in the Peace valley and adjacent lands is addressed in Volume 3, Section 24 Harvest of Fish and Wildlife Resources

14.2 Baseline Conditions

The BRFN 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 BRFN 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 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 for the wildlife resources VC provided 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 BRFN Community Baseline Profile does not raise any new issues or concerns related to the greenhouse gases VC.

15.2 Baseline Conditions

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

15.3 Effects Assessment and Mitigation

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

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 and regional assessment area for the Local Government Revenue VC does not include the Blueberry River First Nations.

The local assessment area (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

17.1 Key Issues

The BRFN Community Baseline Profile does not raise any new issues or concerns related to the labour market VC.

17.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the Blueberry River First Nations labour market.

17.3 Effects Assessment and Mitigation

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the labour market VC, described in EIS section 17.

17.4 Residual Effects

No changes are required to the residual effects for the labour market VC in EIS section 17.6.

17.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the labour market VC in EIS section 17.7.

17.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the labour market VC in EIS section 17.8.

18. REGIONAL ECONOMIC DEVELOPMENT

18.1 Key Issues

The BRFN Community Baseline Profile does not raise any issues or concerns related to the regional economic development VC.

18.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to Blueberry River First Nations economic development.

18.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the regional economic development VC, described in EIS section 18.

18.4 Residual Effects

No changes are required to the residual effects for the regional economic development VC in EIS section 18.6.

18.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the regional economic development VC in EIS section 18.7.

18.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the regional economic development VC in EIS section 18.8.

19. CURRENT USE OF LANDS AND RESOURCES FOR TRADITIONAL PURPOSES

19.1 Key Issues

Table 19-1outlines new key issues regarding current use of lands and resources for traditional purposes raised in the BRFN Community Baseline Profile, and BC Hydro's approach to addressing these issues. In addition to the information identified in Table 19-1, the BRFN Community Baseline Profile also raises several additional concerns related to potential Project effects on vegetation and ecological communities, wildlife, and wildlife habitat. These are considered in Sections 13, and 14 of this BRFN EIS Integration Report. The effects assessment in EIS section 19 was based on the results of the effects assessment on fish, fish habitat, vegetation, wildlife and wildlife habitat in EIS sections 12, 13, and 14 respectively, and baseline information described in EIS section 19.2.

Table 19-1 New Key Issues: Current Use of Land and Resources for Traditional Purposes

Key Issues	Approach to Addressing Key Issues
Potential increased hunting levels and fishing levels in Peace Valley areas due to influx of construction workforce	EIS Section 28 Population and Demographics assessed the changes in population and demographics that may occur in the LAA during construction and operations. The results of this assessment were used in EIS Section 24 Harvest of Fish and Wildlife Resources to estimate the increase in licensed hunters and anglers in the LAA that may occur as a result of the Project. Potential effects on wildlife populations are assessed in EIS Section 14 Wildlife Resources and EIS Section 24 Harvest of Fish and Wildlife Resources considers effects of the Project on the availability of harvested species. Potential effects on fish populations are assessed in EIS Section 12 Fish and Fish Habitat and Section 24.4 Harvest of Fish and Wildlife Resources Effects Assessment considers effects of the Project on the availability of harvested species. 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, fishing, and trapping activities.
Loss of habitation sites / camping sites to use and occupy	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 use of habitation sites.

Key Issues	Approach to Addressing Key Issues
Change in ice conditions/freeze up for ice fishers	Projected ice conditions on the reservoir are described in EIS Section 11.7 Thermal and Ice Regime (construction phase: 11.7.2; and operations phase: 11.7.3) Ice management during construction and operations is described in Summary of Environmental Management Plans in EIS Volume 5 Section 35.2.2.15 and 35.3.2.2.
Dam construction could impact fur bearer utilization in the lower reaches of Beatton watershed, where BRFN members hold traplines	Potential effects on wildlife populations are assessed in EIS Section 14 Wildlife Resources and EIS Section 24 Harvest of Fish and Wildlife Resources considers effects of the Project on the availability of harvested species. EIS Section 24 Harvest of Fish and Wildlife Resources identifies traplines affected by the Project and assesses effects to those traplines.
BRFNs ability 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) - loss of Peace River Valley may deprive BRFN of exercising their rights to hunt, fish, etc.	Potential effects on wildlife populations and wildlife habitat are assessed in EIS Section 14 Wildlife Resources and EIS Section 24 Harvest of Fish and Wildlife Resources considers effects of the Project on the availability of harvested species. Potential effects on fish populations and fish habitat are assessed in EIS Section 12 Fish and Fish Habitat and Section 24.4 Harvest of Fish and Wildlife Resources Effects Assessment considers effects of the Project on the availability of harvested species. 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, fishing, and trapping activities. Using the baseline information described in EIS Section 19.2, and the assessment in EIS Sections 12, 13, and 14, EIS Section 19 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, fishing, and trapping activities. EIS Section 34.3.3 Asserted or Established Aboriginal Rights and Treaty Rights, Aboriginal Interests and Information Requirements assess potential impacts on the exercise of asserted or established Aboriginal and treaty rights.

Key Issues	Approach to Addressing Key Issues
The riparian forests along the Peace River bench lands, slopes and river banks will be impacted and tend to contain and support high levels of bio-diversity and holds traditional and cultural use activities for BRFN members, and as such can impact hunting	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.

19.2 Baseline Conditions

The BRFN Community Baseline Profile describes the following new baseline information on Blueberry River First Nations current use of lands and resources for traditional purposes.

- The drop in wildlife population around the BRFN reserve, areas adjacent to the reserve and areas to the east of the Alaska Hwy forced the BRFN to shift their hunting and cultural land based practices to the west of the Alaska Hwy towards the Northern Rockies over the past ten years. (BRFN 2013: Section 5.4).This hunting area is outside the Current Use of Lands and Resources for Traditional Purposes (Wildlife Resources) LAA and RAA. BRFN hunting is documented in EIS Volume 3 Economic and Land and Resource Use Effects Assessment Section19 Current Use of Lands and Resources for Traditional Purposes.
- A limited number of community members report that they still hunt and kill the occasional caribou in the ‘Butler Ridge” range or at “Caribou Mountain” north of the Williston Reservoir / Peace Reach. Overall, BRFN community members elect not to hunt caribou due to their low numbers and in the hope that that the species will recover through their former ranges. Notwithstanding the fact that the BRFN do not hunt caribou as much as they once did and choose not to exercise their right, the BRFN can be said to have an acute interest in caribou (and by extension caribou habitat and recovery) given its threatened status. (BRFN 2013: Section 5.4). BRFN hunting north of the Williston Reservoir is documented in EIS Volume 3 Economic and Land and Resource Use Effects Assessment Section19 Current Use of Lands and Resources for Traditional Purposes. The effects of the Project on caribou were not assessed in EIS section 14 Wildlife Resources. The rationale for excluding caribou from the assessment is provided in EIS section 14 Table 14.2 page 14-8.
- Hunting skills and the hunting culture of the BRFN are being passed on and transmitted to the new generation. BRFN elders all can name younger men and women that are showing an interest in hunting, learning about hunting and being in the bush with their family. It appears that the younger generation of the BRFN now appear to be accompanying their families into the bush and are now going into the bush by themselves. (BRFN 2013: Section 5.4). BRFN’s transfer of traditional knowledge and skills to younger generations is captured in EIS

Volume 3 Economic and Land and Resource Use Effects Assessment Section 19 Current Use of Lands and Resources for Traditional Purposes.

19.3 Effects Assessment and Mitigation

The new baseline conditions described above for EIS section 19.3 were outside the LAA or were already considered in the assessment. The new baseline information provided in the BRFN Community Baseline Profile does not alter:

- the assessment of the potential for the Project to result in effects described in EIS Section 19.4; or
- the requirements for, the scope of, or the effectiveness of, the mitigation measures described in EIS sections 19.4.3, 19.4.5, 19.4.7 and 19.4.8.

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 19.5.

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 19.6.

19.6 Monitoring and Follow-up

No changes are required to the monitoring and follow-up described in EIS section 19.7.

20. AGRICULTURE

20.1 Key Issues

Table 20-1 outlines key agriculture issues raised in the BRFN Community Baseline Profile, and BC Hydro's approach to addressing these issues.

Table 20-1 New Key Issues: Agriculture

Key Issues	Approach to Addressing Key Issues
Sedimentation from agricultural activities	Matters related to ongoing agricultural activities and past agricultural development lie outside the scope of the environmental assessment in accordance with the EIS Guidelines.
Nutrient loading from agricultural activities	
Water withdrawals from surface water sources	
Draining of wetlands	

Key issues and concerns were also raised regarding the potential cumulative effect of agriculture and other development activities (BRFN 2013, section 4.2) on fish, wildlife and plant communities, and on Blueberry River First Nations' ability to continue to use these resources. 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 updated in this Amendment Report.

20.2 Methodology and Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the agriculture VC.

20.3 Effects Assessment and Mitigation

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the agriculture VC, described in Section 20 of the EIS.

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 monitoring and follow-up for the Agriculture VC in EIS section 20.7.

21. FORESTRY

21.1 Key Issues

The BRFN 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 (BRFN 2013, section 4.2) on fish, wildlife and plant communities, and on Blueberry River First Nations' ability to continue to use these resources. 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 updated in this Amendment Report.

21.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe baseline conditions related to the forestry VC.

21.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the forestry VC, described in EIS section 21.

21.4 Residual Effects

No changes are required to the residual effects 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 monitoring and follow-up for the forestry VC in EIS section 21.8.

22. OIL, GAS, AND ENERGY

22.1 Key Issues

The BRFN Community Baseline Profile does not raise any issues or concerns directly related to the oil, gas and energy VC. Key issues and concerns are raised regarding the potential cumulative effects of oil, and gas and energy and other development activities (BRFN 2013, section 4.2) on fish, wildlife and plant communities, and on Blueberry River First Nations' ability to continue to use these resources. 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 updated in this Amendment Report.

22.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related the oil, gas and energy VC.

22.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the oil, gas and energy VC, described in EIS section 22.

22.4 Residual Effects

No changes are required to 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 BRFN Community Baseline Profile does not raise any issues or concerns directly related to the Minerals and Aggregates VC. Key issues and concerns are raised regarding the potential cumulative effects of minerals and aggregates and other development activities (BRFN 2013, section 4.2) on fish, wildlife and plant communities, and on Blueberry River First Nations' ability to continue to use these resources. 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 updated in this Amendment Report.

23.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the minerals and aggregates VC.

23.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the minerals and aggregates VC, described in EIS section 23.

23.4 Residual Effects

No changes are required to 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

Table 24-1 outlines a new key concern related to the harvest of fish and wildlife resources raised in the BRFN Community Baseline Profile, and BC Hydro's approach to addressing the issue.

Issues and concerns raised in the BRFN Community Baseline Profile regarding harvest of fish and wildlife for traditional purposes are addressed in Section 19 Current Use of Lands and Resources for Traditional Purposes of this report.

Table 24-1 New Key Issue: Harvest of Fish and Wildlife Resources

Key Issue	Approach to Addressing Key Issues
Use of Harvesting Areas / Hunting and Fishing Opportunities	
Potential increased hunting levels and fishing levels in Peace Valley areas due to influx of construction workforce expansion	EIS Section 28 Population and Demographics assessed the changes in population and demographics that may occur in the LAA during construction and operations. The results of this assessment were used in EIS Section 24 Harvest of Fish and Wildlife Resources to estimate the increase in licenced hunters and anglers in the LAA that may occur as a result of the Project. Potential effects on wildlife populations are assessed in EIS Section 14 Wildlife Resources and EIS Section 24 Harvest of Fish and Wildlife Resources considers effects of the Project on the availability of harvested species. Potential effects on fish populations are assessed in EIS Section 12 Fish and Fish Habitat and Section 24.4 Harvest of Fish and Wildlife Resources Effects Assessment considers effects of the Project on the availability of harvested species. 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, fishing, and trapping activities.

24.2 Baseline Conditions

The BRFN Community Baseline Profile describes new baseline information on the Blueberry River First Nations' current use of land and resources, including the harvest of fish and wildlife resources. This baseline information is presented in Section 19 Current Use of Lands and Resources for Traditional Purposes of this report.

24.3 Effects Assessment

The baseline information identified above (Section 24.2) 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 considered in EIS Section 19 Current Use of Lands and Resources for Traditional Purposes. Consequently, the information does not alter:

- the assessment of the potential for the Project to result in effects described in EIS sections 24.4 and 24.5; or
- the requirements for, the scope of, or the effectiveness of, the mitigation measures described in EIS sections 24.4.2, 24.4.4 and 24.5.

24.4 Residual Effects

No changes are required to the residual effects for the harvest of fish and wildlife resources 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 resources 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 resources VC in EIS section 24.8.

25. OUTDOOR RECREATION AND TOURISM

25.1 Key Issues

Table 25-1 outlines a new key outdoor recreation and tourism issue identified in the BRFN Community Baseline Profile, and BC Hydro's approach to addressing the issue.

Table 25-1 New Key Issue: Outdoor Recreation and Tourism

Key Issue	Approach to Addressing Key Issues
Safety	
Debris in reservoir could pose hazard to fishers / boat hunters and trappers.	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 BRFN Community Baseline Profile does not describe new baseline conditions related to the outdoor recreation and tourism VC.

25.3 Effects Assessment

No new baseline information was presented in the BRFN 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.

25.4 Residual Effects

No changes are required to the residual effects for the outdoor recreation and tourism VC 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

Table 26-1 outlines new key navigation issues identified in the BRFN Community Baseline Profile, and BC Hydro's approach to addressing these issues.

Table 26-1 New Key Issues: Navigation

Key Issues	Approach to Addressing Key Issues
Safety	
Sudden flow changes from Peace Canyon could endanger fishers / boaters immediately downstream	Public safety is addressed in EIS Section 35 Summary of Environmental Management Plans Section 35.3.1.3 Public Safety Management plan – Operations
Debris in reservoir could pose hazard fishers / boat hunters and trappers.	Debris management is outlined in the Volume 1, Appendix A Project Vegetation, Clearing, and Debris Management Plan, EIS Volume 1 Executive Summary, Introduction and Project Planning and Description. EIS Section 25 Outdoor Recreation and Tourism (Section 15.4.2.1, pages 25-30) describes the proposed public access restrictions proposed for safety reasons. EIS Section 26 Navigation (Section 26.4.4, Section 26.4.5, and Section 26.4.6, pages 18 - 20) describes Potential navigation hazards in waterways during construction and operations and mitigation measures.
Change in ice conditions / freeze up could impact flows for ice fishers	Projected ice conditions on the reservoir are described in EIS Section 11.7 Thermal and Ice Regime (construction phase: 11.7.2; and operations phase: 11.7.3) Ice management during construction and operations is described in EIS Section 35 Summary of Environmental Management Plans, Section 35.2.2.15 Ice Management Plan - Construction and 35.3.2.2 Ice Management Plan – Operations.

26.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the navigation VC.

26.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the navigation VC, described in EIS section 26.

26.4 Residual Effects

No changes are required to the 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

Table 27-1 outlines a key visual resources issue raised by the Blueberry River First Nations in their Community Baseline Profile, and BC Hydro's approach to addressing it.

Table 27-1 New Key Issue: Visual Resources

Key Issue	Approach to Addressing Key Issues
Aesthetic / visual impact of altered river regime and new dam in river valley	Effects of the Project on visual resources are described in EIS Section 27 Visual Resources. Photomontages were prepared to illustrate altered views and river landscape after filling of the Site C reservoir. A visibility analysis was conducted to show where the Project would be visible from Receptor sites were selected at scenic view locations

27.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the visual resources VC.

27.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the visual resources VC, described in EIS section 27.

27.4 Residual Effects

No changes are required to the residual effects for the visual resources VC in EIS section 27.6.

27.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the visual resources VC in EIS section 27.7.

27.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the visual resources VC in EIS section 27.8.

28. POPULATION AND DEMOGRAPHICS

28.1 Key Issues

The BRFN Community Baseline Profile does not identify any new issues or concerns related to the population and demographics VC.

28.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the population and demographics VC.

28.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the population and demographics VC, described in EIS section 28.

28.4 Residual Effects

No changes are required to the residual effects for the population and demographics VC in EIS section 28.6.

28.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the population and demographics VC in EIS section 28.7.

28.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the population and demographics VC in EIS section 28.8.

29. HOUSING

29.1 Key Issues

The BRFN Community Baseline Profile does not raise any new issues or concerns related to the housing VC.

29.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the housing VC.

29.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the housing VC, described in EIS section 29.

29.4 Residual Effects

No changes are required to the residual effects for the housing VC in EIS section 29.6.

29.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the housing VC in EIS section 29.7.

29.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the housing VC in EIS section 29.8.

30. COMMUNITY INFRASTRUCTURE AND SERVICES

30.1 Key Issues

The BRFN Community Baseline Profile does not raise any new issues or concerns related to the community infrastructure and services VC.

30.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the community infrastructure and services VC.

30.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the community infrastructure and services VC, described in EIS section 30.

30.4 Residual Effects

No changes are required to the residual effects for the community infrastructure and services VC in EIS section 30.6.

30.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the community infrastructure and services VC in EIS section 30.7.

30.6 Monitoring and Follow-up

No changes are required to monitoring and follow-up for the community infrastructure and services VC in EIS section 30.8.

31. TRANSPORTATION

31.1 Key Issues

Table 31-1 outlines a new key transportation issue identified in the BRFN Community Baseline Profile and BC Hydro's approach to addressing it.

Table 31-1 New Key Issue: Transportation

Key Issue	Approach to Addressing Key Issues
Safety / Wildlife Mortality	
Concern that Highway 29 straightening could lead to increased traffic speeds and a greater level of vehicle / ungulate collisions.	Project effects on road safety were described in EIS Volume 4 Social, Heritage, and Health Effects Assessment Section 31 Transportation and in EIS Volume 4 Social, Heritage, and Health Effects Assessment Appendix B Project Traffic Analyses Report. Traffic effects on wildlife are assessed in EIS Volume 2 Assessment Methodology and Environmental Effects Assessment Section 14 Wildlife Resources

31.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the transportation VC.

31.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the transportation VC, described in EIS section 31.

31.4 Residual Effects

No changes are required to the residual effects for the transportation VC in EIS section 31.6.

31.5 Cumulative Effects Assessment

No changes are required to the cumulative effects assessment for the transportation VC in EIS section 31.7.

31.6 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 BRFN Community Baseline Profile does not raise any new issues or concerns related to the heritage resources VC.

32.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline conditions related to the heritage resources VC.

32.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the heritage resources VC, described in EIS section 32.

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 BRFN Community Baseline Profile does not raise any new issues or concerns related to the Human Health VC.

33.2 Baseline Conditions

The BRFN Community Baseline Profile does not describe new baseline information related to the human health VC.

33.3 Effects Assessment

No new baseline information was presented in the BRFN Community Baseline Profile and as such no changes are required to the assessment of the human health VC, described in EIS section 33.

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 BRFN 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 Blueberry River First Nation, as described in EIS sections 34.3.3.

34.2 Aboriginal Accommodation

No changes are required to Aboriginal Accommodation described in EIS section 34.4.

34.3 Outstanding Aboriginal Issues

No changes are required to the discussion of outstanding Aboriginal issues in EIS section 34.5.

BLUEBERRY RIVER FIRST NATIONS

APPENDIX 1

EIS INTEGRATION SUMMARY AMENDMENT TABLE

EIS Integration Summary Amendment Table – Blueberry River First Nations

1 INTEGRATION OF COMMUNITY BASELINE PROFILE: SUMMARY TABLE – BLUEBERRY RIVER FIRST NATIONS

The Blueberry River First Nations EIS Integration Summary Amendment Table (Table 1) was prepared to support the review and consideration of the Blueberry River First Nations Community Baseline Profile (BRFN 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 BRFN Community Baseline Profile for each category
- Column 3 – Identifies the EIS section associated with the information.

Please see the Aboriginal Group Amendment Report – Blueberry River First Nations Community Baseline Profile EIS Integration Report for further information regarding the receipt and consideration of the BRFN Community Baseline Profile.

The BRFN Community Baseline Profile is presented in its entirety in the Aboriginal Group Amendment Report – Blueberry River First Nations Community Baseline Profile Amendment Report.

Table 1 Summary Review Table – Blueberry River First Nations

Baseline Information Category	Baseline Information Summary	EIS Section Number and Name
Current Use of Lands and Resources for Traditional Purposes	Current Use of Lands and Resources– General: S.3.1.2, 3.1.3, 3.1.4, S. 3.3, 3.4, 4.2; 11.0 Fishing – S. 4.1, 4.2, 4.3, 5.2, 5.4.1, 5.5, 5.5.1, 5.5.2, 10.0, 10.1, 10.2, 10.2.2, 10.2.3, 11.1.2, 11.1.3, Potential Project Effects – BRFN Interest Interaction Matrix Trapping - S 4.2, 4.3, 5.2, 5.4.1, 5.6, 5.6.1, 5.6.2, 10.0, 10.3, Potential Project Effects – BRFN Interest Interaction Matrix Hunting – S. 4.2, 4.3, 5.2, 5.4, 5.4.1. 5.4.2, 10.0, 10.1, 10.1.2, 10.1.3, 10.1.4, 11.1.2, 11.1.3, Potential Project Effects – BRFN Interest Interaction Matrix Vegetation ["Plant and Earth Material Gathering Sites"] – S 4.2, 4.3, 5.2, 5.4.1, 5.7, 5.7.1, 5.7.2, 10.0, 10.4.2, 10.5.2, Potential Project Effects – BRFN Interest Interaction Matrix Cultural and Spiritual Use - S.5.4, 5.4.1, 6.8, 6.8.1, 8.0, 10.0, 10.5.1, 10.5.2, Potential Project Effects – BRFN Interest Interaction Matrix Socio-cultural (community response to changing conditions) - S. 11.1.3 Value of Country Foods - S. 5.3	Section 19 Current Use of Lands and Resources for Traditional Purposes Section 24 Harvest of Fish and Wildlife Resources Section 14 Wildlife Resources Section 12 Fish and Fish Habitat Section 13 Vegetation and Ecological Communities Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
	Treaty Area Interest – S. 13.0, Potential Project Effects – BRFN Interest Interaction Matrix	Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests and Information Requirements
	Trapping S5.6, 5.6.1, 5.6.2, 10.3, Potential Project Effects – BRFN Interest Interaction Matrix	Section 24 Harvest of Fish and Wildlife Resources Section 19 Current Use of Lands and Resources for Traditional Purposes
Current Use of Lands and Resources for Traditional Purposes	Concern: Hunting pressures from influx of workers - Potential Project Effects – BRFN Interest Interaction Matrix	Section 24 Harvest of Fish and Wildlife Resources
Environmental Background / Potential Environmental Effects	Fishing/Fish - S.4.1, S. 4.2, 5.5, 7.0, 8.0, 9.0, 10.2, 10.2.2, 10.2.3, 10.5.2, 11.1.3, 13.0, Potential Project Effects –	Section 12 Fish and Fish Habitat

	BRFN Interest Interaction Matrix	
	Vegetation – S. 7.0, 8.0, 10.1, 10.1.2, 10.1.3, 10.1.4, 10.4.2, Potential Project Effects – BRFN Interest Interaction Matrix	Section 13 Vegetation and Ecological Communities Section 14 Wildlife Resources
	Wildlife and Wildlife Habitat – S. 4.1, 5.4, 7.0, 8.0, 9.0, 10.1, 10.1.2, 10.1.3, 10.1.4 (including effect of increased traffic), 10.5.2, 11.1.3, 13.0, 14.0, Potential Project Effects – BRFN Interest Interaction Matrix	Section 14 Wildlife Resources
	Recreation – S. 7.0	Section 25 Outdoor Recreation and Tourism
	Fishing – S. 7.0, 8.0, 10.2.3	Section 24 Harvest of Fish and Wildlife Resources
	Visual Aesthetics – S. 8.0, Potential Project Effects – BRFN Interest Interaction Matrix	Section 27 Visual Resources
Community Demographics, Services and Infrastructure	No information provided	n/a
Heritage	Effects on heritage resources: S. 8.0, 10, 11; Potential Project Effects – BRFN Interest Interaction Matrix	Section 32 Heritage Resources
Economics	No information provided	n/a
Community Health	Cultural Vitality: language, traditional activities – S. 3.2, 5.4	Section 19 Current Use of Lands and Resources for Traditional Purposes
	Methyl-Mercury in fish (concern): S. 5.5.1, 8.0, 10.1, 10.2, 10.2.2, Potential Project Effects – BRFN Interest Interaction Matrix	Section 33 Human Health
Non-traditional Use of Land and resources	No information provided on Blueberry River First Nation's non-traditional use of land and resources Information on industrial development, including forestry, mining, oil and gas in the Peace River Region is provided – concern regarding cumulative effects of development on fish, wildlife and plants, and on Blueberry River's ability to continue to use those resources	Section 19 Current Use of Lands and Resources for Traditional Purposes
Navigation / Safety	Effects of Project on safety of boaters, fishers, hunters from flow changes, debris, and ice conditions S 7.0, 8.0	Section 25 Outdoor Recreation and Tourism Section 26 Navigation