SITE C CLEAN ENERGY PROJECT

Aboriginal Plant Use Mitigation Plan

Site C Clean Energy Project

Revision 1: June 5, 2015

BC hydro FOR GENERATIONS

Table of Contents

Revision History

Version	Date	Comments
Draft	10-17-2015	**Draft**
Rev 0	05-19-2015	**Final Plan**
Rev 1	06-05-2015	**Final Plan, Revision 1**

1.0 Background

1.1 The Site C Clean Energy Project

The Site C Clean Energy Project (the Project) will be the third dam and generating station on the Peace River in northeast B.C. The Project will provide 1,100 megawatts of capacity and about 5,100 gigawatt hours of energy each year to the province's integrated electricity system. The Project will be a source of clean, reliable and cost-effective electricity for BC Hydro's customers for more than 100 years.

The key components of the Project are:

- an earthfill dam, approximately 1,050 metres long and 60 metres high above the riverbed;
- an 83 kilometre long reservoir that will be, on average, two to three times the width of the current river;
- a generating station with six 183 MW generating units;
- two new 500 kilovolt AC transmission lines that will connect the Project facilities to the Peace Canyon Substation, along an existing right-of-way;
- realignment of six segments of Highway 29 over a total distance of approximately 30 kilometers; and
- construction of a berm at Hudson's Hope.

The Project will also include the construction of temporary access roads, a temporary bridge across the Peace River, and worker accommodation at the dam site.

1.2 Project Benefits

The Project will provide important benefits to British Columbia and Canada. It will serve the public interest by delivering long term, reliable electricity to meet growing demand; contribute to employment, economic development, ratepayer, taxpayer and community benefits; meet the need for electricity with lower GHG impact than other resource options; contribute to sustainability by optimizing the use of existing hydroelectric facilities, delivering approximately 35 per cent of the energy produced at the W.A.C. Bennett Dam, with only five per cent of the reservoir area; and include an honourable process of engagement with First Nations and the potential for accommodation of their interests.

1.3 Environmental Assessment Process

The environmental assessment of the Project has been carried out in accordance with the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), the *BC Environmental Assessment Act* (BCEAA), and the Federal-Provincial *Agreement to Conduct a Cooperative Environmental Assessment, Including the Establishment of a Joint Review Panel of the Site C Clean Energy Project*. The assessment considered the environmental, economic, social, heritage and health effects and benefits of the Project, and included the engagement of Aboriginal groups, the public, all levels of government, and other stakeholders in the assessment process.

Detailed findings of the environmental assessment are documented in the Site C Clean Energy Project Environmental Impact Statement (EIS), which was completed in accordance with the Environmental Impact Statement Guidelines (EIS Guidelines) issued by the Minister of Environment of Canada and the Executive Director of the Environmental Assessment Office of British Columbia. The EIS was submitted to regulatory agencies in January 2013, and amended in August 2013 following a 60 day public comment period on the assessment, including open house sessions in Fort St. John, Hudson's Hope, Dawson Creek, Chetwynd, town of Peace River (Alberta) and Prince George.

In August 2013, an independent Joint Review Panel (JRP) commenced its evaluation of the EIS, and in December 2013 and January 2014 undertook five weeks of public hearings on the Project in 11 communities in the Peace region, including six Aboriginal communities. In May 2014, the JRP provided the provincial and federal governments with a report summarizing the Panel's rationale, conclusions and recommendations relating to the environmental assessment of the Project. On completion of the JRP stage of the environmental assessment, the CEA Agency and BCEAO consulted with Aboriginal groups on the JRP report, and finalized key documents of the environmental assessment for inclusion in a Referral Package for the Provincial Ministers of Environment and Forests, Lands and Natural Resource Operations.

Construction of the Project is also subject to regulatory permits and authorizations, and other approvals. In addition, the Crown has a duty to consult and, where appropriate, accommodate Aboriginal groups.

1.4 Environmental Assessment Findings

The environmental assessment of the Project focused on 22 valued components (VCs), or aspects of the biophysical and human setting that are considered important by Aboriginal groups, the public, the scientific community, and government agencies. In the EIS, valued components were categorized under five pillars: environmental, economic, social, heritage and health. For each VC, the assessment of the potential effects of the Project components and activities during construction and operations was based on a comparison of the biophysical and human environments between the predicted future conditions with the Project, and the predicted future conditions without the Project.

Potential adverse effects on each VC are described in the EIS along with technically and economically feasible mitigation measures, their potential effectiveness, as well as specific follow-up and related commitments for implementation. If a residual effect was found on a VC, the effect was evaluated for significance. Residual effects were categorized using criteria related to direction, magnitude, geographic extent, context, level of confidence and probability, in accordance with the EIS Guidelines.

The assessment found that the effects of the Project will largely be mitigated through careful, comprehensive mitigation programs and ongoing monitoring during construction and operations. The EIS indicates that the Project is unlikely to result in a significant adverse effect for most of the valued components. However, a determination of a significant effect of the Project was found on four VCs: Fish and Fish Habitat, Wildlife Resources, Vegetation and Ecological Communities, and Current Use of Lands and Resources for Traditional Purposes.

1.5 Environmental Assessment Conclusion

On October 14, 2014, the Provincial Ministers of Environment and of Forests, Lands and Natural Resource Operation decided that the Project is in the public interest and that the benefits provided by the Project outweigh the risks of significant adverse environmental, social and heritage effects (http://www.newsroom.gov.bc.ca/2014/10/site-c-project-granted-environmental-assessment-approval.html). The Ministers have issued an Environmental Assessment Certificate (EAC) setting conditions under which the Project can proceed.

Further, on November 25, 2014, The Minister of Environment of Canada issued a Decision Statement confirming that, while the Project has the potential to result in some significant adverse effects, the Federal Cabinet has concluded that those effects are justified in the circumstances. The Decision Statement sets out the conditions under which the Project can proceed.

1.6 Development of Mitigation, Management and Monitoring Plans

Mitigation, management and monitoring plans for the Project have been developed taking into account the measures proposed in the EIS, information received during the Joint Review Panel hearing process, and the Report of the Joint Review Panel on the Project. Those plans are consistent with, and meet requirements set out in, the conditions of the Environmental Assessment Certificate and of the Decision Statement issued on October 14, 2014 and November 25, 2014 respectively.

In addition, in accordance with environmental best practices (Condition 3.1), these plans were informed by the best available information and knowledge, based on validated methods and models, undertaken by qualified individuals and apply the best available economically and technologically feasible mitigation strategies. These plans contain provisions for review and update as new information on the effects of the Project and on the efficacy of the mitigation measures become available.

2.0 Aboriginal Plant Use Mitigation Plan

2.1 Objective and Scope

The purpose of the Aboriginal Plant Use Mitigation Plan (the “Plan”) is to describe the mitigation measures intended to avoid or reduce the loss or destruction of plants currently harvested by Aboriginal groups within the Project activity zone, and to describe compensation measures. This Plan has been developed in accordance with the following Conditions 25 and 26 of the Environmental Assessment Certificate (EAC) and Condition 14 of the federal Decision Statement (FDS), as indicated in the table below.

EAC 25, 26, and FDS 14

Condition Number	Condition	Plan Reference
EAC Condition 25	The EAC Holder must undertake a ground truthing program of traditional plants currently used by Aboriginal Groups in collaboration with Aboriginal	Section 4.1 Ground-truthing Program

Condition Number	Condition	Plan Reference
	Groups prior to construction. Where specific plants are known to be harvested by Aboriginal Groups, the EAC Holder must make reasonable efforts to consult interested Aboriginal Groups using the results of the ground truthing to inform the development and implementation of mitigation and compensation measures to accommodate adverse effects of the Project on plants traditionally used by Aboriginal Groups.	
EAC Condition 26	The EAC Holder must develop an Aboriginal Plant Use Mitigation Plan to describe how the effects of the Project on plants currently harvested by Aboriginal Groups will be mitigated, including through compensation measures.	
	The Aboriginal Plant Use Mitigation Plan must include at least the following:	
	• Identify within the Project footprint including areas being reclaimed potential sites for relocation of medicinal and food plants; relocate when deemed necessary by a QEP.	Section 4.2 Identification of Opportunities for Plant Relocation and Ecological Community Restoration
	• Identify within the Project footprint including areas being reclaimed opportunities to restore ecological communities that support species of high traditional use value for affected Aboriginal Groups and undertake restoration of those ecological communities where deemed necessary by a QEP.	Section 4.2 Identification of Opportunities for Plant Relocation and Ecological Community Restoration
	• Identify opportunities and provide financial support for propagation of indigenous plant species for use in reclamation programs, such as that offered through the indigenous nursery owned by the West Moberly First Nation and Saulteau First Nation. The EAC Holder must make reasonable commercial efforts to obtain up to $1 million in commercial service contracts with indigenous nurseries for provision of plants.	Section 4.3 Indigenous Plant Nursery
	The EAC Holder must make reasonable efforts to develop the Aboriginal Plant Use Mitigation Plan in collaboration with FLNR and Aboriginal Groups, at least 90 days prior to Project activities that may affect traditional plants.	Section 2.2 Consultation Section 4.0 Mitigation Measures
	The EAC Holder must file the final Aboriginal Plant Use Mitigation Plan with EAO, FLNR and Aboriginal Groups at least 30 days prior to Project activities that may affect traditional plants.	
	The EAC Holder must develop, implement and	

Condition Number	Condition	Plan Reference
	adhere to the final Aboriginal Plant Use Mitigation Plan, and any amendments, to the satisfaction of EAO.	
FDS Condition 14	Current use of lands and resources for traditional purposes.	
FDS Condition 14.1	The Proponent shall engage Reservoir Area Aboriginal groups and Immediate Downstream Aboriginal groups to identify and develop mitigation measures that could address impacts to current use of lands and resources for traditional purposes.	Section 2.2 Consultation Section 4.0 Mitigation Measures
FDS Condition 14.2	The Proponent shall inform Reservoir Area Aboriginal groups and Immediate Downstream Aboriginal groups about Designated Project activities that may affect the current use of lands and resources for traditional purposes including harvesting of plants, fish and wildlife and access to land for the purposes of those uses.	Section 2.2 Consultation Section 4.0 Mitigation Measures
FDS Condition 14.3	The Proponent shall seek the views of Reservoir Area Aboriginal groups and Immediate Downstream Aboriginal groups on methods to avoid or minimize the use of herbicides and pesticides near locations of plants of importance to those groups.	Section 2.2 Consultation Section 4.0 Mitigation Measures
FDS Condition 14.4	The Proponent shall report to the Agency on any actions implemented as a result of the activities outlined in conditions 14.1, 14.2 and 14.3 on an annual basis starting immediately prior to construction and for the first five years of operation.	Section 5.0 Reporting

The Plan is interrelated with and informed by other plans, including:

- Construction Environment Management Plan, in particular:
  - Soil Management, Site Restoration and Revegetation Framework (section 4.12)
  - Vegetation and Invasive Plant Management Plan (section 4.15)
- Vegetation and Wildlife Mitigation and Monitoring Plan

2.2 Consultation

Many of the conditions require BC Hydro to consult or collaborate with certain government agencies and Aboriginal groups in respect of measures and plans required by the conditions.

BC Hydro began consultation on the Project in late 2007, before any decision to advance the Project to an environmental assessment. BC Hydro's consultation with the public, stakeholders, regional and local governments, regulatory agencies, and Aboriginal groups is described in EIS Section 9, Information Distribution and Consultation.

Additional information on the consultation process and a summary of issues and concerns raised during consultation are provided in:

- Volume 1 Appendix G, Public Information Distribution and Consulting Supporting Documentation
- Volume 1 Appendix H, Aboriginal Information Distribution and Consultation Supporting Documentation
- Volume 1 Appendix I, Government Agency Information Distribution and Consultation Supporting Documentation
- Volume 5, Appendix A01 to A29, Parts 2 and 2A, Aboriginal Consultation Summaries
- Technical Memo: Aboriginal Consultation

Draft versions of a number of the mitigation, management and monitoring plans required by the conditions were submitted to applicable government agencies and Aboriginal groups for comment on October 17, 2014.

Comments on these draft plans were received from various government agencies and Aboriginal groups during November and December 2014, and were considered in the revisions to these plans. BC Hydro's consideration of these comments is provided in the consideration tracking tables that accompany each plan.

On December 15, 2014, Treaty 8 Tribal Association (T8TA), on behalf of West Moberly, Saulteau and Prophet River First Nations, submitted to BC Hydro a letter in response to BC Hydro's request for comment on the Plans sent on October 17, 2014. The letter included several appendices, including the Joint Review Panel (JRP) Report and transcripts from the JRP hearings in December 2013 and January 2014. BC Hydro responded to the three First Nations on January 21, 2015 noting that the October 17 2014 request for comments on the plans was to provide an opportunity to the First Nations to submit to BC Hydro any information they wanted to provide in relation to the Plans. BC Hydro advised that it was aware of the information referred to in T8TA's letter when the plans were prepared, and advised that it was preparing a table setting out where any mitigation measures identified by representatives of the three First Nations during the hearings are considered in the draft plans and would provide that to the First Nations once complete. Accordingly BC Hydro's responses to those mitigation measures identified by the representatives of the three First Nations during the JRP hearings were provided to the EAO in a separate table by letter dated May 19, 2015. Aside from the December 15, 2014 letter, BC Hydro has not received further comments from these First Nations. A letter of understanding dated April 30, 2015 respecting provision of capacity funding to support review of the plans was entered into by BC Hydro and Saulteau First Nations (on behalf of Saulteau, West Moberly and Prophet River First Nations).

New draft plans (i.e., Housing Plan and Housing Monitoring and Follow-Up Program, and the quarry/pit development plans) were provided to the entities identified in the EAC conditions on April 7, 2015. The Vegetation and Wildlife Mitigation and Monitoring Plan was revised based on

comments received on the October 17, 2014 version and based on discussions with Environment Canada and the BC Ministry of Environment, and was re-submitted to applicable entities on April 7, 2015.

Comments on the revised plans were requested by May 11, 2015 to allow for review, consideration of comments and finalization of the plans 30 days prior to the commencement of construction.

Comments were received by this requested date from:

- Fort Nelson First Nation
- Ministry of Forests, Lands and Natural Resource Operations (FLNRO), and
- Métis Nation British Columbia.

The Peace River Regional District submitted their comments on the plan on May 14, 2015. FLNRO submitted additional comments on May 15, 2015, including comments from the BC Ministry of Environment.

BC Hydro considered the comments provided and prepared final plans. On May 19, 2015, BC Hydro submitted the following mitigation, management and monitoring plans to the BC Environmental Assessment Office (BC EAO) for review:

- Construction Environmental Management Plan
- Construction Safety Management Plan
- Fisheries and Aquatic Habitat Management Plan
- Vegetation and Wildlife Mitigation and Monitoring Plan
- Vegetation Clearing and Debris Management Plan
- Aboriginal Plant Use Mitigation Plan
- Aboriginal Training and Inclusion Plan
- Business Participation Plan
- Emergency Services Plan
- Healthcare Services Plan
- Labour and Training Plan
- Cultural Resources Mitigation Plan
- Heritage Resources Management Plan
- Housing Plan and Housing Monitoring and Follow-Up Program
- Wuthrich Quarry Development Plan
- West Pine Quarry Development Plan; and
- Del Rio Pit Development Plan.

The CEA Agency and Environment Canada submitted comments on the revised plan on May 22, 2015. These comments were considered and the final plans were revised accordingly and submitted on June 5, 2015 to the entities identified in the EAC conditions.

3.0 Summary of Baseline Conditions and Project Effects

3.1 Baseline Conditions

The baseline conditions with respect to Aboriginal plant use are described in the EIS Volume 3, Section 19. Information relevant to this plan has been extracted from the EIS and presented in Appendix A of this plan. BC Hydro's response to JRP IR S67 also provides context for this plan (Appendix B).

3.2 Potential Project Effects

Effects on opportunities and practices to harvest resources for traditional purposes are described in Volume 2 Section 13 Vegetation and Ecological Communities. Information relevant to this plan is provided in Appendix C.

4.0 Mitigation Measures

This plan provides an outline of the approach that will be followed as construction activities are initiated over the early years of the construction phase, and site specific opportunities are identified within the project activity zone for relocation of plants of high Aboriginal value and reclamation activities that support plants of high Aboriginal value. The mitigation measures related to Aboriginal plant use are summarized in Volume 3, Chapter 19, Table 19.15 of the EIS and set out in Appendix D of this Plan.

The Plan covers the Project Activity Zone (PAZ) as described in the EIS and as defined in the federal Decision Statement section 1.15.

Based on areas that will be reclaimed after construction activities, potential locations for plant relocation and/or ecological community reclamation will be identified to support plant species of high traditional use value (e.g. North Bank View Point, South Bank Stabilization, South Bank Terrace, and Septimus Siding, and areas along the new transmission line right of way).

4.1 EAC Condition 25: Ground-Truthing Program

BC Hydro supported Aboriginal Groups during the environmental assessment to develop traditional land use studies. In 2014, BC Hydro initiated ground-truthing programs to identify and confirm important sites to Aboriginal Groups (e.g. burial, cultural, ceremonial, habitation, harvesting areas for medicinal and food plants), and to seek further detail including spatial specificity of these sites.

The purpose of the ground-truthing initiative is to engage with Aboriginal land users, including registered trapline holders, to verify and accurately site Aboriginal land use information, and to identify concerns related to specific features, or sites that may be affected by the Project. In particular, BC Hydro is seeking to verify features such as plant harvesting areas (specifically medicinal and food plants), the location of burial sites, and the location of habitation sites, including when and how they are used by Aboriginal Groups.

During ground-truthing, the locations of features and sites are recorded by digital video, photography, notes and GPS. Appropriately qualified professionals (e.g. anthropologists, archaeologists, botanists) will accompany BC Hydro and Aboriginal group land users in the field.

Following completion of field work associated with ground-truthing, BC Hydro will prepare a report, which will be shared with land users for their review and comment. Finalised ground-truthing reports will be used to support subsequent mitigation measures outlined in this plan as described below, as well as other relevant mitigation plans (e.g. heritage).

BC Hydro sent letters on February 13, 2014, September 25, 2014, and October 17, 2014, and May 20, 2015 to invite Aboriginal groups to participate in ground-truthing activities prior to the commencement of construction, with an initial focus on the dam site area.

BC Hydro anticipates that most ground-truthing work will be completed before or during the first year of construction, but may continue as construction progresses.

4.1.1 Desktop Review of Ground Truthing Results

Data collected through the ground truthing programs will be reviewed by BC Hydro. To support this Plan, the data review will include the following:

- Identify known harvesting locations and species of plants harvested at each location that are within the Project Activity Zone, and identify which species and locations are of high traditional value
- Identify plants of interest that could be used in site reclamation and determine if they can be propagated by the indigenous nursery
- Consider other plant/service/monitoring providers

4.2 EAC Condition 26: Identification of Opportunities for Plant Relocation, Ecological Community Restoration, and Indigenous Plant Nursery

4.2.1 Identification of Opportunities for Plant Relocation and Ecological Community Restoration

Data collected through the ground truthing programs will be provided to BC Hydro's technical specialists. Their review of the ground truthing program will include the following:

- Identify target plant species:
    - Identify target species of high traditional Aboriginal value ("target plant species") that may be suitable for use in reclamation plans (based on the biological conditions of reclamation areas and the requirements of the target plant species), and include these species in the Vegetation and Wildlife Mitigation and Monitoring Plan;
    - Identify rare species of high traditional Aboriginal value that may be candidates for translocation or relocation;
- Identify locations that are suitable to support target plant species in site specific reclamation plans, and provide to contractors for their inclusion in site specific reclamation plans;
- Identify suitable translocation sites near to construction areas, in accordance with provincial guidelines for plant translocation

- Undertake plant relocation and ecological community reclamation activities based on identified opportunities and consultation with Aboriginal Groups and FLNRO.

4.2.2 Indigenous Plant Nursery

To support the local sourcing of indigenous plants for project reclamation activities, BC Hydro will:

- Seek a reasonable commercial agreement with an Aboriginal-owned plant nursery in the Peace River Regional District for plants and/or related plant services, with a potential value of up to $1 million.
- Inform its Contractors of the availability of plant and plant material from any plant nurseries contracted by BC Hydro to provide plants for project reclamation activities.

Please also see the Construction Environmental Management Plan, Section 4.12: Soil Management, Site Restoration and Revegetation.

4.3 Decision Statement Condition 14: Current Use of Lands and Resources for Traditional Purposes

4.3.1 Condition 14.1 and 14.2: Mitigation measures

The identification and development of mitigation measures that could address impacts to current use of lands and resources for traditional purposes will be addressed through the development and implementation of the following:

- The Aboriginal Plant Use Mitigation Plan (this Plan);
- Vegetation and Wildlife Mitigation and Management Plan; and
- Fisheries and Aquatic Habitat Management Plan

BC Hydro will inform Reservoir Area Aboriginal groups, and Immediate Downstream Aboriginal groups about Designated Project activities that may affect the current use of lands and resources for traditional purposes including harvesting of plants, fish and wildlife and access to land for the purposes of those users.

4.3.2 Condition 14.3: Use of Herbicide and pesticides

Information obtained during ground truthing will be considered during BC Hydro's vegetation management in accordance with its Vegetation and Pest Management Plans. BC Hydro's Pest Management Plan is appended to the Vegetation and Wildlife Mitigation and Management Plan. These considerations are further described below.

BC Hydro maintains vegetation and pest management plans relevant to its rights-of-way and corridors, and other facilities. These are maintained, updated and approved as required in accordance with BC's *Integrated Pest Management Act* and Regulation. Each of these plans includes a section called "Preventing Contamination of Food", which outline the following measures:

BC Hydro attempts to identify areas where there is food intended for human consumption (including berries). Appropriate precautions are taken during weed control operations to avoid

contaminating these areas, such as timing applications after the berry-growing season, providing increased buffer zones during herbicide applications, or using alternative, non-chemical methods of control.

In general, food plants and medicinal plants are low-growing shrubs and herbaceous plants that are compatible with transmission line safety and reliability. The establishment of these species is encouraged and they are not actively controlled. However, tall-growing species and other vegetation that might interfere with transmission lines must be controlled regardless of their use by people.

Persons using the ROW to collect wild food or medicinal plants should notify BC Hydro. Areas with food and medicinal plants will be mapped, and these interests will be considered when planning vegetation management work.

Public notification of herbicide treatments will be posted at the treatment area according to the Integrated Pest Management Regulation, Section 64. BC Hydro will also notify landowners or users who have previously requested such notification. A Notice of Intent to treat will be sent to all Aboriginal communities near the treatment area.

5.0 Reporting

Reporting on this Plan will be undertaken as follows, with copies provided to EAO, FLNRO and Aboriginal Groups:

- Annual update summarising activities carried out under the Plan each year, starting immediately prior to construction and for the first five years of operation (FDS Condition 14.4);
- Final Ground-Truthing and Desktop Review Report, to be completed once all ground truthing and desktop review activities are complete; and
- Final Report on Aboriginal Plant Use Translocation and Reclamation Opportunities.

Reclamation activities, including those undertaken to support target plant species, will be reported in accordance with contract and permits terms

6.0 References

BC Hydro, 2013. Site C Clean Energy Project Environmental Impact Statement. Published by BC Hydro.

Report of the Joint Review Panel: Site C Clean Energy Project. May 1, 2014. Published under the authority of the federal Minister of the Environment, Government of Canada and the BC Minister of the Environment, Government of British Columbia.

Appendix A: Baseline Conditions

Resource Use by Aboriginal Group – PlantsSource BC Hydro 2013, Volume 3, Chapter 19, Table 19.8

Resource: Plants	SFN	T8TA	BRFN	DTFN	DFN	HLFN
Berries (unspecified)	✓					
Berries or Wild Fruit		✓				
Bearberry (Kinnikinnick)						
Blackberries			✓			
Blueberries			✓			
Bulrush	✓					
Chokecherries			✓			
Cloudberries						
Cow Parsnip						
Cranberries						
Cultural Plants						
Firewood		✓				
Gooseberries						
Hay	✓					
High-bush Cranberries						
Huckleberries				✓		
Labrador Tea	✓		✓			
Low-bush Blueberries			✓			
Lumber	✓					
Medicinal Plants		✓				
Mint			✓			
Native Blackberries			✓			
Peppermint Tea						
Plant (Herb)	✓		✓			
Plants (unspecified)						
Plant/Earth Gathering					✓	✓
Raspberries						
Rat Root	✓					
Rose Hips						
Saskatoon Berries			✓	✓		
Sage		✓				
Shrub						
Soapberries				✓		
Stinging Nettle						
Strawberries						
Trees	✓					
Wild Onion	✓					
Wild Potatoes			✓			

19.3.1.1.5 Current Use of Plants, Trees, and Additional Resources – Blueberry River First Nations

BRFN members describe harvesting plants and berries throughout the Peace River valley. Thirteen plant food harvesting areas, most located outside the wildlife resources LAA, with some portions inside the LAA, are depicted on the Plant Food map. Chokecherries, Saskatoon berries and blackberries are noted as being particularly abundant around Bear Flats, which is within the wildlife resources LAA (Kennedy 2011).

The banks of the Halfway River are noted as important for harvesting mint and Labrador tea, the area north of Fort St. John and the lower Pine River Valley are described as important for harvesting blueberries, cranberries, Saskatoon berries, strawberries, and raspberries. Butler Ridge is reported as important for high-bush blueberries and huckleberries. Saskatoon berries and chokecherries are said to be abundant around Monias Lake. Plants are used for medicinal purposes, but are noted as "not specific to Study Area" (see Volume 5 Appendix A03 Part 5, Blueberry River First Nations Plant Food Map).

19.3.1.2.4 Current Use of Plants, Trees, and Additional Resources – Saulteau First Nations

SFN members report harvesting several types of plant and tree resources in the wildlife resources LAA and in the CTS Project Area outside the wildlife resources LAA, mostly south of the Peace River. These include (in descending order of frequency): berries, trees (wood), plants (herb), Labrador tea, rat root, bulrush, wild onion, hay, and lumber.

There is little specific information presented in the CTS 1 concerning the traditional uses of the resources harvested. Berries are described as being collected generally in the wildlife resources LAA, with a concentration of activity in the area to the south of Boucher Lake. Berries are also said to be collected in the CTS Project Area outside the wildlife resources LAA, with concentrations of harvesting occurring along the shores of Moberly Lake, in the upper Moberly River watershed, in the area around Boucher Lake, and in the general area of Moberly Lake.

Trees are referenced as being harvested in the wildlife resources LAA along the north shore of the Peace River between Attachie and the Peace Canyon Dam, in the general area of Boucher Lake, and near Windy Creek. They are also reported as harvested elsewhere in the CTS Project Area outside the wildlife resources LAA in an area extending northward from Moberly Lake and including Boucher Lake, elsewhere around Moberly Lake, in the middle portion of the Moberly River watershed, and in the general vicinity of Big Lake.

Plants (herbs) are reported as harvested in the wildlife resources LAA in the area to the south of Boucher Lake and in the area around Monias Lake. They are also referenced as harvested in the CTS Project Area outside the wildlife resources LAA in the general area around Boucher Lake, around Monias Lake, along the shores of Moberly Lake, around Cameron Lakes, and around Big Lake. Labrador tea is described as being harvested in the wildlife resources LAA

along the Peace River (in the western part of the LAA) and in the areas around Boucher Lake, the Moberly River, Monias Lake, and Attachie. It is also reported as harvested in the CTS

Project Area outside the wildlife resources LAA in the middle part of the Moberly River watershed, in a portion of the watershed of the Pine River, around Big Lake, around Moberly Lake, around Cameron Lakes, in an area that extends from the north Shore of Moberly Lake to Boucher Lake, and in an area north and west of Attachie. Rat root is shown as harvested in the wildlife resources LAA in the area around Boucher Lake, and in the CTS Project Area outside the wildlife resources LAA in the same general area. Rat root appears to be used by many SFN members (Chan et al. 2011).

Bullrush is mapped as harvested generally in the western parts of the wildlife resources LAA, and in the CTS Project Area outside the wildlife resources LAA, at locations at the east end of Moberly Lake, around Big Lake, and in the vicinity of the confluence of Farrell Creek and Alder Creek.

Wild onion is shown as harvested generally in the central portions of the wildlife resources LAA and the CTS Project Area outside the wildlife resources LAA with concentrations of activity in the vicinity of the confluence of Farrell Creek and Alder Creek, and at a location to the northeast of Moberly Lake.

Lumber is mapped as obtained in the wildlife resources LAA at one site around Monias Lake and another to the west of that location. It is also obtained north and west of Moberly Lake. Hay is shown as harvested in the wildlife resources LAA at one location near Boucher Lake, and in the CTS Project Area outside the wildlife resources LAA on the north side of Moberly Lake.

19.3.1.3.5 Current Use of Plants, Trees, and Additional Resources – Treaty 8 Tribal Association

The Treaty 8 Tribal Association (T8TA) traditional use study represents Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations.

The south facing slopes of the Peace River valley are identified with cultural use values for collecting sage and unidentified rare medicinal plants. Medicinal plants are buffered data on the Cultural Use Study Results maps and cannot be identified. There is, however, one medicinal plant habitat area depicted on the north shore of the Peace River opposite the confluence with the Moberly River on Environmental Study Results Map E3.

Thirteen berry or wild fruit use values depicted on the Subsistence Use Study Results and Comprehensive Study Results maps are located within the wildlife resources LAA. Most are located along the Peace River. Two firewood locations are depicted at Bear Flats and another two locations between Farrell Creek and Halfway River. Outside the wildlife resources LAA, but within the TLUS LSA, there are an additional 13 berry or wild fruit use values depicted. There is a small concentration of berry or wild fruit symbols west of the Halfway River Reserve 168, and at the west end of Moberly Lake. The other berry or wild fruit use values are scattered over the TLUS LSA but outside the wildlife resources LAA.

Four firewood locations are depicted outside of the wildlife LAA.

Two natural water springs are identified southwest of Bear Flats. Four drinking water source locations are depicted on the Subsistence Use Study Results maps within the wildlife resources LAA, one at the south side of the Peace River at the mouth of Moberly Creek, one west of Bear Flats, and two at Hudson's Hope (see Volume 5 Appendix A06 Part 5, Maps W5, E5).

19.3.1.5.5 Current Use of Plants, Trees, and Additional Resources – Duncan's First Nation

The DFN Harvest Study Report indicates that DFN members harvest the following berries: Saskatoon berries, wild raspberries, blueberries, wild strawberries, chokecherries, and high and low bush cranberries (General 2012b). The Harvest Study Report does not provide information on harvesting locations.

Two plant and earth gathering sites identified in the DFN TLUS are shown as located within the wildlife resources LAA, one east of Halfway River and one on the lower Pine River. Eleven plant and earth gathering areas are shown outside the wildlife resources LAA: eight are located on the lower Beatton River east of Fort St. John; three are located on the south side of the Peace River; one is in the area of Moberly Lake, one opposite Halfway River; and one is on the lower Kiskatinaw River.

19.3.1.6.5 Current Use of Plants, Trees, and Additional Resources – Horse Lake First Nation

The HLFN Country Harvest Study indicates that HLFN members currently consume a variety of berries. From highest to lowest frequency of use, these are reported to include: wild blueberry, Saskatoon berry, wild raspberry, huckleberry, wild strawberry, low and high bush cranberry, gooseberry, and loganberry (General 2012d). Although the berries are listed from highest to lowest frequency of use, this may vary depending on the area and availability of each.

19.3.1.7.5 Current Use of Plants, Trees, and Additional Resources – Dene Tha' First Nation

In the wildlife resources LAA, berries (huckleberries and Saskatoon berries) are reportedly harvested in the summer along the Peace River, particularly around Flatrock Creek and downstream (Stevenson, and DTFN Lands and Environment Department 2012).

19.2.3 Current use of Plants, Trees and Additional Resources – McLeod Lake Indian Band

The MLIB Tradition Land Use Baseline and Assessment Report indicated that MLIB members currently undertake a number of activities within their traditional territory, including berry and plant harvesting. Species include blueberries, soapberries, huckleberries, low bush and high bush cranberries, saskatoon berries, strawberries, raspberries, chokecherries, currants and gooseberries (FMA Heritage Inc. 2010 cited in EIS Volume 5 Appendix A15 Part 3 Aboriginal Land and Resource Use Summary). Berries are eaten fresh and either put in jars or frozen for later consumption.

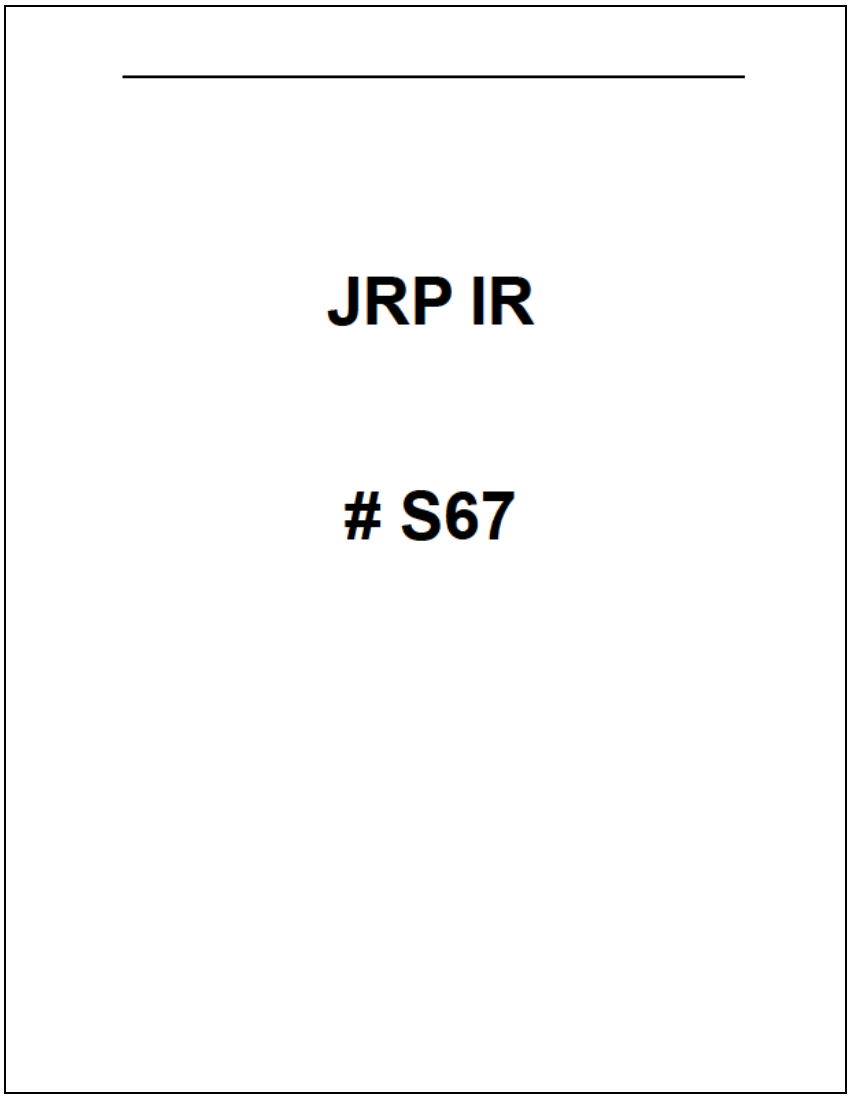
Plants, including Labrador tea, mint tea, devil's club, strawberries, juniper, violet, fireweed, red willow, jack pine, balsam, pine bark and pine sap, are harvested for medicinal purposes, primarily from wetlands in the MLIB traditional territory (FMA Heritage Inc. 2010 cited in EIS Volume 5 Appendix A15 Part 3 Aboriginal Land and Resource Use Summary) In the past, trees were blazed or modified as markers on trails (FMA Heritage Inc. 2010: Sec. 7-19).

The TLUS indicates that MLIB harvesters gather on the lower Farrell Creek and lower Moberly River. This is within the Current Use of Lands and Resources (Wildlife Resources) LAA. The harvesting site at lower Farrell Creek is identified as a berry picking area (highbush cranberries, saskatoon berries, low and highbush blueberries, and raspberries) MLIB TLUS (2013). One interview reported that high bush cranberries grow along the edges of bigger rivers and that "other than harvesting these berries adjacent to the Moberly and Peace Rivers, she does not have good access to these berries anywhere else in MLIB territory" (MLIB 2013: 81). She does not indicate where on those rivers she harvests the berries. BC Hydro reports that high bush cranberries are common on the landscape and that they grow in upland and riparian forests and forested wetland ecosystems (pers. comm. BC Hydro May 21 2013).

The Gathering Map shows that MLIB harvesters are also gathering in the area of Halfmoon and Jackfish Lakes east of Moberly Lake (berries, medicine plants, Labrador tea) and to the east of that area (medicine plants). These areas are within the Current Use of Lands and Resources (Wildlife Resources) RAA.

Appendix B: BC Hydro Responses to Joint Review Panel Information Request # S67

[Please click the image below to view PDF]



Also see link #S67 - page 271 – 304, http://www.ceaa-acee.gc.ca/050/documents/p63919/95902E.pdf

Appendix C: Potential Project Effects

Berries, Herbs, and Medicinal Plants

Effects on opportunities and practices to harvest resources for traditional purposes are assessed based on information reported in Traditional Land Use studies provided to BC Hydro and on the biophysical effects described in Volume 2 Section 13 Vegetation and Ecological Communities. While Volume 2 Section 13 does not assess effects on individual plant species or plants reported in TLUS reports to be used by Aboriginal people for traditional purposes, it reports all terrestrial ecosystems within the Vegetation and Ecological Communities Local Assessment Area (LAA) and assesses effects to those that are vulnerable to environmental effects of the Project, including rare plants and rare and sensitive communities. Sensitive communities encompass grasslands, wetlands, old-growth forest, marl fens and tufa seeps – some of which are known to have occurrences of plants harvested by Aboriginal people. By extension, the interactions and effects described in Volume 2 ecosystems can be used to inform this indicator.

Volume 2 Section 13 indicates that there is an increased potential for adverse effects on terrestrial ecosystems, and that rare plants would be adversely affected during the construction phase of the Project. Based on the effects described in Volume 2 Section 13, it is reasonable to expect that the following effect pathways would also apply to specific plants, berries, trees, bushes and water used by Aboriginal people within the LAA for this VC:

- Clearing of vegetation and grubbing during site preparation for the reservoir, dam site, new roads and transmission line would be the primary project activities resulting in habitat alteration during the early stages of construction
- Water diversion associated with dam construction has the potential to change flow regimes on the Peace River (see Volume 2 Section 11.4 Surface Water Regime for more details), which may affect occurrences of plants along the river margins
- In the final stages of construction, reservoir filling would affect terrestrial ecosystems and rare plants through inundation of existing habitats. Occurrences within the proposed reservoir would be inundated, while those near the new shoreline could experience changes to their supporting habitats.
- Clearing activities also have the potential to affect plants and habitat through a number of mechanisms, including contamination from herbicide, road salt, silt or accidental spills of industrial fluids; and changes to hydrologic regimes—drying of wetlands, flooding of uplands—due to vegetation clearing, road building, and ground disturbance
- Nearly half of the 63.7 km of the construction of new permanent road is associated with access to the south along an extension of the Jackfish Lake Road. This new segment will be built adjacent to the existing corridor for the transmission line and railway. It passes through a variety of terrestrial habitats, including wetlands in the eastern portion of the transmission line corridor as it approaches the dam site.
- Tower placement and line stringing activities related to construction of the transmission line could affect existing rare plant occurrences and potential habitat both directly (trampling, hydrologic modification, etc.) and indirectly (increased invasive species

potential, increased dust deposition, etc.). The level of effect depends on where the activities occur.

T8TA, BRFN, DFN, DTFN, and SFN reported harvesting berries in the LAA. Multiple harvesting locations were reported along the Peace River at the proposed dam site (T8TA), at the Lynx Creek confluence (T8TA), near Hudson's Hope (T8TA) and at Bear Flats (BRFN, T8TA) and Attachie (T8TA), where hunting, trapping and fishing are also practiced. These sites would be inundated. DTFN has reported harvesting berries at the junction of Flatrock Creek and the Peace River, downstream from the dam site. Project construction is not likely to have effects on berries downstream of the dam site.

There is a concentration of berry harvesting activity in the area south of Boucher Lake (SFN, T8TA). This area, depending on the exact location, may be altered or lost during clearing of the transmission line Right of Way or tower placement.

DFN indicated that there are plant and earth gathering sites east of Halfway River, however, there is not enough detail to determine whether the Project would overlap spatially with the harvesting sites (see Volume 5 Appendix A07, Plant and Earth Gathering Sites).

Multiple locations for harvesting herbs and medicinal plants were reported by Aboriginal groups. BRFN reported that the banks of the Halfway River are important for harvesting mint and Labrador tea. However, there is not enough detail in the TLUS maps to determine whether the Project would overlap spatially with the harvesting sites.

Similarly, T8TA indicated medicinal plant use throughout the Peace River between Fort St. John and Hudson's Hope; however, the location of the areas has not been provided in sufficient detail to allow for an assessment of likely Project interactions. One medicinal plant habitat area is depicted on the north shore of the Peace River opposite the confluence with the Moberly River. Part of this harvesting area would be inundated.

SFN reported that Boucher Lake is an area of importance with multiple plant species harvested, including Labrador tea and rat root. This area, depending on the exact location, may be altered or lost during clearing of the transmission line Right of Way or tower placement.

Changes in Other Cultural and Traditional Uses of the Land during Operations

It is anticipated that the effects on other cultural and traditional uses of the land induced during construction would continue during the Operations Phase. As is the case for the rare plants assessed in Section 2 Volume 13 Vegetation and Ecological Communities, berries, trees, medicinal plants and other resources identified above may survive clearing and potentially re-establish themselves.

The Project will affect the opportunities for T8TA, SFN, BRFN and DFN to continue to harvest plants and berries in the LAA. While in some cases, it may be possible for members of these First Nations to find alternate harvesting areas, these may be farther afield relative to their current travel distance, more costly to access, or less abundant. As a result, harvesting success may be reduced.

The operation of the dam is also expected to result in changes to the downstream hydrologic regime along the Peace River from the Project tailrace to the Pine River confluence. However,

Volume 2 Section 13 Vegetation and Ecological Communities reports that it is not clear how these changes would affect rare plants and, by extension it is difficult to predict effects on the plants used by Aboriginal people.

The Project is expected to remove or alter ecosystems where food and medicinal plants, and berries and other resources used by Aboriginal groups grow. As is the case for the rare plants assessed in Section 2 Volume 13 Vegetation and Ecological Communities, berries, trees, medicinal plants and other resources identified above may survive clearing and re-establish themselves in the new environment. There is some uncertainty surrounding the fate of the resources discussed in this section outside of those areas that will be lost to the filling of the reservoir

In areas where clearing has occurred, but plants and berries remain, perceived or real effects on the quality and safety of the foods may limit the availability of desirable harvesting locations and the desire to gather and consume the resources.

Clearing of the Right of Way for the transmission line may destroy resources that are currently used by Aboriginal people at Boucher Lake. As there is already access to Boucher Lake, Right of Way clearing is not expected to induce a noticeable increase in harvesters in the area.

Appendix D: Mitigation Measures Proposed by BC Hydro in the EIS

Summary of Assessment of Potential Significant Residual Adverse Effects

Source BC Hydro 2013, Volume 3, Chapter 19, Table 19.15

Valued Component	Project Phase	Potential Effect	Key Mitigation Measures	Significance Analysis of Residual Effects
Current Use of Land and Resources for Traditional Purposes	Construction and Operation	Changes in fishing opportunities and practices	Implement of all mitigation measures set out in the Fish and Fish Habitat VC and those set out in the Navigation VC for specific measures respecting navigation. Consider developing fish habitat compensation projects that align with BC Hydro compensation programs. Develop a communications program to inform harvesters of planned or unplanned events related to construction activities that may affect fishing opportunities or access. Develop a communications program to inform harvesters of longer term changes in fish community composition.	Not significant
	Construction and operation	Changes in hunting and trapping opportunities and practices	Implement of all mitigation measures set out in the Wildlife Resources VC and those set out in Harvest of Fish and Wildlife Resources VC, pertaining to trapping. Consider developing wildlife habitat compensation projects that align with BC Hydro compensation programs. Develop mitigation measures intended to decrease impacts on trap lines in the Project activity zone. Develop a communications program to inform harvesters of planned or unplanned events related to construction activities that may affect hunting opportunities or access.	Not significant
Current Use of Lands and Resources for Traditional Purposes	Construction and operation	Changes in other cultural and traditional uses	Implement of all mitigation measures set out in the Vegetation and Ecological Communities VC, and the Heritage Resources VC, and those measures supporting the development of new shoreline recreation sites in the Outdoor Recreation and Tourism. Work with Aboriginal groups to ground truth traditional land use information for specific areas within the Project activity zone prior to commencing construction, e.g. when determining the exact location of an access road. Develop a communications program to inform harvesters of planned or unplanned events that may affect opportunities to harvest plants, berries, and other resources. Consider developing habitat compensation projects that align with	Significant

Valued Component	Project Phase	Potential Effect	Key Mitigation Measures	Significance Analysis of Residual Effects
			BC Hydro compensation programs. Work with Aboriginal groups to identify permanent habitation structures used in the current use of lands and resources for traditional purposes that may be lost to inundation. Effects on cabins associated with tenured trap lines will be addressed as set out in Volume 3, Section 24.4.9.1, Harvest of Fish and Wildlife Resources. Where untenured cabins may be impacted by the Project, BC Hydro will work with Aboriginal individuals to determine appropriate measures that could be implemented. Work with Aboriginal groups to identify potential sites for re-location of medicinal and food plants to compensate for areas that will be inundated. Use only indigenous and/or non-invasive plants and grasses in re-vegetation programs associated with the Project. Engage with Aboriginal groups around any reclamation phase that may present opportunities to restore ecological communities that support species of high traditional use value. Be prepared to ~~p~~provide support for the indigenous plant nursery owned by West Moberly and Saulteau First Nations located at Moberly Lake. The First Nations have a business plan to support propagation of a	
			wide range of indigenous plant species for use in reclamation work. Establish a Culture and Heritage Resources Committee to provide advice and guidance on the mitigation of specific effects of the Project on culture and heritage resources. The Committee would consist of BC Hydro officials and Aboriginal members whose communities are in the immediate vicinity of the Project. Consider implementing, in consultation with Aboriginal groups and British Columbia where appropriate, the following potential initiatives: the identification and naming of key cultural sites and the potential to integrate Aboriginal names into Project operations and sites; recording of stories and history associated with key cultural sites that may be affected by the Project; the protection and documentation, including mapping, of important Aboriginal trails and sites; sponsorship of a youth culture camp that includes transfer of knowledge around	

Valued Component	Project Phase	Potential Effect	Key Mitigation Measures	Significance Analysis of Residual Effects
			medicinal and food plants; engagement with Aboriginal groups around a plan to commemorate the lost and submerged places and stories; engagement with Aboriginal groups around potential plans to undertake ceremonies prior to the commencement of construction on key elements of the Project; and development and implementation of an education program respecting Aboriginal culture, history and use of lands and resources in the Project Area to be offered to all workers on the Project.	