

# Site C Clean Energy Project

## Outdoor Recreation Mitigation Plan

### Final

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**Acronyms**

CEMP	Construction Environmental Management Plan
EAC	Environmental Assessment Certificate
EAO	BC Environmental Assessment Office
EIS	Environmental Impact Statement, Site C Clean Energy Project
Fund	Community Recreation Site Fund established pursuant to the ORMP
JRP	Joint Review Panel
ORMP	Outdoor Recreation Mitigation Plan
The Project	Site C Clean Energy Project
PRRD	Peace River Regional District
VC or VCs	Valued Component or Valued Components



## **1 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 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 Shoreline Protection at Hudson's Hope.

The Project also includes 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 Aboriginal groups 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*, the *BC Environmental Assessment Act*, 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 BC Environmental Assessment Office (EAO) 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 (VC or 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, VCs 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 VCs. 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 Consultation**

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:

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

## **1.7 Regulatory Context**

During construction and operations the Project, BC Hydro and its contractors must comply with laws, regulations, and standards of general applicability, as well as Project-specific conditions of approvals, permits, other authorizations, guidelines and protocols that are relevant to the design

and implementation of mitigation programs. The ORMP will consider and integrate regulatory requirements that pertain to outdoor recreation and tourism as required for the Project.

As described in Section 25.1.1 of the EIS, the administration and allocation of Crown land for recreation uses, resorts, and guided commercial recreation activities is managed by the B.C. Ministry of Forests, Lands and Natural Resource Operations, under the *Land Act*, the *Ministry of Lands, Parks and Housing Act*, and related regulations. The allocation of rights through the *Land Act* can include leases, licences, investigative permits, and notations. Agricultural Crown land tenures are administered under the *Range Act* (S.B.C., 2004) and under the *Land Act* (R.S.B.C., 1996). Crown land management in the Project activity zone is also guided by the Dawson Creek and Fort St. John Land and Resource Management plans.

Recreation sites on Crown land may also be approved and established under Section 57 of the *Forest and Range Practices Act*. The intent of Section 57 is to allow for the construction, rehabilitation, or maintenance of a site without a land tenure being issued. A Section 57 authorization is a precursor to legally establishing a site under Section 56 of the *Forest and Range Practices Act*.

BC Hydro's proposed approach to Site C reservoir boating access will be considered by Transport Canada and the BC Water Comptroller in consideration of any required federal and provincial authorisations or permits. Volume 3 Section 26 Navigation (Section 26.1.1) refers to the *Navigable Waters Protection Act* and the public right to navigation. This Act is relevant to the assessment of effects on boating as a form of recreation.

## **1.8 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 (JRP) 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.

## **1.9 Baseline Conditions & Potential Effects of the Project**

The baseline conditions and potential effects of the Project on Outdoor Recreation and Tourism are described in the EIS Volume 3, Section 25. Information from the EIS relevant to the ORMP has been extracted and presented in **Appendix A** including: spatial and temporal boundaries; potential effects, and assessment findings.

## 2 Outdoor Recreation Mitigation Plan

### 2.1 Objective and Scope

The objective of the ORMP is to describe the measures listed below to mitigate effects on outdoor recreation and tourism infrastructure. The ORMP has been developed in accordance with Condition 40 of the EAC as indicated in Table 1.

**Table 1: Environmental Assessment Certificate Condition #40 and Plan Reference**

<b>EAC Condition #40 Outdoor Recreation and Tourism Requirements</b>	<b>Plan Reference</b>
The EAC Holder must finalize and implement the Outdoor Recreation Mitigation Plan to mitigate changes in recreational opportunities and loss of existing recreational areas resulting from the Project.	To be implemented following submission of final plan.
The Outdoor Recreation Mitigation Plan must be developed by a QEP.	Section 5. Qualified Professionals
The Outdoor Recreation Mitigation Plan must include at least the following to:	
Provide technical information to support outdoor recreation providers in adapting to new shoreline conditions.	Section 2.2.1 Technical Information
Establish three new boat launch/day use sites, complete with parking, picnic areas and toilets, at Cache Creek, Lynx Creek and Hudson’s Hope Shoreline, and accessible via Highway 29.	Section 2.2.2 Outdoor Recreation Infrastructure
Establish at least one public viewpoint at the Site C dam site	Section 2.2.2 Outdoor Recreation Infrastructure
Provide approximately \$150,000 to the District of Hudson’s Hope for the enhancement of Alwin Holland Park, or other community shoreline recreation areas.	Section 2.2.3 Outdoor Recreation Funding
Provide approximately \$200,000 for a Community Recreation Site Fund of which \$50,000 is for recreational sites on the south bank to support development of new shoreline recreation areas within the Peace River and its tributaries to the Alberta border.	Section 2.2.3 Outdoor Recreation Funding

<b>EAC Condition #40 Outdoor Recreation and Tourism Requirements</b>	<b>Plan Reference</b>
Outline an approach to governance and allocation of funds from the Community Recreation Site Fund.	Section 2.2.3 Outdoor Recreation Funding
Fund the development of a BC Peace River/Site C Reservoir Navigation and Recreation Opportunities Plan.	Section 2.2.4 Reservoir Navigation and Recreation Opportunities Plan
The EAC Holder must provide this draft Outdoor Recreation Mitigation Plan to FLNR, Peace River Regional District, City of Fort St. John, District of Hudson’s Hope and Saulteau, West Moberly, Halfway River, Doig River, Blueberry River and Prophet River First Nations, and McLeod Lake Indian Band for review within 12 months after the commencement of construction.	Section 3.0 Plan Development Process
The EAC Holder must file the final Outdoor Recreation Mitigation Plan with EAO, FLNR, Peace River Regional District, City of Fort St. John, District of Hudson’s Hope and Saulteau, West Moberly, Halfway River, Doig River, Blueberry River and Prophet River First Nations, and McLeod Lake Indian Band within 18 months after the commencement of construction.	Section 3.0 Plan Development Process
The EAC Holder must develop, implement and adhere to the final Outdoor Recreation Mitigation Plan, and any amendments, to the satisfaction of EAO.	Section 4.0 Implementation

## 2.2 Mitigation Measures

The mitigation measures address EAC Condition 40, and were developed taking into account findings of the outdoor recreation and tourism environmental assessment, the measures proposed within the EIS, information received during the JRP hearing process, and the Report of the Joint Review Panel. In addition, the ORMP was informed by best available information gained consultation and through BC Hydro experience in recreation within British Columbia.

The ORMP is structured by the following four categories which address the measures included in Condition 40. The following sections provide further detail on each of the four areas.

### Technical Information

- Provide technical information to support outdoor recreation providers in adapting to new shoreline conditions.

### Outdoor Recreation and Infrastructure

- Establish three new boat launch/day use sites along the new reservoir, complete with parking, picnic areas and toilets, at Cache Creek, Lynx Creek and Hudson's Hope Shoreline, and accessible via Highway 29.
- Establish at least one public viewpoint at the Site C dam site.

### Outdoor Recreation Funding

- Provide approximately \$150,000 to the District of Hudson's Hope for the enhancement of Alwin Holland Park, or other community shoreline recreation areas.
- Provide approximately \$200,000 for a Community Recreation Site Fund of which \$50,000 is for recreational sites on the south bank to support development of new shoreline recreation areas within the Peace River and its tributaries to the Alberta border.
- Outline an approach to governance and allocation of funds from the Community Recreation Site Fund.

### Reservoir Navigation and Recreations Opportunities Plan

- Fund the development of a BC Peace River/Site C Reservoir Navigation and Recreation Opportunities Plan.

## **2.2.1 Communications & Technical Information**

Condition 40 states: *"Provide technical information to support outdoor recreation providers in adapting to new shoreline conditions."*

Communication of technical information about the reservoir after filling, relevant to outdoor recreation providers will be addressed through relevant plans as well as through responses to individual requests, during construction and operations as applicable. The relevant existing plans include the Construction Communication Plan, the Construction Safety Management Plan, and the Public Safety Management Plan.

- The Construction Communication Plan is included within the Site C Project's Construction Environmental Management Plan (CEMP) as Appendix C. The CEMP was prepared in accordance with EAC Condition 69, the Construction Communications Plan in accordance with Condition 72.
- The Construction Safety Management Plan includes the Public Safety Management Plan, and was prepared in accordance with EAC Conditions 38 and 68. Relevant details of these plans to the ORMP are summarized below. The current CEMP and Construction Safety Management Plan are both publicly available on the Site C website and may be updated as required ([www.sitecproject.com/document-library/environmental-management-plans-and-reports](http://www.sitecproject.com/document-library/environmental-management-plans-and-reports)).

Technical information relevant to outdoor recreation providers to assist in adapting to new shoreline conditions may include information on public access, licensed reservoir water elevations, reservoir impact lines<sup>1</sup>, and other topics as appropriate. BC Hydro has already provided electronic information about the reservoir impact lines to the District of Hudson's Hope, the Peace River Regional District (PRRD), and the Province of British Columbia because of their existing jurisdiction over land surrounding the Site C reservoir area. BC Hydro has provided pdf maps of the reservoir impact lines on its website for general public use, and other potential recreation providers may request site specific information from BC Hydro.

A Boater Communication Protocol is included as Section 5.3.4.3 of Construction Safety Management Plan. The boater communication protocol includes public notifications that would be issued in accordance with the Construction Communications Plan to increase public awareness of safety hazards, including navigational hazards, access restrictions and closures during Project construction. Additionally communications regarding public access to the Peace River during construction and operations will be managed through the Construction Communications Plan.

A variety of notification tools are currently being used to share information with various audiences and stakeholders, and will be applied communications with outdoor recreation providers including:

- Project Website (sitecproject.com)
- Advertising
- Construction Bulletins
- Email Updates and Mailings
- Information Materials
- Media Relations
- Social Media
- Signage

The target audience of outdoor recreation providers may include: local, regional and provincial governments, local businesses, and local recreational stakeholders. In general, the timing of the technical information mitigation measure has a proposed start date of early in Site C operations phase, or earlier as appropriate. However, as stated above some information was provided in the form of existing plans and technical information prior to January 2017.

## **2.2.2 Outdoor Recreation and Infrastructure**

Condition 40 states:

- *Establish three new boat launch/day use sites, complete with parking, picnic areas and toilets, at Cache Creek, Lynx Creek and Hudson's Hope Shoreline, and accessible via Highway 29.*
- *Establish at least one public viewpoint at the Site C dam site.*

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<sup>1</sup> Refer to EIS Section 11.3 Land Status, Tenure, and Project Requirements in Volume 2 Section 11 Environmental Background for further information related to land use within reservoir impact lines.

### 2.2.2.1 New Boat Launch and Day Use Sites

Three new boat launch and day-use recreation sites (recreation sites) will be developed along the reservoir to replace three public boat launch sites that will be inundated by the reservoir, and to mitigate the resulting disruption to navigation and the loss of access points and recreational areas. The three public sites that will be inundated are boat launches at Halfway River and Lynx Creek (both supported by BC Hydro), and the informal ferry landing site at the bottom of D.A. Thomas Road in Hudson's Hope.

The following criteria were used to identify new recreation site locations:

- Public safety; including consideration of preliminary reservoir impact lines (which identify erosion, landslide, and landslide-generated wave areas that are considered a potential public safety risk);
- Safe access from Highway 29; with consideration of visibility, turning lanes, and appropriate grade to enable safe access for trucks and boat trailers (for approval by BC Ministry of Transportation and Infrastructure);
- Site capability to accommodate an access road, boat launch, parking area and day use facilities;
- Proximity to original boat launch site location, and to population centres;
- Avoidance of environmentally sensitive areas;
- Boating accessibility to the reservoir for reservoir levels expected during the peak recreation season, with consideration of the minimum licenced reservoir elevation;
- Overall site development and maintenance costs, and,
- Potential for third party recreation facility development potential on adjacent lands, such as RV parks, campgrounds or marinas.

Based on these criteria, three new recreation site locations have been identified. The Outdoor Recreation Infrastructure Mitigation map included in Appendix B, Figure 1 identifies the proposed boat launch sites including:

- Cache Creek Recreation Site – This location will replace the current Halfway River<sup>2</sup> public boat launch area near the confluence with the Peace River. The new recreation site, including a trailer boat launch, will be on the new reservoir shoreline west of Cache Creek.
- Lynx Creek Recreation Site – This location will replace the current Lynx Creek public boat launch site near the confluence with the Peace River. The new recreation site, including a trailer boat launch, will be in the vicinity of the current site and will be on the new reservoir shoreline.
- Hudson's Hope Recreation Site – This location will replace the current informal launch at the bottom of D.A. Thomas Road. The new recreation site, including a small craft boat launch,

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<sup>2</sup> Due to geotechnical conditions in the vicinity of the Halfway River a safe recreation site on the reservoir could not be identified in vicinity of the current Halfway River boat launch area.

will continue to be accessed via D.A. Thomas Road and will be developed as part of the shoreline protection berm in this area.

#### Consultation:

BC Hydro consulted with regulators, including Transport Canada (Navigable Waters Protection Program), and regional and local governments (PRRD, City of Fort St. John, District of Hudson's Hope, and District of Chetwynd) about the proposed BC Hydro-managed recreation site locations in February 2012. BC Hydro further consulted with the public on these three proposed sites during the spring 2012 Project Definition Consultation on Outdoor Recreation. Refer to Section 9.1 Public Information Distribution and Consultation in Volume 1 Section 9 Information Distribution and Consultation for more information regarding the scope of BC Hydro's Project Definition Consultation.

BC Hydro will provide information to regulators, Aboriginal groups and recreational stakeholders on the final locations for each recreation site.

#### Recreation Site Design:

Each recreation site will include a boat launch, seasonal dock facilities, and day-use recreation facilities and will support boat access to and from the new reservoir at Hudson's Hope, Lynx Creek and Cache Creek / Bear Flat. Each of the three recreation sites will include day-use facilities, including a dock, picnic area, shoreline areas, and toilets. In Appendix B, Figure 2 illustrates a conceptual rendering of a typical boat launch and day-use site design. Site specific designs may differ to accommodate site specific conditions including access from public roads.

Both the Lynx and Cache Creek/Bear Flat boat launches will provide paved parking area for vehicles and trailers leading to a double-wide boat launch.

The boat launch at Hudson's Hope, located at the bottom of D.A. Thomas Road, will be a component of the shoreline protection, and will provide access for smaller vessels given the confined space. A conceptual design is included as Figure 3 in Appendix B. Hudson's Hope shoreline protection recreation site will connect to an existing trail up to the community of Hudson's Hope and to a walking trail along the eastern extent of the shoreline protection berm.

The development steps for each recreation site include:

- Select final site location based on criteria described above;
- Design for access from Highway 29 (to Lynx Creek and Cache Creek boat launch locations);
- Design of recreation site including all facilities, parking area, and as required breakwater facilities;
- Provide information about the final location to regulators, Aboriginal groups and recreation stakeholders for feedback;
- Seek any required approvals or permits as required from regulators;
- Finalize recreation site detailed design, include coordination with Highway 29 re-alignment and shoreline protection berm construction;
- Complete procurement for recreation site facilities;

- Construct access roads to the recreation sites and boat ramps in dry conditions prior to reservoir filling;
- Complete recreation site facilities preparing for potential public use during operations as described in Table 2 (taking into account reservoir monitoring and a late spring / early summer opening).

#### Recreation Site Availability and Access:

During the early years of operations the reservoir will undergo a settling in period, with active shoreline erosion and floating debris, which may present safety hazards and inconvenience to boaters on the reservoir. EIS Section 26.4.8 describes the anticipated navigational use restrictions during the operations period. Such restrictions will affect the timing of boat launches being available for use by the public. The main public safety and navigation hazards anticipated during reservoir filling and early operations are associated with areas affected by potential slope erosion, terrain stability, landslide generated waves, and floating debris. Details are provided in EIS Volume 2 Appendix B Geology, Terrain Stability and Soil Reports and Volume 1 Appendix B Reservoir Filling and Commissioning Plan.

During the first year of reservoir operation BC Hydro will complete initial monitoring of reservoir conditions related to slope stability and debris management. In discussion with regulatory agencies, BC Hydro may allow boat access to some areas of the reservoir within about one year of reservoir creation such as at the Hudson's Hope shoreline protection.

Based on the results of this monitoring, consideration of public safety hazards and discussion with regulatory agencies, it is anticipated that the majority of the reservoir would be available for boating and navigational use after the second year of operations. The Moberly arm and the lower 12 km reach of the Peace River, below Wilder Creek are anticipated to be restricted for a slightly longer period based on active slope stabilization and the natural movement of floating debris into this area of the reservoir.

As described in EIS Section 26.4.8 and 26.4.9, BC Hydro would limit boat access to the reservoir by prohibiting use of BC Hydro's reservoir boat launches, and by implementing its Public Safety Management Plan. The Public Safety Management Plan will identify public safety hazards and appropriate measures, including such as deployment of debris booms, and communications such as signage and marking of navigational hazards.

#### Recreation Site Operation and Maintenance:

BC Hydro operates several public use areas, including boat launch facilities, throughout British Columbia, including several sites on the Williston Reservoir and the Dinosaur Reservoir. BC Hydro will operate and maintain each of the three Site C reservoir recreation sites as part of its overall public use area program. Operations will be seasonal, and facilities may be closed during the off-season.

#### **2.2.2.2 Public Viewpoint at the Site C Dam Site**

A public viewpoint will be established on the north bank of the Peace River above the site of dam to provide the public with a safe and accessible location to view Site C construction

activities, and once complete provide to view the completed facility. The viewpoint will be able to be opened to the public early in the construction phase, once construction progress allows for safe public access and a view of the site. It is anticipated to be open by the end of 2017.

Consideration of appropriate viewpoint sites included the following criteria:

- Public safety; including consideration of construction activity interactions, terrain and slope conditions;
- Accessibility; reliable access for the public from public roads, on-site parking, universal access areas that enable wheelchair and walker access;
- Avoidance of environmentally sensitive areas; and
- Quality of view of construction activity, and future dam and operations.

Based on these criteria, the public viewpoint will be sited on the north bank of the Peace River above the dam site to provide the public with a safe and accessible location to view Site C construction activities. See Figure 4: North Bank Viewpoint in Appendix B.

#### Viewpoint Design:

The viewpoint will include:

- Viewpoint Road Access: Paved spur road off 269 Road
- Viewpoint Parking Area: Paved parking for 19 vehicles and 2 buses
- Viewing Areas: Walking path and viewing area off parking lot
- Interpretive Signage Shelters: including opportunities for BC Hydro, local and Aboriginal group content
- Facilities: Picnic tables, benches, and bear-proof refuse containers
- Safety and Security features: Public safety signage, fencing, night gate, security

#### Communications:

Meetings have been held with local and regional government and Aboriginal groups to discuss the public viewpoint design. Opportunities to contribute content to interpretive signage at the viewpoint has been discussed with Fort St. John North Peace Museum, Aboriginal groups, the City of Fort St. John and the PRRD.

#### Viewpoint Development Steps:

- Finalize location;
- Complete detailed design for viewpoint, consider other project interactions;
- Procurement for construction contractors;
- Construction of viewpoint and access road, installation of facilities and site signage;
- Complete viewpoint; and
- Maintenance and signage updates as required.

### **2.2.3 Outdoor Recreation Funding**

Condition 40 states:

- *Provide approximately \$150,000 to the District of Hudson Hope for the enhancement of Alwin Holland Park, or other community shoreline recreation areas.*
- *Provide approximately \$200,000 for a Community Recreation Site Fund of which \$50,000 is for recreational sites on the south bank to support development of new shoreline recreation areas within the Peace River and its tributaries to the Alberta border.*

#### **2.2.3.1 Funding for Enhancement to Alwin Holland Park**

It is expected that the Project will result in the inundation of less than 0.5 ha of the Alwin Holland Municipal Park shoreline. To mitigate this effect a payment of funds will be made to the District of Hudson's Hope for enhancement of Alwin Holland Municipal Park or other community shoreline recreation areas.

No later than 12 months prior to the commencement of filling of the reservoir, BC Hydro will make a one-time payment to the District of Hudson's Hope in the amount of \$150,000 to be used by the District as a funding contribution toward enhancements to Alwin Holland Park and other community shoreline recreation areas undertaken by the District. Community shoreline recreation area enhancements could include trail development, day/overnight use area refurbishment, and other park amenities including outhouses, interpretive signage, and picnic benches. The District of Hudson's Hope will use the funds for the purposes of enhancements to community shoreline recreation facilities within the District. The District of Hudson's Hope will be responsible for the planning, receipt of any necessary permit and approvals, and implementation of the shoreline recreation area enhancements and ongoing operation and maintenance of any such facilities.

#### **2.2.3.2 Community Recreation Site Fund**

BC Hydro will mitigate changes in recreational opportunities and loss of existing areas resulting from the Project by creating a BC Hydro Community Recreation Site Fund in the amount of \$200,000 (the "Fund"). BC Hydro presented the opportunity to participate in management of the Fund to the PRRD in recognition of the PRRD's role in implementing similar recreational grant programs (e.g. Recreational Trails Grants and the Recreational & Cultural Grants-in-Aid). Communications between BC Hydro and the PRRD on this opportunity started in November 17, 2015 and concluded on October 19, 2016 when the PRRD declined BC Hydro's invitation to become involved in the administration and management of the Fund.

BC Hydro has elected to accept a proposal from with Northern Development Initiatives Trust for the administration of the Fund. The Fund administration will follow the conceptual program outline below.

#### **Conceptual Program Outline for Community Recreation Site Fund**

The Community Recreation Site funding is proposed to be administered as follows:

- A grant application process will be established, which will include a grant application and review process in accordance with designated eligibility criteria (to be developed). The grant

application process will be established to review applications against set criteria that meet the EAC condition, and support intended mitigation as described in the EIS.

- The Fund is proposed to be distributed as follows:
  - \$75,000 will be allocated during the Project construction phase toward proposals for development or enhancement of river recreation sites located along the Peace River and its tributaries, and outside the Site C Project activity area (e.g. outside the dam site and reservoir area).
  - \$75,000 will be allocated within the first 10 years after reservoir filling, toward development of recreation sites located along the Site C Reservoir shoreline. Site specific proposals may be subject to a technical safety review by BC Hydro taking into account the reservoir impact lines, statutory rights of way, the results of monitoring of the reservoir shoreline and other relevant technical information.
  - \$50,000 will be allocated for development of recreation sites in the vicinity of the south bank of the Peace River, generally between the Peace River and Chetwynd and subject to review of proposals by the District of Chetwynd in consideration of this measure under the Chetwynd Community Agreement.<sup>3</sup> These funds may be allocated anytime based on receipt of one or more suitable proposals.
- BC Hydro proposes that the Fund be implemented in 2017, after the final ORMP is submitted in January 2017 and an agreement is concluded with Northern Development Initiatives Trust.
- The Fund would operate for a period of approximately 15 years with two application intakes during Site C construction and two application intakes during operations. Significant notice would be provided in advance of intake close to allow application development, and consideration of other funding opportunities.

Proposed Fund eligibility criteria is as follows:

- Proposals will be accepted for new, or upgrades to existing, public shoreline based day-use or overnight recreation sites. Site development proposals will be typically for “undeveloped” class recreation sites and may include simple infrastructure such as outhouses, picnic tables, shelters and rough cleared areas.
- Proposals must identify if fees will be charged for use of part of, or all of, recreation site, and if so must provide a financial summary to support the rationale for, and use of, fees. It is preferred that recreation sites have no fees, or nominal fees to support site maintenance.
- Proposals must include a plan for, and the applicant’s responsibility for the design, permitting and approvals, implementation, operation and maintenance of the site. Funds will

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<sup>3</sup> The Chetwynd Community Agreement states “BC Hydro will designate \$50,000 from the proposed Community Recreation Site Fund to be used as funding toward development of recreation sites on the south bank between Chetwynd and the reservoir. Community groups, including local governments, would be eligible to apply for funds to develop recreation sites.”

be issued upon confirmation of required approvals and permits including where required the consent of the provincial District Recreation Officer.

- Proposals must acknowledge that BC Hydro is not responsible for sites developed with the use of funds from BC Hydro.
- Funding will be provided on a one-time basis for the development of new recreation sites, or upgrades to existing sites.
- The following activities or developments will not be eligible for funding:
  - commercial developments,
  - development on private land,
  - installation or operation of permanent electrical supply, potable water supply or boat launches or similar infrastructure associated with developed recreation sites,
  - ongoing operation or maintenance activities,
  - purchase of construction equipment and tools, and
  - costs incurred prior to formal notification of funding approval.

### **Who Can Apply**

Applicants cannot be private businesses or landowners. Applicants must be based in the PRRD and may include:

- Aboriginal groups
- Municipal or Regional Government
- Non-profit societies

### **Project Funding Constraints**

The Fund provides a grant up to a maximum of \$10,000 for an individual project, and may opt to provide an amount less than requested.

### **Review Process**

The review process will include consideration of the following:

- Compliance with project eligibility criteria
- Technical merit including overall feasibility and practicality
- Cost vs. benefit (e.g. estimated number of users per year), and proposed fees
- Value-added criteria including in-kind contributions and/or partnered funding (e.g. dollar ratio of requests from the Fund to other cost covering sources)
- Overall benefit to the Fund objective to enhance shoreline recreation opportunities within the PRRD.

## 2.2.4 Reservoir Navigation and Recreations Opportunities Plan

Condition 40 states: *“Fund the development of a BC Peace River / Site C Reservoir Navigation and Recreation Opportunities Plan.”*

A BC Peace River / Site C Reservoir Navigation and Recreation Opportunities Plan will be developed to mitigate potential effects on over the long term on outdoor recreation and tourism infrastructure, as well as access to water-based navigation. The planning process and the plan development will be funded by BC Hydro and initiated within one year after reservoir filling.

The plan will focus on new recreation opportunities provided by the reservoir and the changed navigation environment, supporting a wide range of vessel types. BC Hydro will engage with the following groups in development of the Plan: local boating / water-based recreation groups, the PRRD, the Districts of Hudson’s Hope, Taylor, and Chetwynd, the City of Fort St. John, and local area Aboriginal groups.

In the letter to the PRRD sent on November 17, 2015, BC Hydro also raised the opportunity for involvement or leadership from the PRRD to coordinate this planning process to ensure consistency with other parks and recreation planning for the region. BC Hydro has not yet received a response, however due to the proposed timing of this process after reservoir filling a decision from the PRRD is not required at this time, and BC Hydro would be pleased to discuss with the PRRD at a later date.

In order to provide an opportunity for the communities to experience the new reservoir and to develop ideas for recreation and boating in the new reservoir environment BC Hydro will initiate this planning process within one year after reservoir filling. The spatial scope of the plan will include the Site C reservoir; and the Peace River downstream to the B.C./Alberta border.

Based on the interest of the parties identified above, the BC Peace River/Site C Reservoir Navigation and Recreation Opportunities Plan may include the following key areas, as outlined below:

- General navigation
- Reservoir harbours
- Navigational anchorages
- Boat launches and day use areas
- Development of a private sector marina
- Overnight destination areas
- Recreational access points.

## 3 Plan Development Process

EAC Condition 40 states:

- *“The EAC Holder must provide this draft Outdoor Recreation Mitigation Plan to FLNR, Peace River Regional District, City of Fort St. John, District of Hudson’s Hope and Saulneau, West Moberly, Halfway River, Doig River, Blueberry River and Prophet River First Nations,*

*and McLeod Lake Indian Band for review within 12 months after the commencement of construction.”*

- “The EAC Holder must file the final Outdoor Recreation Mitigation Plan with EAO, FLNR, Peace River Regional District, City of Fort St. John, District of Hudson’s Hope and Saulteau, West Moberly, Halfway River, Doig River, Blueberry River and Prophet River First Nations, and McLeod Lake Indian Band within 18 months after the commencement of construction.”

BC Hydro accepted comments on the draft ORMP for 60 days following submission on July 27 until September 26<sup>th</sup>, 2016. One comment was received on the draft plan requesting clarification regarding recreation funding and the Fund – the comment has been taken into account in this final plan.

## 4 Implementation

EAC Condition 40 states:

- *“The EAC Holder must develop, implement and adhere to the final Outdoor Recreation Mitigation Plan, and any amendments, to the satisfaction of the EAO.”*

BC Hydro will implement the final Outdoor Recreation Mitigation Plan following submission on January 27, 2017. The proposed schedule for implementation of the ORMP is included below in Table 2. Proposed dates may require modification, pending engineering studies, engagement and consultation, and approvals.

**Table 2: Proposed outdoor recreation mitigation plan schedule.**

Mitigation Measure	Anticipated Schedule	Rationale
Provide technical information to support outdoor recreation providers in adapting to new shoreline conditions.	Construction and Operations phases	Enable private, municipal, or community sectors adaptation to new shoreline conditions including information on boating, public access and water levels, and land use restrictions related to reservoir impact lines.
Cache Creek/Bear Flat boat launch	To be opened in Year two to five of reservoir operations	The boat launch at Halfway River will remain open during construction, until public traffic is re-routed onto the realigned highway after which time it may be closed. The launch will be inundated at the time of reservoir filling. Anticipate the new boat launch and day use at Cache Creek/Bear Flat will be available between Year 2 and Year 5 of reservoir operation, subject to evaluation of public safety hazards related to slope stability and debris.
Lynx Creek boat launch	To be opened in Year two to five of reservoir operations	The current boat launch at Lynx Creek will remain open during construction, until public traffic is re-routed onto the realigned highway after which time it may be closed. The launch will be inundated at the time of reservoir filling.

Mitigation Measure	Anticipated Schedule	Rationale
		Anticipate the new boat launch and day use area will be available within the second year of reservoir operation, subject to evaluation of public safety hazards related to slope stability and debris.
Hudson's Hope Shoreline Protection boat launch	To be opened in Year one to two of reservoir operations	The development of the recreation site will occur prior to inundation. Reservoir access via the new small vessel launch is anticipated in Year 2, subject to evaluation of public safety hazards related to slope stability and debris.
Public Viewpoint	Opened in Year two of Construction	Provide public with safe and accessible viewing location for construction and operations.
Alwin Holland Park - \$150,000 grant.	Funding provided one year prior to reservoir filling	Funds will be provided to the District of Hudson's Hope based on an agreed-upon schedule to enable improvements to be made before or early in reservoir operations.
\$200,000 Community Recreation Site Fund Implemented	Initiated after final ORMP submitted (Year 2 of Construction) and into Operations phase	The Community Recreation Site Fund will be initiated during the construction phase to support recreation site development during and post-construction. All funds are planned to be dispersed by Year 10 of the operations phase.
BC Peace River/Site C Reservoir Navigation and Recreation Opportunities Plan	Operations Phase from Years one to ten	The plan will be developed once the community has identified a range of recreation development opportunities consistent with the new reservoir's physical features, natural amenities, and operational restrictions.

## 5 Qualified Professionals

Table 3 lists the qualified individuals who contributed to the preparation and review of the draft ORMP.

**Table 3: Qualified Professionals**

Qualified Individual	Expertise
Dave Hunter, R.P.Bio	Senior Environmental Coordinator, Former Outdoor Recreation Lead, Site C
Siobhan Jackson, MRM	Masters in Resource and Environmental Management, Outdoor Recreation and Parks

## 6 References

- BC Hydro. 2013a, *Site C Clean Energy Project Environmental Impact Statement: Section 10 Effects Assessment Methodology*. Table 10.1 Spatial Boundary Descriptors.
- BC Hydro. 2013b, *Site C Clean Energy Project Environmental Impact Statement: Section 11.3 Land Status, Tenure and Project Requirements*.
- BC Hydro. 2013c. *Site C Clean Energy Project Environmental Impact Statement: Volume 3, Section 25 Outdoor Recreation and Tourism*. Vancouver, BC.
- BC Hydro. 2013d. *Site C Clean Energy Project Environmental Impact Statement: Volume 3, Appendix E, Outdoor Recreation Mitigation Plan*. Vancouver, BC.
- BC Hydro. 2013e. *Site C Clean Energy Project Environmental Impact Statement: Volume 3, Section 26 Navigation*. Vancouver, BC.
- BC Hydro. 2013e. *Site C Clean Energy Project Environmental Impact Statement: Volume 2, Appendix B Geology, Terrain Stability and Soil Reports and Volume 1 Appendix B Reservoir Filling and Commissioning Plan*. Vancouver, BC.
- BC Hydro. 2016. Site C Construction Communication Plan (Included within the Construction Environmental Management Plan). Vancouver, BC.  
<https://www.sitecproject.com/sites/default/files/Construction%20Environmental%20Management%20Plan.pdf>
- BC Hydro. 2016. Site C Construction Safety Management Plan. Vancouver, BC.  
<https://www.sitecproject.com/sites/default/files/Construction%20Safety%20Management%20Plan.pdf>
- BC Hydro. 2016. Site C Public Safety Management Plan. Vancouver, BC.  
<https://www.sitecproject.com/sites/default/files/Construction%20Safety%20Management%20Plan.pdf>

# Appendix A: Baseline and Effects Assessment

## Outdoor Recreation and Tourism Effects Assessment

### 1. Introduction

The potential effect of the Project on outdoor recreation and tourism was assessed in Section 20 of the EIS, as amended (July 2013). The Outdoor Recreation and Tourism assessment considered the project's interactions with outdoor recreation and tourism features, amenities, sites, activities, visitor levels, and use levels.

Changes in outdoor recreation and tourism infrastructure are considered using the following indicators:

- Outdoor recreation features and amenities, including recreation sites, trails, parks, and Peace River Boudreau Lakes proposed protected area
- Tourism features and amenities, including visitor centres, tourist accommodations, and attractions
- Commercial outdoor recreation interests
- Recreation activities undertaken on the land base, including activities, locations, and seasonal nature of activities

Changes to outdoor recreation use levels and regional tourism visitor levels consider outdoor recreation use levels, and regional tourism visitor levels.

### 2. Spatial and Temporal Assessment Boundaries

The Local Assessment Area for changes to outdoor recreation and tourism infrastructure and visitor levels includes the Project activity zone<sup>4</sup> and downstream to Peace Island Park. The Regional Assessment Area (RAA) in the EIS Guidelines is the Peace River Regional District. The temporal boundary for the assessment is the Project construction and operations phases.

### 3. Potential Effects of the Project

The assessment of Project on Outdoor Recreation and Tourism found three potential effects including the following:

- Changes in outdoor recreation and tourism infrastructure during construction
- Change in outdoor recreation and tourism use levels during construction
- Changes in outdoor recreation and tourism infrastructure during operations

Key mitigation measures are included in Table A.1 to address the potential effects.

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<sup>4</sup> The Project Activity Zone is the area within which the project components and activities will be located or will occur, but this does not include existing transportation infrastructure that will be used without modification to transport materials or personnel required for the Project. (BC Hydro.2013c)

Table A.1. Summary of Potential Effects and Mitigation Measures

<b>Potential Effects</b>	<b>Key Mitigation Measures</b>
Changes in outdoor recreation and tourism infrastructure during construction	Establish and operate three new permanent reservoir launches and day use sites (Cache Creek and Lynx Creek trailer launches and Hudson’s Hope Shoreline Protection small craft launch) to replace flooded boat launch areas <ul style="list-style-type: none"> <li>- Identify public communications procedures for public safety hazards, and access restrictions and closures during construction of the dam using a Public Safety Management Plan</li> <li>- Provide funds to the District of Hudson’s Hope for the enhancement of Alwin Holland Park or other community shoreline recreation areas</li> <li>- Provide a Community Recreation Site Fund to support development of new shoreline recreation sites on the reservoir and on the Peace River and tributaries between the project and the Alberta border</li> <li>- Provide technical support to outdoor recreation providers who require access to the reservoir to assist with their development along, or adaptation to, new shoreline conditions.</li> <li>- Establish a permanent north bank dam site public viewpoint</li> </ul>
Change in outdoor recreation and tourism use levels during construction	The project is anticipated to increase recreation and tourism use levels during construction, and would not require specific mitigation measures. Implementing the following housing measures would also support recreation and tourism use: <ul style="list-style-type: none"> <li>- Work with the private sector and local government to develop new RV sites</li> <li>- Implement on-site workforce housing</li> </ul>
Changes in outdoor recreation and tourism infrastructure during operations	Changes in outdoor recreation and tourism infrastructure during Operations <ul style="list-style-type: none"> <li>- Develop a Public Safety Management Plan that will identify public communications procedures for public safety hazards, and access restrictions and closures during operation</li> <li>- Identify public communications procedures for public safety hazards, and access restrictions and closures during operation</li> <li>- Fund the development of a Peace River and Site C Reservoir Navigation and Recreation Opportunities Plan</li> </ul>

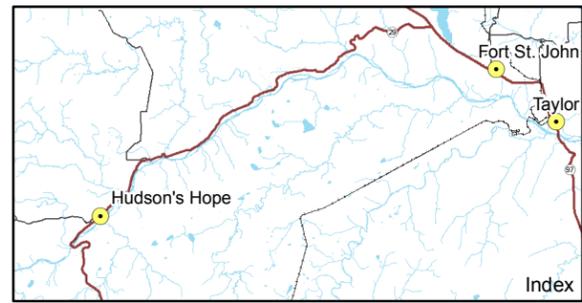
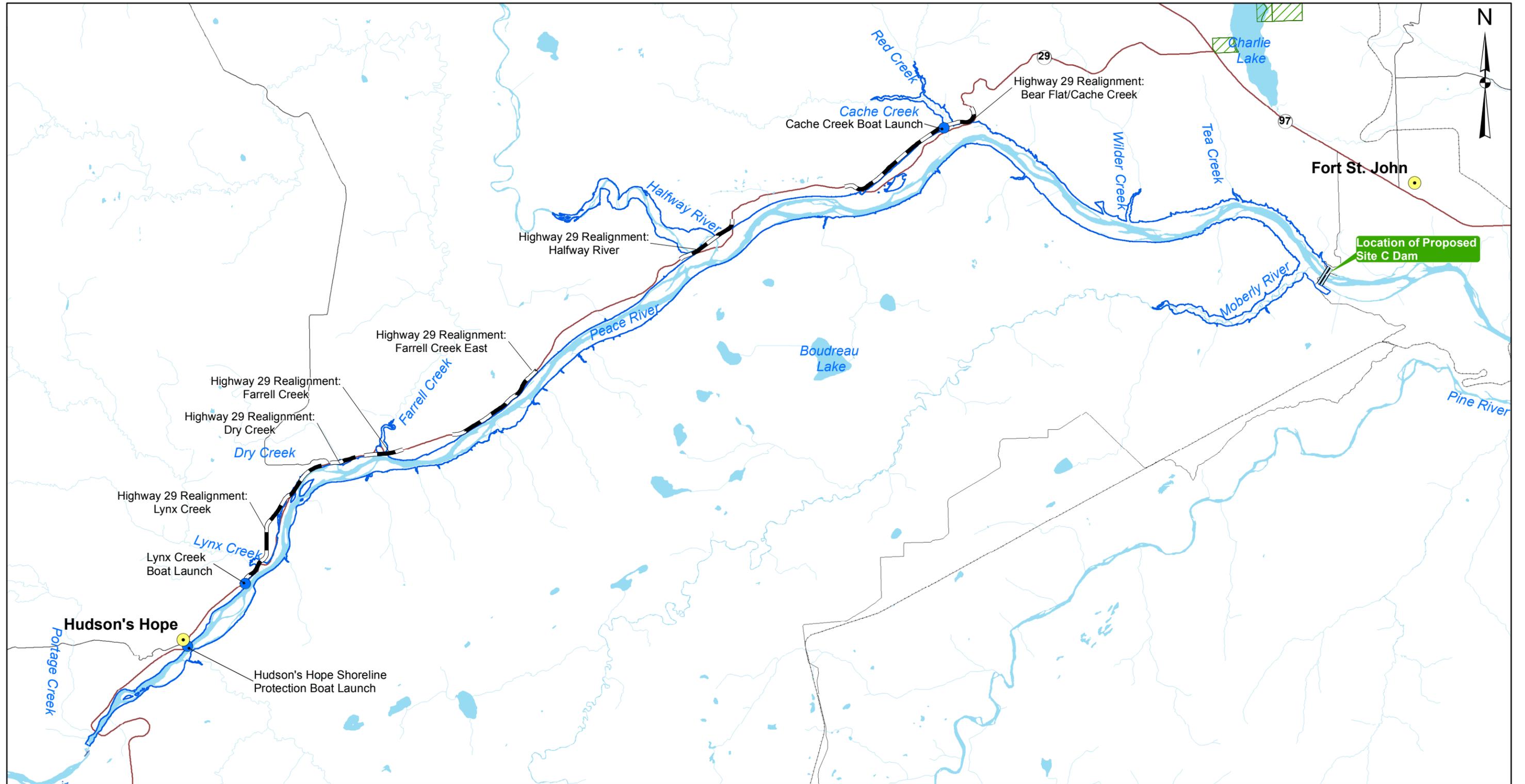
#### 4. Key Assessment Findings

Some recreation opportunities would be temporarily reduced for short periods during the construction phase, and while new infrastructure is being developed. As a result, during construction, a residual adverse effect is expected due to temporary losses of recreation and tourism access and infrastructure.

BC Hydro will provide replacement boat launches and day use areas in the reservoir and will implement a number of measures to support other community groups and the District of Hudson’s Hope in developing new reservoir recreation infrastructure. During operations recreation and tourism are expected to benefit due to new recreation opportunities. Considering the temporary and long-term changes to outdoor recreation, the residual effect is not considered significant.

## **Appendix B: Maps & Figures**

- Figure 1: Outdoor Recreation Infrastructure Mitigation
- Figure 2: Boat Launch Conceptual Design
- Figure 3: Hudson's Hope Shoreline Protection boat launch conceptual design
- Figure 4: North Bank Viewpoint



Map Notes:  
 1. Datum: NAD83  
 2. Projection: UTM Zone 10N  
 3. Base Data: Province of B.C.  
 4. Proposed reservoir area (461.8m maximum normal elevation) from Digital Elevation Models (DEM) generated from LIDAR data acquired July/August, 2006.

**Legend**

- Proposed B.C. Hydro Operated Boat Launch and Day Use Recreation Area
- Preferred Highway Realignment
- Maximum Normal Reservoir Level (461.8 m)
- City/District Municipality
- Protected Areas, Provincial Parks, Regional Parks, and Ecological Reserves

1:200,000 0 10 km

**BC Hydro**

**Figure 1:  
Outdoor Recreation Infrastructure Mitigation**

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Conceptual Rendering of Typical Boat Launch



**Figure 2 Conceptual rendering  
of typical boat launch and  
day use facilities**

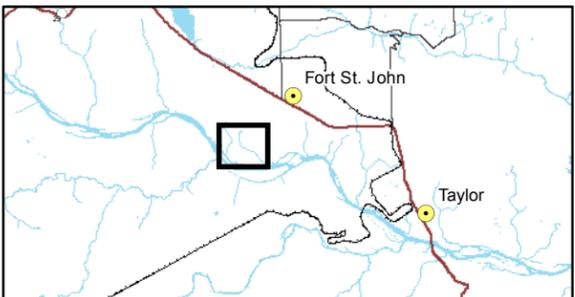
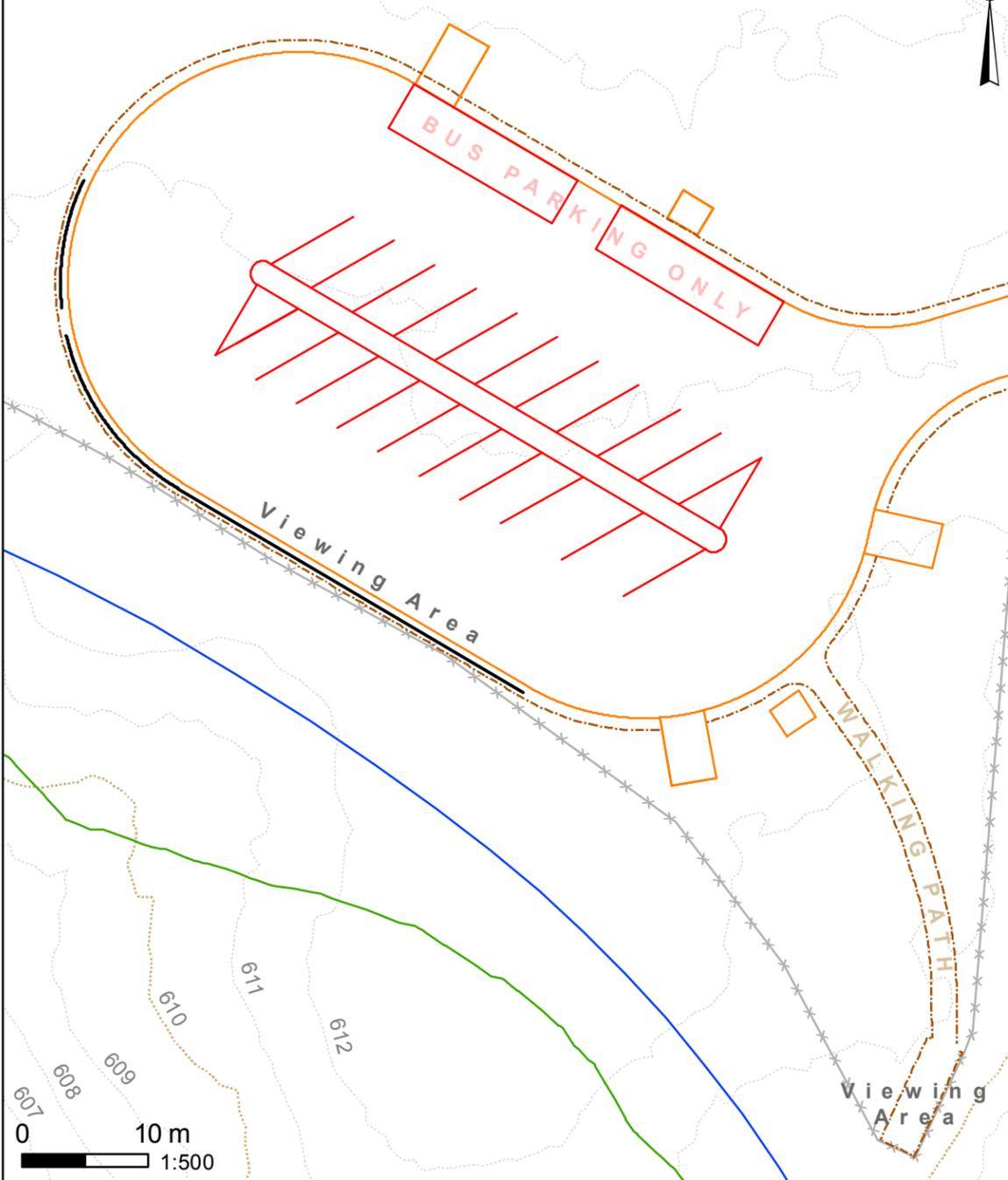


 **BC Hydro**  
Power smart

**Figure 3 Conceptual rendering of  
recreation site layout and boat launch  
for Hudson's Hope Shoreline Protection**

**Viewpoint Inset**

Three Signage Shelters  
(Locations to be Determined)



Map Notes:  
 1. Datum: NAD83  
 2. Projection: UTM Zone 10N  
 3. Base Data: Province of B.C.  
 4. Orthophotos created from 50cm photos taken July 17, 2015.

**Legend**

- Painted Lines
- Extent of Paved Area
- - - Extent of Gravel Area
- Security Barrier
- x - x - x Security Fencing
- Drainage Ditch Centreline
- Upper Extent of Left Bank Excavation Area
- Constructed Project Roads
- - - Contours (1m)
- - - Intermediate Contours (5m)

1:15,000    0    750 m

**BC Hydro**

**North Bank Viewpoint**

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