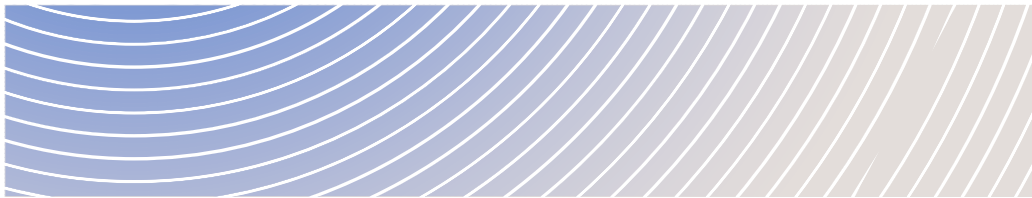


Impact Assessment Agency of Canada



ANALYSIS OF BC HYDRO'S PROPOSED NEW BORROW
SOURCE FOR CONSTRUCTION OF RESERVOIR CLEARING
ACCESS ROADS (HALFWAY RIVER EAST BORROW SOURCE)

DECEMBER 2022





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1. Introduction

BC Hydro (the proponent) is in the construction phase of developing a dam and 1,100-megawatt hydroelectric generating station on the Peace River in northeastern British Columbia (B.C.). The Site C Clean Energy Project (the Project) will be the third in a series of dams on the Peace River. Construction of the Project began in summer of 2015 and is anticipated to be completed in 2024.

The Project was subject to an assessment under both the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) and the B.C. *Environmental Assessment Act*. The environmental assessment was conducted by a joint review panel established by the former Minister of the Environment and the Government of B.C. The former Minister issued a Decision Statement under CEAA 2012 for the Project on October 14, 2014, (re-issued on November 25, 2014) following a Governor in Council decision allowing the Project to proceed. The Decision Statement contains over 80 legally binding conditions, which include mitigation measures and follow-up program requirements that the proponent must comply with throughout the life of the Project. The Provincial Ministers of Environment and of Forests, Lands and Natural Resource Operations issued an Environmental Assessment Certificate under the provincial *Environmental Assessment Act* on October 14, 2014, which contained a Project Description and 77 legally binding conditions.

On September 22, 2020, the proponent informed the Impact Assessment Agency of Canada (Agency) of a proposed new borrow source for construction of reservoir clearing access roads (Halfway River East Borrow Source) which would require a change to Section 4.3.5.2 (Table 4.7) and Section 4.3.5.2.10 of the project's Environmental Impact Statement (EIS) submitted by the proponent in January 2013.

On August 28, 2019, the *Impact Assessment Act* (IAA) came into force, repealing the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). Section 184 of the IAA provides that Decision Statements issued under CEAA 2012 are deemed to be Decision Statements under the IAA and therefore subject to the provisions of the IAA. In addition, the Canadian Environmental Assessment Agency is now the Impact Assessment Agency of Canada. In this report, the term "Agency" refers to either the former Canadian Environmental Assessment Agency or the current Impact Assessment Agency of Canada.

This is the eight project change for which the proponent has provided information to the Agency since the issuance of the Decision Statement. The Agency has analyzed the proposed changes for previous amendments and determined that no changes to the 2014 Decision Statement were required. These proposed changes include:

- 1) Design changes to the generating station and spillway
- 2) Modify the design of the Halfway River Bridge
- 3) Use of West Pine Quarry
- 4) Approve clearing methods used in riparian zones
- 5) Change a portion of the realignment of Cache Creek segment of Highway 29 and a change to the design of Cache Creek Bridge (Cache Creek/Bear Flats)
- 6) Expansion of the worker's camp.
- 7) Changes to the design of Highway 29 realignment crossing at Farrell Creek, Dry Creek and Lynx Creek

With this context in mind, the Agency conducted an analysis of the proposed changes to the Halfway River East Borrow Source (Project change) and the potential adverse environmental effects of those changes, and



considered comments from federal, provincial, regional, municipal governments and Indigenous representatives, to assess:

- whether the changes constitute a new or different designated project that may require a new impact assessment; and
- whether any changes (including addition or removal) may be required to the key mitigation measures and follow-up requirements in the initial environmental assessment set out as conditions in the Decision Statement to address the proposed Project changes.

This report provides a summary of the proposed Project changes, an analysis of whether these changes may result in adverse environmental effects that may not have been considered in the initial environmental assessment, and consideration of whether existing key mitigation measures and follow-up requirements set out as conditions in the Decision Statement are still applicable, need to be modified and/or whether new mitigation measures or follow-up requirements should be added as conditions to the Decision Statement.

The Agency is of the view that the proposed Project changes do not constitute a new or different designated project that may require a new impact assessment, and that the mitigation and follow-up requirements included as conditions in the Decision Statement remain relevant without any requirement for changes.

2. Proposed Project Design Changes

The proponent is proposing changes to develop and use a new borrow source on the north side of the Peace River to provide aggregate material for the construction of western reservoir clearing access roads on the north bank of the Peace River. These changes could alter the initial assessment of adverse environmental effects to the following valued components: fish and fish habitat, migratory birds and species at risk, current use of lands and resources for traditional purposes, and archaeological and heritage resources. The proposed design changes include:

Halfway River East (Figure 1 and Figure 2)

- Development and use of a new borrow source on the north side of the Peace River, near its confluence with the Halfway River, to provide aggregate material for the construction of western reservoir clearing access roads on the north bank of the Peace River
- Total area of the Halfway River East Borrow Source will be 13.4 hectares.
- Total volume to be used from the Halfway River East Borrow Source is 100,000m³.

BC Hydro has indicated that since the Decision Statement for the Project was issued they have had difficulty sourcing local, competent borrow material that is suitable for the development of the reservoir access roads. Existing pits identified in the EIS within the Peace Region are not suitable for north bank access road construction within and around the Halfway River due to hauling distance cost, and availability of resources.

The new proposed Halfway River East Borrow Source is in very close proximity to the required access roads where the material will primarily be used, which will reduce material haul times and associated costs in comparison to using other existing pits in the region.

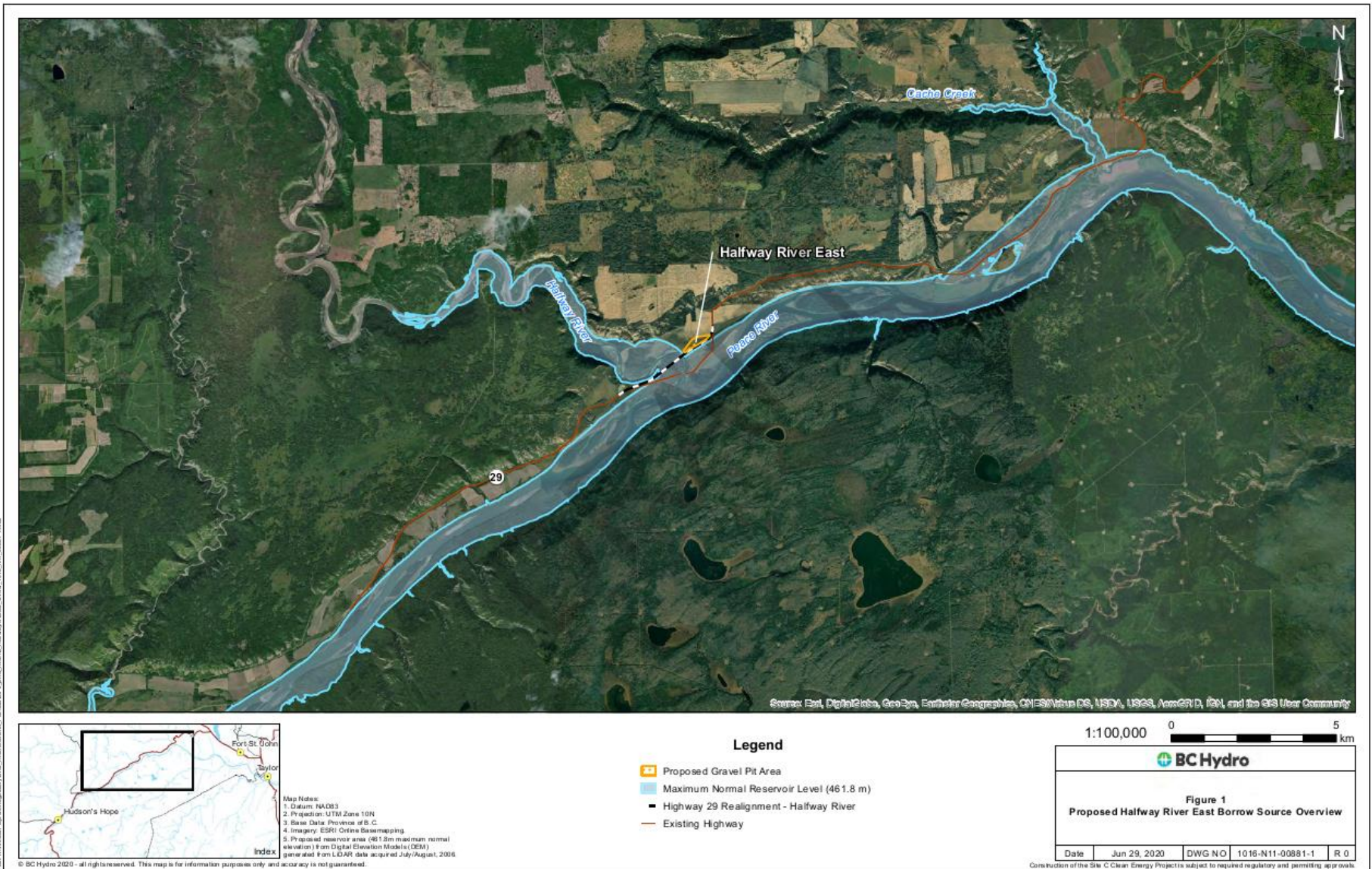


2.1 Agency's Analysis of Changes

The *Physical Activities Regulations* under the IAA identify the physical activities that constitute designated projects that may require an impact assessment. On its own, the proposed Project design change of the Halfway River East Borrow Source is not a physical activity as described in the Regulations. Consequently, the Agency has determined that the changes do not constitute a new or different designated project that may require a new impact assessment.



FIGURE 1: PROPOSED HALFWAY RIVER EAST BORROW SOURCE - GENERAL OVERVIEW MAP



Source: Letter from BC Hydro to the Impact Assessment Agency of Canada dated September 22nd, 2020.



FIGURE 2: HALFWAY RIVER EAST PROPOSED AREA MAP



Source: Letter from BC Hydro to the Impact Assessment Agency of Canada dated September 22nd, 2020.



3. Potential Adverse Environmental Effects from Proposed Project Changes

The following is an analysis of whether any of the changes to the design of the Halfway River East Borrow would require modifications, including addition or removal, to the mitigation measures and follow-up requirements set out as conditions in the Decision Statement.

3.1 Fish and Fish Habitat

Effects to fish and fish habitat, including impacts to navigation were assessed during the initial environmental assessment of the Project and mitigation measures and follow-up requirements were developed. The Decision Statement includes related conditions.

3.1.1 Proponent's Assessment

The proponent has indicated that the bank of the Halfway River is located approximately 100 m west of the proposed borrow source's western edge. Further the proponent states that because the use of the Halfway River East pit as a source of materials for reservoir clearing access roads will not result in any additional material effects on fish and fish habitat, it is not expected to cause any additional effects on the harvest of fish and wildlife resources beyond those predicted in the EIS.

3.1.2. Agency's Analysis

The Agency accepts the proponent's determination that the creation of a new borrow source at the Halfway River East borrow site would not result in any additional adverse environmental effects to fish and fish habitat beyond what was assessed through the environmental assessment of the project. The Agency is of the view that no changes are required to the key mitigation measures and follow-up requirements identified in the initial environmental assessment and set out as conditions in the Decision Statement.

3.2 Migratory Birds and Species at Risk

Effects to migratory birds and federally listed species at risk were assessed during the initial environmental assessment of the Project and mitigation and follow-up requirements were developed, and the Decision Statement includes related conditions.



Subsection 79(2) of the *Species at Risk Act, 2002* (SARA) requires the identification of the Project's adverse effects to SARA-listed wildlife species and their critical habitat. If the Project is carried out, SARA requires that measures be taken to avoid or lessen those effects and that such effects be monitored.

3.2.1 Proponent's Assessment

The proponent indicated that the Halfway River East source will affect 13.4 ha of agricultural field. No rare or sensitive ecosystems, including wetlands, will be affected. The proposed development of the borrow source will not impact any known occurrences of rare plants. Disturbance of an agricultural field will not change the conclusions of the EIS regarding the effects of the Project on vegetation and ecological communities.

The development and use of Halfway River East as a materials source for reservoir clearing access roads will not affect the conclusions in the EIS regarding the effects of the Project on wildlife resources. The effects of the Project on wildlife resources focused on a number of wildlife key indicators under the species groups of butterflies and dragonflies, amphibians and reptiles, migratory birds, non-migratory game birds, raptors, bats, fur-bearers, ungulates, and large carnivores. The effects of the Project on wildlife resources were determined to be significant due to the alteration and fragmentation of habitat for avian species of provincial and federal conservation concern.

The proponent indicated that no sensitive wildlife habitat will be affected. Some localized wildlife disturbance and displacement may occur near the developed borrow source. Implementation of measures set out in the Project's CEMP would mitigate the occurrence of incidental wildlife mortality events, which are expected to be rare during construction and operation of the borrow source. The proponent concluded that the disturbance of an agricultural field will not change the conclusions of the EIS regarding the effects of the Project on wildlife resources.

3.2.2 Agency's Analysis and Conclusions

The Agency accepts the proponent's determination that the creation of a new borrow source at the Halfway River East borrow site would not result in any additional adverse environmental effects to migratory birds and species at risk beyond what was assessed through the environmental assessment of the project. The Agency is of the view that no changes are required to the key mitigation measures and follow-up requirements identified in the initial environmental assessment and set out as conditions in the Decision Statement.

3.3 Current Use of Lands and Resources for Traditional Purposes

The proposed changes to the Project could impact Indigenous peoples by affecting the current use of lands and resources for traditional purposes. Current use was assessed during the initial environmental assessment and the Decision Statement includes related conditions.



3.3.1 Proponent's Assessment

Project effects on Current Use of Lands and Resources for Traditional Purposes were assessed in the EIS, including the consideration of Project changes to the use of and access to hunting, fishing, trapping activities, as well as current use of lands and resources for activities other than hunting, fishing and trapping by Indigenous groups, including cultural activities. The revised design changes are not anticipated to result in any additional effects on activities other than hunting, fishing or trapping by Indigenous groups, including effects on cultural activities.

Prior to Project approval in 2014, the Project underwent extensive consultation with Indigenous groups, commencing in 2007. Project effects on Current Use of Lands and Resources for Traditional Purposes were assessed in the EIS by considering Project changes to current use of lands and resources for hunting, fishing and trapping activities, as well as current use of lands and resources for activities for other cultural and traditional uses by Indigenous groups. The effects of the Project on current use of lands and resources for other cultural and traditional uses were determined in the EIS to be significant for the First Nations represented by the Treaty 8 Tribal Association (Doig River, Halfway River, West Moberly and Prophet River First Nations), Sauteau First Nations, and Blueberry River First Nations at particular high value places along the Peace River, most notably at Bear Flat, Farrell Creek and Attachie (and for McLeod Lake Indian Band at Attachie).

Based on the information shared, Indigenous groups have not reported any site-specific use of the Halfway River East Borrow Source location. The use of this area is not expected to cause additional effects on wildlife resources which would impact Indigenous group hunting and trapping in the proposed pit area, which is on an agricultural field owned by BC Hydro. No wetlands or waterbodies are located within the proposed borrow source and use of this area is not expected to cause any effects on fish and fish habitat.

3.3.2 Agency's Analysis and Conclusions

The Agency accepts the proponent's determination that the creation of a new borrow source at the Halfway River East borrow site would not result in any additional adverse environmental effects to the current use of lands and resources for traditional purposes beyond what was assessed through the environmental assessment of the project. The Agency is of the view that no changes are required to the key mitigation measures and follow-up requirements identified in the initial environmental assessment and set out as conditions in the Decision Statement.

3.4 Archaeological and Heritage Resources

The proposed changes to the Project could impact Indigenous peoples by affecting archeological and heritage resources. Archeological and heritage resources were assessed during the initial environmental assessment and the Decision Statement included related conditions.



3.4.1 Proponent's Assessment

The proponent undertook a comprehensive effects assessment for heritage resources for the EIS. The effects assessment considered the following:

- Disturbance to heritage sites and features from Project-induced disturbance of paleontological, archaeological and historical sites and features
- Disturbance to elements essential to the heritage character of features from Project-induced changes to context of paleontological, archaeological and historical sites and features
- Disturbance to artifacts, features, human remains, and fossils from Project-induced disturbance of fossils and trace fossils, archaeological features and artifacts, and burials
- Hindrance or increase in access to sites and destroying contextual information from changes in level of accessibility to paleontological, archaeological and historical sites
- Other relevant issues raised by Aboriginal groups in relation to changes to paleontological, archaeological and historical sites, as well as preservation of heritage resources for cultural uses by Aboriginal peoples

Information and data for the Effects Assessment was drawn from: literature reviews (including paleontological resources, archaeological resources, and historical resources), consultation between BC Hydro and Indigenous groups, and a multi-year field inventory and assessment. The EIS concluded that mitigation measures were expected to reduce potential effects, such as the implementation of a Heritage Resources Management Plan to address heritage site stewardship and protection relative to construction activities (EAC Condition 62). However, the EIS indicated that Project-related residual adverse effects may occur due to Project-induced disturbance.

The proposed Halfway River East Borrow Source is outside of the EIS assessed area, and overlaps with HbRi-33, a Site C Class I archaeological site, 101.7 ha in size. The proposed borrow pit encompasses 13.4 ha (or about 13% of the area) of the site. HbRi-33 is a large sized site, which was initially recorded as five discrete sites (HbRi-6, HbRi-9, HbRi-33, HbRi-34 and HbRi-49), and later combined into one site. Extensive archaeological studies were conducted on this site between 2010 and 2020. Heritage inventory, Archaeological Impact Assessment (AIA) and Systematic Data Recovery (SDR) mitigation studies have been conducted on portions of this site within the current Project footprint, mainly associated with the new alignment for Highway 29 as well as a reservoir clearing access road. This includes conducting the maximum of 75 m² of SDR (archaeological excavation) for a Class I site.

In preparation for this amendment application, an AIA was also conducted on a portion of the proposed pit area (attached in Appendix C). Additional archaeological work will be required prior to the commencement of any ground disturbing works, including management under the terms of a HCA Section 12.4 permit, as well as assessment under a HCA Section 12.2 permit for any areas not yet assessed. While a portion of site HbRi-33 will be impacted by this proposed work, the proposed use would not change the conclusions in the EIS in respect of impacts of the Project on heritage resources.



3.4.2 Agency's Analysis and Conclusions

The Agency accepts the proponent's determination that the creation of a new borrow source at the Halfway River East borrow site would not result in any additional adverse environmental effects to archaeological and heritage resources beyond what was assessed through the environmental assessment of the project. The Agency is of the view that no changes are required to the key mitigation measures and follow-up requirements identified in the initial environmental assessment and set out as conditions in the Decision Statement.

4. Consultation and Engagement

4.1 Consultation with Indigenous Groups

Indigenous groups were defined in the Decision Statement as "Reservoir Area Aboriginal groups" and "Immediate Downstream Aboriginal groups." Reservoir Area Aboriginal groups include: Sauteau First Nations, Blueberry River First Nations, West Moberly First Nations, Doig River First Nation, McLeod Lake Indian Band, Halfway River First Nation, and Prophet River First Nation. Immediate Downstream Aboriginal groups include: Horse Lake First Nation, Métis Nation British Columbia, Kelly Lake Métis Settlement Society, Duncan's First Nation, and Dene Tha' First Nation. As the Agency does not expect the changes to the Project design to warrant amendments to the Decision Statement and in order to avoid duplication of efforts with the provincial amendment process described below, no consultation was done on this analysis document.

Regulatory and compliance matters for BC Hydro's northeast projects (including Site C) are discussed during regular meetings with most BC Treaty 8 First Nations.

On June 30, 2020, the proponent shared a draft request to amend the Project Environmental Assessment Certificate (EAC) to reflect the proposed use of the Halfway River East Borrow Source. In response, Halfway River First Nation (HRFN) asked whether BC Hydro will be undertaking a post impact ground disturbance inspection (PGDI) or monitoring during works in relation to the archaeological site within the proposed borrow source. The proponent confirmed that they would be undertaking a PGDI, in accordance with the 2020 AIA report for the site. HRFN also expressed concern that the site appears to come in close proximity to some significant traditional use sites. The proponent is working with HRFN to conduct ground-truthing to identify any sites of traditional or cultural significance.

In addition, HRFN expressed concerns with the conclusion of the EAC Amendment request that there will be no significant adverse effects beyond the effects identified in the original EIS, given that the proposed activity is different from previously proposed activities in this area. BC Hydro acknowledges that these activities are different from those described in the EIS and that they will have a local effect. However, the scope and scale of the activities are such that they will not change the overall conclusions of the EIS, which are based on an assessment of effects due to Project-wide construction activities as a whole.

No other comments on the draft EAC amendment request were received from Indigenous groups.



The Agency considered all of these comments and discussions as part of its analysis of the Project design changes and was satisfied with the level of detail provided by the proponent in addressing concerns raised. The Agency is of the opinion that the proposed changes would not change the residual effects assessment on valued components within federal jurisdiction, and is therefore satisfied that there would be no additional impacts to Aboriginal and or Treaty rights beyond those assessed in the initial environmental assessment.

5. Conclusion

Considering the potential adverse environmental effects of the proposed Project changes, the Agency is of the view that changes to mitigation measures and follow-up requirements included as conditions in the Decision Statement would not be required.