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January 21, 2016

Ms. Erica Hamilton
Commission Secretary
British Columbia Utilities Commission
Sixth Floor – 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**RE: British Columbia Utilities Commission (BCUC or Commission)**
**British Columbia Hydro and Power Authority (BC Hydro)**
**PUBLIC Site C Clean Energy Project – Progress Report No. 1**
**F2016 – Q2 (July to September 2015)**

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BC Hydro writes to provide its public Site C Clean Energy Project Progress Report No. 1. Commercially sensitive and contractor-specific information has been redacted.

A confidential version of the Report is being filed with the Commission only under separate cover.

For further information, please contact Geoff Higgins at 604-623-4121 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,

Tom Loski
Chief Regulatory Officer

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Enclosure (1)

BC Hydro
Power smart

# Site C Clean Energy Project

## Quarterly Progress Report No. 1

## F2016 Second Quarter

## July 2015 to September 2015

## PUBLIC

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## Appendices

# 1 Project Status

This Quarterly Progress Report No. 1 (**Report No. 1**) provides information concerning the Site C Clean Energy Project (**Project**) covering the period from July 1, 2015 to September 30, 2015.

## 1.1 Overview and General Project Status

The Project will construct a third dam and hydroelectric generating station on the Peace River in northeast B.C. to provide 1,100 megawatts of capacity, and produce about 5,100 gigawatt hours per year. In December 2014, the Project received approval from the provincial government to proceed to construction. The Project is in Implementation Phase and construction commenced July 27, 2015.

On the north bank of the dam site, construction of access roads is underway, the material disposal site has been prepared and material is now being excavated and moved to the disposal site to stabilize the north bank. On the south bank of the dam site, construction of access roads and a new rail siding has begun. Over 250 hectares of clearing has been completed between the north and south bank of the dam site and logs are being delivered to local mills. On the South Bank, some logs are being temporarily stored until the Peace River Bridge is constructed. In addition, BC Hydro is currently in discussion with a preferred proponent regarding the utilization of waste wood. The site preparation for the Worker Accommodation Camp is underway with site grading and clearing substantially complete, foundation piles and underground utility lines are being installed and a temporary work camp is ready for occupation.

Overall, the progression of work is on track to achieve the BC Hydro Board of Directors (**Board**) approved in-service dates; the first unit is expected to come on line in December 2023 and final Project completion is expected in November 2024. Costs are still forecast to come within the Board approved P50 amount ($8.335 billion).

Table 1 provides a dashboard based on the Project status as at September 30, 2015.

**Table 1 Project Status Dashboard**

● Green: No Concerns; ● Amber: Some Concerns but in Control; ● Red: Serious Concerns

| **Status as of:** | | **September 30, 2015** | **Overall:** | ● |
|---|---|---|---|---|
| **Overall Assessment** | ● | The Project is on track for overall scope and schedule. The Project is on track with the Project completion date of November 2024.[1] | | |
| **Schedule ISDs** | ● | The overall schedule and progress remains on track to achieve the planned In Service Dates. | | |
| **Cost** | ● | Cashflow projections have shifted out but the overall cost forecast remains on track:<br>– Total Project cost is still forecast to be within the Board approved P50 amount of $8.335 billion. This excludes the Treasury Board Reserve of $440 million.<br>– Allocations of contingency in respect of Year 1 activities are $85.9 million<br>– There have been no draws on reserve to date | | |
| **Environmental** | ● | No material environmental incidents occurred to September 30, 2015 that required reporting to permitting agencies. | | |
| **Risks** | ● | All risks are being managed and treatments are in place. For details refer to section 4 Material Project Risks below. | | |
| **First Nations** | ● | Impact Benefit Agreement (**IBA**) offers have been made to all Treaty 8 First Nations significantly affected by the Project. | | |
| **Regulatory and Litigation** | ● | Decisions made by the Crown may be subject to additional judicial reviews by First Nations and others who continue to oppose the project. | | |
| **Safety** | ● | Morgan Construction & Environmental Ltd., ATCO Two Rivers Lodging Group and Paul Paquette and Sons have prime contractor responsibilities and are executing all work under their Safety Management Plans.<br>– There were 0 Level 1 & 2 safety incidents in the quarter ended September 30, 2015.<br>– There were 10 WorkSafeBC Orders written during the reporting period. All were successfully closed within the reporting period. | | |

[1] The Board approved In Service Dates for total Project completion November 2024.

## 1.2 Major Accomplishments, Work Completed, Key Decisions and Key Issues

### 1.2.1 First Nations Consultation

Pursuant to the Environmental Assessment Certificate and Federal Decision Statement, BC Hydro is required to consult with 13 Aboriginal groups with respect to the construction stage of the Project. This consultation includes provision of information on construction activities, support for the permit review process, and review and implementation of mitigation, monitoring and management plans, and permit conditions.

Efforts are ongoing to conclude IBAs with First Nations, and discussions are ongoing with respect to directed procurement.

Four contracts have been awarded to Aboriginal businesses for current work associated with site preparation. BC Hydro is in discussion with other Aboriginal businesses for work scheduled for late 2015 and early 2016.

### 1.2.2 Litigation

Of seven legal challenges initiated to date, two were discontinued, four were dismissed, one has yet to be heard, and three appeals were filed. The details are summarized in Table 2 below.

**Table 2 Litigation Status Summary**

| Outcome | | Date |
|---|---|---|
| Federal Court : Federal Environmental Approval | | |
| Mikisew Cree<br>Athabasca Chipewyan | Two judicial reviews were discontinued after agreements were reached with BC Hydro and the federal government. | July 16, 2015 |
| Peace Valley Landowner Assoc. | Dismissed | August 28, 2015 |
| Prophet River First Nation<br>West Moberly First Nations | Dismissed<br>Appeal filed | August 28, 2015<br>September 30, 2015 |
| B.C. Supreme Court : Provincial Environmental Assessment Certificate | | |
| Peace Valley Landowner Assoc. | Dismissed<br>Appeal filed | July 2, 2015<br>July 30, 2015 |
| Prophet River First Nation<br>West Moberly First Nations | Dismissed<br>Appeal filed (Post Reporting Period) | September 18, 2015<br>October 19, 2015 |
| B.C. Supreme Court : Provincial Permits | | |
| Prophet River First Nation<br>West Moberly First Nations | Injunction application dismissed<br>Hearing of Petition | August 28, 2015<br>November 17 to 20, 2015 |

* Status of September 30, 2015.

### 1.2.3 Permits and Government Agency Approvals

#### *Background*

In addition to the Environmental Assessment Certificate and the Federal Decision Statement, provincial permits and federal authorizations are required to construct the Project. Timing of the application for these permits and authorizations is staged and aligned with the construction schedule, availability of detailed design information, and by Project component.

#### *Provincial Permits*

The strategy for Site C provincial permits involves a phased approach to the submission of applications to the Ministry of Forest, Lands and Natural Resource Operation (**FLNRO**) based on Project components and construction schedule. The

first batch of permits pursuant to the Land, Water, Wildlife, *Forest and Mines Acts* were sought for the dam site area, the reservoir (i.e., for vegetation clearing), and quarries/pits under the *Land, Forest, Water, and Wildlife Acts.* These permits were issued July 7, 2015.

*Heritage Conservation Act* permits were issued July 14, 2015 and *Mines Act* permits were issued on July 24, 2015. These permits were issued for site preparation activities (i.e., vegetation clearing, road access) which commenced July 27, 2015.

Table 3 below provides a list of permits and authorizations that have been issued for site preparation works at the dam site, for vegetation clearing and quarries/pits. Long-term permit requirements such as removal of land from the Agricultural Land reserve and the Water Licence for diversion and storage are also included.

Below is a list of Permits and Authorizations issued for Site Preparation Works at the Dam site, the Water Licence and Agricultural Land Reserve.

**Table 3 Site Prep Works Permits and Authorizations**

| Required Permit/Approval | Process Initiation/ Application Date | Approval Date |
|---|---|---|
| B.C. EAC<br>Federal Decision Statement (revised date) | Submitted EIS<br>January 2013 | October 14, 2014 – EAC<br>November 25, 2014 – FDS |
| Water Licence-<br>Diversion & Storage<br>Fish Passage | <br>2008<br>April 2015 | <br>*Forecast:*<br>December 31, 2015 |
| Crown Land tenures | April 2014 | July 7, 2015 |
| *Water Act* (section 8&9) | April 2014 | July 7, 2015 |
| Occupant Licence to Cut | April 2014 | July 7, 2015 |
| *Mines Act* (Notice of Works) | April 2014 | July 7, 2015 |
| *Wildlife Act* | April 2014 | July 7, 2015 |
| *Heritage Conservation Act* | November 2014 | July 14, 2015 |
| *Fisheries Act* Authorization | October 2014 | September 30, 2015 |
| *Navigation Protection Act* Authorization | October 2014 | September 29, 2015 |
| Removal of land from Agricultural Land Reserve | December 2014 | April 2015 |

The Water Licence for diversion and storage is currently under review with the Water Comptroller's office. The review includes a written hearing with two rounds of comments and responses. BC Hydro will submit its final responses by November 20, 2015 to the Water Comptroller.

### *Federal Authorizations*

*Navigation Protection Act* and *Fisheries Act* authorizations for site preparation works were issued on September 29 and 30, 2015, respectively.

### *Future Provincial Permits*

Table 4 below lists the general categories of future provincial permit requirements for the different Project components.

**Table 4 General List of Future Permit Requirements**

| Project Component | Key Permit Requirements | Required Date |
|---|---|---|
| Main Civil Works | Water License<br>1st Leaves to Commence<br>*Wildlife Act* (fish, amphibian salvage)<br>*Water Act* (section 8) | December 31, 2015<br>April 1, 2016<br>May 2016<br>July 2017 |
| Highway 29 Re-alignment (Cache Creek section)<br><br>Other sections | *Land, Water, Wildlife, Heritage Conservation, Forest Acts*<br><br>*Land, Water, Wildlife, Heritage Conservation, Forest Acts* | May 2016<br><br>Fall 2016 and beyond |
| Transmission | *Land, Water, Wildlife, Heritage Conservation, Forest Acts* | August 2016 |
| Quarries/Pits | *Land, Water, Wildlife, Heritage Conservation, Forest, Mines Acts* | Spring 2016 |
| Mitigation Works (e.g., Fish and Wildlife) | *Water Act, Wildlife Act* | TBD |

* Dates are preliminary and should not be used for final negotiations or planning purposes.

### *Assumptions*

Permit requirements listed are general in nature. Additional permits may be identified and required under the various acts as detail design and construction proceeds for the different Project components

The date required is subject to change based on changes to the construction design, methods and/or schedule and the consultation process currently being discussed with the Province, DFO and Transport Canada

Future applications include Land, Water, Wildlife, Forest, Mines, and *Heritage Conservation Act* permits for the Main Civil Works, transmission line, Highway 29 re-alignment, quarries and pits, mitigation and monitoring works (e.g., fish contouring for minimizing the risk of fish stranding). Weekly meetings with FLNRO are continuing to ensure that these future applications meet the scheduling needs of the Project.

BC Hydro and FLNRO meet weekly to discuss the permit application process, time required for review and consultation with Aboriginal groups, the status of specific applications and when permits will be issued to minimize the risk of delay to construction.

Given the extensive consultation required with First Nations, the level of detailed technical information required and the timing and capacity of resources available to review permit applications, a review by senior officials at Forest, Land and Natural Resource Operations and BC Hydro is underway. It is expected that resources from Forest, Land and Natural Resource Operations will be required to clarify the technical requirements and simplify documentation to further enhance the consultation process with First Nations.

### *Future Federal Authorizations*

The *Navigation Protection Act* application for construction and reservoir filling is complete and Transport Canada will be issuing authorizations and consulting on components. For the *Fisheries Act* authorization, BC Hydro initiated first steps and submitted a Request for Review for Major Civil Works on September 22, 2015, and is preparing the application which also includes reservoir filling. Regular meetings are scheduled with Department of Fisheries and Oceans and Transport Canada.

### 1.2.4 Engineering and Construction

#### *1.2.4.1 Engineering*

The Engineering team assisted with issuing the Main Civil Works technical addendum, including the schedule of quantities and prices at the end of July 2015. In addition, an Engineers Estimate was prepared based on the Main Civil Works specifications, drawings and draft Contract. The first set of Construction drawings will be issued on Contract Award.

The implementation design of the Generating Station and Spillway commenced in September 2014 and is expected to continue through 2023. Hydraulic model testing of the spillway, approach channel, power intakes and tailrace was completed over a three year period from May 2012 to July 2015, when the physical models were decommissioned. The final report is near completion, pending a final review by the Site C Integrated Engineering Team.

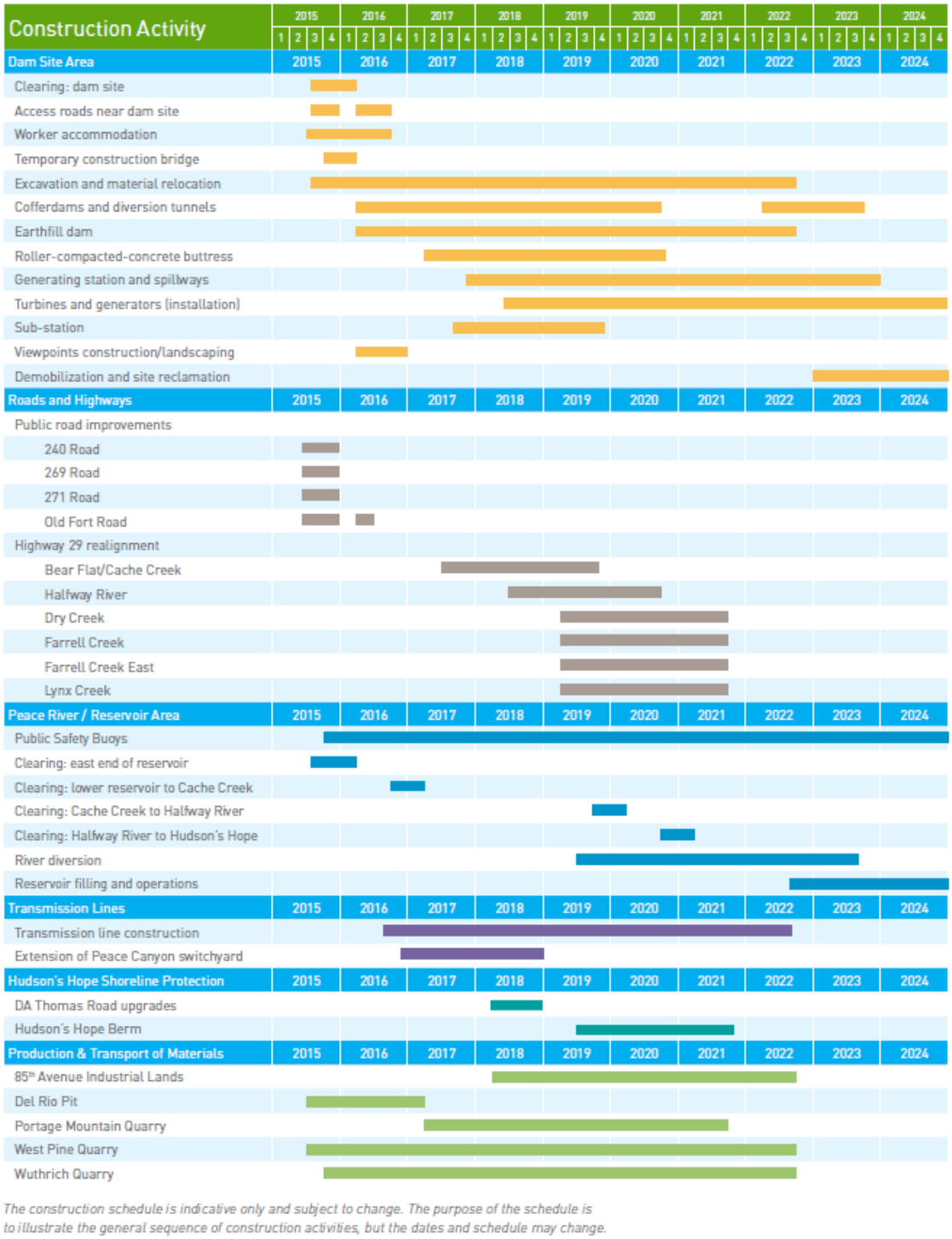
Proposals were received for the Turbine-Generator contract in July 2015. Testing of the turbines in the independent model testing facility also commenced in July and is expected to be completed by the end of December 2015.

Definition design for the 500 kV transmission lines (5L5 and 5L6), Peace Canyon 500 kV Gas Insulated Switchgear and Site C Substation commenced in April 2015 and is expected to conclude in November 2015. Implementation design for the construction power, construction telecom and temporary substation commenced in January 2015 and is expected to conclude in December 2015.

#### *1.2.4.2 Construction*

Construction for the Site C project commenced July 27, 2015 with initial site preparation work, including the mobilization of contractors to site along with installation of access gates and signage. Construction activity has steadily increased and there are now approximately 665 workers involved in Site C project construction over the month of September. Refer to Table 5 below for the preliminary construction schedule.

**Table 5 Preliminary Construction Schedule**




*The construction schedule is indicative only and subject to change. The purpose of the schedule is to illustrate the general sequence of construction activities, but the dates and schedule may change.*

* Schedule as of July 2015.

### *North (Left) Bank Site Preparation*

Clearing, vegetation removal and grading was started in August 2015 on the north bank of the dam site to create space for new access roads, worker accommodations and material excavation and disposal area.

- Construction of the North Bank Access Road and River Road commenced in August and is progressing according to plan;
- Approximately 161 of 220 hectares have been cleared on the North Bank and is progressing according to plan; and
- Preparation of the left bank excavation area and the material disposal area commenced in August 2015. About 200,000 cubic meters of excavated material has been placed in the disposal area.

### *South (Right) Bank Site Preparation*

South Bank site preparation work has commenced in September 2015 and includes vegetation clearing, construction of new access roads, a temporary sub-station pad, and a new rail siding.

- About 250 of 620 hectares have been cleared on the South Bank and progressing ahead of plan; and
- The new Septimus rail siding is progressing slower than planned because of some challenging soil conditions but is expected to be completed on time.

### *Worker Accommodation*

A Limited Notice to Proceed was issued to the contractor in June 2015. This allowed the contractor to conduct site surveys and other investigative works and to advance the design development and construction planning.

- The contractor commenced on-site construction on August 5, 2015 with clearing and site grading activities. Site grading is expected to be completed on time. Approximately 200,000 cubic metres of site grading is complete;

- Manufacturing dormitory units started in August and the first units are expected to be completed for transport by October 2015;
- Underground utilities including water and sewer lines are being installed.
- A temporary 300 person work camp has been installed for the contractor's workers and is ready to be occupied; and
- The Worker Accommodation contract was executed in September 2015.

### *Ministry of Transportation and Infrastructure Public Road Upgrades*

The Ministry of Transportation and Infrastructure's awarded a contract to Al Simms and Sons for the public road improvements on 240 Road and 269 Road. This work is planned to be completed in November 2015.

### *Main Civil Works*

The scope of the Main Civil Works contract is described in Table 6. It includes the construction of the following major components:

**Table 6 Scope of Main Civil Works Contract**

| Component | Description |
|---|---|
| Diversion works | Two approximately 11 metre diameter concrete-lined tunnels approximately 750 metres in length |
| Excavation and bank stabilization | Approximately 26 million cubic metres of overburden and rock excavation |
| Relocation | Relocation of surplus excavated material (including management of discharges |
| Dams and Cofferdams | A zoned earth embankment 1,050 metres long and 60 metres above the present riverbed and stage 1 and 2 cofferdams |
| Roller-Compacted Concrete | Buttress - 800 metres long with 2 million cubic metres of concrete |

It is anticipated that the contractor would mobilize to site soon after contract award (January 2016) and be on-site until the end of 2024. The anticipated timeline of major construction milestones is outlined in Table C-2 in Appendix C.

### *Quality Management*

Implementation and monitoring of Quality Control and Quality Assurance Plans are required of all contractors. Table 7 below identifies quality management non-conformity instances during the quarter ended September 30, 2015.

**Table 7 Quality Management Non-Conformity Report Metrics**

| Contract | Contractor | Reported this period | Closed this period | Reported to date | Closed to date |
|---|---|---|---|---|---|
| North Bank Site Preparation | Morgan Construction & Environmental | 2* | 0 | 2 | 0 |
| South Bank Site Preparation | Duz Cho Construction | 0 | 0 | 0 | 0 |

* The two non-conformity incidences reported include: Testing Frequency and Embankment Fines Content.

## 1.2.5 Safety

There has been one contractor fatality since the start of construction due to personal health issues. Another worker suffered a serious health event and required emergency services. Neither event was related to work standards.

A public fatality also occurred in conjunction to a Project Open House event in Dawson Creek in July. The deceased individual was believed to be targeting the open house with public mischief intent and was engaged by police outside the Project's open house event. BC Hydro staff and contractors inside the open house remained safe, and counselling services were made available in the weeks following the event. An internal BC Hydro safety investigation was also undertaken with recommendations relating to monitoring, security and safety for future engagements and meetings with stakeholders and the public. Response to this event has included escalation of security at the construction site and other key locations. Table 8 below presents the safety metrics accumulated across all project activities commencing with the start of construction in July 2015.

**Table 8 Safety Metrics**

| Description | Reported this period | Reported since inception |
|---|---|---|
| Fatality & Serious Injury[1] | 0 | 0 |
| Severity (number of calendar days lost due to injury per 200,000 hours worked) | 2 | 2 |
| Lost Time Injury Frequency (number of injuries resulting in lost time per 200,000 hours worked) | 2 | 2 |
| Contractor near miss reports | 10 | 10 |
| Lost time incidents | 2 | 2 |
| Equipment/property damage reports | 1 | 1 |

1. Of the contractor near miss reports, 70 per cent were Level 3 type (lowest severity), and 60 per cent of the reports related to equipment or vehicle use.

### 1.2.6 Environment

***Mitigation, Monitoring and Management Plans***

In accordance with Environmental Assessment Certificate conditions, environmental management, mitigation and monitoring plans have been developed. Draft plans were submitted to regulators, local governments and potentially affected Aboriginal groups. Comments were incorporated into the final plans, which were submitted on June 5, 2015. The list of plans is as follows:

- Aboriginal Plant Use Mitigation Plan
- Aboriginal Training and Inclusion Plan
- Business Participation Plan[1]
- Construction Environmental Management Plan
- Construction Safety Management Plan
- Cultural Resources Mitigation Plan
- Emergency Services Plan
- Fisheries and Aquatic Habitat Management Plan

[1] Excludes health events unrelated to work standards.

- Healthcare Services Plan
- Heritage Resources Management Plan
- Housing Plan and Housing Monitoring and Follow-Up Program
- Labour and Training Plan
- Vegetation and Wildlife Mitigation and Monitoring Plan
- Vegetation Clearing and Debris Management Plan

Additional plans are in the development process, as required by Environmental Assessment Certificate conditions. The Fish and Fish Habitat Monitoring and Follow-up Program and the Agriculture Monitoring and Follow-up program are in final stages of preparation and will be submitted to regulators on October 23, 2015.

Overall, a compliance database has been developed to monitor and track compliance with all Environmental Assessment and permit conditions. The database is undergoing quality assurance review and supporting evidence and data is being compiled to support future reviews and provide regular reporting.

### *Environmental Compliance Inspections*

Inspectors from Environmental Assessment Office, Canadian Environmental Assessment Agency and Forest, Land and Natural Resource Operations attended a two day inspection of Site C construction on September 22 to 23, 2015. The inspection included a Site C orientation, an overview of the whole project and detailed discussion of current activities, including permit requirements. The following potential compliance concerns were noted at meetings following the inspections:

- Erosion and Sediment Control in L3 Ravine
- Erosion and Sediment Control on South Bank
- Many large areas of open soil that could become infested by invasive plants

- Spill Kits not in all vehicles
- Wildlife Attractants
- Speed limits are not posted on the north bank
- Some wood debris piles may not meet the spacing requirements for burning

Preventive and corrective actions will be implemented to address these concerns.

The inspectors noted the following good practices:

- "Inspected Leak and Weed Free" stickers on Paul Paquette and Sons vehicles;
- *Water Act* Section 8 permits and water withdrawal logs on water trucks;
- If workers and staff didn't know the answer to a question, they didn't guess at the answer and referred to someone who has the knowledge to provide a correct response; and
- Site C compliance data base instills confidence that the owner is aware of the requirements and is working to meet them.

Inspections are expected to take place twice per year and are over and above the independent environmental monitoring for the project.

### *Heritage*

In accordance with a number of Environmental Assessment Conditions and the Federal Decision Statement, the Site C Heritage Management Resource Plan addresses the measures that will be used to mitigate the adverse effects of the Project on heritage resources. Measures that were taken in the last quarter included ongoing work in the 2015 Heritage Work Plan set to be completed by late October. The work included archaeological impact assessments and systematic data recovery at known heritage sites in the Project Area Zone in accordance with B.C. *Heritage Conservation Act* requirements.

In addition, where known archaeological sites were altered through construction activities and where required by the *Heritage Conservation Act* Site Alteration Permit, mitigation involving concurrent monitoring or surface inspections of known archaeology sites was performed.

***Stakeholder Consultation for Agricultural Mitigation and Compensation Plan***

Agricultural stakeholder consultation is being planned to address Environmental Assessment Certificate Condition 30 requirements and to support the development of the Agriculture Mitigation and Compensation Plan. BC Hydro has established a Consultation Steering Committee comprised of staff from BC Hydro, the Ministry of Agriculture, and the Ministry of Energy and Mines to guide consultation. A discussion guide and feedback form is being developed to include information items and consultation topics that will inform stakeholders and request feedback on the proposed framework for the Agricultural Mitigation and Compensation Plan Framework, and proposed options for the structure of the $20 million Agricultural Compensation Fund, including governance, eligibility criteria, and payment stream options.

The consultation period is planned for November 2015 to the end of January 2016 to accommodate the seasonal availability of farmers and the agricultural industry. Groups invited to participate in consultation will include: Regional agricultural associations; regional governments, agencies, research and educational organizations; affected agriculture land owners and tenure holders, and First Nations groups.

Following the consultation period, a Consultation Summary Report and Consideration Memo will be produced documenting input received from agricultural stakeholders during the consultation period. The input received will be considered in the development of the Agricultural Mitigation and Compensation Plan framework, and in the subsequent preparation of the draft and final plan.

### 1.2.7 Employment

During the first three months of construction, activity generally consisted of site preparation, public road improvements and construction of the worker accommodation facility.

There were approximately 665 workers involved in Site C project construction over the month of September including construction, monitoring, environmental mitigation and studies, public road improvement and on-site construction management. Of these 665 workers, approximately 475 were from B.C. Employment will continue to ramp up as construction progresses over the coming months and years. Refer to Appendix E for workforce information.

Contractors will post Site C employment opportunities on the WorkBC website. This provides a central repository for all Site C job opportunities, including apprenticeship opportunities. Prospective candidates can access information about available Site C job opportunities on the WorkBC website as well as BC Hydro's Job Opportunities section on the Site C Project website.

BC Hydro, through commercial contracts, requires contractors to collect and to provide certain worker information data, including the number of workers being hired, their job categories and the number of apprentices/trainees. BC Hydro is currently working with contractors to implement a process that will enable this worker information data to be collected and submitted to BC Hydro electronically on a monthly basis. It is expected that contractors will submit their monthly data by mid-month of the following month. Upon receipt of this data, BC Hydro will collate the data received in order to report on the progress being made in the following areas:

- Diversity (i.e., underrepresented groups – Aboriginals, women, visible minorities, persons with disabilities) as reported by major contractors; and
- B.C. hires as reported by major contractors.

Statistics collected will identify the number of workers, by job category as well as the number of apprentices/trainees, as reported by major contractors. BC Hydro expects to be in a position to provide specific data around these foregoing items by the next quarterly reporting period.

### 1.2.8 Community Engagement & Communication

***Local Government Liaison***

BC Hydro concluded community measures agreements with the District of Taylor (January 2014) and the District of Chetwynd (January 2013). BC Hydro met with senior staff from the District of Taylor and the District of Chetwynd to review the implementation status of their respective community measures agreements and provided each community with an update report documenting that status.

Throughout spring and summer 2015, BC Hydro staff presented to municipal councils to provide project updates for the communities of Fort St. John, Taylor, Hudson's Hope, Peace River Regional District (**PRRD**), Chetwynd, Tumbler Ridge, Prince George, Pouce Coupe and Mackenzie. Final discussions are underway with the City of Fort St. John to achieve a legal agreement addressing community mitigation measures. Negotiations are also continuing with the District of Hudson’s Hope and the PRRD to achieve an agreement to address community mitigation measures primarily during the construction period. A separate Legacy Benefit Agreement was reached with the PRRD in 2014 that will provide legacy benefit payments for 70 years once the Project is operational.

***Business Liaison and Outreach***

Job Fairs were originally scheduled in the last week of July in Tumbler Ridge, Chetwynd and Fort St. John, but were postponed due to the security incident at the public open house in Dawson Creek. Following a security review and an updated security plan, the Job Fairs were then planned in combination with Business-to-Business Networking sessions in the same communities from October 5 to 8, 2015.

### *Community Relations and Consultation*

A public information program and open houses to communicate upcoming Site C construction activities commenced in early July. Open Houses were held in Taylor, Fort St. John, Chetwynd, Hudson's Hope and Dawson Creek. This program was supported by broad notification including advertisements, a four-page brochure that was delivered to households in the region, a new Construction Activities section of the project website and media relations. With construction underway, Construction Bulletins are now issued every two weeks and posted to the new Construction Activities section of sitecproject.com. As of September 30, 2015, there are 2,013 subscribers who receive Construction Bulletins, and 4,203 who receive overall project updates.

Public enquiries have increased with the vast majority focused on jobs and business opportunities, but also some initial complaints about construction impacts, including noise. From July 1 to September 30, there have been a total of 622 public enquiries. Of these, 83 per cent of the enquiries were related to seeking a job on the construction of Site C (389 enquiries) or seeking business opportunities with the project (134 enquiries). 20 enquiries were complaints about construction including noise and traffic and the balance were general enquiries such as presentation requests, and questions about project timelines and procurement.

Enquiries come into BC Hydro via email (sitec@bchydro.com), phone calls and visitors to consultation office in Fort St. John, and enquiries from project team members or local MLAs.

### *Communications and Government Relations*

Media coverage of the Site C project has remained steadily high with an average of 209 media stories per month from July to September. A brochure titled '60 Days of Construction' was published during the week of Union of B.C. Municipalities to highlight the construction progress and number of jobs and contractors on site.

Public enquiries have increased, with the vast majority focused on jobs and business opportunities, but also with some initial noise complaints.

***Housing Plan and Housing Monitoring and Follow-Up Program***

BC Hydro has established Memorandum of Understanding agreements with the following three organisations to support the provision of emergency or transitional housing:

- $25,000 to Skye's Place, a second stage housing program for women with children who are leaving abusive relationships;
- $25,000 to the Meaope Transition House for Women that provides a 24-hour safe and secure shelter for women who are victims of violence or abuse, and their children; and
- $200,000 to the Salvation Army Northern Centre of Hope to support shelter and transitional beds.

These agreements commit a total of $250,000 to support emergency or transitional housing providers in the City of Fort St. John. Once funds are transferred, BC Hydro will have addressed Measure 5 of the Housing Plan: Emergency or Transitional Housing Provider Contribution and Condition 48 of the Environmental Assessment Certificate.

In accordance with Environmental Assessment Certificate Condition 48, BC Hydro is to expand affordable rental housing supply in Fort St John by building 50 rental units to be owned and operated by BC Housing and with 40 units to be used by Site C workers until the project construction is complete. Upon completion of Site C, the 40 worker housing units will be made available to low/moderate income households.

In April 2015, BC Housing completed a Request for Information seeking to understand market capacity for construction of energy efficient housing and availability of a suitable site for 50 units. BC Housing reviewed the findings of the Request for Information with BC Hydro and stated they were satisfied that there is

sufficient capacity in the market for construction of an R2000 energy efficient building and adequate available sites.

### *Labour and Training Plan*

In accordance with Environmental Assessment Condition 53, BC Hydro is to provide additional day-care spaces in Fort St. John to increase spousal participation in the labour market. BC Hydro will provide a capital funding contribution toward a new facility or expansion of an existing facility to include approximately 37 daycare spaces.

BC Hydro has initiated discussions with the Ministry of Education regarding locating child care at a new elementary school that the Ministry is building in Fort St John.

### *Health Care Services Plan and Emergency Service Plan*

BC Hydro has begun work with the Northern Health Authority on the development of scope for a Project Health Clinic service provider. In addition, the Project team has met with B.C. Ambulance Service local staff to provide information about the Project's plan for first aid and emergency transport of workers and receive feedback on plans for health care services for Project workers.

### *Properties Acquisitions*

As of September 30, BC Hydro has entered into agreements with three of six land owners, and is continuing negotiations with the remaining three owners for the land required by end of 2015. Settlements are expected to be achieved by the end of October 2015. In this reporting period, the properties team also secured 53 of 53 consents and six of nine right away agreements for upgrades to the BC Hydro distribution lines, with the final three agreements expected in October.

## 1.3 Key Procurement and Contract Developments

The Project procurement approach was approved by the Board of Directors in June 2012 for the construction of the Project. The procurement approach defined the

scope of the major contracts and their delivery models, as summarized in Table 9 below.

**Table 9 Major Project Contracts and Delivery Models**

| Component | Contract | Procurement Model | Anticipated Timing |
|---|---|---|---|
| Worker Accommodation | Worker Accommodation and site services contract | Design-Build-Finance-Operate-Maintain | Completed |
| Earthworks | Site Preparation contracts | Predominantly Design Bid Build | Various, through F2016 |
| | Main Civil Works contract | Design-Bid-Build | Contract Award: Q4 F2016 |
| Reservoir Clearing | Multiple reservoir clearing contracts to be awarded over 7-8 years | Design-Bid-Build | One agreement awarded for the Lower Reservoir |
| Generating Station and Spillways | Turbines and Generators contract | Design-Build | Contract Award: Q4 F2016 |
| | Generating Station and Spillways contract | Design-Bid-Build/ Design-Build | Commence: Q1 F2017 |
| | Powertrain Balance of Plant Equipment Supply | Supply Contracts | Commence: 2017 – 2018 |
| | Completion Contract (Powertrain Balance of Plant Equipment Installation) | Install Contract | Commence: 2019 |
| Electrical and Transmission Infrastructure | Transmission Lines contract | Design-Bid-Build | Various, through F2017 |
| | Site C substation contract | Design-Bid-Build | F2017 |
| | Peace Canyon Substation upgrade contract | Design-Build | Contract Award: Q1 F2017 |
| Highway 29 Realignment | Design-Bid-Build in partnership with B.C. Ministry of Transportation and Infrastructure with anticipated award of the first contracts in 2017 with subsequent contract being awarded through 2018 - 2019. | | |

### 1.3.1 List of Major Contracts Awarded in the Quarter

Since inception of the Project, two major contracts (i.e., greater than $50 million in value) have been awarded: Worker Accommodation and Site Preparation: North Bank. Both contracts were procured through a public competitive process and awarded based on a rigorous evaluation process within the budget established for each contract. A list of contracts in excess of $50 million is shown in Table 10 below.

**Table 10 Major Project Contracts Awarded**

| Work Package | Contract Value ($ million) | Current Status |
|---|---|---|
| Site Preparation: North Bank | 52 | Contract executed July 2015. |
| Worker Accommodation | 464 | Contract executed September 2015 |

The major contracts expected to be awarded in the next three to six months include the Main Civil Works and Turbine and Generators. Both of these work packages are being procured through a public competitive process and are currently under evaluation. In the fall of 2016, procurement of two major work packages will commence; Generating Station and Spillway and Hydromechanical equipment.

### 1.3.2 Large Contracts to Date

BC Hydro has provided a table in Appendix B which shows the breakdown to date of the contracts awarded in excess of $10 million and cumulative variances.

### 1.3.3 Contract Management

#### *1.3.3.1 Material Changes to the Major Contracts*

There have been no material changes to the Major contracts to date.

#### *1.3.3.2 Contingency and Project Reserve Draws*

A total of $85.9 million of project contingency has been approved for allocation to work packages to date (refer to Table D-3 in Appendix D). The project budget includes contingency of $620 million (in 2010 dollars), $679 million (in 2014 dollars), or $794 million in nominal dollars (refer to Appendix D).

The project reserve is held by Treasury Board in the amount of $440 million. There have been no draws on Treasury Board reserve to date.

## 1.4 Plans During Next Six Months

The key milestones for the next six months are listed in Table 11.

**Table 11 Key Milestones**

| Milestone | Plan Date[2] | Forecast Date | Float (months) | Status |
|---|---|---|---|---|
| Limited Notice to Proceed for Major Civil Works | November 2015 | December 2015 | -1 | Delayed |
| Leave to Commence for Major Civil Works | April 2016 | April 2016 | 0 | On Track |
| Peace River Temporary Bridge Complete | May 2016 | March 2016 | 2 | Ahead of Plan |
| Worker Accommodation – Phase One | February 2016 | February 2016 | 0 | On Track |
| Award Turbines & Generators Contract | March 2016 | March 2016 | 0 | On Track |
| Site Clearing North Bank | March 2016 | March 2016 | 0 | On Track |

## 1.5 Impacts on Other BC Hydro Operations

For the reporting period, there were no material impacts on the generation operation at the GM Shrum and Peace Canyon Dams or on water management at the Williston and Dinosaur reservoirs.

## 1.6 Site Photographs

Refer to Table 12 for site construction photographs.

[2] Based on plan at Final Investment Decision, December 2014.

# 2 Project Schedule

## 2.1 Project In Service Dates

BC Hydro currently shows all in service dates on track per Table 12.

**Table 12 Project In-Service Dates**

| Description/Status | Planned ISD[3] | Status and Comments (e.g., complete, on schedule, delayed, possibly delayed, probable delayed) |
|---|---|---|
| Peace Canyon Gas Insulated Switchgear | February 2019 | On Track |
| 5L5 500 kV Transmission Line | October 2020 | On Track |
| Site C Substation | November 2020 | On Track |
| 5L6 500 kV Transmission Line | July 2023 | On Track |
| Unit 1 (First Power) | December 2023 | On Track |
| Unit 2 | February 2024 | On Track |
| Unit 3 | May 2024 | On Track |
| Unit 4 | July 2024 | On Track |
| Unit 5 | September 2024 | On Track |
| Unit 6 | November 2024 | On Track |

The approved Final Investment Decision schedule involved the first unit coming into service in December 2023. Subsequent to the decision, activities have been accelerated in order to mitigate schedule risk.

[3] Based on plan at Final Investment Decision, December 2014.

# 3 Project Costs and Financing

## 3.1 Project Budget Summary

Table 13 below presents the overall Project Budget, based on the Final Investment Decision (December 2014), represented in nominal dollars.

**Table 13 Project Budget Summary**

| Description | Capital Amount (Nominal $ million) |
|---|---|
| Dam, Power Facilities, and Associated Structures | 4,120 |
| Offsite Works, Management and Services | 1,575 |
| Total Direct Construction Cost | 5,695 |
| Indirect Costs | 1,235 |
| Total Construction and Development Cost | 6,930 |
| Interest During Construction | 1,405 |
| Project Cost, before Treasury Board Reserve | 8,335 |
| Treasury Board Reserve | 440 |
| Total Project Cost | 8,775 |

## 3.2 Project Expenditure Summary

Table 14 provides a summary of the Board approved *total* Project cost, the current forecast *total* Project cost and the variance between the two; and the plan *to date* amounts based on the Board approved cost schedule, the actual costs *to date* and the variance between the two.

**Table 14 Total Project Expenditure Summary (Nominal $ million)**

| Description | Board Approved (Plan) | Forecast | Forecast vs Plan | Plan to Date | Actuals to Date | Actuals vs Plan to Date |
|---|---|---|---|---|---|---|
| Total Project Costs[1] | 8,335 | 8,335 | - | 502 | 522 | (20) |
| Treasury Board Reserve | 440 | 440 | - | - | - | - |
| Authorized Project Cost | 8,775 | 8,775 | - | 502 | 522 | (20) |

[1] Includes Net Book Value of Impact Benefits Agreements (**IBA**)-related costs.

Variances are primarily due to commencement of some design and site preparation efforts earlier than scheduled, offset by delays in purchase of properties. Further explanations are in the confidential filing of the cost breakdown in Appendix D.

### 3.3 Internal Project Financing versus External Borrowings To Date

To date, all project funding has been from internal borrowings. There have been several discussions with BC Hydro's Board, the Debt Management Branch, the past Deputy Minister of Finance and Treasury Board Staff on a debt hedging strategy for BC Hydro's borrowing requirements (which include expenditures related to Site C) over a ten-year period. In addition to portfolio adjustments that are currently being implemented whereby BC Hydro is reducing its exposure to variable rate debt and increasing its issuance of fixed rate debt, a strategy has been developed that recommends hedging 50 per cent of BC Hydro's future forecasted borrowing requirements from F2017-F2024 through the use of derivative contracts. A decision has been made to apply to the British Columbia Utilities Commission (**BCUC**) for a new Debt Management Regulatory Account that will capture the mark to market gains and losses related to the hedging of future debt issuance. BC Hydro is currently working on the application and plans to file with the BCUC in December 2015.

## 4 Material Project Risks

This section describes the material Project risks that have high residual exposure to BC Hydro. Commercially sensitive numbers and content, and/or content that could be seen to prejudice BC Hydro's negotiating position, are redacted in the public version. Note that the residual consequence and residual probability levels are qualitative assessments. Refer to Table 15 for a list of risks.

**Table 15 Material Project Risks**

| Risk Event / Description | Risk and Response Summary | Trend in Risk Exposure |
|---|---|---|
| Delay to Permitting | Permits and licences are still required for several portions of construction activity. Delays to these permits and licences will result in delays to the associated construction work.<br>BC Hydro continues to consult with federal and provincial authorities, local government and First Nations to mitigate this risk. Awaiting the outcome of the judicial review of permits as described below. If BC Hydro is unsuccessful, this could result in a delay to the work underway and claims arising. | → |
| Litigation | BC Hydro, the Province, and the Federal Government have all been subject to legal proceedings seeking to overturn the Environmental Assessment Certificate, the Federal Decision Statement, and specific permits. The governments and BC Hydro have been successful in five proceedings to date (four judicial reviews and one injunction application dismissed). Three appeals have been filed in respect of the judicial review decisions (one federal and two provincial). A judicial review of the provincial permits issued in summer 2015 was also filed and will be heard in November 2015.<br>The B.C. Building Trades union filed a lawsuit regarding the labour approach to Site C. However, this lawsuit is on hold as a result of the signing of a Memorandum of Understanding (refer to Labour Relations below) and has not progressed to a hearing.<br>There is a potential for additional legal proceedings. If any are successful, there may be delays. | → |
| First Nations | BC Hydro has reached agreement with two First Nations on IBA term sheets, with ratification by the First Nations. One other First Nation has signed a term sheet but has since indicated they will not hold to it.<br>BC Hydro is in active negotiations with four other First Nations on IBAs and has circulated draft IBA term sheets to these First Nations.<br>Note that progress on IBAs with First Nations reduces the potential for future legal proceedings. | ↓ |
| Market response to procurement | If strong competition does not occur during procurement, there could be higher premiums, mark ups and overall prices on labour and materials. Risk has been mitigated via market soundings, robust Request For Quotation process, honorariums for successful bidders, etc. All three major procurement processes initiated to date (WA, MCW, T&G) have had excellent response with two procurements now in the Request for Proposal evaluation stage and one contract awarded. Market response risk will continue to be monitored and could be impacted if the project construction start is delayed significantly. | ↓ |

| Risk Event / Description | Risk and Response Summary | Trend in Risk Exposure |
|---|---|---|
| Labour Relations & Stability | BC Hydro is using an inclusive labour approach with a managed open site. This allows for participation by all union and non-union labour groups and allows access to the largest pool of skilled and experienced labour.<br>BC Hydro and B.C. Building Trades secured an agreement to achieve labour stability and a mix of labour representation on site, including building trades unions. BC Hydro agreed to provide greater weight on bids with a mix of labour representation (including Building Trades unions) to the extent that it adds to labour stability. B.C. Building Trades agreed to no strike, no lockout, and no raiding provisions for work done by the Building Trades on the Main Civil Works contract.<br>BC Hydro has noted active organization attempts by several labour organizations regarding work underway at the project site. This activity creates a risk of a work disruption or complaints to the Labour Relations Board. BC Hydro is managing this risk through consistent treatment of all labour organizations and ensuring that organization activities do not occur on the project site itself except as provided for under the Labour Relations Code.<br>BC Hydro will have more information on this risk when the preferred proponent (and the accompanying labour strategy) is identified for the Main Civil Works contract. | → |
| Geotechnical risks | Key Geotechnical risks include unexpected shears encountered during construction; deeper than expected relaxation joints; bedding planes worse than expected; larger than expected deterioration of shale bedrock once exposed during construction; and Rock Rebound/Swell.<br>Current strategies to mitigate geotechnical risks include:<br>Complete field investigations to aid in the identification of shears, relaxation joints, and bedding planes.<br>Use of conservative design principles for the slope of excavation surfaces, grout curtains, and shear strength assumptions.<br>Transfer some degree of ground condition risks to the Contractor.<br>Design contracts which allow the contractor to respond to unexpected ground conditions (potentially through pre-agreed pricing).<br>Conduct field-scale trials to determine the response when shale bedrock is exposed to the elements.<br>These risks have not changed substantially since Final Investment Decision (**FID**) as there has not been sufficient excavation to date. Once the MCW contract is underway and beginning excavation BC Hydro will have additional information about this risk. | → |

| Risk Event / Description | Risk and Response Summary | Trend in Risk Exposure |
|---|---|---|
| Construction cost – labour | Potential cost increases could arise if there is competition with other projects for labour resources, labour instability, or changing workforce demographics. BC Hydro is partially mitigating this risk through regional job fairs to increase local participation and investments in skills training ($1.5 million invested to date). This risk is also partially mitigated by consideration of labour stability during contractor selection.<br>Based on current market conditions in the infrastructure and energy sector BC Hydro believes that the risk of unexpectedly high labour prices has decreased. There remains the potential for market conditions to shift in the future and this risk to increase.<br>BC Hydro anticipates having more information on this risk in mid to late 2016 once the Main Civil Works contractor has progressed on recruitment. | ↓ |
| Construction cost – commodities and equipment | Potential cost increases could arise if market prices for key commodities and equipment increase, or if overall market activity results in higher contractor profit margins.<br>BC Hydro has completed procurement for several contracts associated with early works and the Worker Accommodation, and does not see early indications on market price pressures at this point. More information will be available upon conclusion of other major contracts (MCW, T&G)<br>BC Hydro retains exposure to fuel prices (generally diesel), which have decreased compared to prices in the budget. Fuel prices may increase in the future due to global market forces. BC Hydro will consider the potential to hedge these prices, where appropriate.<br>Canada has applied a duty to rebar from specific countries that may add approximately $20 million in cost to the Site C project. The risk of this duty is subject to a Trade Tribunal decision that is expected to be rendered later this year. Any incremental costs relating to the Trade Tribunal decision would be accommodated through allocations from Project Contingency or Treasury Board reserve, as appropriate.<br>Based on current market conditions in the infrastructure and energy sector BC Hydro believes that the risk of unexpectedly high market prices has decreased. There remains the potential for market conditions to shift in the future and this risk to increase.<br>BC Hydro anticipates having more information on this risk in early to mid-2016 once the Main Civil Works contractor has been selected. | ↓ |

| Risk Event / Description | Risk and Response Summary | Trend in Risk Exposure |
|---|---|---|
| Construction execution. | Contractors may be unable to execute successfully on scope of contract with resulting costs to BC Hydro. Mitigation is via:<br>Robust procurement processes to determine whether contractors have the capability to undertake their scope of work<br>A cross-functional construction readiness review to confirm contractor and BC Hydro readiness before authorizing the start on any specific scope of work<br>BC Hydro increased on site supervision to address recent environmental compliance issues<br>BC Hydro step-in rights under contracts to allow for correction in the case of contractor failure | → |
| Foreign exchange | Some of Site C project costs are in foreign currency, and will be affected by fluctuations in the exchange rate between the Canadian Dollar and these foreign currencies. Approximately 20 per cent of the Site C capital costs are based on foreign currency.<br>The Canadian dollar has weakened significantly compared to the US dollar since the 2014 capital cost estimate was developed, and as a result this risk has increased. This is partially mitigated through contractor flexibility around sourcing of material, resulting in an exposure to a basket of currencies rather than solely the US dollar.<br>This risk will be further mitigated through BC Hydro contract design that allocates the majority of foreign exchange risk to the contractors. As a result, upon receipt of pricing for each contract foreign exchange risk will decrease. | ↑ |
| Interest rate variability | Interest during construction costs will be affected by fluctuations in market interest rates. Currently market interest rates are expected to be lower than assumed in BC Hydro's budget.<br>There have been several discussions with BC Hydro's board, the Debt Management Branch, the past Deputy Minister of Finance and Treasury Board Staff on a debt hedging strategy for BC Hydro's borrowing requirements (which include expenditures related to Site C) over a 10-year period. In addition to portfolio adjustments that are currently being implemented whereby BC Hydro is reducing its exposure to variable rate debt and increasing its issuance of fixed rate debt, a strategy has been developed that recommends hedging 50 per cent of BC Hydro's future forecasted borrowing requirements from F2017-F2024 through the use of derivative contracts. A decision has been made to apply to the BCUC for a new Debt Hedging Regulatory Account that will capture the gains and losses related to the hedging of future debt issuance. BC Hydro is currently working on the application and plans to file with the BCUC in November 2015. | → |

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## Appendix A

## Site Photographs

**Figure A-1 Excavation Area on the Left Bank**


**Figure A-2 Excavation of Material; Part of the Left Bank Stabilization on the North Bank of the Site C Dam Site**

**Figure A-3 Temporary Camp in Place, until Main Camp Complete**

**Figure A-4 Worker Camp under Construction: Crews Installing Foundation Piles**

**Figure A-5 Work on Access Roads and Site Preparation for the Worker Camp**

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## Appendix B

## Summary of Individual Contracts Exceeding $10 million

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## Appendix C

## Project Progression

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## Appendix D

## Detailed Project Expenditures

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## Appendix E

## Workforce Overview

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