

Fred James

Chief Regulatory Officer

Phone: 604-623-4046

Fax: 604-623-4407

bchydroregulatorygroup@bchydro.com

September 28, 2018

Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Site C Clean Energy Project
PUBLIC Quarterly Progress Report No. 12 – April to June 2018 (Report)**

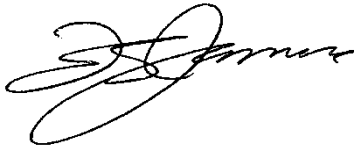
BC Hydro writes to provide its public Report.

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,



Fred James
Chief Regulatory Officer

gh/ma

Enclosure (1)

Site C Clean Energy Project

Quarterly Progress Report No. 12

F2019 First Quarter

April 2018 to June 2018

PUBLIC

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1 Project Status

This Quarterly Progress Report No. 12 (**Report No. 12**) provides information concerning the Site C Clean Energy Project (**Project**) covering the period from April 1, 2018 to June 30, 2018.

1.1 Overview and General Project Status

Site C will be a third dam and hydroelectric 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. In December 2014, after a three-year-long independent environmental assessment by the federal and provincial governments, the Project received approval from the provincial government to proceed. Construction on the Project began in July 2015.

The Project includes the following key components (refer to [Figure 1](#) and [Figure 2](#)):

- Access roads in the vicinity of the site and a temporary construction access bridge across the Peace River at the dam site;
- Construction of two temporary cofferdams across the main river channel to allow for construction of the earthfill dam;
- Worker accommodation at the dam site, with other workers being housed off site and in the region;
- The realignment of six segments of Highway 29 over a total distance of 30 kilometres;
- Shoreline protection at Hudson's Hope;
- Two new 500 kilovolt AC transmission lines that will connect the Site C facilities to the existing Peace Canyon Substation, along an existing right-of-way;

- An 800-metre roller-compacted concrete buttress to enhance seismic protection;
- An earthfill dam, approximately 1,050 metres long and 60 metres high above the riverbed;
- A generating station with six 183 MW generating units; and
- An 83-kilometre-long reservoir that will be, on average, two to three times the width of the current river.

Figure 1 Site C Project Components

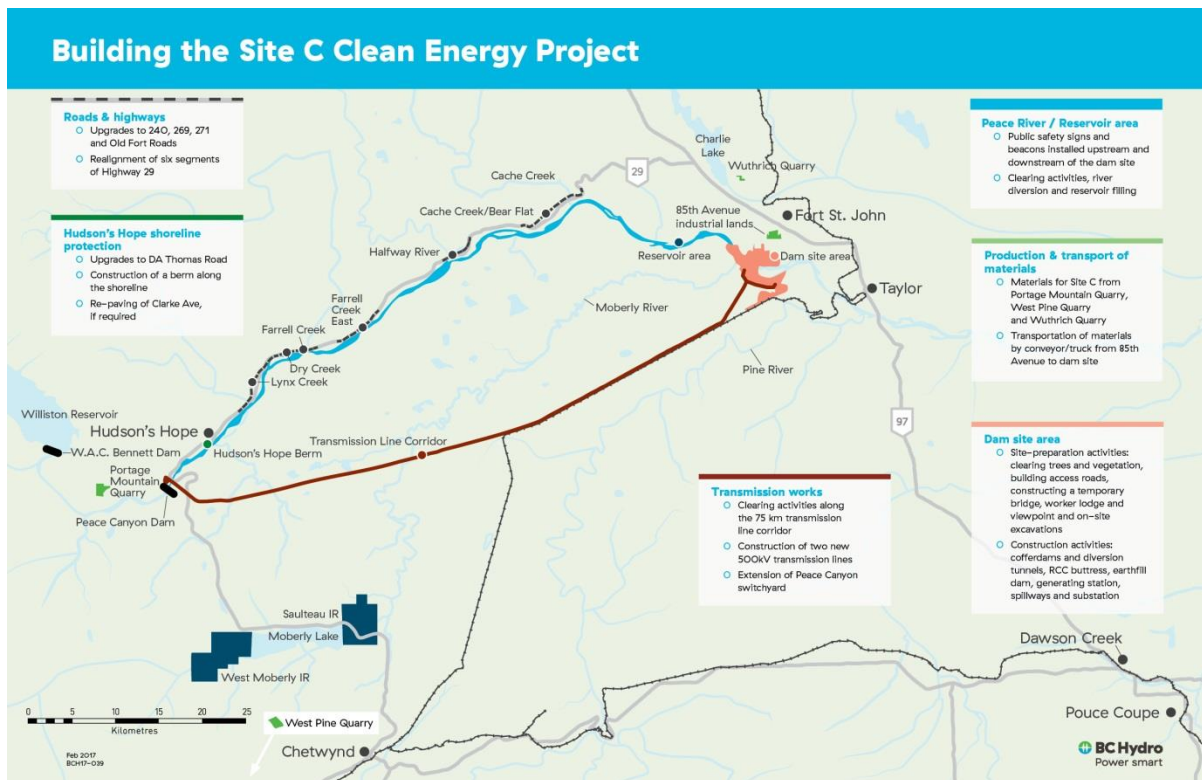
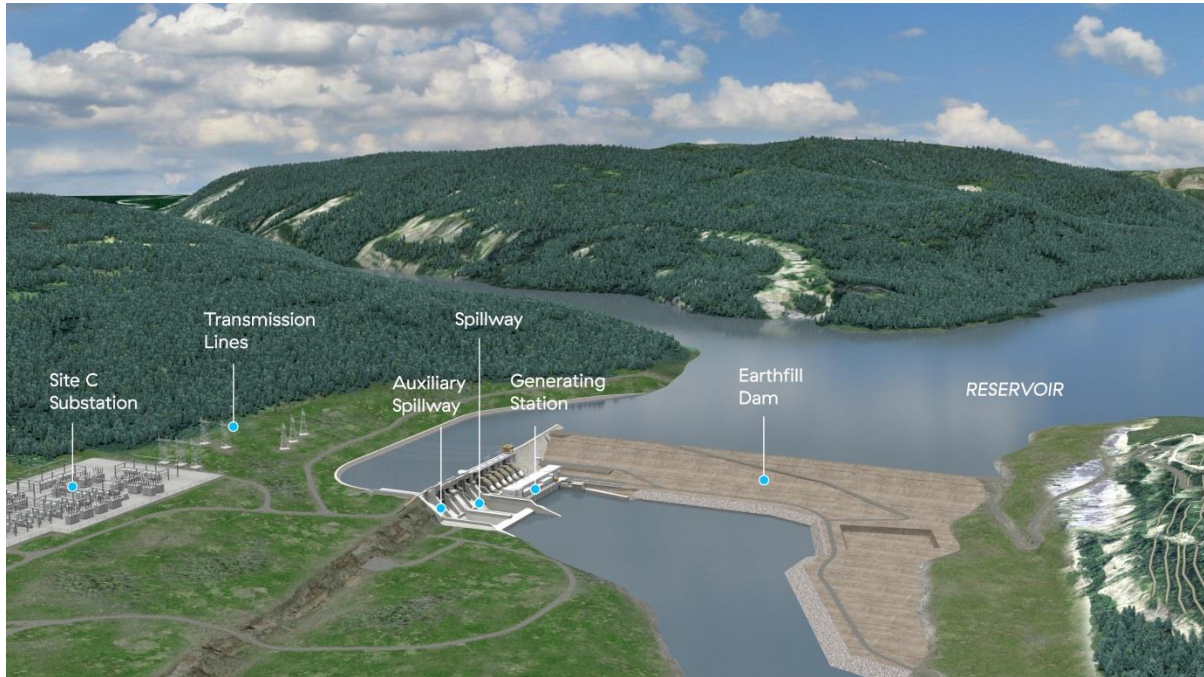


Figure 2 An Artist's Rendering Depicts the Site C Earthfill Dam, Generating Station and Spillways, Substation, Transmission Lines and Reservoir



Significant Project updates that occurred during the period from April 1, 2018 to June 30, 2018, include:

- On June 1, 2018, BC Hydro reached a memorandum of understanding with the main civil works contractor that includes an updated contractual schedule that achieves 2020 river diversion and keeps the project on track to meet the 2024 in-service date. The agreement accelerates a number of critical construction activities, and includes the purchase of some additional key equipment, numerous incentive payments to the contractor if and when they meet critical project milestones, and a settlement of past issues that arose prior to May 31, 2018. The total potential cost of the agreement over the life of the project is estimated at \$325 million. More information is available in section [1.3.1.1](#).

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- During the quarter, BC Hydro significantly increased its focus on Site C safety including adding safety resources, developing a strategic safety plan, reviewing and confirming the prime contractor model approach and continuing work on safety and construction plans. More information is available in section [1.3.2](#).
 - On June 29, 2018, a small rock movement occurred on a localized area of bench -9, above and to the west of the diversion tunnel inlet portal number 2. A remediation plan is in place and work is well underway to resolve this issue. There were no workers in the area at the time of the incident. This small slope movement is not related to the tension cracks that occurred on the north bank in 2017. This current issue is related to a localized shear zone in bedrock material while the tension cracks were related to the overburden materials and slope conditions. Excavation of the inlet portal near tunnel number 1 is continuing, while remediation work proceeds above tunnel number 2.
 - The generating station and spillways balance of plant request for supplier qualifications and the request for proposals for the generator terminal equipment (equipment that connects the generators to the unit transformers) were both issued in June 2018.
 - BC Hydro completed all necessary geotechnical investigations in June 2018 for the three Highway 29 realignment options at Cache Creek-Bear Flats. Preliminary results indicate there are no significant geotechnical differences between the three options. BC Hydro is evaluating the three highway realignment options using a structured decision making process. The preferred route is scheduled to be communicated in September 2018.
 - The June 2018 employment statistics show that there were 3,093 people working on the Site C project in June 2018, the highest workforce number to date on the project. Over 80 per cent of the workforce is from B.C. and 28 per cent are residents of the Peace River Regional District. The onsite contractor number also includes a project high of 17 per cent women and a high

of 56 workers working for various contractors as apprentice carpenters, welders, electricians, millwrights, ironworkers, mechanics, and boilermakers.

For more information refer to section [1.3.7](#).

- Environmental compliance continued to focus on completing the channelization works at the areas of the dam site referred to as L3 and Garbage Creek. The upper portion of L3 suffered some damage due to freshet loading, but overall performed and met regulators' expectations. Redesign works are underway with repairs to be completed fall 2018. More information is available in section [1.3.6.2](#).

These, and other, project updates are detailed in this report. [Table 1](#) provides a dashboard based on the Project's status as at June 30, 2018.

Table 1 Project Status Dashboard

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

Status as of:	June 2018	
Overall Project Health	●	Overall, the project is on time and on budget. During the quarter, overall project health improved due to concluding a memorandum of understanding with the main civil works contractor that improves the likelihood of meeting project milestones, and continued work with all contractors to improve safety performance. The injunction application and ongoing discussions around the Highway 29 realignment continue to contribute to concerns with the schedule and overall project health in the quarter.
Scope	●	Scope changes have been minimal and the changes are expected to be managed within contingency.
Schedule	●	The project is on track for the overall in-service date of 2024. A memorandum of understanding was signed in June 2018 with the main civil works contractor that improved the likelihood of meeting project milestones. There continues to be schedule pressures due to the pending injunction application, and ongoing discussions around Highway 29 realignment options.
Cost	●	The project budget (\$10.7 billion including Treasury Board Reserve) was approved by the board of directors in February 2018. The costs associated with the memorandum of understanding with the main civil works contract can be managed within the existing contingency budget and as a result, there is no impact to the overall project budget.
Regulatory, Permits & Tenures	●	Permits are on track and are meeting schedule requirements with 250 permits/authorizations obtained to date and an estimated 147 permits/authorizations remaining. Additionally, six annual environmental reports, required through either federal or provincial authorizations, were finalized and distributed this quarter.

Status as of:	June 2018	
Environment	●	During the quarter there were no significant environmental incidents. Freshet began April 11, 2018 and peaked April 26, 2018. Both the L3 and Garbage Creek channels were strained and suffered some damage but overall they performed and met regulators' expectations. The water treatment facility is now operating. Substantial regulatory inspections occurred over this period with 685 inspection hours between February 2018 and June 2018.
Procurement	●	The request for supplier qualifications for the balance of plant contract was posted on BC Bid and the information session was held at the end of June 2018. The first of ten equipment supply contracts was also posted on BC Bid in June 2018. BC Hydro continues to work with the Ministry of Transportation and Infrastructure to implement the procurements for the Highway 29 work.
Indigenous Relations	●	Six of ten agreements are fully executed and in implementation. BC Hydro and the Ministry of Transportation and Infrastructure are exploring the feasibility of three alternate route options for Cache Creek East to reduce its effects on potential Indigenous burial sites and areas of cultural importance identified by First Nations. BC Hydro is continuing to engage with Nun wa Dee Stewardship Society to respond to concerns related to cultural and heritage resource mitigations, including concerns in the Cache Creek-Bear Flats area.
Litigation	●	In January 2018, two Treaty 8 First Nations (West Moberly and Prophet River) each filed treaty infringement claims, followed by an interim injunction application. These claims assert, among other things, that the Site C Project is an infringement of their rights under Treaty 8. The injunction seeks to stop the Site C Project pending the trial of the treaty claim. The injunction hearing began July 23, 2018 and is scheduled to conclude in September 2018. A decision is expected by fall 2018.
Safety	●	Safety continues to be a focus for BC Hydro and its contractors. During the quarter, we implemented a senior-level safety steering committee with all prime contractors to address shared safety issues and opportunities. The contractors have confirmed their commitment to safety and developed plans to improve their safety performance. During the quarter, there were three contractor lost time incidents and seven medical attention treatments injuries. There was one serious near-miss incident and a formal investigation into each of these incidents occurred. There were no public safety incidents. For details refer to section 1.3.2 below.
Stakeholder Engagement	●	BC Hydro continues to work with the communities, regional district and stakeholder groups on the implementation of various community agreements.
Quality	●	The Projects Quality Lead continues work on an overall project quality assessment and action plan. Pilot methodology for assessing and reporting of quality across all of the sub-projects is being rolled out.

1.2 Post Reporting Period Update

There are a number of project updates that occurred subsequent to the reporting period:

1.2.1 Injunction application hearing

In January 2018, West Moberly First Nations and Prophet River First Nation each filed a notice of civil claim against the Site C project, asserting treaty infringement.

Subsequently, West Moberly First Nations also filed an injunction application to stop Site C construction until the treaty infringement cases can be heard.

The injunction hearing began in the Supreme Court of British Columbia on July 23, 2018 and is scheduled to conclude in September 2018. A decision on the application is expected by fall 2018.

1.2.2 Highway 29

BC Hydro has been working with Treaty 8 First Nations and landowners on the redesign of the eastern portion of the Highway 29 realignment at Cache Creek-Bear Flats (Cache Creek East).

BC Hydro and the Ministry of Transportation and Infrastructure are exploring the feasibility of three alternate route options for Cache Creek East to reduce its effects on potential Indigenous burial sites and areas of cultural importance as identified by First Nations.

To evaluate these options, BC Hydro is using a structured decision making process that has been used for other BC Hydro capital projects, including the Peace Region Electric Supply Project.

As part of this process, BC Hydro has undertaken site investigations and has sought input from Indigenous groups and landowners.

The preferred route for Cache Creek East is scheduled to be communicated in September 2018. Construction is scheduled to begin by spring/summer 2020.

1.2.3 Conclusion of agreement with main civil works contractor

On July 26, 2018, BC Hydro concluded a settlement with the main civil works contractor that is consistent with the terms of the June 1, 2018 memorandum of understanding. For further information, please refer to section [1.3.1.1](#).

1.3 Major Accomplishments, Work Completed, Key Decisions and Key Issues

Section [1.3](#) has been re-ordered from the previous report to reflect significant construction activity given the current phase of the project. Updates on construction and engineering are first, followed by the other sections.

1.3.1 Construction and Engineering

1.3.1.1 Construction

Refer to [Appendix F](#) for the full construction schedule.

Main Civil Works

The scope of the contract includes the construction of the following major components:

- Diversion works (including two approximately 11-metre diameter concrete-lined tunnels approximately 750 m in length);
- Excavation and bank stabilization (approximately 26 million cubic metres of overburden and rock excavation);
- Relocation of surplus excavated material (including management of discharges);
- Dams and cofferdams (including a zoned earth embankment 1,050 metres long and 60 metres above the present riverbed and stage 1 and 2 cofferdams);
- Roller-compacted concrete (including a buttress approximately 800 metres long with 2 million cubic metres of concrete);
- Haul roads; and
- Inlet and outlet portals.

On June 1, 2018, BC Hydro reached a memorandum of understanding with the main civil works contractor on an updated contractual schedule. The memorandum of understanding includes:

- a contractual schedule that achieves 2020 river diversion and keeps the project on track to meeting the 2024 project in-service date;
- accelerating a number of critical construction activities and purchasing some additional key equipment;
- incentive payments to the contractor if and when they meet critical project milestones; and
- settlement of past issues that arose prior to May 31, 2018.

The financial and contractual impacts of the memorandum of understanding will be reflected in the subsequent quarters results as the final settlement agreement was executed in July 2018. The total potential cost of the agreement over the life of the project is estimated at \$325 million. While the agreement will draw on the project contingency, there is sufficient budget available such that there is no impact to the overall project budget.

Figure 3 Map of Main Civil Works Area



Construction progress at site currently is split between work on the left bank and right bank.

Left Bank

Work activities on the left bank are to stabilize the slope with a mass excavation, stabilize the diversion inlet and outlet portals and excavate a set of diversion tunnels in preparation for river diversion and construction of the earthfill dam.

The activities during this period were focused on achieving the start of diversion tunneling in August 2018 to enable diversion of the Peace River in 2020.

The activities currently underway or completed include:

- Continuation of the construction of a till haul road across the left bank, expected to be complete in October 2018;
- Continuation of the left bank excavation to allow access to the inlet and outlet portals, expected to be completed by August 2018;

-
- Stabilization of the diversion inlet portal, which includes benched excavation above the inlet portal to allow work to commence on construction of the inlet portals. On June 29, 2018, a small rock movement occurred on a localized area of bench -9, above and to the west of the diversion tunnel inlet portal number 2. A remediation plan is in place and work is well underway to resolve this issue. There were no workers in the area at the time of the incident. This small slope movement is not related to the tension cracks that occurred on the north bank in 2017. This current issue is related to a localized shear zone in bedrock material while the tension cracks were related to the overburden materials and slope conditions. Excavation of the inlet portal near tunnel number 1 is continuing, while remediation work proceeds above tunnel number 2; and
 - Excavation of the outlet portal has recently commenced. The excavation of the outlet portal will provide access to addition tunneling fronts on the diversion tunnels and is scheduled to be completed by December 2018.

Right Bank

The right bank scope of work includes the excavation of the powerhouse, spillways and dam, and placing roller-compacted concrete for the foundations to support the powerhouse, dam and spillway structures. The current activities on the right bank include:

- Excavation of the right bank drainage tunnel to allow for spillway and dam abutment excavation. The right bank drainage tunnel excavation is targeting to be complete by January 2019;
- Excavation of the spillway apron is underway and expected to be complete by August 2018;
- The 2018 aggregate production in support of roller-compacted concrete placement and cast-in-place concrete placement started in March 2018 and has progressed to plan; and

- Placement of roller-compacted concrete in the powerhouse and spillway continues to progress but is currently behind planned targets. The contractor continues to build momentum in roller-compacted concrete placement and recently set a daily production record. The contractor is forecasting to meet October 2018 placement elevations.

In-River Work

When the river is diverted in 2020, upstream and downstream cofferdams will be in place in the Peace River to provide safe access for the main dam construction. The current in-river work includes dredging in support of stage 1 cofferdams.

Earthfill Dam

This work is not scheduled to commence until 2019.

Generating Station and Spillways

Aecon-Flatiron-Dragados-EBC Partnership, the generating station and spillways civil contractor, started work on the right bank on schedule in April 2018. The infrastructure needed to support the permanent work was completed in the quarter which included building and testing the first concrete batch plant, erecting the aggregate crushing equipment and developing the borrow area. The generating station and spillways civil contractor laydown areas were also developed including the building of covered work areas.

Laydown Area L2, the area immediately downstream of the powerhouse, was handed over from the main civil works contractor to the generating station and spillways civil contractor on time in June 2018, enabling the generating station and spillways civil contractor to continue to develop their infrastructure.

The Balance of Plant Request for Supplier Qualifications was issued in June 2018. The Request for Proposals for the Generator Terminal Equipment (equipment that connects the generators to the unit transformers) was issued in June 2018.

Permanent concrete work is scheduled to begin in August 2018, approximately one month ahead of schedule.

The fabrication of the powerhouse bridge cranes will begin in July 2018 and the testing of an intake operating gates model is scheduled to occur in July 2018 and August 2018.

Turbines and Generators

All contract progress for design, procurement and manufacturing for the Site C turbines and generators is on track. Voith Hydro Inc., the contractor, continues the assembly and welding of embedded turbine components in its temporary manufacturing facility on the right bank at site. The Voith São Paulo factory will supply the majority of turbine generator components, and has produced several of the cast steel parts for the first turbine, followed by machining. Kick-off meetings for various other turbine and generator components in the Voith São Paulo factory have been held concurrently with visits to three of the Voith subcontractors for supply of insulating materials, rough machining and stator lamination punchings. Under the current powerhouse construction schedule, the contractor will commence turbine installation in the powerhouse by summer 2020. Current areas of focus include ensuring quality of the manufactured components and that contract specifications are met.

BC Hydro visited the Voith São Paulo facility in May 2018 for contract progress review, subcontractor evaluation and quality inspections. Additional inspections and testing are planned for the fall 2018 in order to ensure contract specifications are met. Active communication with the contractor and resolving issues early in the manufacturing process are part of the strategy to ensure quality.

Transmission and Substation

The transmission sub-project is on schedule, but is forecasting cost pressures due to postponement of clearing on the western half of the transmission line right-of-way.

Provided that clearing resumes by December 2018, the postponement of clearing will have no impact on the overall transmission sub-project schedule. Cost pressures related to the clearing postponement are being managed within project contingency.

Substation construction is in progress by F&M Installations Ltd., including site preparation, foundation construction and grounding grid installation. The first milestone to complete the control building foundation was achieved in July 2018.

The construction of access roads on the transmission line right-of-way by a First Nations contractor has started.

The transmission line construction contractor is in the process of developing a marshalling yard near Moberly Lake for the receipt, storage and handling of construction equipment and transmission line materials, including steel lattice towers and overhead conductor.

The expansion of the Peace Canyon outdoor switchyard is in progress by ABB Inc., including site preparation and foundation construction.

In the next quarter, substation construction will continue, including completion of control building and transformer foundations. Transformers will also be delivered to the site. Lattice towers and overhead conductor will be delivered to the line contractor's marshalling yard. The line contractor will begin geotechnical investigations and helical pile foundation testing on the transmission line right-of-way. Transmission line construction access roads will be completed by the First Nations contractor. Expansion of the Peace Canyon outdoor switchyard will continue, including assembly of electrical equipment and erection of steel and buswork.

Highway 29

The creation of the Site C reservoir requires realignment of six segments of Highway 29. In order for the highway to remain accessible once the reservoir is

created and the dam is operating, the permanent realignment must be completed by spring 2023.

BC Hydro completed all necessary geotechnical investigations for the three highway realignment options for Cache Creek East in June 2018 and preliminary results indicate that there are no significant geotechnical differences between the three options. Depending on the recommendation for realignment and the timeline and process required for regulatory approvals, cost and schedule pressures could occur.

BC Hydro is evaluating the three highway realignment options using a structured decision making process. The preferred route is scheduled to be communicated in September 2018. BC Hydro has engaged First Nations in ground-truthing and the heritage and cultural assessments that will help inform the structured decision making analysis. Ministry of Transportation and Infrastructure has confirmed that a temporary detour option for Cache Creek-Bear Flats could be implemented to allow river diversion to continue as scheduled, and BC Hydro is working with Ministry of Transportation and Infrastructure to develop an alternate procurement model for bridges in an effort to reduce costs. To help reduce schedule risk, construction of the first highway segment, Cache Creek West, is planned to start in fall 2018.

While the Highway 29 realignment is not on the critical path for diversion in 2020, it is on the critical path for inundation in 2023. In the current project schedule, it is currently planned that the highway must be complete prior to the start of inundation, when the water level in the Peace River upstream of the dam is raised to its permanent level.

During discussions with property owners and Indigenous groups, several suggestions were made for other variations of the realignment options. However, they were not pursued as a result of road geometry challenges or the timing of when variations were brought forward.

Nun wa dee (representing Prophet River First Nation and West Moberly First Nations) asked BC Hydro to re-examine a route alignment option that Nun wa dee had initially proposed in 2017. BC Hydro had previously reviewed that option and explained that it would not be pursued due to technical challenges, construction and operations costs, and it did not meet Ministry of Transportation and Infrastructure’s design criteria. BC Hydro has re-confirmed that it will not be pursuing the 2017 Nun wa dee option and provided an engineering report outlining the technical challenges with that option.

Reservoir Clearing

Reservoir clearing activities remain on track.

Clearing of the lower reservoir was substantially complete in 2017 with the final clearing of 12.9 hectares of trees scheduled to be cleared in fall 2018 (not previously cleared due to environmental constraints). Inventory collection of the middle and western reservoir areas is in progress. All clearing is scheduled for completion by 2023.

Planned activities in the next reporting period include continuing with inventory and the collection of access road information of the middle and western reservoirs. This work will be used to develop the clearing and access plans for the completion of the reservoir activities. Minor amendments to the eastern reservoir, and north and south bank clearing areas are being finalized with field visits. Mapping and amendment submissions are being prepared for Regulatory approval.

Procurement packages for clearing and access are being assembled for release to identified contractors. Existing road upgrades are planned for this fall in preparation of accessing clearing areas by November 1, 2018.

Information for the Regulatory Permit applications is being finalized and assembled to meet the clearing and access construction for fall and winter 2018/2019.

Properties continue to negotiate and obtain access permissions within and in proximity to the reservoir to permit inventory and archaeological assessments to continue and, to specifically address the clearing areas planned for fall and winter 2018/2019.

Quality Management

Implementation and monitoring of Quality Control and Quality Assurance Plans are required of all contractors. [Table 2](#) below identifies quality management non-conformity instances during the quarter ending June 30, 2018.

**Table 2 Quality Management Non-Conformity
 Report Metrics**

Contract	Reported this Period	Closed this Period	Reported to Date	Closed to Date	Open as at June 30, 2018
Main Civil Works	137	254	930	751	179
Turbines and Generators	4	1	23	15	8
Transmission	24	16	36	28	8

Within the main civil works contract, the top three disciplines with the most non-conformities reported to date are earthworks (338), quality (152) and tunnel (137). Outstanding non-conformities are being resolved and reviewed weekly through face-to-face meetings with management from BC Hydro and the Contractor.

The eight turbine and generators non-conformities that remain open as at June 30, 2018 relate to equipment being manufactured at the on-site shop. BC Hydro has accepted the corrective actions proposed by the Contractor and the non-conformities will be closed before the associated equipment is released.

The 24 non-conformities reported in this period for the transmission contracts are minor in nature and have been reviewed by BC Hydro. Corrective actions proposed by the contractors for the remaining open non-conformities are being reviewed by BC Hydro.

1.3.1.2 Engineering

Design activities for main civil works continue to focus on several alternatives to accelerate the river diversion schedule. These included alternatives for the construction of the inlet portal structure, temporary stabilization measures for the outlet portal and design alternates for the construction of the roller-compacted concrete. The few remaining main civil works construction drawings are being released in accordance with project schedule requirements.

Construction support is underway for the large cranes, hydromechanical equipment, and the generating station and spillways contracts, with a focus on the mobilization and development of concrete mix designs and initial thermal control plans required under the generating station and spillways contract. Several batches of construction drawings for the generating station and spillways contract were completed between April 2018 through June 2018 and the remainder are being developed for issue to the contractor in accordance with the contract schedule. Model testing is underway for hydromechanical equipment.

The specifications and modelling for the Balance of Plant contract are progressing to meet the project schedule. A request for supplier qualification for the balance of plant is currently open. Balance of plant and equipment supply contracts combined are 50 per cent complete. Design continues to be advanced on the protection and control systems and is on schedule. Implementation design is at 100 per cent level for the 500 kV lines and the right bank substation. Peace Canyon gas insulated switchgear design is in progress and is nearing the 100 per cent level. Planning for Highway 29 final design has been updated to meet project schedule requirements. The tender package for Cache Creek west has been prepared and design alternates for Cache Creek crossing have been developed in consultation with stakeholders.

Several conference calls were conducted with the Technical Advisory Board to discuss options for acceleration of the outlet portal. The next Technical Advisory

Board meeting is schedule for the week of October 9, 2018 with a field visit by several Technical Advisory Board members in August 2018.

1.3.2 Safety

During the quarter, BC Hydro significantly increased its focus on Site C safety including:

- Additional safety resources were brought on to support the project;
- A strategic safety plan was developed that targets improvement opportunities in the areas of safety leadership, culture, systems and resources;
- The prime contractor model used to safely manage and coordinate construction work was reviewed and confirmed as the model that will continue to be used going forward;
- Work on shared safety issues continued with contractors through the newly established Joint Prime Contractor Safety Steering Committee; and
- Substantial work was completed on the safety and construction plan that will be used to manage work in the area of the right bank cofferdam, which begins to substantially ramp up in the next quarter.

There were three contractor lost time incidents and seven medical attention treatment injuries. There was one serious near miss incident and a formal investigation into each of these incidents occurred. There were no public safety incidents.

In June 2018, an injured worker received a permanent partial disability award from WorkSafeBC due to an August 2017 lost time injury incident. The worker was attempting to unload a light plant from a flat bed truck. The worker stepped on the light plant outrigger to gain enough height to reach the lifting attachment when the worker lost balance and fell approximately 7.5 feet to the ground.

The incident is now identified as a serious injury in the BC Hydro Incident Management System.

The project received seven safety regulatory inspections from WorkSafeBC and two from the Ministry of Energy, Mines and Petroleum Resources during the period. Three of the nine inspections resulted in no safety regulatory orders. A total of 11 orders were associated with the remaining inspections – nine orders from WorkSafeBC and two orders from the Ministry of Energy, Mines and Petroleum Resources. In May 2018, Peace River Hydro Partners received a WorkSafeBC administrative penalty of \$310,000. The penalty related to work that took place in April 2017 by Peace River Hydro Partners and WorkSafeBC determined they did not adequately protect workers from silica exposure. [Table 3](#) and [Table 4](#) below show the details of the safety regulatory inspections that occurred during the quarter ending June 30, 2018.

Table 3 WorkSafeBC Inspections and Orders

Date of Inspection	Inspection reports and orders received
April 2018	Order #1: The contractor failed to ensure workers were wearing their seat belts on the crew bus whenever the equipment is in motion or engaged in an operation which could cause the equipment to become unstable.
June 2018	The inspection was conducted in the underground work area of the Right Bank Drainage Tunnel. The contractor adopted the use of powered air respirators for the majority of the underground work activities. The contractor is reminded to continue to test the silica levels in the air to ensure that work activities do not produce concentrations of silica that are above the maximum for a powered air respirator. No orders were issued.
June 2018	The inspection was carried out on the operation of the Mobile Crane Tadano GR-1000-2-0010. The crane operator had a valid certificate and was conducting daily inspections. The outriggers were full extended as per the marks. The crane operator remained at the controls while the load was suspended. No orders were issued.
June 2018	The inspection was conducted on the exhaust ventilation systems in the crushing plants A and B. Order #1: The contractor failed to submit to WorkSafeBC the drawings and/or specification for the existing exhaust ventilation system for all curing plants at Site C.

Date of Inspection	Inspection reports and orders received
June 2018	<p>The inspection was carried out on a Manitowoc 4600 Lattice Boom Crane.</p> <p>Order #1: The contractor failed to remove the wire rope permanently from service if there is evidence of kinking, bird-caging or any other damage resulting in distortion of the rope structure.</p> <p>Order #2: The contractor's maintenance department failed to change a damage hoist line that was indicated it was damaged on every daily operator's inspection dating back May 13, 2018.</p> <p>Order #3: The contractor failed to ensure their operator had a valid operator's certificate issued by a person acceptable to WorkSafeBC.</p>
June 2018	<p>This inspection concentrated on the Right Bank Drainage Tunnel and the support facilities. At the time of the inspection the crew were getting ready to start rock bolting the area that was excavated earlier. No orders were issued.</p>
June 2018	<p>The inspection was conducted in the welding and allied processes of Area 24. Prior to the site visit the contractor supplied drawings and specifications on their local exhaust ventilation system. It was reviewed along with the site observations.</p> <p>Order #1: The contractor failed to ensure the ventilation system that is on the side of the building have a built air cleaner.</p> <p>Order #2: The plasma and arc gouging does not have proper capture hoods due to the velocity of the process and the spatter will impact the ducting. The molten metal releases fume and will impact the ducting integrity. Therefore, the contractor failed to ensure the ventilation system for controlling airborne contaminants in the workplace must be designed, installed and maintained using established engineering principles.</p> <p>Order #3: The contractor failed to ensure the ventilation system used to control air contaminants in the workplace is regularly inspected and monitored to ensure that it remains effective.</p> <p>Order #4: The welder/boiler workers on site were wearing 3M half mask respirators. The qualitative fit tests were done at site but it does not meeting the CSA requirements. Therefore, the contractor failed to ensure the fit tests are performing in accordance with procedures in CSA Standard CAN/CSA-Z94.4-02, selection, use and care of the respirators.</p>

Table 4 Ministry of Energy, Mines and Petroleum Resources

Date of Inspection	Inspection reports and orders received
May 2018	<p>Order #1: At the Wuthrich Quarry a contractor failed to ensure a wheel loader was parked with wheel chocks.</p>
May 2018	<p>Order #1: At the West Pine Quarry a contractor received an order related to dust being produced by heavy equipment and the crusher system.</p>

[Table 5](#) below identifies the project safety metrics during the quarter ending June 30, 2018.

Table 5 Safety Metrics

	Reported this Period (April 1, 2018 to June 30, 2018) ¹	Reported since Inception (July 27, 2015) ²
Fatality ²	0	0
Serious Injury ² (permanently disabling)	0	1
Lost Time Injury	3	14
Lost Time Injury Frequency (number of injuries resulting in lost time per 200,000 hours worked) ³	0.50	0.27
Severity Rate (number of calendar days lost due to injury per 200,000 hours worked) ³	13.11	12.23
Contractor near miss incidents	73	707
Employee near miss incidents	25	69
Public near miss incidents	0	6
Equipment/property damage reports ⁴	41	362
WorkSafeBC orders	9	80

A near miss incident is an unplanned loss of control event that could have resulted in an injury but did not because of effective barriers or the person was missed/out of harm's way. Contractors and employees are encouraged to report near misses to gain an opportunity to prevent future incidents. Generally, BC Hydro considers increased near miss reporting as positive and indicative of a stronger or improving safety culture.

¹ Numbers are subject to change due to timing of when data is retrieved and when injury is categorized.

² Excludes health events unrelated to work standards.

³ BC Hydro is now capturing safety metrics data each week from our two prime contractors which includes hours worked. Submissions have improved during the reporting period, resulting in improvements in the timeliness and accuracy of the safety metrics.

⁴ Types of equipment and property damage include vehicle damage, motor vehicle accidents, minor electrical fire damage, etc. Equipment damage data is collected through contractor monthly reports not the BC Hydro Incident Management System.

1.3.3 Aboriginal Consultation

Pursuant to the Environmental Assessment Certificate and Federal Decision Statement, BC Hydro is required to consult with 13 Indigenous 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.

Accommodation offers were originally extended to ten Indigenous groups. Six agreements have been fully executed and are in various stages of implementation. One agreement is in legal drafting. To date, Impact Benefits Agreements with Doig River First Nation, Halfway River First Nation, Sauteau First Nation and McLeod Lake Indian Band, and a Project Agreement with Dene Tha' First Nation have been publicly announced.

1.3.4 Litigation

The details of the various proceedings and hearings with decisions pending are summarized in [Table 6](#) below. The hearing of the interim injunction application filed by the West Moberly First Nations seeking to stop the construction of Site C pending hearing of their treaty infringement claim commenced on July 23, 2018 and is scheduled to conclude in September 2018.

**Table 6 Summary of Proceedings with Hearings
 or Decisions Pending**

Description	Date
B.C. Supreme Court: Treaty Infringement Claims	
West Moberly First Nations Prophet River First Nation	Notice of Claims filed January 15, 2018
West Moberly First Nations	Injunction application filed January 31, 2018 Hearing date From July 23 to August 3, 2018, ten days of argument took place. On August 6, 2018 the court adjourned the hearing and will recommence for four days from September 4 to 7, 2018.
B.C. Court of Appeal:	
Prophet River First Nation West Moberly First Nations	Appeal filed Hearing date November 30, 2016 Appeal is inactive. Requires leave of court to proceed.
Environmental Appeal Board	
C. London	Hearing date Written hearing of the matter through September 2018.
Other Proceedings	
Building Trades v. BC Hydro	Civil claim filed Response to claim filed March 2, 2015 April 10, 2015

1.3.5 Permits and Government Agency Approvals

1.3.5.1 Background

In addition to the Environmental Assessment Certificate, the Water License 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. Approximately 397 permits will be required throughout the life of the project. Prior to the reporting period, 220 permits had been received and are being actively managed. During the reporting period, 30 new permits were received in accordance with the schedule. BC Hydro has developed a coordinated First Nations consultation process with the Ministry of Forest, Lands, Natural Resource Operations and Rural Development to assist with the government permit workload. This coordinated consultation process was implemented in January 2018.

1.3.5.2 Federal Authorizations

Federal authorizations are required under the *Fisheries Act* (Fisheries and Oceans Canada) and the *Navigation Protection Act* (Transport Canada). All major federal authorizations for construction and operation of the Site C dam and reservoir were received in July 2016. At this time, no further *Fisheries Act* authorizations are anticipated. Additional *Navigation Protection Act* approvals for discrete works in the reservoir (e.g., shoreline works, debris booms and Highway 29 bridges) are anticipated to be issued at the regional level.

On May 4, 2018, BC Hydro submitted an application to amend the *Navigation Protection Act* approval for the main civil works due to changes to the design of the spillway. Transport Canada is currently reviewing this application.

1.3.5.3 Provincial Permits

The plan for obtaining Site C provincial permits involves a phased approach to the submission of applications to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development based on project components and construction schedule.

Provincial permits are required primarily under the *Land Act*, *Water Sustainability Act*, *Forest Act*, *Heritage Conservation Act*, and *Mines Act*. The majority of the permits are administered by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development and the Ministry of Energy, Mines and Petroleum Resources.

Approximately 397 provincial permits and approvals will be required throughout the life of the project. As of this reporting period, 250 permits have been obtained with another 25 permit submissions pending approval.

1.3.5.4 Environmental Assessment Certificate

On June 22, 2018, the Environmental Assessment Office issued an amendment to the Site C project's Environmental Assessment Certificate. This amendment was requested to reflect a design change to the generating station and spillways.

The changes include: each generator will now be connected to a transformer located upstream of the units, on the transformer deck; the original design of the spillway had seven gates, but will now be constructed with three radial gates and six low level outlets; and the discharge capacity of the spillways has been increased by 900 m³/s at the maximum normal reservoir level. These improvements will optimize capacity, minimize environmental risks, improve safety and facilitate the ease of long-term maintenance during operations. The footprint and the functional requirements of the generating station and spillways will remain the same.

As with any large construction project, refinements to the design are expected. There are no material impacts to the cost of the generating station and spillways as a result of these refinements to the design.

1.3.5.5 Permitting Improvement

In order to efficiently and effectively manage the large volume of permits required for the project, BC Hydro continues to engage with regulators, Indigenous groups and contractors to share information, seek feedback, and identify process improvements. Process improvements implemented include the following:

- BC Hydro continues to facilitate meetings with the Regional Office of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development, the Comptroller of Water Rights and contractors to ensure permit applications are coordinated, timely and sufficient;
- Regular permitting forums are being held with Indigenous groups to share information on upcoming permit applications and to seek feedback before applications are submitted to regulators; and
- BC Hydro has implemented a coordinated First Nations consultation process with the Ministry of Forest, Lands, Natural Resource Operations and Rural Development to assist with the government permit workload.

1.3.6 Environment

1.3.6.1 Mitigation, Monitoring and Management Plans

The Environmental Assessment Certificate and Federal Decision Statement conditions require the development of draft and final environmental management, mitigation and monitoring plans, as well as the submission of annual reports on some of these plans.

Focus remains on finding a solution to the pH and metal limits imposed by the Water Comptroller as the background conditions throughout the site make compliance

challenging. An on-site mobile water treatment plant arrived in May 2018 and is expected to address pH and metals exceedances in the on-site water management. Calibration of the plant is currently underway.

As of the end of this quarter, all required submissions have been made in accordance with the schedule and requirements of the conditions, including all environmental protection plans required of the generating station and spillways contractor.

1.3.6.2 Environmental Compliance Inspections and Enforcement

Inspectors from the B.C. Environmental Assessment Office Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Ministry of Energy, Mines and Petroleum Resources, the Water Comptroller and the Canadian Environmental Assessment Agency performed approximately 685 hours of inspection between February and June 2018. This resulted in a Canadian Environmental Assessment Agency written warning for spill kit training, an Environmental Assessment Office written warning for hydrocarbon management, and an Environmental Assessment Office order for sediment and erosion control at Portage Mountain quarry. Both written warnings and the order are either resolved or in progress of resolution. The Environmental Assessment Office has yet to finalize the associated inspection reports.

BC Hydro has performed more than 14,000 inspections with a compliant or partial compliant result of 93 per cent across all contractors and works areas.

During this quarter, environmental compliance continued to focus on completing the channelization works at the areas of the dam site referred to as L3 and Garbage Creek. The stilling basin in the upper portion of L3 was damaged due to high flows during freshet. This stilling basin has been decommissioned and the area cleared of debris. Redesign works are underway with repairs scheduled to be completed in fall 2018. Works on the installation of the final sediment pond on the lower portion of

L3 have resumed with completion estimated for fall 2018. There are no notable water flows currently within the channel as the L3 channel is a dry watercourse for the majority of the year; outside winter snow melt. As a precaution, bypass pumps are in place to redirect water past the damaged area until repairs are complete should flows materialize from heavy rain events. Additionally, sediment management features, such as rip rap, coconut matting, channel revegetation and check dams are in place through the L3 channel above the damaged area and within the input ditches.

During the quarter, the independent environmental monitor continued weekly inspections with a focus on hydrocarbon management, waste disposal, erosion and sediment control, dust management and wildlife management. Overall, the weekly inspections indicated general environmental compliance across the dam site. Issues continue to be observed for excessive greasing of equipment and hydrocarbon spills as well as gas cylinder storage issues. However, improvement has been noted in the latter portion of the quarter. BC Hydro is working with its onsite contractors to raise the awareness of both care of water and spill/leak prevention requirements.

1.3.6.1 Heritage

In accordance with a number of Environmental Assessment Certificate and Federal Decision Statement conditions, the Site C Heritage Resources Management Plan addresses the measures that will be used to mitigate the adverse effects of the Project on heritage resources.

The 2018 heritage field program is focused on field work to meet regulatory requirements for pre-construction archaeological impact assessments (in areas not accessible until now), and systematic data recovery at selected archaeological sites. This year's field season was initiated in mid-May 2018 with up to 60 archaeologists and First Nations representatives active on site. During this quarter, heritage compliance reviews of contract documents, contractor environmental plans and construction readiness plans were performed to ensure compliance. BC Hydro's

heritage specialist initiated three contractor compliance field inspections of archaeological sites, and one *Heritage Conservation Act* permit amendment was received. No heritage chance finds were reported in this quarter.

1.3.6.2 Agriculture Mitigation and Compensation Plan – Framework

Establishment of the \$20 million BC Hydro Peace Agricultural Compensation Fund is underway. The first fund board meeting was held on May 9, 2018 for the initial six members to select the four additional members from public applications. The full ten member Board met on June 15, 2018. The Board is made up of representatives from five regional agricultural organizations, the Peace River Regional District, three agricultural producer members-at-large and one Peace River Valley agricultural producer. BC Hydro posted the public request for proposals for the fund administrator, who will provide financial management, board secretariat and fund application process services, which closed on March 29, 2018. BC Hydro is in the final stages of completing the contract. The \$20 million will be transferred into the fund once BC Hydro approves the financial management plan prepared by the fund administrator and receives feedback from the board.

1.3.7 Labour, Employment and Training and Building Capacity Initiatives

Labour

To date, unions that have participated in the construction of Site C include: Construction Maintenance and Allied Workers (**CMAW**), the Christian Labour Association of Canada (**CLAC**) Local 68, Canada West Construction Union (**CWU**), Pile Drivers 2402, the Construction and Specialized workers Union (**CSWU**), Local 1611, the International Union of Operating Engineers (**IUOE**) Local 115, and the Ironworkers Local 97, the International Brotherhood of Electrical Workers (**IBEW**), MoveUP and the Teamsters Local 213.

In addition, ten unions affiliated with the BC Building Trades will be working on the installation of the turbines and generators. The International Brotherhood of

Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers (**Boilermakers Union**) members have been working on this contract as of September 2017.

The Aecon-Flatiron-Dragados-EBC Partnership (the contractor for the Site C generating station and spillways) has signed a labour agreement for the generating station and spillways civil works with the IUOE Local 115, the CSWU Local 1611 and CMAW.

F&M Installations Ltd. has negotiated labour agreements with the IBEW for the electrical work on the Site C substation, and their civil subcontractor, Jim Dent Construction, has been certified to the CMAW.

Employment

Contractors submit monthly workforce data electronically to BC Hydro. [Table 7](#) shows a snapshot of the total number of construction contractors, non-construction contractors, engineers, and project team workers for this quarter by month.

Table 7 Site C Jobs Snapshot

Month	Number of B.C. Workers ⁵	Number of Total Workers ⁵	Percentage of B.C. Workers (%)
April 2018	1890	2242	84
May 2018	2358	2810	84
June 2018	2531	3093	82

The June 2018 total workforce number is the highest workforce number to date on the project. Over 80 per cent of the workforce is from BC and 28 per cent are residents of the Peace River Regional District. The onsite contractor number also includes a project high of 17 per cent women and a high of 56 workers working for various contractors as apprentice carpenters, welders, electricians, millwrights,

⁵ Employment numbers provided by Site C contractors and consultants are subject to revision. Data not received by project deadline may not be included in the above numbers. Employment numbers are direct only and do not capture indirect or induced employment.

ironworkers, mechanics, and boilermakers. As the project approaches the busy summer season, these numbers are expected to increase even further.

Refer to [Appendix E](#) for additional workforce information. The number of workers continues to vary as the construction work progresses.

Training and Capacity Building Initiatives

In September 2017, the Contractors Labour Committee agreed to establish an Indigenous labour subcommittee. The purpose of the subcommittee is to support Indigenous training, labour and employment on Site C. The committee has met three times in January and has developed a number of initiatives, such as the Indigenous Employment and Training Informational sessions and increased communication protocols related to job opportunities.

BC Hydro has included apprentice targets in the generating station and spillways civil works contract, the transmission lines and the substation contracts, and BC Hydro procured Highway 29 work. The Aecon-Flatiron-Dragados-EBC Partnership has also committed to providing opportunities for apprentices.

In August 2013, Northern Lights College started distributing the BC Hydro Trades and Skilled Training Bursary Awards. As of March 2018, 206 students had received bursaries, including 79 Indigenous students who have benefitted from the bursary in programs such as electrical, welding, millwright, cooking, social work, and many others.

BC Hydro continues to work with local employment agencies to ensure that as job opportunities become available, they are posted on the work website as well as on the Fort St. John Employment Connections website. In June 2018, Site C contractors reported 664 workers on site from the Peace River Regional District. This is a total of 28 per cent of the construction and non-construction contractor's workforce.

Both major contractors on site, Peace River Hydro Partners and Aecon-Flatiron-Dragados-EBC Partnership are exploring opportunities for electrical and carpentry apprentices training on site. Specifically, as the project ramps up, Aecon-Flatiron-Dragados-EBC Partnership will be developing initiatives for both on and off site pre-apprenticeship programs.

1.3.8 Community Engagement and Communication

1.3.8.1 Local Government Liaison

The Regional Community Liaison Committee, which is comprised of local elected officials and local Indigenous groups, met on May 16, 2018. The next meeting is scheduled for September 19, 2018. A total of 11 communities have participated as committee members, including eight local governments and four local Indigenous groups (McLeod Lake Indian Band, Doig River First Nations, Sauleau First Nations and Blueberry River First Nations) as well as the two MLAs for Peace River North and Peace River South. Representatives from the Ministry of Transportation and Infrastructure and the Project's major contractors, including Peace River Hydro Partners, Aecon-Flatiron-Dragados-EBC Partnership, Voith Hydro Inc. and ATCO Two Rivers Lodging Group, also attended the meeting as invited guests.

The Fort St. John Community Agreement Implementation Committee and the Hudson's Hope Community Engagement Committee met on May 29, 2018.

1.3.8.2 Business Liaison and Outreach

BC Hydro continued to implement its business construction liaison and outreach by attending local chamber of commerce meetings in Fort St. John and Chetwynd. During this reporting period, the project team sent out eight notifications to the Site C business directory.

1.3.8.3 Community Relations and Construction Communications

BC Hydro continued to implement its construction communications program during this reporting period. The program includes updating and maintaining the project

website www.sitecproject.com with current information and photos of construction and providing information to local and regional stakeholders as required.

Construction Bulletins

Bi-weekly construction bulletins were issued throughout this reporting period. These bulletins are posted on the project website and sent by email to the web-subscriber list.

Public Enquiries

In total, BC Hydro received 504 public enquiries between April 1, 2018 and June 30, 2018, compared to 485 in the previous quarter. The majority of these enquiries continued to be about business and job opportunities, with limited construction impact concerns from local residents. [Table 8](#) shows the breakdown of some of the most common enquiry types.

Table 8 Public Enquiries Breakdown

Enquiry Type⁶	April 2018	May 2018	June 2018
Job Opportunities	97	108	109
Business Opportunities	36	37	70
General Information	11	6	9
Construction Impacts ⁷	1	4	3

1.3.8.4 Communications Activities

Based on a search using the media database Infomart, there were 205 stories in B.C. news media between April 2018 and June 2018 on the Site C Project, compared to 562 stories in the previous quarter.

1.3.8.5 Housing Plan and Housing Monitoring and Follow-Up Program

BC Hydro and BC Housing signed a Contribution Agreement on July 19, 2016 related to the development, construction and operation of a building in Fort St. John

⁶ This table is a sample of enquiry types and does not include all enquiry types received.

⁷ The nature of the construction impact inquiries is primarily air quality, noise and traffic conditions.

comprised of 50 residential rental units. This agreement is the outcome of detailed discussions between the two partners to find the most appropriate approach to meeting the Project's environmental assessment conditions and the housing terms of the Community Measures Agreement with the City of Fort St. John. The agreement structured the financial contribution from BC Hydro to enable viable financial operation of the affordable housing units in the near-term and viable financial operation of all 50 units of affordable housing in the longer term.

The housing project is under construction by Western Canadian Properties Group with six floors framed. Construction is on track for substantial completion by December 2018 with occupancy in January 2019. BC Hydro is working with BC Housing on a Head Lease for the units in the building that BC Hydro wishes to rent.

1.3.8.6 Labour and Training Plan

In accordance with Environmental Assessment Certificate Condition 53, a Labour and Training Plan was developed and submitted to the Environmental Assessment Office on June 5, 2015.

This plan, as well as Environmental Assessment Certificate Condition 45, includes reporting requirements to support educational institutions in planning their training programs to support potential workers in obtaining Project jobs in the future. This report was issued to the appropriate training institutions in the Northeast Region of B.C., in July 2016 and July 2017. The next report will be issued in July 2018.

This plan and Environmental Assessment Certificate Condition 45, also require the establishment of a daycare. This measure is being implemented through a contribution agreement with School District 60 in the North Peace. The daycare is anticipated to open on August 1, 2018 as part of a new school in Fort St. John. The YMCA was the selected daycare operator by School District 60.

1.3.8.7 Health Care Services Plan and Emergency Service Plan

The Project health clinic is contracted by BC Hydro with Halfway River International SOS Medical Ltd., a partnership between Halfway River First Nations and International SOS. The clinic continues to operate in its permanent location within the Two Rivers Lodge, and based on camp occupancy was staffed 24/7 during this period with a nurse practitioner and advanced care paramedics. BC Hydro and the clinic operator continue to liaise with the local health care community.

The clinic provides workers with access to primary and preventative health care and work-related injury evaluation and treatment services and is currently open seven days a week, 24 hours a day. Since opening the Project health clinic, there have been a total of 5,998 patient interactions. During the reporting period, there were 830 patient interactions, of which 185 were occupational and 645 non-occupational. Several preventive health themes were promoted to workers including: alcohol awareness, smoking cessation and heat awareness.

1.3.8.8 Property Acquisitions

During this quarter, BC Hydro accessed private properties to inform design and mitigation options for the various Site C Projects. BC Hydro was required to rely on the powers of entry under section 9 of the *Expropriation Act* for one private property owner who denied access to their lands for the 2018 field season.

In the next quarter, BC Hydro will consult with private property owners about the Structured Decision Making process impacting their properties in Cache Creek-Bear Flats.

1.4 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 Contract Timing
Worker Accommodation	Worker accommodation and site services contract	Design-Build-Finance-Operate -Maintain	Completed
Earthworks	Site preparation contracts	Predominantly Design-Bid-Build	Completed
	Main civil works contract	Design-Bid-Build	Completed
Reservoir/ Transmission Clearing	Multiple reservoir clearing contracts to be awarded over seven to eight years	Design-Bid-Build	Five contracts completed (lower and east reservoirs)
Generating Station and Spillways	Turbines and generators contract	Design-Build	Completed
	Generating station and spillways civil works contract	Design-Bid-Build	Completed
	Hydromechanical equipment contract	Supply Contract	Completed
	Balance of plant equipment supply	Supply Contracts	F2019 to F2020
	Balance of plant contract	Design-Build/ Design-Bid-Build	F2019 to F2021 Request for Supplier Qualifications was issued in June 2018
Electrical and Transmission Infrastructure	Transmission lines construction contract	Design-Bid-Build	Completed
	Site C substation contract	Design-Bid-Build	Completed
	Peace Canyon substation upgrade contract	Design-Build	Completed
Highway 29 Realignment	Design-Bid-Build in partnership with B.C. Ministry of Transportation and Infrastructure with anticipated contracts being awarded from 2018 to 2022.		

1.4.1 List of Major Contracts Awarded (in excess of \$50 million)

Since inception of the Project, seven major construction contracts (e.g., greater than \$50 million in value) have been awarded: worker accommodation, north bank site preparation, main civil works, turbines and generators, generating station and spillways civil works, transmission line construction and hydromechanical equipment. The 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 awarded to June 30, 2018 is shown in [Table 10](#) below.

Table 10 Major Project Construction Contracts Awarded

Work Package	Contract Value ⁸ (\$ million)	Current Status
Site Preparation: North Bank	60	Contract executed July 2015
Worker Accommodation	469	Contract executed September 2015
Main Civil Works	1,829	Contract executed December 2015
Turbine and Generators	464	Contract executed March 2016
Generating Station and Spillways Civil Works	1,604	Contract executed March 2018
Transmission Line Construction	113	Contract executed April 2018
Hydromechanical Equipment	69	Contract Executed April 2018

1.4.2 Large Contracts to Date (Excess of \$10 million)

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.

1.4.3 Contract Management

1.4.3.1 Material Changes to the Major Contracts

The main civil works contract is a unit price contract and as such variations in quantities and design are expected over the term of the contract. Since contract award in December 2015, the main civil works contract value has increased by

⁸ Contract value reflects the current value including executed change orders to the end of the reporting period.

\$82 million to reflect approved changes to date. The changes are managed within project contingency.

BC Hydro reached a memorandum of understanding with the main civil works contractor. The financial and contractual impacts of the memorandum of understanding will be reflected in the subsequent quarters results as the final agreement was executed in July 2018. The total potential cost of the agreement over the life of the project is estimated at \$325 million. While the agreement will draw on the project contingency, there is sufficient budget available such that there is no impact to the overall project budget.

1.4.3.2 Contingency and Project Reserve Draws

As a result of the change in timing for river diversion and other factors including an increase in direct and indirect costs, BC Hydro revised the project budget to \$10.7 billion, which was approved by the provincial Treasury Board in January 2018 and the BC Hydro board of directors in February 2018. This revised budget includes contingency of \$858 million and reserve subject to the control of Treasury Board of \$708 million.

Refer to [Appendix D](#) for more detailed information regarding contingency and project reserve draws.

1.5 Plans During Next Six Months

[Table 11](#) and [Table 12](#) below presents the key milestones for activities planned during the next six months that reflect a plan to complete river diversion in 2020.

**Table 11 Key Milestones for Main Civil Works
(July to December 2018)**

Milestone	Plan (July 2018) ⁹	Forecast/ Actual Date	Variance (months)	Current Status
Left Bank Excavation Complete to access outlet portal	July 2018	July 2018	0	On track
Complete inlet portal Stabilization	August 2018	September 2018	(1)	At risk
Work Area W1 access provided to GSS	September 2018	August 2018	1	On track
Complete Roller-Compacted Concrete – Lower Powerhouse (W1), Service Bay, Gates Chamber & Tailrace Wall	October 2018	August 2018	2	On track
Complete Powerhouse Roller-Compacted Concrete – Upper	October 2018	October 2018	0	At risk
Complete Outlet Portal Stabilization	December 2018	December 2018	0	On track
Right Bank Drainage Tunnel Excavation, Support & Drainage Complete for RCC placement	September 2019	January 2019	8	On track

⁹ Peace River Hydro Partners' settlement agreement baseline schedule.

**Table 12 Key Milestones for Generating Station
 and Spillways, Turbines and Generators,
 Transmission and Substation, Reservoir
 Clearing and Highways
 (July to December 2018)**

Milestone	Plan (February 2018)	Forecast/ Actual Date	Variance (months)	Current Status
Cache Creek-Bear Flats route re-alignment options	August 2018	August 2018	0	On track
Supply of anchors for draft tube maintenance gates	September 2018	August 2018	1	On track
Completion of transmission clearing	September 2018	March 2019	(6)	At risk
5L5/5L6 Construction Starts	October 2018	October 2018	0	On track
Geotechnical Investigations for All Hwy 29 Segments Complete	October 2018	September 2018	1	On track
Laydown Area 23 Access to GSS	October 2018	November 2018	(1)	At risk

1.6 Impacts on Other BC Hydro Operations

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

1.7 Site Photographs

Refer to [Appendix A](#) for site construction photographs.

2 Project Schedule

2.1 Project In Service Dates

As filed with the British Columbia Utilities Commission Inquiry respecting Site C on October 4, 2017, BC Hydro identified that the river diversion milestone will move from 2019 to 2020. This did not impact the overall in service dates, as shown below.

Table 13 Project In-Service Dates

Description/Status	Final Investment Decision Planned In-Service Date ¹⁰	Updated Plan (February 2018)	Forecast Date	Status and Comments
5L5 500kV Transmission Line	October 2020	October 2020	October 2020	On track
Site C Substation	November 2020	October 2020	October 2020	On track
5L6 500kV Transmission Line	July 2023	August 2023	August 2022	On track
Unit 1 (First Power)	December 2023	December 2023	December 2023	On track
Unit 2	February 2024	February 2024	February 2024	On track
Unit 3	May 2024	May 2024	May 2024	On track
Unit 4	July 2024	July 2024	July 2024	On track
Unit 5	September 2024	September 2024	September 2024	On track
Unit 6	November 2024	November 2024	November 2024	On track

3 Project Governance, Costs and Financing

3.1 Project Governance

With increased internal and external oversight of project performance, BC Hydro is confident that we will deliver the project on time and within the updated budget.

Examples of measures implemented this quarter include:

- Project Controls Lead added at site who is focused on progress measurement, which allows us to identify early warnings of challenges and identify and implement corrective action.

¹⁰ Based on plan at Final Investment Decision, December 2014.

- Project Controls, Risk and Services vision and organizational structure announced. The vision for the team is to drive effective management and decision-making at the Site C Project by capturing and analyzing data to understand, predict and positively influence project outcomes and communicate key data and analysis in a focused, consistent, understandable and actionable way using the Integrated Project & Portfolio Management Solution as a foundation.
- Completion of hiring of senior leadership team positions for Main Civil Works, Off Dam Site, and Design Engineer.
- Continuing to increase the number of BC Hydro on-site representatives that oversee construction contracts.

3.2 Project Budget Summary

[Table 14](#) below presents the updated budget approved in February 2018, represented in nominal dollars.

Table 14 Project Budget Summary

Description	Updated Budget Approved February 2018 (Nominal \$ million)
Dam, Power Facilities, and Associated Structures	5,320
Offsite Works, Management and Services	1,868
Total Direct Construction Cost	7,188
Indirect Costs	1,484
Total Construction and Development Cost	8,672
Interest During Construction	1,320
Project Cost, before Treasury Board Reserve	9,992
Treasury Board Reserve	708
Total Project Cost	10,700

* Budget values are rounded to the nearest \$5 million and include allocations of contingency.

3.3 Project Expenditure Summary

[Table 15](#) provides a summary of the updated budget for the total Project, the current forecast total Project cost and the variance between the two. It also presents the cumulative updated budget amount planned to June 30, 2018 compared to the cumulative actual costs incurred to June 30, 2018 and the variance between the two.

Table 15 Total Project Expenditures - Updated Budget Compared to Forecast and Life to Date – Updated Budget Compared to Actual Expenditures to June 30, 2018 (\$ million Nominal)

Description	Total Project			Life to Date, to June 30, 2018		
	Updated Budget	Forecast	Variance	Updated Budget	Actual Expenditures	Variance
Total Project Costs	9,992	9,992	0	2,577	2,574	3
Treasury Board Reserve	708	708	0	0	0	0
Authorized Project Cost	10,700	10,700	0	2,577	2,574	3

[Table 16](#) below provides a summary of the F2018-F2019 Service Plan Project expenditures for Fiscal 2019 year-to-date, the actual Project expenditures for Fiscal 2019 year-to-date and the related variance.

Table 16 Actual Fiscal 2019 Project Expenditures Compared to 2018/19 to 2020/21 Service Plan (\$ million Nominal)

Description	2018/19 to 2020/21 Service Plan Fiscal 2019 YTD	Actual Expenditures Fiscal 2019 YTD	Variance
Total Project Costs	240.8	219.6	21.3
Treasury Board Reserve	-	-	-
Authorized Project Cost	240.8	219.6	21.3

Variances between the plans to date amounts occur due to differences in the timing of project implementation activities. The variance of \$21.3 million between actual and plan life to date is primarily due to a shift of some mitigation & compensation, reservoir clearing and transmission related expenditures into future periods, partially

offset by earlier than planned expenditures for generating station and spillways civil scopes of work. Further explanations are in [Appendix D](#).

3.4 Internal Project Financing versus External Borrowings to Date

To date, all project funding has been from internal borrowings and there has been no Site C Project specific debt issued. As part of BC Hydro's debt management strategy, BC Hydro's exposure to variable debt is managed within a board approved range of 5 per cent to 25 per cent and a target of 15 per cent. In addition, to lock in low interest rates, since F2017 BC Hydro has hedged \$6.7 billion of its future forecast long-term debt issuances out to F2024 through the use of derivative contracts.

As at June 30, 2018, \$2.4 billion in hedges have settled with a realized gain of \$136 million and \$4.3 billion of hedges remain outstanding with an unrealized gain of \$32 million.

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 17](#) for a list of risks.

Table 17 Material Project Risks

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
<p>Permit, Approvals and Environmental Compliance</p>	<p>BC Hydro is receiving permits on time and the risk has decreased due to experience gained by the team and implementing a proactive approach with regulators to resolving concerns in advance of the required permit date.</p> <p>The Project must comply with the requirements of the Environmental Assessment Certificate (Provincial) and the Federal Decision Statement as well as conditions in licenses, permits and authorizations required for construction.</p> <p>Permits and licences are still required for several portions of the construction activity. Delays to these permits and licences could result in delays to the associated construction work. BC Hydro is proactively working with contractors, federal and provincial authorities, and First Nations to mitigate this risk. BC Hydro was successful in obtaining an Environmental Assessment Certificate amendment for the generation station and spillway re-design.</p> <p>There are two outstanding challenges of Project permits/approvals:</p> <ul style="list-style-type: none"> (i) An appeal of one of the Conditional Water Licences is before the Environmental Appeal Board; that appeal is proceeding in writing. On January 19, 2018, the Environmental Appeal Board set dates for the written hearing of this matter to proceed through various steps that conclude by July 2018 and a ruling can be expected 3-4 months later; and (ii) An appeal of the dismissal of the judicial review of 36 provincial permits. The appellants (two First Nations) are not actively pursuing the appeal and will require a court order to proceed. 	<p>↓</p>

¹¹ Arrow direction represents the change since the last Quarterly Progress Update report.

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Litigation	<p>There remains a risk that litigation could be initiated with respect to construction matters.</p> <p>In January 2018, two First Nations each filed a Notice of Civil Claim in B.C. Supreme Court in which they assert, among other things, that the Site C project is an infringement of their rights under Treaty 8. Related to this claim, the West Moberly First Nations filed an application for an injunction to stop construction of Site C pending the hearing of their civil claim. The injunction application commenced on July 23, 2018 and is scheduled to conclude in September 2018.</p> <p>In addition, in a separate civil claim against the Province for treaty infringement, Blueberry River First Nations and the Province are currently engaged in mediation and have agreed to adjourn the trial to October 2018. It is unclear at this time what the implications of this mediation and/or this trial may be to the Site C Project.</p>	→
Indigenous Relations	<p>BC Hydro has agreements in place with six First Nations who have indicated they do not oppose or object to the Project. These agreements provide First Nations with Project benefits and mitigate the risk of legal challenges. In the absence of agreements with all of the identified potentially affected First Nations, there remains risk of challenges to authorizations issued for the Project.</p> <p>BC Hydro is continuing to negotiate agreements with several First Nations. The status of some specific negotiations is confidential at this time.</p> <p>BC Hydro is working with First Nations to evaluate the Highway 29 Cache Creek realignment options to avoid or reduce impacts on areas of cultural importance identified by First Nations. First Nations ground truthing is completed and feedback provided to BC Hydro to inform the final route selection.</p>	→
Procurement	<p>The risk is decreasing with BC Hydro awarding the Hydromechanical Equipment Contract and receiving positive market interest to the Balance of Plant contract Request for Supplier Qualifications.</p> <p>BC Hydro has received positive and competitive market responses in major contract procurements to date. Market response risks will continue to be monitored. Some risk remains for major procurements yet to be completed, including balance of plant and the Highway 29 realignment.</p>	↓

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Labour Relations and Stability	<p>Due to multiple employers at site with different union affiliations, there is a risk of site labour disruption that could result in issues. The labour workforce stability risk is expected to increase as the workforce increases.</p> <p>All major contracts contain provisions preventing labour disruptions on site such as no strike, no lockout, and no raiding provisions; BC Hydro has implemented a site wide Labour Relations Contractor Committee to support labour stability on the site.</p> <p>Competition for labour will likely increase closer to 2019 as major projects, with similar labour requirements, are predicted to start (e.g. pipeline and LNG Projects). Without contractors' ability to access a qualified and skilled labour pool, project risk could increase.</p>	→
Geotechnical	<p>Changes to geotechnical ground conditions remain a risk to the project schedule and cost.</p> <p>There have been extensive geotechnical studies over many years. Construction plans have been developed to mitigate these impacts. For example, the left bank slope is being excavated to remove known historical instability. BC Hydro has redesigned the left bank slope profile to incorporate the temporary till haul road for the construction of the main dam to mitigate construction execution risks associated with instability events.</p> <p>A minor geotechnical event was experienced during the inlet portal excavation and remediation work is underway to minimize schedule impacts.</p>	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Construction cost – labour	<p>Potential cost increases could arise if there is competition with other projects for labour resources, labour instability, or changing workforce demographics. Based on current market conditions in the infrastructure and energy sector, the labour risk is low; however, previous federal announced pipeline projects could impact labour prices and availability of skilled labour. There remains the potential for market labour conditions to shift in the future and, if so, this risk may increase.</p> <p>Competition for labour will likely increase closer to 2019 as major projects, with similar labour requirements, are predicted to start.</p> <p>BC Hydro has included a provision in major contracts that allows for a labour escalation of 2 per cent per year, as well as a cost sharing formula based on general industry increases beyond 2 per cent. Increased pressure on the labour market would likely drive labour wage rates higher, potentially resulting in general industry increases beyond the 2 per cent.</p>	→
Construction cost – commodities and equipment	<p>Key commodities such as steel, gasoline and diesel are trending higher than BC Hydro's original cost estimate. There continues to be an external risk of higher-than-expected commodity costs.</p> <p>If there is a material change in market conditions or changes to the North American Free Trade Agreement, this may impact contracts awarded, or to be awarded, that rely on key commodities.</p>	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Construction execution	<p>The main civil works contractor has experienced delays on several of their critical path activities, resulting in a one year schedule delay. BC Hydro and the main civil works contractor have negotiated a Settlement Agreement that includes resolution of historical contractor claims and includes future contractor incentives to meet critical path river diversion milestones.</p> <p>The main civil works contractor experienced low production rates with the right bank roller-compacted concrete placement. This resulted in the powerhouse roller-compacted concrete buttress being only partially completed in 2017 and BC Hydro and the contractor have re-sequenced the work for the 2018 season to recover productivity for the remaining roller-compacted concrete.</p> <p>Two of the main civil works areas that BC Hydro are monitoring closely, with positive schedule progress being made to date, are the preparation work for the construction of the diversion tunnels and the placement of roller-compacted concrete for the powerhouse buttress.</p> <p>Critical path construction activities that involve the main civil works and the generation station and spillways contractors have been identified as an interface risk. BC Hydro is actively coordinating between the main civil works contractor and the generating station and spillways civil contractor to identify potential interface issues.</p> <p>The generation station and spillways contract was awarded and the contractor is on site and on schedule, completing site mobilization activities.</p> <p>If oil and gas sector activity returns to pre-2014 levels, there may be a risk in accessing skilled and qualified workers for the project workforce, due to a low unemployment rate in the region and multiple contractors competing for a similar workforce.</p> <p>Quality assurance/control of contract execution is also a risk. This is being addressed by assuring the construction follows specifications and that there are proper quality assurance/quality contract measures on site.</p> <p>A decision on the preferred Cache Creek re-alignment option is expected in late August or early September 2018. Delays to this decision could impact the schedule and completion date for start of inundation.</p>	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Foreign exchange, interest and taxes	<p>Some 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 overall Site C direct construction costs are based on foreign currency.</p> <p>The Canadian dollar has weakened significantly compared to the U.S. dollar since the 2014 capital cost estimate was developed. However, the award of major contracts (particularly the turbine and generators contract, main civil works contract and generating station and spillway civil works contract) has reduced BC Hydro's exposure to currency fluctuations by transferring the risk to the contractor after award.</p> <p>The impact on future procurements may depend on future movement in foreign exchange markets, future movement in commodity and equipment markets, and the ability of the proponents to source from a range of foreign markets. Residual risk on contracts yet to be procured is partially mitigated through contractor flexibility around sourcing of material, resulting in an exposure to a basket of currencies, rather than solely the U.S. dollar.</p> <p>Interest during construction costs will be affected by fluctuations in market interest rates. BC Hydro has reduced its exposure to variable rate debt and increased its exposure to fixed rate debt. In March 2016, the British Columbia Utilities Commission approved a Debt Hedging Regulatory Account for BC Hydro to capture the gains and losses related to the hedging of future debt issuance. BC Hydro has hedged 50 per cent of its forecast future debt issuances from F2017 to F2024 through the use of derivative contracts.</p> <p>There is potential for a change in the PST rate and tax base, the Carbon Tax will increase over the next four years, and Canada and the U.S. have introduced new surtaxes (duties) on steel and aluminum and other products. Depending on the terms of the contract and project needs, the real and potential changes could impact Site C project cost. BC Hydro is monitoring changes to federal and provincial taxes and duties and their potential effects. Where appropriate, BC Hydro will secure advance rulings on tax applicability to reduce uncertainty in treatment.</p>	→

Risk Event/ Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Safety	<p>Throughout the project, there is a risk of a disabling worker injury or fatality given the nature of the work. The occurrence of such a tragic incident could result in safety regulators (WorkSafeBC, Ministry of Energy, Mines and Petroleum Resources) imposed work stoppages, investigations, and financial penalties that could impact the project's schedule and cost.</p> <p>BC Hydro has systems and processes in place to mitigate the safety risks associated with work on the project. This includes checking and auditing the safety systems and competence of contractors, and ensuring that investigations are completed for all significant safety incidents.</p> <p>Although the frequency of serious incidents is constant, BC Hydro is following up on the increase in the frequency of 'Lost Time Incidents' and 'Medical Attention-Treatments'. BC Hydro has developed and is implementing a strategic safety plan to address safety improvement opportunities.</p> <p>There is also a risk of a public safety incident such as a boating accident. This is being addressed by placing safety buoys, signage, additional booms, a safety pull-out ramp, public warning signs at boat ramps and a patrol boat. Also, a swift water rescue capability is in place and part of the safety plan.</p>	→

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Appendix A

Site Photographs

Figure A-1 Left Bank Cofferdam. Photo taken April 5, 2018.



Figure A-2 Left Bank Shotcrete Placement for the Inlet Portal. Photo taken April 5, 2018.

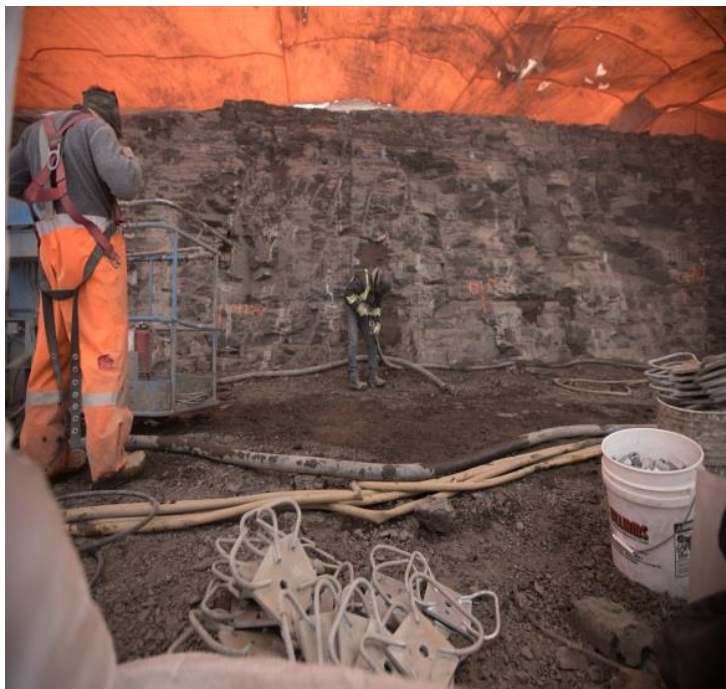


Figure A-3 In-river Works (Dredging). Photo taken April 19, 2018.



Figure A-4 Right Bank Insulation Placement on the Face of the Roller-compacted Concrete. Photo taken April 19, 2018.



Figure A-5 Aecon-Flatiron-Dragados-EBC Partnership Office Set up on the Left Bank (Area 33). Photo taken May 2018.



Figure A-6 Roller-Compacted Concrete Placement on the Right Bank for the Powerhouse Buttress. Photo taken May 2018.



Figure A-7 Placing Concrete Foundations for the Substation on the Right Bank. Photo taken June 22, 2018.



Figure A-8 Placement of Steel Formwork for the Powerhouse Buttress on the Right Bank. Photo taken June 22, 2018.

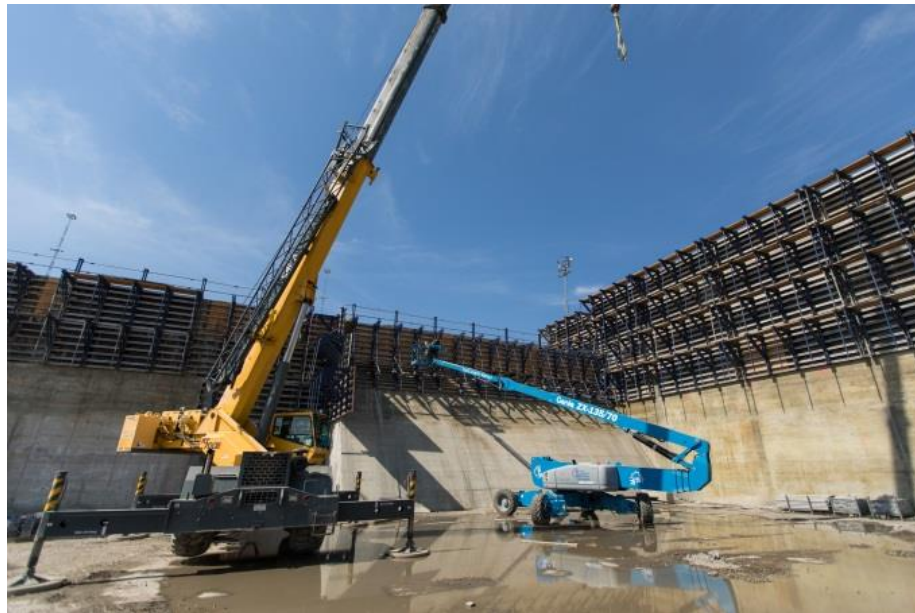


Figure A-9 Roller Compacted Concrete Placement and Shotcrete Application at the Spillway Buttress on the Right Bank. Photo taken June 22, 2018.



Figure A-10 Right Bank Phase 2 Crusher. Photo taken June 29, 2018.



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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 Expenditure

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Appendix E

Workforce Overview

**Table E-1 Current Site C Jobs Snapshot
 (April 2018 to June 2018)¹²**

Type of Work	April 2018		May 2018		June 2018	
	Number of B.C. Workers	Number of Total Workers	Number of B.C. Workers	Number of Total Workers	Number of Total Workers	Number of B.C. Workers
Construction and Non-Construction Contractors ¹³ (including some subcontractors). Excludes work performed outside of B.C. (e.g., manufacturing)	1,421	1,737	1,765	2,160	1,867	2,363
Engineers and Project Team ¹⁴	469	505	593	650	664	730
TOTAL	1,890	2,242	2,358	2,810	2,531	3,093

Employment numbers provided by Site C contractors are subject to revision. Data not received by project deadline may not be included in the above numbers.

BC Hydro has contracted companies for major contracts, such as main civil works, who have substantial global expertise. During the month of June 2018, there were three workers in a specialized position working for Site C construction and non-construction contractors, which were subject to the Labour Market Impact Assessment process under the Federal Temporary Foreign Worker Program. Additionally, there were 26 management and professionals working for Site C construction and non-construction contractors through the Federal International Mobility Program.

¹² Employment numbers are direct only and do not capture indirect or induced employment.

¹³ Construction and Non-Construction Contractors includes work performed on Site C dam site, transmission corridor, reservoir clearing area, public roadwork, worker accommodation and services.

¹⁴ Engineers and Project Team are comprised of both on site and off site workers. The Project Team includes BC Hydro construction management and other offsite Site C project staff. An estimate is provided where possible if primary residence is not given.

**Table E-2 Preliminary Site C Apprentices Snapshot
(April 2018 to June 2018)**

Month	Number of Apprentices
April 2018	29
May 2018	37
June 2018	56

Data is subject to change based on revisions received from the contractors.

Table E-3 Current Site C Job Classification Groupings

Biologists and laboratory	Carpenters	Inspectors	Construction managers / supervisors	Crane operators	Electricians	Engineers
Foresters	Health care workers	Heavy equipment operators	Housing staff	Heating, ventilation, and air conditioning	Kitchen staff	Labourers
Mechanics	Millwrights	Office staff	Pipefitters	Plumbers	Sheet metal workers	Truck drivers
Underground mining	Welders	Surveyors	Security guards	Boilermakers	Cement Masons	Crane Operators
Ironworkers						

**Table E-4 Aboriginal Inclusion Snapshot
(March 2017 to March 2018)**

Month	Number of Indigenous Workers
June 2017	213
July 2017	193
August 2017	181
September 2017	172
October 2017	132
November 2017	96
December 2017	78
January 2018	118
February 2018	190
March 2018	213
April 2018	163
May 2018	226
June 2018	240

The information shown has been provided by BC Hydro's on-site construction and non-construction contractors and their subcontractors that have a contractual requirement to report on Indigenous inclusion in their workforce.

Employees voluntarily self-declare their Indigenous status to their employer and there may be Indigenous employees that have chosen not to do so; therefore, the number of Indigenous employees may be higher than shown in the table.

As with any construction project, the number of workers, and the proportion from any particular location, will vary month-to-month and also reflects the seasonal nature of construction work. The number of workers will also vary as a contract's scope of work is completed by the contractor.

Women

In June 2018, there were 404 women working for Site C construction and non-construction contractors. The number of women was provided by on-site construction and non-construction contractors and engineers that have a contractual requirement to report on the number of women in their workforce.

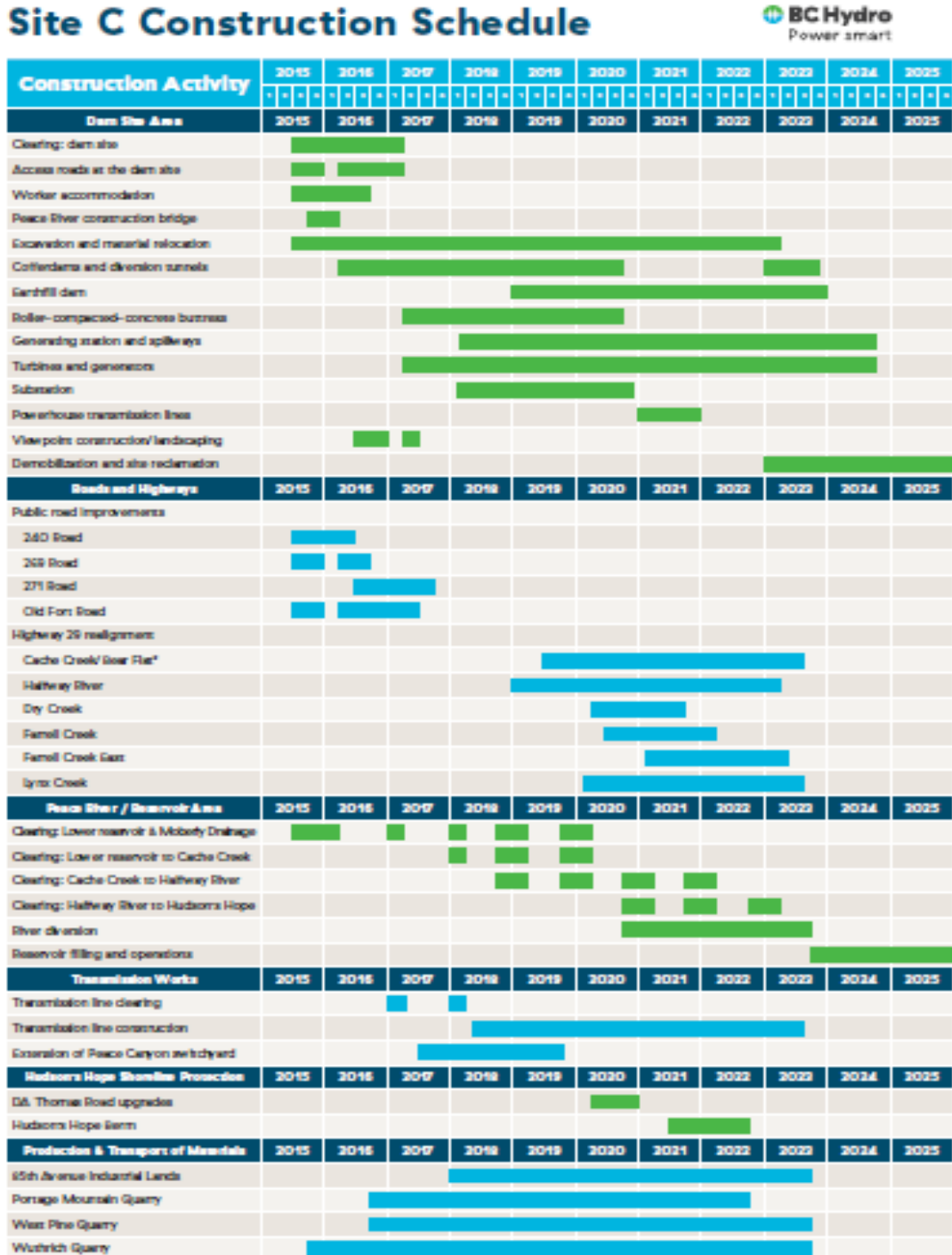
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Appendix F

Site C Construction Schedule

Table F-1 Site C 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 activity. For details and schedule map change, see the project website. January 2018