
Site C Clean Energy Project

Quarterly Progress Report No. 3

F2016 Fourth Quarter

January 2016 to March 2016

CONFIDENTIAL

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s.16,s.17	

1 Project Status

This Quarterly Progress Report No. 3 (**Report No. 3**) provides information concerning the Site C Clean Energy Project (**Project**) covering the period from January 1, 2016 to March 31, 2016.

1.1 Overview and General Project Status

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

Construction activity for the Site C Project reduced slightly through the winter season, as expected, but has increased in the spring with approximately 650 workers on site in March. The Peace River Construction Bridge was completed on schedule and on budget on March 31, 2016. On the north bank of the dam site, construction of the North Bank Access and River Roads are still in progress. A design revision to the gully embankment section of the North Bank Access Road was required to support the existing east gully slope due to movement. Embankment construction work was resumed in February, 2016. River Road, which provides access to the Peace River Construction Bridge's North Approach, has been completed sufficiently and is being used to provide access to the bridge. Final completion of River Road is scheduled for late July. Left (north) bank excavation works is under way. Over 900 hectares of clearing has been completed between the north and south bank of the dam site and the lower reservoir. Merchantable logs harvested from the North Bank have been delivered to local mills in Fort St. John and logs from the South Bank will be delivered to local mills now that the Peace River Construction Bridge is complete.

Construction of the Worker Accommodation Camp continues with the Phase 1 opening of 300 rooms and the onsite Construction Management Site Office infrastructure completed in time for occupation on March 1, 2016. Work remains on track for completion of Phase 2 (an additional 900 rooms) by the end of June.

Peace River Hydro Partners mobilized to site on March 22, 2016. Recruitment for administration of this major contract has progressed and all efforts are focused on providing substantial opportunities for local candidates. Acceptance of submittals to start physical work at site is behind and starting to impact the schedule to start the right (south) bank drainage tunnel.

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

Table 1 provides a dashboard based on the Project status as at March 31, 2016.

Table 1 Project Status Dashboard

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

Status as of:		March 31, 2016	Overall:	●
Overall Assessment	●	The Project is on track for overall scope and schedule. The Project is on track with the Project completion date of November 2024 ¹ .		
Schedule ISDs	●	The Main Civil Works contractor is currently one month behind, however the overall schedule and progress remains on track to achieve the planned In Service Dates.		
Cost	●	The project is monitoring and evaluating some specific cost pressures and is conducting detailed budget reviews to identify opportunities for savings. Overall cost forecast remains on track and total project cost is forecast to be within budget. There have been no draws on Treasury Board reserve.		

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

Status as of:	March 31, 2016	Overall:
Permits and Environmental	<p><u>Provincial Permits:</u> Some permit applications are currently under review by Forest, Lands and Natural Resource Operation, but have not yet been issued. It is anticipated that these permits will be issued in time for the specific construction activities to commence as scheduled. The Water License was issued in February 2016.</p> <p><u>Federal Authorizations:</u> Applications for Main Civil Works and operations were submitted to both Transport Canada and Fisheries and Ocean Canada for review. Anticipated in May 2016.</p>	
Risks	Identified risks are being managed and treatments are in place or planned. For details see Section 4 Material Project Risks below.	
Aboriginal Relations	Impact Benefit Agreement offers have been made to all Treaty 8 First Nations significantly affected by the Project.	
Regulatory and Litigation	Decisions made by the Crown may be subject to additional judicial reviews by First Nations and others who may oppose the project.	
Safety	There was one Level 1 safety incident and three Level 2 injuries at the construction site in this quarter.	

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

1.2.1 Aboriginal Consultation

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

Efforts are ongoing to conclude impact benefit agreements with ten Aboriginal groups. s.16,s.17
s.16,s.17

1.2.2 Litigation

Of seven legal challenges of major environmental approvals and permits, two were discontinued, four were dismissed by the courts, one decision is pending, three appeals were filed and one appeal was heard by the BC Court of Appeal and a decision on that appeal is pending. In addition, two appeals of BC Hydro's water licence have been filed with the Environmental Appeal Board. The details of the various proceedings are summarized in Table 2 below.

Table 2 Litigation Status Summary

Outcome		Date
Federal Court : Federal Environmental Approval		
Mikisew Cree Athabasca Chipewyan	Two judicial reviews were discontinued after agreements were reached with BC Hydro and the federal government	July 16, 2015
Peace Valley Landowner Assoc.	Dismissed; no appeal filed	August 28, 2015
Prophet River First Nation West Moberly First Nations	Dismissed Appeal filed No hearing date yet	August 28, 2015 September 30, 2015 TBD: Sept./Oct. 2016
BC Supreme Court : Provincial Environmental Assessment Certificate		
Peace Valley Landowner Assoc.	Dismissed Appeal filed Hearing held Decision pending	July 2, 2015 July 30, 2015 April 4 – 5, 2016
Prophet River First Nation West Moberly First Nations	Dismissed Appeal filed No hearing date yet	September 18, 2015 October 19, 2015
BC Supreme Court : Provincial Permits		
Prophet River First Nation West Moberly First Nations	Injunction application dismissed Hearing of Petition complete Decision pending	August 28, 2015 November 17-23, 2015 and February 2, 2016
Environmental Appeal Board		
West Moberly and Prophet River First Nations	Water Licence Appeals filed No hearing date yet	March 29, 2016

Outcome		Date
Other Proceedings		
BC Hydro v Boon et al. (Rocky Mountain Fort)	Civil Claim filed Injunction decision	January 29, 2016 February 29, 2016
Building Trades v BC Hydro	Civil claim filed Response to claim filed	March 2, 2015 April 10, 2015

Status as of March 31, 2016

1.2.3.1 Rocky Mountain Fort Protest

From January to February 2016, a group of individual protestors prevented BC Hydro and its contractor from safely clearing an area known as "Rocky Mountain Fort", upstream of the confluence of the Moberly and Peace Rivers. BC Hydro filed a civil claim and applied to BC Supreme Court for an injunction to remove the protestors from the area. The Court granted the injunction order on February 29, 2016; the protestors respected the order and left the area; and clearing proceeded in March 2016. There have been no further steps in the civil claim.

1.2.3.2 Building Trades Claim

In 2015, Building Trades representatives filed a claim in BC Supreme Court alleging that certain labour provisions in BC Hydro's contracts, such as "no organizing" at site, were contrary to the Charter. In May 2015, BC Hydro signed the "Poly-Party" memorandum of understanding and, although settlement of the claim was not a condition of the MOU, no further steps have been taken in the litigation since the MOU was signed.

1.2.3 Permits and Government Agency Approvals

1.2.3.3 Background

In addition to the Environmental Assessment Certificate and the Federal Decision Statement, provincial permits and federal authorizations are required to construct the Project. Timing of the application for these permits and authorizations is staged and

aligned with the construction schedule, availability of detailed design information, and by Project component.

1.2.3.2 Provincial Permits:

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

Table 3 below provides a list of permits and authorizations that have been issued for site preparation works at the dam site, for vegetation clearing and quarries/pits. The project received three authorizations in this reporting period. Additional permits were issued in February 2016.

Table 3 Site Prep Works Permits and Authorizations

Required Permit/Approval	Process Initiation/ Application Date	Approval Date / Forecast Decision Date
BC Environmental Assessment Certificate Federal Decision Statement (revised date)	Submitted EIS Jan 2013	October 14, 2014 – EAC November 25, 2014 – FDS
Crown Land tenures	April 2014	July 7, 2015
Water Act (section 889)	April 2014	July 7, 2015
Occupant Licence to Cut	April 2014	July 7, 2015
Mines Act (Notice of Works)	April 2014	July 7, 2015
Wildlife Act	April 2014	July 7, 2015
Heritage Conservation Act – Alteration Permit Amendment	November 2014 November 2015	July 14, 2015 March 31, 2016
Fisheries Act Authorization – Site Preparation	October 2014	September 30, 2015
Navigation Protection Act – Site Preparation	October 2014	September 29, 2015
Removal of land from Agricultural Land Reserve	December 2014	April 2015
Floating Dock Installation – Notification	October 2015	October 30, 2015
Peace River Safety Buoys – Notification Amendment	November 2015	November 3, 2015
Water Licence - Diversion & Storage	2008	February 29, 2016
Fisheries Act – Main Civil Works and Operations	December 2015	Forecast: May 2016
Navigation Protection Act – Main Civil Works and Operations	October 2014	Forecast: May 2016
1 st Leaves to Commence	February 2016	April 1, 2016

Required Permit/Approval	Process Initiation/ Application Date	Approval Date / Forecast Decision Date
34 Permit applications currently under review with Forests, Lands and Natural Resource Operations	Various dates in 2015	Forecast: Dec. 2015 to May 2016
Renewal and Future permit applications (Year 2-3)	February 2016	Forecast: September 2016
Renewal and Future permit applications (Years 3-8)	TBD	TBD

The Water Licence for diversion and storage has been approved by the Water Comptroller's office. The review included a written hearing with 2 rounds of comments and responses as well as First Nations consultation. The hearing portion of the process was completed in December 2015 and the Water Comptroller made a decision on February 29, 2016. Two appeals were filed with the Environmental Appeal Board. The first Leave to Commence Construction was issued on April 1, 2016.

1.2.3.3 Future Provincial Permits:

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

Table 4 General List of Future Permit Requirements

Project Component	Key Permit Requirements	Forecast Date
Main Civil Works	2 nd Leave to Commence Construction 3 rd Leave to Commence Construction Wildlife Act (fish, amphibian salvage) Water Act (section 8 – short term use)	Estimated: May 2016 Estimated: July 2016 Estimated: June 2016 Estimated: June 2017
Highway 29 Re-alignment (Cache Creek and Halfway River sections)	Land, Water, Wildlife, Heritage Conservation, Forest Acts	June 2016
Other sections	Land, Water, Wildlife, Heritage Conservation, Forest Acts	Spring 2017 and beyond
Transmission	Land, Water, Wildlife, Heritage Conservation, Forest Acts	August 2016
Quarries/Pits (West Pine)	Land, Water, Wildlife, Heritage Conservation, Forest, Mines Acts	Spring 2017
Mitigation Works (e.g., Fish and Wildlife)	Water Act, Wildlife Act	TBD

Assumptions

- Permit requirements listed are general in nature. Additional permits may be identified and required under the various acts as detail design and construction proceeds for the different Project components
- The date required is subject to change based on changes to the construction design, methods and/or schedule and the consultation process currently being discussed with the Province, DFO and Transport Canada

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

1.2.3.4 Future Federal Authorizations:

The *Navigation Protection Act* application for construction and reservoir filling is complete and Transport Canada is consulting on components in preparation for authorization issue. A *Fisheries Act* authorization is also required and BC Hydro submitted the application in December 2015. The application includes the authorization for reservoir filling as well as operations. The consultation is being conducted simultaneously for these two permits and began in late December 2015.

1.2.4 Engineering and Construction**1.2.4.1 Engineering**

The implementation design of the Power Intakes, Penstocks and Spillways is progressing with tender specifications and drawings targeted to be complete by mid-May 2016 for the Intakes and Penstocks, and end of June 2016 for the Spillways. The tender design schedule for the powerhouse has been updated based on the award date for the turbine generator contract with completion by end of August 2016. Main Civil Works implementation design is continuing. The issuing of the construction drawings commenced following contract award, and as of the end of March, 55% of the drawings have been issued. Implementation design is underway for the 500kV transmission lines, Peace Canyon 500kV Gas Insulated Substation and Site C substation. A Technical Advisory Board meeting was held during the week of April 25, 2016.

1.2.4.2 **Construction**

See Appendix F for the full preliminary construction schedule.

North (Left) Bank Site Preparation:

Key contract scope for North Bank Site Preparation includes constructing approximately 7 km of access roads and excavation of approximately 2 million cubic metres of material.

- North Bank embankment construction commenced in February 2016 and 82 per cent of excavation is now completed.
- Approximately 29 per cent of the River Road subgrade is completed, and the road is in usable condition. Final grade of the River Road is expected to be completed in July 2016.
- The North Bridge Approach was completed in February 2016.
- Clearing on the North Bank has now been completed (approximately 220 hectares).

South (Right) Bank Site Preparation:

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

- All 620 hectares have now been cleared on the South Bank.
- The Peace River Construction Bridge was completed on schedule and on budget on March 31, 2016.

- Work on the Septimus rail siding will resume in Q1 of F2017 and there is currently no anticipated consequence of delay to the Main Civil Works Contractor at this time.
- Construction of temporary substation pad access roads to final grade will continue in 2016. In-service date for the Temporary Substation is anticipated for July 2016 and is progressing according to plan.

Worker Accommodation:

- Phase 1 of the Worker Accommodation camp (300 beds) was completed on February 29, 2016, on schedule.
- All of the modules for the Phase 2 Core and 90 per cent of the modules for the Phase 2 dormitories have been delivered and set in place (1,200 beds).
- Additional work such as electrical, plumbing, mechanical, telecommunications, etc. is in progress for the scheduled Phase 2 In-Service date of June 25, 2016.

Ministry of Transportation and Infrastructure Public Road Upgrades

The Ministry of Transportation and Infrastructure's contractor, Al Simms and Sons, was able to complete the upgrading of 269 Road (0.9km) including paving prior to winter shutdown. The Contractor has also commenced work on 240 Road (1.5km), with widening and embankment work now complete. Paving and finishing work on 240 Road is scheduled to be completed in June 2016.

Main Civil Works:

The Main Civil Works contract was signed on December 18, 2015 with Peace River Hydro Partners, a partnership between ACCIONA Infrastructure Canada Inc., Samsung C&T Canada Ltd, and Petrowest Corporation. Peace River Hydro Partners mobilized to site on March 22, 2016. The scope of the Main Civil Works contract is described in [Table 5](#).

Table 5 Scope of Main Civil Works Contract

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

Quality Management:

Implementation and monitoring of Quality Control and Quality Assurance Plans are required of all contractors. [Table 6](#) below identifies quality management non-conformity instances during the quarter ending March 31, 2016.

Table 6 Quality Management Non-Conformity Report Metrics

Contract	Contractor	Reported this period	Closed this period	Reported to date	Closed to date
North Bank Site Preparation	Morgan Construction & Environmental	2*	3	6	6
South Bank Site Preparation	Duz Cho Construction	0	N/A	0	N/A
Peace River Construction Bridge	Saulteau Ruskin **	10**	10	11	11
Main Civil Works	Peace River Hydro Partners	0	N/A	0	N/A

* The two non-conformity incidences reported were concrete anchor block installation (closed) and commencement of work prior to authorization (closed).

**The bridge is in service and all Non-Conforming Reports are closed.

1.2.5 Safety

There was one Level 1 safety incident and three Level 2 injuries at the construction site in this quarter. Table 7 below identifies the project safety metrics during the quarter ending March 31, 2016.

Table 7 Safety Metrics

	Reported this Period	Reported since Inception
Fatality & Serious Injury ²	0	0
Severity (number of calendar days lost due to injury per 200,000 hours worked)	0	2*
Lost Time Injury Frequency (number of injuries resulting in lost time per 200,000 hours worked)	0	2*
Contractor, employee, public near miss reports	43	66
Lost time incidents	0	2
Equipment/property damage reports**	1	20

*Complete information not provided by the contractors

**Types of equipment and property damage include vehicle damage, minor electrical fire damage, etc.

² Excludes health events unrelated to work standards.

One Level 3 employee injury was reported and 40 contractor injuries were reported of which 39 were Level 3 injuries and one was a Level 2 injury. None resulted in lost time. Of the near miss reports, 95% were Level 3 type (lowest severity). The Level 1 Contractor Near Miss involved a contract employee falling into the Peace River while attempting to access a boat. Of the near misses reported, two were Public Near Misses, involving a member of the public accessing the construction site and rip rap rock falling onto a public road off a haul truck.

1.2.6 Environment

1.2.6.1 Mitigation, Monitoring and Management Plans

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

In accordance with EAC conditions, during the reporting period the Recreation Program was submitted (January 28, 2016). In accordance with the mitigation and management plans the following program reports were submitted:

- Housing Plan and Housing Monitoring and Follow-Up Program: Rental Apartments – Interim Monitoring Report (January 22, 2016)
- Traffic and Pavement Monitoring Report (January 22, 2016)
- Vegetation and Wildlife Mitigation and Monitoring Plan 2015 Annual Report (January 2016)

1.2.6.2 Environmental Compliance Inspections

Inspectors from Environmental Assessment Office, Canadian Environmental Assessment Agency and Forest, Land and Natural Resource Operations attended a

two day inspection of Site C construction in December 2015. Reports were received and responded to in March 2016.

In late March 2016, the Environmental Assessment Office attended another inspection. Following that inspection, an Order was issued that focused on sediment and erosion control. Some corrective actions were put in place prior to the order being issued. Secondary actions that had longer timelines associated with them are in progress and timelines are being met.

Ongoing inspections will be taking place frequently. In addition, independent environmental monitors, contractor and BC Hydro monitors are conducting compliance checks on an ongoing basis.

1.2.6.3 *Heritage*

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

During the reporting period, which is predominantly during winter conditions, heritage mitigation work was focused on compliance with construction environmental protection plans in active work areas. This included ensuring communication about the status of heritage sites to contractors, flagging and marking of heritage sites within work areas as required, as well as concurrent monitoring or surface inspections of known archaeology sites was performed.

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

Agricultural stakeholder consultation undertaken to address Environmental Assessment Certificate Condition 30 requirements and to support the development of the Agriculture Mitigation and Compensation Plan concluded during the reporting period. Working with a Consultation Steering Committee comprised of staff from BC

Hydro, the Ministry of Agriculture, and the Ministry of Energy and Mines to guide consultation, a Consultation Summary Report and meeting summaries were prepared and are available on the project website.

In accordance with the requirements of the condition, the Framework for an Agricultural Mitigation and Compensation Plan will be submitted to the Peace River Regional District and the District of Hudson's Hope for review by July 2016. A draft Agricultural Mitigation and Compensation Plan will be provided for review in January 2017, and a final plan filed with the BC Environmental Assessment Office, Peace River Regional District, District of Hudson's Hope, the Ministry of Agriculture and the Ministry of Forests, Lands and Natural Resource Operations by July 2017. In addition, the Framework, draft Plan and final Plan will be posted on the Site C website for review, and notification will be provided to affected land owners, tenure holders, agricultural stakeholders, and consultation participants.

1.2.7 Employment

Contractors submit monthly workforce data electronically to BC Hydro. [Table 8](#) shows a snapshot of the number of workers for this quarter by month.

Table 8 Site C Jobs Snapshot

Month	# BC Workers*	# Total Workers*
January 2016	381	564
February 2016	492	691
March 2016	490	666

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

See [Appendix E](#) for additional workforce information. The number of workers continues to vary as the construction work progresses. For example, it is expected that the number of workers will increase overall following the Main Civil Works contractor's mobilization to site in March 2016. The Main Civil Works contractor,

Peace River Hydro Partners, has indicated that approximately 1,500 workers will be working at the peak of construction. As these job opportunities become available, they will be posted on the WorkBC website as well as on the local Fort St. John's WorkBC Employment Centre's website (Employment Connections).

BC Hydro will continue to work with the contractors on site to facilitate reporting of workforce information such as the types of jobs, number of apprentices, and the diversity of their workforce. Some preliminary data is available but we anticipate being in a position to more thoroughly report on these additional categories of information as the construction progresses and the size of the work force increases.

1.2.8 Community Engagement & Communication

1.2.8.1 Local Government Liaison:

BC Hydro concluded community measures agreements with the District of Taylor (January 2014) and the District of Chetwynd (January 2013). BC Hydro continues to meet and communicate with senior staff from the District of Taylor and the District of Chetwynd to review the status of implementation of the measures in their respective community measures agreements and to provide each community with a regular status update.

BC Hydro concluded a final community measures agreement with the City of Fort St. John, and a joint news release was issued on February 3, 2016. The formal signing of the legal agreement is expected to take place on April 22, 2016, and BC Hydro and the City will establish a regular committee to oversee implementation of the agreement.

Negotiations are also continuing with the District of Hudson's Hope and the Peace River Regional District with respect to a Site C community measures agreement focused on mitigation. A separate Legacy Benefit Agreement was reached with the Peace River Regional District in 2014 that will provide legacy benefit payments to

the PRRD and its member municipalities for 70 years once the Project is operational.

A Regional Community Liaison Committee has been established which includes the local MLA's, elected community officials and Aboriginal leadership. BC Hydro hosted the first meeting in March with the second to follow in April. It is anticipated that the frequency may reduce over time but will occur no less than four times annually.

Participants expressed an interest in participating to ensure they receive information about the Project and have a timely opportunity to raise issues directly to BC Hydro during Project construction.

1.2.8.2 Business Liaison and Outreach:

BC Hydro along with the BC Chamber of Commerce jointly hosted job fairs and business-to-business networking sessions in the January to March period of 2016. Sessions were held in Chetwynd, Dawson Creek, Fort Nelson, Fort St. John, Prince George, Mackenzie, Quesnel and Tumbler Ridge. Contractors attending included Peace River Hydro Partners, ATCO Two Rivers Lodging and Duz Cho Construction. There was a large interest in the region, as over 5,100 job seekers attended the job fairs and more than 700 businesses participated in the business-to-business networking sessions. Table 9 shows the breakdown of the number of job fair attendees and business participants by location.

Table 9 Site C Job Fairs and Business Networking Sessions

Community	Job Fair Attendance (# of people)	Business Participation (# of businesses)
Chetwynd	499	79
Dawson Creek	1,040	178
Fort Nelson	184	23
Fort St. John	1,484	240

Community	Job Fair Attendance (# of people)	Business Participation (# of businesses)
Mackenzie	129	13
Prince George	1,018	141
Quesnel	442	35
Tumbler Ridge	364	33
TOTAL	5,160	742

1.2.8.3 Community Relations and Consultation:

BC Hydro continued to implement its construction communications program during the quarter. Bi-weekly Construction Bulletins were issued throughout this period. With construction activities increasing, there was an increase in public enquiries during the quarter. In total, BC Hydro received 1,642 public enquiries between January and March 2016, up from 996 the previous quarter. The majority of these enquiries continued to be about business and job opportunities, although there were also some construction impact concerns from local residents. [Table 10](#) shows the breakdown of some of the most common enquiry types:

Table 10 Public Enquiries Breakdown

Enquiry Type	January	February	March
Job Opportunities	457	482	283
Business Opportunities	150	118	50
Construction Impact	4	8	11

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

1.2.8.4 Communications and Government Relations:

Based on a search using the media database Infomart, there were a total of 405 media stories in the January – March 2016 period on the Site C Project, compared to 277 stories in the previous quarter. Key communications activities that contributed to this media attention included:

- On January 7, 2016, BC Hydro issued a news release announcing the first phase of business-to-business networking sessions and job fairs.
- On February 3, 2016, BC Hydro issued a news release announcing the second phase of business-to-business networking sessions and job fairs.
- On February 4, 2016, BC Hydro and the City of Fort St. John announced that they have reached an agreement-in-principle for a community measures agreement related to Site C.
- On February 15, 2016, BC Hydro issued a news release announcing \$50,000 in funding for emergency and transitional housing programs in Fort St. John.
- On February 25, 2016, BC Hydro provided a technical briefing to the B.C. Press Gallery in Victoria.
- On March 14, 2016, BC Hydro issued a news release summarizing the attendance at the business networking sessions and job fairs and provided information about how to learn more about jobs and business opportunities.
- On March 30, 2016, BC Hydro announced that the temporary Peace River Construction Bridge had been completed on time and on budget.
- On March 31, 2016, BC Hydro issued an Information Bulletin detailing the latest job statistics at the Site C construction site.

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

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

- \$25,000 to Sky's Place, a second stage housing program for women with children who are leaving abusive relationships;

- \$25,000 to the Meaope Transition House for Women that provides a 24-hour safe and secure shelter for women who are victims of violence or abuse, and their children; and
- \$200,000 to the Salvation Army Northern Centre of Hope to support shelter and transitional beds.

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

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

In April 2015, BC Housing completed a Request for Information seeking to understand market capacity for construction of energy efficient housing and availability of a suitable site for 50 units. BC Housing reviewed the findings of the Request for Information with BC Hydro and stated they were satisfied that there is sufficient capacity in the market for construction of an R2000 energy efficient building and adequate available sites.

1.2.8.6 *Labour and Training Plan:*

In accordance with Environmental Assessment Condition 53, BC Hydro is to provide additional day-care spaces in Fort St. John to increase spousal participation in the labour market. BC Hydro and School District 60 have agreed to pursue negotiations

toward a contribution agreement for BC Hydro to provide capital funding for a new child care facility in the new elementary school to be built in Fort St John. As of March 31, 2016, negotiations continue to be on track.

1.2.8.7 Health Care Services Plan and Emergency Service Plan:

A Project Health Clinic opened on March 1, 2016, in conjunction with the opening of Phase 1 of the Worker Accommodation facility. In addition, the Project team has met with B.C. Ambulance Service local staff to provide information about the Project's plan for first aid and emergency transport of workers.

1.2.8.8 Properties Acquisitions:

In this reporting period, BC Hydro continued discussions with land owners including those who own land in Cache Creek/Bear Flat area and lands impacted by the conveyor dam site area (three land holdings) and the transmission line (two land holdings). BC Hydro concluded arrangements to allow access to private properties in the Cache Creek/Bear Flat area for activities such as site investigation, wildlife and forestry studies and appraisals and those activities are now underway.

1.3 Key Procurement and Contract Developments

The Project procurement approach was approved by the Board of Directors in June 2012 for the construction of the Project. The procurement approach defined the scope of the major contracts and their delivery models, as summarized in Table 11 below.

Table 11 Major Project Contracts and Delivery Models

Component	Contract	Procurement Model	Anticipated Timing
Worker Accommodation	Worker Accommodation and site services contract	Design-Build-Finance-Operate-Maintain	Completed
Earthworks	Site Preparation contracts	Predominantly Design Bid Build	Various, through F2017
	Main Civil Works contract	Design-Bid-Build	Completed

Component	Contract	Procurement Model	Anticipated Timing
Reservoir Clearing	Multiple reservoir clearing contracts to be awarded over 7-8 years	Design-Bid-Build	1 Agreement awarded for the Lower Reservoir
Generating Station and Spillways	Turbines and Generators contract	Design-Build	Completed
	Generating Station and Spillways Civil contract	Design-Bid-Build/ Design-Build	Commence: Q1 F2017
	Hydro-mechanical Equipment contract	Supply Contract	Commence: Q1 F2017
	Powertrain Balance of Plant Equipment Supply	Supply Contracts	Commence: 2017 – 2018
	Completion Contract (Powertrain Balance of Plant Equipment Installation)	Install Contract	Commence: 2017
Electrical and Transmission Infrastructure	Transmission Lines contract	Design-Bid-Build	Various, through F2017
	Site C substation contract	Design-Bid-Build	F2017
	Peace Canyon Substation upgrade contract	Design-Build	Contract Award: Q2 F2017
Highway 29 Realignment	Design-Bid-Build in partnership with BC Ministry of Transportation and Infrastructure with anticipated award of the first contracts in 2017 with subsequent contract being awarded through 2018 - 2019.		

1.3.1 List of Major Contracts Awarded (Excess of \$50 million)

Since inception of the Project, four major contracts (i.e. greater than \$50 million in value) have been awarded: Worker Accommodation, Site Preparation: North Bank, Main Civil Works and Turbine-Generator. 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 is shown in Table 12 below.

Table 12 Major Project Contracts Awarded

Work Package	Contract Value	Current Status
Site Preparation: North Bank (\$ million)	52	Contract executed July 2015.
Worker Accommodation (\$ million)	464	Contract executed September 2015
Main Civil Works (\$ billion)	1.75	Contract executed December 2015
Turbine-Generator (\$ million)	464	Contract executed March 2016

In 2016, procurement of two major work packages will commence: Generating Station and Spillways Civil contract and Hydro-mechanical equipment. Preparations for the procurement of these work packages are currently on track.

1.3.2 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.

1.3.3 Contract Management

1.3.3.1 Material Changes to the Major Contracts

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

1.3.3.2 Contingency and Project Reserve Draws

The project is on track to manage budget within the approved amounts including contingency. The project budget includes contingency of \$794 million in nominal dollars. There have been no draws on project reserve to date. See [Appendix D](#) for more detailed information regarding contingency and project reserve draws.

1.4 Plans During Next Six Months

The key milestones for the next six months are listed in [Table 13](#):

Table 13 Key Milestones

Milestone	Final Investment Decision Plan Date: ³	Revised Plan: ⁴	Forecast Date	Variance: ⁵ (months)	Status: ⁶
Ministry of Transportation & Infrastructure: North Bank Roads (240) Work	October 2015	October 2015	June 2016	-8	Late: ⁷
Site Prep North Bank Complete	February 2016	June 2016	July 2016	-1	At Risk
North Bank Road Gully Section to River Road complete	January 2016	February 2016	July 2016	-5	Late
Phase 2 – Worker Accommodation	May 2016	June 2016	June 2016	0	On Track
Phase 3 – Worker Accommodation	July 2016	August 2016	August 2016	0	On Track
North Bank (271) Road complete	July 2016	June 2016	September 2016	-3	Late
Main Civil Works Commence North Bank Excavations	January 2017	April 2016	May 2016	-1	Late

1.5 Impacts on Other BC Hydro Operations

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

1.6 Site Photographs

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

³ Plan based on plan at Final Investment Decision, December 2014.

⁴ Revised Plan updated as of December 2015 to reflect start of construction activities and award of contracts.

⁵ Variance based on comparison of Forecast to Revised Plan.

⁶ Status based on comparison of Forecast to Revised Plan.

⁷ Work on North Bank Roads (240) rescheduled (not on critical path)

2 Project Schedule

2.1 Project In Service Dates

BC Hydro currently shows all in service dates on track per Table 14.

Table 14 Project In Service Dates

Description/Status	Financial Investment Decision Planned ISD ⁸	F2017-F2019 Service Plan ⁹	Status ¹⁰ and Comments (e.g., complete, on schedule, delayed, possibly delayed, probable delayed)
5L5 500kV Transmission Line	Oct. 2020	Sept. 2020	On Track
Site C Substation	Nov. 2020	Oct. 2020	On Track
5L6 500kV Transmission Line	July 2023	Sept. 2023	On Track
Unit 1 (First Power)	Dec. 2023	Dec. 2023	On Track
Unit 2	Feb. 2024	Feb. 2024	On Track
Unit 3	May 2024	May 2024	On Track
Unit 4	July 2024	July 2024	On Track
Unit 5	Sept. 2024	Sept. 2024	On Track
Unit 6	Nov. 2024	Nov. 2024	On Track

The approved Final Investment Decision schedule involved the first unit coming into service in December 2023. The Project has advanced implementation phase activities to mitigate schedule risk.

⁸ Based on plan at Final Investment Decision, December 2014

⁹ Based on BC Hydro F2017-F2019 Service Plan approved in January 2016.

¹⁰ Status based on comparison to BC Hydro F2017-F2019 Service Plan.

3 Project Costs and Financing

3.1 Project Budget Summary

Table 15 below presents the overall Project Budget, based on the Final Investment Decision (December 2014), represented in nominal dollars.

Table 15 Project Budget Summary

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

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

3.2 Project Expenditure Summary

Table 16 provides a summary of the Final Investment Decision approved *total* Project cost, the current forecast *total* Project cost and the variance between the two; and the plan *to date* amounts, the actual costs *to date* and the variance between the two.

**Table 16 Total Project Expenditure Summary (\$ million Nominal)
 Compared to Final Investment Decision**

Description	Final investment Decision	Forecast	Forecast vs Final Investment Decision Approved Budget	Final Investment Decision Plan to Date	Actuals to Date	Variance
Total Project Costs ¹	8,335	8,335		636	950	(314)
Treasury Board Reserve	440	440				
Authorized Project Cost	8,775	8,775		636	950	(314)

Table 17 provides a summary of the F2017-F2019 Service Plan *total* Project cost, the current forecast *total* Project cost and the variance between the two; and the plan *to date* amounts, the actual costs *to date* and the variance between the two.

**Table 17 Total Project Expenditure Summary (\$ million Nominal)
 Compared to F2017-F2019 Service Plan**

Description	F2017-F2019 Service Plan	Forecast	Forecast vs F2017-F2019 Service Plan	F2017-F2019 Service Plan to Date	Actuals to Date	Variance
Total Project Costs ¹	8,335	8,335		845	950	(105)
Treasury Board Reserve	440	440				
Authorized Project Cost	8,775	8,775		845	950	(105)

There is no variance between the *total* project costs approved in the Final Investment Decision and the total project costs approved in the F2017-F2019 Service Plan. Variances between the plan to date amounts occur due to differences in the timing of project implementation activities.

Variances are primarily due to earlier than planned expenditures related to Worker Accommodation and Main Civil Works. Further explanations are in Appendix D.

3.3 Internal Project Financing versus External Borrowings To Date

To date, all project funding has been from internal borrowings. In March 2016, the British Columbia Utilities Commission approved a Debt Hedging Regulatory Account that will capture the gains and losses related to the hedging of future debt issuance (which includes financing of expenditures related to Site C) over a 10 year period. In addition to portfolio adjustments that are currently being implemented whereby BC Hydro is reducing its exposure to variable rate debt and increasing its issuance of fixed rate debt, a strategy has been developed that recommends hedging 50% of BC Hydro's future forecasted borrowing requirements from F2017-F2024 through the use of derivative contracts.

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. See [Table 18](#) for a list of risks.

Table 18 Material Project Risks

Risk Event / Description	Risk and Response Summary	Trend in Risk Exposure. ¹¹
Delay to Permitting	<p>Permits and licences are still required for several portions of construction activity. Delays to these permits and licences will result in delays to the associated construction work. BC Hydro continues to consult with federal and provincial authorities, local government and First Nations to mitigate this risk. Awaiting the outcome of the judicial review of permits as described below. If BC Hydro is unsuccessful, this could result in a delay to the work underway and claims arising.</p> <p>The issue of the Site C Water License in February 2016 results in a decrease to BC Hydro's permitting risk exposure.</p>	↓
Litigation	<p>See section 1.2.2 and Table 2 for status of judicial reviews related to environmental approvals and permits. Two appeals of the Water License have been filed by West Moberly and Prophet River First Nations and an individual with the Environmental Appeal Board.</p> <p>There is a potential for additional legal proceedings. If any are successful, there may be delays.</p>	→
First Nations	<p>BC Hydro has made progress on negotiating agreements with First Nations and has reached substantive agreement with several First Nations. The status of specific negotiations is confidential at this time.</p> <p>Impact Benefit Agreements with First Nations provide First Nations with Project benefits and mitigate the risk of legal challenges.</p>	→
Market response to procurement	<p>There is a risk that strong competition does not occur during procurement, which may result in higher premiums, mark ups and overall prices on labour and materials. Risk has been mitigated via market soundings, robust RFQ process, honorariums for successful bidders, and other engagement activities. All three major procurement processes completed to date (Worker Accommodation, Main Civil Works, Turbine and Generators) have had positive responses.</p> <p>Market response risk will continue to be monitored and could be impacted if the project construction schedule is delayed significantly.</p>	→

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

14. Jan 16

Risk Event / Description	Risk and Response Summary	Trend in Risk Exposure. ¹¹
Labour Relations & Stability	<p>BC Hydro is using an inclusive labour approach with a managed open site. This allows for participation by all union and non-union labour groups and allows access to the largest pool of skilled and experienced labour.</p> <p>BC Hydro entered into a Memorandum of Understanding with certain BC Building Trades unions to achieve labour stability and a mix of labour representation on site, including building trades unions. All major contracts contain no strike, no lockout, and no raiding provisions.</p> <p>BC Hydro has noted active organization attempts by several labour organizations regarding work underway at the project site. This activity creates a risk of a work disruption or complaints to the Labour Relations Board. BC Hydro is managing this risk through consistent treatment of all labour organizations and ensuring that organization activities do not occur on the project site itself except as provided for under the Labour Relations Code.</p>	→
Geotechnical risks	<p>Key Geotechnical risks include unexpected shears encountered during construction; deeper than expected relaxation joints; bedding planes worse than expected; larger than expected deterioration of shale bedrock once exposed during construction; and Rock Rebound/Swell.</p> <p>Current strategies to mitigate geotechnical risks include:</p> <ul style="list-style-type: none"> • Transfer some degree of ground condition risks to the Contractor. • Design contracts which allow the contractor to respond to unexpected ground conditions (potentially through pre-agreed pricing). • Conduct field-scale trials to determine the response when shale bedrock is exposed to the elements. <p>Events associated with this risk have occurred on the North Bank gulley crossing, where unexpected slope failure occurred. BC Hydro has been working with the contractor to provide an engineered solution, and expects to address this issue within available funds. Once the MCW contract is beginning excavation BC Hydro will have additional information about this risk.</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. BC Hydro is partially mitigating this risk through regional job fairs to increase local participation and investments in skills training (\$1.5 million invested to date). This risk is also partially mitigated by consideration of labour stability during contractor selection.</p> <p>BC Hydro has now awarded the Main Civil Works contract, which fixes labour rates for the first two years. BC Hydro has also awarded the contract for the Turbines & Generators, which fixes labour costs for manufacturing activities. Labour costs under these contracts are consistent with BC Hydro estimating expectations.</p> <p>Based on current market conditions in the infrastructure and energy sector BC Hydro believes that the risk of unexpectedly high labour prices has decreased since the Final Investment Decision. There remains the potential for market conditions to shift in the future and this risk to increase.</p>	→
Construction cost – commodities and equipment	<p>Potential cost increases could arise if market prices for key commodities and equipment increase, or if overall market activity results in higher contractor profit margins.</p> <p>BC Hydro has completed procurement for several contracts associated with early works, Worker Accommodation, Main Civil Works and Turbines and Generators and it does not see early indications on market price pressures at this point. More information will be available upon conclusion of other major contracts such as Generating Stations and Spillways.</p> <p>BC Hydro retains exposure to fuel prices (generally diesel), which have decreased compared to prices in the budget. Fuel prices may increase in the future due to global market forces. BC Hydro will consider the potential to hedge these prices, where appropriate.</p> <p>Based on current market conditions in the infrastructure and energy sector BC Hydro believes that the risk of unexpectedly high market prices has decreased since the Final Investment Decision. There remains the potential for market conditions to shift in the future and this risk to increase.</p>	→

1-
12/1/16

Risk Event / Description	Risk and Response Summary	Trend in Risk Exposure ¹¹
Construction execution.	<p>Contractors may be unable to execute successfully on scope of contract with resulting costs to BC Hydro. Mitigation is via:</p> <ul style="list-style-type: none"> • Robust procurement processes to determine whether contractors have the capability to undertake their scope of work • A cross-functional construction readiness review to confirm contractor and BC Hydro readiness before authorizing the start on any specific scope of work • BC Hydro increased on site supervision to address recent environmental compliance issues <p>BC Hydro step-in rights under contracts to allow for correction in the case of contractor failure.</p> <p>BC Hydro has encountered challenges in the early stages of mobilization of the Main Civil Works contractor, resulting in an increase to this risk. BC Hydro is actively working to resolve the mobilization issues, and will have more information on this risk once the contractor's mobilization to site is fully complete.</p>	↑
Foreign exchange	<p>Some of Site C project costs are in foreign currency, and will be affected by fluctuations in the exchange rate between the Canadian Dollar and these foreign currencies. Approximately 20% of the Site C capital costs are based on foreign currency.</p> <p>The Canadian dollar has weakened significantly compared to the US dollar since the 2014 capital cost estimate was developed. However, the award of major contracts (particularly the Turbine-Generator 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 be larger than BC Hydro has seen to date, depending 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 US dollar.</p>	↓

F
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J
v

Risk Event / Description	Risk and Response Summary	Trend in Risk Exposure. ¹¹
Interest rate variability	<p>Interest during construction costs will be affected by fluctuations in market interest rates. Currently market interest rates are expected to be lower than assumed in BC Hydro's budget at the Final Investment Decision.</p> <p>In addition to portfolio adjustments that are currently being implemented whereby BC Hydro is reducing its exposure to variable rate debt and increasing its issuance of fixed rate debt, a strategy has been developed that recommends hedging 50% of BC Hydro's future forecasted borrowing requirements from F2017-F2024 through the use of derivative contracts.</p> <p>An application to the BCUC for a new Debt Hedging Regulatory Account that will capture the gains and losses related to the hedging of future debt issuance was approved by the BCUC in March 2016. Once this hedging program begins implementation BC Hydro expects interest rate risk to decline.</p>	→
Change in Tax Rates	<p>There is the potential for a change in tax rates that apply to Site C (e.g. PST, carbon tax) as well as the potential for a portion of GST to be unrecoverable.</p> <p>BC Hydro is monitoring potential changes to federal and provincial taxes and their potential effects. Where appropriate, BC Hydro will secure advance rulings on tax applicability to reduce uncertainty in treatment.</p>	→

Site C Clean Energy Project

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Appendix A

Site Photographs

PUBLIC

Figure A1 Construction of the L3 Gully Buttress

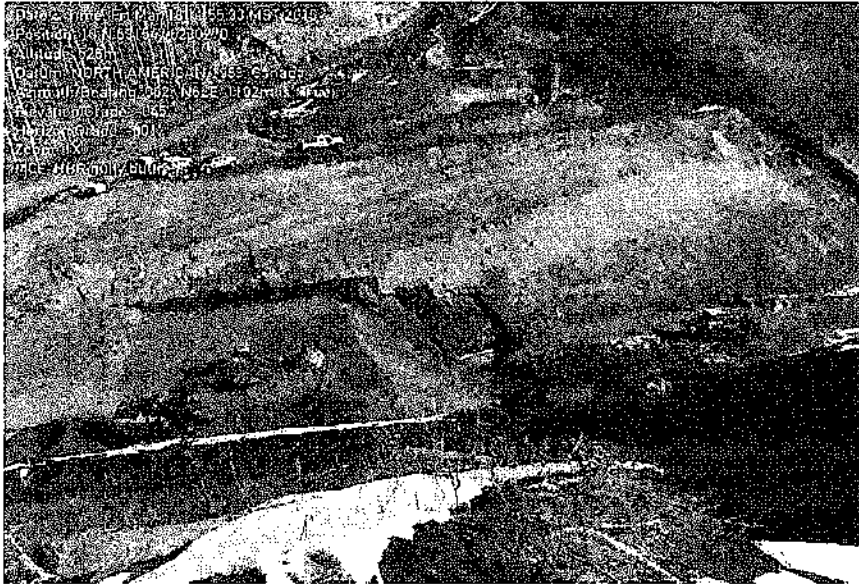


Figure A2 Contractor backfilling the approach to the Peace River Construction Bridge



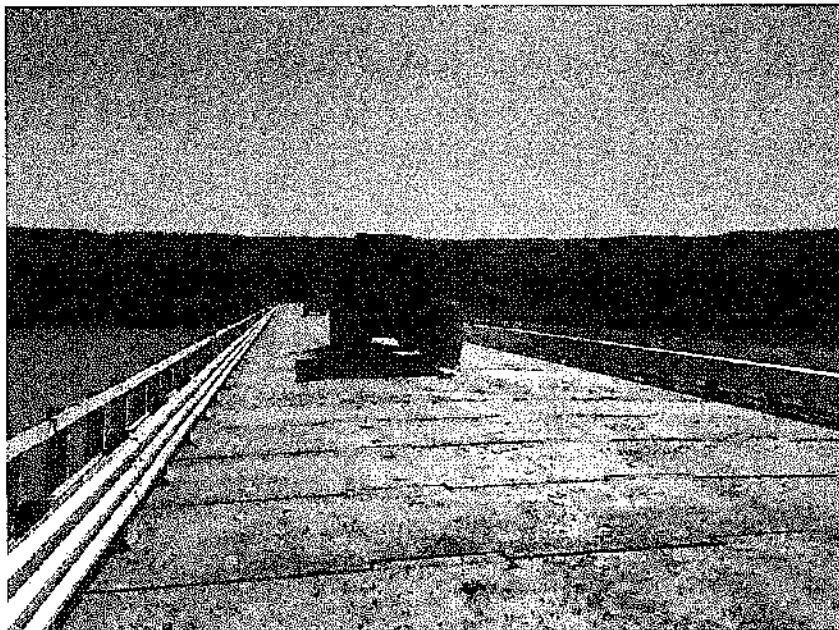
Figure A3 Maintenance of erosion and sediment control along storm ditch west of Worker Accommodation camp



Figure A4 Peace River Construction Bridge in Service



Figure A5 **Bridge Test Run and Open on
April 1, 2016**



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Appendix B

Summary of Individual Contracts

Exceeding \$10 million

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**Table B1 Summary of Individual Contracts
(Exceeding \$10 million)**

No.	Supplier	Scope of Supply	Original Contract Value (\$ million)	Current Contract Value (\$ million)	Expended To Date * (\$ million)	Current Contract Status	Comments
1	Golder Associates Ltd	Heritage Impact Assessment	10.2	23	23	Closed	
2	Klohn Crippen Berger Ltd.	Engineering Design Services	15.5	43	40	Active	Initial contract for design for core components; responsibility for Final Design of Main Civil Works and Generating Station and Spillways subsequently added.
3	SNC-Lavalin Inc.	Engineering Design Services	15.5	43	39	Active	Initial contract was for design for core components; responsibility for Final Design of Main Civil Works and Generating Station and Spillways subsequently added.
4	Paul Paquette & Sons Contracting	South Bank Clearing Services	s.17			Active	
5	s.17	Guard Services				Active	
6		Temporary Bridge Construction				Active	Timeline for bridge advanced to mitigate site access costs for Main Civil Works.
7	Morgan Construction	North Bank Site Preparation	52	52	33	Active	
8	ATCO Two Rivers Lodging Group	Worker Accommodation	464	464	33	Active	
9	Tetra Tech	Engineering Design – Hwy 29	6.5	13	12	Active	
10	Peace River Hydro Partners	Main Civil Works	1,748	1,748	153	Active	
11	Aon Reed Stenhouse Inc.	Course of Construction and Wrap Up Liability Insurance	15	15	15	Closed	Insurance prepaid through end of construction period
12	Halfway River First Nation SOS International JV	Health Clinic Services	s.17			Active	

No.	Supplier	Scope of Supply	Original Contract Value (\$ million)	Current Contract Value (\$ million)	Expended To Date * (\$ million)	Current Contract Status	Comments
13	Voith Hydro Inc.	Turbines - Generators	464	464	9	Active	
14	Duz Cho	Site Preparation – South Bank (2015 works)	s.17			Active	
15	Duz Cho	Site Preparation – South Bank (2016 works)				Active	

* Note: Expended to date = Total Invoiced, but excludes accruals

Site C Clean Energy Project

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Appendix C

Project Progression

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Table C1 shows: the current budget for each work category of work completed for the project and the life to date actuals to March, 2016.

Table C1 Summary of Work Categories

Work Activity	Current Total Budget	Total Life to Date Actuals	
	\$ million	%	\$ million

s.17

IDC	1,407	5	74
Expected Project Cost (P50)	8,335	11	950
Treasury Board Reserve	440	0	0
TOTAL	8,775	11	950

Note 1: Dam, Power Facilities and Associated Structures – includes Earthfill Dam, Approach Channel and RCC Buttress, North Bank Stabilization, Cofferdams, Dykes and Diversion Tunnels, Access Roads, Powerhouse, Spillways, Intakes and Penstocks, Turbines and Generators, Substation and Transmission

Note 2: Offsite Works – includes Highway 29, Clearing, Land and Rights

Note 3: Construction Management & Services – includes Worker Accommodation and Construction Management

Note 4: Once approved, contingency may be released to a specific contract or scope of work. When it is actually expended, it will be shown in "Total life to date actuals" on the related cost line.

Table C2 Progress of Early Works Summary

Clearing		Unit	Complete to date	% Compl.	Contract Quantity
Left Bank	Cleared	ha	218.0	100%	218.0
	Roads	km	7.9	100%	7.9
Right Bank	Cleared	ha	620.0	100%	622.1
	Roads	km	17.0	57%	30.0
Lower Reservoir	Cleared	ha	97.0	45%	215.9
	Roads	km	5.0	73%	6.8

Note: on site access roads excludes temp roads for forestry ops.

Left Bank Site Prep		Unit	Complete to date	% Compl.	Contract Quantity	
North Bank Road	Clearing	ha	2.46	100%	2.46	
	Excavation (Type D)	m3	291,911	82%	357,600	
	Embankment	m3	42,300	16%	265,740	
	Final Grade	m3	7,301	20%	37,000	
	Subgrade	km	2.9	94%	3.09	
	Final Grade	km	-	0%	3.09	
River Road	On Land	Clearing	ha	11.9	70%	17.0
		Excavation (Type D & A)	m3	74,400	100%	74,400
		Embankment	m3	40,568	40%	101,240
	In River	Zone A Embankment	m3	162,522	74%	219,042
		Zone B Embankment	m3	34,611	11%	329,621
	Both	Final Grade	m3	-	0%	3.77
		Subgrade	km	1.1	29%	3.77
		Final Grade	km	-	0%	16,391
	Left Bank Excavation		Clearing	ha	19	100%
		Excavated (incl. UGS)	m3	1,338,272	100%	1,338,272
North Bridge Approach	Zone A	m3	24,258	100%	24,258	
	Zone B	m3	42,379	100%	42,379	
	Final Grade	m3	539	100%	539	

Right Bank Site Prep		Unit	Complete to date	% Compl.	Contract Quantity
Septimus Road	Excavation	m3	5,000	100%	5,000
	Embankment	m3	8,000	100%	8,000
Substation Pad & Associated Roads	Cleared	ha	26	100%	26
	Excavation	m3	5,673	100%	5,673
	Embankment	m3	21,718	100%	21,718
South Bank Road					
Septimus Siding	Cleared	ha	53	100%	53
	Excavation	m3	27,000	100%	27,000
	Embankment	m3	30,024	100%	30,024
	Sub Ballast Produced	m3	10,225	100%	10,225
RB Bridge Approach	Embankment (est.)	m3	9,953	100%	9,953

Worker Accommodation			Unit	Complete to date	% Compl.	Contract Quantity
All Phases		Piles	no.	3,868	100%	3,868
Phase 1	Dorm	Mods delivered	no.	114	100%	114
		Mods set in place	no.	114	100%	114
	BCH Office	Mods delivered	no.	24	100%	24
		Mods set in place	no.	24	100%	24
Phase 2	Dorm	Mods delivered	no.	328	93%	351
		Mods set in place	no.	315	90%	351
	Core	Mods delivered	no.	96	100%	96
		Mods set in place	no.	96	100%	96
Phase 3	Dorm	Mods delivered	no.	31	22%	141
		Mods set in place	no.	8	6%	141
	Core	Mods delivered	no.	27	79%	34
		Mods set in place	no.	23	68%	34

Off Site Public Roads Upgrades		●	Unit	Complete to date	% Compl.	Contract Quantity
269 Road	Paved		km	9	100%	9
	Excavation		m3	8,019	100%	8,019
	Embankment		m3	5,054	100%	5,054
	Paved		m3	2,005	100%	2,005
240 Road	Paved		km	-	0%	16
	Excavation		m3	5,400	100%	5,400
	Embankment		m3	6,020	100%	6,020
	Paved		m3	-	0%	4,160
271 Road	Paved		km	-	0%	28.1
	Excavation		m3	-	0%	27,500
	Embankment		m3	-	0%	19,500
	Paved		m3	-	0%	1,700
Old Fort Road	Paved		km	-	0%	8
	Excavation		m3	-	0%	63,200
	Embankment		m3	-	0%	26,300
	Paved		m3	-	0%	2,830

Note: public roads excludes Hwy 29 realignments.
 As of March 31, 2016

Table C3 Project In Service Dates

Description/Status	Financial Investment Decision Planned ISD. ¹²	F2017-F2019 Service Plan. ¹³	Forecast Date. ¹⁴	Float. ¹⁵ (months)	Status. ¹⁶ and Comments (e.g., complete, on schedule, delayed, possibly delayed, probable delayed)
5L5 500kV Transmission Line	October 2020	September 2020	October 2020	s.17	On Track
Site C Substation	November 2020	October 2020	November 2020		On Track
5L6 500kV Transmission Line	July 2023	September 2023	July 2023		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

The approved Final Investment Decision schedule involved the first unit coming into service in December 2023. The Project has advanced implementation phase activities to mitigate schedule risk.

¹² Based on plan at Final Investment Decision, December 2014

¹³ Based on BC Hydro F2017-F2019 Service Plan approved in January 2016.

¹⁴ Based on January Month End Progression.

¹⁵ Float represents the amount of time that an activity can be delayed without causing a delay to subsequent tasks or the project completion date.

¹⁶ Status based on comparison to BC Hydro F2017-F2019 Service Plan.

Site C Clean Energy Project

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Appendix D

Detailed Project Expenditures

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**Table D1 Total Project Expenditure Summary
 F2017-F2019 Service Plan (\$ million, Nominal)**

Description	Board Approved Plan	F2017 to F2019 Plan to Date (March 31, 2016)	Actuals to Date (March 31, 2016)	Actuals vs Plan to Date
s.17				

Treasury Board Reserve	440			
Authorized Project Cost (P90)	8,775	845	950	(105)

Plan to date above reflects the amounts included in the F2017-F2019 Service Plan, approved by the Board of Directors in January 2016.

Due to the uncertainty of timing for the start of construction, receipt of permits and litigation, the actual expenditures to date are different than the planned cashflow in the Final Investment Decision (FID).

**Table D2 Total Project Expenditure Summary
 Final Investment Decision
 (\$ million, Nominal)**

Description	Final Investment Decision	Final Investment Decision Plan to Date (March 31, 2016)	Actuals to Date (March 31, 2016)	Actuals vs Plan to Date
s.17				

Expected Project Cost (P50)	8,335	636	950	(314)
Treasury Board Reserve	440			
Authorized Project Cost (P90)	8,775	636	950	(314)

The project now has increased certainty due to receipt of initial permits and contract award of Main Civil Works and Turbine - Generator. The project remains on track to meet the Government approved in-service date within the approved budget.

Direct Cost Variance

Early works, including preparation for the North and South banks, clearing and Work Accommodation are slightly ahead of plan. The early works were advanced to mitigate schedule risk of completing some site preparation activities to ensure that BC Hydro could meet the commitments made in Main Civil Contract as to site conditions at handover to this contractor.

The earlier than planned expenditures are offset by later than planned Main Civil Works expenditures.

Indirect Cost Variance

Variance is primarily due to later than planned signing of agreements with s.17
s.17 Also contributing to the variance are delays in a property purchase for wetland mitigation and lower than planned spends in general management costs.

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s.17

Site C Clean Energy Project

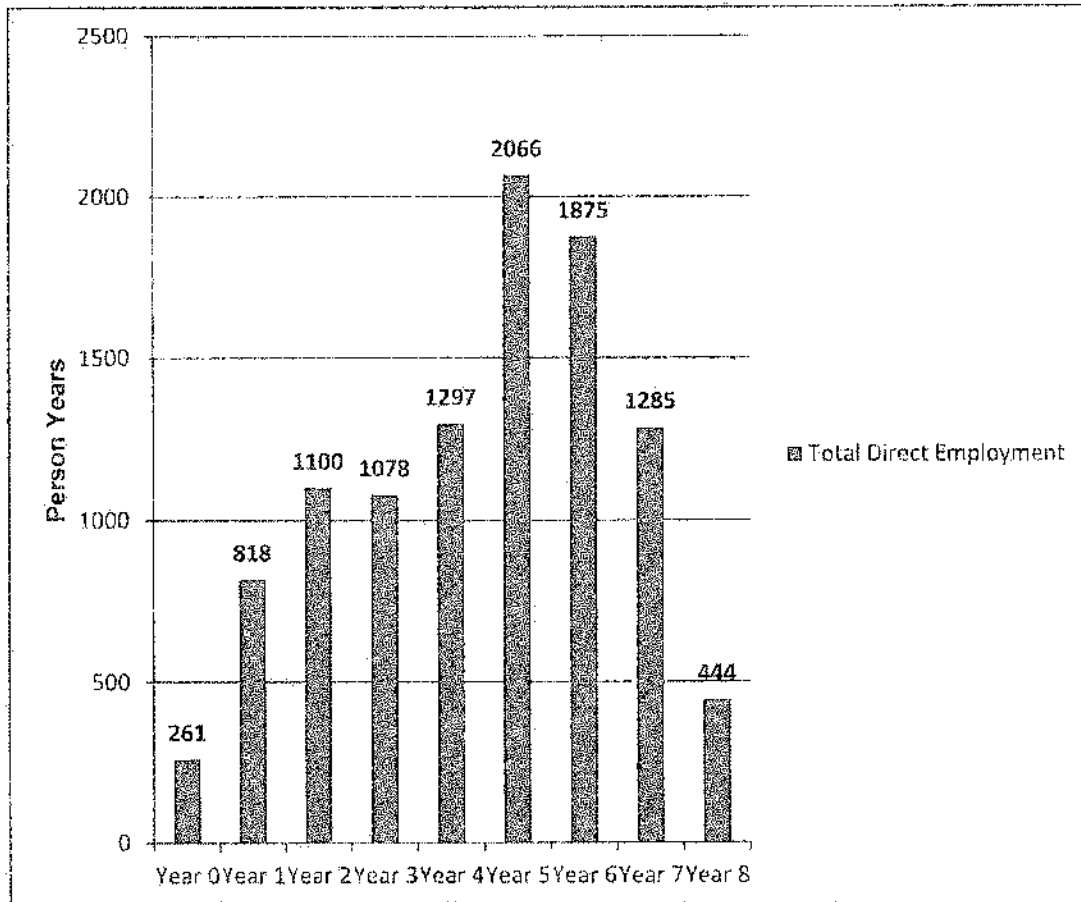
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Appendix E

Workforce Overview

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Figure E1 Site C Projected Average Annual Project Workforce



Based on 2010 cost estimate: on-site workers only, not including off-site manufacturing, actual numbers of workers at the discretion of the contractor.

Based on a 7 year construction schedule, with year 0 being a partial summer/winter start.

Based on an estimate of person years of employment (not actual workers).

Figure E2 Current Site C Jobs Snapshot (January – March 2016)

	January 2016		February 2016		March 2016	
Type of Work	# of BC Workers	# of Total Workers	# of BC Workers	# of Total Workers	# of BC Workers	# of Total Workers
Construction Contractors (including some subcontractors) <ul style="list-style-type: none"> Ministry of Transport and Infrastructure Morgan Construction Paul Paquette & Sons ATCO S.17 Duz Cho 	333	516	448	647	426	601
Non-Construction Contractors <ul style="list-style-type: none"> Spunky Ventures Golder Keystone Wildlife Environment Dynamics Inc. Peace Country Technical Services Others 	24	24	20	20	25	26
BC Hydro / Owners' Representatives on-site *	24	24	24	24	39	39
TOTAL	381 (68%)	564	492 (71%)	691	490 (74%)	666

* Number of BC Hydro Employees and Owners' Representatives on site is an estimate, subject to change.

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

Figure E3 Preliminary Site C Apprentices Snapshot (January – March 2016)

Month	Number of Apprentices	Number of Temporary Foreign Workers
January 2016	88	0
February 2016	95	0
March 2016	105	0

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

Figure E4 Preliminary Site C Aboriginal Workers Snapshot (October – December 2015)

Month	Number of Aboriginal Workers*
January 2016	50+
February 2016	50+
March 2016	50+

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

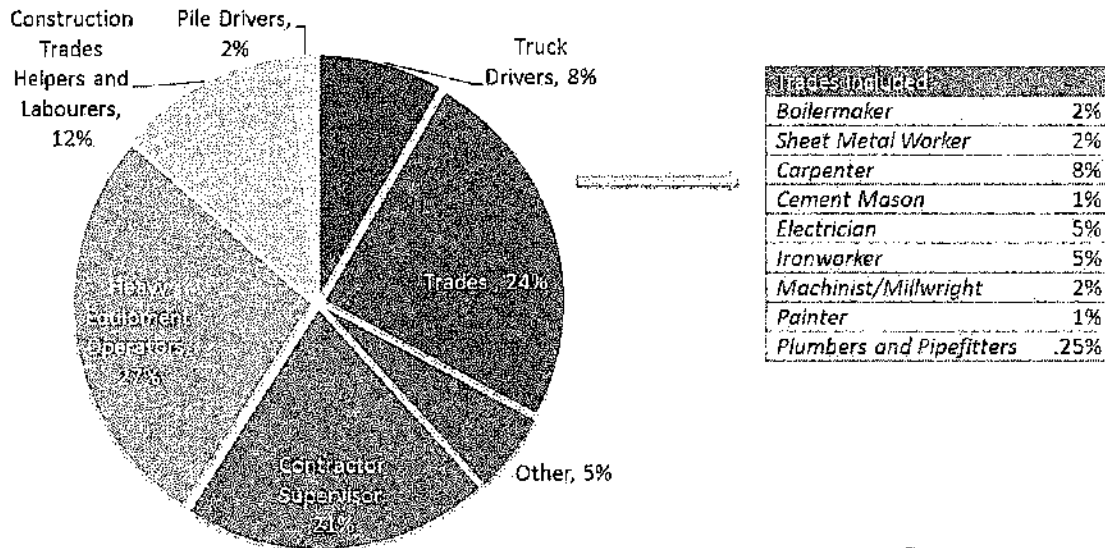
*This is a 3 month average as complete month to month data is not available from the contractors yet.

Figure E5 Labour Resourcing Requirements

Anticipated Site C Job Classifications

Biologists	Boilermakers	Botanists	Carpenters	Cement Masons
Construction Supervisors	Construction Trades Helpers Labourers	Crane Operators	Culinary Workers	Electrical Workers
Environmental Technicians	First Aid Workers	Foresters	Heavy Duty Equipment Mechanics	Heavy Equipment Operators
Insulators	Ironworkers	Lab Technicians	Millwrights	Pile Drivers
Plumbers and Pipefitters	Sheet Metal Workers	Security Guards	Surveyors	Technologists
Truck Drivers	Welders			

Figure E6 Site C Projected Construction Workforce Average



Site C Clean Energy Project

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Appendix F

Preliminary Construction Schedule

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Table F1 Preliminary Construction Schedule

Construction Activity	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Clearing dam site										
Access roads near dam site										
Worker accommodation										
Temporary construction bridge										
Excavation and material relocation										
Catchments and diversion tunnels										
Dam fill dam										
Rock compacted concrete buttress										
Generating station and penstocks										
Turbines and generators installation										
Sub-station										
Access roads construction and clearing										
Dam fill and site restoration										
Public road improvements										
248 Road										
269 Road										
271 Road										
Old Pitt Road										
Highway 12 realignment										
East Fork/Cache Creek										
Halfway River										
Dry Creek										
Garrett Creek										
Garrett Creek East										
Lyons Creek										
Public Safety Cuts										
Clearing east end of reservoir										
Clearing: Lower reservoir to Cache Creek										
Clearing: Cache Creek to Halfway River										
Clearing: Halfway River to Hudson's Hope										
River diversion										
Reservoir filling and operations										
Transmission line construction										
Extension of Peace Canyon switchyard										
DA Thomas Road upgrades										
Hudson's Hope Dam										
SRP Annual In-surface Lands										
Del Rio Rd										
Paragon Mountain Quarry										
West Pine Quarry										
Whitlock Quarry										

The construction schedule is approximate and subject to change. Construction of the schedule is not binding the general sequence of construction activities, nor the dates and schedule may change.

Schedule as of July 2015

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s.16;s.17

Page 065 to/à Page 104

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s.12