

PROJECT DEFINITION CONSULTATION FALL 2012
Discussion Guide and Feedback Form

FEEDBACK FORM INSIDE PAGE 36





PROJECT DEFINITION CONSULTATION

FALL 2012

PURPOSE

Project Definition Consultation, Fall 2012, is designed to consult the public, stakeholders and communities about the following topics: Worker Accommodation, Transportation, Clearing and Agriculture. BC Hydro has been conducting several streams of consultation since 2007. These BC Hydro-led consultations are separate from the consultation opportunities led by the environmental assessment agencies.

ENVIRONMENTAL AND REGULATORY REVIEW

The Site C Clean Energy Project (Site C) is currently in the environmental and regulatory review stage, which includes a cooperative federal and provincial environmental assessment process, including a joint review panel.

As part of the environmental review process, BC Hydro will file an Environmental Impact Statement (EIS) in early 2013.

More information about the environmental assessment process for Site C is available at:

- British Columbia Environmental Assessment Office (BCEAO): www.eao.gov.bc.ca
- Canadian Environmental Assessment Agency (CEA Agency): www.ceaa-acee.gc.ca

HOW INPUT WILL BE USED

Public and stakeholder input received will help inform project plans, project design and mitigation plans as BC Hydro prepares the Environmental Impact Statement.

A Consultation Summary Report will be posted on the Site C website summarizing feedback from this consultation.

BC Hydro will review the feedback provided and this feedback will be considered, along with technical and financial information, in refining project designs and plans, including mitigation plans. A *Consideration Memo* will document how consultation input was addressed in project plans.

WE WANT TO HEAR FROM YOU

Project Definition Consultation, Fall 2012, takes place September 10 through October 19, 2012. Consultation materials, including this Discussion Guide and Feedback Form, are available on the Site C website (www.bchydro.com/sitec).

You can provide feedback and learn more by:

- Attending open houses or stakeholder meetings
- Providing feedback online: www.bchydro.com/sitec
- Writing a submission to: sitec@bchydro.com or P.O. Box 2218, Vancouver, B.C. V6B 3W2
- Visiting the Site C project website: www.bchydro.com/sitec
- Visiting the Community Consultation Offices:
 - 9948 100th Avenue, Fort St. John
 - The Pearkes Centre, 10801 Dudley Street, Hudson's Hope
- Calling toll-free: 1 877 217 0777 Faxing: 604 695 5290

PROJECT DEFINITION CONSULTATION, FALL 2012 - MEETING CALENDAR

COMMUNITY	EVENT	DATE: 2012	TIME	LOCATION	
Fort St. John	Stakeholder Meeting*	Mon, Sept 10	5:00 p.m 7:00 p.m.	Quality Inn Northern Grand	
Fort St. John	Stakeholder Meeting*	Tues, Sept 11	1:00 p.m 3:00 p.m.	Quality Inn Northern Grand	
Fort St. John	Open House	Tues, Sept 11	6:00 p.m 9:00 p.m.	Quality Inn Northern Grand	
Hudson's Hope	Stakeholder Meeting*	Wed, Sept 12	4:00 p.m 6:00 p.m.	Hudson's Hope Community Hall	
Hudson's Hope	Open House	Wed, Sept 12	6:00 p.m 8:00 p.m.	Hudson's Hope Community Hall	
Dawson Creek	Stakeholder Meeting*	Thur, Sept 13	2:00 p.m 4:00 p.m.	Best Western Dawson Creek	
Dawson Creek	Open House	Thur, Sept 13	6:00 p.m 9:00 p.m.	Best Western Dawson Creek	
Taylor	Stakeholder Meeting*	Fri, Sept 14	1:00 p.m 3:00 p.m.	Taylor Community Hall	
Tumbler Ridge	Stakeholder Meeting*	Mon, Sept 17	2:00 p.m 4:00 p.m.	Tumbler Ridge Community Centre	
Chetwynd	Stakeholder Meeting*	Tues, Sept 18	4:00 p.m 6:00 p.m.	Pomeroy Inn & Suites	
Chetwynd	Open House	Tues, Sept 18	6:00 p.m 8:00 p.m.	Pomeroy Inn & Suites	
Mackenzie	Stakeholder Meeting*	Wed, Sept 19	2:00 p.m 4:00 p.m.	Mackenzie Recreation Centre	
Prince George	Stakeholder Meeting*	er Meeting* Thur, Sept 20 9:00 a.m 11:00 a.m. Prince George Ramada		Prince George Ramada	

*To register for a stakeholder meeting, please email sitec@bchydro.com or call 1 877 217 0777.

Please check www.bchydro.com/sitec for any potential revisions to this schedule.



WHAT WE HEARD

PROJECT DEFINITION CONSULTATION, SPRING 2012

Project Definition Consultation, Spring 2012, held from April 10 to May 31, 2012, was designed to consult and engage with the public and stakeholders on topics important to project planning and the environmental assessment.

- BC Hydro presented information on: Transmission, Worker Accommodation, and Preliminary Impact Lines and Land Use.
- BC Hydro sought feedback on: Highway 29 Preferred Realignments, Outdoor Recreation and the 85th Avenue Industrial Lands.

SUMMARY REPORT

The Project Definition Consultation, Spring 2012, Consultation Summary Report summarizing the complete feedback received through feedback forms, submissions and consultation meetings can be found at www.bchydro.com/sitec.

The Site C Clean Energy Project requires environmental certification and other regulatory permits and approvals before it can proceed to construction. In addition, the Crown has a duty to consult and, where appropriate, accommodate Aboriginal groups. The information presented in this document reflects current planning for the Site C Clean Energy Project and is subject to change as the Project continues to be further defined. Activities may be different depending on final design and procurement, including contractors' preferences for equipment, construction means and methods, and competitive pricing. However, such differences are not expected to significantly change the footprint of the project.

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SITE C CLEAN ENERGY PROJECT

The Site C Clean Energy Project (Site C) is a proposed third dam and hydroelectric generating station on the Peace River in northeast B.C. It would be located approximately seven kilometres southwest of Fort St. John, just downstream of the Moberly River. BC Hydro is proposing to build Site C as part of its overall program to invest in and renew the province's electricity system.

Site C would provide up to 1,100 megawatts (MW) of capacity, and produce about 5,100 gigawatt hours (GWh) of electricity each year — enough energy to power the equivalent of about 450,000 homes per year in B.C.

As the third project on one river system, Site C would gain significant efficiencies by taking advantage of water already stored in the Williston Reservoir. This means that Site C would generate 35 per cent of the energy produced at the W.A.C. Bennett Dam with only five per cent of the reservoir area.

BC Hydro has adopted a multi-stage planning and evaluation process for Site C. The project is currently in the environmental and regulatory review phase (Stage 3), which includes an independent environmental assessment process.

Subject to approvals, Site C would be a source of clean, reliable and cost-effective electricity in B.C. for more than 100 years. Site C would be a publicly owned asset.





MEETING B.C.'S FUTURE ELECTRICITY NEEDS

British Columbia is growing and so is our demand for electricity. BC Hydro forecasts that the province's electricity needs will grow over the next 20 years. This increase in demand is being driven by a projected population increase of more than one million residents and economic expansion.

As extensive as BC Hydro's electricity supply is, it will not be enough to meet B.C.'s future electricity needs if demand continues to grow as projected. To meet B.C.'s future electricity needs, BC Hydro is encouraging conservation, upgrading its facilities, building new transmission and distribution infrastructure, and investing in new supplies of clean energy, such as wind and biomass projects.

With Site C, BC Hydro is planning now so that British Columbians will continue to benefit from clean, reliable and cost-effective electricity in the future.

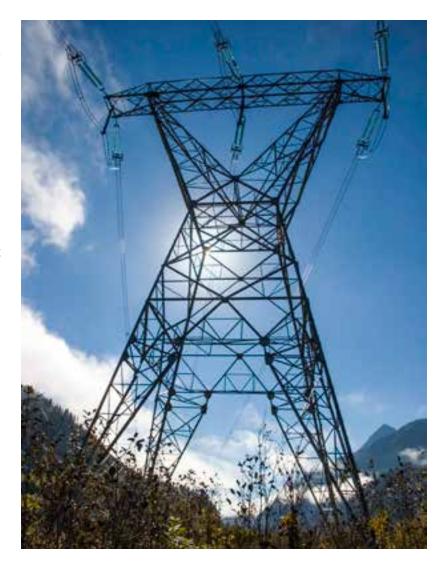
BC HYDRO'S INTEGRATED RESOURCE PLAN

Consistent with British Columbia's *Clean Energy Act*, BC Hydro is preparing a long-term Integrated Resource Plan (IRP) for submission to the Ministry of Energy and Mines.

The IRP will establish BC Hydro's plan for conservation and set its course for acquiring sufficient generation and transmission resources to reliably and cost-effectively meet customers' anticipated future electricity needs over the coming decades.

In May – June 2012, BC Hydro consulted the public, stakeholders, First Nations and communities about BC Hydro's draft Integrated Resource Plan — including the key actions that BC Hydro proposes to meet growing demand for electricity for the next two decades.

To learn more and to see the Consultation Summary Report from the May – June consultation, please go to www.bchydro.com/irp.



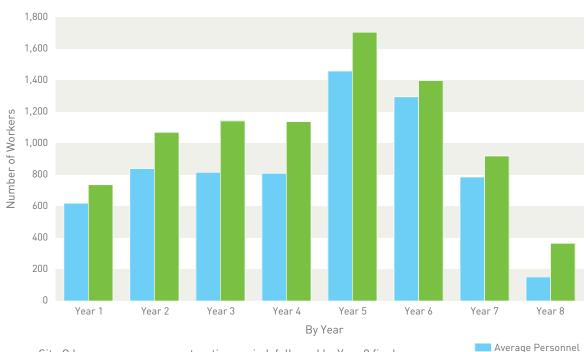
BC Hydro is developing a worker accommodation plan for Site C that will describe accommodation requirements for short-term and long-term workers, consider community interests, and be adjustable and flexible to meet construction needs.

This preliminary plan has been informed by technical studies, project requirements, and input received from the public and local governments to date. The plan will be further refined and included in the Environmental Impact Statement (EIS).

BC Hydro estimates it will generate approximately 7,000 person-years of direct employment during Site C's seven-year construction period. The estimated average annual workforce would be approximately 800 workers per year for project construction, with seasonal peaks in Years 5 and 6 of up to 1,700 workers. Approximately 90 per cent of the workforce would be required for construction at the dam site. About 10 per cent of the workforce would be required for off-site construction activities, including Highway 29 realignment, Hudson's Hope berm construction, road works, clearing, material transport and transmission line construction.

There are currently high levels of employment in the region, which are forecast to continue. As a result, it is anticipated the Site C workforce would include new residents, workers from outside the region, and current local and regional residents.

SITE C CONSTRUCTION WORKFORCE



Peak Personnel

Site C has a seven-year construction period, followed by Year 8 final commissioning, site reclamation and demobilization. The workforce estimates shown are based on preliminary construction planning and assumptions for planning. The actual workforce numbers and timing will be based on final design and procurement, including contractor plans, methods and construction considerations. Adjustments will be made to the worker accommodation plan based on those factors.



WHAT WE'VE HEARD TO DATE

During **public and stakeholder consultation since 2008**, BC Hydro asked for feedback on the importance of various factors relating to housing out-of-town workers.

- Consultation participants ranked the following factors in order of importance:
 - Minimizing impact on local housing costs
 - Minimizing the need for additional services (such as health care)
 - Creating opportunities for out-of-town workers to bring families to the region
- Concerns were raised regarding the Site C workforce putting pressure on local infrastructure without providing any benefits to municipalities.
- Participants expressed concern about the short-term nature of the workforce housing needs and the impact on local housing market demand and local services.

During Project Definition Consultation, Spring 2012, participants asked further questions about plans for worker housing, worker transportation and the impact of workforce on local services.

BC Hydro has also been consulting with **local and regional governments**. Some of the interests and issues raised by Fort St. John, Hudson's Hope, Taylor and Chetwynd include:

- Hiring local workers and businesses
- Creating in-community housing
- Encouraging workers and their families to relocate to the area
- Minimizing effects on the local housing market
- Minimizing impacts on community infrastructure
- Planning for worker transportation, regional commuters and airport usage

BC HYDRO'S PRELIMINARY WORKER ACCOMMODATION PLAN

The preliminary worker accommodation plan is informed by the following objectives and considerations:

- Safety for public and workers
- Workforce attraction, retention and well-being of workers and their families
- Project construction productivity, cost and schedule
- Responsible cost management for BC Hydro ratepayers
- Managing social and housing market effects
- Integration of new workers and their families into local communities
- Opportunities to create positive community benefits and managing potential adverse effects

The preliminary plan includes the following components:

- **1. Workers living locally** local residents, regional commuters and new in-community housing to support workers moving to the area.
- 2. Workforce camp accommodation for core construction activities (Site C dam site) two camps, one on the north bank and one on the south bank of the Peace River, which would operate with varied schedules and capacity throughout the construction period, based on construction requirements.
- 3. Smaller regional workforce camps for other project activities (regional construction sites) short-term camp accommodation may be used in the region near construction activities.
- **4. Accommodation Support** monitoring housing requirements, support for workers seeking housing and ongoing communication with regional communities.

1. WORKERS LIVING LOCALLY

BC Hydro anticipates that the direct construction workforce will include local residents, regional commuters and out-of-town workers interested in relocating to the area. BC Hydro is planning for approximately 15 per cent of workers to live in local communities and commute daily to the work site. It should be noted that this is only a planning assumption and may change depending upon the availability of local workers.

BUILDING NEW HOUSING

BC Hydro is currently working in cooperation with BC Housing towards building approximately 40 new housing units for use by BC Hydro's workforce and their families during construction, plus 10 new affordable housing units. Other projects may be considered.

After construction of the Site C project, all of the housing units would be available as affordable housing in the community. BC Hydro's participation would provide a financial contribution to offset the cost of building affordable housing for the region.

DEVELOPMENT PRIORITIES FOR NEW HOUSING

In committing to build new housing, several objectives are under consideration:

- Affordability building units that add to the affordable housing stock
- **Sustainability** building units that demonstrate high energy-efficiency standards and sustainable design
- **Location** building units that have good access to community services and transportation options

2. WORKFORCE CAMP ACCOMMODATIONS FOR SITE C DAM SITE

Workforce camp facilities are proposed for both sides of the Peace River to provide the safest and most efficient work site access. For more details about planning for camps, please see page 9.

Infrastructure to support the workforce camps, such as water and sewer connections, would be built to be able to meet all workforce requirements. However, the actual number of units built would be scaled up or down based on the construction requirements and available labour.

NORTH BANK CAMP (Throughout construction period)

The north bank facility would be built first and would operate throughout the construction period, with room for approximately 500 workers. In addition to the camp facilities, the site would include general and commuter parking, offices and shuttle stops. Local commuters would be shuttled from this parking area to their work site reporting location. This site would be located on BC Hydro-owned land.

SOUTH BANK CAMP (Approximately Years 2–7)

The south bank facility would be built to be operational in Year 2. The camp would be connected by dam site construction roads to the north bank and Fort St. John, and to the south via the Jackfish Lake Road. This camp would start with a small number of beds, and then scale up to meet a peak of up to 1,200 workers in Years 5 and 6. Actual numbers will be determined by the project schedule and availability of local labour. In addition to the camp facilities, this site would include supporting facilities, restricted parking, offices and shuttle stops. Based on the needs of regional commuters, BC Hydro will consider park-and-ride facilities, support for carpooling and transportation for local commuters in the Peace region.



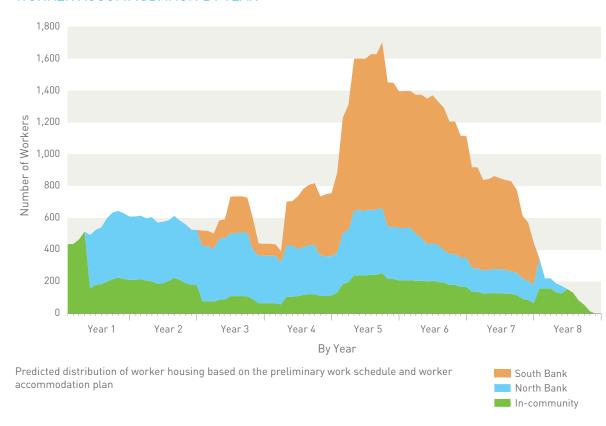


Artist's conceptual rendering of worker accommodation. This conceptual rendering shows modular units for approximately 500 workers, with a front lobby and common areas, transportation/shuttle loop, parking area, and rear dormitory wings accessible from a central interior corridor.



Proposed locations of the workforce camp facilities at the dam site, north bank and south bank $\,$

WORKER ACCOMMODATION BY YEAR



3. SMALLER REGIONAL WORKFORCE CAMPS – REGIONAL LOCATIONS AND RV PARKS

About 10 per cent of the construction workforce would be involved in construction at other regional locations such as the realignment of Highway 29 or the construction of the Hudson's Hope berm. These work sites would be active for shorter seasonal periods. The size and duration of a camp or other accommodation options will be determined by contractors and in consideration of local housing options.

BC Hydro is also interested in commissioning dedicated long-stay RV spaces, likely within the Fort St. John, Hudson's Hope and Taylor areas, to provide additional worker housing options. BC Hydro would plan for additional RV site capacity by working with the private sector or local government to develop or expand RV parks in compliance with local zoning.

4. ACCOMMODATION SUPPORT SERVICES

As part of the worker accommodation plan, BC Hydro will develop an accommodation support services program, which may comprise the following:

- Booking and planning for temporary in-community accommodations
- Supporting workers in becoming local residents
- Construction phase monitoring of project housing requirements
- Expanding and adapting camp space as required to meet real-time housing needs
- Maintaining an annual worker accommodation plan
- Communicating the worker plan to local governments, agencies and the public

Please see page 36 in the feedback form to answer questions related to worker accommodation.



PLANNING FOR RESPONSIBLE TEMPORARY ACCOMMODATION

BC Hydro would plan for responsible practices in workforce camps, as outlined below.

Camp Operations: BC Hydro would procure an experienced operator to construct, operate and manage camp accommodation facilities. Camp policies would be established including camp rules, site safety and security, work and leisure transportation services, and parking.

Recreation, Leisure and Entertainment: Exercise, leisure and entertainment facilities, including exercise rooms, gym space and social lounges, would be provided on-site.

Lodging, Food and Telecommunications: Private rooms would be provided. A commercial kitchen and dining facilities would provide 24-hour access to prepared meals, takeout lunches and snacks to support all work shifts. Modern telecommunication services would be provided on-site.

Health and Medical: The camp facilities would support provision of site safety, first aid and emergency transport, as well as access to general medical and health services.

Security and Safety: Facilities would have security systems and procedures, such as on-site security staff, sitesurveillance systems, guest check-in systems, and secure access points. Policies would be established to provide for a safe camp environment, and rules will be enforced.

Infrastructure: All infrastructure to support camp operations would be provided on-site, including water supply, treatment and distribution sewage and other waste management and power supply.

Power Supply: BC Hydro grid electricity supply would be provided for heating, lighting and other systems, which would reduce local emissions, while kitchen facilities would likely use gas or propane.

Fire Protection: Fire alarm, detection and protection systems for workforce camps would be developed following applicable regulatory standards. Fire protection plans and resources for the dam site construction area would include coverage of camps.

WORKFORCE TRANSPORTATION

On-site transportation: Workers would generally be housed in the camp closest to their work site and be moved safely from pickup and drop-off points to work areas in shuttles and work vehicles. Private vehicles would be restricted on the main site, in active work areas and on major project roads.

Leisure transportation: Scheduled worker transportation would be provided to Fort St. John.

Safe Commuting and Park-and-Ride Facilities: Safe commuting practices would be supported, such as limiting private vehicle traffic on construction access roads and providing a secure park-and-ride site near Chetwynd.

BC Hydro would support workers commuting from regional communities through on-site parking as well as carpooling coordination, and would consider shuttle services if there is a need.

More information about this topic can be found in the Transportation section.

UPGRADED AND NEW ROADS

As a component of the Site C Clean Energy Project, BC Hydro will upgrade existing roads and construct both temporary and permanent new roads.

Highway 29 Realignments:

- The creation of the Site C reservoir would require the realignment of the following six segments of Highway 29 over a total distance of up to 30 kilometres:
 - Lynx Creek
 - Dry Creek
 - Farrell Creek
 - Farrell Creek East
 - Halfway River
 - Bear Flat/Cache Creek

Permanent Upgraded Roads:

- D.A. Thomas Road (Ferry Landing Road) would be upgraded to accommodate truck traffic accessing the Hudson's Hope berm site
- Old Fort Road (south of 240 Road) a segment would be upgraded
- 240 Road (between Old Fort Road and 269 Road) would be paved

- 269 Road (south of 240 Road) approximately 300 metres of 269 Road would be upgraded
- Jackfish Lake Road gravel segments would be strengthened and resurfaced

Upgraded Roads for Temporary Use by the Project:

- Access roads to construction material sources at Portage Mountain and Del Rio Pit would be upgraded
- Access roads for clearing (approximately 84 kilometres) along the reservoir and construction sites may need to be upgraded

Permanent New Roads:

• **Project Access Road:** BC Hydro is proposing to construct a new 34-kilometre dedicated road from where Jackfish Lake Road passes under the existing 138 kilovolt (kV) transmission line, to the Site C dam site. This road would generally be contained within the planned transmission corridor. It would allow for a safe, reliable, dedicated access route for Site C construction traffic. Project Access Road would also be used for the construction of two new 500 kV transmission lines and future dam site and transmission line maintenance.

The development of a new controlled Project Access Road for Site C-related traffic would reduce interaction with industrial vehicles and other traffic using the resource roads. Access to this road would be restricted to project traffic at all times during construction.

 269 Road (south of 240 Road) would be extended by approximately 600 metres to provide construction access to the dam site

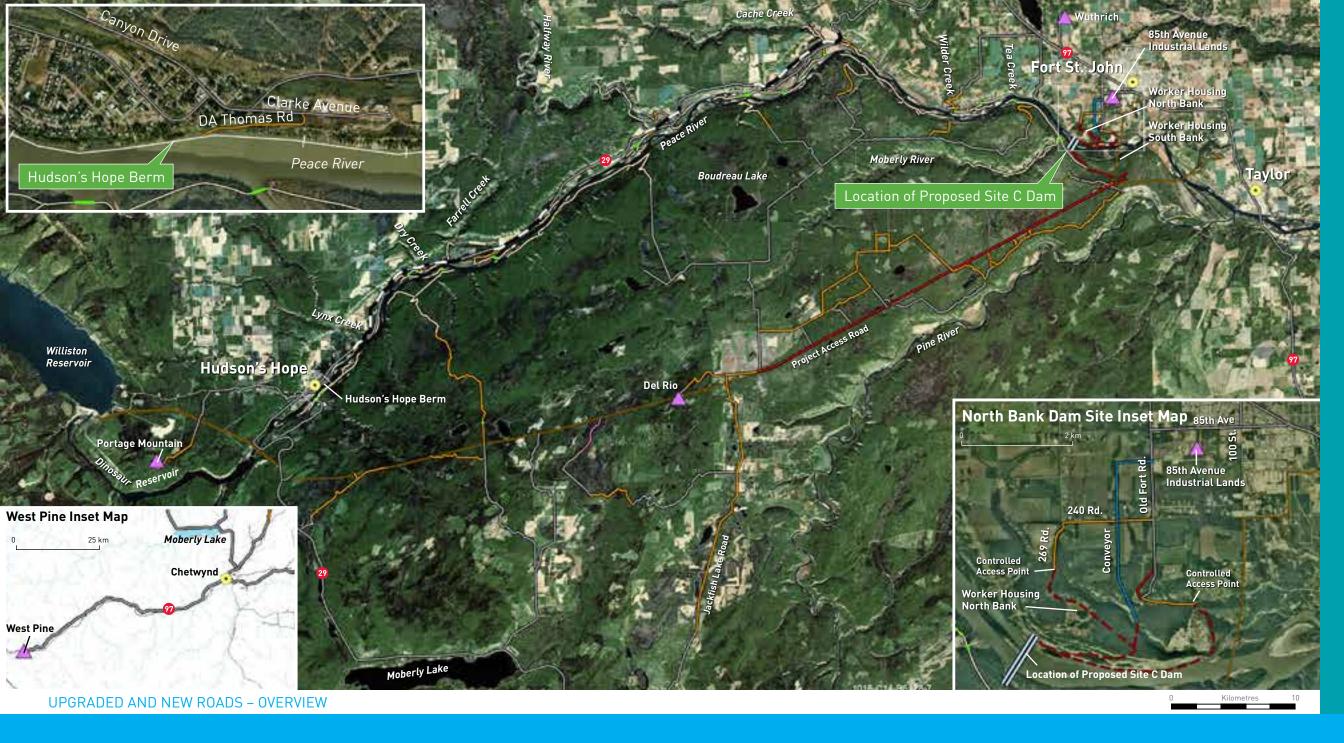
Temporary New Roads:

- All-season clearing roads (approximately 23 kilometres) would be constructed along the reservoir and construction sites
- Winter clearing roads (approximately 113 kilometres)
 would be constructed
- Temporary spans would be used to access islands for clearing activities

An overview map showing these upgraded and new roads can be found on the next page.







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SITE C PROJECT - CONSTRUCTION PHASE TRAFFIC

The following construction-related activities would be anticipated to generate traffic:

- Worker Transportation: Construction workers living in local communities and in temporary worker accommodation camps would travel by road to construction sites.
- Materials and Equipment Movement: Materials and equipment required for construction would be transported from the following locations:
 - Wuthrich Quarry, 271 Road, north of Fort St. John
 - West Pine Quarry, Highway 97, west of Chetwynd
 - 85th Avenue Industrial Lands, immediately outside Fort St. John, where a conveyor belt system is proposed to move materials to the dam site, reducing trucks on the road

Other materials such as cement and fly ash, and components and equipment would be transported primarily from British Columbia and Alberta. BC Hydro is also exploring the possibility of transporting materials and equipment by rail.

• Clearing: Clearing of the reservoir and construction areas would require logging trucks travelling between clearing areas and mills in the region. Overall, it is anticipated that Site C clearing activities would not add to the number of logging trucks in the region, as material cleared for Site C would be used by local mills or managed on-site.

- Transmission Line Construction: Construction of the transmission line on the south bank would require movement of construction workers, equipment and materials.
- Highway 29 Realignments Construction: Materials for construction of Highway 29 realignments would come from adjacent sites, Portage Mountain, Fort St. John or beyond.
- Hudson's Hope Berm Construction: Materials for construction of the Hudson's Hope Berm would come from Portage Mountain and locally on-site or from the Lynx Creek area, east of Hudson's Hope.

MITIGATION: CONSTRUCTION TRAFFIC CONTROL PLANS AND SAFETY

BC Hydro would implement construction communications and community relations activities to minimize traffic disruption and maximize predictability and safety for the travelling public and workers on the project.

These activities would be designed to keep the public and stakeholders advised on a timely basis about traffic flow, specifically incidents or emergency management situations, and to provide timely notice of construction-related delays, closures and detours, if required. Methods of communication could include such things as advertisements and public service announcements in local newspapers, on local radio and on websites, as well as email and social media alerts, text message alerts and messages on portable, changeable signs.

Each construction site would require a Construction Traffic Control Plan, which would outline traffic control measures at that site. Where work is taking place on provincial highways, approval from the B.C. Ministry of Transportation and Infrastructure would be required. Generally, these plans would take into account site-specific details such as maximum hourly traffic volume, along with best management practices, regional or municipal standards, and Ministry of Transportation and Infrastructure standards.

Please see page 37 in the feedback form to answer questions related to traffic communications.

TRANSPORTATION AREAS

The following section presents information about the construction activities that would generate traffic in the following areas:

- 1. Hudson's Hope
- 2. Highway 29 North (Hudson's Hope to Fort St. John)
- 3. Highway 97 North (Fort St. John to Taylor and Dawson Creek)
- 4. Fort St. John to Dam Site (Old Fort Road, 240 Road, 269 Road and 85th Avenue)
- 5. Highway 97 South (Chetwynd)
- 6. Jackfish Lake Road to Dam Site (Jackfish Lake Road, Project Access Road)



MAPS AND GRAPHS

The maps and graphs on the following pages show average traffic volumes and types of traffic that are anticipated during construction of Site C.

Traffic forecasts shown are averages over a 10-hour work day and are based on a six-day work week. These forecasts are provided to show the order of magnitude of the increase in traffic as a result of Site C construction activities. Actual hours may be different depending on construction requirements, project schedule and contractor plans. Traffic volumes will be higher during the morning and evening workforce commutes.

1. HUDSON'S HOPE

Project-related traffic activities within the District of Hudson's Hope are outlined below.

Construction of the Hudson's Hope Berm

- The berm would be constructed from materials at or near the local berm site, as well as from Portage Mountain to the west.
- Portage Mountain materials would be brought by truck, along Highway 29, down Canyon Drive into Hudson's Hope.
- The local D.A. Thomas Road (Ferry Landing Road) would be upgraded to accommodate truck traffic accessing the berm site.
- This upgraded road would remain as access to the proposed Hudson's Hope Berm recreation area, which BC Hydro would build during berm construction.

Construction of Highway 29 Realignments

- Two segments, Lynx Creek and Dry Creek, are within the District of Hudson's Hope.
- Riprap required for the construction of these segments would be sourced from Portage Mountain, and transported to each site along Highway 29.
- Gravel would come from adjacent sites and would be brought along Highway 29 to each site.
- Other materials and equipment are anticipated to come from Fort St. John along Highway 29.

- The construction of Highway 29 realignments would take place alongside the existing highway, minimizing the number and length of minor construction-related delays.
- The main interaction with public road traffic would be where construction vehicles leave Highway 29 to access construction sites.

Clearing - Reservoir and Highway 29 Realignment Segments

 Merchantable timber cleared from the reservoir and Highway 29 realignment areas would be transported by truck along Highway 29 to regional mills.

Traffic Forecasts - Hudson's Hope

- In the peak year of construction in this area (Year 5), the project would add an average of approximately 10 vehicles per hour – over the average forecasted regional traffic volume of about 70 vehicles per hour – along Canyon Drive.
- Along Highway 29 North, in the peak year of construction (Year 5), the project would add an average of approximately 10 vehicles per hour – over the forecasted average regional traffic volume of about 80 vehicles per hour.
- Both of the Highway 29 realignment segments in this area would have a Construction Traffic Control Plan.

Mitigation

See Construction Traffic Control Plans and Safety section on page 12.

Average Traffic Volumes: Canyon Drive



HUDSON'S HOPE





2. HIGHWAY 29 NORTH – HUDSON'S HOPE TO FORT ST. JOHN

Project-related traffic activities along Highway 29 are outlined below.

Construction of Highway 29 Realignments

- Highway 29 segments at Farrell Creek, Farrell Creek East, Halfway River and Bear Flat/Cache Creek will require materials sourced from Portage Mountain transported to each site by Highway 29 heading east.
- Gravel would come from adjacent sites and would be transported along Highway 29 to each site.
- It is anticipated that other materials and equipment would come from Fort St. John along Highway 29.
- The construction of Highway 29 realignments would take place alongside the existing highway, minimizing the number and length of minor construction-related delays.
- The main interaction with public road traffic would be at locations where construction vehicles leave Highway 29 to access construction sites.

Clearing - Reservoir and Highway 29 Realignment Segments

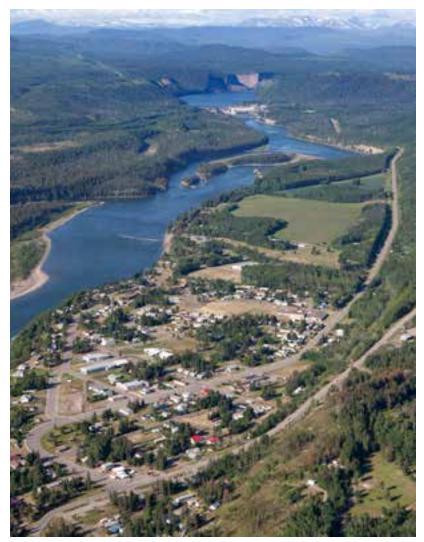
 Merchantable timber cleared from the reservoir and Highway 29 realignment areas would be transported by truck along Highway 29 to regional mills.

Traffic Forecasts – Highway 29 North (Hudson's Hope to Fort St. John)

- In the peak year of construction in this area (Year 5), the project would add an average of approximately 10 vehicles per hour over the forecasted average regional traffic volume of about 80 vehicles per hour along Highway 29 North.
- Each of the Highway 29 realignment segments in this area would have a Construction Traffic Control Plan.

Mitigation

See Construction Traffic Control Plans and Safety section on page 12.

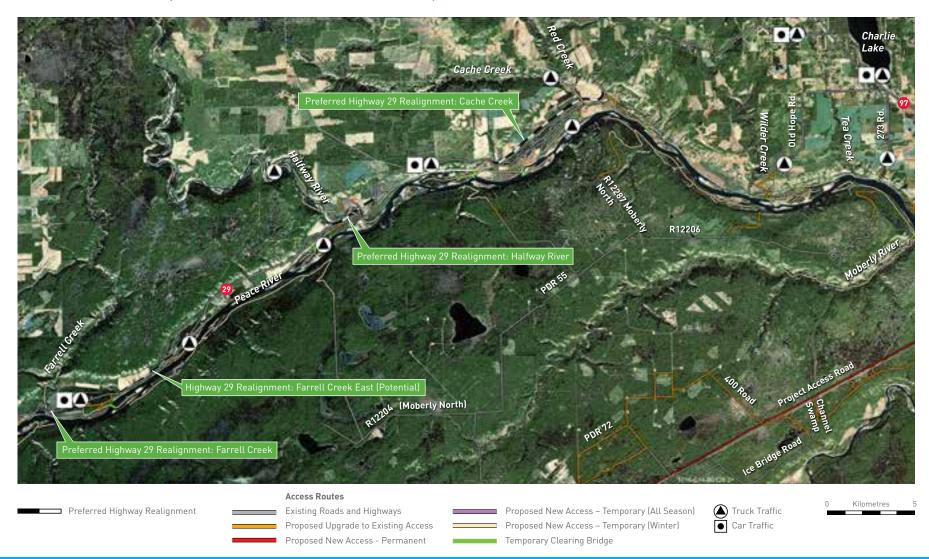


Hudson's Hope

Average Traffic Volumes: Highway 29 North – Hudson's Hope to Fort St. John



HIGHWAY 29 NORTH (HUDSON'S HOPE TO FORT ST. JOHN)





3. HIGHWAY 97 NORTH (FORT ST. JOHN, TAYLOR AND DAWSON CREEK)

Project-related traffic activities along Highway 97 North are outlined below.

Local commuting workforce

- Local workers living within commuting distance would travel to the north bank parking lot.
- From the parking lot, they would be transported to their work site.

Movement of Dam Construction Materials from Wuthrich Quarry

 Riprap would be transported to the dam site from the Wuthrich Quarry, located off of 271 Road, approximately three kilometres north of Highway 97.

Clearing - Reservoir and Dam Site Area

 Merchantable timber cleared from the reservoir and Site C dam area would be transported by truck along Highway 97 to regional mills.

Materials and Equipment Movement from Southeast B.C. and Alberta

• Some materials required for construction would be transported to the north bank dam construction site along Highway 97 North and Fort St. John.

Traffic Forecasts - Highway 97 North

- In the peak years of construction in this area (Years 3 and 4), the project would add an average of approximately 10 vehicles per hour – over the average forecasted regional traffic volume of approximately 1,000 vehicles per hour – along Highway 97, between Charlie Lake and Old Fort Road.
- Highway 97 was recently improved to four lanes through much of the project area. Intersections such as Highway 97 at 85th Avenue, 100th Street, 100th Avenue, 269 Road and 271 Road have all been signalized with left- and right-turn lanes, and additional through lanes.

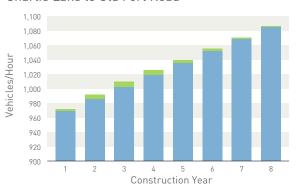
Mitigation

See Construction Traffic Control Plans and Safety section on page 12.



Highway 97 towards Fort St. John

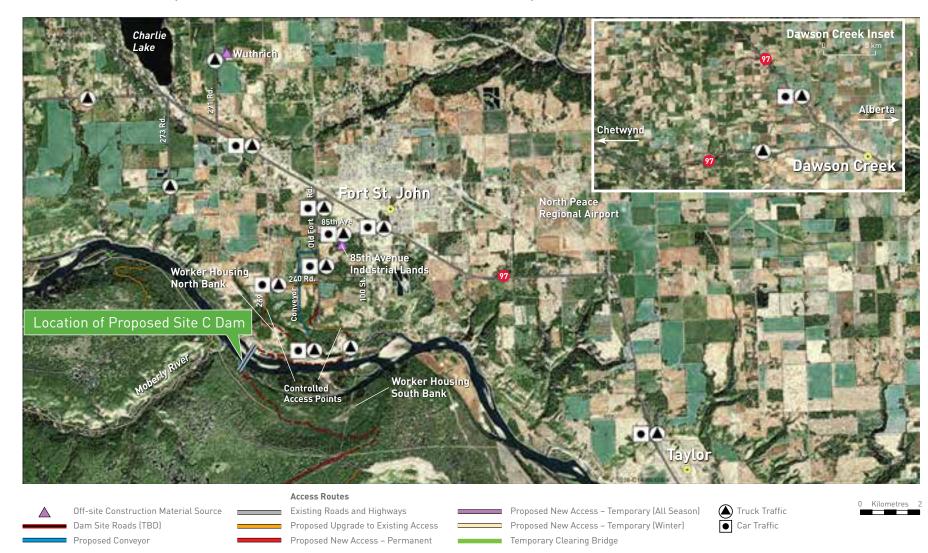
Average Traffic Volumes: Highway 97 North, Charlie Lake to Old Fort Road



Average Traffic Volumes: Highway 97 North, Fort St. John to Taylor and Dawson Creek



HIGHWAY 97 NORTH (FORT ST. JOHN TO TAYLOR AND DAWSON CREEK) AND FORT ST. JOHN TO DAM SITE



4. FORT ST. JOHN TO DAM SITE (OLD FORT ROAD, 240 ROAD, 269 ROAD AND 85TH AVENUE)

Roads between Fort St. John and the Site C dam site serve a mix of industrial, rural and residential properties. These roads, particularly Old Fort Road, 240 Road and 269 Road (south of 240 Road) would be the primary route for vehicles accessing the north bank dam site.

Project-related traffic activities in this area are outlined below.

Road Improvements

A portion of Old Fort Road would be realigned and portions of Old Fort Road, 240 Road and 269 Road would require strength upgrades to accommodate increased volumes of traffic related to Site C construction. The following portions of local roads would be improved:

- Old Fort Road (south of 240 Road) approximately
 1 kilometre would be upgraded
- 240 Road (between Old Fort Road and 269 Road) approximately 1.5 kilometres of the two-lane gravel road would be paved
- 269 Road (south of 240 Road) approximately 1 kilometre would be upgraded (approximately 300 metres would be upgraded and the road would be extended by approximately 600 metres)

Old Fort Road and 269 Road lead to dam site roads that would be constructed for the project. Only project traffic would be permitted past controlled access points.

Movement of Dam Construction Materials from Wuthrich Quarry

• Riprap for the Site C dam would be required from Wuthrich Quarry, north of Highway 97.

Movement of Materials and Equipment

• Some materials required for construction would be transported to the north bank dam construction site by local roads via Highway 97 North and Fort St. John.

Clearing - Reservoir, Dam Site and Construction Areas

 Merchantable timber cleared from the reservoir and Site C dam area would be transported by truck along local roads to Highway 97 and then to regional mills through the provincial road network.

Local Commuting Workforce

- Local workers living within commuting distance would travel to the north bank site access and parking.
- From there, they would be transported to their work site.

Workers Living in Workforce Camps

- Traffic forecasts include the shuttle traffic to transport
 workers to the workforce camps for their scheduled
 rotations at the work site. While on-site, workers will be
 transported using project roads.
- Forecasts also include shuttle transportation to the community of Fort St. John for leisure activities.

Traffic Forecasts - Old Fort Road, 240 Road, 269 Road and 85th Avenue

- In the peak year of construction in this area (Year 5), the project would add an average of approximately 30 vehicles per hour along Old Fort Road, 240 Road and 269 Road. This is an increase over the average forecasted regional traffic of about 40 vehicles per hour on Old Fort Road, 20 vehicles per hour on 240 Road and about 25 vehicles per hour on 269 Road.
- The project would increase truck traffic on roads that are currently predominantly used by commuters.
- During Year 5, the project would add an average of approximately 15 vehicles per hour over the forecast of about 85 vehicles per hour along 85th Avenue west of 100th Street.

Mitigation

See Construction Traffic Control Plans and Safety section on page 12.

Potential additional mitigation for managing traffic from Fort St. John to the Site C dam site would include the following:

- Upgrades to Old Fort Road, 240 Road and 269 Road (south of 240 Road) to improve safety and reduce dust.
- BC Hydro is currently studying the potential for commercial and recreational facilities for workers in the south bank camp, to reduce traffic volume effects while still allowing for workers to travel to regional communities to create local economic benefits.
- BC Hydro has initiated discussions with School District 60 regarding enhancements to school bus pickup locations to ensure safe pickup and drop-off.
- BC Hydro has initiated conversations with Canada Post regarding increasing the size of pullouts for community mailboxes. This would improve safety for residents picking up their mail as well as for Canada Post workers delivering mail.

Further mitigation options may also be developed as project planning continues and with feedback from the community.

85TH AVENUE INDUSTRIAL LANDS – TRANSPORTING MATERIALS BY CONVEYOR BELT SYSTEM

The 85th Avenue Industrial Lands is a 96-hectare (237 acre) parcel of land in the Peace River Regional District, adjacent to the City of Fort St. John. BC Hydro has selected the 85th Avenue Industrial Lands as a multi-use site, including storage and laydown areas, site offices, and as a source of construction material for the Site C dam.

BC Hydro's preferred method of moving materials from the 85th Avenue Industrial Lands to the proposed dam site area is by using a conveyor belt system.

The conveyor belt system would be approximately 2 metres wide and 1.5 metres high, and would be powered by electricity from the existing BC Hydro distribution network.

This method of moving construction materials is preferred for several reasons:

- Reduces the number of trucks needed to transport materials to the dam site area – other options explored included building a temporary off-road truck route or hauling materials along local public roads
- Conveyor belt system requires a narrower right-of-way (approximately 15 metres) compared to other methods
- Powering the conveyor belt by electricity reduces potential emissions from trucks or other conventional transportation methods
- Minimizes noise and dust, and provides more options for additional mitigation such as enclosures and noise walls, than transportation by truck or other method
- Following construction, the conveyor belt route would be decommissioned and land would be restored. Any property rights purchased on private property for the purpose of constructing and operating the route would be removed.





Truck travelling through Fort St. John

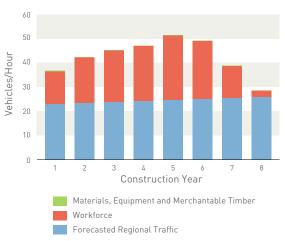
Average Traffic Volumes: Old Fort Road North of 240 Road



Average Traffic Volumes: 240 Road West of Old Fort Road



Average Traffic Volumes: 269 Road South of 240 Road



Average Traffic Volumes: 85th Avenue, between Old Fort Road and 100th Street



5. HIGHWAY 97 SOUTH (CHETWYND)

Project-related traffic activities along Highway 97 South are outlined below.

Local Commuting Workforce

- BC Hydro is planning to provide a secure park-and-ride facility near Chetwynd, where workers would board shuttles to the south bank dam construction site.
- This would reduce the total traffic on Jackfish Lake Road and Project Access Road and, by reducing private vehicles, would improve safety.

Movement of Dam Construction Materials from West Pine Quarry

 Riprap from West Pine Quarry, accessed from Highway 97 west of Chetwynd, would be required for the construction of the Site C dam.

Materials and Equipment

- Some materials required for construction would be transported to the south bank dam construction site via Highway 97 South and through Chetwynd.
- Construction of Site C would require some very large components, such as turbines with oversize dimensions, particularly in the later stages of construction.

- These extraordinary loads would be transported by specialty road transportation equipment along public highways in both British Columbia and Alberta.
- Extra precautions such as pilot cars and restricted hours of hauling would be undertaken to meet commercial vehicle safety and compliance regulations as established by the transportation departments of both provinces.

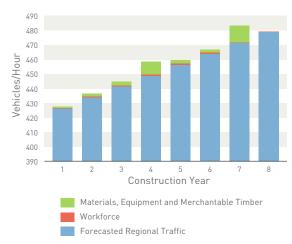
Traffic Forecasts - Highway 97 South

- During the peak year of construction activity in this area (Year 7), the project would add an average of approximately 10 vehicles per hour over the average forecasted regional traffic volume of about 460 vehicles per hour along Highway 97 South to Chetwynd.
- Project-related traffic through Chetwynd is anticipated to be relatively low compared to existing traffic volumes; therefore, existing infrastructure through Chetwynd is forecasted to accommodate increases from the project.
- The intersection of Highway 97 and Highway 29 in Chetwynd will be further analyzed to determine if improvements could be made to signalized operations to reduce potential delays.

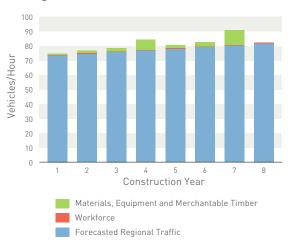
Mitigation

See Construction Traffic Control Plans and Safety section on page 12.

Average Traffic Volumes: Highway 97 South to Chetwynd



Average Traffic Volumes: Jackfish Lake Road





HIGHWAY 97 SOUTH (CHETWYND) AND JACKFISH LAKE ROAD TO THE DAM SITE



Preferred Highway Realignment
Proposed Transmission Line
Off-site Construction Material Source
Dam Site Roads (TBD)

Access Routes

Existing Roads and Highways

Proposed Upgrade to Existing Access

Proposed New Access – Permanent

Proposed New Access – Temporary (All Seasor
Proposed New Access – Temporary (Winter)
Temporary Clearing Bridge
Proposed Conveyor

Truck Traffic

Car Traffic

(JACKFISH LAKE ROAD AND PROJECT ACCESS ROAD)

6. JACKFISH LAKE ROAD TO DAM SITE

Project-related traffic activities in this area are outlined below and on the following page.

Project Access Road

BC Hydro is proposing to construct a new, permanent 34-kilometre dedicated haul road from where Jackfish Lake Road passes under the existing 138 kV transmission line, to the Site C dam site. This road would generally be contained within the planned transmission corridor. It would allow for a safe, reliable, dedicated access route for Site C construction traffic. Project Access Road would also be used for the construction of two new 500 kV transmission lines and future dam site and transmission line maintenance.

The development of a new controlled Project Access Road for Site C-related traffic would reduce interaction with industrial vehicles and other traffic using the resource roads. Access to this road would be restricted to project traffic at all times during construction.

Movement of Dam Construction Materials from West Pine Quarry

 Riprap coming from West Pine Quarry along Highway 97 would be hauled along Jackfish Lake Road and Project Access Road.

Transmission Line Construction

 BC Hydro is proposing to construct two new 500 kV transmission lines to replace the existing 138 kV lines.
 Access for construction of the line would be from Jackfish Lake Road and Project Access Road.

Clearing - Reservoir, Dam Site and Transmission Line Areas

 Merchantable timber cleared from the south bank of the reservoir and Site C dam site, and from the transmission line, would be transported by truck along Forestry Service Roads and Project Access Road, to Jackfish Lake Road and then to regional mills through the provincial road network.

Local Commuting Workforce

- Workers commuting from the south would park their vehicles at a designated secure park-and-ride facility near Chetwynd, and would be transported by shuttle bus along Jackfish Lake Road and Project Access Road to the south bank dam construction site.
- This would reduce the total traffic on Jackfish Lake Road and Project Access Road, and would maintain safety by reducing the number of Site C private vehicles.

Materials and Equipment

 Some materials required for construction would be transported to the south bank dam construction site via Project Access Road.

Workers Living in Workforce Camp

 Traffic forecasts include the shuttle traffic to transport workers to the workforce camps for their scheduled rotations at the work site. While on-site, workers will be transported using project roads.

Traffic Forecasts - Jackfish Lake Road

• During the peak year of construction activity in this area (Year 7), the project would add an average of approximately 10 vehicles per hour – over the average forecasted regional traffic volumes of about 80 vehicles per hour – along Jackfish Lake Road.

Mitigation

See Construction Traffic Control Plans and Safety section on page 12.

Potential additional mitigation for managing traffic along Jackfish Lake Road includes the following:

- Upgrades to Jackfish Lake Road, which would improve safety and reduce noise and dust.
- Constructing Project Access Road for Site C-related traffic would reduce potential conflicts with industrial vehicles and other traffic using the resource roads.
- Upgrades and maintenance to resource roads during the first year of construction until new access roads are complete.
- BC Hydro has initiated discussions with Canada Post and School District 59 regarding enhancements to mailbox and school bus pickup locations to ensure safe pickup and drop-off.
- Shuttle buses would be used to transport workers, to reduce the total number of vehicles travelling on Jackfish Lake Road and Project Access Road.

Further mitigation options may also be developed as project planning continues and with feedback from the community.

Please see page 38 in the feedback form to answer questions related to transportation.



BC Hydro is developing a Clearing Plan for the Site C project that will outline the proposed approach to clearing trees and vegetation and managing wood waste and debris.

The Clearing Plan will include the proposed approach in the construction areas and the reservoir area.

The clearing activities will be assessed as part of the overall environmental assessment, and additional mitigation activities may be identified in relation to the clearing activities. The clearing plan will also include actions that mitigate potential project effects. For example, use of merchantable trees would mitigate forestry effects, and reservoir clearing would enhance safe boating on the reservoir.

WHAT WE'VE HEARD TO DATE

During public and stakeholder consultation since 2008, BC Hydro asked about reservoir preparation and clearing.

- Participants rated the following reservoir clearing factors as extremely or very important: water quality, slope stability and erosion, fish and aquatic habitat, wildlife and terrestrial habitat, and air quality.
- Participants rated the following wood waste disposal factors as extremely or very important: minimizing visibility and health impacts, minimizing impacts to local residents and minimizing greenhouse gas emissions.

In Spring 2012 consultation meetings, participants gave feedback that clearing and debris management for the Site C reservoir must be better than the Williston Reservoir.

BC Hydro has met with regional forest industry representatives to understand their fibre use, capacity and specifications, and the capacity of the regional logging contractors.

BC Hydro has also engaged the Ministry of Forests, Lands and Natural Resource Operations to review provincial permit requirements, technical information requirements and guidance in developing a smoke management plan.

The Clearing Plan will be included in the Environmental Impact Statement (EIS) to be submitted as part of the environmental review process.

CONSIDERATION OF INPUT TO DATE

As a result of this input to date, and further technical studies, the preliminary clearing plan includes:

- Special riparian zone clearing methods to manage fish and wildlife habitat
- Consideration for seasonally important fish and wildlife periods within the clearing schedule
- Preparation of the reservoir for recreation use and public safety
- Updated reservoir clearing area based on updated project design

- More detailed forest inventory and biomass estimates
- Clearing access road and water crossings located based on fieldwork
- Consideration of fibre capacity and specifications of local forest industry and contractors

PRELIMINARY CLEARING PLAN

Key considerations include:

- Clearing vegetation, including harvesting merchantable timber
- Retain natural vegetation in select areas where it would be beneficial to do so to prevent erosion, maintain water quality during construction and operation, and to protect wildlife habitat during construction
- Minimize wood and vegetation waste
- . Minimize effects on fish and water quality
- Support safe use of the reservoir following construction, including debris management and creation of a clear boating navigation zone

1. CONSTRUCTION AREA CLEARING PLAN

Within the construction areas, BC Hydro would strive to preserve existing vegetation and trees wherever practical, and limit clearing to planned work areas. Clearing activities would use environmental management practices including machine-free riparian zone methods and avoiding identified environmental and archaeological protection zones.

Harvested trees would be offered for sale to the forest industry and practices would be employed to minimize the overall volume of wood waste.

Clearing is required in all construction areas early within the construction schedule. These areas include:

- The dam site
- Sources of construction materials
- Highway 29 realignments
- Access roads
- Transmission corridor

2. RESERVOIR CLEARING PLAN

The proposed Site C reservoir would be approximately 83 kilometres long and would inundate about 5,550 hectares (ha) of land, of which about 4,000 ha is forested. The majority of this forested land is on the south bank. A detailed vegetation inventory identified the dominant coniferous trees as spruce, pine and larch and the dominant deciduous trees as cottonwood, aspen and birch.

BC Hydro is proposing to clear the reservoir prior to inundation. This would include the removal of all merchantable timber within the reservoir area, except on very steep or unstable slopes.

Further, all non-merchantable timber that extends above 455 metres elevation would be removed. This would create a clear boating navigation zone with a minimum clearance of 5 metres below the proposed minimum normal reservoir operating level.

The main harvesting method in the reservoir would be to "low stump" to a height of about 7–10 centimetres, which removes the trees while minimizing ground and soil disturbance and wood waste. Harvested trees would be offered for sale to the forest industry, and practices would be employed to minimize the overall volume of wood waste.

The Clearing Plan also outlines benefits to retaining a limited amount of trees in the reservoir area, as outlined below.

- Minimize erosion and sedimentation. Retain trees on very steep or unstable slopes to minimize erosion and sedimentation.
- Maintain riparian habitat. Non-merchantable trees retained in riparian areas to support riparian habitat. This is consistent with the approved work practices that BC Hydro uses in other areas where vegetation maintenance is required.
- Maintain fish and wildlife habitat. Retaining nonmerchantable trees to support habitat for birds and small mammals before inundation.
- Maintain visual quality. Retaining some non-merchantable trees to support visual quality in the valley during the construction period by maintaining low natural tree cover.



The graphics below shows a viewpoint of the Peace River, **west of Farrell Creek** as it is today and with the areas of proposed clearing indicated.



Existing – West of Farrell Creek



Proposed Clearing – Artist's rendering of proposed clearing prior to reservoir filling

The graphics below shows a viewpoint of the Peace River, **east of Halfway River**, as it is today and with the areas of proposed clearing indicated.



Existing – East of Halfway River



Proposed Clearing – Artist's rendering of proposed clearing prior to reservoir filling

DEBRIS MANAGEMENT

During construction, natural woody debris and debris from clearing activities would move downstream in the Peace River as a result of natural spring runoff and ongoing hydroelectric operations. To manage for construction site safety, and to minimize future reservoir floating debris, a debris trap and catchment booms are planned to catch the debris above the dam site construction areas.

A similar river debris collection site has operated on the Fraser River between Hope and Agassiz for more than 40 years. This type of debris trap is planned for the Peace River near Wilder Creek. Additional catchment booms would be placed as necessary upstream of the dam construction site and at the mouth of the Moberly River.

Following construction, BC Hydro would continue to manage floating debris on the reservoir upstream of the dam site. Typically, a permanent boom is deployed immediately above BC Hydro's dams. Additional debris booms would be used as required and can be designed to allow for boat passage.

Plans to minimize wood and vegetation waste include:

- Encourage maximum utilization by the forest industry
- Minimize reservoir floating woody debris by removing trees within areas predicted to erode in the first 5–10 years after reservoir creation
- Grind non-merchantable trees to create material for biofuels
- Use a Smoke Management Plan to burn remaining waste material within Open Burning Regulations



Fraser River debris trap and fin boom



Wilder Creek: Proposed location of debris trap and fin boom

CLEARING ACCESS ROADS AND BRIDGES

An estimated 95 per cent of clearing in the construction areas and reservoir would be undertaken by conventional ground-based harvesting, with the remaining to be undertaken by helicopter. A variety of roads and bridges would be required to support this clearing work.

New roads and upgraded roads will be required as follows:

- Upgrading existing roads (84 kilometres)
- Constructing new all-season roads (23 kilometres)
- Proposed new winter roads, which are reclaimed relatively quickly (113 kilometres)

Temporary bridge spans would be used to access islands; these would be in place from between a few weeks to one season.

Further clearing access roads information and maps, and information about traffic related to clearing activities can be found in the Transportation section of the Discussion Guide.



Example of a clearing road



SUMMARY OF CLEARING VOLUMES

Construction Areas and Reservoir

- In total, 1.4 million cubic metres (m³) of merchantable timber would be harvested from the reservoir and construction areas during the clearing process.

 This represents less than half of the current annual consumption by the forest industry in the Peace region.
- In addition, 1.2 million m³ of non-merchantable timber would be removed from these areas.

Forest Industry – Using Merchantable Wood

The forest industry in the Peace region is well established, producing mainly lumber, oriented strand board (OSB) and market pulp. There are two major companies that process coniferous logs and three that process deciduous logs in the Peace region. Tree clearing could result in the sale of merchantable wood to the forest industry over a three- to four-year period.

The regional forest industry has the capacity to use all of the merchantable wood harvested for the Site C project, based on average annual consumption of merchantable deciduous and coniferous wood (2006 to 2010). On an annual basis, the Site C clearing would provide less than one-third of the regional deciduous demand and less than one-seventh of the annual coniferous demand. The current demand in the region for wood for bioenergy is 38,000 m³ per year.

Clearing Schedule

The majority of clearing activities would take place in the first two years of the construction phase, and are predominantly focused on preparing the construction area sites. These areas include the dam site, lower reservoir area and Highway 29 realignment areas.

BC Hydro is considering timing options for the clearing of the upper reservoir area and tributaries, from approximately the upstream end of Bear Flat to upstream of the community of Hudson's Hope. Key considerations for the timing of clearing in these areas include local forest industry operations, scenic and visual quality, fish and wildlife habitat, procurement, and input from the public and stakeholders. Clearing activities in these areas are required prior to reservoir filling and could be planned either earlier in the construction period (Years 3 and 4) or later (Years 5 and 6).

Considerations for Timing Options:

Earlier in Construction Period (e.g., Years 3 and 4)

- Clearing completed in a shorter period
- Some visual impacts would be seen earlier and for a longer period
- Continuity with Year 1 and 2 clearing could create contractor and local mill efficiencies

Later in Construction Period (e.g., Years 5 and 6)

- Some visual impacts of clearing along Highway 29 and near Hudson's Hope would be seen later in the construction period, with a shorter time before reservoir filling
- Recreational use of the shorelines in the upper Peace River would be disturbed for a shorter period of time

Please see page 41 in the feedback form to answer questions related to clearing.

In this Discussion Guide, BC Hydro is:

- Providing an overview of the agricultural assessment
- Providing updated information and classifications of land affected by the Site C project
- Discussing agricultural mitigation options
- Seeking feedback on these mitigation options

OVERVIEW: 2012 AGRICULTURAL ASSESSMENT

BC Hydro's agricultural assessment will inventory the agricultural baseline, or current conditions, and describe the potential effects of the Site C project on agriculture. The assessment looks not only at current use of agricultural land, but also the capability or potential of the lands for agricultural use.

The agricultural assessment will include:

- Agricultural land capability ratings, including agricultural climatic capability
- Agricultural crop suitability
- Likely current and future agricultural land use, shown as agricultural utility ratings
- Current agricultural land use (e.g., cultivated or grazing land)
- Agricultural tenure on Crown lands, including grazing licences and leases

- Current and expected future agricultural operations and practices
- Local and regional agricultural economic activity
- Local and regional food production and consumption estimates (a measure of food self-reliance)
- Effects on agricultural land base (loss of agricultural land)
- Effects on individual farm operations, including changes to land, farm infrastructure and farm activities

The agricultural assessment will also propose mitigation measures. At the farm level, mitigation will include avoiding impacts and direct compensation for effects that cannot be avoided. Regionally, mitigation will focus on increasing agricultural productivity on lands not affected by the project.

Agricultural mitigation measures will be presented in three categories, as listed below.

- Construction Environmental Management Practices
- Direct on-farm mitigation
- Agricultural compensation program

The complete agricultural effects assessment will be filed with the Environmental Impact Statement to be submitted to BCEAO and CEA Agency and will be available for public comment in 2013.

STUDY UPDATE - AGRICULTURAL LAND

BC Hydro is presenting preliminary results from the agricultural assessment for the proposed Site C project, focusing on land affected by the project. A technical field program was undertaken during 2011 and 2012 to develop an updated baseline and mapping for climate, soils, agricultural capability and land use. The project team discussed the program methods with staff from the Ministry of Agriculture and the Agricultural Land Commission as the work progressed.

Interviews were also held with potentially directly affected farmers and ranchers and with the local agricultural community.



SUMMARY OF KEY FINDINGS

The following results are available at this stage and are further described in the following pages:

- The updated agricultural study estimates that 3.816 hectares of Class 1–5 lands in the Peace River valley will be affected by the creation of the reservoir or other project components. This represents less than one per cent of the agricultural lands in the Peace River Agricultural Region.
 - Of these lands, an estimated 1,666 hectares are rated as moderate or high utility, which means that they could be used for agriculture in the future.
 - Approximately 590 hectares of these lands are currently cultivated.
 - A total of 34 farm operations could be partially affected by the project. One farm operation would lose the majority of its agricultural land base.

1. Land Capability for Agriculture

Previous land capability for agriculture ratings for the Peace region and Site C components were based on small-scale Canada Land Inventory (CLI) and BC Land Inventory (BCLI) mapping from the early 1970s. BC Hydro updated the agricultural capability mapping with field studies as part of earlier Site C agricultural studies carried out in the late 1970s and early 1980s.

The current study updates the previous agricultural capability mapping using the following:

- Field investigations, including soil sampling to assess soil capability
- Lidar digital mapping, to provide more accurate slope, aspect and topographic information
- Slope mapping
- Orthophotographs, providing recent aerial photography and base mapping
- Up-to-date climate records and climatic capability analysis

AGRICULTURAL DEFINITIONS

Agricultural Capability: The potential for agricultural crop use is determined by assessing soil conditions and climate limitations.

Agricultural capability ratings from the Agricultural Land Commission:

- Class 1 land is capable of producing the very widest range of crops. Soil and climate conditions are optimum, resulting in easy management.
- Class 2 land is capable of producing a wide range of crops. Minor restrictions of soil or climate may reduce capability but pose no major difficulties in management.
- Class 3 land is capable of producing a fairly wide range of crops under good management practices. Soil and/or climate limitations are somewhat restrictive.
- Class 4 land is capable of a restricted range of crops. Soil and climate conditions require special management considerations.
- Class 5 land is capable of production of cultivated perennial forage crops and specially adapted crops. Soil and/or climate conditions severely limit capability.
- Class 6 land is important in its natural state as grazing land. These lands cannot be cultivated due to soil and/or climate limitations.
- Class 7 land has no capability for soil-bound agriculture.

Agricultural Utility: To estimate potential future agricultural land use, agricultural utility ratings are assigned to land to reflect the capability for cultivated crop production and the likelihood of future agricultural use.

• Agricultural utility is classified as high, moderate or low to nil, and is based on the land capability (soil and climate) and likely constraints to agricultural use. Potential constraints include: tenure, land use plans and potential protected areas, location and access, parcel size and environmental issues.

KEY FINDINGS – AGRICULTURAL CAPABILITY

The key findings of the current study for the proposed reservoir area and other project components include the following:

- **Updated agricultural capability ratings:** The agricultural assessment identifies 3,816 ha of Class 1 5 lands that would be permanently used by the project and no longer available for agricultural use. This includes 3,225 ha within the proposed Site C reservoir area and 591 ha within other project component areas. (See Tables 1 and 2).
- Climatic capability: The valley climate data indicates that the crop growing season has a natural climatic moisture deficit. This climatic moisture deficit can be overcome with irrigation.
- **Soil capability:** The valley soils are predominantly fine-textured, with a high moisture-holding capacity. This means that, with irrigation, much of the natural Class 2 lands would improve to Class 1 and would be capable of supporting a wider range of crops.

Agricultural Lands Within the Site C Reservoir and Project Component Areas

The following tables show a breakdown of agricultural capability for land within the proposed Site C reservoir (Table 1) and for all project component areas (Table 2). These tables do not include land that would be temporarily unavailable for agricultural use during project construction.

Overall, approximately 2,034 ha of the affected lands are within the Agricultural Land Reserve.

The Agricultural Land Commission's agricultural capability classification usually provides two ratings*:

- Unimproved ratings describe the land in its native condition without any improvements to the soil.
- **Improved ratings** indicate the land's potential once the appropriate management practice identified by the subclass, such as irrigation, stone removal or drainage, has been implemented.

*From: www.alc.gov.bc.ca Historical studies used only unimproved ratings.

TABLE 1: Agricultural Capability within the Site C Reservoir (ha)

(improved ratings are shown in brackets below)

AREA	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	Sub- total CLASS 1 - 5	CLASS 6 & 7 (Pre- dominantly Steep Slopes)	TOTAL
Peace River North Bank	0	697	137	45	45	922	567	1,489
	(525)	(291)	(20)	(43)	(43)	(922)	(567)	(1,489)
Peace River South Bank	0	432	160	16	6	614	483	1,097
	(379)	(106)	(107)	(16)	(6)	(614)	(483)	(1,097)
Islands in Peace River	0	687	162	68	19	936	58	994
	(373)	(471)	(68)	(5)	(19)	(936)	(58)	(994)
Tributaries	0 (135)	474 (432)	226 (133)	53 (53)	0 (0)	753 (753)	190 (190)	943 (943)
Reservoir Land Area	0	2,290	685	182	68	3,225	1,298	4,523
Sub-Total	(1,412)	(1,300)	(328)	(117)	(68)	(3,225)	(1,298)	(4,523)

^{*}The total reservoir surface area would be 9,330 ha. This area comprises the current river channel (3,773 ha) and river sediments (1,034 ha) and the land area that would be inundated (4,523 ha).



TABLE 2: Agricultural Capability within the Site C Reservoir and Project Component Areas (ha) (improved ratings are shown in brackets below)

	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	Sub- total CLASS 1 – 5	CLASS 6 & 7 (Pre- dominantly Steep Slopes)	TOTAL
Reservoir	0 (1,412)	2,290 (1,300)	685 (328)	182 (117)	68 (68)	3,225 (3,225)	1,298 (1,298)	4,523 (4,523)
Erosion Impact Line	0 (10)	87 (56)	34 (46)	25 (34)	15 (15)	161 (161)	1,212 (1,212)	1,373 (1,373)
Highway 29 Realignments	0 (121)	149 (54)	32 (57)	66 (15)	1 (1)	248 (248)	82 (82)	330 (330)
Dam Site	0 (14)	75 (61)	29 (29)	0 (0)	0 (0)	104 (104)	61 (61)	165 (165)
Construction Access Roads	0 (0)	0 (0)	52 (52)	7 (7)	19 (19)	78 (78)	0	78 (78)
Transmission Towers*	0	0	0	0	0	0	0	0
Off-site Construction Material Sites	0	0	0	0	0	0	0	0
TOTAL	0 (1,557)	2,601 (1,471)	832 (512)	280 (173)	103 (35)	3,816 (3,816)	2,635 (2,635)	6,469 (6,469)

^{*} Areas of transmission line not available for agricultural use based on approximate 2m x 2m transmission tower footings. Right-of-ways are still available for compatible agricultural use.

2. Agricultural Utility and Expected Future Use

The agricultural assessment estimates future agricultural use by assigning a utility rating to agricultural lands within the Site C project area to reflect the likelihood of future use for cultivated agriculture.

Agricultural utility ratings are defined as:

- **High utility:** Class 1 to 3 lands with a high likelihood of being used for cultivated agriculture in the future
- **Moderate utility:** Class 4 and 5 lands with a high likelihood of being used for cultivated agriculture in the future
- Low to nil utility: Class 6 and 7 lands and lands with a low to nil likelihood of being used for cultivated agriculture in the future

Agricultural Utility - Key Findings

• Within the Site C reservoir and project component areas, an estimated 1,666 ha are rated as being of moderate and high utility, most of which are on the north bank of the Peace River. Low utility lands are primarily in the upper tributary, island and south bank areas.

AGRICULTURAL UTILITY RATING

Agricultural utility is classified as high, moderate or low to nil, based on agricultural land capability ratings, provincial land use plans, tenure, location and access, parcel size/remoteness and environmental factors.

- Agricultural Land Capability Areas with capability ratings of Class 1 to 3 are
 assigned a high utility rating, Class 4 and 5 are assigned a moderate utility rating,
 and other areas are assigned a low to nil utility rating. Utility ratings are then revised
 to reflect the likelihood of being used for cultivated agricultural production in the
 future as described below.
- Provincial Land Use Plans There are two provincial Land Use Plans in the region that include the Site C project area. Both plans propose the creation of the Peace Boudreau Protected Area, which would include the Peace River islands and the majority of the south bank land within the proposed reservoir area. This protected area would be expected to limit agricultural land use to existing grazing tenures or perhaps some expanded grazing use. Therefore, it is assumed that land within the proposed protected area would not likely be used for new agricultural cultivation purposes in the future.

Agricultural land use within the remainder of the proposed Site C project areas is generally not restricted by existing zoning nor is it expected to be restricted by the implementation of recommendations in area land use plans.

- Tenure No restrictions due to tenure, ownership, private, BC Hydro or Crown land, or by status within or outside the Agricultural Land Reserve are deemed to restrict future or potential agricultural use.
- Location, Access, Parcel Size and Potential Environmental Constraints A low
 to nil utility rating is assigned to areas with no existing access, areas for which
 providing new access would be difficult and expensive, and relatively small and
 isolated parcels. No environmental factors are identified that would likely limit future
 agricultural use.

AGRICULTURE

3. Current Agricultural Land Use

The agricultural assessment includes farm operator interviews and land use inventories to understand and characterize current farm and ranching operations, and crop production in the study area. These interviews contribute to understanding current agricultural land use, potential project effects on individual farm operations, and options to reduce the effects on agricultural lands and operations.

Agricultural interviews are being conducted with farm operators whose land or operations may be affected by the proposed Site C reservoir, dam site and Highway 29 realignment areas. To date, interviews have been conducted with 21 of the 34 farm operators that have been identified (three operators have declined to be interviewed), and interviews with operators will continue through fall 2012.

Current Agricultural Land Use - Key Findings

- A total of 34 farm operations could be partially affected by the Site C reservoir and project component areas.
- One farm operation would lose the majority of its agricultural land base
- Of the total Class 1 5 lands within the Site C project component areas, approximately 590 ha are currently used for crop production and would no longer be available for agriculture use
- Existing crops are predominantly forage, grain and canola
- Seasonal market produce has occasionally been produced over the years, including in 2012
- Livestock production is predominantly cattle and horses



AGRICULTURE

MITIGATION OPTIONS

As part of the EIS submitted to the BCEAO and CEA Agency, the agricultural assessment will include options for mitigation of effects on agriculture.

Generally mitigation will focus on maintaining or increasing agricultural productivity on lands not directly affected by the project. Agricultural mitigation measures can be categorized as follows:

- Construction Good Management Practices. BC Hydro
 would implement good management practices for all
 aspects of construction, including those that would
 affect agricultural land. Examples of construction good
 management practices include dust, noxious weed,
 erosion and sediment control.
- **Direct On-Farm Mitigation.** Direct mitigation at the farm level would be focused on avoiding, reducing or compensating for direct adverse effects on agricultural land and operations, including management of on-farm impacts, such as changes to farm access, buildings, wells or fencing.

• Agricultural Compensation Program. BC Hydro is proposing a regional agricultural compensation fund as a significant component of agricultural mitigation. Potential projects funded through this program may include agricultural research and development, infrastructure, and management programs. This compensation program is further described below.

AGRICULTURAL COMPENSATION PROGRAM

BC Hydro is proposing to establish an agricultural compensation fund to support in-valley and regional agricultural projects.

These projects would focus on enhancements that would improve agricultural production on a local and regional scale.

The agricultural compensation fund, administration and governance will be proposed in the Environmental Impact Statement and are expected to evolve through the review and consultation process. For example, regional agricultural projects may be nominated by community or agricultural organizations for evaluation by the agricultural fund administrators.

POTENTIAL AGRICULTURAL MITIGATION PROJECTS

Examples of potential projects that could be developed under the fund are presented below:

- Crop irrigation research and development and infrastructure to enhance agricultural capability in the Peace River valley
- Vegetable sector projects, such as vegetable storage and processing facilities near transportation routes, to support development of higher-value agricultural production
- Forage sector projects to increase current forage (food for horses and cattle) and grain crop production levels
- Range and pasture sector improvements, such as clearing, seeding, fertilizing and fencing, to increase capacity and local production
- Regional agricultural programs, such as invasive plant management, agricultural climate adaptation research or local food production programs

Please see page 41 in the feedback form to answer questions related to agriculture.

Refer to pages 4 to 9 for more information

FEEDBACK FORM

WORKER ACCOMMODATION

1. BC HYDRO'S PRELIMINARY WORKER ACCOMMODATION PLAN

The preliminary plan includes the following components:

- 1. **Workers living locally** local residents, regional commuters and new in-community housing to support workers moving to the area.
- 2. Workforce camp accommodation for core construction activities (Site C dam site) two camps, one on the north bank and one on the south bank of the Peace River, which would operate with varied schedules and capacity throughout the construction period, based on construction requirements.
- 3. **Smaller regional workforce camps for other project activities** (regional construction sites) short-term camp accommodation may be used in the region near construction activities.
- 4. **Accommodation Support** monitoring housing requirements, support for workers seeking housing, and ongoing communication with regional communities.
- 1.1 Please rate your level of agreement with the preliminary worker accommodation plan.

Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree
Please provide you	r reasons for your r	ating:		

1.2	worker accommodation plan.						

2. WORKERS LIVING LOCALLY

Building New Housing

BC Hydro is currently working in cooperation with BC Housing towards building approximately 40 new housing units for use by BC Hydro's workforce and their families during construction, plus 10 new affordable housing units. Other projects may be considered.

After construction of the Site C project, all of the housing units would be available as affordable housing in the community. BC Hydro's participation would provide a financial contribution to offset the cost of building affordable housing for the region.

Development Priorities for New Housing - Consultation Topic

In committing to build new housing, several objectives could be considered during development:

- Affordability building units that add to the affordable housing stock
- **Sustainability** building units that demonstrate high energy-efficiency standards and sustainable design
- **Location** building units that have good access to community services (groceries, medical clinic, movie theatres) and transportation options (walking, transit, cycling)



Refer to pages 4 to 9 for more information

FEEDBACK FORM

WORKER ACCOMMODATION

2.1 Please rate the importance of each of these objectives for consideration by BC Hydro regarding new housing development.

	Extremely Important	Very Important	Somewhat Important	Not Very Important	Not at All Important
Affordability					
Sustainability					
Location					

3. ADDITIONAL COMMENTS – Please provide any additional comments regarding worker accommodation.

Refer to page 12 for more information

TRANSPORTATION

TRAFFIC COMMUNICATIONS METHODS

If the Site C Clean Energy Project were to proceed to construction, BC Hydro would implement construction communications and community relations activities to minimize traffic disruption and maximize predictability and safety for the travelling public and workers on the project.

These activities would be designed to keep the public and stakeholders advised on a timely basis about traffic flow, specifically incidents or emergency management situations, and to provide timely notice of construction-related delays, closures and detours if required. Methods of communication could include such things as advertisements and public service announcements in local newspapers, on local radio and on websites, as well as email and social media alerts, text message alerts and messages on portable, changeable signs.

In addition to messages on portable, changeable signs, BC Hydro will provide traffic communications through other channels. Please rate how likely you would be to use the following traffic communications methods:

	Very likely	Somewhat Likely	Neither Likely Nor Unlikely	Somewhat Unlikely	Very Unlikely
Local newspaper advertisements					
Local radio advertisements					
Websites					
Email alerts					
Social media					
Text message alerts					

Refer to pages 10 to 24 for more information

FEEDBACK FORM

TRANSPORTATION

ADDITIONAL INFORMATION REGARDING CONSTRUCTION TRAFFIC CONTROL PLANS AND TRAFFIC MANAGEMENT PLANS	6. Highway 29 – Hudson's Hope to Fort St. John
Each construction site would require a Construction Traffic Control Plan, which would outline traffic control measures at that site. Where work is taking place on provincial highways,	
approval from the B.C. Ministry of Transportation and Infrastructure would be required. Generally, these plans would take into account site-specific details such as maximum hourly traffic volume and special conditions, along with best management practices, regional or	
municipal standards, and Ministry of Transportation and Infrastructure standards.	
For each of the following areas, please provide any additional information that BC Hydro should be aware of in developing Construction Traffic Control Plans or Traffic Management Plans.	
5. Hudson's Hope	
	7. Highway 97 North (Fort St. John to Taylor and Dawson Creek)



Refer to pages 10 to 24 for more information

FEEDBACK FORM

TRANSPORTATION

8. Fort St. John to Dam Site (Old Fort Road, 240 Road, 269 Road and 85th Avenue)	10. Jackfish Lake Road to Dam Site
9. Highway 97 South (Chetwynd)	

Refer to pages 10 to 24 for more information

FEEDBACK FORM

TRANSPORTATION

TRANSPORTATION MITIGATION

Potential mitigation for increases in traffic from Fort St. John to the Site C dam site would include the following:

- Upgrades to Old Fort Road, 240 Road and 269 Road (south of 240 Road) to improve safety and reduce dust
- BC Hydro is currently studying the potential for commercial and recreational facilities for workers in workforce camps, to reduce traffic volume effects while still allowing for workers to travel to regional communities to create local economic benefits
- BC Hydro has initiated discussions with School District 60 regarding enhancements to school bus pickup locations to ensure safe pickup and drop-off

11. Please provide any comments you may have regarding the proposed mitigation

• BC Hydro has initiated conversations with Canada Post regarding increasing the size of pullouts for community mailboxes. This would improve safety for residents picking up their mail as well as for Canada Post workers delivering mail.

for this area:	,		3	

JACKFISH LAKE ROAD TO DAM SITE

Potential mitigation for the increase in traffic along Jackfish Lake Road includes the following:

- Upgrades to Jackfish Lake Road, which would improve safety and reduce noise and dust
- Constructing Project Access Road for Site C-related traffic would reduce potential conflicts with industrial vehicles and other traffic using the resource roads
- Upgrades and maintenance to resource roads during the first year of construction
- BC Hydro has initiated discussions with Canada Post and School District 59 regarding enhancements to mailbox and school bus pickup locations to ensure safe pickup and drop-off.

12. Please provide any comments you may have regarding the proposed mitigation for

• Shuttle buses would be used to transport workers, to reduce the total number of vehicles travelling on Jackfish Lake Road and Project Access Road

this area:	•	,	3	3	 3	



Refer to pages 25 to 29 for more information

FEEDBACK FORM CLEARING

Refer to pages 30 to 35 for more information

AGRICULTURE

15. BC HYDRO IS PROPOSING TO ESTABLISH AN AGRICULTURAL COMPENSATION

PRELIMINARY CLEARING PLAN

13.	Please provide any comments about the preliminary clearing plan, including timing for							
	the 20 per cent of reservoir clearing that could be completed earlier (Years 3 and 4) or later (Years 5 and 6) in the construction period.							
				•	rastructure to enha	nce agricultural		
		Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree		
		Comments						
14.	Additional Comments – Please provide feedback regarding any aspect of clearing that you may want BC Hydro to consider.							
		•		•				
		Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree		
		These projects would focus on enhancements that would improve agricultural local and regional scale. Regional agricultural projects would be nominated by agricultural organizations for evaluation by the agricultural fund administrato an annual basis. Please rate your level of agreement with exploring the follow 15.1 Crop irrigation research and development and infrastructure to enha capability in the Peace River valley. Strongly Agree Somewhat Agree Neither Agree Nor Disagree Comments 15.2 Vegetable sector projects, such as vegetable storage and processing transportation routes, to support development of higher-value agricultural local and regional scale. Regional transportation routes, to support development of higher-value agricultural projects would be nominated by agricultural projects would be						
		Comments						

FEEDBACK FORM

AGRICULTURE

15.3	Forage sector projects to increase current forage (food for horses and cattle) and grain
	crop production levels.

5.3 Forage sector projects to increase current forage (food for horses and cattle) and grain crop production levels.					icultural programs tation research, or		plant management, tion programs.	agricultural	
Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree	Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree
comments					Comments				
	asture sector impro crease capacity and		s clearing, seeding, f	fertilizing and					
		Neither Agree							

Strongly Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Strongly Disagree
Comments				

FEEDBACK FORM

ADDITIONAL COMMENTS

16. ADDITIONAL COMMENTS – Please provide any additional comments you may have regarding any aspect of the Site C Clean Energy Project.	

FEEDBACK FORM

ADDITIONAL (COMMENTS
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HOW INPUT WILL BE USED

Name:

Address:

Phone:

PROJECT DEFINITION CONSULTATION, FALL 2012, DEADLINE FOR FEEDBACK IS OCTOBER 19, 2012.

Postal Code:

Email:

Consent to Use Personal Information

I consent to the use of my personal information by BC Hydro for the purpose of contacting me and keeping me updated about the Site C Clean Energy Project. For purposes of the above, "my personal information" includes name, mailing address, phone number and email address, as per the information I provide.

Signature: Date:

Any personal information you provide to BC Hydro on this form is collected and protected in accordance with the Freedom of Information and Protection of Privacy Act. BC Hydro is collecting information with this form for the purpose of its Site C Clean Energy Project in accordance with BC Hydro's mandate under the Hydro Power and Authority Act, the BC Hydro Tariff, the Utilities Commission Act and related Regulations and Directions. If you have any questions regarding the Site C Clean Energy Project, and/or the information collected on this form, please contact the Site C Clean Energy Project at 1 877 217-0777.

For further information or to submit your feedback form:

P.O. Box 2218 Vancouver B.C. V6B 3W2 Toll-free: 1 877 217 0777 Email: sitec@bchydro.com

Fax: 604 695 5290

Community Consultation Offices:

9948 100th Avenue Fort St. John B.C. V1J 1Y5

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