



PROJECT DEFINITION CONSULTATION

APRIL 10 – MAY 31, 2012

Discussion Guide and Feedback Form

FEEDBACK
FORM
INSIDE

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PROJECT DEFINITION CONSULTATION

SPRING 2012

PURPOSE

Project Definition Consultation, Spring 2012 is designed to consult and engage with the public and stakeholders on topics important to project planning and the environmental assessment. Project Definition Consultation builds on the public and stakeholder consultation conducted in the consultation and technical review stage held between 2007 and 2009.

ENVIRONMENTAL AND REGULATORY REVIEW

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.

Project Definition Consultation, Spring 2012 is a BC Hydro-led consultation and is separate from public participation opportunities led by the Canadian Environmental Assessment Agency (CEA Agency) and the British Columbia Environmental Assessment Office (BCEAO).

HOW INPUT WILL BE USED

Public and stakeholder input received during consultation will help inform the planning process, project definition and plans for mitigation of potential project impacts as BC Hydro prepares the Environmental Impact Statement for review in the environmental assessment process in 2013.

A *Consultation Summary Report* will be posted on the Site C website summarizing feedback from this consultation. BC Hydro will produce a *Consideration Memo*, showing how consultation input has been considered. This information will be used, along with technical and financial information, in refining project designs or plans, including engineering and environmental mitigation plans.

WE WANT TO HEAR FROM YOU

Project Definition Consultation, Spring 2012 takes place April 10 through May 31, 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 (see schedule)
- Providing feedback online: www.bchydro.com/sitec
- Writing a submission to: sitec@bchydro.com or PO Box 2218, Vancouver, B.C. V6B 3W2
- Visiting the Site C project website for the latest information: www.bchydro.com/sitec
- Visiting the Community Consultation Offices: 9948 100th Avenue, Fort St. John and The Pearkes Center, 10801 Dudley Street, Hudson’s Hope
- Calling toll-free: 1 877 217 0777
- Faxing: 604 695 5290

OPEN HOUSE SCHEDULE – APRIL 2012*

Community	Date	Time	Location
Prince George	Thursday April 12, 2012	6:00 – 9:00 p.m.	Ramada Hotel Prince George
Fort St. John	Tuesday April 17, 2012	6:00 – 9:00 p.m.	Pomeroy Hotel, Fort St. John (11308 Alaska Road)
Hudson’s Hope	Wednesday April 18, 2012	6:00 – 9:00 p.m.	Hudson’s Hope Community Hall
Dawson Creek	Monday April 23, 2012	6:00 – 9:00 p.m.	Best Western Dawson Creek Inn
Chetwynd	Tuesday April 24, 2012	6:00 – 9:00 p.m.	Pomeroy Inn and Suites, Chetwynd

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

The deadline for feedback for this period of consultation is May 31, 2012.

PROJECT DEFINITION CONSULTATION

INFORMATION UPDATES AND CONSULTATION TOPICS

INFORMATION UPDATES – BC Hydro is presenting information regarding the following topics:

- **Transmission**
Information about the transmission infrastructure required to connect Site C to the overall transmission network through the existing Peace Canyon substation.
- **Worker Accommodation**
Information about BC Hydro’s planning related to accommodation of workers required for construction of the Site C project.
- **Preliminary Impact Lines and Land Use**
Information about preliminary impact lines that have been determined around the proposed Site C reservoir, including the Flood Impact Line, Erosion Impact Line, Stability Impact Line and the Landslide-Generated Wave Impact Line.

CONSULTATION TOPICS – BC Hydro is seeking feedback regarding the following topics:

- **Highway 29 Preferred Realignments**
The creation of the Site C reservoir would require the realignment of up to six segments of Highway 29 over a total distance of up to 30 kilometres. BC Hydro is seeking feedback regarding the preferred realignments and corridors for segments of Highway 29.
- **Outdoor Recreation**
The creation of the Site C reservoir would mean reservoir-based recreation would replace river-based recreation upstream of the dam, and new recreation opportunities could be created. BC Hydro is seeking feedback about potential recreation areas in the Peace region.
- **85th Avenue Industrial Lands**
BC Hydro has selected the 85th Avenue Industrial Lands as a multi-use site, including storage and laydown, site offices, and as a source of construction material for the Site C dam. BC Hydro is presenting information about the proposed use of the site and is seeking feedback regarding the preferred method of transporting materials and proposed mitigation for the effects of extraction and transportation.

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SITE C CLEAN ENERGY PROJECT

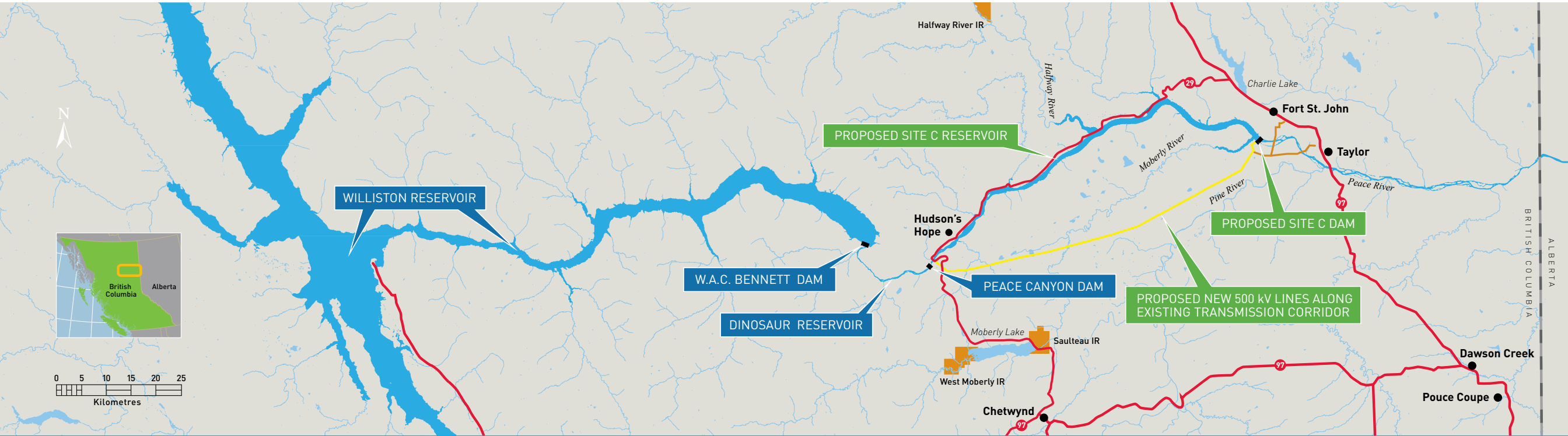
The Site C Clean Energy Project (Site C) is a proposed third dam and hydroelectric generating station on the Peace River in northeast B.C. It would be located approximately seven kilometres southwest of Fort St. John, just downstream of the Moberly River. BC Hydro is proposing to build Site C as part 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 by approximately 50 per cent 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

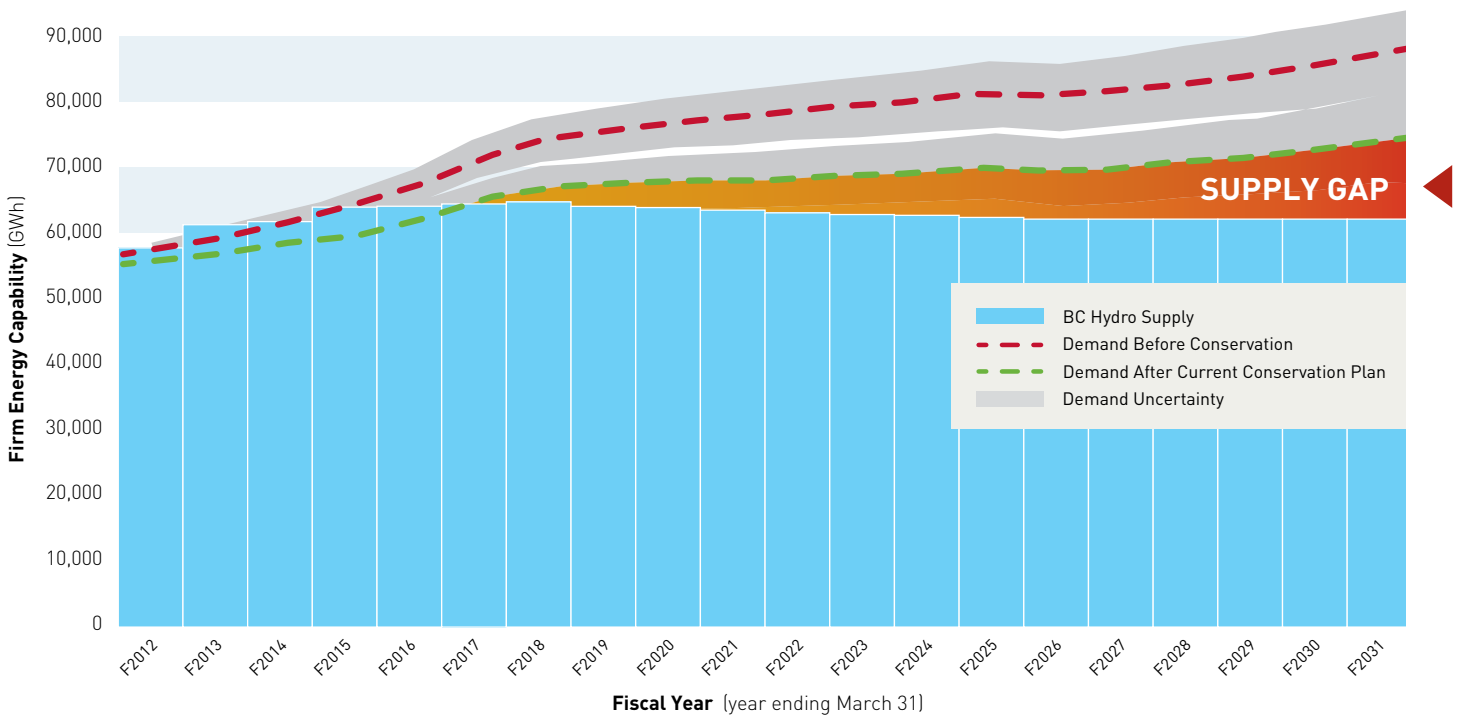
Consistent with British Columbia's *Clean Energy Act*, BC Hydro is preparing a long-term Integrated Resource Plan (IRP) for submission to the Ministry of Energy and Mines, after which the government will review the Plan and decide whether to approve it.

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 Spring 2012, BC Hydro will be consulting the public, stakeholders 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, please go to www.bchydro.com/irp.

DEMAND/SUPPLY OUTLOOK



PROJECT DESIGN FEATURES

As part of BC Hydro's early Stage 3 work, the Site C project design was updated to meet current seismic, safety and environmental guidelines.

THE SITE C CLEAN ENERGY PROJECT COMPONENTS:

- An earthfill dam, approximately 1,050 metres long and 60 metres high.
- A generating station with six 183 MW generating units.
- An 83-kilometre-long reservoir that would be, on average, two to three times the width of the current river. It would be one of the most stable reservoirs in the BC Hydro system.
- The realignment of up to six segments of Highway 29 — over a total distance of up to 30 kilometres.
- A berm at Hudson's Hope along the shoreline.
- Two new 500-kilovolt alternating current (AC) transmission lines that would connect the Site C facilities to the existing Peace Canyon substation, along an existing right-of-way.
- Access roads in the vicinity of the dam site and a temporary construction access bridge across the Peace River at the dam site.
- Construction of two temporary cofferdams across the main river channel to allow for construction of the earthfill dam.

SITE C DESIGN UPGRADES:

- The south valley wall under the dam, the generating station and the spillway are reinforced with a long concrete buttress to improve foundation stability and provide greater seismic protection.
- An overflow auxiliary spillway enhances safety so that even if the plant loses all power, it can safely pass the upstream flows.
- A centre wall divides the gated spillway into two sections, allowing either section of the spillway to be maintained or repaired, while retaining spill capacity in the other section.
- Larger turbines result in increased generating capacity. This provides improved capability for BC Hydro to meet winter peak loads, and allows for greater integration of intermittent renewable sources, such as wind.



Artist rendering of the proposed Site C dam and generating station (May 2011)

The Site C Clean Energy Project requires environmental certification and other regulatory permits and approvals before it can proceed to construction. 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.

PROJECT BENEFITS

BC Hydro is proposing to build the Site C Clean Energy Project as a long-term source of clean, reliable and cost-effective electricity for customers. While the proposed Site C project would create impacts that require avoidance, mitigation or compensation, the project also has the following key benefits.

A COST-EFFECTIVE RESOURCE OPTION

Large hydro projects like Site C have an upfront capital cost, low operating costs, and a long life of more than 100 years.

The estimated capital cost of Site C is \$7.9 billion and it would produce electricity at a cost between \$87 and \$95 per megawatt hour at the point of interconnection.

This would make Site C among the most cost-effective resource options to help meet B.C.'s future electricity needs. Site C would also provide significant additional benefits such as reliable capacity and improved system flexibility.

There is no effect on today's rates from Site C, as development costs are deferred until the project begins generating electricity. This ensures that the costs for Site C are paid by the ratepayers who are benefiting from the project.

BC Hydro is committed to keeping rates as low as possible. To reduce the rate impact on customers, BC Hydro anticipates that the costs for Site C would be amortized over a long period. This amortization period and rate impact would be determined through a future regulatory process with the British Columbia Utilities Commission.

A PUBLICLY OWNED ASSET

BC Hydro's long-term planning indicates that Site C would provide a cost-effective, reliable source of electricity, resulting in economic benefits for BC Hydro customers, compared to other resource alternatives. Site C would be a source of clean and renewable electricity in B.C. It would be a publicly owned BC Hydro asset for the benefit of all British Columbians.

REGIONAL ECONOMIC DEVELOPMENT

Site C is estimated to create approximately 7,000 person-years of direct employment during the seven-year construction period. It is estimated to create up to 35,000 direct and indirect jobs through all stages of development and construction.

The construction of Site C would also provide significant opportunities for small, medium and large businesses, including northern and Aboriginal businesses.

Once in operation, Site C would contribute revenues to the local and provincial governments through water rentals, grants-in-lieu, and other taxes.

Other long-term benefits associated with the Site C project will be determined in Stage 3 in consultation with the public, local governments, Aboriginal groups and the Province.

GREENHOUSE GAS EMISSIONS

Site C would produce among the lowest greenhouse gas (GHGs) emissions per gigawatt hour, compared with other forms of electricity generation. It would produce significantly less GHG emissions than fossil fuel sources such as natural gas, diesel or coal. Preliminary study results indicate that emissions from Site C would fall within the ranges expected for wind, geothermal and solar energy sources.

INTEGRATING RENEWABLE ENERGY

Site C would help facilitate the continued development of intermittent renewables — such as wind and run-of-river hydro — as a dependable and flexible resource. With its reliable capacity, Site C would be able to quickly increase or decrease generation to match the availability of intermittent resources. For example, Site C generation could be increased when intermittent resources are not available (e.g., when the wind is not blowing). When intermittent resources are available, the generation from Site C could be decreased and the water could be stored in the Williston Reservoir for later use.



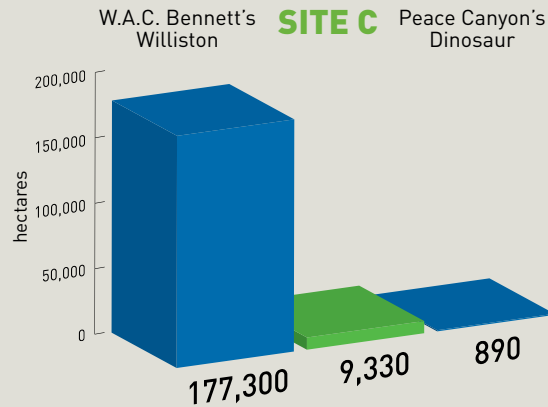
Bear Mountain Wind Park near Dawson Creek

SITE C RESERVOIR

The Site C reservoir would be approximately 83 kilometres long and would be, on average, two to three times the width of the current river. It would flood approximately 5,550 hectares of land and would have a total surface area, including the current river area, of approximately 9,330 hectares.

The Site C reservoir would be one of the most stable in the BC Hydro system, with relatively little fluctuation in water levels during typical operations. The proposed maximum normal operating range for the Site C reservoir would be 1.8 metres — between 460.0 metres and 461.8 metres.

RESERVOIR FOOTPRINT COMPARISON



STAGE 3: ENVIRONMENTAL AND REGULATORY REVIEW

Site C is in the early stages of a cooperative environmental assessment process by the British Columbia Environmental Assessment Office (BCEAO) and the Canadian Environmental Assessment Agency (CEA Agency), which includes a joint review panel. The environmental assessment process commenced in August 2011 and is anticipated to take approximately three years.

As part of the environmental assessment, BC Hydro is identifying and assessing potential project effects — environmental, economic, social, heritage and health — and opportunities to provide lasting benefits for the region and Aboriginal groups. Where effects cannot be avoided, BC Hydro is identifying and evaluating options for mitigation.

Site C 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.

Further information about the environmental assessment process is available online:

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

Project Definition Consultation, Spring 2012 is a BC Hydro-led consultation and is separate from public participation opportunities led by CEA Agency and BCEAO.



1. Fisheries Study: Fish Movement 2. Air Quality Monitoring
3. Climate Monitoring 4. Heritage Study: Soil Sampling

TRANSMISSION

INFORMATION ITEM

Site C would require transmission infrastructure to connect the electricity generated at Site C to the rest of the BC Hydro grid. To achieve this, BC Hydro is planning to construct two new 500 kV AC transmission lines to connect Site C to the overall transmission network through the existing Peace Canyon substation.

Between the Peace Canyon facility and the proposed Site C project area, there is currently a 77-kilometre transmission right-of-way to the south of the Peace River. Today, this right-of-way is occupied by two 138 kV transmission lines that serve local electricity needs in Fort St. John and Taylor from the substation at the W.A.C. Bennett Dam.

Previously, BC Hydro's transmission plans for Site C proposed that the new 500 kV lines for Site C be built along the 77-kilometre right-of-way, beside the existing 138 kV lines. This would have required an expansion of the right-of-way by approximately 34 metres for the length of the 77-kilometre corridor.

TRANSMISSION UPDATE

BC Hydro has assessed an alternative option that would remove the existing 138 kV lines from the transmission corridor and construct the new 500 kV lines in the same corridor. In this scenario, the communities of Fort St. John and Taylor would be connected to the transmission system and served through the Site C switchyard. This option has been found to be feasible and has several benefits over the previous plan. As a result, BC Hydro's transmission plans for Site C have been updated.

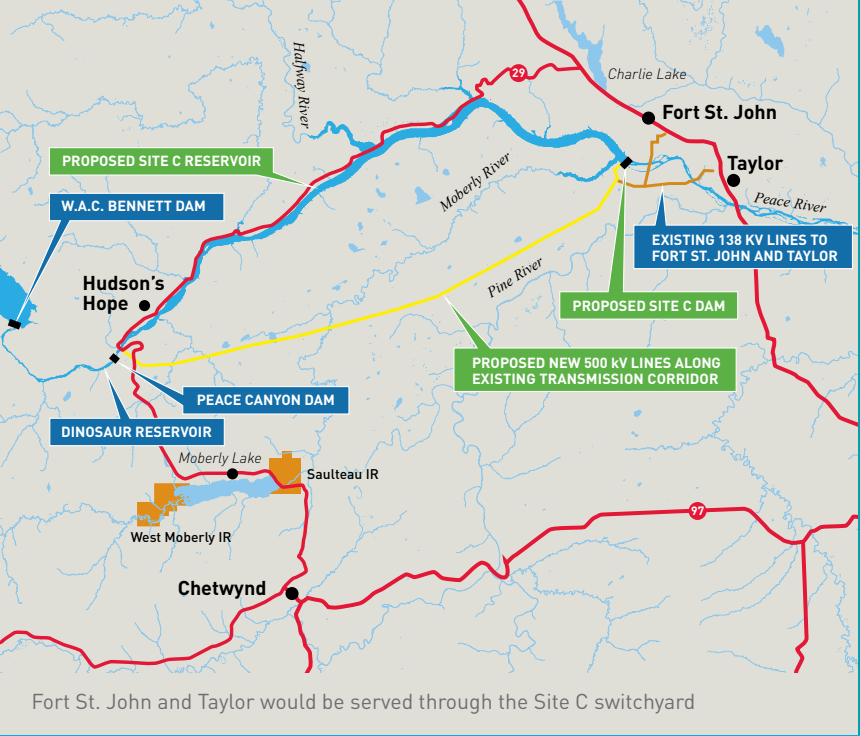
Construction of the new 500 kV lines and removal of the 138 kV lines would be done in such a way as to maintain the continual flow of electricity to Fort St. John and Taylor. The first 500 kV line would be constructed along the north side of the existing right-of-way from the Site C switchyard to Peace Canyon, alongside the existing 138 kV lines. Fort St. John and Taylor would be connected to Site C switchyard and the remaining portions of the 138 kV lines would then be removed, which would free the south side of the existing right-of-way. The second 500 kV line would then be constructed.

BENEFITS OF THE UPDATED TRANSMISSION PLAN FOR SITE C

The updated transmission plan for Site C has several benefits, including increased system efficiency.

Improvements in system reliability for the communities of Fort St. John and Taylor could be expected, as they would be connected to the transmission system at a much closer point (at Site C instead of at the W.A.C. Bennett Dam).

In addition, the updated transmission plan for Site C reduces the overall project footprint.

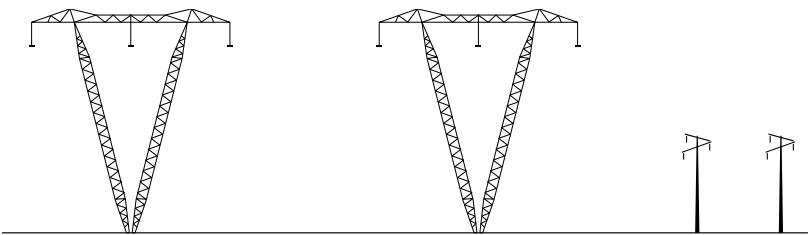


TRANSMISSION

INFORMATION ITEM

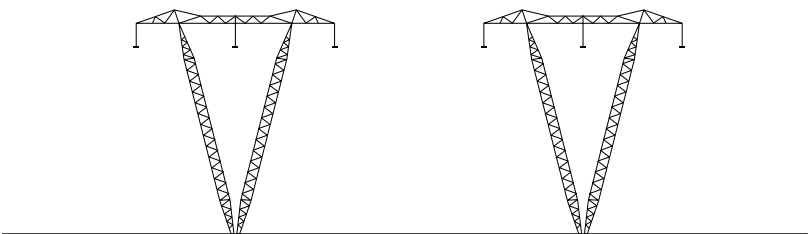
The exact right-of-way requirements for the updated plan are still being studied. However, it is expected that the width of the transmission corridor would be narrower than in the previous design. This is because the updated plan involves just two transmission lines running along the corridor, instead of the four lines in the previous plan (see transmission profile graphic below).

PROFILE OF PREVIOUS PLANNED TRANSMISSION CORRIDOR



New 500 kV lines alongside existing 138 kV lines

PROFILE OF UPDATED TRANSMISSION CORRIDOR



New 500 kV lines replacing existing 138 kV lines

ONGOING AND FUTURE WORK

Technical and field work is ongoing to define transmission requirements for Site C. This includes developing access options for the transmission corridor, as well as vegetation, wildlife and fisheries studies to determine potential effects and options for mitigation.

In addition, BC Hydro is continuing its work to determine right-of-way requirements and timing for the construction of each of the two new transmission lines for Site C.

If the Site C project proceeds to construction, installation of the new 500 kV transmission lines would involve:

- Surveying and siting for towers
- Right-of-way clearing and preparation
- Construction access roads
- Foundation installation
- Tower assembly and installation
- Stringing conductors and ground wires
- Temporary construction facilities (such as laydown areas)

The proposed 500 kV transmission lines for Site C would become part of the overall BC Hydro transmission system and would undergo the same type of operation and maintenance activities as other transmission lines throughout the province.

Transmission plans for Site C will be submitted as part of the Environmental Impact Statement and will be available for public comment as part of the environmental assessment process in 2013.



500 kV transmission lines near Hudson's Hope

WORKER ACCOMMODATION

INFORMATION ITEM

BC Hydro anticipates that the construction workforce for the Site C project would include local residents, regional commuters and out-of-town workers. BC Hydro is developing a worker accommodation plan to include a combination of new in-town housing, dedicated RV spaces and temporary camp accommodations close to work sites.

SITE C CONSTRUCTION WORKFORCE REQUIREMENTS

The construction of Site C is estimated to require about 7,000 person-years of employment during the seven-year construction period. The workforce would vary seasonally and annually to match the construction schedule, with lower numbers in the earlier and final years as work gradually increases and decreases. The estimated average annual workforce would be approximately 900 – 1,000 workers.

About 90 per cent of the construction workforce would be required to construct the dam and generating station. The distribution of work at the dam site would shift between the north and south bank during the construction years. The remainder of the workforce would be needed away from the dam site, including work sites for Highway 29 realignments, Hudson’s Hope berm construction, general roadworks, reservoir clearing and construction material transport, as well as transmission line construction and other related activities.

These workforce estimates are useful for planning and are based on preliminary construction plans and assumptions. The final workforce numbers and scheduling will be determined based on final design and procurement, including contractor plans, methods, and construction considerations. Annual monitoring of the regional labour and housing market during construction will inform adjustments to the project’s worker accommodation plan.

CONSIDERATIONS FOR WORKER ACCOMMODATION

Planning and preparing for the construction workforce accommodation requires consideration of several factors, including project needs and community interests:

- **Workforce requirements:** the number of workers required, where, and when
- **Housing:** accommodation type and location relative to workforce and work sites
- **Transportation:** travel distances, routes, safe commuting practices and support systems
- **Health services:** provision of on-site first aid, emergency services and medical support to reduce use of local services
- **Recreation and leisure:** on-site exercise facilities and social spaces to support workforce well-being
- **Services:** water, sewer, waste management, fire protection and security services
- **Planning for community interactions:** supporting positive interactions with communities while reducing unwanted effects

WORKER ACCOMMODATION

INFORMATION ITEM

WHAT WE’VE HEARD – PUBLIC CONSULTATION

During public and stakeholder consultation in 2008, participants were asked about the importance of five factors regarding housing out-of-town workers.

Participants ranked several housing factors to be of high 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 their families to the region

The input received during consultation is helping to shape BC Hydro’s approach to workforce accommodation planning, including plans to provide in-town housing to support families moving to the region, and the use of temporary camp accommodation to reduce the impact on the local housing market and municipal services.

WHAT WE’VE HEARD – REGIONAL AND LOCAL GOVERNMENT LIAISON

Discussions about worker accommodation are ongoing. Recent discussions regarding workforce accommodation have been held with local and regional government staff, and in introductory presentations to local area First Nations. Considerations raised by local government, including the District of Hudson’s Hope, the City of Fort St. John and the Peace River Regional District, include:

- Minimize distortion and disruption of the local housing market
- Encourage local residency and hiring of local businesses (employees who are already local residents)
- Support and showcase sustainable housing styles and design, and leave a positive housing legacy
- Learn from communities in the region that have experienced “boom and bust” cycles
- Consider transportation and commuting aspects of the workforce
- Consider occupying previously used sites for short-term regional camp locations

NEXT STEPS

BC Hydro will continue to work with local government and is undertaking additional technical work regarding worker accommodation. Worker accommodation and workforce planning will be part of public and stakeholder consultation scheduled for fall 2012.

PRELIMINARY IMPACT LINES AND LAND USE

INFORMATION ITEM

During Stage 2 consultation with communities, stakeholders and the public, BC Hydro introduced an impact line approach to assess the slopes of the proposed Site C reservoir. This approach replaces the previously established “safeline” approach from when the project was reviewed in the 1980s.

The purpose of the reservoir impact line approach is to:

- Protect public safety
- Maximize land use flexibility
- Minimize the amount of land required for the project

BACKGROUND

The creation of the proposed Site C reservoir would flood land and impact land use in the surrounding area. When Site C was initially examined more than 30 years ago, a residential “safeline” around the potential reservoir was established. Since then, a modern impact line approach has been adopted by BC Hydro, consistent with guidelines from the International Commission on Large Dams. The impact line approach is consistent with a recommendation from the British Columbia Utilities Commission in the early 1980s to, where possible, minimize the land acquisition required for the project.

Preliminary impact lines have been determined, and outline potential effects from flooding, erosion, slope instability, and landslide-generated waves that could affect safety and land use around the reservoir.

A full set of maps showing the location of the impact lines around the reservoir is available online at www.bchydro.com/sitec.

WHAT WE HEARD ABOUT IMPACT LINES IN STAGE 2 (2007–2009)

During Stage 2 consultation, the public, property owners and stakeholder participants indicated that the residents who live adjacent to the Peace River are aware of and are concerned about erosion and landslides associated with the proposed reservoir, and how these processes could affect public safety, property use, recreation and the environment.

Participants were presented with information regarding the reservoir impact line approach, and asked for their level of agreement with BC Hydro adopting this approach. Overall, 64 per cent of participants agreed (“strongly” or “somewhat”) with the reservoir impact line approach with respect to property and land use, 22 per cent were neutral and 15 per cent disagreed (“strongly” or “somewhat”).

These results were considered during Stage 3 as the reservoir impact line approach was further developed.



Steep slopes downstream from the Halfway River

PRELIMINARY IMPACT LINES AND LAND USE

INFORMATION ITEM

PRELIMINARY IMPACT LINES

Preliminary impact lines have been determined around the proposed Site C reservoir, based on information gathered as part of historical and recent geotechnical investigations and analyses of erosion seepage and slope stability.

The preliminary impact lines are based on predictions of potential changes to the shoreline from flooding, erosion and landslides, as a result of the creation of the reservoir.

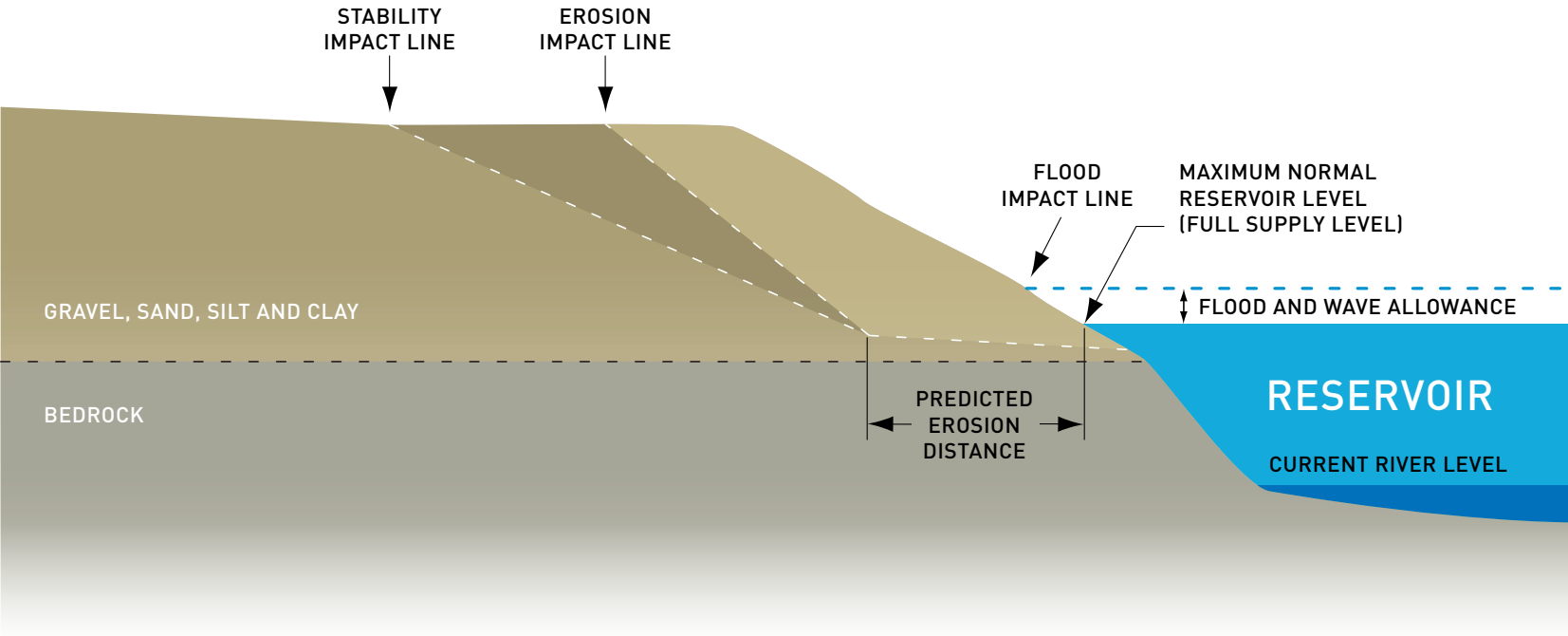
There are four preliminary impact lines:

Flood Impact Line: the boundary beyond which land is not expected to be affected by flood, wind-generated waves, the operation of the Site C auxiliary spillway, and waves caused by boats and small landslides. The Flood Impact Line is located at an elevation of 466 metres, approximately 4 metres above the Maximum Normal Reservoir Level (Full Supply Level) of the proposed Site C reservoir (461.8 metres). As the Maximum Normal Reservoir Level and Flood Impact Line are based on elevation, their location will change as erosion occurs.

Erosion Impact Line: the boundary beyond which the top of the slope is not expected to regress due to erosion caused by the creation and operation of the reservoir over a period of 100 years. The most active period of erosion would be expected to occur during the first five years of reservoir operation.

Stability Impact Line: the boundary beyond which land is not expected to be affected by landslide events caused by the creation and operation of the reservoir. This line considers extremely unlikely landslide events.

Landslide-Generated Wave Impact Line (*not shown on graphic*): a boundary applied to three areas on the north bank (Lynx Creek, Farrell Creek and Halfway River), which comprise less than five per cent of the reservoir shoreline, where landslide-generated waves could temporarily flood elevations higher than the flood impact line. It is based on extremely unlikely landslide events.



This cross-section illustrates the maximum normal reservoir level and preliminary flood, erosion and stability impact lines

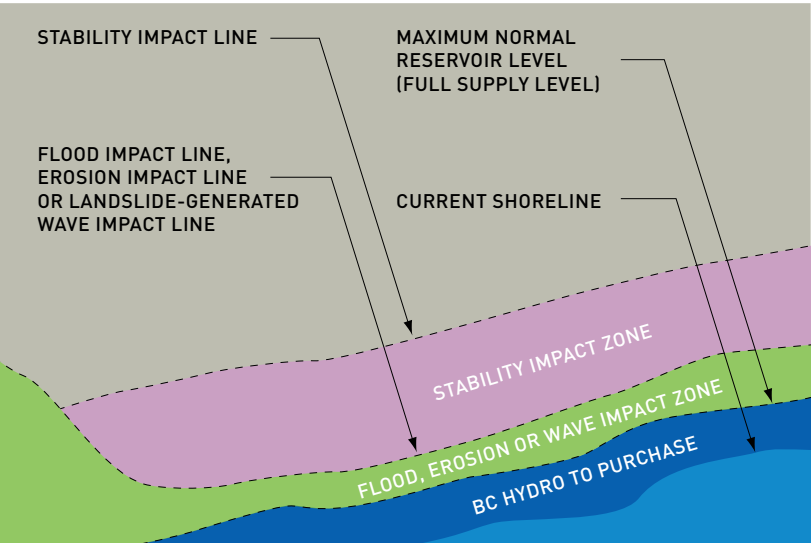
PRELIMINARY IMPACT LINES AND LAND USE

INFORMATION ITEM

LAND USE WITHIN PRELIMINARY IMPACT LINES

BC Hydro has developed an approach to land use on private property within the impact lines. The approach focuses on public safety, maximizing flexibility for land owners, and minimizing the amount of land required by the project.

The graphic illustrates, in plan view, the impact lines and land use zones described below.



The establishment of reservoir impact lines is intended to ensure public safety while maximizing land use flexibility, and to minimize the amount of land required by the project. BC Hydro would purchase the property rights required for the impact lines. Where impacts and implications on zoning, land use and property acquisition cannot be avoided, BC Hydro will identify and evaluate options for mitigation.

BC Hydro's approach:

- BC Hydro would purchase land between the current river shoreline and the area required for the proposed reservoir, up to the Maximum Normal Reservoir Level (461.8 metres above sea level).
- No new residential structures would be permitted within impact lines.
- Non-residential structures could remain, pending site-specific geotechnical assessment
- Within the Stability Impact Zone, existing residential structures could remain for a period of time, at the owner's request and provided a site-specific geotechnical assessment determines that it is safe to do so.
- Within the Flood, Erosion or Wave Impact Zone, existing residential structures would not be permitted to remain, to protect public safety.

BC Hydro is meeting directly with property owners who may be impacted to discuss their specific property interests and options.

NEXT STEPS

During the environmental assessment for the Site C project, the preliminary impact lines may be revised once project elements, such as Highway 29 realignment, recreation site locations and potential shoreline mitigation measures are finalized.

Following reservoir filling, impact lines will be reviewed and may be updated following an initial period of monitoring. An additional update of the impact lines will take place following the first five years of reservoir operations.

GEOLOGY OF PEACE RIVER SLOPES

The topography and geology of the reservoir shoreline are the most significant factors influencing impact lines. A typical section, as shown below, might include bedrock underneath old river gravels, sand, silt and clay lake deposits, a layer of till, and another lake deposit.

Each of these materials has different strength, erosion potential, and susceptibility to changes in water levels. Where the proposed reservoir would flood bedrock slopes or old river gravels, minimal effects on slope stability are anticipated. Where the lake deposits are to be flooded, there is a much higher likelihood for beach erosion and increased landslide activity.

BC Hydro has conducted investigations and assessments of the shoreline geology to help determine the impact lines around the proposed Site C reservoir.



PRELIMINARY IMPACT LINES AND LAND USE

INFORMATION ITEM

HUDSON'S HOPE BERM

As with the historic project design, BC Hydro is proposing a berm to offset the effects of the Site C reservoir on slope stability at the base of the slope at Hudson's Hope. The berm would be designed to protect the shoreline from effects of erosion from the reservoir, and thereby maintain or improve the stability of the slopes compared to their historical performance.

In fall of 2011, BC Hydro consulted the District of Hudson's Hope, property owners and the community of Hudson's Hope regarding options for the Hudson's Hope berm.

Consultation topics included:

- Options for the Hudson's Hope berm
- Potential public use options for berm areas, including:
 - Public access to berm areas
 - Potential landscaping and recreation opportunities in berm areas

Consultation included meetings with Hudson's Hope Mayor and Council and staff, property owner meetings and two public open houses.

BC Hydro presented three berm options for discussion. They are summarized in the following table:

Option	Description	Length of Berm/Protection	Considerations
1	Zone A berm	1,650 metres	Berm in front of residential land, as well as new commercial development since the 1980s berm design.
2	Zone A and C berm	2,100 metres	Berm in front of residential land, new commercial development since the 1980s berm design, as well as municipal sewage ponds.
3	Zone A and C berm, slope flattening in Zone B	2,650 metres	Berm in front of residential land, new commercial development since the 1980s berm design, as well as land zoned as light industrial and municipal sewage ponds. Materials taken from Zone B could be used as construction materials for the berm in Zones A and C.

Based on preliminary engineering, the berm would be built with gravel fill, cobble rock, and rip rap and would be located at the bottom of the slope. It would have a minimum crest width of approximately 7 metres.

RECREATION USE

While consideration of input and technical work is ongoing and no final decisions have been made on the berm options, based on preliminary consultation feedback, BC Hydro has developed a concept for recreation use in the berm area, which is discussed on page 24, under outdoor recreation.



This map illustrates the zones, described above, along the Hudson's Hope shoreline

HIGHWAY 29 PREFERRED REALIGNMENTS

1. CONSULTATION TOPIC

Highway 29 connects Hudson’s Hope to Fort St. John and runs along the north side of the Peace River. Several segments of Highway 29 would be inundated by the proposed Site C reservoir or would be within various impact lines.

In Stage 2 (2007–2009), BC Hydro consulted communities, stakeholders and the public regarding four segments of Highway 29 that would need to be realigned: Lynx Creek, Farrell Creek, Halfway River and Bear Flat/Cache Creek.

Since then, additional information from geotechnical investigations and impact line work identified two additional segments of Highway 29 that may require upgrades, relocation or monitoring: Dry Creek and Farrell Creek East (approximately 20 kilometres east of the Hudson’s Hope townsite).

Five segments of Highway 29 will be realigned:

- Lynx Creek
- Dry Creek
- Farrell Creek
- Halfway River
- Bear Flat/Cache Creek

The segment at Farrell Creek East may also need to be realigned, pending further geotechnical analysis.



Segment Name	Approximate Length of Segment
Lynx Creek	8 kilometres
Dry Creek	1.5 kilometres
Farrell Creek	2 kilometres
Farrell Creek East (potential)	up to 6 kilometres
Halfway River	4 kilometres
Bear Flat/Cache Creek	8.5 kilometres
Total	up to 30 kilometres

HIGHWAY 29 PREFERRED REALIGNMENTS

1. CONSULTATION TOPIC

WHAT WE HEARD ABOUT HIGHWAY 29 IN STAGE 2

In 2008, BC Hydro consulted the public and stakeholders about the four segments of Highway 29 that had been identified at the time for potential realignment.

BC Hydro also undertook property owner consultation on highway realignment options from November 2008 to February 2009. In this consultation, engineering and other representatives from the project team met individually with potentially directly affected property owners to discuss several realignment options for Highway 29 in the Lynx Creek, Farrell Creek, Halfway River and Bear Flat/Cache Creek segments.

The following summarizes input received through these consultation processes:

- When asked which factors were important to consider when evaluating the relocation of the highway segments, public consultation participants considered safety and environmental impacts as most important, followed by heritage sites, impacts on private property, scenic views and cost.
- Most property owners raised specific property-related concerns — examples of common concerns include access to property, supply of power to property, and impacts to current use of land.

- Some property owners suggested alternative routings to the realignment options presented, including along existing roads and rights-of-way (e.g., Millar Road in the Lynx Creek segment) and in areas outside of historical options.
- In addition, feedback was provided regarding slope stability and access.

PREFERRED HIGHWAY 29 REALIGNMENTS AND CORRIDORS

BC Hydro has identified preferred realignments for each of the Lynx Creek, Farrell Creek and Halfway River segments of Highway 29. At Dry Creek and Bear Flat/Cache Creek, BC Hydro has identified corridors in which an alignment would be determined pending further geotechnical analysis. These preferred realignments and corridors are shown over the next few pages.



Highway 29: Geotechnical Investigations

In determining the preferred realignments and corridors, BC Hydro considered Stage 2 consultation input along with the following factors:

- Public safety
- Geotechnical
- Environmental
- Archaeological
- Agricultural
- Private property
- Cost

All preferred realignments were designed to Ministry of Transportation and Infrastructure standards, and were developed in cooperation with, and reviewed by, the Ministry of Transportation and Infrastructure. Costs for the realignment of Highway 29 are included in the project costs for the Site C Clean Energy Project.

Preferred realignments have been designed to a 90-kilometre-per-hour speed, to provide a safer route and modest travel time savings for drivers. All segments require a minimum of a 40-metre-wide (130 feet) right-of-way.

HIGHWAY 29 PREFERRED REALIGNMENTS

1. CONSULTATION TOPIC

1.1 PREFERRED REALIGNMENT – LYNX CREEK

The Lynx Creek segment is located approximately five kilometres east of the Hudson's Hope townsite and 75 kilometres west of Fort St. John.

The preferred realignment is approximately eight kilometres long, and would cross Lynx Creek with a bridge of approximately 160 metres and a causeway of approximately 280 metres, and then run along Millar Road. The use of Millar Road was suggested by property owners during consultation in 2008.

The preferred realignment has the following attributes:

- Improves safety for the travelling public and addresses existing problems with highway slopes
- Allows for posted speed limit of 90 kilometres per hour throughout, eliminating existing curve speed advisories
- Less land removed from Agricultural Land Reserve compared to other options considered
- Less area of wildlife habitat removed compared to other options considered
- Shortest bridge length, minimizing maintenance cost, and maximizing foreshore habitat along causeway

1.2 PREFERRED CORRIDOR – DRY CREEK

The Dry Creek segment is located between Lynx Creek and Farrell Creek, approximately 14 kilometres east of the Hudson's Hope townsite and 73 kilometres west of Fort St. John. At this location, the existing culvert is undersized and would be submerged once the reservoir is filled.

Approximately 1.5 kilometres of highway would be realigned or raised to improve the highway alignment. The existing culvert would be replaced by a larger culvert, to allow water to pass underneath.

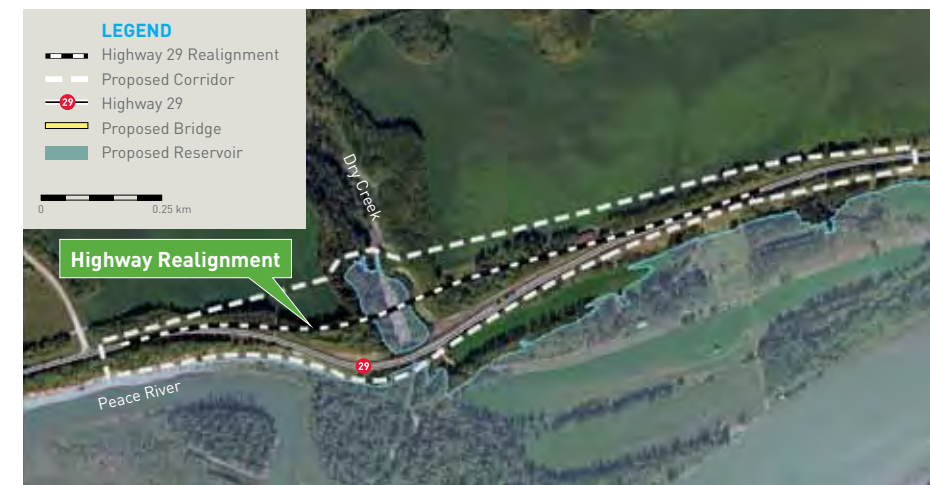
BC Hydro has identified a preferred corridor within which the realignment would occur, as shown on the map. The preferred realignment shown within the corridor is subject to further geotechnical investigation.

The preferred corridor and realignment have the following attributes:

- Improves safety for the travelling public and increases the length of passing opportunities for drivers
- Allows for posted speed limit of 90 kilometres per hour throughout, eliminating existing curve speed advisories



PREFERRED REALIGNMENT – LYNX CREEK



PREFERRED CORRIDOR – DRY CREEK

HIGHWAY 29 PREFERRED REALIGNMENTS

1. CONSULTATION TOPIC

1.3 PREFERRED REALIGNMENT – FARRELL CREEK

The Farrell Creek segment is located approximately 15 kilometres east of the Hudson’s Hope townsite and 70 kilometres west of Fort St. John.

The preferred realignment would be approximately two kilometres long, and would cross Farrell Creek with a bridge of approximately 170 metres and a causeway of approximately 170 metres.

The preferred realignment has the following attributes:

- Improves safety for the travelling public and increases the length of passing opportunities for drivers
- Allows for posted speed limit of 90 kilometres per hour throughout, eliminating existing curve speed advisories
- 500 metres shorter than the existing Highway 29 segment
- Preferred realignment makes use of the existing peninsula, minimizing bridge length and maintenance costs and adding foreshore habitat

1.4 POTENTIAL ADDITIONAL SEGMENT – FARRELL CREEK EAST

(Approximately 20 kilometres east of the Hudson’s Hope townsite)

The Farrell Creek East segment of Highway 29 is located approximately 20 kilometres east of the Hudson’s Hope townsite, and 60 kilometres west of Fort St. John. The existing Highway 29 is currently experiencing surface erosion and shallow landslides that, in some locations, are encroaching on the existing highway. The highway is currently located within the preliminary stability and erosion impact lines that have been determined for the proposed Site C reservoir.

BC Hydro is proposing to relocate up to 6 kilometres of Highway 29 in this segment further from the top of the bank, behind the preliminary stability and erosion impact lines. Additional geotechnical investigation is required to confirm the length of highway realignment.

BC Hydro has identified a preferred corridor within which the realignment would occur, as shown on the map. The preferred realignment shown within the corridor is subject to further geotechnical investigation.

The preferred corridor and realignment have the following attributes:

- Improves safety for the travelling public and increases the length of passing opportunities for drivers
- Addresses existing problems with highway slopes



PREFERRED REALIGNMENT – FARRELL CREEK



POTENTIAL ADDITIONAL SEGMENT – FARRELL CREEK EAST

HIGHWAY 29 PREFERRED REALIGNMENTS

1. CONSULTATION TOPIC

1.5 PREFERRED REALIGNMENT – HALFWAY RIVER

The Halfway River segment is located approximately 37 kilometres east of the Hudson’s Hope townsite and 47 kilometres west of Fort St. John. In this segment, the existing highway would be flooded, requiring realignment of approximately four kilometres of Highway 29.

The preferred realignment would follow the reservoir shoreline, and would cross over the Halfway River with a bridge of approximately 300 metres and a causeway of approximately 650 metres, as shown to the right.

The preferred realignment has the following attributes:

- Improves safety for the travelling public
- Reduces travel by approximately 300 metres compared to the existing Highway 29
- Less area of in-stream works required compared to other options considered, and therefore fewer potential effects on aquatic and riparian habitat

1.6 PREFERRED CORRIDOR – BEAR FLAT/CACHE CREEK

The Bear Flat/Cache Creek segment is located approximately 49 kilometres east of the Hudson’s Hope townsite and 31 kilometres west of Fort St. John. In this area, the existing highway would be flooded by the reservoir, requiring relocation of approximately 8.5 kilometres of Highway 29.

BC Hydro has identified a preferred corridor within which the realignment would occur, as shown on the map. The preferred realignment shown within the corridor is subject to further geotechnical investigation.

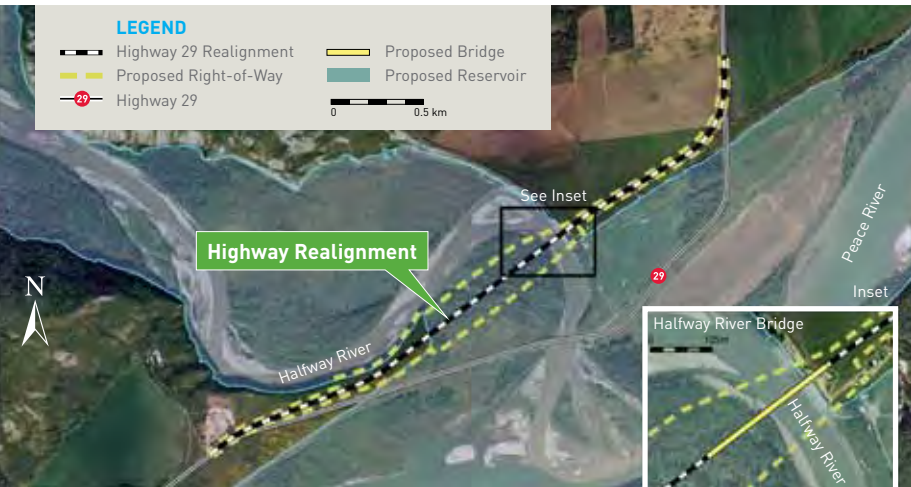
The preferred corridor and realignment have the following attributes:

- Improves safety for the travelling public and increases the length of passing opportunities for drivers
- Less land removed from Agricultural Land Reserve compared to other options considered

NEXT STEPS

Further engineering work would be completed prior to construction of Highway 29 realignments. This work could include additional geotechnical investigations, incorporating results of environmental studies, detailed designs, confirming alignments and preparing construction specifications.

Input received regarding preferred Highway 29 realignments will help inform project definition and plans for mitigation of effects. Preferred realignments and mitigation plans will be included in the Environmental Impact Statement, and will be available for further public comment as part of the environmental assessment process.



PREFERRED REALIGNMENT – HALFWAY RIVER



PREFERRED CORRIDOR – BEAR FLAT/CACHE CREEK

OUTDOOR RECREATION

2. CONSULTATION TOPIC

The Peace River is currently used by residents and tourists for recreation activities such as boating and fishing. BC Hydro is developing an Outdoor Recreation Plan that will describe:

- Potential effects on outdoor recreation use and facilities
- The change from river-based recreation upstream of the dam to reservoir-based activities and the potential for new recreation opportunities
- The proposed public safety management related to recreation

The plan will also include proposed outdoor recreation mitigation measures where direct impacts from the Site C project on recreation facilities are identified.

Input from public and stakeholder consultation and recreation studies conducted in Stage 2 and feedback from ongoing discussions with local governments, along with the standards that BC Hydro maintains for recreation at other hydroelectric facilities around the province, are being considered as BC Hydro develops the Outdoor Recreation Plan.



Fishing on the Peace River

RECREATION AT BC HYDRO FACILITIES

BC Hydro supports recreation around many of its hydroelectric facilities throughout the province, including boat launches and other recreation features such as camping, trails and picnic sites. Information is available at www.bchydro.com/community/recreation_areas.html.

In the Peace region, BC Hydro takes an active role in the provision and maintenance of public boat launches due to its current facilities on the Peace River – the Peace Canyon Dam and the W.A.C. Bennett Dam.



Fishing, Peace River between Halfway River and Hudson's Hope

OUTDOOR RECREATION

2. CONSULTATION TOPIC

WHAT WE HEARD ABOUT RECREATION IN STAGE 2

In 2008, consultation participants were asked four specific questions on reservoir recreation and were given the opportunity to provide any further input in the open-ended comment sections.

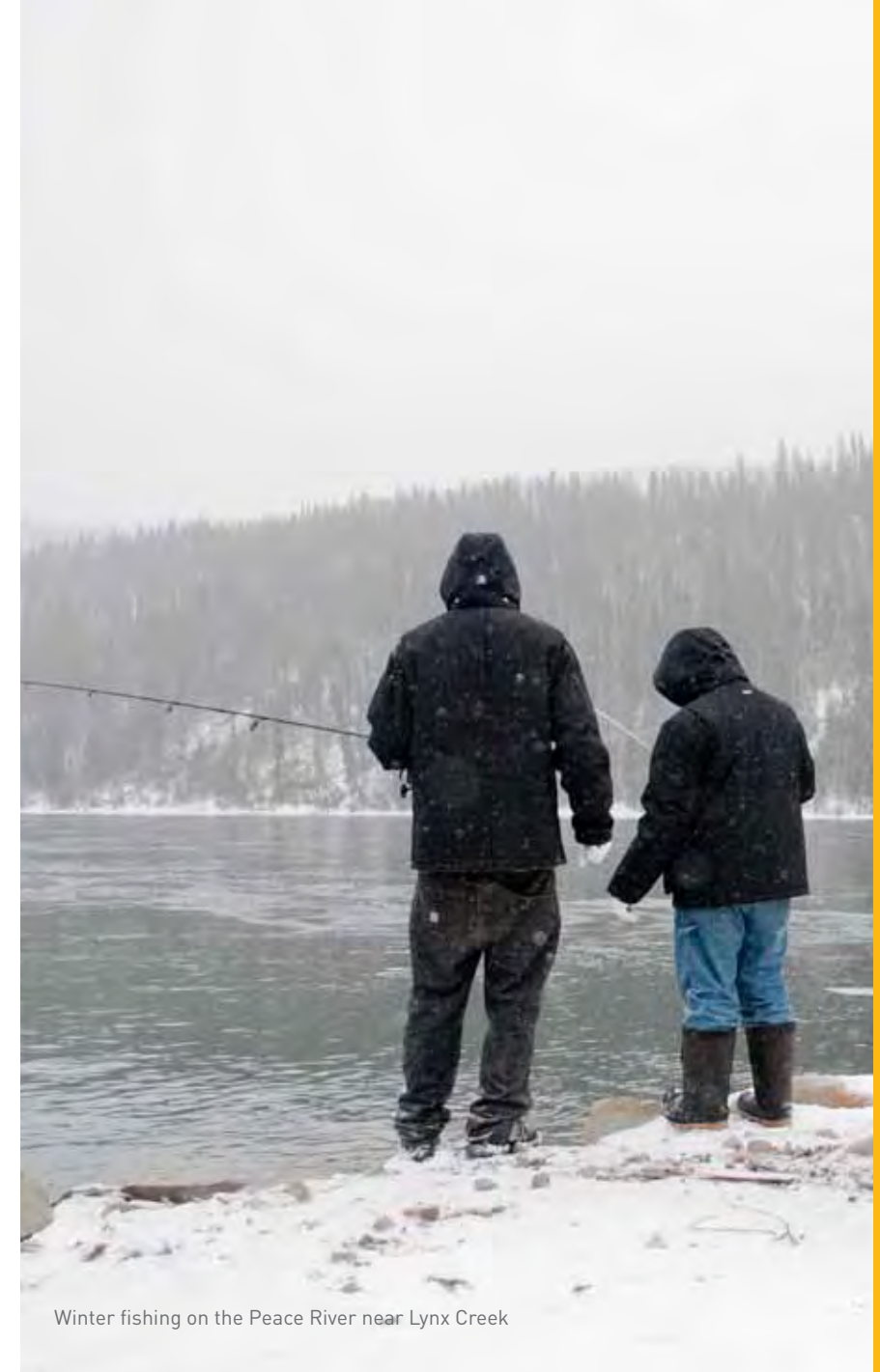
- When asked which factors should be considered when evaluating potential reservoir recreation, participants were most likely to select:
 - Provide minimal impacts to the environment
 - Designate new parks and protected areas
 - Provide a range of facilities and services for recreation
 - Support new types of recreation activities
- When asked about the likelihood of using the reservoir for specific recreational activities, participants were “very” or “somewhat” likely to use the reservoir for:
 - Day use
 - Camping
 - Hiking
 - Fishing
 - Boating (motorized and/or non-motorized)
 - Hunting
- Just over half of participants indicated they would prefer to see a network of roads providing easy recreational access while just under half (46 per cent) would prefer to keep the reservoir accessible primarily by boat, existing roads, or on foot.

- Almost 60 per cent of participants said they would be at least somewhat likely to use the reservoir for recreational purposes if there was public access.

REGIONAL AND LOCAL GOVERNMENT ENGAGEMENT (2010–2012)

Discussions with regional and local governments regarding recreation are ongoing as part of Site C’s regional and local government liaison program. Interests related to recreation raised by regional and local government include:

- Creation of a trail network in the Hudson’s Hope area, or other hiking opportunities
- Provision of BC Hydro-maintained boat launches
- Maintaining public access for fishing and day use
- Providing new camping or other recreational areas along the reservoir
- Involvement of local recreation groups in identifying potential new recreation sites
- Mitigating navigation barriers created by the project, including boat passage past the dam
- Planning for increased public use at new recreation facilities



Winter fishing on the Peace River near Lynx Creek

OUTDOOR RECREATION

2. CONSULTATION TOPIC

HOW INPUT HAS BEEN USED

Input to date that has been incorporated in preliminary recreation planning includes:

- Avoiding environmentally sensitive areas in selecting potential boat launch and day-use sites
- Including day-use facilities at reservoir boat launch locations, with consideration given to the adjacent land use to support potential future recreation amenities
- Providing technical support to private and local government planning for new reservoir recreation facilities, including parks, camping, RV parks, and marinas.
- Planning for a potential new Hudson’s Hope berm trail, but not extending it in front of private properties
- Planning for a Hudson’s Hope berm small-vessel launch, as well as options for full-size boat launches near Lynx Creek and Cache Creek
- Providing funds to local recreation groups to support development of replacement sites

2.1 BC HYDRO RESERVOIR BOAT LAUNCHES – POTENTIAL AREAS

An important aspect of recreation on the Peace River is the availability of sites to access the river. The proposed Site C reservoir would inundate two existing BC Hydro-maintained public boat launches: one at Lynx Creek and one at Halfway River.

BC Hydro has identified potential areas within which recreation sites, including replacement boat launches, could be created. One site at Lynx Creek and two sites at Cache Creek have been identified, and are shown on the map on the next page.

BC Hydro proposes to replace the two inundated boat launches with one at Lynx Creek and one at Cache Creek, and is seeking input on which of the two potential locations at Cache Creek is preferred.

A suitable site for a boat launch on the reservoir near Halfway River that met public safety and access considerations was not found.

Potential areas have been selected with consideration of:

- Public safety
- Preliminary impact lines
- Highway 29 preferred realignments
- Public road access
- Land ownership
- Environmental site considerations
- Adjacent land use available for further additional recreation amenities, e.g., campgrounds

Boat launches would be accessible from Highway 29 and may be located in areas that have the potential to accommodate camping or other recreational facilities that may be developed in the future, as is currently the case at Peace Island Park (operated by the District of Taylor) and Blackfoot Creek Park (operated by the Peace River Regional District).

The sites identified are subject to change based on further technical work. BC Hydro’s assessment of the effects on outdoor recreation and this proposed mitigation will be reviewed as part of the environmental assessment process.



Lynx Creek – berm at boat launch site

OUTDOOR RECREATION

2. CONSULTATION TOPIC

The map on this page shows potential areas within which recreation sites, including replacement boat launches, could be created.

BC Hydro proposes to replace the two inundated boat launches with one at Lynx Creek and one at Cache Creek, and is seeking input on which of the two potential locations at Cache Creek is preferred.

In addition, a boat launch is proposed as part of the recreation facilities at the Hudson’s Hope berm.

LYNX CREEK – POTENTIAL RECREATION AREA

A potential area has been identified near Lynx Creek:

- Approximately 80 kilometres from Fort St. John
- Approximately 5 kilometres from Hudson’s Hope
- Approximately 70 kilometres from Chetywnd
- Easily accessible from Highway 29

CACHE CREEK – POTENTIAL RECREATION AREA

Two potential areas have been identified near Cache Creek:

Cache Creek West

- Approximately 40 kilometres from Fort St. John
- Approximately 50 kilometres from Hudson’s Hope
- Easily accessible from Highway 29

OR

Cache Creek East

- Approximately 30 kilometres from Fort St. John
- Approximately 55 kilometres from Hudson’s Hope
- Easily accessible from Highway 29



Potential recreation sites – Site C reservoir

OUTDOOR RECREATION

2. CONSULTATION TOPIC

BOAT LAUNCH DESIGN AND FACILITIES

In addition to boat access to the reservoir, these boat launch sites would provide day-use facilities such as a dock, picnic area, outhouses and parking. Below is a representative image of a typical boat launch site, showing the type of design BC Hydro would use and the type of facilities that would be included. BC Hydro would be responsible for ongoing site management and maintenance.

LOCAL RECREATION CLUBS

There are a number of informal recreation sites along the Peace River that would be inundated by the Site C reservoir, including informal camping sites maintained by a local recreation club under short-term Forest Recreation tenures.



Artist rendering of a typical boat launch

BC Hydro proposes to provide compensation funding to enable the group to build new sites, for example in and around the reservoir area, or downstream on the Peace or Pine rivers. The location of these sites would require site specific planning and appropriate tenures.

ALWIN HOLLAND PARK

The Site C reservoir would inundate some shoreline and low trail areas of Alwin Holland Park. As part of the recreation mitigation, BC Hydro proposes to provide funds to the District of Hudson's Hope for improvements to Alwin Holland Park, such as trail development, parking or other park facilities.

HUDSON'S HOPE BERM – RECREATION USE

While consideration of input and technical work is ongoing and no final decisions have been made on the berm options, facilities in the berm area may include:

- Small-vessel boat launch and dock
- Small parking area
- Picnic benches and washroom facilities
- New trail travelling east along the berm
- Connection to existing trail leading west up into town

Based on input from the public and property owners in the Hudson's Hope area, public use of the berm in front of private property, upstream of the boat launch site, is not proposed. A preliminary concept of recreational facilities at Hudson's Hope is shown in the artist rendering on this page.



Artist rendering of conceptual recreational use on Hudson's Hope berm

OUTDOOR RECREATION

2. CONSULTATION TOPIC

BC HYDRO PUBLIC SAFETY

A Public Safety Management Plan will be developed for Site C that will include the approach to managing public safety for river access during construction and for reservoir access during the early years of operation. Transport Canada would need to authorize any proposed restrictions to boating or navigational closures.

Public use of the Peace River during construction of the Site C Project

The proposed approach to safe public access during construction of the Site C project includes:

- Maintaining public access to the river except in active construction areas:
 - Boat access would be restricted at the dam site, approximately 3 kilometres, both upstream and downstream
 - Temporary area closures would be used within the reservoir zone in active work areas
- Placement of debris management booms on the river between Cache Creek and the dam site

Public use of the Site C Reservoir during early operation

The proposed approach to safe public access following commissioning of the Site C project includes:

- Shoreline use along the reservoir is expected to be available near Hudson's Hope shortly after reservoir filling, with additional areas opened for use based on monitoring of slope conditions
- Boat access would be restricted permanently at the dam site for safety reasons
- Boat access in some areas of the reservoir is expected to be safe and allowable within about one year of reservoir creation
- Construction of reservoir boat launches and recreation areas would begin within the first year of reservoir creation
- Areas would be opened based on monitoring of reservoir conditions related to slope stability and debris management

NEXT STEPS

BC Hydro will continue discussions with local and regional governments, First Nations, and provincial and federal agencies regarding plans for outdoor recreation related to the Site C project.

Input received will help inform project definition and plans for mitigation of effects. An Outdoor Recreation Plan will be included in the Environmental Impact Statement, and will be available for further public comment as part of the environmental assessment process in 2013.

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

SITE LOCATION AND OWNERSHIP

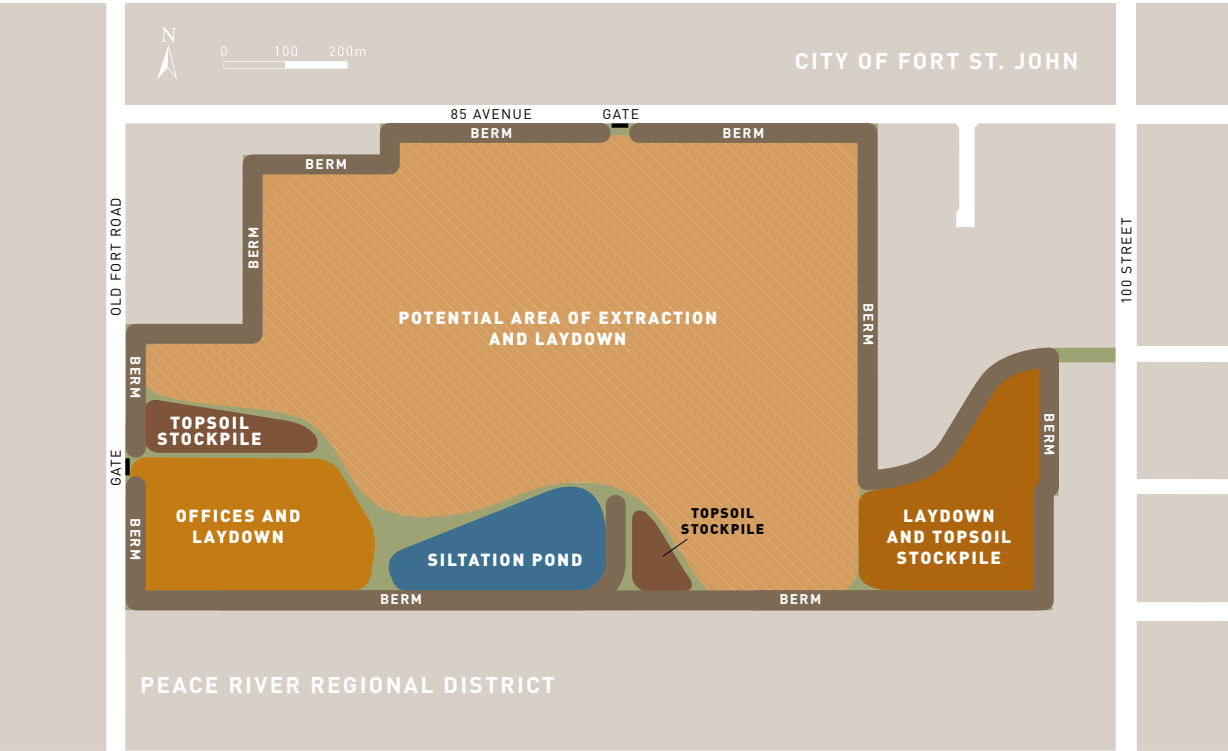
The 85th Avenue Industrial Lands is a 96-hectare (237 acre) parcel of land located in the Peace River Regional District, adjacent to the City of Fort St. John. The borders of the area referred to as the 85th Avenue Industrial Lands can be seen in the map below. BC Hydro owns all parcels of land within the 85th Avenue Industrial Lands site.



The 85th Avenue Industrial Lands are located in the Peace River Regional District, close to Fort St. John, and are approximately six kilometres from the proposed Site C dam

USE OF THE 85TH AVENUE INDUSTRIAL LANDS FOR THE SITE C CLEAN ENERGY PROJECT

BC Hydro has selected the 85th Avenue Industrial Lands as a multi-use site, including storage and laydown, site offices, and as a source of construction material for the Site C dam.



Preliminary concept plan for the layout at the 85th Avenue Industrial Lands (Subject to change)

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

LAYDOWN AND STORAGE AREA

The 85th Avenue Industrial Lands would be used as a temporary laydown and storage area for equipment and materials. Equipment stored at this site would include passenger vehicles and construction equipment. Materials temporarily stored at this site could include lumber, rebar, steel, cement, and miscellaneous mechanical and electrical equipment. Storage of equipment and materials may require the construction of temporary warehouses.

CONSTRUCTION OFFICES

Given their proximity to the proposed Site C dam, the 85th Avenue Industrial Lands could be used as a location for temporary construction offices for BC Hydro or its contractors.

SOURCE OF CONSTRUCTION MATERIAL

During Stage 2 and early Stage 3 (2008–2011), BC Hydro conducted investigations to find the best source for impervious materials close to the Site C dam site.

BC Hydro identified that the material found at the 85th Avenue Industrial Lands would be the best option for impervious material. All impervious material required for the construction of the temporary cofferdams, the dam's central core, and the approach channel lining can be sourced from the 85th Avenue Industrial Lands, eliminating the need to extract impervious materials from areas further from the dam site.

The 85th Avenue Industrial Lands were chosen as a source of dam materials for the following reasons:

- Quality and suitability of the material as impervious fill
- The site is close to the dam (approximately six kilometres)
- The till deposit is thick, with relatively little waste material, which enables an extraction plan that minimizes the surface footprint
- Removal of materials would level and flatten the ground of the site, which would provide more options for reclamation plans and the future use of the site

MATERIAL STOCKPILE

The 85th Avenue Industrial Lands would include stockpiles for materials such as topsoil, materials requiring moisture control, and materials ready to be moved to the dam site.

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

SITE PLANNING CONSIDERATIONS

As part of the Site C environmental assessment, these lands and their use during construction would be assessed for potential effects on community services, transportation, land use, agriculture, archaeology, human health (air quality and noise) and wildlife, among others.

Information about the use of these lands and related studies will be included in the Environmental Impact Statement for the Site C project, along with proposed mitigation strategies for potential adverse effects.

A detailed site plan would be developed for use of the 85th Avenue Industrial Lands.

The plan would include consideration of:

- The provision of new, or impact to existing, utilities and services including water, sewer, gas and electrical lines
- The use, crossing, alteration and construction of existing and new roads
- Clearing of trees and vegetation
- Noise, light and dust mitigation
- Current and future land use and adjacent land use

EXTRACTION ACTIVITIES

Materials would be extracted from the site in approximately 30-centimetre (1 foot) layers. Extraction would not require any drilling or blasting, and it is anticipated that only a relatively small portion of the materials would require processing, such as screening or crushing, prior to being removed from the site.

Public access to the site would be restricted during operations for safety and security reasons. Gated access for construction use would be provided from 85th Avenue and from Old Fort Road.

3.1 MITIGATION FOR SITE PREPARATION AND EXTRACTION ACTIVITIES

Site preparation and extraction activities would cause some noise, light, dust and visual impacts. BC Hydro has developed proposed mitigation measures for these impacts and is interested in feedback regarding any additional mitigation measures that might be considered.

Mitigation measures could include the following:

- Minimizing noise, light and visual impacts by constructing a berm and leaving trees around the perimeter of the site, and directing lights purposefully into the site
- Minimizing dust by moisture conditioning materials, using water trucks on gravel roads and cleaning paved roads
- Minimizing vehicle emissions by preventing queued and idling vehicles, performing regular maintenance of equipment, using electricity rather than diesel where practical and positioning equipment away from residences
- Minimizing noxious weeds by treating noxious weeds, hydro-seeding soil and implementing vehicle wash stations

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

OPTIONS FOR MOVING CONSTRUCTION MATERIAL TO DAM SITE AREA

BC Hydro has explored several options for moving materials from the 85th Avenue Industrial Lands to the proposed dam site area, and has identified a preferred transportation method and route for discussion.

3.2 PREFERRED OPTION: CONVEYOR BELT SYSTEM

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.

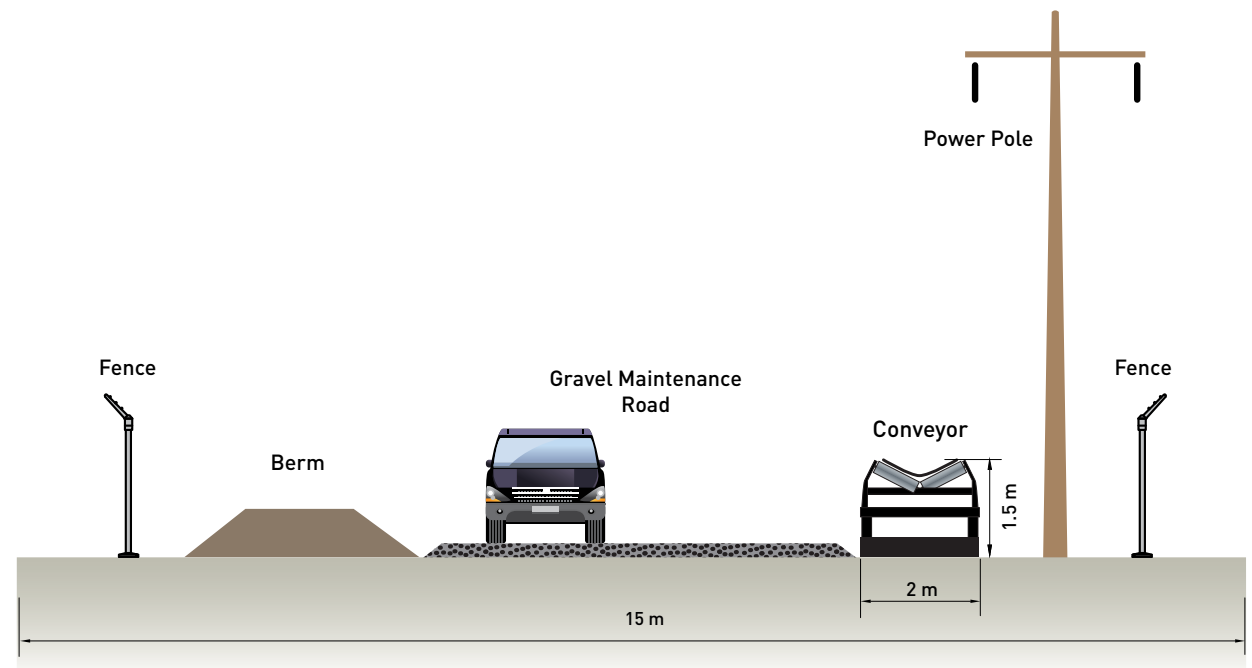
The conveyor belt system would be approximately 2 metres wide and 1.5 metres high. The right-of-way required would be approximately 15 metres wide, and would include a gravel service road for construction and ongoing maintenance of the conveyor. The image to the right shows a conceptual cross-section of the conveyor belt system.

The conveyor belt could deliver approximately 1,600 tonnes of material per hour to the proposed dam site area. Here, the conveyor belt would off-load materials into a large hopper or to a stockpile close to the hopper. Trucks would then be loaded directly from the hopper or by front-end loader from the stockpile, and would move materials within the dam site area.

The conveyor belt would be powered by electricity through an extension of the existing BC Hydro distribution network along the right-of-way. Power would be required at the 85th Avenue Industrial Lands, at conveyor transfer points, and at the truck loading area.

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

- Conveyor belt requires a narrower right-of-way (approximately 15 metres) compared to other methods, minimizing the project footprint
- 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 methods



Conceptual cross-section of a conveyor belt system

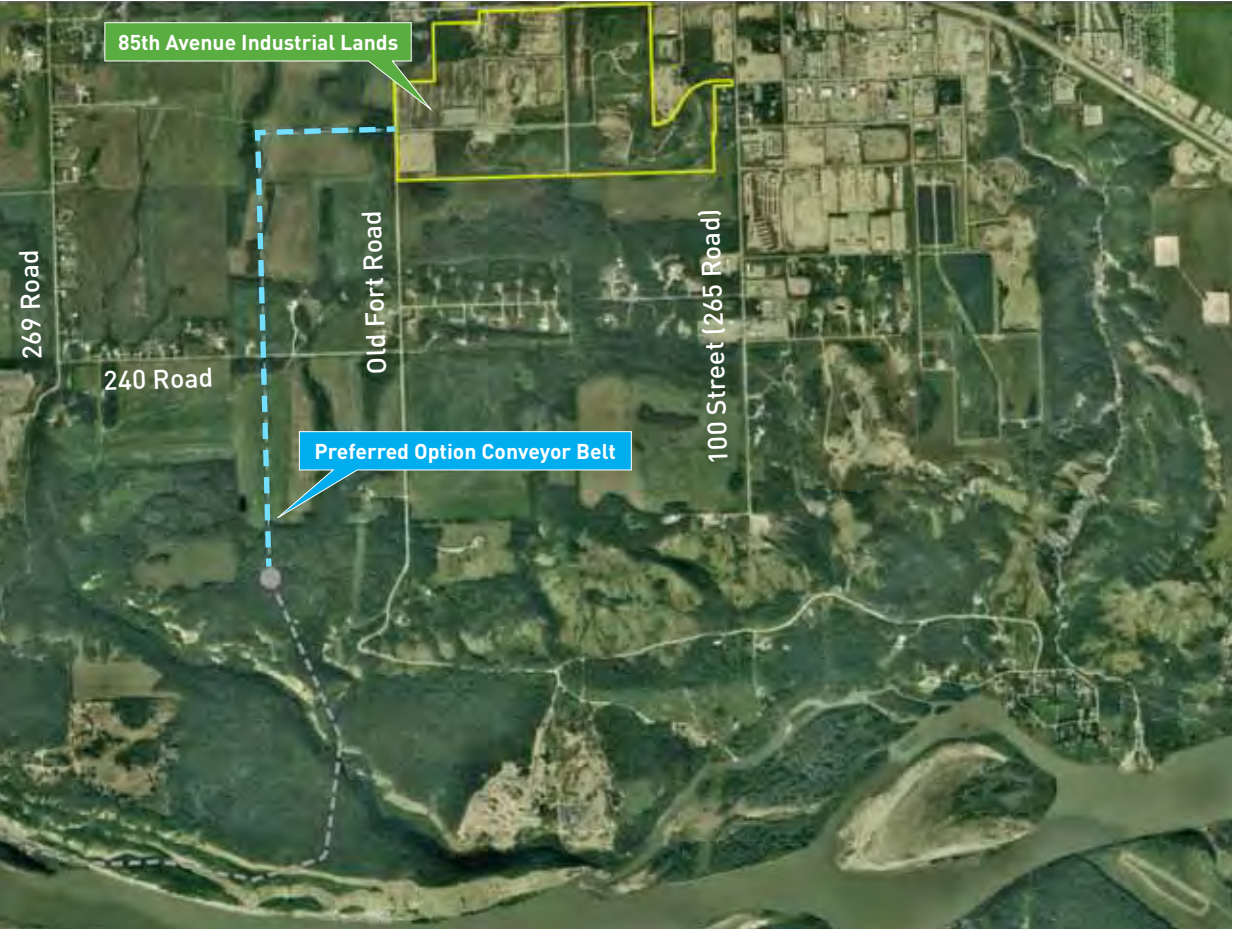
85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

PREFERRED OPTION: CONVEYOR BELT SYSTEM – PROPOSED ROUTE ALIGNMENT

The proposed route alignment is shown on the map to the right, denoted by the blue line. The preferred route would have a length of approximately three kilometres from the 85th Avenue Industrial Lands to the proposed dam site area. The route would head west from the 85th Avenue Industrial Lands, crossing Old Fort Road, and would travel for approximately 600 metres before turning south. From here, the route travels parallel to Old Fort Road, crossing 240 Road. The conveyor belt ends at the dam site area. Trucks would be used to move material within the dam site area.

Where the route crosses private lands, BC Hydro would obtain rights for the construction and use of the conveyor belt route. Property owners would be compensated for the granting of these rights to BC Hydro.



Proposed route alignment for a conveyor belt system

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

ALTERNATIVE OPTION – NOT PREFERRED: OFF-ROAD TRUCKING

Another option that BC Hydro evaluated is to use large trucks along a temporary off-road truck route directly from 85th Avenue Industrial Lands to the proposed dam site area. The route would generally follow the same alignment as the conveyor belt system.

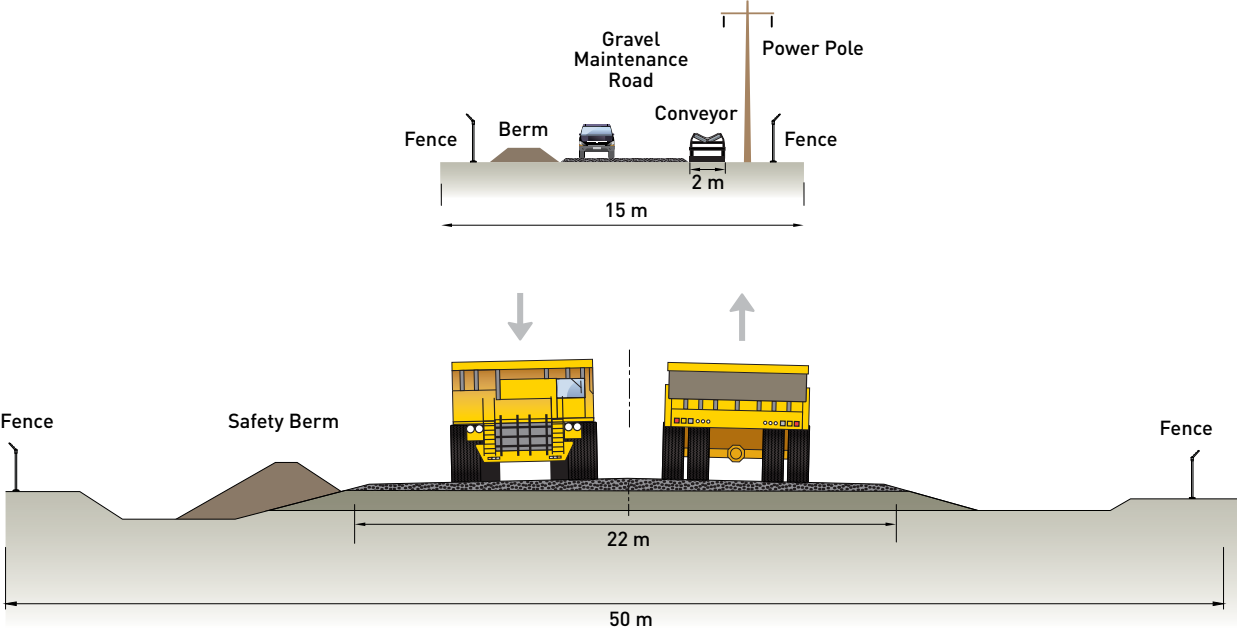
The temporary off-road truck route would have a right-of-way of approximately 50 metres and would be built for construction traffic only, with no public use. The road surface would be gravel and would be maintained using a grader to level the road and water trucks to control dust. The image to the right shows a conceptual cross-section of an off-road truck route.

The off-road truck route is an alternative option, but not the preferred option, for the following reasons:

- Off-road truck route would require larger right-of-way (50 metres), resulting in greater impacts on land
- In areas close to residences, truck movements along the off-road truck route are expected to result in greater visual, noise, dust and air quality impacts than a conveyor belt
- The off-road truck route would require overpass structures to be built to avoid intersections at Old Fort Road and 240 Road
- Fewer mitigation options for noise and dust are available, as compared to a conveyor belt system

DECOMMISSIONING AND RECLAMATION OF TRANSPORTATION ROUTE

The transportation route would be decommissioned and land restored following construction. The gravel surface would be stripped from the road and used for other construction or stockpiled, and the right-of-way would be hydro-seeded with native grasses or prepared for cultivation. Any property rights purchased on private property for the purposes of construction and operating the route would be removed.



This diagram shows a conceptual section of an off-road truck route compared to a conveyor belt system (to scale)

OTHER MEANS OF MOVING CONSTRUCTION MATERIALS CONSIDERED – EXISTING LEGAL (PUBLIC) ROADS

The use of public roads (e.g., Old Fort Road) as a transportation option was considered by BC Hydro, but was dismissed as an option because it would have a greater impact on traffic and safety. In addition, because the trucks that could be used on public roads are smaller than those allowed on an off-road truck route, using public roads would require almost four times as many trucks to move the same amount of material.

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

3.3 MITIGATION FOR TRANSPORTATION OF MATERIALS

Transportation activities will cause some noise, light, dust and visual impacts. BC Hydro has developed proposed mitigation measures for these impacts and is interested in feedback regarding any additional mitigation measures that might be considered.

The table to the right outlines potential mitigation that could be undertaken for each of the transportation options. The conveyor belt system would provide more options for mitigating these impacts than the alternative of an off-road truck option.

Mitigation Areas	Mitigation for Preferred Option: Conveyor Belt System	Mitigation for Alternative Option: Off-Road Truck Route
Noise/Light/Visual	• Conveyor belt could be covered in areas close to residences to reduce impacts of noise • Noise walls could be built in areas close to residences • Lighting would be minimized while allowing for safe operation • Regularly scheduled maintenance to reduce noise of the conveyor	• Noise wall could be built in areas close to residences. However, given the size of trucks used, these would need to be much higher than the noise walls for the conveyor belt. • Lighting would be minimized while allowing for safe operation of trucks
Dust	• Conveyor belt could be covered in areas close to residences to prevent the impacts of dust	• Water trucks would be used to mitigate dust on gravel roads
Vehicle Emissions	• Powered by electricity rather than diesel, resulting in low emissions	• Minimize queued and idling vehicles
Noxious Weeds (same mitigation measures for both options)	• Mechanical and chemical treatment of noxious weed populations • Development of weed management plan • Hydro-seeding of exposed soils • Vehicle wash stations	

85TH AVENUE INDUSTRIAL LANDS

3. CONSULTATION TOPIC

SITE RECLAMATION AND POST-CONSTRUCTION USE

BC Hydro is seeking input from the Peace River Regional District and City of Fort St. John regarding the potential post-construction use of the 85th Avenue Industrial Lands and is interested in feedback regarding preferences for the type of concepts for post-construction use that could be further explored. Given the location of the 85th Avenue Industrial Lands within the Peace River Regional District and adjacent to the City of Fort St. John, the post-construction use of the site should be considered in relation to the Official Community Plans of both the regional and local governments. Any post-construction use options will also be subject to regulatory review.

RETURN TO CURRENT ZONED USE

BC Hydro is seeking input from the Peace River Regional District and the City of Fort St. John regarding returning the site to its currently zoned use as light industrial, as follows:

- After extraction operations, most of the area within the site would be at the same level that currently exists at the south portions of the site. This flatter area would be graded and would be suitable for future construction.
- The slope around the extracted area would be graded to a stable, walkable slope of 3:1 to meet

the higher ground to the north and west of the site. Final site landscaping would be done in accordance with project commitments and environmental management plans for the site and with input from the Peace River Regional District and City of Fort St. John.

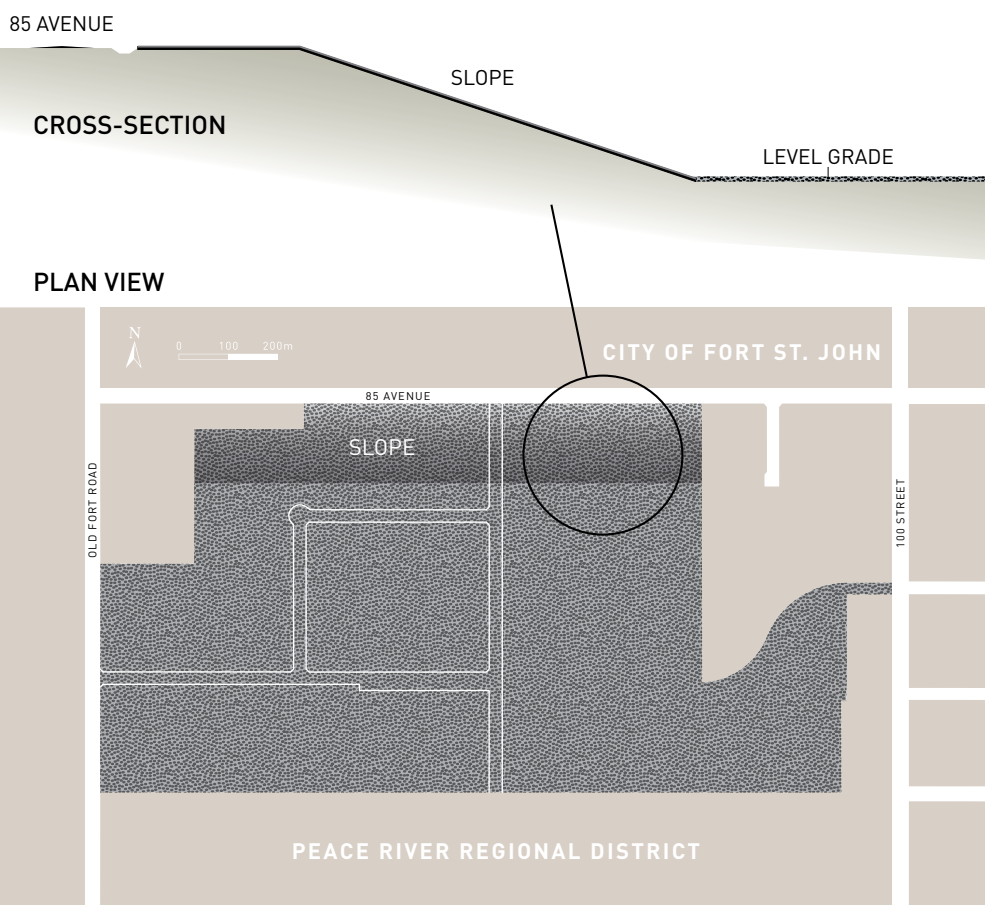
- If required, interior roads would be constructed to B.C. Ministry of Transportation and Infrastructure standards.

3.4 JOINT PLANNING REGARDING POST-CONSTRUCTION USE

BC Hydro is proposing a joint planning study with the Peace River Regional District and the City of Fort St. John. The joint study would include a review of:

- Information about the demand for residential, commercial and industrial land
- Consideration of adjacent land uses (current and future)
- Consideration of Official Community Plans and other planning processes
- Options for post-construction use of the land, including but not limited to the current light industrial zoning

BC Hydro would like your feedback about this approach and any additional components that this study should address.



Preliminary concept plan for 85th Avenue Industrial Lands – return to current zoned use (subject to change)

FEEDBACK FORM

HOW INPUT WILL BE CONSIDERED

Public and stakeholder input received during consultation will help inform the planning process, project definition and plans for mitigation of potential project impacts as BC Hydro prepares the Environmental Impact Statement for review in the environmental assessment process in 2013.

HIGHWAY 29 PREFERRED REALIGNMENTS

Refer to pages 15 to 19 for more information

1.1 PREFERRED REALIGNMENT – LYNX CREEK: Approximately eight kilometres long, and would cross Lynx Creek with a bridge of approximately 160 metres and a causeway of approximately 280 metres, and then run along Millar Road **(see page 17 for a more detailed description and map).**

Please rate your level of agreement with the preferred realignment.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

1.2 PREFERRED CORRIDOR – DRY CREEK: Replace the existing culvert with a larger culvert, to allow water to pass underneath. BC Hydro has identified a corridor in which an alignment would be determined, pending further geotechnical investigation **(see page 17 for a more detailed description and map).**

Please rate your level of agreement with the preferred corridor.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

1.3 PREFERRED REALIGNMENT – FARRELL CREEK: Approximately two kilometres long, crosses Farrell Creek with a bridge of approximately 170 metres and a causeway of approximately 170 metres **(see page 18 for a more detailed description and map).**

Please rate your level of agreement with the preferred realignment.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

Refer to pages 15 to 19
for more information

FEEDBACK FORM

HIGHWAY 29 PREFERRED REALIGNMENTS

1.4 POTENTIAL ADDITIONAL SEGMENT – FARRELL CREEK EAST: BC Hydro is proposing to relocate up to 6 kilometres of Highway 29 in this segment further from the top of the bank, behind the preliminary stability and erosion impact lines. Additional geotechnical investigation is required to confirm the length of highway realignment. BC Hydro has identified a preferred corridor within which the realignment would occur, pending further geotechnical investigation (**see page 18 for a more detailed description and map**).

Please rate your level of agreement with the preferred corridor.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

1.5 PREFERRED REALIGNMENT – HALFWAY RIVER: Follows the reservoir shoreline, crossing over the Halfway River with a bridge of approximately 300 metres and a causeway of approximately 650 metres (**see page 19 for a more detailed description and map**).

Please rate your level of agreement with the preferred realignment.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

1.6 PREFERRED CORRIDOR – BEAR FLAT/CACHE CREEK: Approximately 8.5 kilometres long. BC Hydro has identified a preferred corridor in which an alignment would be determined, pending further geotechnical investigation (**see page 19 for a more detailed description and map**).

Please rate your level of agreement with the preferred corridor.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

ADDITIONAL COMMENTS – Please provide any additional comments you may have regarding any aspect of Highway 29 preferred realignments.

FEEDBACK FORM

OUTDOOR RECREATION

2.1 BC HYDRO RESERVOIR BOAT LAUNCHES – POTENTIAL AREAS

To replace two existing BC Hydro-maintained boat launches that would be inundated by the proposed Site C reservoir, BC Hydro has identified potential areas within which recreation sites, including replacement boat launches, could be created. One area near Lynx Creek and two areas near Cache Creek have been identified **(see the map on page 23)**.

Please rate your level of agreement with the potential recreation area at Lynx Creek.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
				

Comments (reasons):

Please indicate your preference regarding a potential recreation area at Cache Creek:

☐ **Cache Creek West** OR ☐ **Cache Creek East**

Please provide any comments you may have regarding your preference.

ADDITIONAL COMMENTS – Please provide any additional comments about potential outdoor recreation areas.

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.

Refer to pages 26 to 33
for more information

FEEDBACK FORM

85TH AVENUE INDUSTRIAL LANDS

3.1 MITIGATION FOR SITE PREPARATION AND EXTRACTION ACTIVITIES

Site preparation and extraction activities will cause some noise, light, dust and visual impacts. BC Hydro has developed proposed mitigation measures for these impacts and is interested in feedback regarding any additional mitigation measures that might be considered.

Mitigation measures could include the following:

- Minimizing noise, light and visual impacts by constructing a berm and leaving trees around the perimeter of the site, and directing lights purposefully into the site
- Minimizing dust by moisture conditioning materials, using water trucks on gravel roads and cleaning paved roads
- Minimizing vehicle emissions by preventing queued and idling vehicles, performing regular maintenance of equipment, using electricity rather than diesel where practical and positioning equipment away from residences
- Minimizing noxious weeds by treating noxious weeds, hydro-seeding soil and implementing vehicle wash stations

Please rate your level of agreement with the proposed mitigation measures:

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Comments (reasons):

ADDITIONAL COMMENTS – Please provide feedback regarding any additional mitigation for site preparation and extraction activities that you may want BC Hydro to consider.

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Refer to pages 26 to 33
for more information

FEEDBACK FORM

85TH AVENUE INDUSTRIAL LANDS

3.2 PREFERRED METHOD OF TRANSPORTING CONSTRUCTION MATERIALS

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.

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

- Conveyor belt requires a narrower right-of-way (approximately 15 metres) compared to other methods, minimizing the project footprint
- 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 methods

Please provide your level of agreement with BC Hydro using a conveyor belt system to move construction materials from the 85th Avenue Industrial Lands to the proposed dam site area:

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Please provide any additional comments you may have regarding transportation of construction materials from the 85th Avenue Industrial Lands to the proposed dam site area.

3.3 MITIGATION FOR TRANSPORTATION OF MATERIALS

The table below outlines potential mitigation that could be undertaken for each of the transportation options. The conveyor belt system would provide more options for mitigating these impacts than the alternative of an off-road truck option.

Mitigation Areas	Mitigation for Preferred Option: Conveyor Belt System	Mitigation for Alternative Option: Off-Road Truck Route
Noise/Light/Visual	• Conveyor belt could be covered in areas close to residences to reduce impacts of noise • Noise walls could be built in areas close to residences • Lighting would be minimized while allowing for safe operation • Regularly scheduled maintenance to reduce noise of the conveyor	• Noise wall could be built in areas close to residences. However, given the size of trucks used, these would need to be much higher than the noise walls for the conveyor belt. • Lighting would be minimized while allowing for safe operation of trucks
Dust	• Conveyor belt could be covered in areas close to residences to prevent the impacts of dust	• Water trucks would be used to mitigate dust on gravel roads
Vehicle Emissions	• Powered by electricity rather than diesel, resulting in low emissions	• Minimize queued and idling vehicles
Noxious Weeds (same mitigation measures for both options)	• Mechanical and chemical treatment of noxious weed populations • Development of weed management plan • Hydro-seeding of exposed soils • Vehicle wash stations	

Please provide feedback regarding any additional mitigation for transportation of materials that you may want BC Hydro to consider.

Refer to pages 26 to 33
for more information

FEEDBACK FORM

85TH AVENUE INDUSTRIAL LANDS

3.4 JOINT PLANNING REGARDING POST-CONSTRUCTION USE

BC Hydro is proposing a joint planning study with the Peace River Regional District and the City of Fort St. John. The joint study would include a review of:

- Information about the demand for residential, commercial and industrial land
- Consideration of adjacent land uses (current and future)
- Consideration of Official Community Plans and other planning processes
- Options for post-construction use of the land, including but not limited to the current light industrial zoning

Please indicate your level of agreement with BC Hydro pursuing joint planning with the Peace River Regional District and the City of Fort St. John regarding potential post-construction use of the 85th Avenue Industrial Lands.

Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
				

Please indicate any additional components that this study should address.

ADDITIONAL COMMENTS – Please provide any comments you may have regarding the 85th Avenue Industrial Lands.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

FEEDBACK FORM

ADDITIONAL COMMENTS

HOW INPUT WILL BE USED

PROJECT DEFINITION CONSULTATION, SPRING 2012. DEADLINE FOR FEEDBACK IS MAY 31, 2012.

Input received during Project Definition Consultation, Spring 2012 will help inform project definition and mitigation plans, which will be included in the Environmental Impact Statement, and will be available for further public comment as part of the environmental assessment process in 2013.

Feedback collected via print and online feedback forms, stakeholder meetings, open houses, fax, phone, email and mail will be recorded and summarized in a *Consultation Summary Report*, which will be posted at www.bchydro.com/sitec.

Do you live in the Peace region? ☐ Yes ☐ No

Would you like to receive updates on the project, including the *Consultation Summary Report*? ☐ Yes ☐ No

Please provide your contact information *(optional)*:

Name: _____

Address: _____

Postal Code: _____

Phone: _____ 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 Hydro Project at 1 877 217-0777.

For further information or to submit your feedback form:

PO Box 2218	Community Consultation Offices:	
Vancouver BC V6B 3W2	9948 100th Avenue	The Pearkes Center
Toll-free: 1 877 217 0777	Fort St. John BC V1J 1Y5	10801 Dudley Street
Email: sitec@bchydro.com	Tel: 250 785 3420	Hudson’s Hope BC V0C 1V0
Fax: 604 695 5290	Fax: 250 785 3570	www.bchydro.com/sitec

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