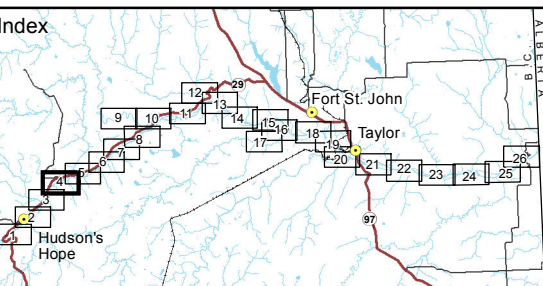
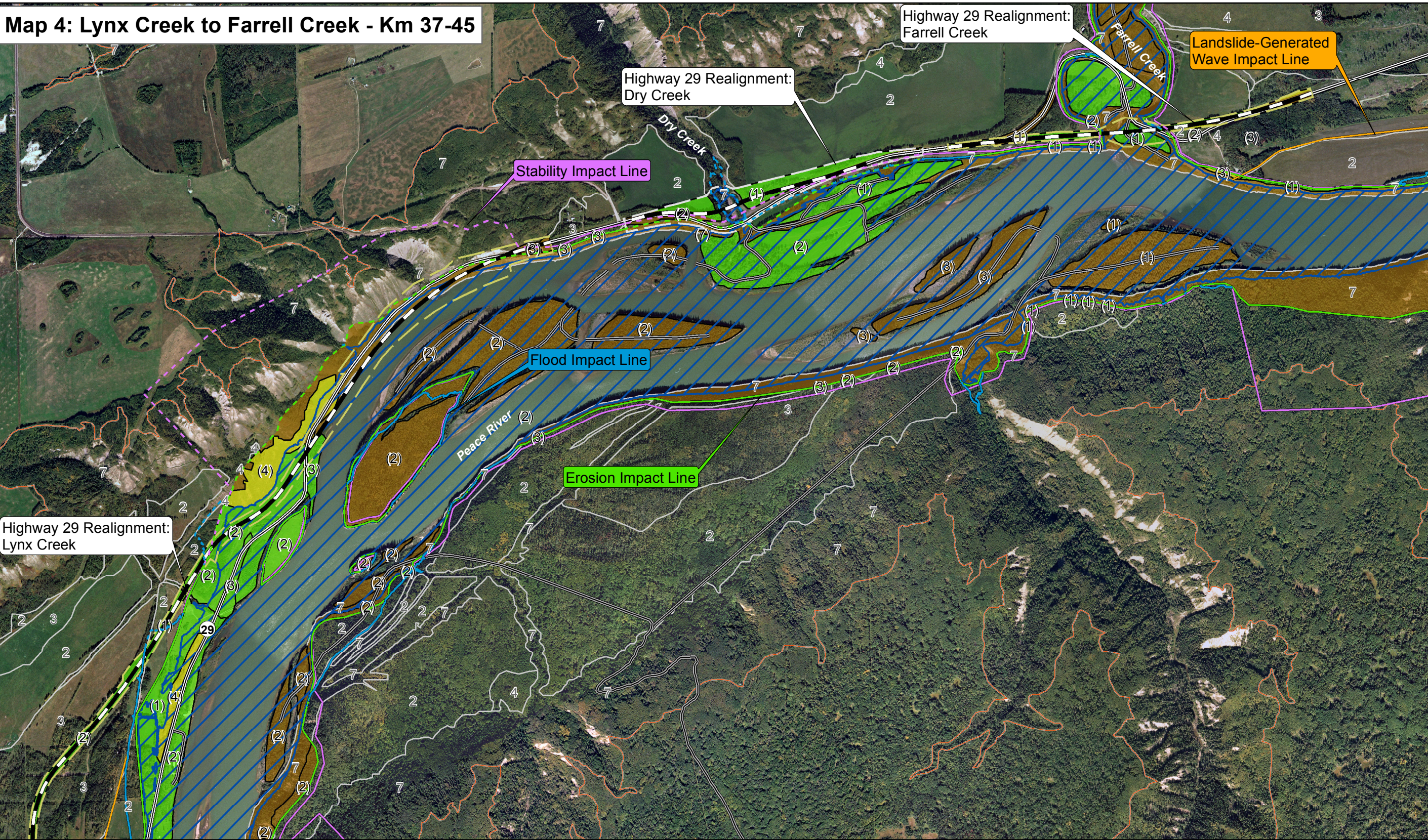


Kilometre	Current Conditions	Reservoir Conditions and Preliminary Impact Lines Related to the Proposed Site C Reservoir
37-45	<p><b>Locations</b></p> <p>This map sheet covers from approximately river kilometre 37 to 45 (measured downstream from Bennett Dam). It extends from Lynx Creek to Farrell Creek. Gates Island is located near river kilometre 39.5 and Dry Creek is located near kilometre 42.</p> <p><b>Geology and Topography</b></p> <p>Between Lynx Creek and approximately river kilometre 39, the north riverbank comprises a low-lying sand and gravel terrace that would be just a few metres above Maximum Normal Reservoir Level. Between approximately river kilometre 39 and 41, the north riverbank increases in height and the proposed reservoir shoreline would be in colluvium (landslide debris) and siltstone bedrock. There is evidence that large landslides have occurred on these higher slopes in the past.</p> <p>Downstream of river kilometre 41, the height of the north riverbank decreases and the reservoir shoreline would predominantly be in siltstone bedrock that is capped by a layer of sand and gravel.</p> <p>The proposed reservoir shoreline along the south riverbank predominantly comprises siltstone and silty shale bedrock that is capped by a layer of sand and gravel.</p> <p><b>Highway 29 and Other Infrastructure</b></p> <p>Highway 29 is located along the north bank of the river and below the proposed Maximum Normal Reservoir Level on the west half of the map sheet. It runs along the base of high bedrock slopes between approximately river kilometre 39 and 41, and would need to be re-located onto a causeway through this section.</p>	<p><b>Proposed Reservoir</b></p> <p>Within this map sheet, the proposed Site C reservoir would have a width ranging from about 500 metres to 1,000 metres. Based on the river surface elevation at the time of topographic survey, the reservoir would cause an increase in water depth over river conditions ranging from about 16 metres at the upstream end to about 22 metres at the downstream end.</p> <p><b>Preliminary Impact Lines</b></p> <p>Because the ground elevation is relatively low, the <b>flood impact line</b> extends inland of the <b>erosion and stability impact lines</b> along the north bank between approximately river kilometre 37 and 39. On rare occasions, flooding of these low-lying areas could occur due to wind generated waves combined with high reservoir levels, or from small landslide-generated waves. Elsewhere the banks are steeper and the reservoir shoreline and the <b>flood impact line</b> would be located close together in aerial-view when the reservoir is first filled.</p> <p>Downstream of river kilometre 41, the proposed reservoir shoreline would predominantly be in siltstone bedrock and the predicted amount of shoreline erosion over the life of the project is typically less than 2 metres. The <b>erosion impact line</b> is typically located on the slope or within 5 metres of the crest of the slope and the <b>stability impact line</b> is typically located less than 20 metres from the crest of the slope. It is extremely unlikely that sudden landslides will reach the position of the stability impact line within the life of the project.</p> <p>Low-lying terraces downstream of Farrell Creek could potentially be affected by waves caused by landslides originating from the south bank of the proposed reservoir. Consequently, a <b>landslide-generated wave impact line</b> has been defined in this area. It roughly follows the 472 metre contour east of Farrell Creek. The likelihood of landslide-generated waves reaching the landslide-generated wave impact line over the life of the project is considered extremely low.</p> <p><b>Highway 29 Preferred Corridor – Dry Creek</b></p> <p>A larger culvert would be installed at Dry Creek. The highway embankments and causeways associated with the proposed Highway 29 realignment between approximately river kilometre 38.5 and 41 would incorporate erosion protection and slope stabilization measures where they are located adjacent to the shoreline. With the construction of Highway 29 realignment through these sections, no erosion or stability impacts are predicted as a result of the reservoir. However, natural processes such as landslides and surface erosion originating above the highway would be expected to continue.</p> <p><b>Highway 29 Preferred Realignment – Farrell Creek</b></p> <p>The preferred alignment across Farrell Creek is shown in this map sheet.</p>
	<p><b>Agriculture Assessment</b></p> <p>Improved (irrigated and/or drained) agricultural land capability ratings are provided for the Site C project component areas where additional soil survey work has been undertaken as part of the Agriculture Assessment.</p> <p>For remaining lands outside the Site C project component areas, including the Peace River valley downstream of the Site C dam, unimproved agricultural land capability ratings are provided. The unimproved ratings reflect published agricultural capability maps from the 1970s, based on an assumed low climatic moisture deficit (CMD) during the growing season in the range of 34 mm. However, subsequent climate studies have confirmed much drier conditions in the Peace River valley, with a CMD in the range of 148 mm, which results in a Class 3 unimproved climatic capability rating. With irrigation, it is likely that Peace River valley soils downstream of the Site C dam historically rated as Class 2 or Class 3 with aridity or soil water holding capacity limitations, which would now be rated as unimproved Class 3 due to climatic limitations, would improve to Class 2 or Class 1 with irrigation.</p>	<p><b>Land Use Within Preliminary Impact Lines</b></p> <p><i>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. BC Hydro's approach would be as follows:</i></p> <ul style="list-style-type: none"><li><i>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)</i></li><li><i>No new residential structures would be permitted within impact lines</i></li><li><i>Non-residential structures could remain, pending site specific geotechnical assessment</i></li><li><i>Within the Stability Impact Line, 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</i></li><li><i>Within the Flood, Erosion or Landslide-Generated Wave Impact Line, existing residential structures would not be permitted to remain, to protect public safety</i></li><li><i>Other activities such as agriculture, grazing and trapping could continue within the impact lines</i></li></ul> <p><i>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 will 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.</i></p> <p><i>BC Hydro is meeting directly with property owners whose land may be impacted to discuss their specific property interests.</i></p>
	<p><b>Peace River Valley Definition</b></p> <p>BC Hydro defined the Peace River Valley as a spatial area, reflecting the Peace River mainstem from the Peace Canyon Dam to the B.C.-Alberta border. The upper edge of the Peace River Valley is defined as the crest of the top of high bank slopes, typically between El. 620 and 850m. The purpose of spatially defining the valley was to provide a consistent area for use where relevant in the Environmental Impact Statement.</p>	



Map 4: Lynx Creek to Farrell Creek - Km 37-45



Map Notes:  
1. Datum/Projection: NAD83/UTM Zone 10N.  
2. Orthophotos created from 1:40,000 scale photography taken Sept. 2007; 1:20,000 scale photography taken June, 2007; TRIM, Bing Maps Aerial 2012.  
3. Proposed maximum normal reservoir level (full supply level-461.8m) from Digital Elevation Models (DEM) generated from LIDAR data acquired July/August, 2006. The surface area of the reservoir will change over time after reservoir filling as a result of shoreline erosion and deposition of sediment.  
4. Preliminary flood impact line is based on an elevation of 466 m and is only shown when located outside of the preliminary erosion impact line.  
5. Exact extent of Hudson's Hope Berm yet to be determined.  
6. The amount of water level fluctuation downstream of the proposed dam will be dependent on factors such as the flow volume, depth, width and slope of the river.

Legend

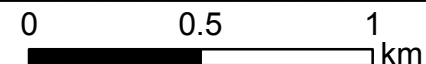
- Proposed Reservoir
- Peace River Valley Definition
- Highway 29
- Access Routes
- Preferred Highway Realignment
- Preferred Highway Realignment Right-Of-Way
- Preferred Highway Realignment Corridor

Preliminary Impact Lines

- Preliminary Flood Impact Line
- Preliminary Flood Impact Line - Subject to final highway design
- Preliminary Erosion Impact Line
- Preliminary Erosion Impact Line - Subject to final highway design
- Preliminary Landslide-Generated Wave Impact Line
- Preliminary Stability Impact Line
- Preliminary Stability Impact Line - Subject to final highway design

Agriculture

- Agriculture Utility Class**
- High
  - Moderate
  - Low
- Agriculturally Improved Capability Class (eg. with irrigation)**
- Capability Class 1-7 (Dominant)
- Unimproved Capability Class**
- Capability Class 1-7 (Dominant)



CLEAN ENERGY PROJECT		Preliminary Impact Lines, Highway 29 Realignments & Agriculture Assessment	
Date	March 2013	DWG NO	1016-C14-B6192 R 1

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 these maps reflects current planning for the Site C Clean Energy Project and is subject to change as the project continues to be further defined.