

Wiltshire, Farrah EMPR:EX

From: McNish, James EMPR:EX
Sent: Thursday, October 26, 2017 2:10 PM
To: Hansen, Lucy EMPR:EX
Subject: FW: BC Hydro confirmed Highway 29 will not impact river diversion schedule

From: Howlett, Tim GCPE:EX
Sent: Thursday, October 5, 2017 4:45 PM
To: Howlett, Tim GCPE:EX; Sanderson, Melissa MEM:EX; McNish, James EMPR:EX
Subject: BC Hydro confirmed Highway 29 will not impact river diversion schedule

BC Hydro confirmed that Highway 29 will not impact river diversion schedule in their August 30, 2017 filing with BCUC (F1-1).

For future reference

http://www.sitecinquiry.com/wp-content/uploads/2017/09/DOC_90101_F1-1-BCH_submission_SiteC_Public.pdf

p38 – 39 (p47-48 of pdf)

32 Highway 29 Work

33 Highway 29 is an arterial highway that connects Hudson's Hope to Fort St. John,
34 running along the north side of the Peace River. It is under the jurisdiction of the
35 Ministry of Transportation and Infrastructure (**MOTI**). Six segments of the highway

1 totalling approximately 30 kilometres will be flooded by the Site C reservoir and
2 therefore need to be realigned.

3 The costs for the realignment are included in the Project budget and BC Hydro is
4 managing the design work. However, the design must be acceptable to MOTI and
5 meet its safety criteria. The contracts will be procured by MOTI since the highway is
6 under MOTI's jurisdiction.

7 BC Hydro plans to construct the highway in stages beginning with the Cache Creek
8 segment, which is closest to the dam site. Under BC Hydro's original schedule, the
9 highway work was scheduled to commence in summer 2017 so that it would be
10 complete before River Diversion in fall 2019. River Diversion will occur during a short
11 window from September to November and will create a head pond that may, under
12 high water conditions, result in flooding of the existing bridge and highway in the
13 Cache Creek area, creating a public safety risk. To mitigate the risk to the public,
14 BC Hydro planned to complete the highway and bridge realignment in Cache Creek
15 before river division.

16 In June 2017 a request was made to BC Hydro to delay the start of this work to allow
17 further discussions with local property owners and consultation with Aboriginal
18 Groups. A delay in start of construction beyond September 1, 2017 could have
19 resulted in missing the construction milestone for completion of the Highway 29

20 Cache Creek segment and, in view of the public safety concerns, could have
21 delayed River Diversion. BC Hydro estimated delaying River Diversion for one year
22 would cost approximately \$630 million.

23 MOTI has since advised that they are willing to discuss the implementation of
24 mitigation measures that would manage the risk of flooding while allowing River
25 Diversion to continue. **This development will allow BC Hydro to proceed with River**
26 **Diversion as scheduled, maintaining the Project schedule**, while also postponing the
27 commencement of highway work in Cache Creek, following completion of this
28 Inquiry and further consultation with Aboriginal groups.

Tim Howlett
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Withheld pursuant to/removed as

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Transition Team
Supplement to the Ministry of Energy, Mines and Petroleum Resources
Issue Note - Cost of 1 Year Delay for Site C
July 2017

Issue

- See Realignment of highway 29 briefing note

Description

Analysis

- The realignment of highway 29 is collateral of the Site C Dam project and will only arise if the dam is completed and the upstream lands flooded.
- At a minimum it should be kept on hold until the BCUC's review of the economic viability of the dam project.
- The chart at the conclusion provides estimated additional cost to the Site C project of one year of delay occasioned by postponing approval of the realignment pending a BCUC review as \$630 million.
- This may provide some sense of the annual cost of any temporary suspensions of Site C, though it is not certain the annual cost of a longer delay would remain consistent with this estimate.

Next Steps

Questions for the Ministry

- Is there any information on imminent tendering?

ISSUE NOTE

Issue:

- The realignment of Highway 29 in the Cache Creek/Bear Flat area is required by September 2019 to allow for river diversion which will create localized flooding upstream in that area. First Nations in the area are concerned that the route chosen for the realignment will impact a sweat lodge and potential burial site in the area. Some parties have questioned the cost of delaying the Highway 29 realignment in this area to allow a review of the project by the BC Utilities Commission (BCUC).

Key Messages:

- BC Hydro is aware of West Moberly and Prophet River First Nation's concerns about construction activities in the Cache Creek/Bear Flat area, in the vicinity of the sweat lodge, and the potential burial site in the area.
- In response to these concerns, BC Hydro has refined the design of Highway 29 within the approved alignment in an effort to mitigate impacts on the sweat lodge and the potential burial site.
- Construction must commence in September 2017 to realign the highway and construct a new bridge to allow for the diversion of the Peace River around the Site C construction site in September 2019, which will cause localized flooding in the Cache Creek/Bear Flat area. Missing the September 2019 diversion window would add one year to the schedule and an estimated \$630 million to the cost of the Site C project.

Sweat Lodge:

- BC Hydro has increased the distance between the highway realignment and the sweat lodge.
- BC Hydro's investigations determined that they could move the highway an additional eight metres to the north to accommodate planting vegetation or noise abatement measures on the south side.
- These measures would act as a buffer between the sweat lodge and the highway. The total distance from the centre line of the highway to the sweat lodge is now 45 metres.
- BC Hydro also remains willing to discuss other mitigation measures in relation to the sweat lodge including constructing a new sweat lodge elsewhere in the Cache Creek/Bear Flat area.

Potential Burial Site:

- BC Hydro is also aware of the unconfirmed burial site in the Cache Creek/Bear Flat area.
- To mitigate any impacts, BC Hydro has increased the length of the bridge by 50 metres (from 404 metres to 455 metres). This updated bridge design now avoids ground disturbance in the area of the potential burial site.
- Realignment of Highway 29 must be completed prior to September, 2019, in order to divert the river and to ensure that all reasonable precautions have been taken, so the public has access to a safe transportation route through the Peace River Valley.

Supporting Point:

- The realignment of Highway 29 at Cache Creek was reviewed as part of the federal-provincial environmental assessment process for Site C, including the preferred route. The Joint Review Panel Report stated: *"About 9 km of highway would require realignment, and two alignments were considered. The preferred alignment with a short bridge presented fewer technical challenges, which would result in lower costs and construction risks. The preferred alternative also would impact a smaller area of private land, sever less actively farmed land, and need less ALR land for the right-of-way."*

Background:

- In the Cache Creek/Bear Flat area, the existing highway will be flooded by temporary construction dams used to isolate the main construction site. This requires relocation of approximately 8.5 kilometres of highway, including the construction of a new bridge at Cache Creek.
- Starting in 2019, the Peace River will be diverted through tunnels at the dam site which may cause flooding in the Cache Creek/Bear Flat area. To avoid traffic interruption, a new bridge must be constructed at Cache Creek, and the portion of the highway in the area must be relocated before river diversion.
- To ensure highway realignment at Cache Creek/Bear Flat can be completed in time for river diversion in 2019, construction of the new highway must start in summer 2017. Two families living on properties now owned by BC Hydro must relocate by July 15, 2017 to allow for possibly moving the houses in advance of the commencement of construction in September 2017. These families have already been provided with two extensions, and can continue farming outside the right-of-way until 2019.
- The realignment will occur in six sections along Highway 29 between Hudson's Hope and Fort St. John. In mid-June 2017, the Ministry of Transportation and Infrastructure issued tender documents for the first of six projects in the Cache Creek/Bear Flat area. Contracts are expected to be completed in August to allow for construction to commence in September 2017.

Burial Site:

- Following extensive archeological work, BC Hydro has not confirmed any Aboriginal burial sites in the Project area.
- In this respect, BC Hydro has been working closely with a number of First Nations in the Bear Flat area, including those with whom they have agreements regarding specific areas where there are interests.
- With respect to the West Moberly and Prophet River First Nations, in March 2017 they notified BC Hydro of the location of a potential burial site. BC Hydro has met with these First Nations to further discuss their concerns.
- The realignment of Highway 29 at Cache Creek – including the preferred route – was reviewed as part of the federal-provincial environmental assessment process for Site C in the context of other routes that had been identified. The environmental assessment process involved consultation with and input from 29 Aboriginal groups. West Moberly and Prophet River First Nations did not provide BC Hydro with any site specific information of cultural, spiritual or burial sites that intersect with the alignment of Highway 29 at Cache Creek during the environmental assessment.
- The preferred route was included in the project's Environmental Impact Statement, which was reviewed by an independent Joint Review Panel for Site C and subsequently became part of the Environmental Assessment Certificates.

Route for Highway 29 Re-alignment:

- The proposed site of the new bridge and resulting road re-alignment were chosen following extensive public hearings during Joint Panel Review of the Site C project.
- While two alignment options were evaluated at Bear Flat/Cache Creek — a shoreline route and an inland route — a shoreline route was selected for several reasons, including:
 - Improved safety for the travelling public by increasing the length of passing opportunities for drivers.
 - Better geotechnical conditions.
 - Fewer technical challenges, resulting in lower costs and reduced construction risks.
 - A smaller area of private land is affected.
 - Less impact on agricultural land.
- Please note, this issue is referenced in the Ministry of Transportation and Infrastructure note on Road Contract Tender Awards.

Costs of Delay:

- Realignment of Highway 29 must be completed prior to September, 2019, in order to divert the river and to ensure that all reasonable precautions have been taken, so the public has access to a safe transportation route through the Peace River Valley.
- Re-examining the alternate routes would take time, and have significant implications for the project schedule and cost.

- Delaying realignment of Highway 29 pending completion of a BCUC review would mean missing the September 2019 diversion window, adding a year to the project schedule, and an estimated \$630M to the project costs:

Estimated Costs of One-Year Delay (BC Hydro)	\$ M
Direct Costs	
Ongoing project costs, incurred during delay period	95
Site and environmental maintenance for one-year period	10
Main civil works – overhead, demobilization, mobilization	120
Turbines and generators - storage	25
Worker accommodation, fixed costs	15
Other impacts (e.g. claims, procurement impacts, etc.)	<u>60</u>
Total estimated direct costs	325
Inflation (one-year delay on expenditures)	105
Interest During Construction	200
Total Estimated Cost of Delay	630

Drafted by:

Input: Katherine Rowe, Director, GRB

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Dear^{s.22}

Thank you for your July 20, 2017 email addressed to Honourable Lana Popham, Minister of Agriculture, and Honourable George Heyman, Minister of Environment and Climate Change Strategy, regarding BC Hydro's Site C Clean Energy Project (Site C). As the Minister responsible for BC Hydro, I am responding on their behalf.

As you know, the Government is taking immediate action to refer Site C to the BC Utilities Commission for a review of the economic consequences viability and consequences to British Columbians. I understand that BC Hydro has been in contact to
s.22 prior to the
conclusion of this review.

In addition, Ministry of Transportation and Infrastructure has announced that it is pursuing an alternate option for the planned road and bridge construction on Highway 29 at Cache Creek. The current Highway 29 Bear Flats to Cache Creek contracts will be deferred, and a temporary detour bridge and alignment will be built at a higher elevation to mitigate the impact of flooding affecting the operation of the highway during the construction period for Site C. Further information is available through this link.

The revised highway and bridge construction plans will allow for further extensions to
s.22 BC Hydro staff will be in touch to discuss the details.

Thank you, again, for writing. I appreciate your during this period of transition.

Sincerely,

Michelle Mungall
Minister of Energy, Mines and Petroleum Resources