West Kelowna Transmission Project Update

Fall 2018

On February 5, 2015, the Province of British Columbia and BC Hydro announced the West Kelowna Transmission Project to build a new, secondary transmission line to West Kelowna and Peachland. The existing 138 kV wood pole transmission line into the area has provided reliable power to the communities for decades. The new line will strengthen and reinforce the existing transmission network.

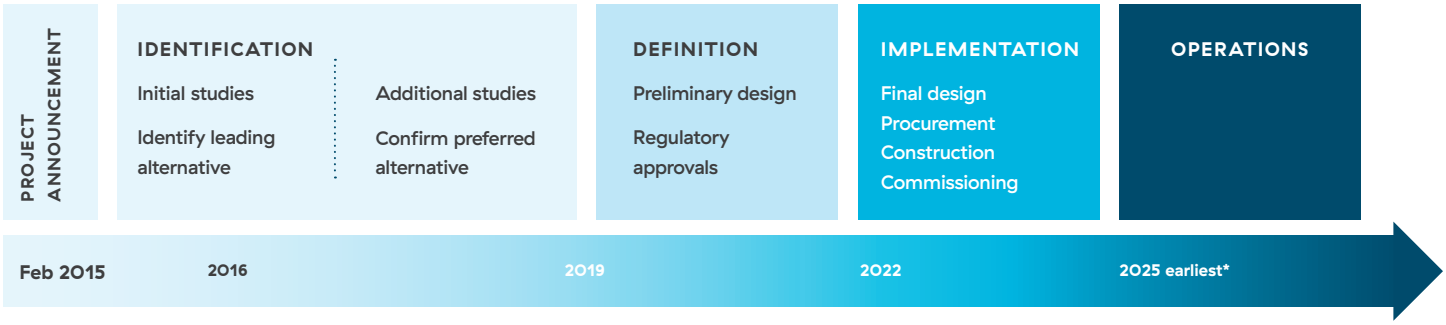
Project at-a-glance

- Spring 2015 to fall 2016, studied three alternatives.
- In the fall of 2016, we identified Alternative 2: to Nicola Substation as the leading alternative for the transmission project. This alternative involves building a new transmission line to Nicola Substation from the Westbank Substation. Alternative 2 was assessed as more favourable from an overall safety, environmental, socio-economic, cost, geotechnical and wildfire risk perspective compared to Alternative 1: a new line to Vernon Terminal Substation from the Westbank Substation, and Alternative 3: a new line and submarine cable to FortisBC from the Westbank Substation.
- Additional review of Alternative 3: to FortisBC is being undertaken in order to confirm our assessment.
- No plans to continue to study Alternative 1: to Vernon Terminal Substation as it poses the highest level of risk compared to the other alternatives.
- A decision on the preferred alternative is expected to be made in early 2019.

What's new

PROJECT TIMELINE

The project timeline has been updated. The earliest target in-service date (ISD) has moved to 2025 from 2022. This change to the ISD takes into account the time required to acquire regulatory permits, approvals and authorizations, and the time required to complete field studies and construction. The schedule will continue to be updated as the project progresses.

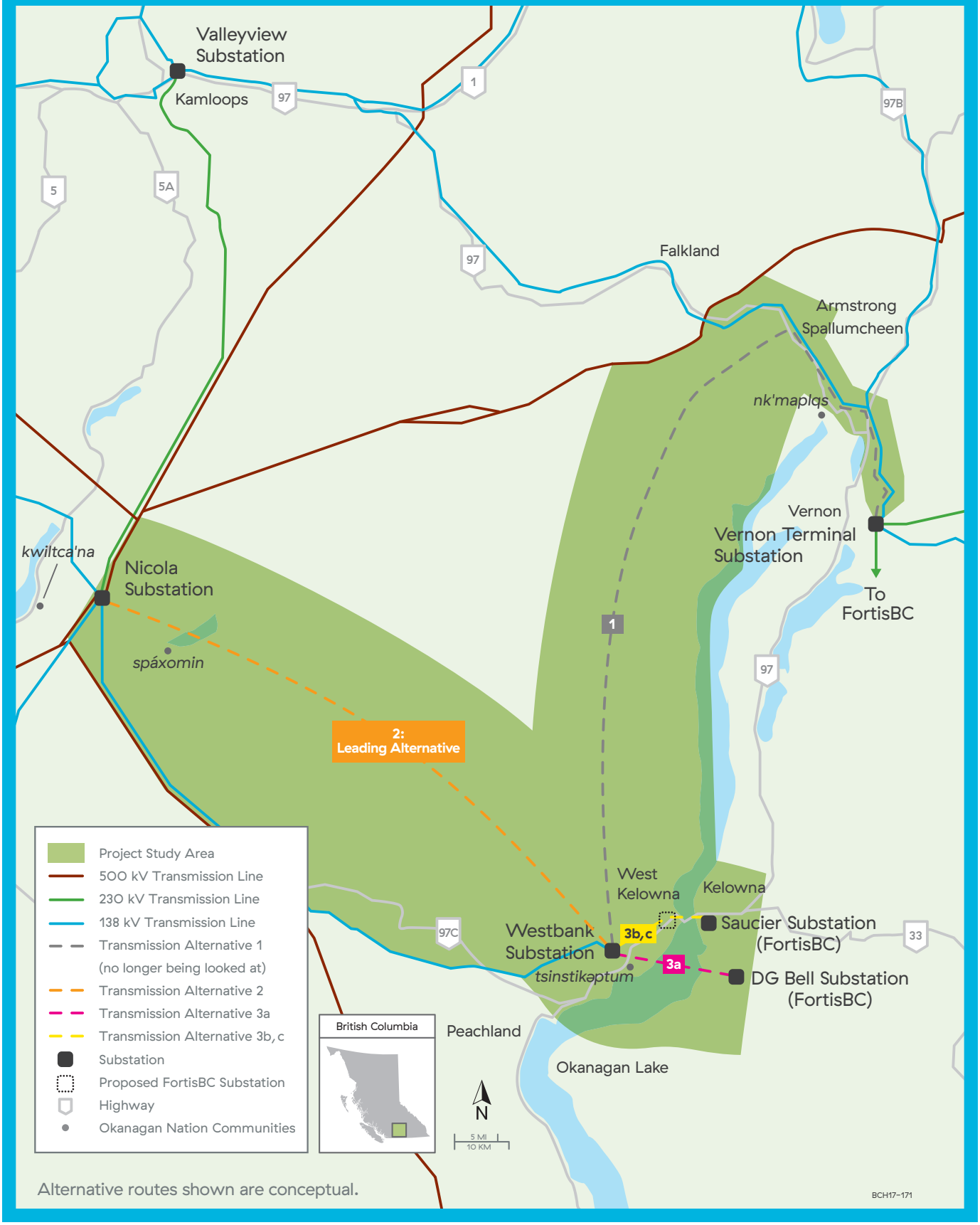


Construction will not commence until the project is approved by the BC Utilities Commission under the Utilities Commission Act, and the BC Hydro Board of Directors.

BC Hydro
Power smart

BCH18-1109

West Kelowna Transmission Project



Leading alternative, Alternative 2: to Nicola Substation

PRELIMINARY STUDY CORRIDORS

We are assessing the area and have identified three preliminary study corridors based on the following information:

- Environmental and archaeological studies
- Wildfire risk and terrain
- Road access and land ownership
- Consultation feedback
- Technical standards and best practice
- Input from BC Hydro engineering, operations and maintenance staff

Studies completed in 2017 and 2018 along with consultation with First Nations, the public and government will be used to assess the corridors.

We expect to make a decision on the preferred alternative and preferred corridor in early 2019. The selected corridor will be refined over the next few years.

If you'd like to provide us with your feedback prior to our decision on the preferred alternative or corridor, please forward your comments to **projects@bchydro.com**.

Map of preliminary corridors is for study and discussion.

Work currently underway

Since June 2017 we have undertaken additional studies for Alternative 2: geotechnical, wildfire, environmental, socio-economic, archaeological, traditional use and engineering.

Cultural plant knowledge holder with Trapper's Tea. Part of the studies completed in this phase include terrestrial wildlife and vegetation studies. These studies identified and evaluated potential effects on terrestrial wildlife resources, vegetation resources, species-at-risk, and sensitive ecosystems associated with construction and operation activities.

Wetland featuring aquatic vegetation. Part of the studies completed in this phase include fisheries and aquatic habitat studies. These studies identified and evaluated potential effects on fish populations, instream and riparian habitat, fish passage and water quality associated with construction and operation activities.

For more information on all our studies underway, please go to **bchydro.com/wktp**.

Field work, summer 2017

These studies will inform our decision making process and help our project planning including line routing and access plans.

We're also completing a review of Alternative 3: to FortisBC to confirm our assessment. This alternative includes three options to build a new transmission line, including a submarine cable across Okanagan Lake, connecting Westbank Substation to the FortisBC system on the east side of Okanagan Lake.

Stakeholder engagement and First Nations consultation continues. We're collaborating with the Okanagan Nation Alliance and member communities as well as other First Nations to understand and address their interests throughout the life of the project.

We expect to make a decision on our preferred alternative for the transmission project in early 2019.

Updated alternatives assessment

We've updated the alternatives assessment in preparation for the decision on the preferred alternative in early 2019. This assessment was developed based on the results of studies completed to date. First Nations consultation and stakeholder engagement will be updated at the end of 2018. It includes all alternatives, however, please note that Alternative 1 is no longer being studied.

To illustrate how each of the alternatives stack up against each other, we've colour-coded some of the considerations.

Assessment criteria	Alternative 1	Alternative 2 Leading alternative	Alternative 3a	Alternative 3b	Alternative 3c
Safety	🔴	🟢	🟢	🟢	🟢
Environment	🔴	🟡	🟡	🟡	🟡
Cost	🔴	🟢	🔴	🔴	🔴
Socio-economic	🔴	🟡	🟢	🟢	🟢
First Nations*	🔴	🟢	🟡	🟡	🟡
Stakeholders*	🔴	🟢	🟢	🟢	🟢
Reliability**	🔴	🟡	🟡	🟡	🟡

* First Nations and stakeholders assessments are from 2016. They will be updated at the end of 2018.

** Reliability includes Wildfire Risk and Geotechnical Risk as well as other factors.

🔴 Higher potential risk or impact 🟡 Moderate potential risk or impact 🟢 Lower potential risk or impact

Alternatives assessment descriptions

Alternative 1: To Vernon Terminal Substation

BUILD A NEW TRANSMISSION LINE ON THE WEST SIDE OF OKANAGAN LAKE, CONNECTING WESTBANK SUBSTATION TO THE VERNON TERMINAL SUBSTATION.

Safety ●

This alternative has higher overall potential safety risk. There are higher potential safety risks for our workers because of challenging terrain and access. It's expected that this alternative would require the most helicopter access, the highest level of clearing and the most access road construction, all of which increase hazards for our workers.

Environment ●

This alternative has higher overall potential environmental impact. This alternative has the largest environmental footprint; the potential line length is the longest. This alternative has poor geotechnical conditions. For example, the steep slopes and loose soil conditions found in this area could result in erosion. This alternative would pose a higher level of risk to wildlife and fisheries, due to the sensitive areas associated with this alternative, such as Fintry Park and numerous stream crossings.

Cost ●

It's anticipated that this alternative would have a higher cost compared to Alternative 2, due to the longer line length, difficult terrain and construction methods.

Socio-economic ●

This alternative has higher overall potential socio-economic impact. New rights-of-way would be required in developed and urbanized areas in West Kelowna and Vernon, with a higher potential for visual impacts and impacts to private property.

First Nations ●

Not supported.

Stakeholders ●

Not supported.

Reliability ●

This alternative has higher overall potential reliability risk, due to the longer line length, difficult terrain, and higher wildfire risk.

Alternative 2: To Nicola Substation (leading alternative)

BUILD A NEW TRANSMISSION LINE FROM NICOLA SUBSTATION TO WESTBANK SUBSTATION USING A DIFFERENT ROUTE THAN THE EXISTING TRANSMISSION LINE.

Safety ●

This alternative has lower overall potential safety risk. There are lower potential safety risks for our workers because of existing access roads and large sections of non-mountainous terrain. It's expected that this alternative could require a small amount of helicopter access and a moderate amount of clearing.

Environment ●

This alternative has moderate overall potential environmental impact. This alternative has a moderate environmental footprint; the potential line length is the second longest. Potential impacts of this alternative to fisheries and wildlife are expected to be lower if mitigated through thoughtful routing and design. This alternative also has relatively lower geotechnical risks.

Cost ●

It's anticipated that this alternative would have the lowest cost of all alternatives, due to construction methods and the type of infrastructure being built.

Socio-economic ●

This alternative has moderate overall potential socio-economic impact. New rights-of-way would be required. This alternative is the least developed and urbanized, with a large amount of rural and Crown land and the potential to partially use existing rights-of-way.

First Nations ●

Generally supported. Okanagan Nation Alliance (ONA) have expressed support for Alternative 2 as the preferred alternative.

Stakeholders ●

Generally supported.

Reliability ●

This alternative has moderate overall potential reliability risk due to having the second longest line length and the second lowest wildfire risk.

Alternative 3: To FortisBC

BUILD A NEW TRANSMISSION LINE, INCLUDING A SUBMARINE CABLE ACROSS OKANAGAN LAKE, CONNECTING WESTBANK SUBSTATION TO THE FORTISBC SYSTEM.

We're also completing a review of Alternative 3: to FortisBC to confirm our assessment. Ministry of Transportation and Infrastructure (MOTI) do not support installing a transmission line on or near the William R. Bennett Bridge or allowing the new transmission line in their Highway 97 right-of-way. The City of Kelowna does not support any overhead infrastructure within City boundaries or to the south of the City and east of Okanagan Lake.

We have explored three options for Alternative 3:

- 3a: Connecting Westbank Substation to DG Bell Substation in the FortisBC system.
- 3b: FortisBC building a new substation in West Kelowna and a transmission line and a cable crossing Okanagan Lake to Saucier Substation (part of the FortisBC system in Kelowna). We would then build a transmission line from Westbank Substation to the new FortisBC substation.
- 3c: Option 3c is similar to 3b except it proposes no new substation in West Kelowna.

Safety ●

This alternative has lower overall potential safety risk. There are lower potential safety risks for our workers because of the relatively short transmission line or cable length. This alternative will require a submarine cable in Okanagan Lake.

Environment ●

This alternative has moderate overall potential environmental impact. This alternative has the smallest environmental footprint having the shortest potential line length. It also includes a submarine cable in Okanagan Lake, creating a moderate potential impact to fish and fisheries habitat.

Cost ●

- 3a and 3c: It's anticipated that these options would have a higher cost compared to Alternative 2. This is due to the requirement of a submarine cable and undergrounding the transmission line.
- 3b: It's anticipated that this option would have a higher cost compared to Alternative 2, due to the requirement of a new substation, a submarine cable and undergrounding the transmission line.

Socio-economic ●

This alternative has lower overall potential socio-economic impact. New rights-of-way would be required in developed and urbanized areas in West Kelowna and Kelowna, with lower potential for visual impacts and impacts to private property as a result of undergrounding the transmission line.

First Nations ●

Not fully supported.

Stakeholders ●

Generally supported.

Reliability ●

This alternative has moderate overall potential reliability risk. The wildfire risk is anticipated to be lower risk. If an outage were to occur, the repair time for the submarine cable in Okanagan Lake or the underground transmission line would be longer than the repair time for an overhead transmission line.

Westbank Substation Project

We're planning to upgrade the existing Westbank Substation to increase capacity, replace end-of-life assets and ensure we can connect a new transmission line planned as part of the West Kelowna Transmission Project.
See **bchydro.com/westbanksub** for more information on the Westbank Substation Project.

For more information

Please visit our web page for additional information on the project including the latest Communications and Consultation Summary (January 2018–July 2018) and storyboards from our open houses in May 2018.

Visit: **bchydro.com/wktp**
Email: **projects@bchydro.com**
Call: **1 866 647 3334**

Your feedback is important to us

We expect to make a decision on the preferred alternative in early 2019. If you'd like to provide us with your feedback prior to our decision, please forward your comments to **projects@bchydro.com.**