West Kelowna Transmission Project

Stakeholder Communication and Consultation Summary

JANUARY 2018—JULY 2018

SEPTEMBER 2018

BC Hydro
Power smart

BCH18-880

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Introduction

The Stakeholder Communication and Consultation Summary, January 2018 – July 2018 presents the public consultation program and activities that took place within that time frame, as part of the Identification Phase of the West Kelowna Transmission Project.

In this stage of the project, BC Hydro has continued to study Alternative 2: to Nicola Substation as the leading alternative for this project. Since June 2017, we've been working on the environmental, socio-economic, archaeological, traditional use and engineering studies for the leading alternative. These studies will take place through 2018 and will help our project planning including line routing and access plans. We're also completing a review of Alternative 3 in order to confirm our assessment.

As these studies have been underway, BC Hydro has kept all stakeholders, levels of governments and First Nations informed of the status of this work. This was done through email and website updates, correspondence, delegations to municipal councils and regional districts, open houses, in-person meetings and presentations.

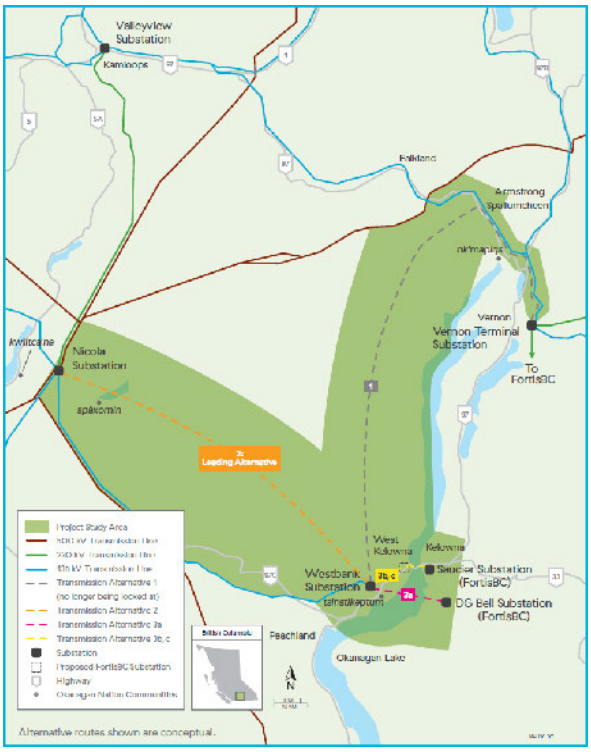
In November 2016, we identified Alternative 2 as the leading alternative. As of August 2018, the team will continue to study Alternative 2 to confirm the preferred alternative. The project team will take any input received from First Nations, the public and other stakeholders into consideration to confirm the preferred alternative anticipated in 2018.

Overview

Project background

We're in the early planning stage for a new, secondary transmission line delivering clean, reliable power to the communities of West Kelowna and Peachland. The existing line into the area has provided reliable power to the communities for decades. A new transmission line will provide a second source of power for the area, also called redundancy.

From February 2015 until October 2016, we studied three alternatives with options for a new transmission line:



Alternative 1: to Vernon Terminal Substation. Build a new transmission line on the west side of Okanagan Lake, connecting Westbank Substation to Vernon Terminal Substation.

Alternative 2: to Nicola Substation. Build a new transmission line from Nicola Substation to Westbank Substation using a different route than the existing transmission line.

Alternative 3: to FortisBC. Build a new transmission line, including a submarine cable across Okanagan Lake, connecting Westbank Substation to the FortisBC system.

- 3a: Connect Westbank Substation to DG Bell Substation in the FortisBC system.
- 3b: FortisBC builds a new substation in West Kelowna and a transmission line crossing Okanagan Lake to Saucier Substation. BC Hydro then builds a transmission line from Westbank Substation to the new Fortis BC substation.
- 3c: Similar to 3b except it proposes no new substation in West Kelowna. Alternative 3c was identified in early 2017.

In November 2016, BC Hydro identified Alternative 2: to Nicola Substation as the leading alternative. During this current stage of the project, we are undertaking detailed environmental, socio-economic, archaeological, traditional use and engineering studies for Alternative 2 as the leading alternative. An additional review of Alternative 3: to FortisBC is being completed to confirm our assessment. There are no plans to continue to study Alternative 1 as it poses the highest level of safety, environmental, socio-economic and cost risk. At the end of this process we will make a decision on our preferred alternative. This is expected to take place in 2018.

Communication and consultation program summary

Identification Phase communication and consultation began in February 2015 when the West Kelowna Transmission Project was announced. Following this initial announcement, the project was introduced to stakeholders and the general public within the project study area, including an initial round of stakeholder meetings and open houses. The document, *Communications and Consultation Summary February 2015 – July 2015* can be provided on request.

In the second round of consultation, from August 2015 – January 2016, we continued to build upon the first round of consultation. The document*, Communications and Consultation Summary August 2015 – January 2016* can also be provided on request.

In the third round of consultation, from February 2016 – October 2016, we shared our preliminary assessment of the three alternatives including safety, environment, cost and socio-economic impacts. The document*, Communications and Consultation Summary February 2016 – October 2016* can also be provided on request.

In the fourth round of consultation, from November 2016 – December 2017, we shared our completed assessment of the three alternatives, identified Alternative 2: to Nicola, as the leading alternative and held additional stakeholder meetings and open houses. We also shared the following information:

- Alternative 2 was assessed as more favourable from an overall safety, environmental, socio-economic, cost, geotechnical and wildfire risk perspective than Alternative 1: Westbank Substation to Vernon Terminal Substation, and Alternative 3: Westbank Substation to FortisBC System.
- Alternative 1 will no longer be studied as it poses the highest level of safety, environmental, socio-economic, cost, geotechnical and wildfire risk.
- An additional review of Alternative 3: to FortisBC is being undertaken to confirm our assessment, and,
- Project's next steps.

In the fifth round of consultation, from January 2018 to July 2018, we kept all stakeholders, levels of governments and First Nations informed of the status of the studies underway for the leading alternative, Alternative 2: to Nicola, and the review of Alternative 3: to FortisBC system. This was done through email and website updates, correspondence, delegations to municipal councils and regional districts, open houses, in-person meetings and presentations.

Consultation and communication will continue during the next stage of the project, with a focus on confirming the preferred alternative.

Methodology

Correspondence & Notification

A stakeholder list was developed prior to the first round of open houses to keep interested parties informed about the project. This list is continually updated and is comprised of members of the public who attended open houses or requested to be kept informed, community groups, businesses, regional districts, senior municipal staff, mayors, councils and current Members of Parliament (MPs) and Members of the Legislative Assembly of British Columbia (MLAs) in the project area. There are currently 417 contacts on the West Kelowna Transmission Project stakeholder list, of which 305 include an email address.

In January 2018, the public was informed of the publishing of the Stakeholder Communication and Consultation Summary: November 2016 to December 2017.

In May 2018, the public was invited to participate in the fifth round of public open houses in Kelowna (May 29), West Kelowna (May 30) and Peachland (May 31) through the following:

A postcard sent by postal mail.

- A double-sided 5” X 7” postcard was sent by unaddressed mail to over 51,000 homes and businesses within the project study areas for Alternatives 2 and 3. The postcard explained the project, the project status, invited the public to attend an open house and included contact information.

Ad placement inviting the public to attend an open house in the following local media:

- Power 104 FM
- SUN 99.9FM Kelowna
- CKFR AM1150
- CBC Radio South
- Peachland View
- Westside Weekly
- Kelowna Capital News
- Kelowna Daily Courier

Social media notifications inviting the public to attend an open house via the BC Hydro Twitter and Facebook accounts.

Email notifications to mayors and council, senior staff of municipalities, and Members of the Legislative Assembly of British Columbia within the project study area.

Email notifications to the West Kelowna Transmission Project stakeholder e-mail list.

- Two rounds of emails (May 14 and May 25, 2018) were sent to the stakeholder email list inviting them to attend one of the three open houses or to contact us by phone or email for more information.
- At the time of the email notification, there were 325 email addresses on the stakeholder email list.

Information packages delivered to community centres, libraries and City Halls within the project study areas.

- Prior to the May 2018 open houses, packages including the project postcard with details of the upcoming consultation were mailed to 23 locations, with the request they be displayed.

Project website: www.bchydro.com/wktp

- Updated with the details of consultation opportunities (in-person at open houses and online).

A copy of the open house online advertisement and postcard are included in Appendix A.

Open houses

The fifth round of West Kelowna Transmission Project open houses was held in May 2018. These open houses were a drop-by format, allowing visitors to learn about the project at their own pace, and to engage in conversation with the project team on the issues important to them.

The open houses were held in three communities within the project study area:

Community	Date and time	Location
Kelowna	May 29, 2018 5:00 p.m. to 8:00 p.m.	Coast Capri Hotel 1171 Harvey Ave, Kelowna, B.C.
West Kelowna	May 30, 2018 5:00 p.m. to 8:00 p.m.	Westbank Lions Community Centre 2466 Main St, West Kelowna, B.C.
Peachland	May 31, 2018 5:00 p.m. to 8:00 p.m.	Peachland Community Centre 4450 6th Street, Peachland, B.C.

The fifth round of public open houses was intended to inform stakeholders of the latest information on the studies being undertaken for the leading alternative, Alternative 2: to Nicola Substation. An update was also provided on the additional review of Alternative 3: to FortisBC, underway to confirm our assessment. The preferred alternative is expected to be confirmed in 2018.

We displayed a set of 20 storyboards at each of the open houses with text, graphics and maps (see Appendix A).

The open house storyboards and project update were made available on the project website as part of the online consultation.

The project team, including project management, stakeholder engagement, system planning, engineering, properties, environment and aboriginal relations leads, were at the open houses to answer questions and hear comments. Feedback forms were also available to participants.

Westside Daze

Westside Daze is a multi-day community event on Canada Day long weekend in West Kelowna. The BC Hydro Community Team participated in this important community event on June 30, 2018. As part of this participation, the Community Team was prepared to answer questions and provide information on the status of the West Kelowna Transmission Project. No questions were received.

Web / Online Updates

A project website was established when the project was announced. The site can be found at www.bchydro.com/wktp.

These pages have been regularly updated as the project moves through the Identification phase. The site includes sections highlighting "What's New" and "Reports and Documents" were stakeholders can find the latest project files and reports such as storyboards from recent open houses and the Stakeholder Communications and Consultation Summary reports.

From January 2018 to July 2018, these pages have been updated to ensure all stakeholders can access project updates, next steps and project files on a regular basis.

Local government meetings

Between January 2018 and July 2018, we met with senior staff and/or elected officials of local governments, to provide project updates.

These meetings built on meetings held in 2015, 2016 and 2017. To date, we've had a total of 34 meetings with local governments.

Local government	Meeting date
Regional District Central Okanagan	October 23, 2017 July 14, 2016 February 17, 2016 March 23, 2015
City of Kelowna	July 20, 2017 February 6, 2017 June 23, 2016 November 14, 2015
City of West Kelowna	**May 22, 2018** September 27, 2017 September 5, 2017 July 20, 2017 February 6, 2017 January 10, 2017 September 28, 2016

Local government	Meeting date
	June 23, 2016 June 14, 2016 November 13, 2015 March 24, 2015
City of Vernon	June 13, 2016 November 12, 2015 June 4, 2015
District of Peachland	**May 22, 2018** September 5, 2017 January 10, 2017 November 8, 2016 June 14, 2016 November 26, 2015 March 25, 2015
Township of Spallumcheen	June 6, 2016 June 4, 2015
Columbia-Shuswap Regional District	August 18, 2016
Thompson-Nicola Regional District	**February 8, 2018** July 14, 2016

Feedback

Feedback from stakeholders

During this period, we received some feedback and questions from stakeholders.

We received three emails in response to the publishing of the Stakeholder Communication and Consultation Summary. Responses were inquiring about property impacts.

We received three emails regarding the overall project:

- One email requesting to be added to the distribution list for project updates
- One encouraging the start of construction
- One questioning the assessment of the project alternatives and the wildfire risk assessment

We received no phone calls.

We received three feedback forms at the May 2018 open houses. Feedback included:

- Not much has changed since the last open house
- Concerned about impacts to wildlife
- Concerned that “option 2” will open up backcountry for public access
- Preference for “option 3”
- Interested in why gas fired generation wouldn’t be cheaper than a new line
- Request for continued project updates

Feedback from local government

We received written feedback from the Thompson-Nicola Regional District (a copy of the letter can be found in Appendix C).

Thompson-Nicola Regional District

Following a February 8, 2018 delegation to the Thompson-Nicola Regional District (TNDR) board members to review the project status, BC Hydro received a letter from the TNRD, dated February 14, 2018. The letter thanked BC Hydro for keeping the Directors informed of the progress of the project and how it my impact the region.

Collaborating with First Nations

We place a high value on our relationship with First Nations; the input and participation of First Nations is crucial to all of our projects. 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’re working in collaboration with the Okanagan Nation Alliance and member communities to develop and execute the field studies for this stage of the project. Additionally, the Okanagan Nation Alliance and member communities and other First Nations are delivering Traditional Use studies to inform the project work.

Next steps

In this stage of the project, we’ll continue to conduct studies for Alternative 2. At the end of this process we will make a decision on our preferred alternative, expected to be made in 2018.

The next round of public open houses is anticipated for spring 2019.

Ongoing communication

We'll continue to provide information and respond to your enquiries as the project proceeds. If you'd like to learn more about the project or provide your feedback, please get in touch with us:

- Phone: 1 866 647 3334
- Email: projects@bchydro.com
- Website: www.bchydro.com/wktp

Appendix A:

May 2018 open house materials

West Kelowna Transmission Project

Come see what we're studying!

May 29–31, 2018

BCH18-268

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We're planning a new secondary transmission line, to strengthen the transmission network delivering clean, reliable electricity to West Kelowna and Peachland.

Since June 2017, we've been working on environmental, socio-economic, archaeological, traditional use and engineering studies for Alternative 2 as the leading alternative for this project. These studies will take place through 2018 and will help our project planning including line routing and access plans.

Join us at one of our upcoming open houses to learn more.

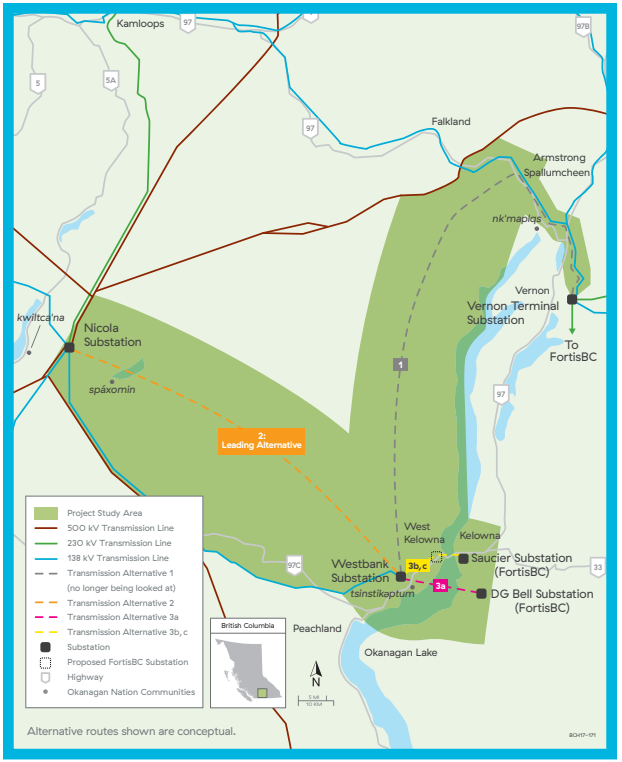
Drop in anytime between 5:00 p.m. and 8:00 p.m. on:

Tuesday, May 29, 2018—Kelowna
Coast Capri Hotel, 1171 Harvey Ave, Kelowna

Wednesday, May 30, 2018—West Kelowna
Westbank Lions Community Centre, 2466 Main St, West Kelowna

Thursday, May 31, 2018—Peachland
Peachland Community Centre, 4450 6th St, Peachland

Can't make it?
Contact us at **1 866 647 3334** or **projects@bchydro.com**, or visit **bchydro.com/wktp**.



Collaboration with the Okanagan Nation and other First Nations is underway. Stakeholder engagement activities with local governments in the project area are ongoing.

RE: West Kelowna Transmission Project - Open Houses May 29-31

Projects

Sent: Fri 5/25/2018 1:11 PM
To: Projects

A reminder that open houses for the West Kelowna Transmission Project will be held next week. Event details are below.

Drop in any time between 5:00 p.m. and 8:00 p.m. on:

Tuesday, May 29, 2018 – Kelowna
Coast Capri Hotel
1171 Harvey Ave, Kelowna

Wednesday, May 30, 2018 – West Kelowna
Westbank Lions Community Centre
2466 Main St, West Kelowna

Thursday, May 31, 2018 – Peachland
Peachland Community Centre
4450 6th St, Peachland

From: Projects
Sent: Monday, May 14, 2018 1:29 PM
Subject: West Kelowna Transmission Project - Open Houses May 29-31

West Kelowna Transmission Project Open Houses May 29-31

We're planning for a new secondary transmission line to strengthen the transmission network delivering clean, reliable electricity to West Kelowna and Peachland.

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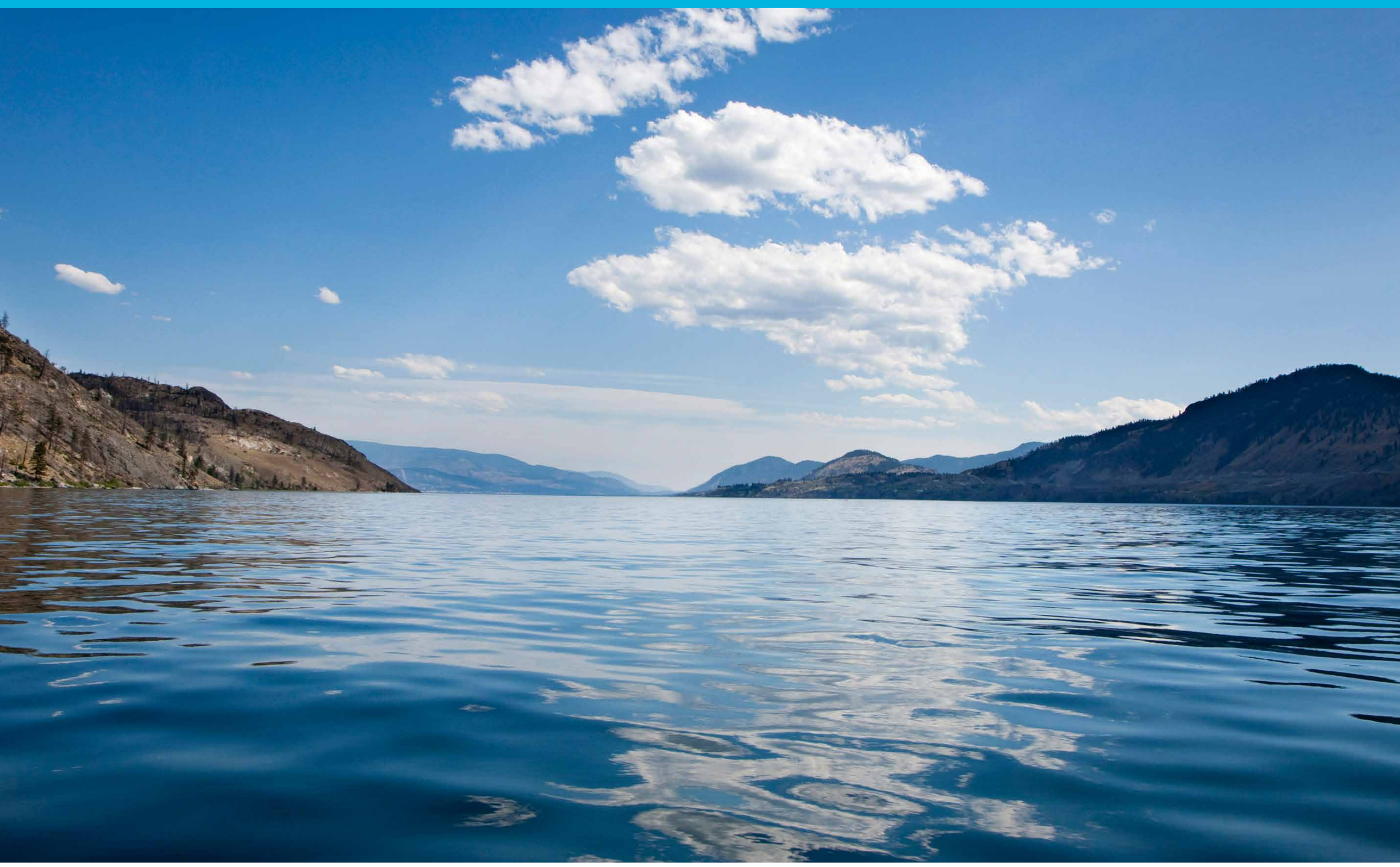
Welcome to the BC Hydro open house



West Kelowna Transmission Project

We're planning for a new, secondary transmission line delivering clean, reliable power to the communities of West Kelowna and Peachland.

The new transmission line will strengthen and reinforce the existing transmission network.

We're here to share the most recent project information and to gather your comments on what we know so far. We hope you'll share your local knowledge of the project study area with us.

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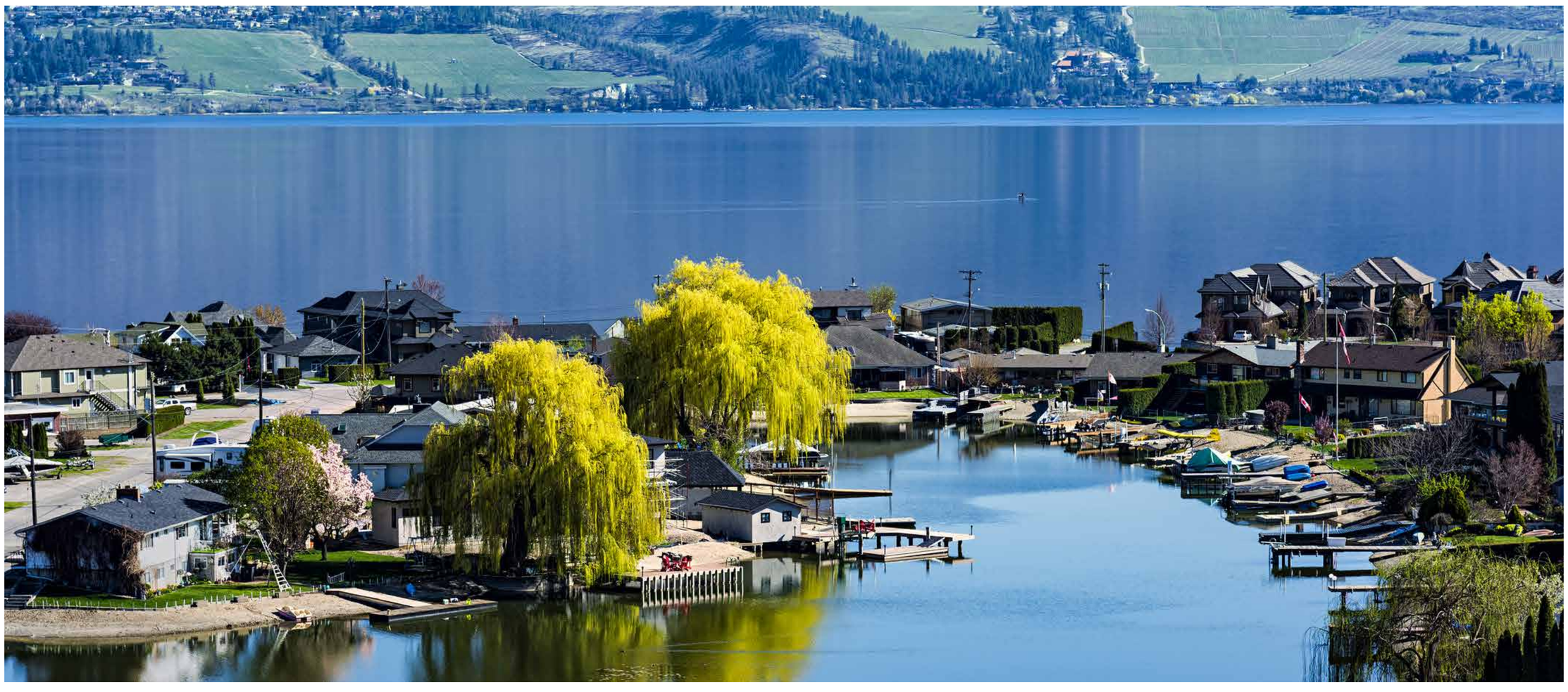
Why it’s important

Approximately 22,000 customers are served by the Westbank Substation and a single 138 kilovolt transmission line.



We’ve prioritized the West Kelowna area as needing a redundant supply of power because of:

- The large number of customers served by a single transmission line.
- The challenge of restoring power on the existing transmission line resulting from its 80 kilometre length, remote location and rough terrain.
- The risk of destructive forces like forest fires and landslides.

In the meantime, we’ll continue to monitor and manage any risks to the existing transmission line.

What’s redundant supply?

Redundant supply means there is more than one source (for example, a transmission line) providing power to the community or “back-up” power. That way, if one source is taken out of service, the other can still supply the community with electricity.

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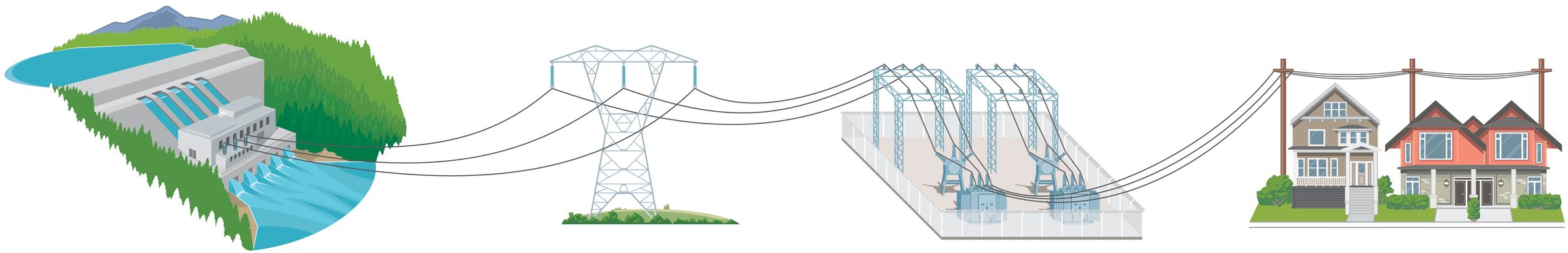
Our electricity system



Generation

Electricity is generated by BC Hydro and independent power producers.

Transmission

Electricity is moved from where it's produced to where it's used.

Substations

Voltage is reduced at substations to provide power suitable for use in your home or business.

Distribution

Low voltage electricity is provided to neighbourhoods and businesses.

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Project timeline

IDENTIFICATION

Initial studies

Identify leading alternative

Additional studies

Confirm preferred alternative

DEFINITION

Preliminary design

Regulatory approvals

IMPLEMENTATION

Final design
Procurement
Construction
Commissioning

OPERATIONS

Feb 2015 — **2016** — **2018** — **2022 earliest***

*Construction will not commence until the project is approved by the BC Utilities Commission (as required) and a final investment decision is supported by BC Hydro's Board of Directors.

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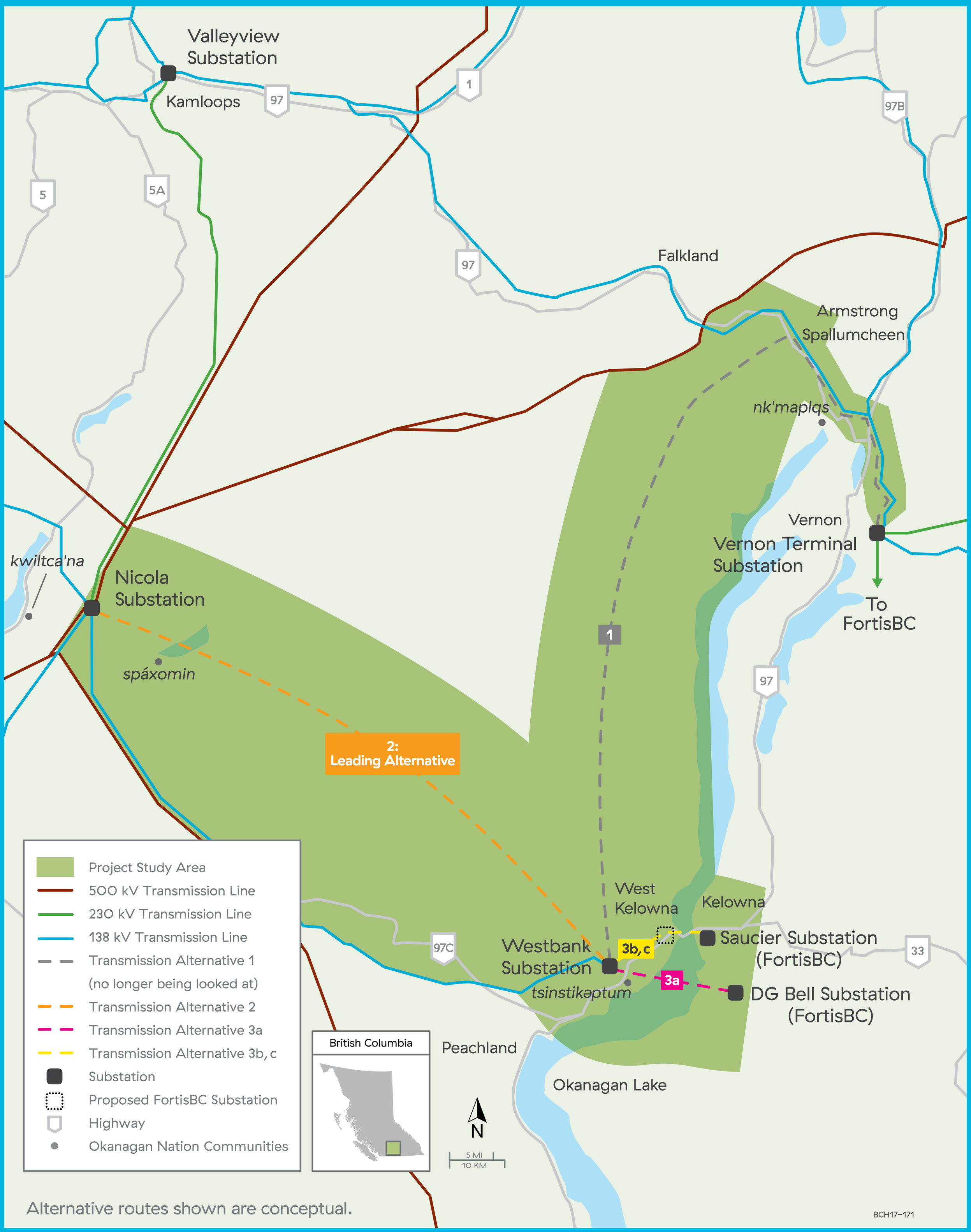
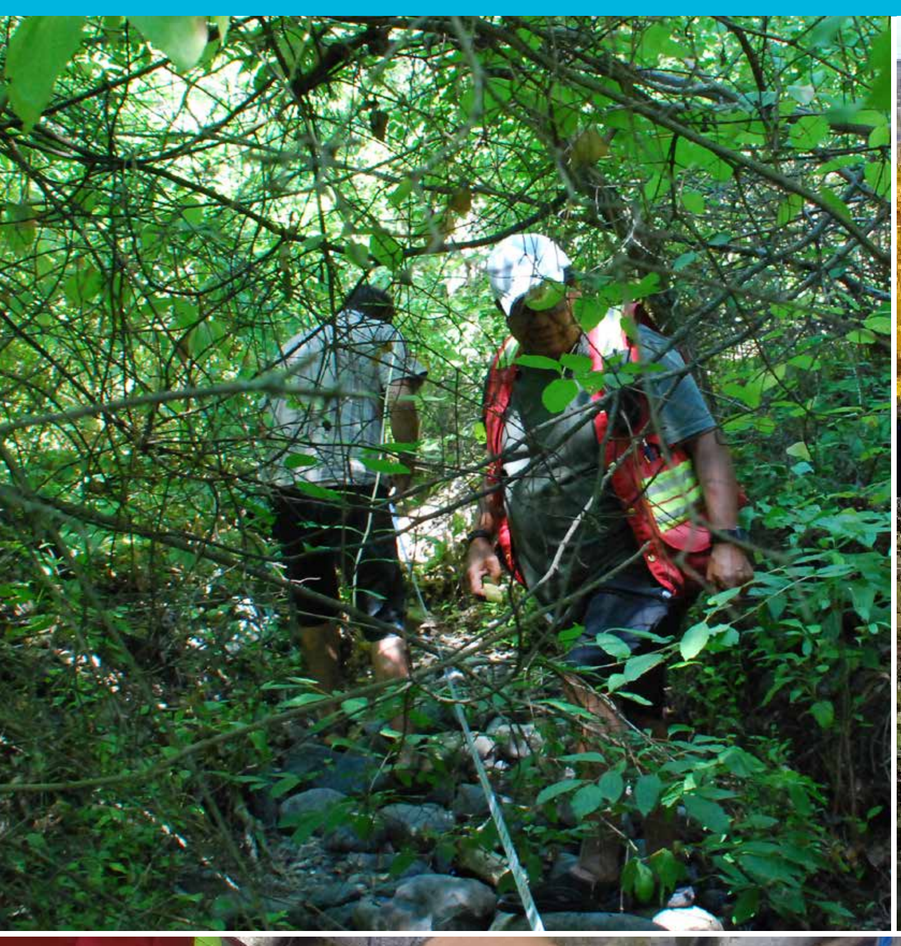
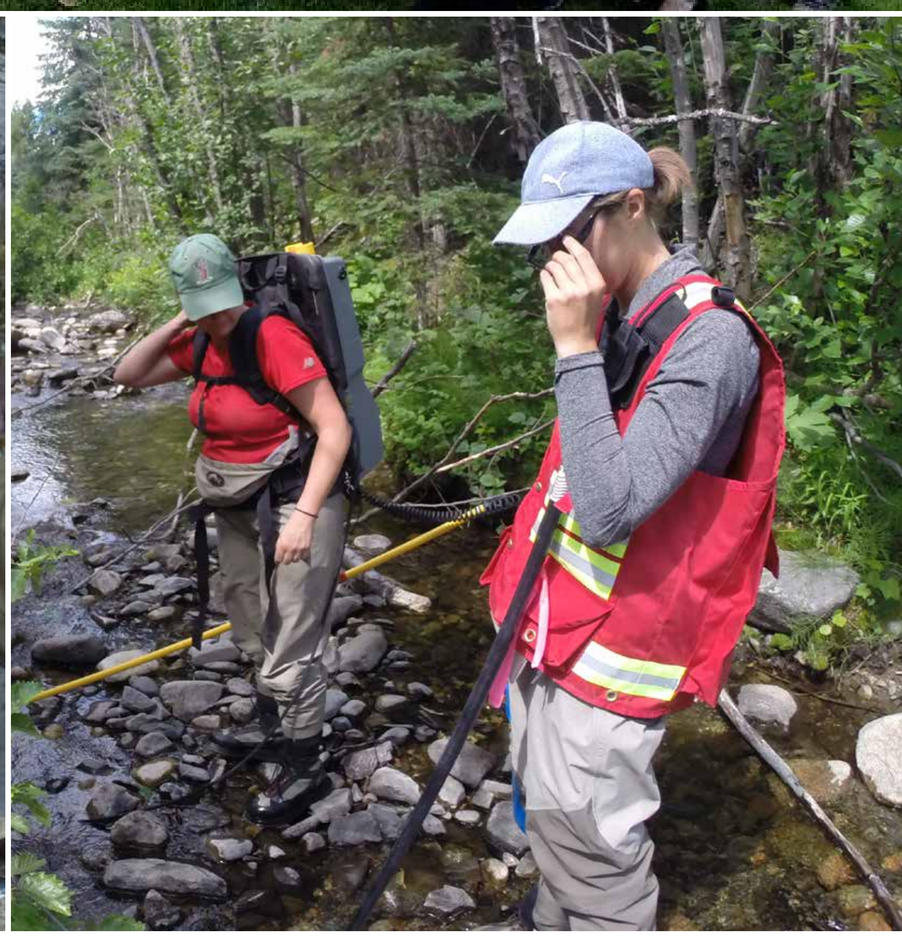
West Kelowna Transmission Project



Collaborating with First Nations





We place a high value on our relationship with First Nations; the input and participation of First Nations is crucial to all of our projects.

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.

During this stage of the project, we're working in collaboration with the Okanagan Nation Alliance and member communities to develop and execute the field studies. Additionally, the Okanagan Nation Alliance and member communities and other First Nations are delivering Traditional Use studies to inform this stage of the project.

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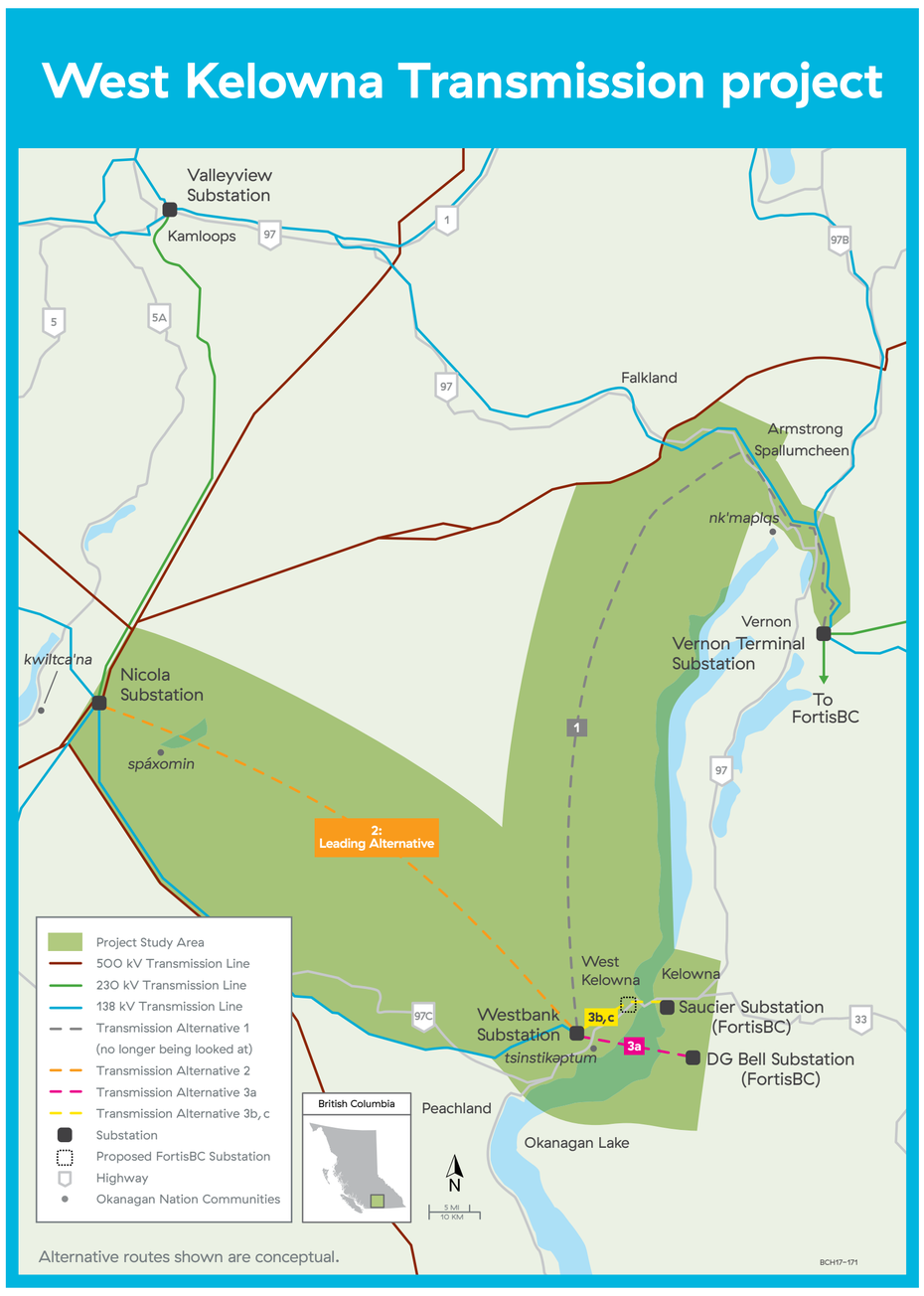
Project status

- Spring 2015 to fall 2016, studied three alternatives.
- In fall 2016, Alternative 2: to Nicola Substation was identified as the leading alternative and will be further studied.
- 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 levels of risk compared to the other alternatives.
- A decision on the preferred alternative is expected to be made in 2018.



Why Alternative 2: To Nicola Substation was identified as the leading alternative

- Alternative 2 is more favourable than alternatives 1 and 3 from an overall safety, environmental, socio-economic and cost assessment.
- Alternative 2 poses low geotechnical risk which can be mitigated by routing and design of the new line. It is unlikely that an event (e.g. landslide) would impact the existing line and the new line at the same time.
- Alternative 2 has the second lowest fire risk which may be mitigated by use of steel poles, routing, design, adequate separation from the existing line and vegetation management. Nicola Substation is a 500kV station built with redundancy and additional fire protection.

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Leading alternative, Alternative 2: to Nicola Substation

Leading alternative, Alternative 2: to Nicola Substation

In this stage we are:

- Continuing to consult with First Nations and stakeholders.
- Conducting desktop and field environmental, socio-economic, archaeological, traditional use and engineering studies.
- Completing geotechnical investigations on the ground.
- Completing a field and desktop wildfire risk assessment.
- Selecting transmission line structure type, conductor size, configuration and substation layout requirements.
- Looking at routing options.

Field work, summer 2017.

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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.

The selected corridor will be refined over the next few years.

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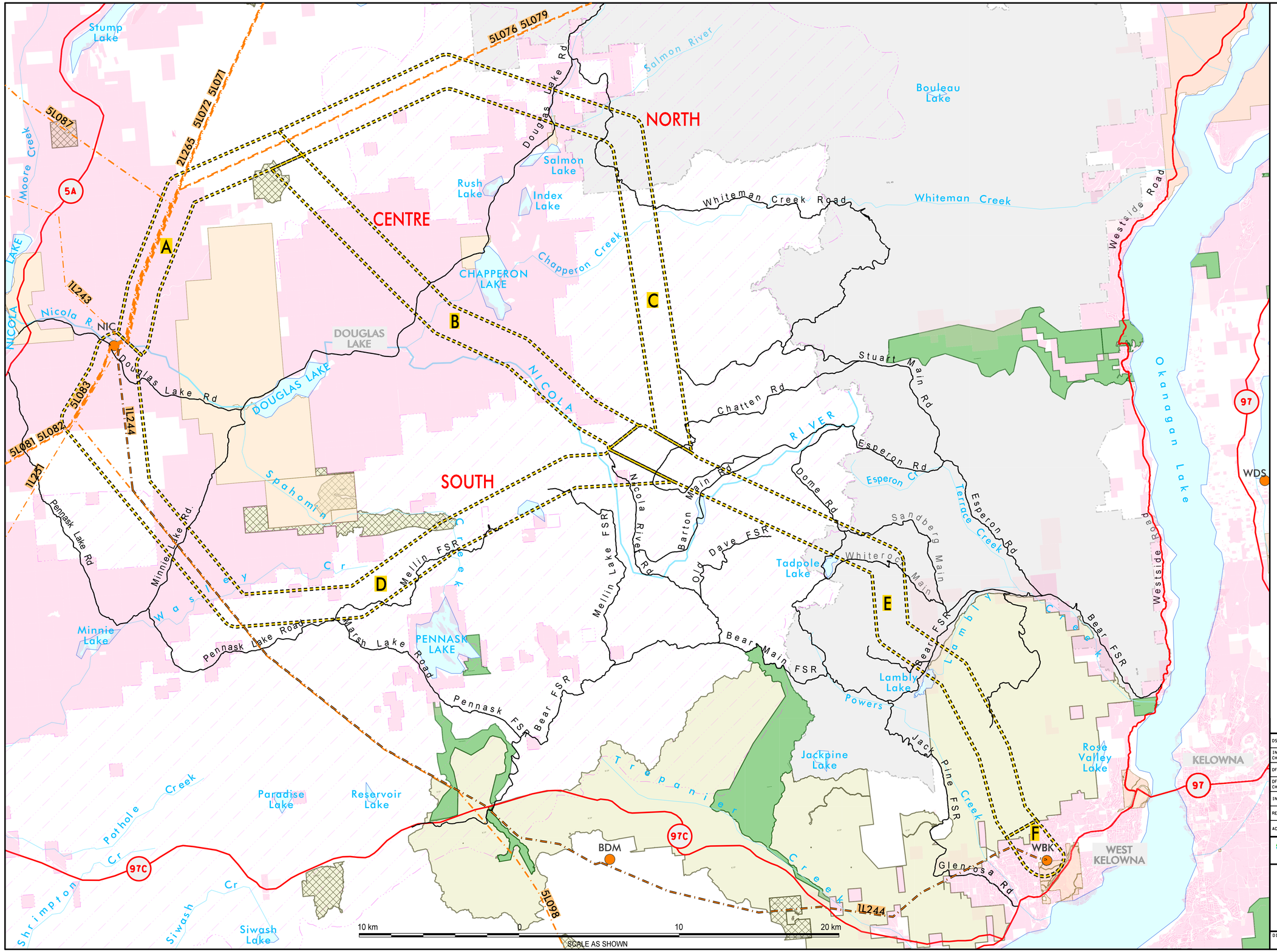

N

LEGEND

- Study Area Boundary
- Study Area Section (A)
- Existing Transmission Line(s)
- Existing NIC-WBK Transmission Line
- River / Creek
- Highway
- Mainline / Forest Service Road
- Water Body **
- First Nation Reserves (IR)**
- Parks **
- Woodlot / Westbank Com. Forest **
- Tree Farm Licence (TFL 49 / SCH-A)**
- Private / Unknown Property **
- Crown Tenured Property
- Existing Substation
- Crown Land *

** On this map Crown Land is shown as white.*

*** Due to ovelaping data, shading within each data layer on the map may deffer than shown in legend.*

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PHOTOGRAMMETRY SERVICES, BC HYDRO

DIGITAL METRIC MAP
BC ALBERS PROJECTION; NAD83
BCGS REFERENCE: 82 E/L, 92 H/J

BASE MAP DERIVED FROM
NATIONAL TOPOGRAPHIC SERIES MAPS
AT A SCALE OF 1:250 000

PRELIMINARY

DRAFT COPY SUBJECT TO CHANGE
Check with BC Hydro for the latest revisions.
Map is for presentational purposes only.

DSGN		
INDEP CHK		
DFTG	DU	
DFTG CHK		
INSP		
REV		
ACPT		DATE July 6, 2017

BC Hydro Power smart — ENGINEERING, PHOTOGRAMMETRY SERVICES

NICOLA (NIC) - WESTBANK SUBSTATION (WBK)
WEST KELOWNA TRANSMISSION PROJECT
FEASIBILITY DESIGN
PRELIMINARY STUDY AREAS
OVERVIEW

DISTR	CAD DWG NO	R
	1LXXX-T07-0000X	0

Leading alternative, Alternative 2: to Nicola Substation

Archaeological and Cultural Assessment Studies

Identify and evaluate archaeological sites and areas with potential for archaeological sites.

Identify and evaluate potential effects of construction and operation activities on the ability of First Nations to continue to carry out traditional cultural, spiritual, and subsistence practices.

Key considerations:

- Previously recorded archaeological sites within the study area such as:
  - Pre-contact temporary habitation sites consisting of lithic and artifact scatters, faunal remains, fire-altered rock, and other associated structural and/or subsistence features including cultural depressions
  - Trails
  - Isolated lithic and artifacts scatters
  - Cairn or petroform features
  - Burials
  - Culturally Modified Trees (CMTs)
- Areas with moderate or high potential for unknown archaeological sites
- Traditional use sites associated with cultural or spiritual values within the study area
- Known historic sites
- First Nations Reserves

High elevation rock outcrop and old forest.

Grasslands and Alkaline Lake.

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Leading alternative, Alternative 2: to Nicola Substation

Terrestrial Wildlife and Vegetation Studies

Identify and evaluate potential effects on terrestrial wildlife resources, vegetation resources, species—at—risk, and sensitive ecosystems.

Key considerations:

- Breeding birds
- Bats
- Lewis's Woodpecker
- Great Basin Spadefoot toad
- Old growth management areas
- Ungulate winter range (moose and mule deer)
- Invasive plant species
- Grasslands
- Wetlands
- Proposed critical habitat
- Parks and protected areas

Cultural plant knowledge holder with Trapper's Tea.

Wetland featuring aquatic vegetation.

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Leading alternative, Alternative 2: to Nicola Substation

Fisheries and Aquatic Habitat Studies

Identify and evaluate potential effects on fish populations, instream and riparian habitat, fish passage and water quality.

Key considerations:

- More than 600 water crossings (including the Nicola River)
- Potential loss, reduction, or alteration of riparian habitat at watercourse crossings
- Changes in water quality on fish and fish habitat
- Potential effects on rare and endangered fish species
- Effects on fish distribution and abundance
- Groundwater features such as wells and aquifers

Tadpole Lake.

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Leading alternative, Alternative 2: to Nicola Substation

Geotechnical and Natural Hazards Studies

Identify and evaluate potential effects resulting from the interaction between construction and operation activities and the physical environment and terrain.

Key considerations:

- Foundation requirements
- Natural hazards (landslides, avalanche, rock fall)
- Slope stability
- Erosion
- Acid Rock Drainage
- Climate
- Earthquakes

Geohazard slopes.

Granite rock.

Mountains, West Kelowna.

WEST KELOWNA TRANSMISSION PROJECT OPEN HOUSE

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Leading alternative, Alternative 2: to Nicola Substation

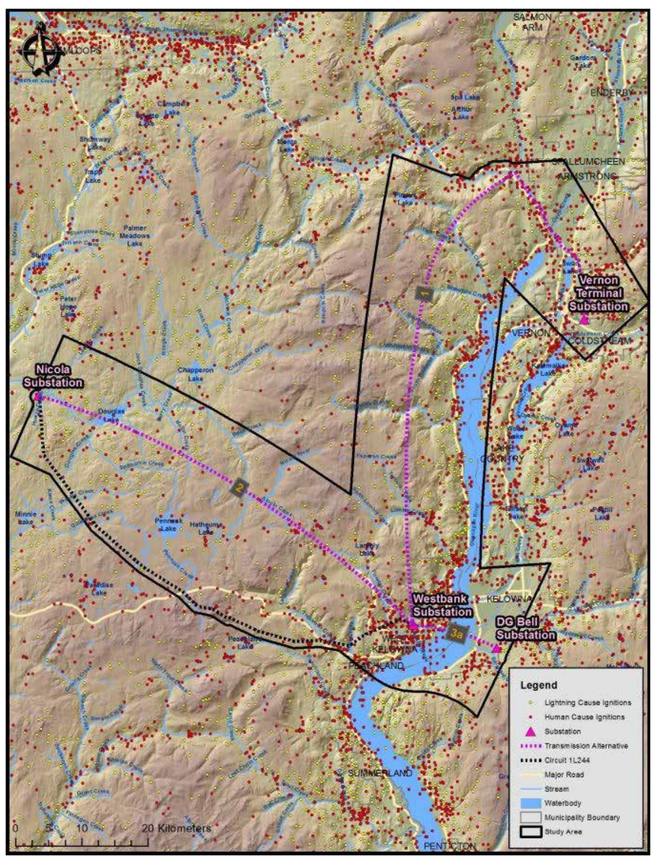
Wildfire Studies

Identify and evaluate the wildfire risk associated with the construction of operation activities.

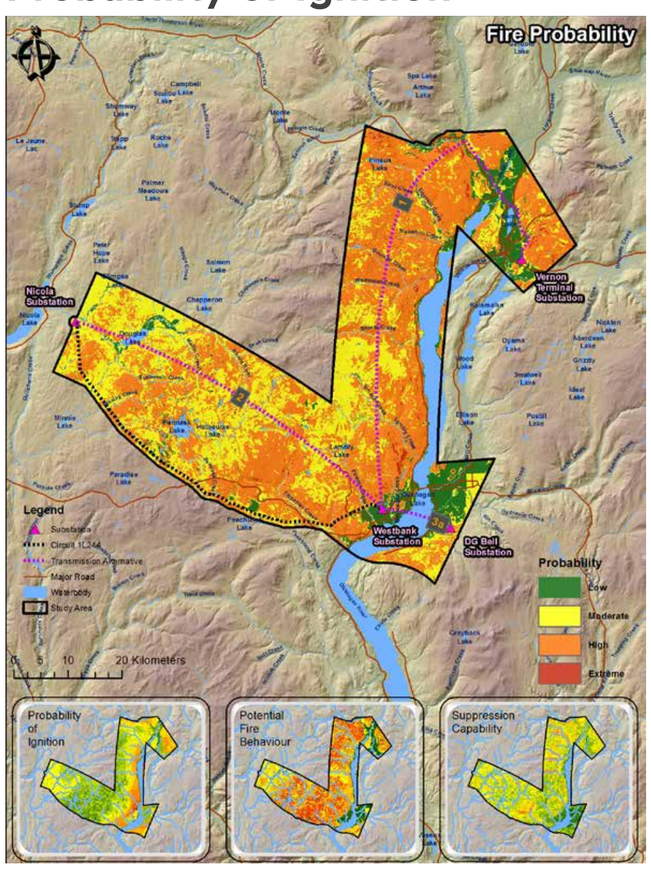
Key considerations:

- Risk of ignition
- Potential fire behaviour
- Suppression response capability
- Simultaneous risk to existing and new line

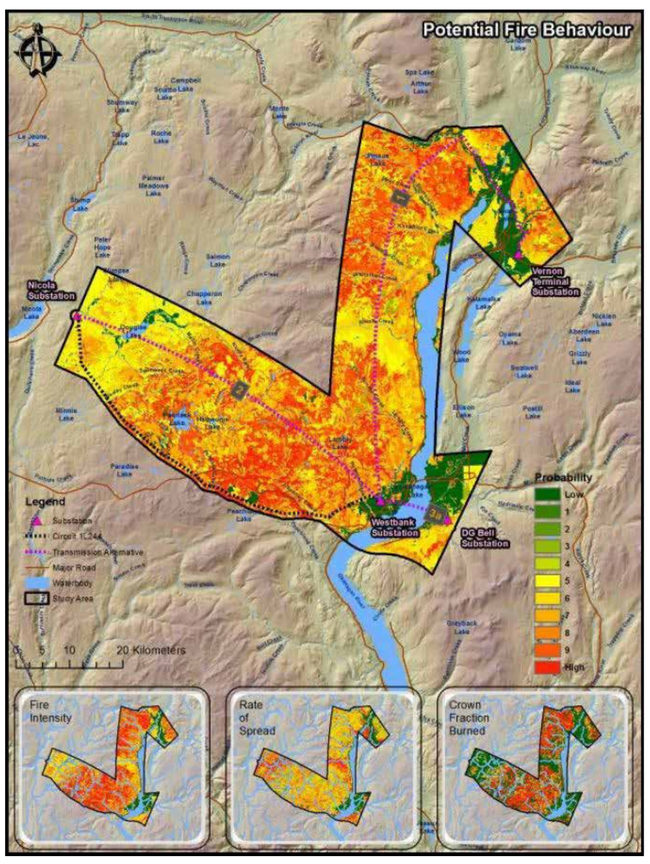
Ignition History



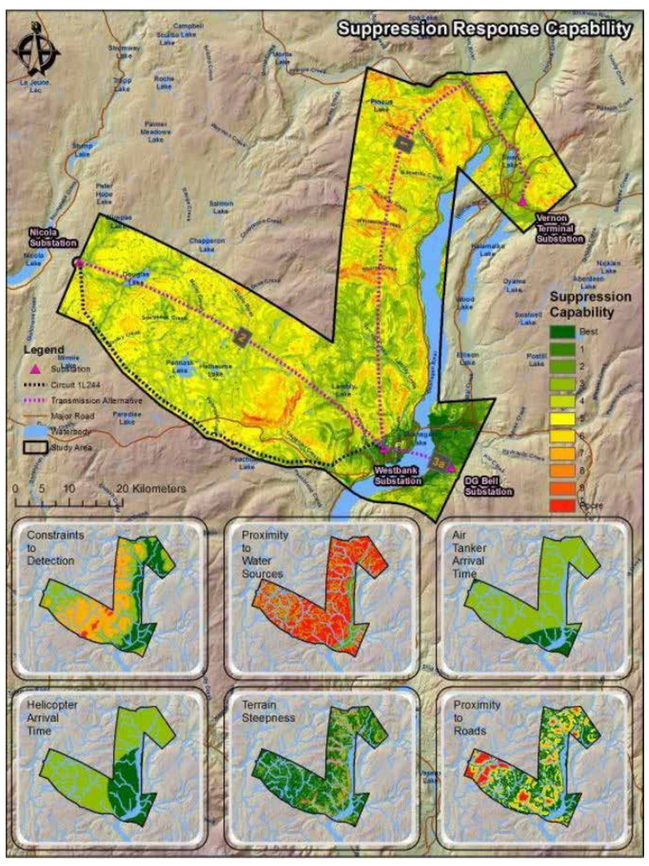
Probability of Ignition



Fire Behaviour



Suppression Response Capability



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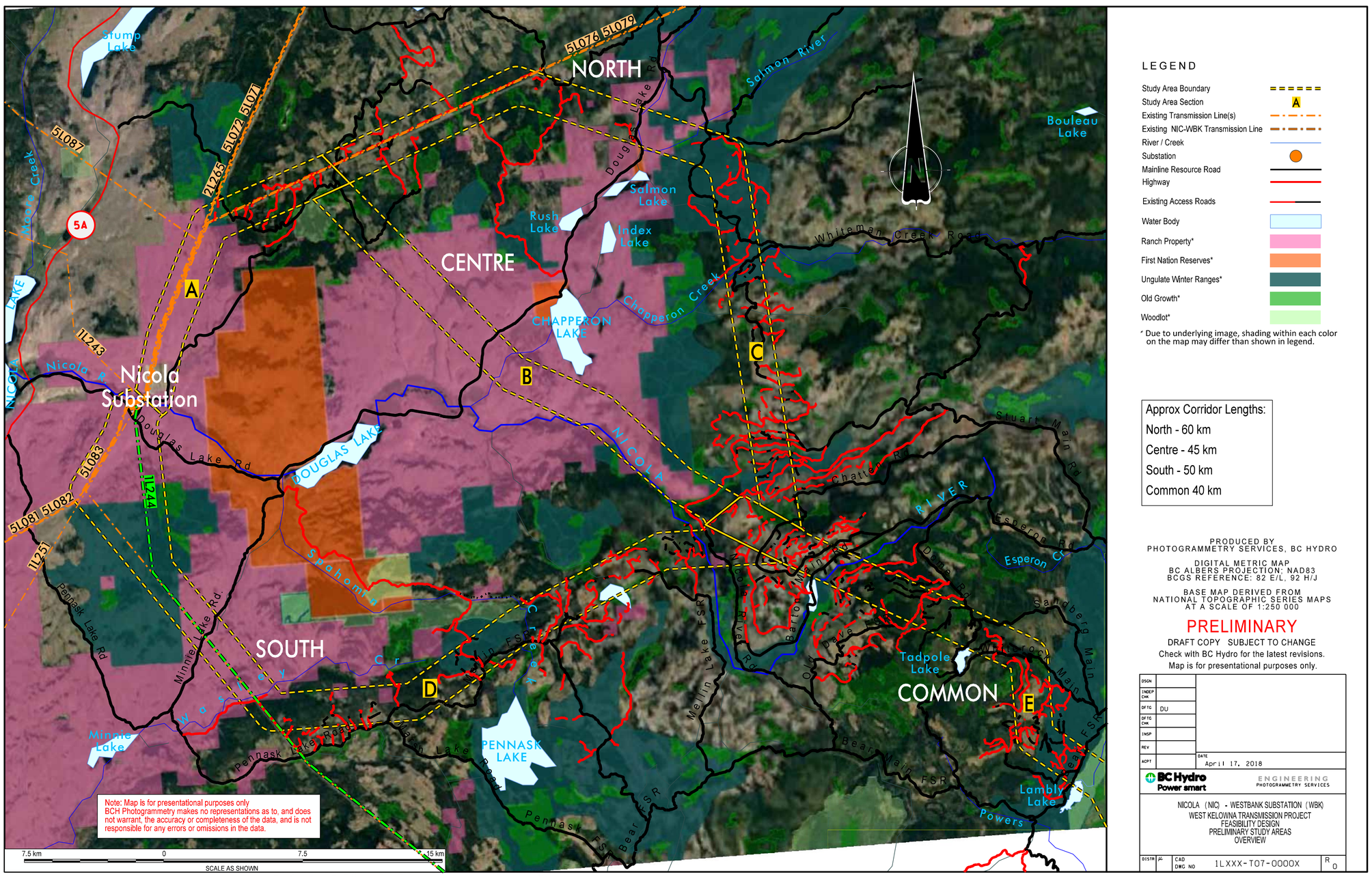
Preliminary study corridor profiles



South corridor

The South preliminary study corridor begins at the Nicola Substation and follows an existing BC Hydro right-of-way for approximately 20km. The corridor then bends east near Pennask Lake Road. From here, the segment bends northeast away from the existing ROW, and travels through logged area before joining the Common corridor that proceeds southeast to the Westbank Substation.

Centre corridor

The Centre preliminary study corridor begins at the Nicola Substation and follows an existing BC Hydro right-of-way for approximately 20km. The corridor then proceeds southeast before joining the Common corridor that proceeds southeast to the Westbank Substation.

North corridor

The North preliminary study corridor begins at the Nicola Substation and follows an existing BC Hydro right-of-way for approximately 30km. The corridor then turns southeast before joining the common section that proceeds southeast to the Westbank Substation.

Common corridor

The Common preliminary study corridor starts at the meeting point of the South, Centre and North corridors. The corridors meet approximately 5km northwest of Barton Lake. The Common corridor proceeds southeast to Westbank substation.

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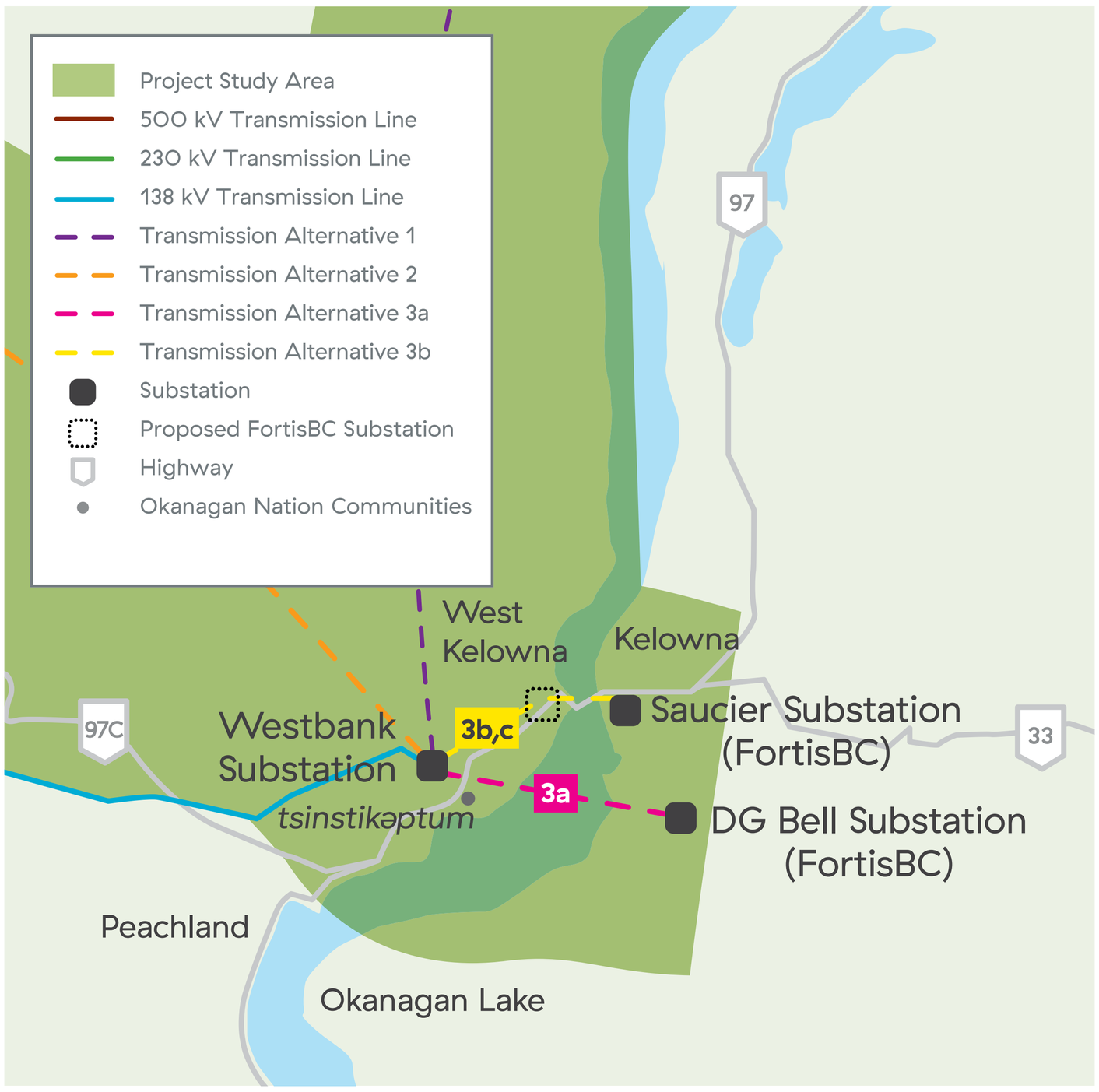
Alternative 3:
to FortisBC



In this stage, we are:

- Reviewing Alternative 3 to confirm our assessment.
- MOTI has provided feedback that they will not consider the option of installing a transmission line on or near the WR Bennett Bridge because other options are available.
- MOTI has also expressed concern with allowing the new transmission line in their highway 97 right-of-way and strongly encourage BC Hydro to consider an alternative alignment.
- The City of Kelowna has indicated that they oppose any overhead infrastructure within City boundaries or to the south of the City and east of Okanagan Lake.
- A greater portion of the new transmission line is expected to be constructed underground rather than overhead as previously expected.
- The new substation in West Kelowna (option 3b) will require underground distribution lines to connect to the existing BC Hydro distribution system.

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Transmission line design
Structure materials and types

In this stage, we're considering the advantages and disadvantages of different material and structure types for the transmission line design based on the information we're gathering through our studies. By the end of this stage we'll select the best material and structure type, or a combination of types, for the project.

A transmission line transfers electricity, carried on three wires known as conductors. The three wire arrangement is also known as a three-phase system.

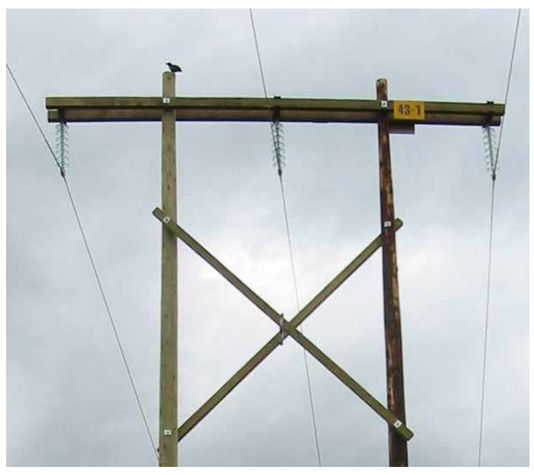
The transmission line wires are supported by poles or structures that prevent the wires touching the ground or other objects in the vicinity. The wires are prevented from touching the pole or structure using insulators.

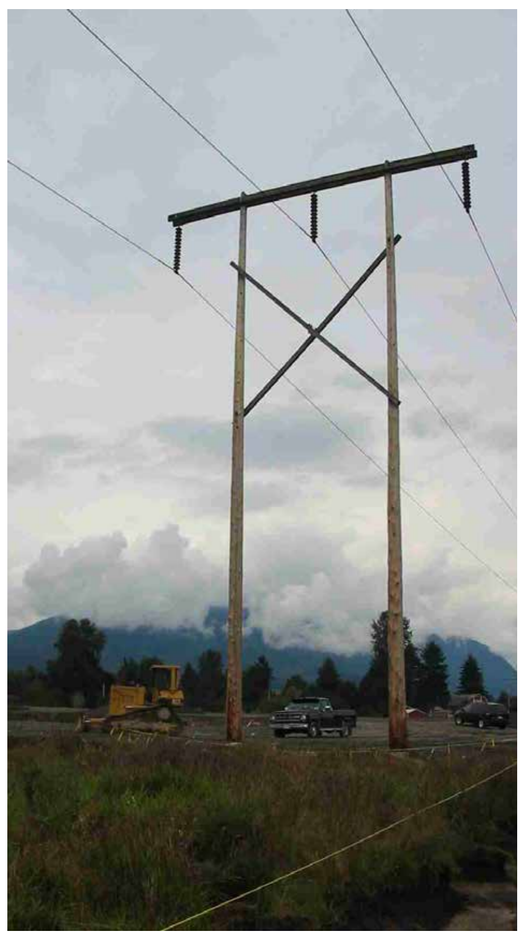
The pole or structure is held in place by suitable foundations that are built according to the ground conditions, for example soft soil or hard rock. Sometimes the pole or structure is further supported by one or more guy wires.

Structure materials

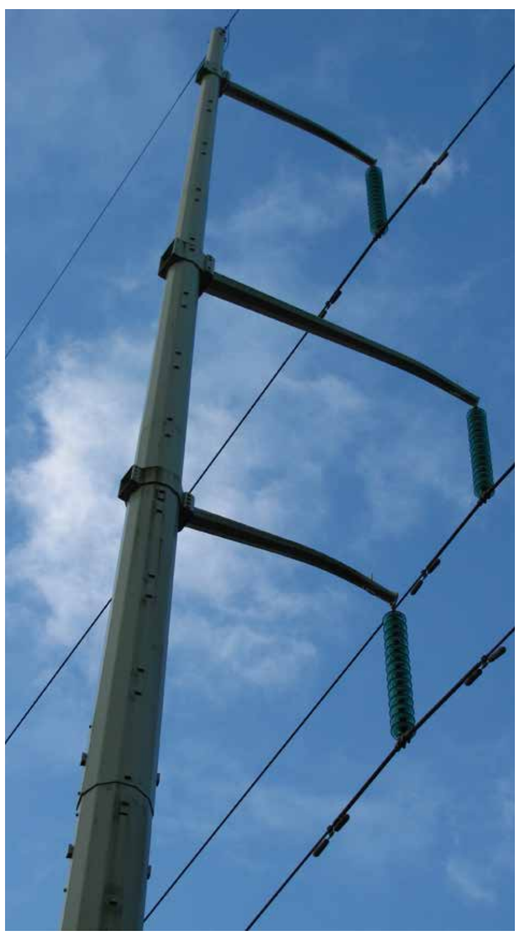
These can be made of wood, steel or fibre reinforced plastic. The materials structural strength, durability, maintainability, performance under natural events, such as wildfires, ease of construction and cost are some of the features being considered to make a selection.

WOOD





STEEL



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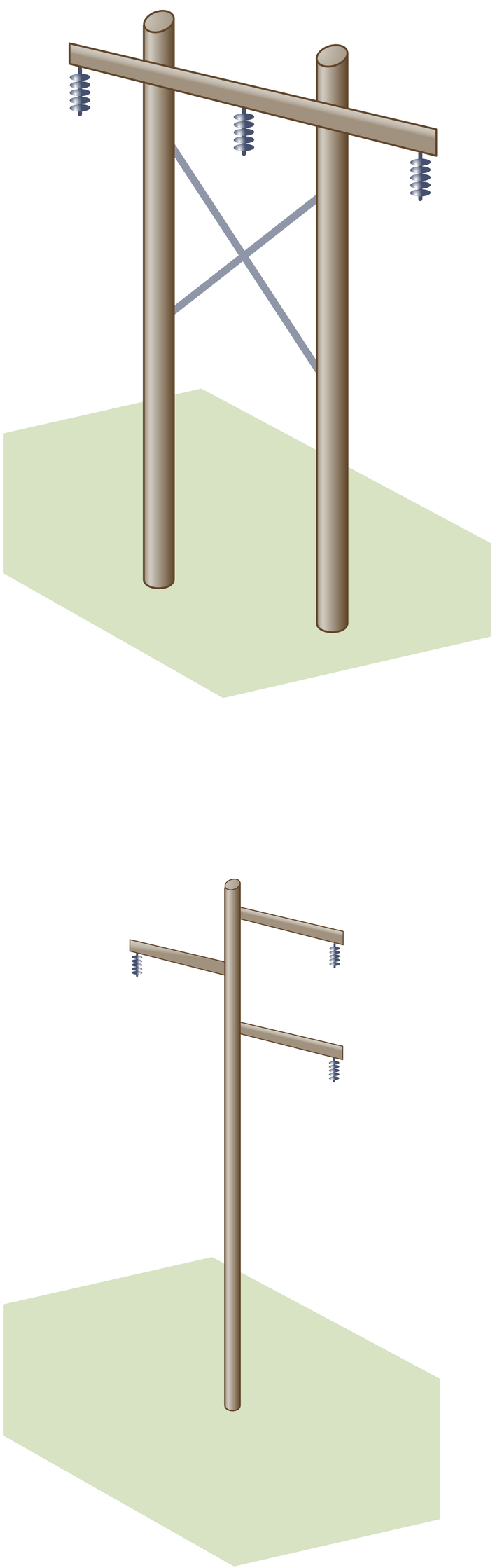
Transmission line design
Structure and materials

Structure types



H-FRAME

Three wires are in a horizontal configuration where the insulators are hung from a horizontal crossarm that connects two vertical poles. Cross braces further strengthen the structure.

- Shorter than an equivalent monopole
- Wider than an equivalent monopole
- Requires two foundations

MONOPOLE

There are different configurations of monopoles. In this example, the wires are in a triangle formation. Insulators are hung from three horizontal arms attached to a single pole.

- Taller than an equivalent H-frame
- Narrower than an equivalent H-frame
- Requires one foundation

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Next steps

Studies

This year, we're continuing to conduct desktop and field studies for the leading alternative, Alternative 2: to Nicola Substation that we started in 2017. We'll also complete a review of Alternative 3 to confirm our assessments. However, there are no plans to continue to study Alternative 1 as it poses the highest level of safety, environmental, socio-economic, cost, wildfire and geotechnical risk compared to the other alternatives.

Identifying a preferred alternative

We expect to make a decision on our preferred alternative in 2018.

Desktop and field studies, First Nations consultation and stakeholder engagement will inform our decision making process.

Key aspects will include: safety, cost, socio-economic, First Nations and stakeholders, wildfire and geotechnical.

For more information, please visit **bchydro.com/wktp** or contact us at **1 866 647 3334**, or **stakeholderengagement@bchydro.com**.

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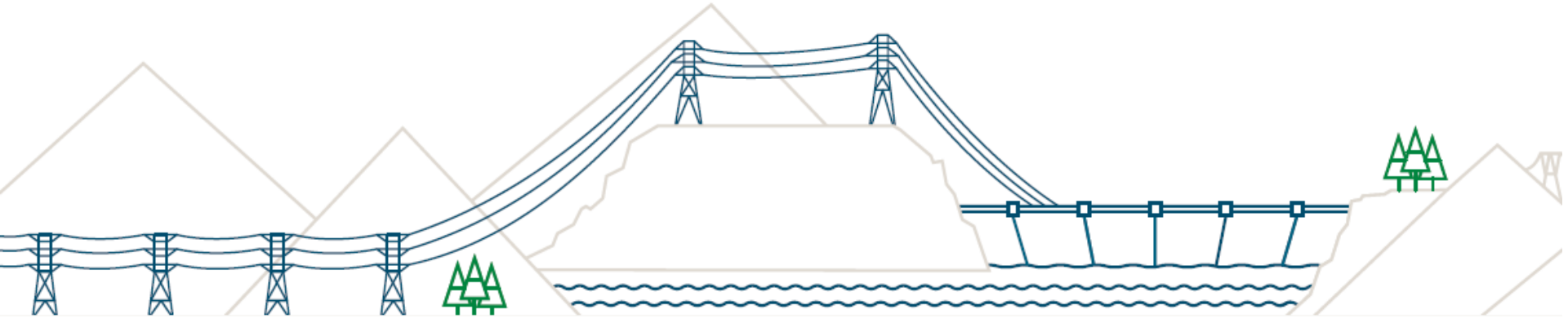
Appendix B:

Presentations to local governments

West Kelowna Transmission Project

Project Update



February 8, 2018

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Agenda

- Project Overview
- Review of Alternative 2, Leading Alternative
- Leading Alternative, Preliminary Study Corridors
- Leading Alternative, Preliminary Studies
- Review Alternative 3
- Identifying a Preferred Alternative
- Project Timeline

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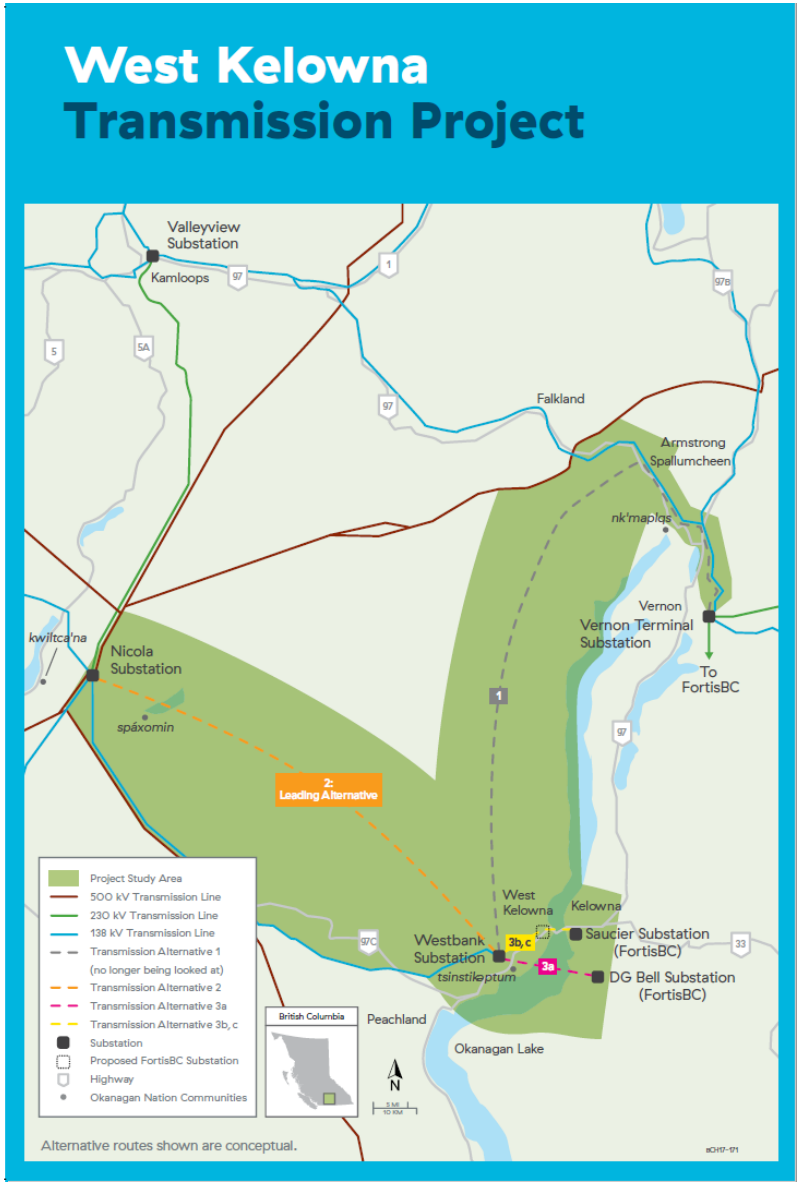
Project overview

- Planning for a new, secondary transmission line to strengthen the transmission network delivering clean, reliable electricity to the communities of West Kelowna and Peachland.

- The new line will strengthen and reinforce the existing transmission network.



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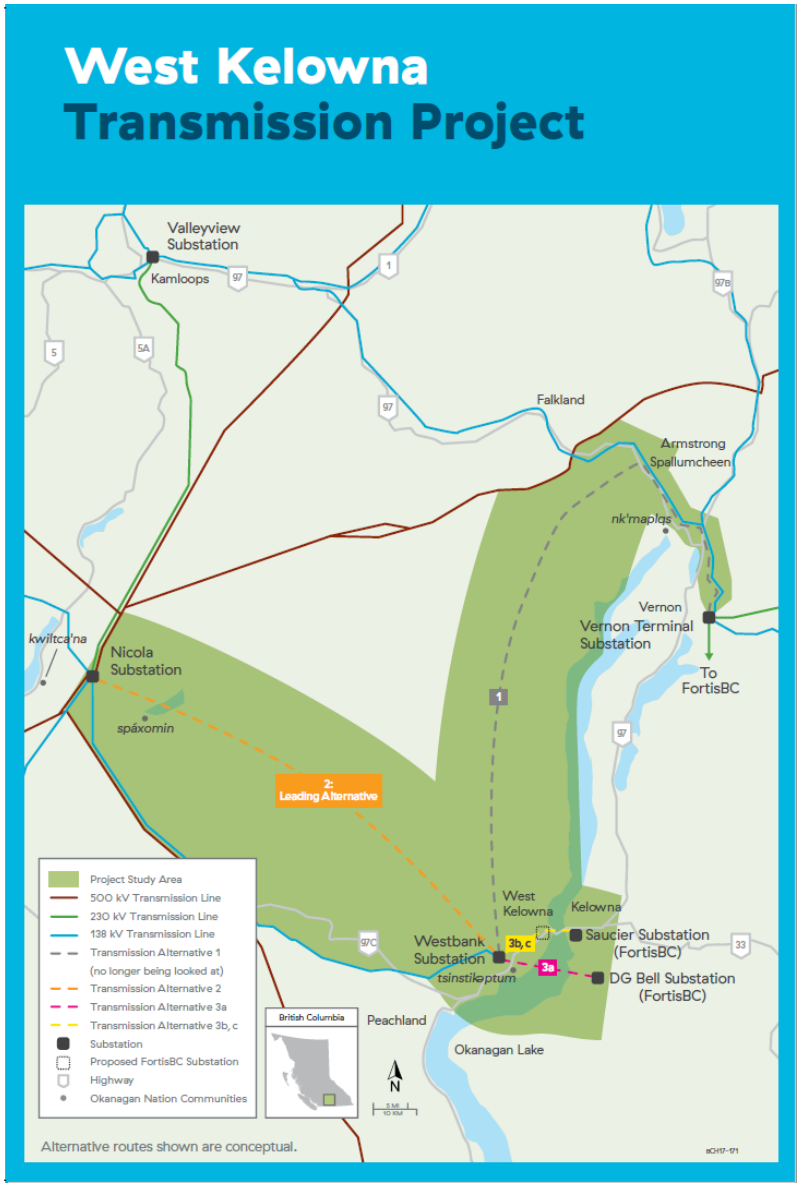
Project overview

- Spring 2015 to fall 2016, studied three alternatives.
- Fall 2016, Alternative 2: to Nicola Substation was identified as the leading alternative and will be further studied.
- 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 levels of risk compared to the other alternatives.
- A decision on the preferred alternative is expected to be made in 2018.



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Leading Alternative

Why Alternative 2: To Nicola Substation was identified as the leading alternative

- Alternative 2 is more favourable than alternatives 1 and 3 from an overall safety, environmental, socio-economic and cost assessment.
- Alternative 2 poses low geotechnical risk which can be mitigated by routing and design of the new line. It is unlikely that an event (e.g. landslide) would impact the existing line and the new line at the same time.
- Alternative 2 has the second lowest fire risk which may be mitigated by use of steel poles, routing, design, adequate separation from the existing line and vegetation management. Nicola Substation is a 500kV station built with redundancy and additional fire protection.
- **Alternative 2 as the leading alternative will be further studied. Additional review of Alternative 3 is being undertaken in order to confirm our assessment.**

Leading Alternative (Alternative 2)

In this stage, we are:

- Continuing to consult with First Nations and stakeholders.
- Conducting desktop and field environmental, socio-economic, archaeological, traditional use and engineering studies.
- Completing an area survey by air and geotechnical investigations on the ground.
- Completing a field wildfire risk assessment.
- Selecting transmission line structure type, conductor size, configuration and substation layout requirements.
- Beginning to look at routing options.

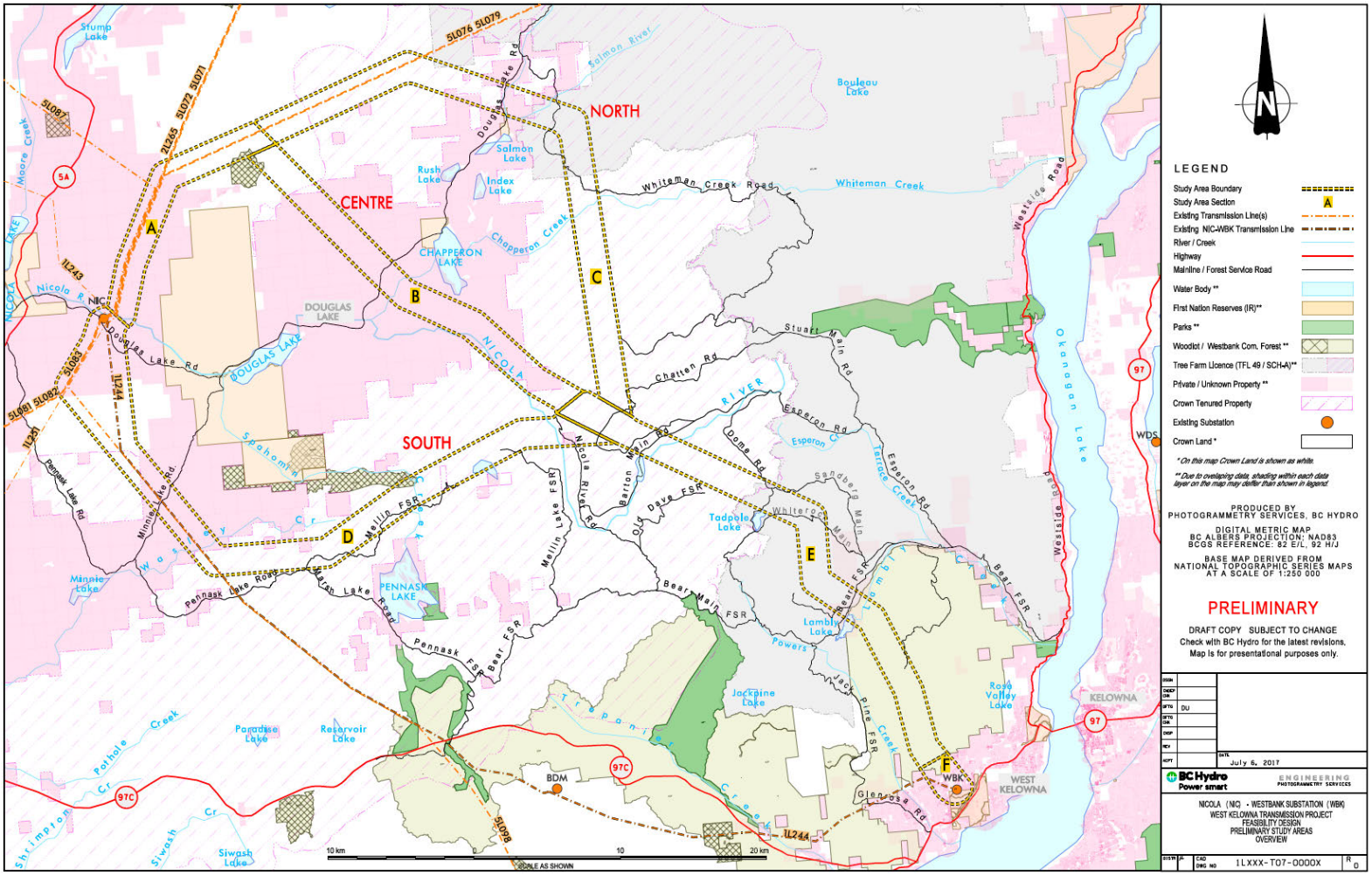
Leading Alternative (Alternative 2)

Preliminary Study Corridors

- Studies and findings from the work done to date helped us develop three preliminary study corridors. We used the following information:
  - Environmental Overview Assessment,
  - Geotechnical and Wildfire Fire Risk Assessment,
  - Consultation feedback,
  - Existing mapping information about the area between Nicola and Westbank substations, e.g. access roads, terrain, usage, and,
  - Technical standards and best practice.
- The preliminary study corridor will continue to be refined over the next couple of years.

Leading Alternative, Alternative 2: to Nicola Substation

Three Preliminary Study Corridors



THIS IS A DRAFT MAP FOR STUDY AND DISCUSSION.

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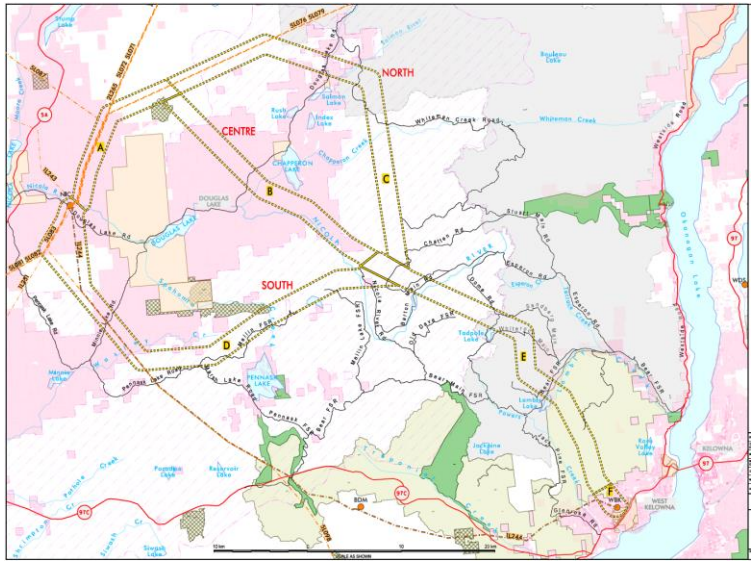
Leading Alternative (Alternative 2)

South Corridor Studies

- BC Hydro is undertaking a desktop and field study program for Alternative 2 on the South preliminary study corridor, starting in June 2017 and running through 2018.
- The study program includes a number of environmental, socio-economic, archaeological, traditional use and engineering studies.
- These studies will inform our project planning including line routing and access plans.
- The study area includes both the Okanagan and Nicola watersheds.



DRAFT MAP FOR STUDY AND DISCUSSION.

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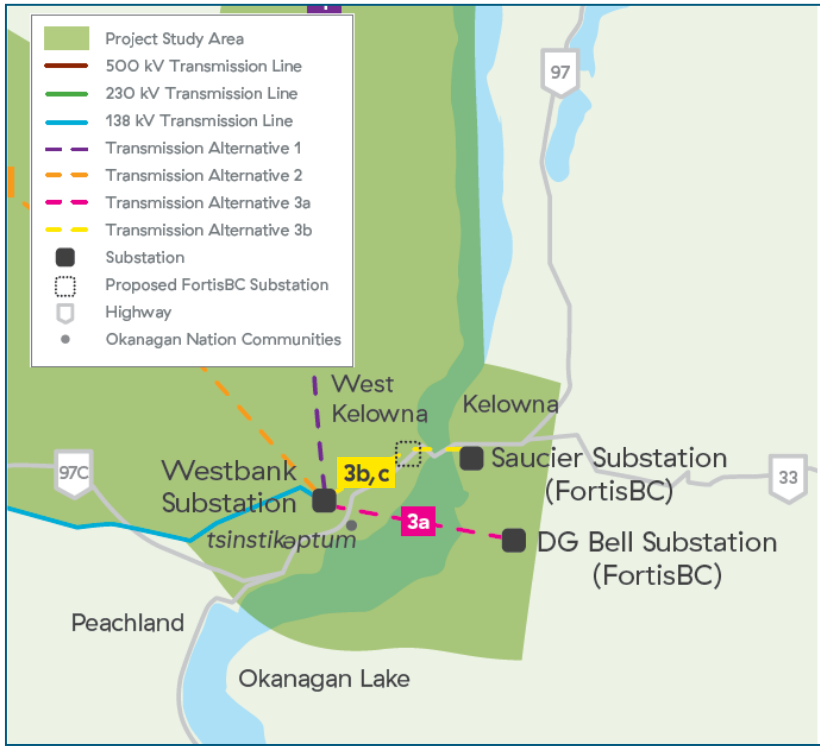
Leading Alternative (Alternative 2)

Wildfire Risk Assessment

- The Wildfire Risk Assessment will be updated to cover the Preliminary Study Corridors, to include:
  - A comparison of the wildfire risk for each study corridor.
  - Study of the risk of simultaneous outage to existing line and a line in each of the study corridors.
  - A review of the finding of occurrence of wildfires with a diameter larger than 20 km based on the lessons learned from the 2017 wildfire season.
  - Recommendations on the mitigation required for each of the study corridors.

Alternative 3: to FortisBC

In this stage, we are:



- Continuing to review Alternative 3 to confirm our assessment.
- Option 3c is similar to 3b except it proposes no new substation in West Kelowna.
- Looking at:
  - Whether a cable can be placed on the bridge
  - Potential transmission routing options and overhead versus undergrounding required
  - Distribution system requirements from the new substation in West Kelowna (option 3b)
  - Clarifying power flow studies carried out by FortisBC
- MOTI has provided feedback that they will not consider the option of installing a transmission line on or near the WR Bennett Bridge because other options are available. They have also expressed concern with allowing the new transmission line in their highway 97 right-of-way strongly encourage BC Hydro to consider an alternative alignment.
- The City of Kelowna has indicated that they oppose any overhead infrastructure within City boundaries or to the south of the City and east of Okanagan Lake.

Identifying a Preferred Alternative

Structured decision making

- We expect to make a decision on our preferred alternative in 2018.
- Desktop and field studies, First Nations consultation and stakeholder engagement will inform our decision making process.

Key aspects will include:

- Safety
- Environment
- Cost
- Socio-economic
- First Nations and stakeholders
- Wildfire
- Geotechnical

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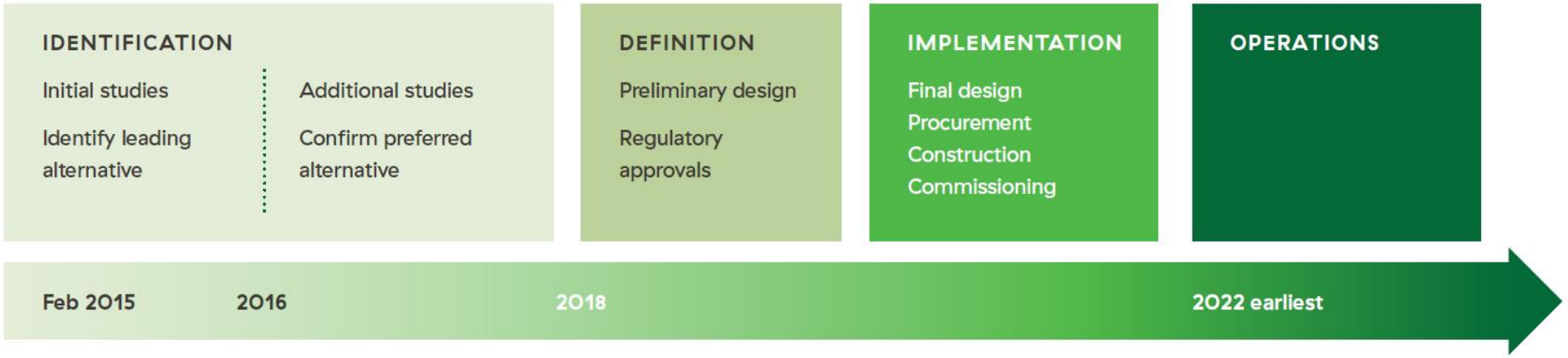
Project timeline

- Conduct desktop and field studies for Alternative 2.
- A review of Alternative 3 is being undertaken in order to confirm our assessments.
- No plans to continue to study Alternative 1 as it poses the highest level of safety, environmental, socio-economic, cost, wildfire and geotechnical risk compared to the other alternatives.
- At the end of this process we expect to make a decision on our preferred alternative in 2018.
- Next round of Public Open Houses anticipated for spring 2018.



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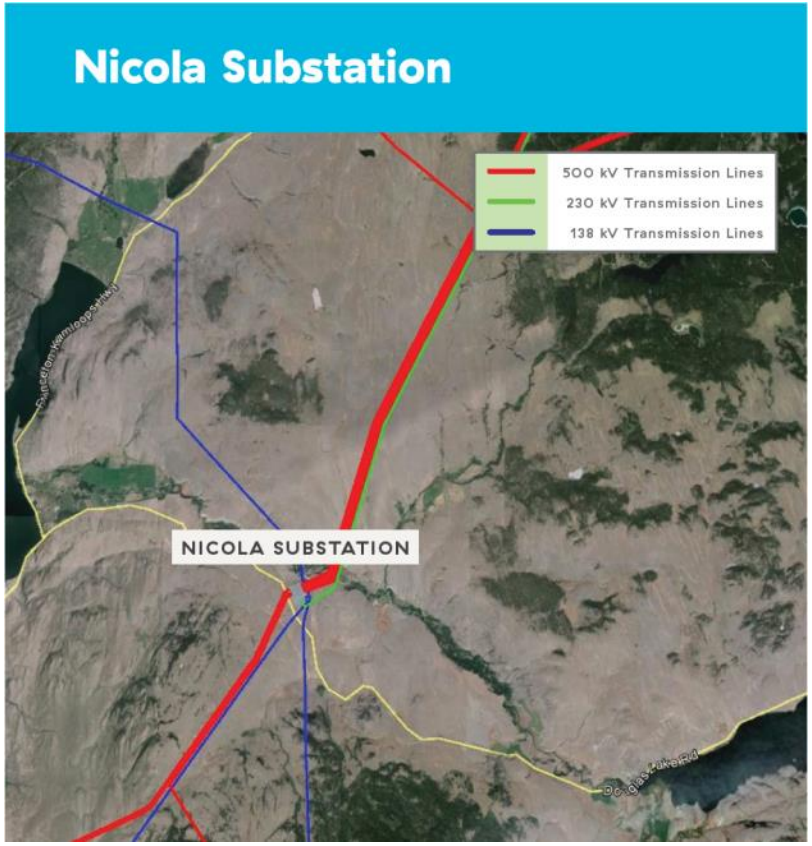
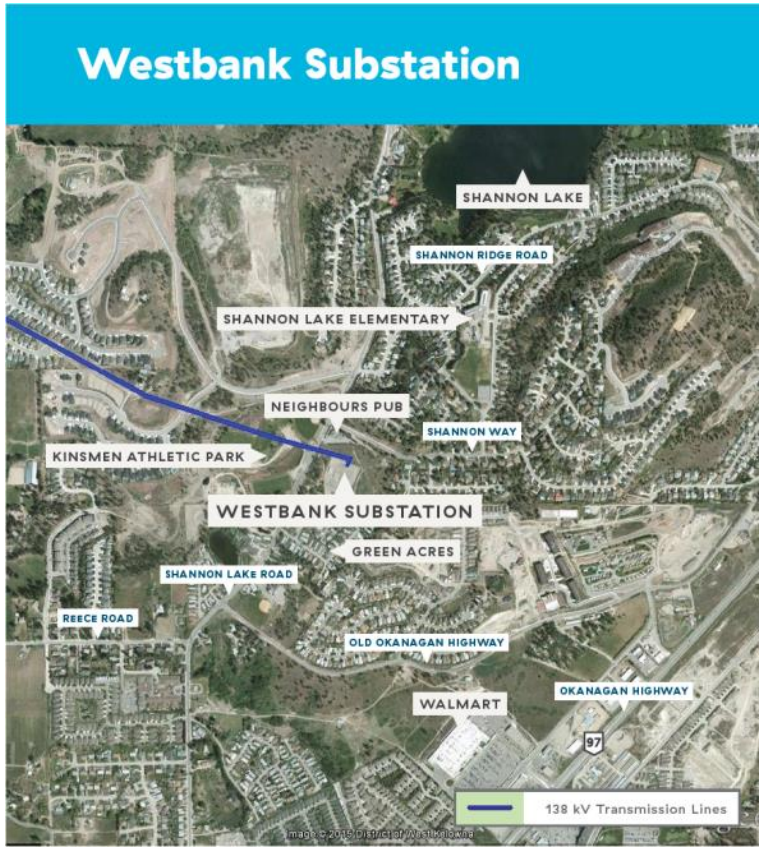
Alternative 2: to Nicola Substation

Substations





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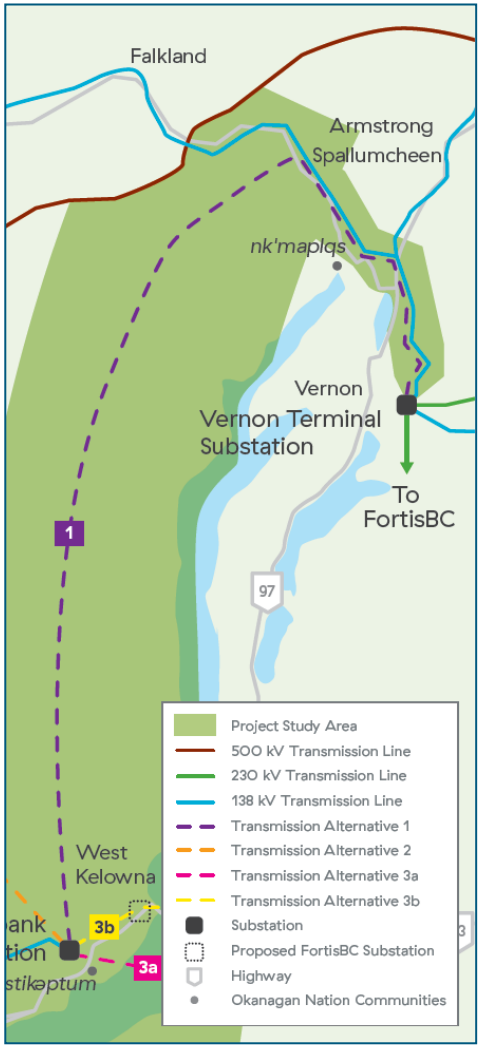
Alternative 1: to Vernon Terminal Substation

- **Safety:** high potential safety risk.
- **Environment:** high potential environmental risk.
- **Cost:** highest cost compared to other alternatives.
- **Socio-economic:** high potential socio-economic risk.
- **First Nations and stakeholders:** not supported.
- **Wildfire:** highest potential wildfire risk.
- **Geotechnical:** highest potential geotechnical risk.



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Leading Alternative, Alternative 2: to Nicola Substation

- **Safety:** low potential safety risk.
- **Environment:** moderate potential environmental risk.
- **Cost:** lowest cost compared to other alternatives.
- **Socio-economic:** moderate potential socio-economic risk.
- **First Nations and stakeholders:** generally supported.

- **Wildfire:** second lowest potential wildfire risk after Alternative 3b.
- **Geotechnical:** low potential geotechnical risk.

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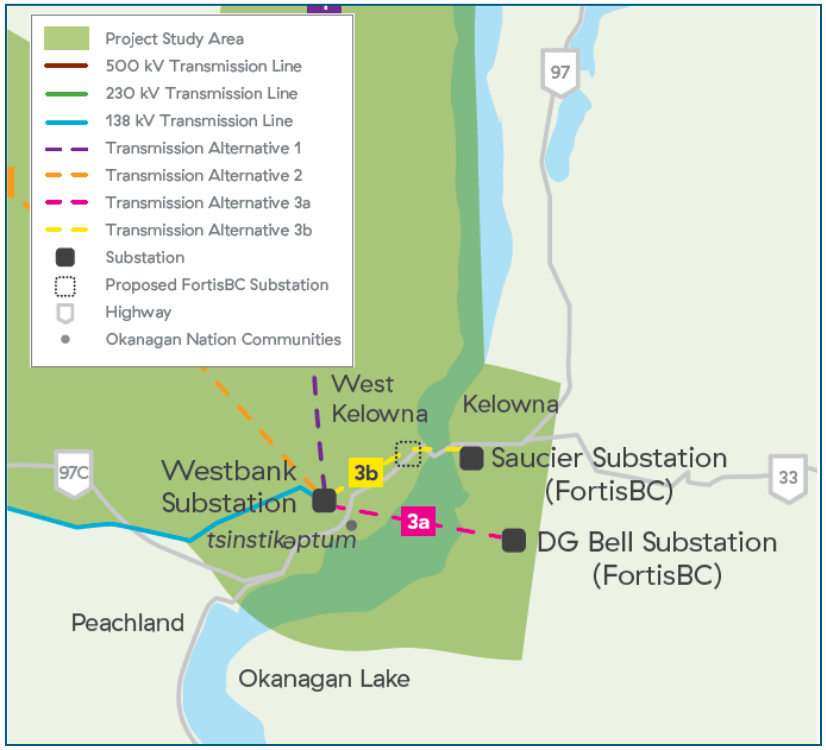
Alternative 3: to FortisBC



- **Safety:** low potential safety risk.
- **Environment:** moderate potential environmental risk.
- **Cost:** moderate cost compared to other alternatives.
- **Socio-economic:** high potential socio-economic risk.
- **First Nations:** not fully supported.
- **Stakeholders:** generally supported.

- **Wildfire 3a:** second highest potential wildfire risk.
- **Wildfire 3b:** lowest potential wildfire risk.
- **Geotechnical:** low potential geotechnical risk.

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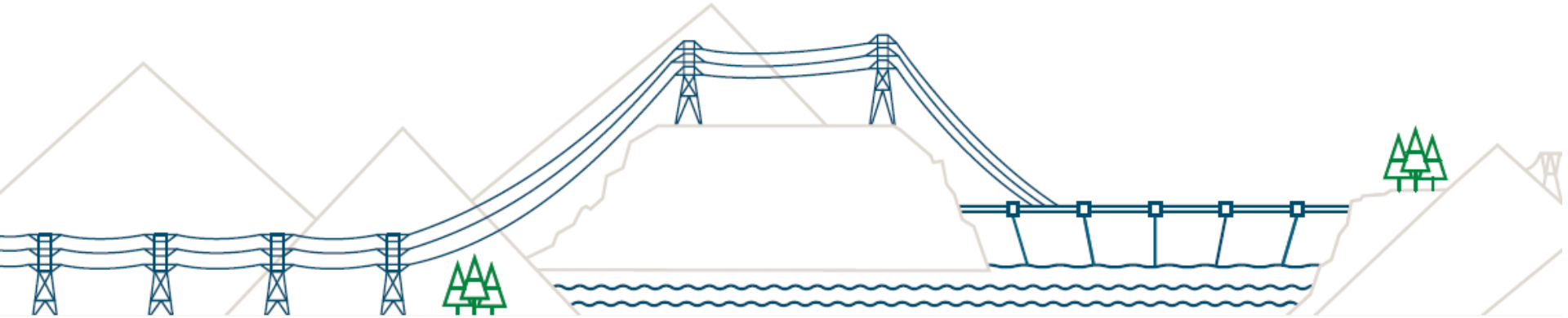
West Kelowna Transmission Project



May 2018

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Agenda

Project overview

Work in this stage

Alternative 2: Preliminary study corridors

Environmental and Engineering Studies

Transmission Line Design

Review of Alternative 3

Identifying a Preferred Alternative

Project timeline

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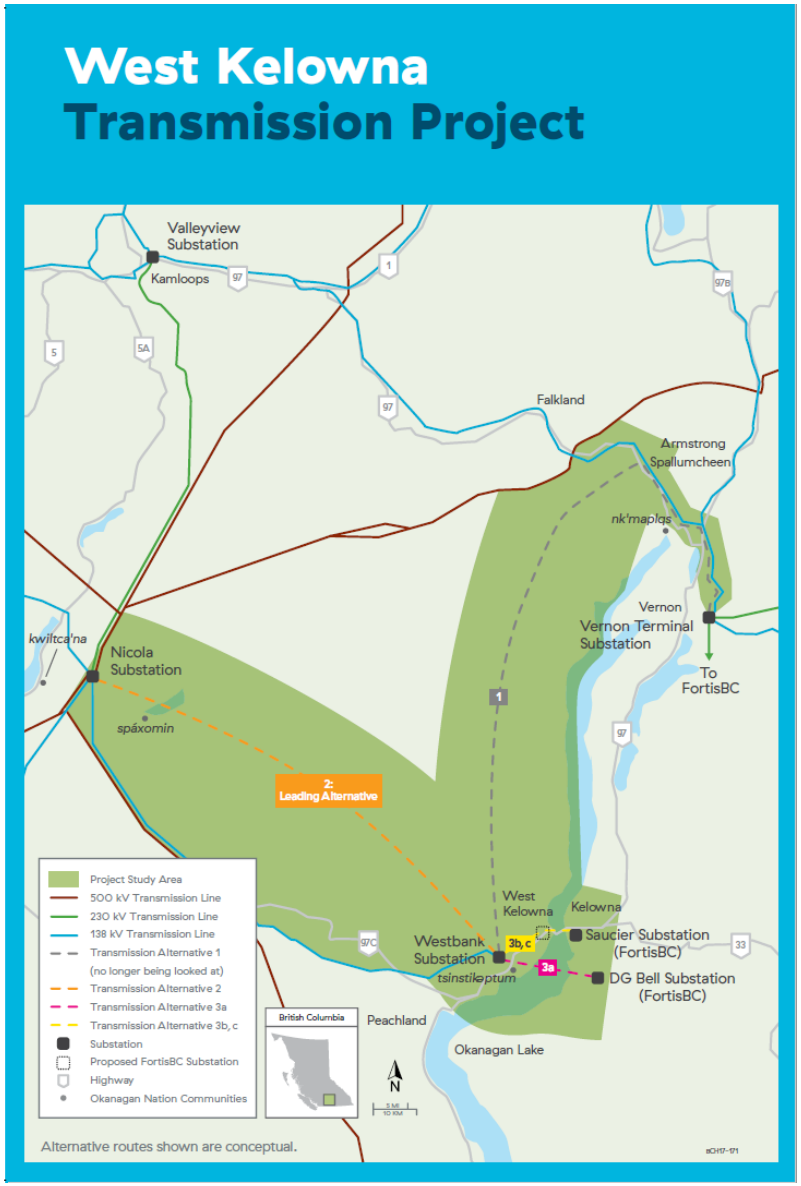
Project overview

- Spring 2015 to fall 2016, studied three alternatives.
- Fall 2016, Alternative 2: to Nicola Substation was identified as the leading alternative and will be further studied.
- 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 levels of risk compared to the other alternatives.
- A decision on the preferred alternative is expected to be made in 2018.



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Leading alternative, Alternative 2: to Nicola Substation

In this stage we are:

- Continuing to consult with First Nations and stakeholders.
- Conducting desktop and field environmental, socio-economic, archaeological, traditional use and engineering studies.
- Completing geotechnical investigations on the ground.
- Completing a field and desktop wildfire risk assessment.
- Selecting transmission line structure type, conductor size, configuration and substation layout requirements.
- Beginning to look at routing options.

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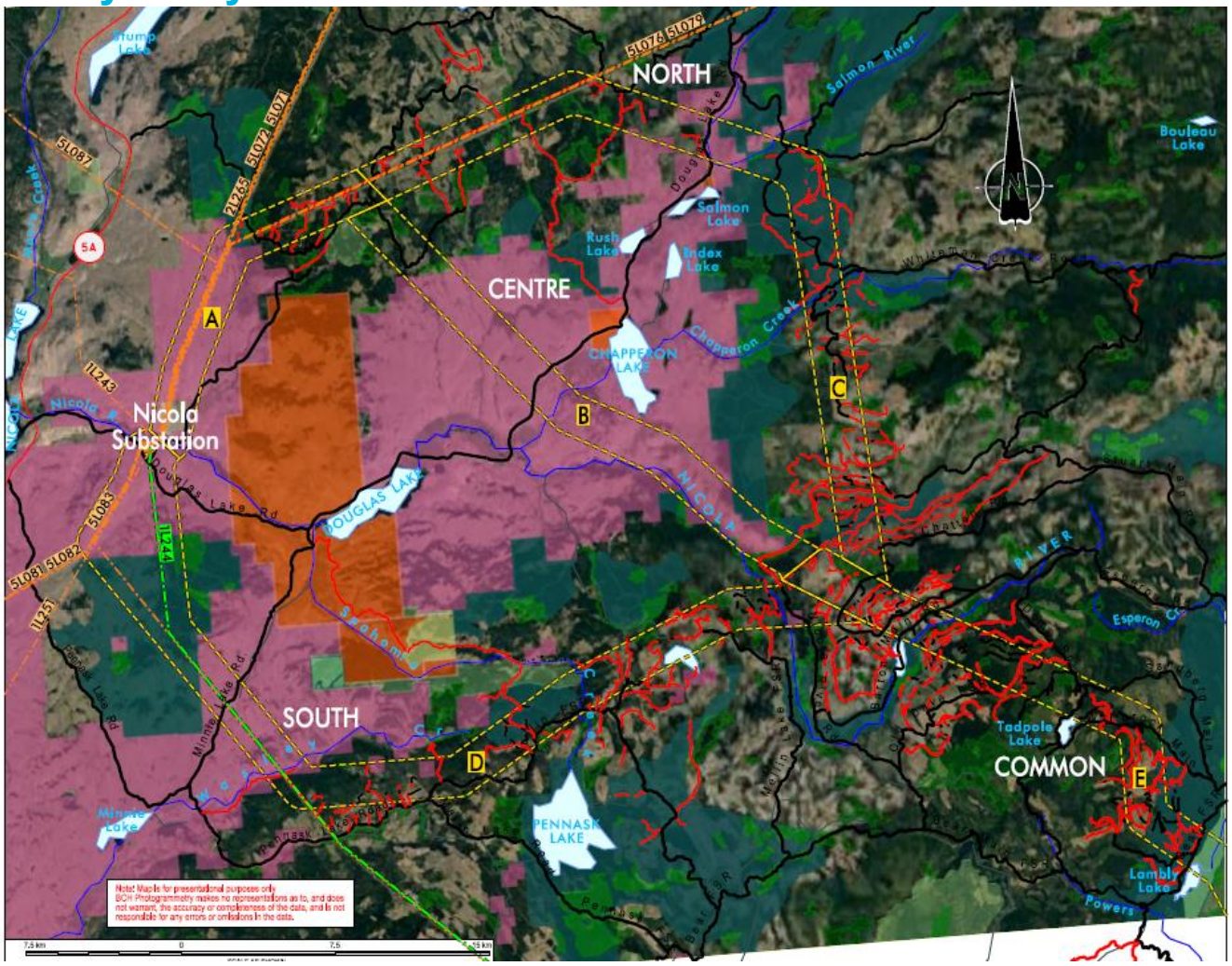
Leading alternative, Alternative 2: to Nicola Substation

Preliminary study corridors

- We're 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, and,
  - 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.
- The selected corridor will be refined over the next few years.

Leading alternative, Alternative 2: to Nicola Substation

Preliminary study corridors



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Leading alternative, Alternative 2: to Nicola Substation

Archaeological and Cultural Assessment Studies

- Identify and evaluate archaeological sites and areas with potential archaeological sties.
- Identify and evaluate potential effects of construction and operation activities on the ability of First Nations to continue to carry out traditional cultural, spiritual and subsistence practices.

Key Considerations:

- Previously recorded archaeological sites
- Areas with moderate or high potential for unknown archaeological sites
- Traditional use sites associated with cultural or spiritual values within the study area
- Known historic sites
- First Nations Reserves

Leading alternative, Alternative 2: to Nicola Substation

Terrestrial Wildlife and Vegetation Studies

- Identify and evaluate potential effects on terrestrial wildlife resources, vegetation resources, species-at-risk, and sensitive ecosystems.

Key Considerations:

- Breeding birds
- Bats
- Lewis' Woodpecker
- Great Basin Spadefoot toad
- Old growth management areas
- Ungulate winter range (moose and mule deer)
- Invasive plant species
- Grasslands

- Wetlands
- Proposed critical habitat
- Parks and protected areas

Leading alternative, Alternative 2: to Nicola Substation

Fisheries and Aquatic Habitat Studies

- Identify and evaluate potential effects on fish populations, instream and riparian habitat, fish passage and water quality.

Key Considerations:

- More than 600 water crossings
- Potential loss, reduction or alternation of riparian habitat at watercourses crossings
- Changes in water quality on fish and fish habitat
- Potential effects on rare and endangered fish species
- Effects on fish distribution

- Groundwater features such as wells and aquifers

Leading alternative, Alternative 2: to Nicola Substation

Geotechnical and Natural Hazards Studies

- Identify and evaluate potential effects resulting from the interaction between construction and operation activities and the physical environment and terrain.

Key Considerations:

- Foundation requirements
- Natural hazards
- Slope stability
- Erosion
- Acid rock drainage
- Climate
- Earthquakes

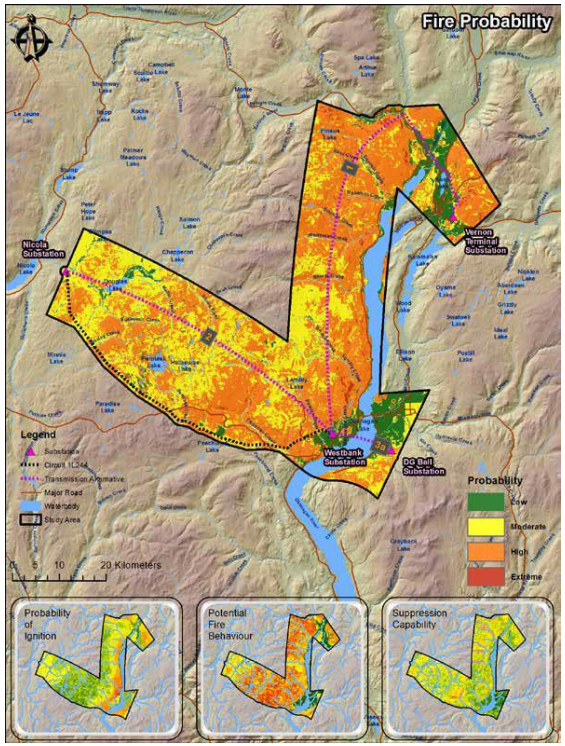
Leading alternative, Alternative 2: to Nicola Substation

Wildfire Studies

- Identify and evaluate the wildfire risk associated with the construction of operation activities.

Key Considerations:

- Risk of ignition
- Suppression response capability
- Potential fire behaviour
- Simultaneous risk to existing and new line



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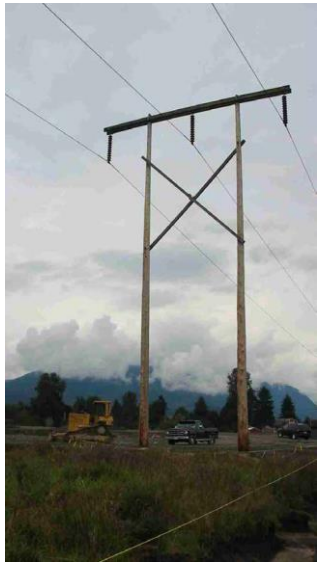
Leading alternative, Alternative 2: to Nicola Substation

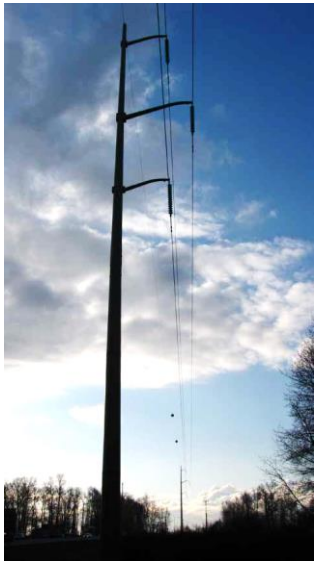
Transmission line design

- Considering the advantages and disadvantages of material and structure types for the transmission line design based on study results
- By the end of this stage we'll select the best material and structure type, or a combination of types, for the project.

Wood



Metal



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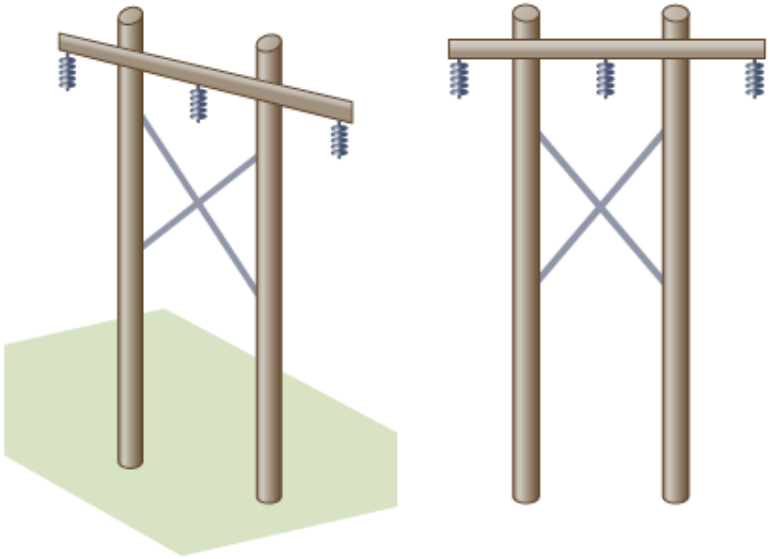
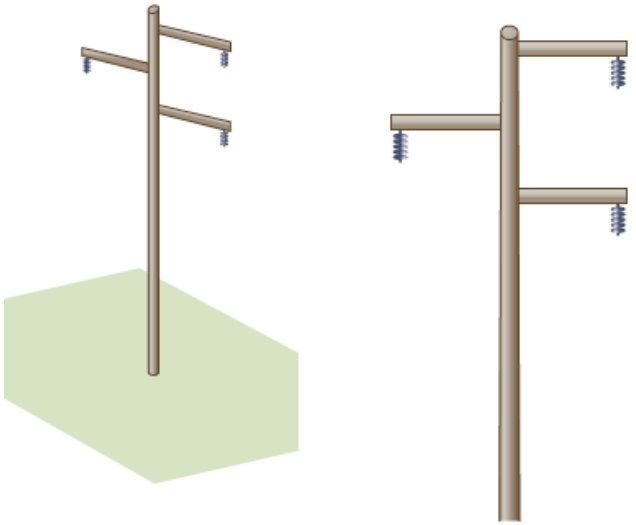
Leading alternative, Alternative 2: to Nicola Substation

Transmission line design

H-Frame



Monopole



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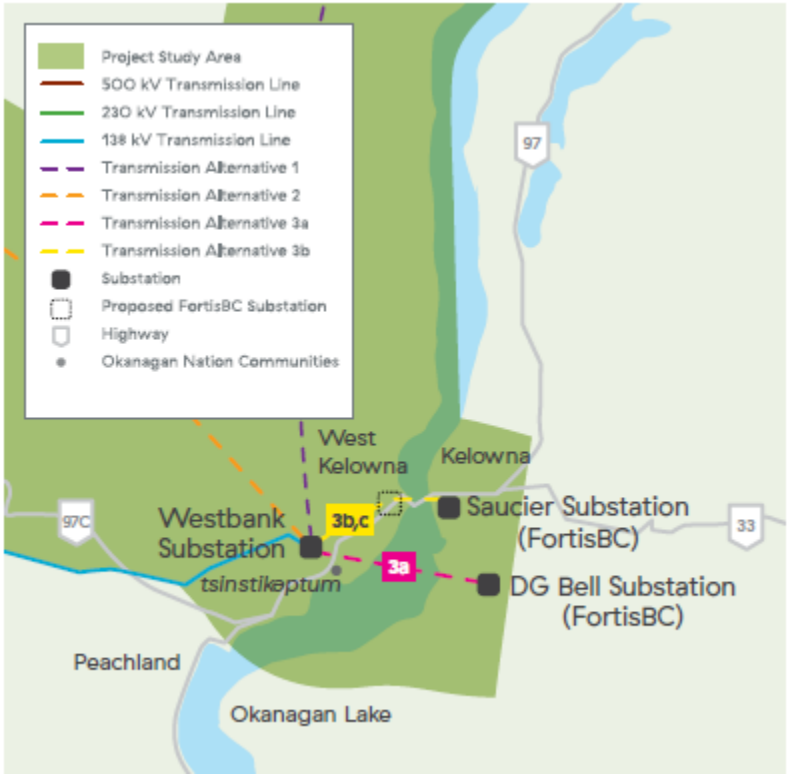
Alternative 3: to FortisBC



- Reviewing Alternative 3 to confirm our assessment.
- MOTI has provided feedback that they will not consider the option of installing a transmission line on or near the WR Bennett Bridge because other options are available.
- MOTI has also expressed concern with allowing the new transmission line in their highway 97 right-of-way and strongly encourage BC Hydro to consider an alternative.
- The City of Kelowna has indicated that they oppose any overhead infrastructure within City boundaries or to the south of the City and east of Okanagan Lake.
- A greater portion of the transmission line is expected to be constructed underground rather than overhead as previously expected.
- The new substation in West Kelowna (option 3b) will require underground distribution lines to connect to the existing BC Hydro distribution system.

Identifying a Preferred Alternative

- We expect to make a decision on our preferred alternative in 2018.

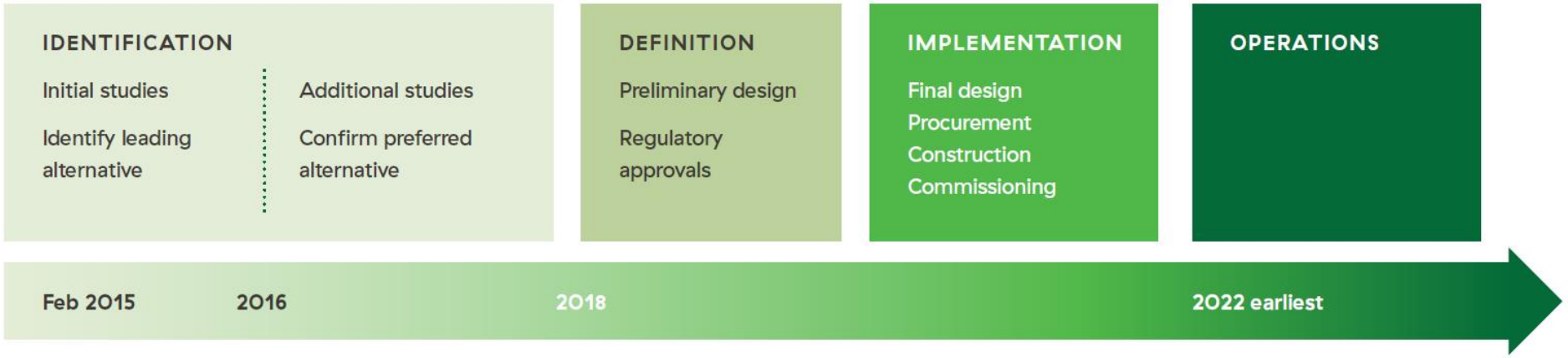
- Desktop and field studies, First Nations consultation and stakeholder engagement will inform our decision making process.

Key aspects will include:

- Safety
- Environment
- Cost
- Socio-economic
- First Nations and stakeholders
- Wildfire
- Geotechnical

Project timeline

- Conduct desktop and field studies for Alternative 2.
- A review of Alternative 3 is being undertaken in order to confirm our assessments.
- No plans to continue to study Alternative 1 as it poses the highest level of safety, environmental, socio-economic, cost, wildfire and geotechnical risk compared to the other alternatives.
- At the end of this process we expect to make a decision on our preferred alternative in 2018.
- Next round of Public Open Houses planned for May 29-31, 2018.



BC Hydro
Power smart

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Appendix C:

Letters from local governments

Thompson-Nicola Regional District

THE REGION OF BC'S BEST

Department: Board Chair

February 14, 2018

Sabrina Locicero and Bridget McNulty
BC Hydro
333 Dunsmuir, 15th floor
Vancouver, BC V6B 5R3

Delivered via email: sabrina.locicero@bchydro.com

To Ms. Locicero and Ms. McNulty:

RE: Thank-you for your Presentation

On behalf the Thompson-Nicola Regional District (TNRD) Board of Directors, I would like to extend my thanks for your recent presentation at our last Board of Directors meeting. We appreciated the time you took to provide an update on the work of BC Hydro with regards to the West Kelowna Transmission Project. It is valuable for our Directors to stay informed on the progress of the project to date and how it may impact our region. In particular, it was useful to learn that the current leading alternative is the Nicola Substation route, and gain a better understanding of how you've come to this decision so far.

I would like to thank you again for taking the time to present to our Board, and answer questions from the Directors. We value the work of your organization for our shared region, and wish you success with this project moving forward.

Sincerely yours,

John Ranta, Chair
Thompson-Nicola Regional District

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