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West Kelowna Transmission Project: Wildfire and Geotechnical Risk Assessments

In response to what we heard during consultation, we recently completed a wildfire risk assessment for the West Kelowna Transmission Project. The results of this assessment are below. Also included are highlights from the updated geotechnical risk assessments.

Wildfire Risk Assessment

The wildfire risk assessment was completed by Bruce Blackwell of B.A. Blackwell and Associates and assessed the project alternatives and the existing transmission line (see attached map). Please note that Alternative 3b was not studied; it's anticipated that a large portion of this line would be in urban areas or underground making the wildfire risk negligible.

The assessment reviewed the likelihood, impact and mitigation for each alternative and the existing line in terms of:

1. Probability of Ignition: Lighting caused fires, human caused fires, ignition potential.
2. Fire Behaviour: Fire intensity, rate of spread, crown fraction burned.
3. Suppression Response Capability: Constraints to detection, proximity to water sources, helicopter arrival time, air tanker arrival time, terrain steepness, proximity to roads.

The assessment also looked at the potential for a wildfire to simultaneously impact the existing line and each of the alternatives.

Based on the wildfire risk assessment results, we've identified each of the alternatives as having the following potential wildfire risk:

- **Alternative 1 (to Vernon Terminal Substation): HIGHEST.** Alternative 1 poses the highest potential risk due to the severe wildfires experienced in the area in the last decade, high probability of human ignition given its proximity to areas of high population density, the length of the line exposed to areas of high wildfire probability, the reduced suppression capability associated with the terrain and access difficulty, and high wildfire behaviour potential. Implementing the mitigation recommendations including design measures and vegetation maintenance work would be difficult and costly given the challenging terrain in this area.
- **Alternative 2 (to Nicola Substation): MODERATE.** Alternative 2 poses the second lowest potential risk due to the lower incidence of fires experienced in the area in the last decade, the lower probability of human ignition given its proximity to areas of low population density, and low frequency of fire return. The risk for a wildfire to impact Alternative 2 and the existing line can be mitigated through the use of steel poles, routing, design and vegetation management. The report concludes there is no record of a wildfire larger than 20 kilometres in diameter in B.C. and the study area for Alternative 2 is 50 kilometers. This means there can be adequate separation to build the new line away from the existing line.

- **Alternative 3a (to FortisBC, DG Bell Substation): HIGH.** Alternative 3a poses the second highest potential risk due to the severe fires experienced in the area in the last decade, high probability of human ignition given its proximity to areas of high population density, and high frequency of fire return. Also, carrying out the mitigation recommendations including design measures and vegetation maintenance work would be difficult given the heavily populated urban and recreation areas.
- **Alternative 3b (to FortisBC, Saucier Substation): NEGLIGABLE.** Alternative 3b poses the lowest potential wildlife risk because of its location in an urban area, short line length, and assumption that a large section of this line would be underground.

An important part of this study looked at the potential for a wildfire to impact both the existing line and one of the alternatives at the same time. The assessment does identify that a wildfire near the Westbank Substation could impact all alternatives and the existing line at the same time. This area does have the highest ignition potential and moderate fire behavior potential. However, there is better suppression capability in this area and therefore a higher likelihood of suppression success.

Geotechnical Risk Assessment

We recently updated the geotechnical risk assessment for all three project alternatives. The assessment concludes that, for each of the alternatives, a geotechnical event is unlikely to impact the existing line and the new line at the same time. Alternative 1 poses the highest geotechnical risk primarily related to the presence of multiple steep river valleys; routing to avoid this risk may be challenging. Alternatives 2 and 3 pose less geotechnical risk and routing and design of the new line are expected to minimize the likelihood and impact from events such as landslides.

Next Steps

While we haven't identified a leading alternative for the West Kelowna Transmission Project, Alternative 2 appears to be the most favourable based on our assessment to date. We are working towards a decision on the leading alternative before the end of the year. The results for both the wildfire risk and geotechnical risk assessments will be included as a part of the decision-making criteria to identify a leading alternative along with safety, environment, cost, socio-economics and input from First Nations and stakeholders.

Following the decision on a leading alternative, we will undertake detailed environmental, socio-economic, First Nation and engineering studies on the leading alternative and the other alternatives in order to confirm a preferred alternative.

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