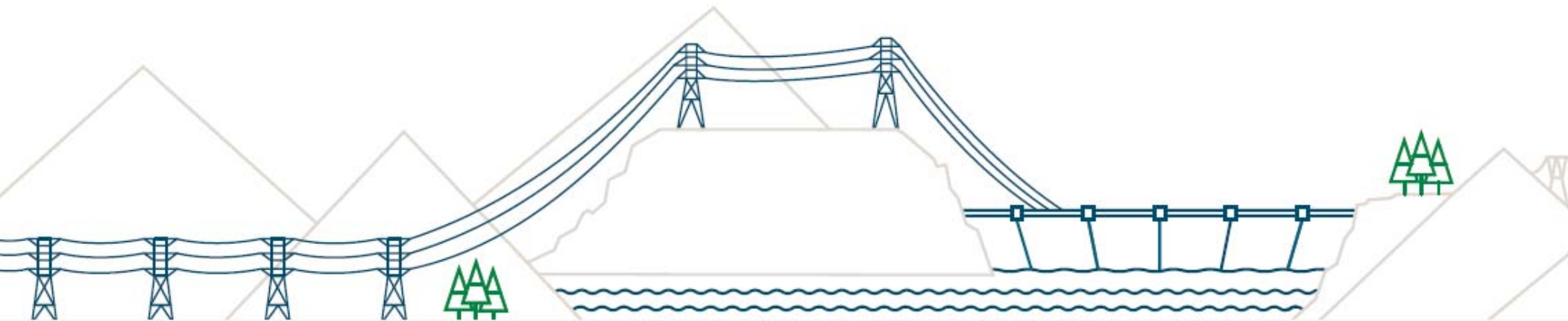


Peace to Kelly Lake Capacitors Project

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May/June 2019

Today's presentation

1. What is the Peace to Kelly Lake Capacitors Project?
2. Alternatives assessment & the leading alternative
3. Potential segments and site locations
4. First Nations consultation and stakeholder engagement
5. Next Steps

Peace to Kelly Lake Capacitors Project

The Peace Region currently generates more than 30% of the total electricity produced in the province.

- With new generation resources being planned, more electricity will be generated in the area in coming years.
- Upgrades are needed to ensure our transmission system can move this electricity from where it is generated to where it is used in homes and businesses across the province.

Why are upgrades needed?

- The existing 500 kV transmission lines are at 95% capacity.
- Building capacitor stations will help maintain voltage levels of existing transmission lines.
- The project will include upgrades to aging equipment that needs to be replaced at the existing Kennedy Capacitor Station.



What is a capacitor station?

- A capacitor station is a facility where electricity from a high-voltage transmission line is carried through a series of devices called capacitors.
- This helps maintain the voltage levels in a transmission line, allowing more electricity to pass through a line over long distances.
- Capacitor stations are a cost-effective way of maximizing the efficiency of an existing transmission line.



Example of a Capacitor Station.

Alternatives Considered

Peace to Kelly Lake Capacitors Project Alternative 1



Peace to Kelly Lake Capacitors Project Alternative 2



Peace to Kelly Lake Capacitors Project Alternative 3



- Build 4 new capacitor stations: 1 in segment A or A2, 1 in segment B, 1 in segment C and 1 in segment D
- Decommission existing capacitor stations at Kennedy Capacitor Station (KDY) and McLeese Capacitor Station.

- Build 3 new capacitor stations: 1 in segment A or A2, 1 in segment B and 1 in segment E (the installation of new capacitor station equipment at Williston Substation).
- Decommission existing capacitor station (KDY).

- Build 3 new capacitor stations: 1 in segment A or A2, 1 in segment B and 1 in segment F or F2.
- Decommission existing capacitor station (KDY).

Comparing the Alternatives


How the alternatives stack up

Assessment Criteria		Measure	Alternative 1	Alternative 2	Alternative 3 Leading Alternative
			Segments A / B / C / D	Segments A / B / E	Segments A / B / F
First Nations Interests	Potential land Impacts (Excludes BC Hydro owned land at the existing Williston Substation)	Hectares (ha)	24 ha	12 ha	18 ha
	Potential impacts to cultural and archaeological sites	Yes (Y) / No (N)	Y	Y	Y
	Potential Impacts to Traditional Use	Y/N	Y	Y	Y
Potential Properties Impacts	Total footprint	ha	26 ha	20 ha	20 ha
	Potential Impacts to Agricultural Land Reserve	ha	8 to 14 ha	2 to 8 ha	2 to 8 ha
Flexibility	Downscale project scope to address increase in the northern load		Possible	n/a	Good
	Address possible future capacity increases		Good	Poor	Fair

 Leading Alternative

 Higher level of potential risk and/or impact than the leading alternative

 Same level of potential risk and/or impact as the leading alternative

 Better level of potential risk and/or impact than the leading alternative

Comparing the Alternatives

How the alternatives stack up

Assessment Criteria		Measure	Alternative 1	Alternative 2	Alternative 3 Leading Alternative
			Segments A / B / C / D	Segments A / B / E	Segments A / B / F
Operational and Reliability	Meet maximum power output under normal conditions	Y/N	Y	Y	Y
	Limit on generation with single outage	Megawatts (MW)	0 MW	400 MW	0 MW
	Mitigate operating restriction at McLeese		N/A	Possible	Likely
Potential Archaeological Impacts		Low (L) Medium (M) High (H)	H / H / L / L	H / H / L	H / H / H
Potential Environmental Impact	Vegetation	Negligible (N) Low (L) Medium (M) High (H)	L / L / N / L	L / L / L	L / L / L
	Wildlife		L / N / M / L	L / L / L	L / L / L
	Fish/aquatic habitat		L / N / L / N	L / N / M	L / N / L
	Land use		L / L / L / L	L / L / L	L / L / L
	Visual		L / L / L / L	L / L / L	L / L / L
	Hydrogeology		N / N / L / N	N / N / L / N	N / N / N

- Leading Alternative
- Higher level of potential risk and/or impact than the leading alternative
- Same level of potential risk and/or impact as the leading alternative
- Better level of potential risk and/or impact than the leading alternative


Comparing the Alternatives

How the alternatives stack up

Assessment Criteria		Measure	Alternative 1	Alternative 2	Alternative 3 Leading Alternative
			Segments A / B / C / D	Segments A / B / E	Segments A / B / F
Constructability	Schedule risk	L / M / H	M	M	H
	Geotechnical risks		M	M	M
	Outage requirements		M	M	M
Estimated Project Cost	Total project cost	%	119%	91%	100%
	Present value life cycle costs (including maintenance)		106%	97%	100%

 Leading Alternative

 Same level of potential risk and/or impact as the leading alternative

 Higher level of potential risk and/or impact than the leading alternative

 Better level of potential risk and/or impact than the leading alternative

Leading Alternative

- BC Hydro has identified Alternative 3 as the leading alternative for further study.
- We chose this alternative because it was assessed as more favourable from overall safety, reliability, environment, constructability, and cost perspective.



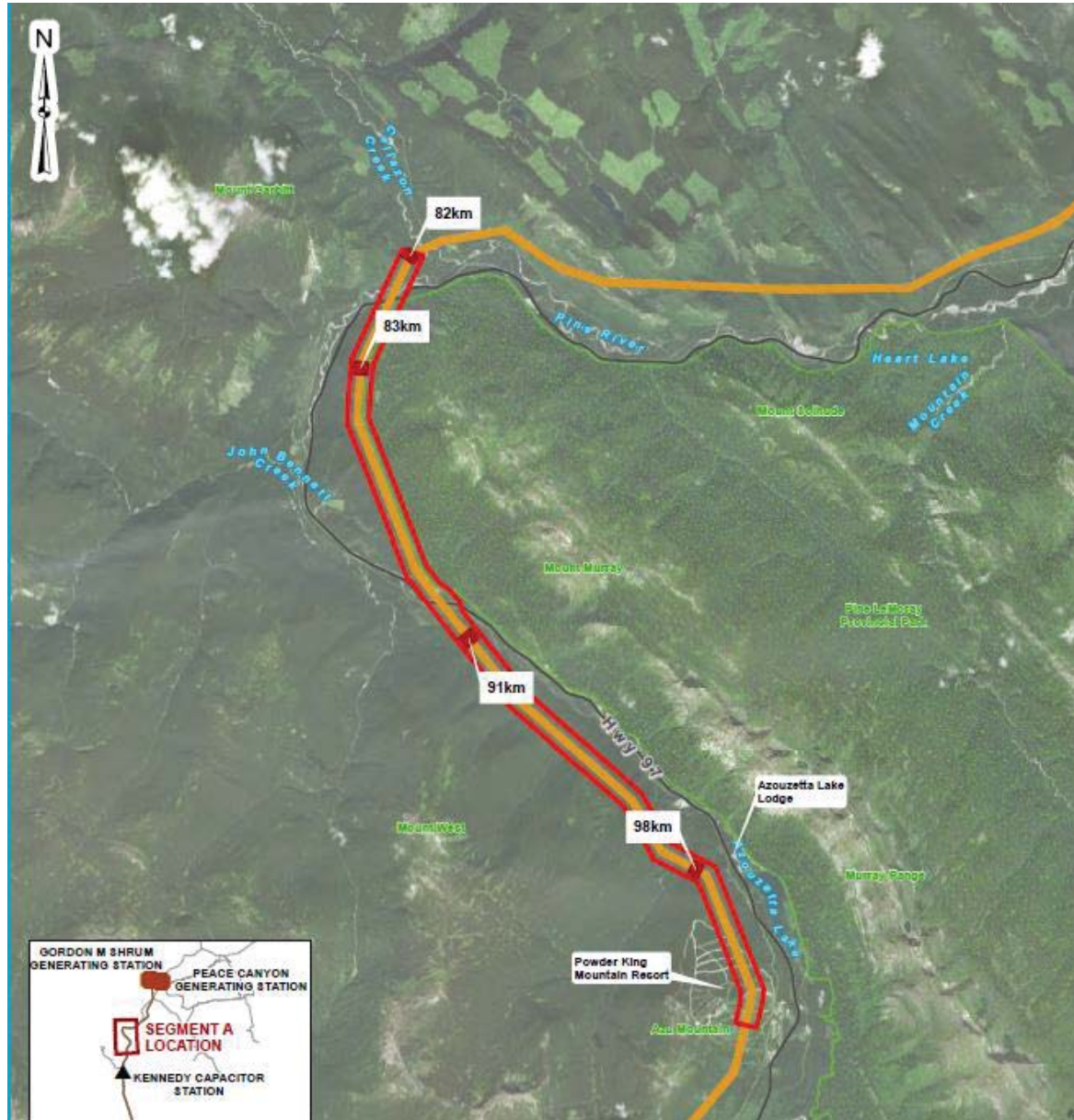
Where will these new stations be located?

We are considering line segments A, A2, B, F and F2 for these stations.

- We have reviewed possible sites for the capacitor stations in each of our different alternatives.
- All stations will be located on or near the existing transmission lines' rights-of-way.
- The potential locations for the stations are somewhat limited because they need to be located at specific intervals along the transmission lines. We refer to the potential locations along the line as segments.

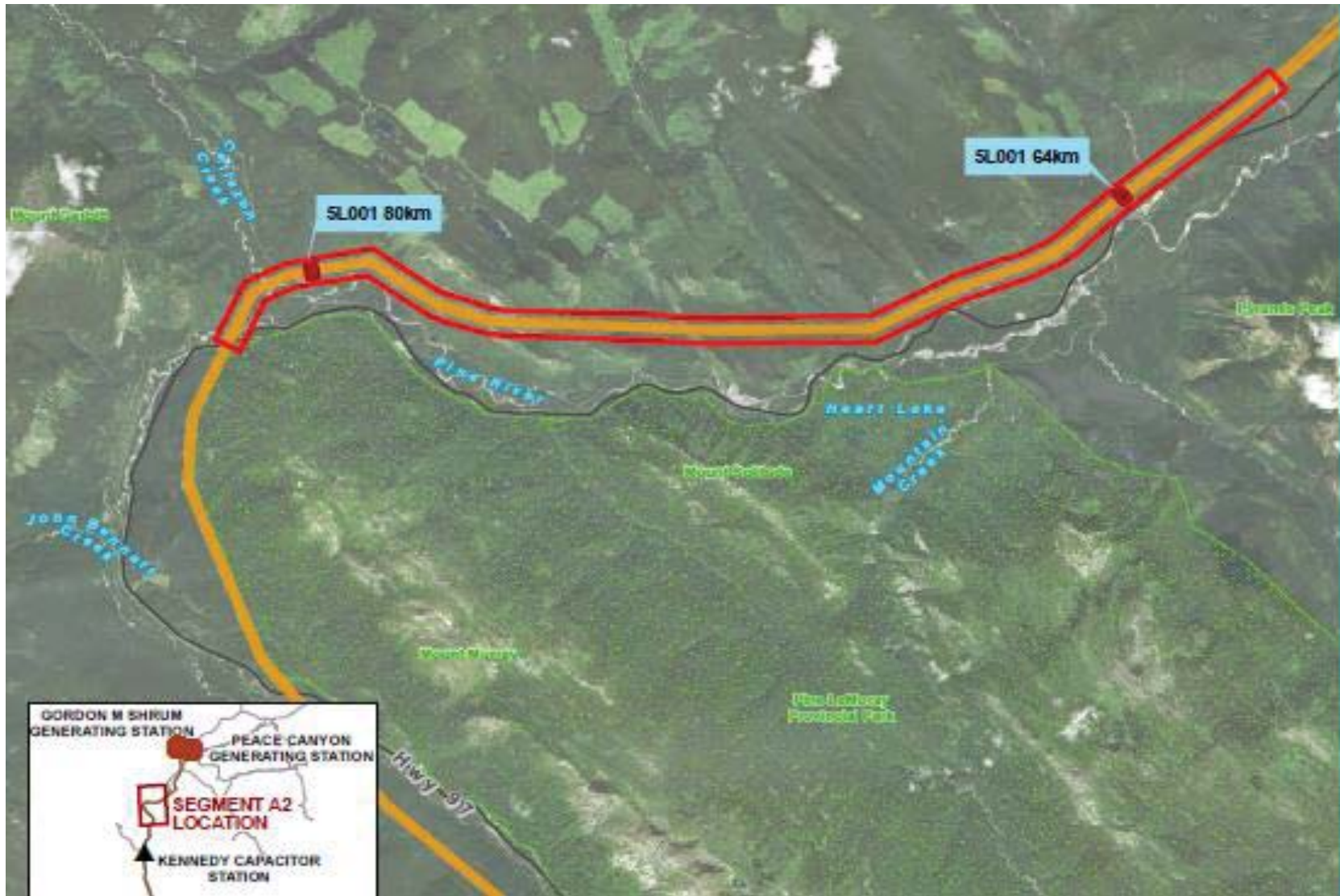
Segment A

Sites 82km, 83km, 91km, and 98km



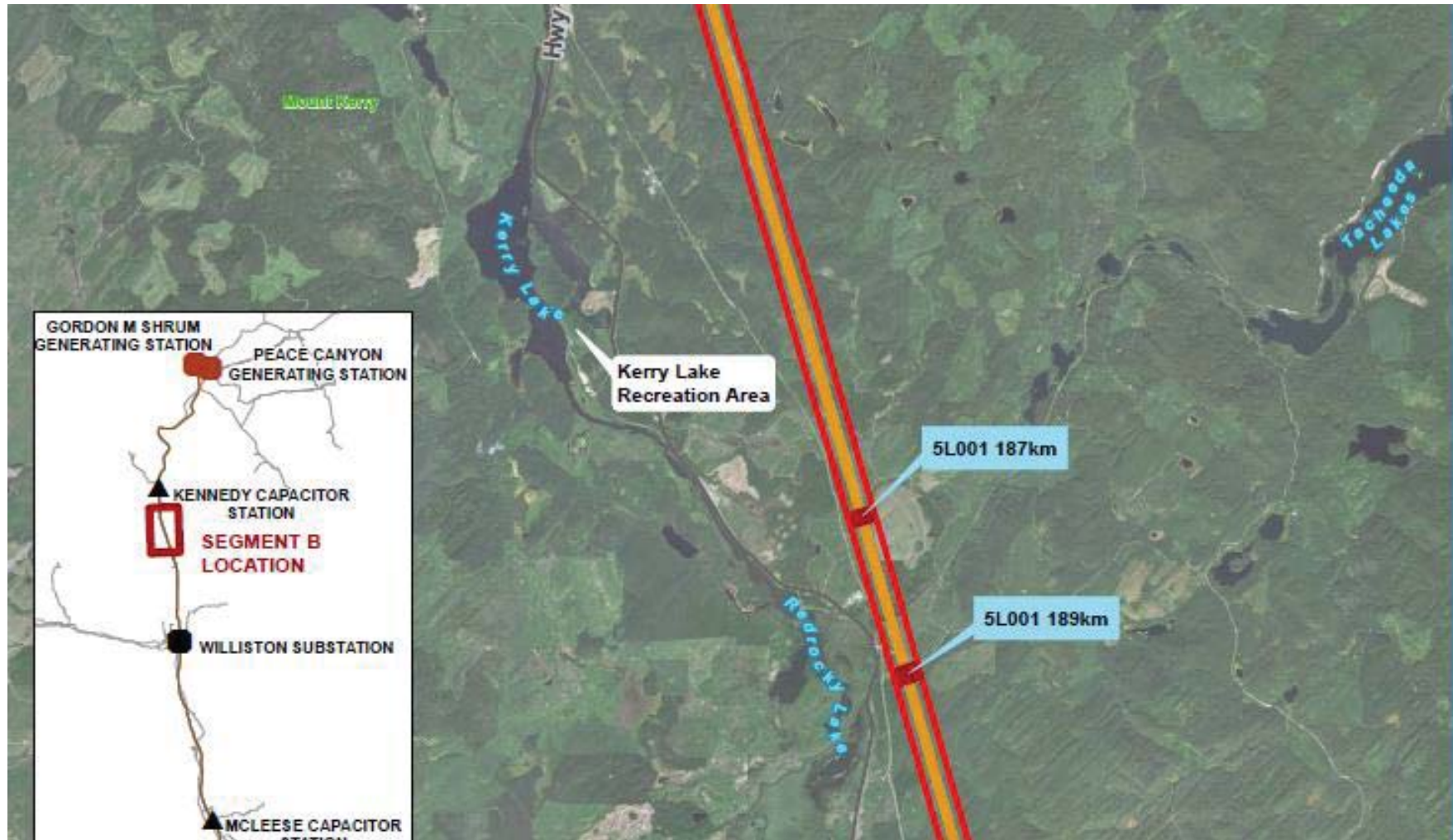
Segment A2

Sites 64km and 80km



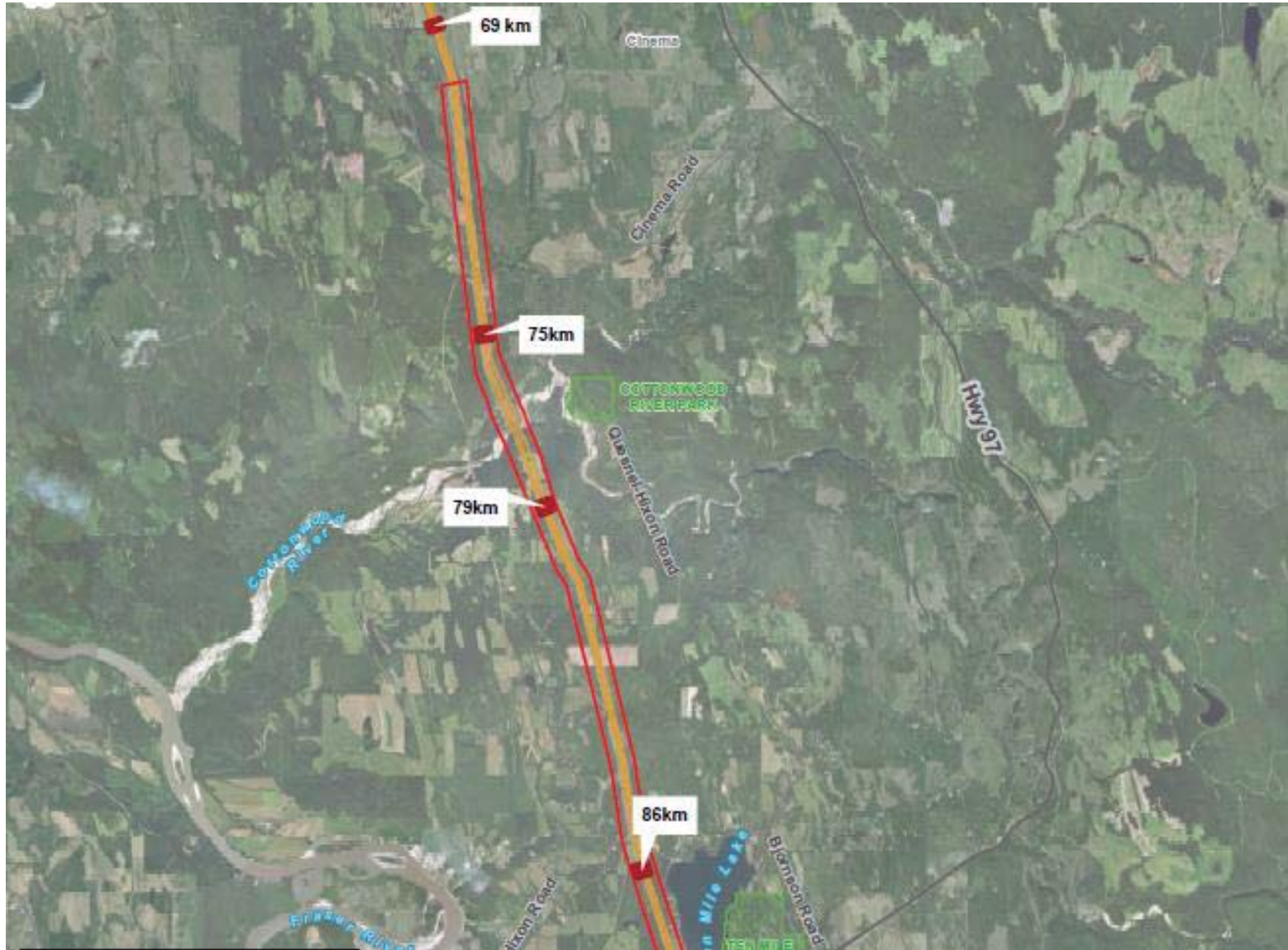
Segment B

Sites 187km and 189km



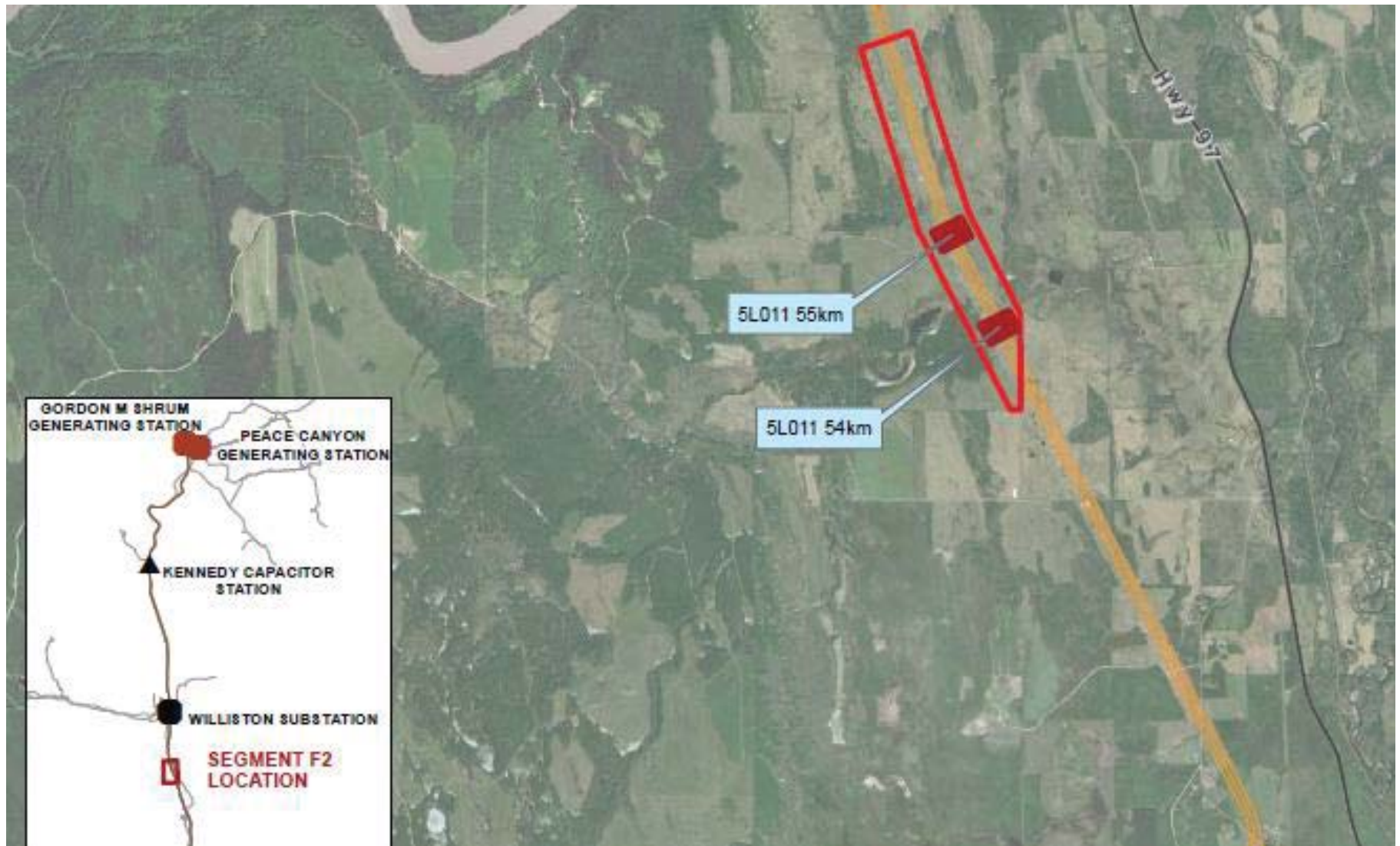
Segment F

Sites 69km, 75km, 79km and 86km



Segment F2

Sites 55km and 54km



Williston Substation



What are we doing this year?

Work this summer will focus on investigative works that will allow us to select preferred station locations

- Clearing and access development to permit investigative works
- Geotechnical drilling to determine ground conditions
- Topographic surveys
- Ground resistance testing
- Environmental field work and Archaeological Impact Assessments
- First Nation site investigations

Timeline and next steps

- Now that the leading alternative has been identified, we'll focus on studying and selecting site locations within the segment areas for further study.
- Anticipate confirming a preferred alternative in 2020.
- Ongoing consultation and engagement.
- Visit www.bchydro.com/pkcp for current project information.

Project timeline



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