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WOLVERINE TO BHP JANSEN
NEW TRANSMISSION LINE PROJECT
Preferred Route Selection Update, July 2019



PRESENTATION PURPOSE

- To update you on the project, specifically, how we determined our preferred route.
- To explain our planning and decision-making process, the things we considered, including stakeholder feedback.
- To answer your questions the best we can, and to let you know next steps.

WHY THIS NEW POWER LINE IS NEEDED

- BHP has requested 230 kV service to its proposed Jansen potash mine located about 10 km north of the Village of Jansen.
- A lower voltage line (138 kV) was built in 2010 to provide temporary power to the Jansen site until permanent higher voltage (230 kV) service was needed (initially expected by the end of 2014).
- Revised project timeframes would require the line be in service by late 2021.
- SaskPower is moving forward with the studies and routing work required.



ABOUT THE PROJECT

- 230 kV service will be provided by a new transmission line originating from the Wolverine Switching Station, located in SW34-33-24-W2;
- The single-circuit line will use weathering steel H-Frame structures;
- Total length of the new transmission line will be approximately 44 km;
- BHP would like the line to be in service in late 2021; and
- Estimated project cost is about \$33 million.

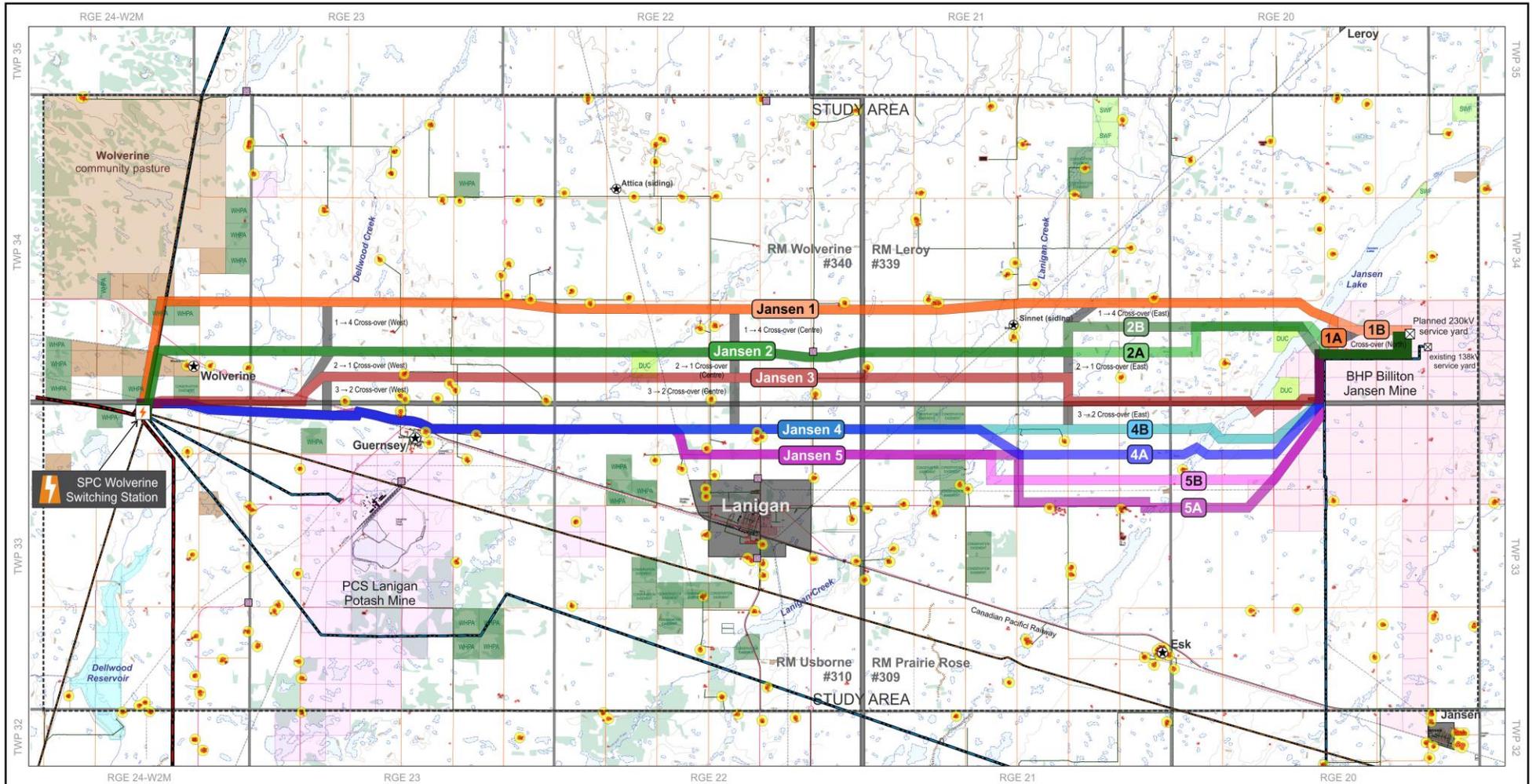
BALANCING MANY CONSIDERATIONS



PROJECT SCHEDULE

- Routing Studies April -August 2017
- **First Round Stakeholder Consultation** **November 2017**
- Preferred Route Studies Nov. 2017 – Sept. 2018
- **Second Round Stakeholder Consultation** **Nov. – Dec. 2018**
- Transmission Line Design Jan. 2019- Apr. 2020
- **Environmental & Geotechnical Field Studies** **April - Oct. 2019**
- Submission to Ministry of Environment January 2020
- **Acquire Easements** **May – August 2020**
- Construction Sept. 2020 - Mar. 2021
- **Energization** **Late 2021**

PROPOSED CORRIDORS/ROUTES



LEGEND

- Wolverine Community Pasture (former AAFC, now transferred to Province of Saskatchewan)
- Other provincial crown lands (Saskatchewan Ministry of Agriculture lease)
- Potash mine lands (BHP Billiton Canada or Potash Corp of Saskatchewan)
- Wildlife Habitat Protection Act (WHPA) lands
- Private lands with existing conservation easement agreements
- Saskatchewan Wildlife Federation (SWF) lands
- Ducks Unlimited Canada (DUC) lands
- Cemetery
- Rural residence; includes 60m minimum avoidance buffer (red) and 160m prudent avoidance (yellow)
- SaskPower 230 kV Transmission Line
- SaskPower 138 kV Transmission Line
- SaskPower 72 kV Transmission Line
- Provincial Highway or numbered grid road

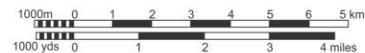
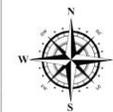
CREDITS & MAP NOTES

Basemap: National Topographic Series (NTS) 'Toporama' © 2017 Natural Resources Canada; available through the Atlas of Canada portal at www.atlas.gc.ca/toporama/en

Boundaries of urban and rural municipalities and former PFRRA pastures (within Saskatchewan) © 2017 Information Services Corp of Saskatchewan; current as of June 5th, 2017; wildlife and other protected lands © 2017 The Saskatchewan Ministry of Environment, current as of June 2017.

This map is intended to show the general location of the potential route alternatives for the Wolverine to Jansen Mine 230kV service transmission line, as of June 5th, 2017; general reference map only – not to be used for navigation or cadastral work.

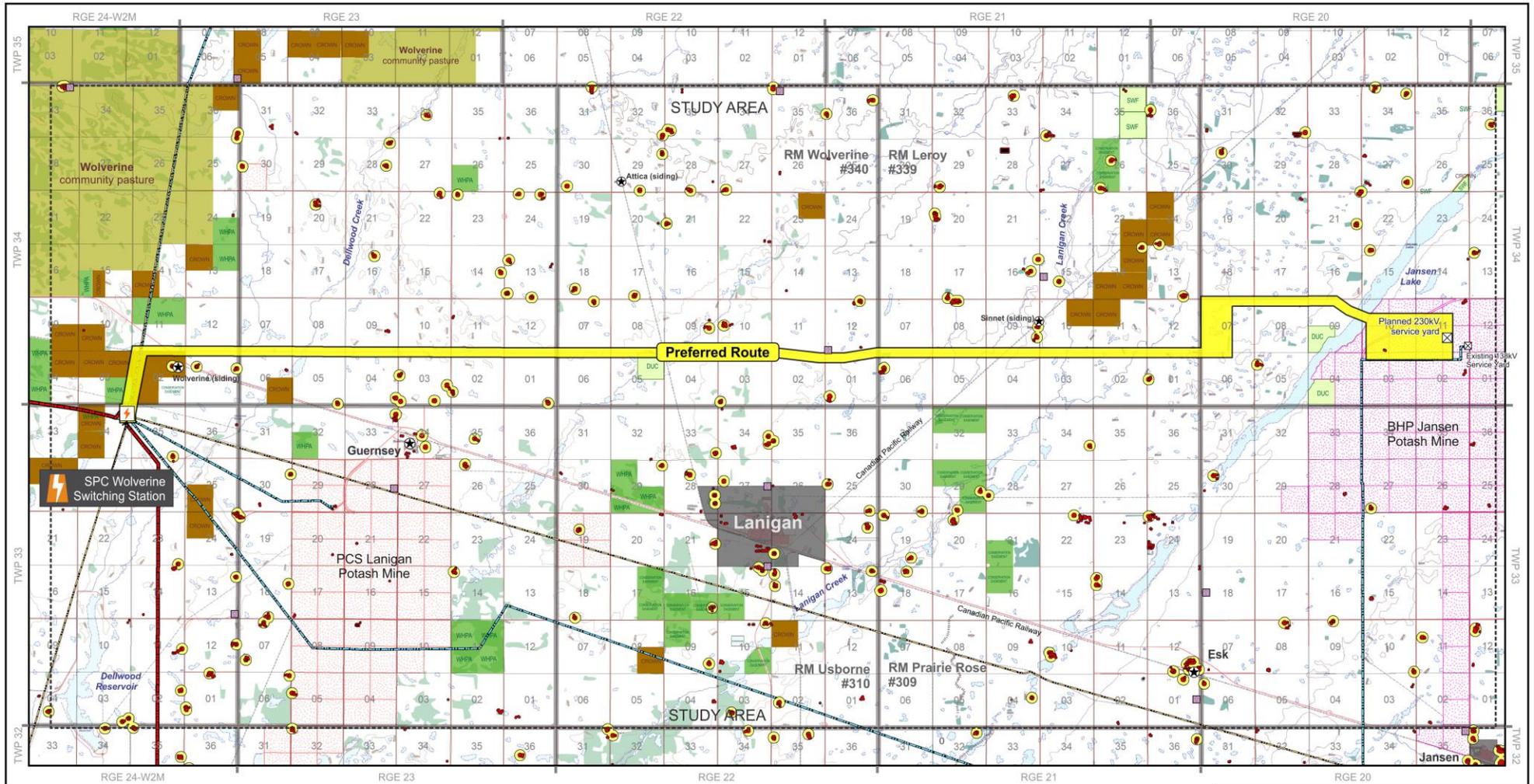
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POTENTIAL ROUTE ALTERNATIVES as of August 2017

J.D. MOLLARD		
SASKPOWER		
Wolverine to Jansen Mine 230kV Service Transmission Line POTENTIAL ROUTE LOCATION STUDY		
Client:		
Project:		
Prepared by:	T.A. Zimmer	UTM Zone 13N
Reviewed by:		10 AUG 2017
Drawn by:		NAD83 (CSRS98)
Scale:	1:115,000	CSRS Project #
Drawn on:		2017-015

OUR PREFERRED ROUTE



LEGEND

- Wolverine Community Pasture (former AAF, now transferred to Province of Saskatchewan)
- Other provincial crown lands (Saskatchewan Ministry of Agriculture lease)
- Potash mine lands (BHP Billiton Canada or Potash Corp of Saskatchewan)
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This map is intended to show the general location of the Preferred Route recommended for the Wolverine - BHP Jansen 230kV service transmission line project by the Project Team, August 2018; general reference map only - not to be used for navigation or cadastral work.

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PREFERRED ROUTE RECOMMENDED BY PROJECT TEAM AUGUST 2018

J.D. MOLLARD www.jdmollard.com			
SASKPOWER			
WOLVERINE STATION TO BHP JANSEN MINE - 230KV SERVICE PREFERRED ROUTE SELECTION STUDY			
Category:	T.A. Zimmer, B.Sc.	UTM Zone 13N	10 SEPT 2018
Author:		NAD83 (GRS98)	
Scale:	1:110,000	Drawn:	2017-011

WHY THIS ROUTE

- At the first round of consultations the two big concerns for landowners were **proximity to residences** and the impact of transmission structures on **farming operations** (seeding, spraying, harvest, weeds, *etc.*).
- This route has no residences within 160 metres, and the least number of residences within ½ mile (800m).
- The majority (72%) of the route is located on legal boundaries, where structures can be placed on the edges of fields rather than in the middle.
- Cross-country portions are kept to a minimum in cultivated land; where they do occur there is flexibility to work with the landowner to reduce structure impacts.

WHY THIS ROUTE

- This route is based on the JANSEN 2A route alternative presented during first-round consultations; JANSEN 2A had the lowest levels of landowner opposition of all the route alternatives.
- Where the route crosses from the JANSEN 2A to JANSEN 1A corridors the crossover portion was already shown in first-round consultations; no new land is impacted.
- The JANSEN 2A route was the shortest, lowest-cost of the route alternatives presented; this route contains all the social and environmental advantages of JANSEN 2A while keeping material and support costs to within 5%.

WHY THIS ROUTE

- Based on fall and spring bird surveys, the JANSEN 1A lake crossing site (used by the Preferred Route) has relatively low level of environmental constraints compared to crossings farther to the south.
- Approaching BHP's mine facilities from the north keeps the service line farther from the mine's tailings piles, which helps mitigate potential reliability issues from salt contamination.
- The location facilitates potential future station construction in the area north and west of Jansen Lake, as per SaskPower's future planning requirements.

PREFERRED STRUCTURE



230kV Single-Circuit

Weathering Steel H-Frame

Tangent Structure

Typical Right of Way: 40m (131 feet)

**230 KV MINIMUM CLEARANCE
OF CONDUCTOR**

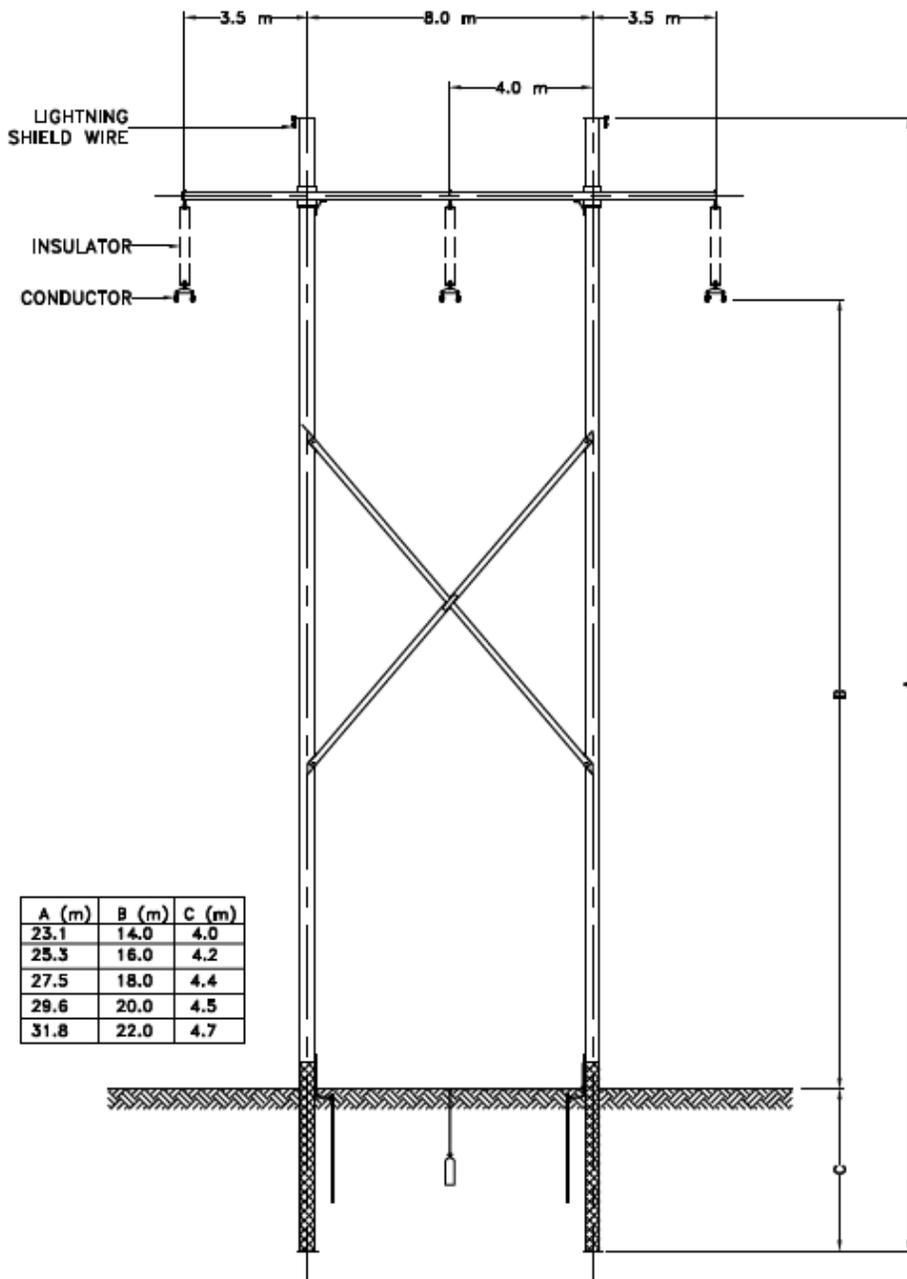
Over Farmland 8.1m (26.6 feet)

Over Highways 8.4m (27.6 feet)

High Load Corridors 11.25m (36.9 feet)

Railways 9.3m (30.5 feet)

STRUCTURE TYPE



230kV Single-Circuit Weathering Steel H-Frame Tangent Structure (T73/001)

Bundled Conductor

Pole Spacing: 8.0m (26.2ft)

Structure Height: 19.1 - 27.1m (62.7 – 88.9ft)

Average Span: ~230m (754ft)

Deflection Structures: Guy-anchored

COMMENTS, QUESTIONS AND SUGGESTIONS

EMAIL: publicconsultation@saskpower.com

BY PHONE: 1.866.566.3166