BC Hydro

Peace Region Electricity Supply Project

Overview and Feasible Alternatives

Revision 2

BC hydro
FOR GENERATIONS

January 13, 2014

BC Hydro: Peace Region Electricity Supply (PRES) Project
Overview and Feasible Alternatives

Document Version Control

Revision 1	Initial issue	August 2013
Revision 2	*Removal of alternative 3 and addition of alternative 3A to the feasible alternatives.*	*January 13, 2014*

Background

The Peace Region of BC contains one of North America's most competitive natural gas areas - the Montney basin. Unconventional gas production is expected to dramatically increase over the next 10 years in all parts of the Peace Region, particularly in the Dawson Creek and Groundbirch areas. Gas producers have submitted load interconnection requests to BC Hydro to use electrical rather than gas fired equipment for their compression requirements. This has resulted in BC Hydro needing to serve some of the most dramatic, single industry load growth in a discrete area that it has experienced over the past 50 years.

The Dawson Creek / Chetwynd Area Transmission (DCAT) project currently being implemented will resolve the downstream constraints in the transmission system supplying the Dawson Creek and Groundbirch areas. Another project is required to resolve the upstream constraints in the transmission system supplying these areas and the rest of the Peace Region. This additional project is being studied as the Peace Region Electricity Supply (PRES) project.

The Peace Region is supplied by a network of 138kV and 230kV transmission lines feeding from the GM Shrum (GMS) generating facility. The load growth in the Peace Region (particularly in the Dawson Creek and Groundbirch areas) is expected to increase so rapidly that soon after the DCAT project goes into service in mid-2015, the ability of the transmission system to maintain supply to all customers in the event of any system issues will be exceeded. In addition to this, the ability of the system to supply the growing load under normal conditions is expected to be exceeded sometime in the 2019 timeframe meaning that the transmission system must be reinforced in order for BC Hydro to meet its obligation to serve customers.

Alternatives

BC Hydro has identified a number of alternatives for serious consideration which are capable of addressing the problems associated with the load growth in the Peace Region. These alternatives are:

1. Alternative 1: 230 kV transmission line from GM Shrum generating station (GMS) to Sundance via Sukunka substation (SNK);

2. Alternative 2A: 230 kV transmission line from GM Shrum Generating Station (GMS) to Sundance Substation (SLS) via Dokie Substation (DKT), south of Chetwynd route.

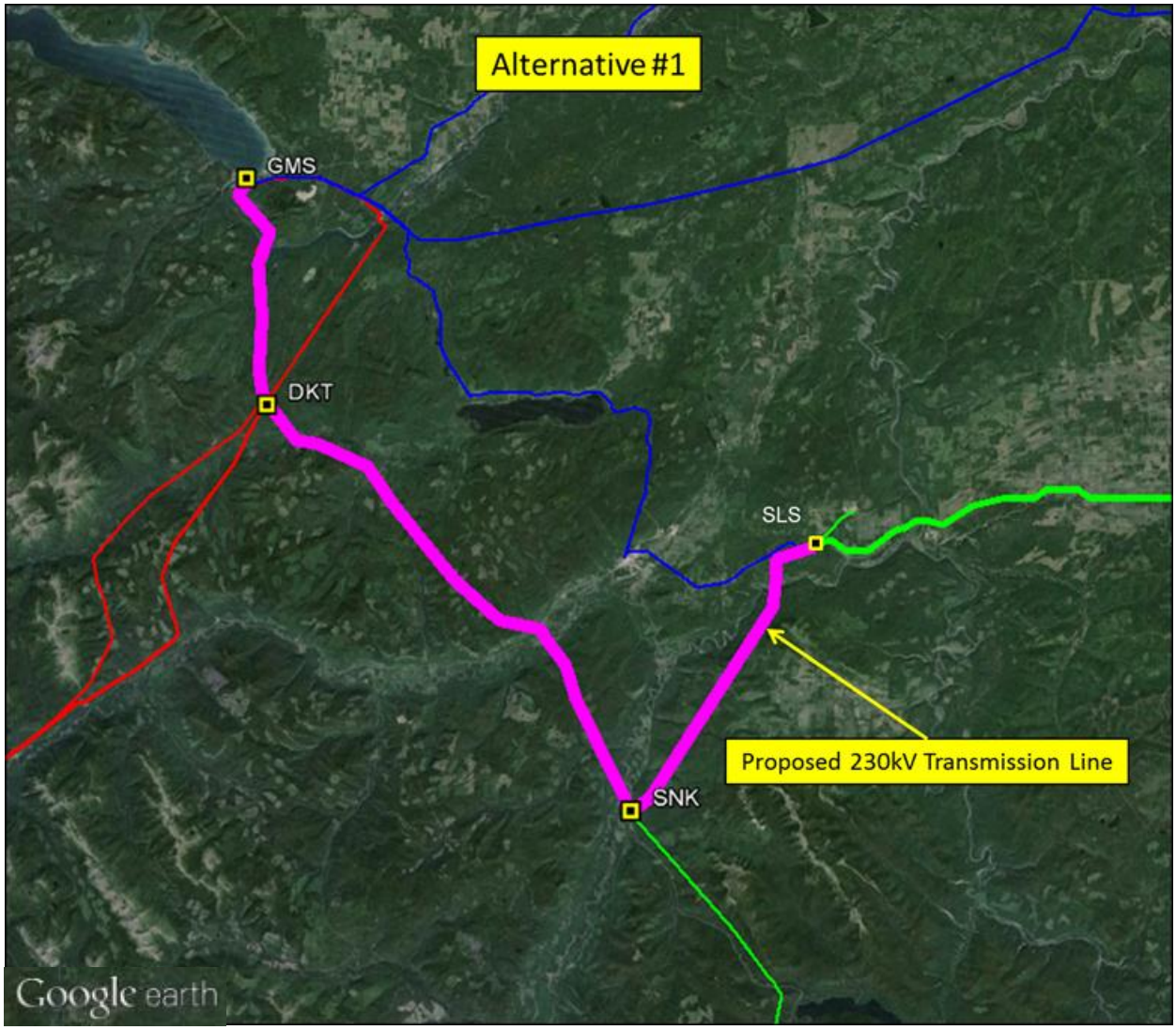
3. Alternative 2B: 230 kV transmission line from GM Shrum Generating Station (GMS) to Sundance Substation (SLS) via Dokie Substation (DKT), north of Chetwynd route.

4. Alternative 3A: 230 kV transmission line from a new 500/230kV substation to Sundance substation (SLS) via Sukunka substation (SNK)

These alternatives are further described below.

Alternative 1: 230 kV transmission line from GM Shrum generating station (GMS) to Sundance substation (SLS) via Sukunka substation (SNK)

This alternative involves building a new 230kV transmission line from GMS to the existing Sukunka substation (SNK) and on to the Sundance Substation (SLS) which is to be constructed as part of the DCAT project. These new transmission lines would run alongside BC Hydro's existing transmission lines where feasible for a total length of approximately 105km. This alternative would also require upgrades to the three existing substations (GMS, SNK and SLS) that would connect to the new transmission line.



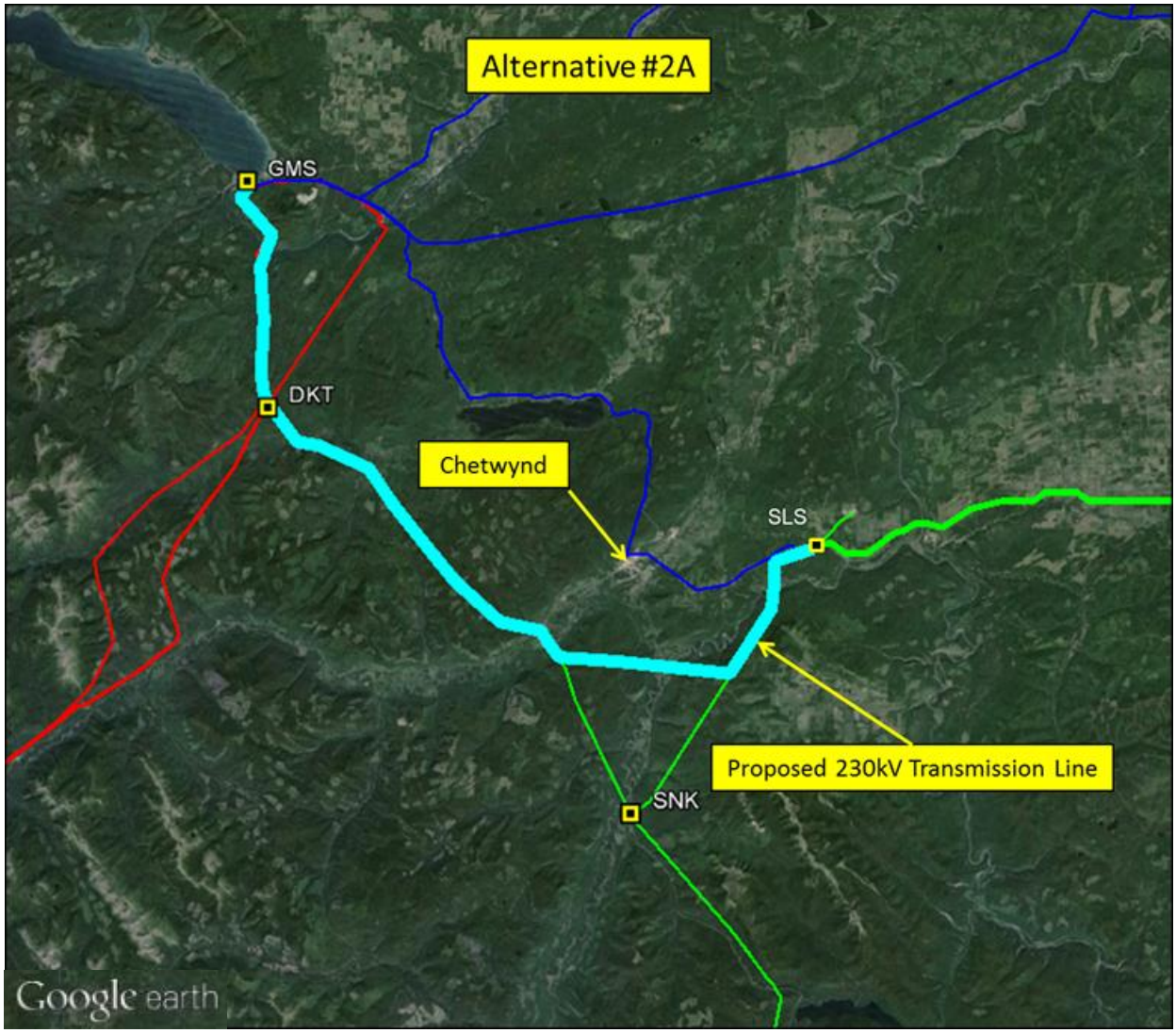
Alternative 2: 230 kV transmission line from GM Shrum Generating Station (GMS) to Sundance Substation (SLS) via Dokie Substation (DKT)

This alternative involves building a new 230kV transmission line from GMS to the existing Dokie substation (DKT) and on to the Sundance substation (SLS). This alternative differs from Alternative 1, in that the new transmission lines would only run alongside BC Hydro's existing transmission lines where feasible for part of the length. By avoiding extension to Sukunka substation (SNK) the length of the lines are shorter and some new rights of way are proposed. This alternative would also require upgrades to three existing substations (GMS, DKT and SLS).

Two different route options are being considered for this alternative, one being south of Chetwynd and the other north of Chetwynd, as follows.

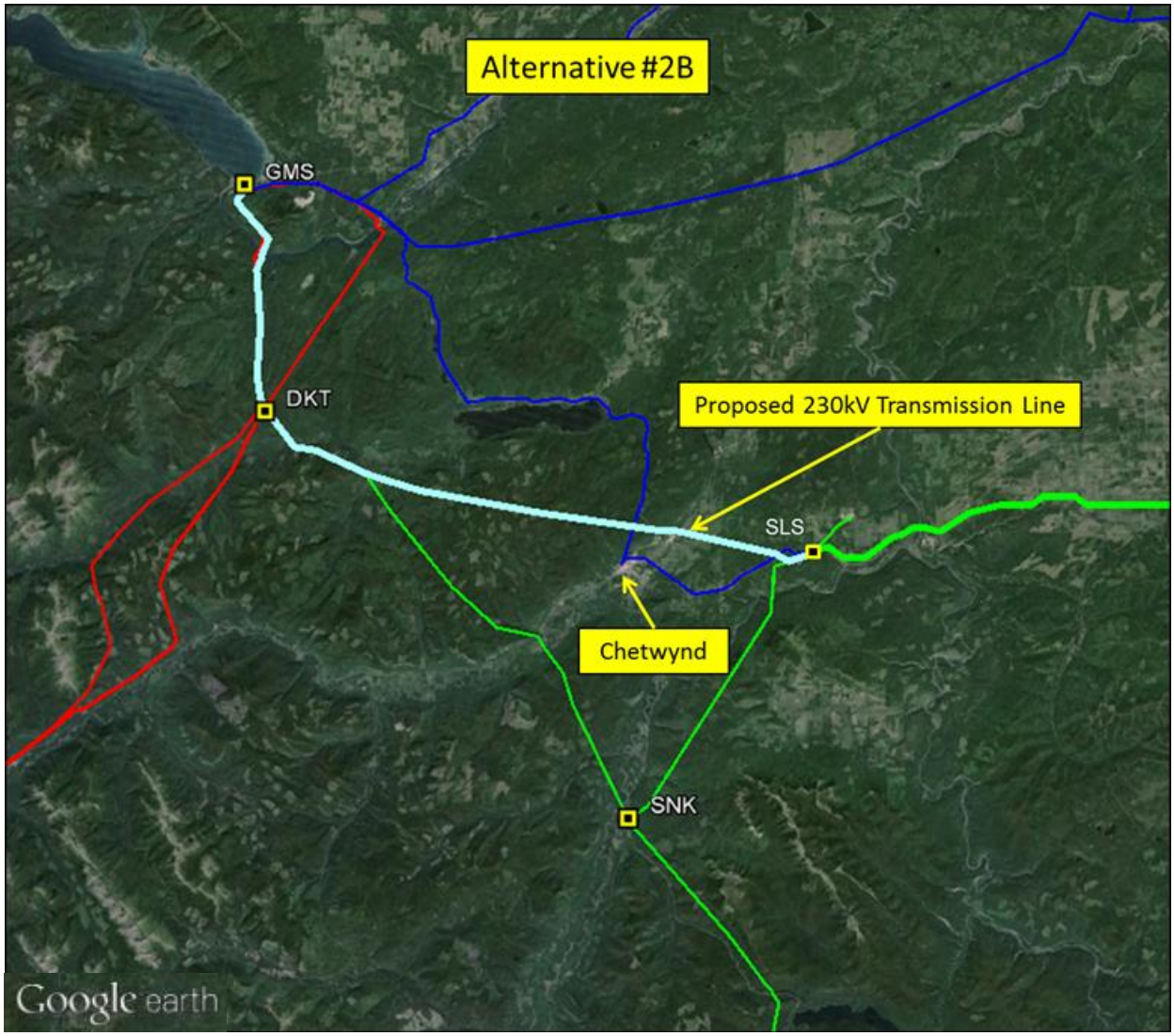
Alternative 2A - South of Chetwynd Route

For this routing the new transmission lines run alongside existing transmission line routes for approximately 75km and follow new routes for approximately 15km.



Alternative 2B - North of Chetwynd Route

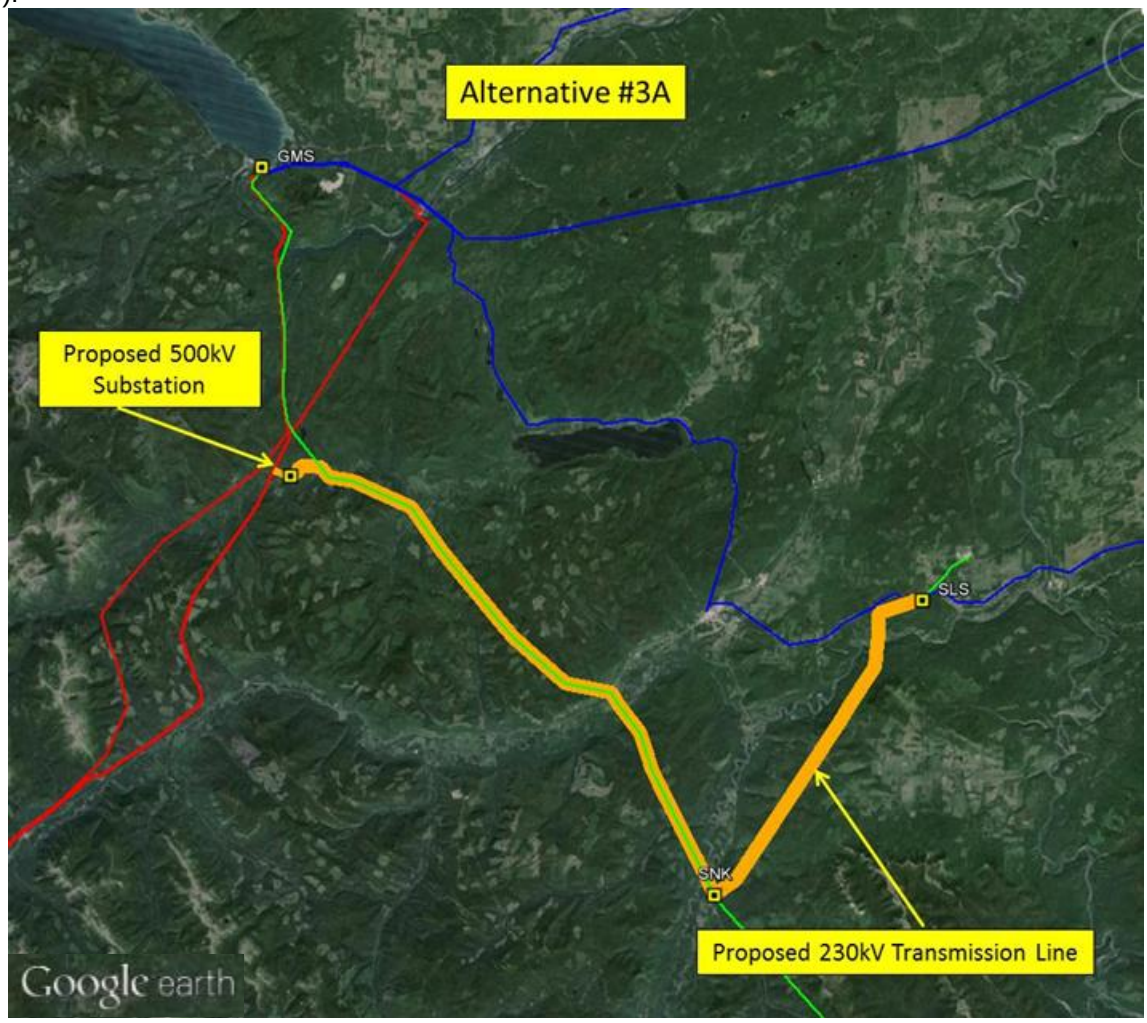
For this routing the new transmission lines run alongside existing transmission line routes for approximately 37km and follow new routes for approximately 39km.



Alternative 3A: 230 kV transmission line from a new 500kV substation to Sundance substation (SLS) via Sukunka substation (SNK)

Note: This is a new alternative, superseding the previous alternative 3.

This alternative involves building a new 500/230kV substation, connected to the existing 500kV transmission line and building a new 230kV transmission line from the new substation to the Sukunka substation (SNK) and on to the Sundance substation (SLS). The new transmission line would follow existing transmission line routes for approximately 78km but would also require some new routing for approximately 4km. This alternative would also require upgrades to two existing substations (SNK and SLS).



Next Steps

BC Hydro will be conducting various studies on the alternatives (technical, environmental, cost estimating, constructability etc.) and gathering input from First Nations and impacted Stakeholders. BC Hydro will identify a leading alternative in spring 2014 for further definition in order to support an application for regulatory review and approval. Alternative evaluation and consultation on all four alternatives continues through to culmination of the regulatory process. BC Hydro is aiming to implement a project with a target in service date of 2019 to meet the identified needs in the area. In addition to this, BC Hydro will continue to monitor load growth in the area to ensure proposed solutions will meet identified needs.