

August 2015

## FORT MCMURRAY WEST 500-KV TRANSMISSION PROJECT

A new transmission line is being planned in your area. The Fort McMurray West 500-kilovolt (kV) Transmission Project will connect the existing Sunnybrook converter station near Wabamun to an expanded **Livock substation** (located within the existing 240-kV Livock 939S substation site boundary), and then extend northeast to the planned new **Thickwood Hills substation** near Fort McMurray. Each substation will have a 500-kV side owned by Alberta PowerLine and a 240-kV side owned by ATCO Electric.

Information about this project was also distributed in January and June 2015. This fact sheet provides the technical details for the Alberta PowerLine owned components of the Livock and Thickwood Hills substations.

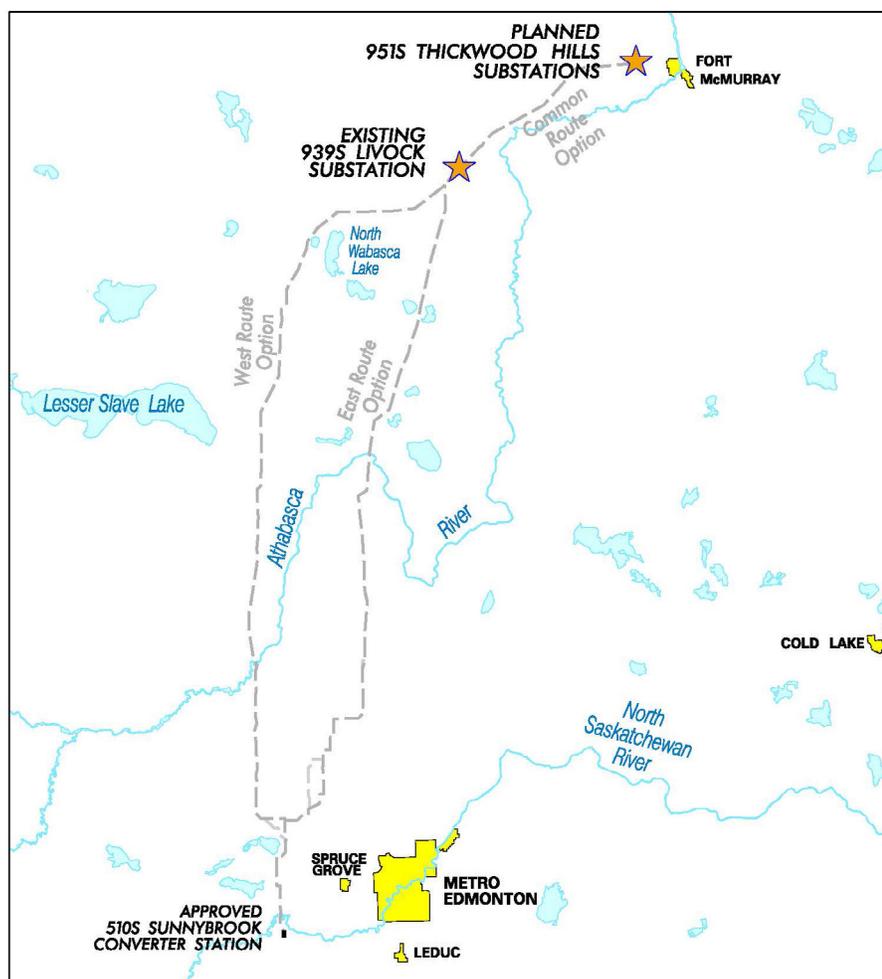
The Alberta Electric System Operator (AESO) expects that the demand for electricity in northeastern Alberta will almost double in the next 10 years. These facilities are needed to reinforce the reliability, capacity and efficiency of the electric grid in Alberta. This project will help to ensure Albertans have access to reliable, cost effective electricity when they need it.

## Substation Locations

If approved, the expanded Livock substation will be located approximately 70 kilometres (km) northeast of Wabasca (located within the existing Livock substation site boundary). The Thickwood Hills substation will be located approximately 15 km west of Fort McMurray.

See the reference map to the left for the substation locations.

If you have a land interest within the immediate vicinity of either planned substation, Alberta PowerLine will contact you for a personal consultation.



## Livock Substation

If approved, the expanded Livock substation will be located on the southwest quarter of Section 19-85-19 W4M (see enclosed Livock substation site layout). This new substation will be located completely within the existing site boundary of ATCO Electric's 240-kV Livock substation (called 939S).

The new substation will include the following equipment:

- Four 500-kV circuit breakers
- Two 500-kV line reactors
- One 500-kV bus reactor
- One 125 kilowatt (kW) propane backup generator and,
- Related electrical support equipment and structures

## Thickwood Hills Substation

If approved, the 500-kV side of the new Thickwood Hills substation (to be called 951S) will be located on the south half of Section 5-90-11 W4M and the north half of Section 32-89-11 W4M (see enclosed Thickwood Hills substation site layout). The planned Thickwood Hills substation site will also house ATCO Electric's planned 240-kV substation equipment.

The new substation will include the following equipment:

- One 500-kV transformer
- Three 500-kV circuit breakers
- One 500-kV line reactor
- One 250 kW propane backup generator and,
- Related electrical support equipment and structures

## The Process

Your comments and questions are important to us. You can provide your input on the project by calling our toll-free number (1-844-420-7779) or emailing [contactus@albertapowerline.com](mailto:contactus@albertapowerline.com). We have also enclosed a reply form and postage paid envelope if you prefer to mail us your input.

Additional project information is available on our website at [www.albertapowerline.com](http://www.albertapowerline.com).

Following additional consultation over the next few months, Alberta PowerLine will submit a facilities application to the Alberta Utilities Commission (AUC) to obtain approval for the construction and operation of the planned transmission facilities.

## Glossary

**Backup Generator:** A backup generator is needed to provide emergency power to support the regional transmission system and maintain communication systems in the event of a blackout.

**Circuit breaker:** An automatic switch that is designed to protect an electrical circuit from overloading by shutting off the flow of electricity.

**Kilovolt (kV):** A kilovolt is equal to one thousand volts. This unit of measurement is most commonly used when describing transmission and distribution lines. Distribution and transmission lines in Alberta carry between 2.4-kV (2,400 volts) and 500-kV (500,000 volts).

**Reactor:** A reactor is a device in a substation that consumes reactive power and is used to regulate voltage on transmission lines.

**Substation:** A substation is a fenced area that contains all of the electrical equipment, such as circuit breakers and transformers, where transmission lines begin or end.

**Transformer:** A transformer is the device in a substation that steps voltage up or down. It 'transforms' the electricity from higher transmission voltages to the lower distribution voltages that power your home.