

## Upgrading of the Transmission System in the Northeast Montréal Metropolitan Region

# Equipment Addition and Line Reorganization at **Bout-de-l'Île** Substation

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To meet increasing demand and ensure the long-term operability of facilities in the northeastern part of the metropolitan Montréal region, Hydro-Québec has prepared a plan that groups together several projects in the east end of the island, including the addition of equipment to Bout-de-l'Île substation.

### Present situation

Located in the borough of Rivière-des-Prairies–Pointe-aux-Trembles, Bout-de-l'Île substation is surrounded by Autoroute Métropolitaine (Highway 40) to the southeast, Avenue Armand-Charput to the west and Boulevard Maurice-Duplessis to the north. It plays a strategic role since it supplies all of the distribution substations in the east end of the island of Montréal. In addition to being a source substation, it also delivers power directly to a large number of customers in the borough.



# Equipment Addition and Line Reorganization at **Bout-de-l'Île** Substation

## Recommended solution

To meet current needs while providing flexibility for the future, Hydro-Québec must substantially increase the capacity of this substation, which has been in service since 1956. Aging equipment will be replaced with new, higher-capacity models, and new equipment will be added. In addition, Bout-de-l'Île substation will be connected to the 735-kV power grid, which runs nearby and connects Duvernay and Boucherville substations.

Once commissioned, the new equipment will enable Hydro-Québec to adequately meet the electricity needs of the area for many years to come.

## Technical characteristics

The substation will have to be expanded to accommodate the following:

- A 735/315-kV transformer section with two 315-kV feeder bays
- Two 735-kV feeder bays
- Two 715/315-kV power transformers

A static VAR compensator<sup>1</sup> will be added along with the new transformer section.

The current 315-kV section will be replaced to increase capacity. In addition, the substation will be connected to the 735-kV line. Finally, the substation expansion will require reorganization of the 315-kV and 120-kV lines in the vicinity.

The lots that may be affected by the substation expansion belong to the Ville de Montréal and Hydro-Québec.

## Environmental studies

By establishing a specific study perimeter, Hydro-Québec is able to assess the potential of an entire area in terms of technical requirements for a project and to take steps to integrate its facilities harmoniously with their surroundings. The study area for this project covers 7 km<sup>2</sup> and is bordered to the northwest by Boulevard Perras, not far from Rivière des Prairies, to the southwest by Boulevard Saint-Jean-Baptiste and to the southeast by a diagonal line drawn from Autoroute Métropolitaine to Rue Sherbrooke. Its northeast section includes the rights-of-way for the 315-kV and 735-kV lines. Bout-de-l'Île substation is in the middle of the study area.

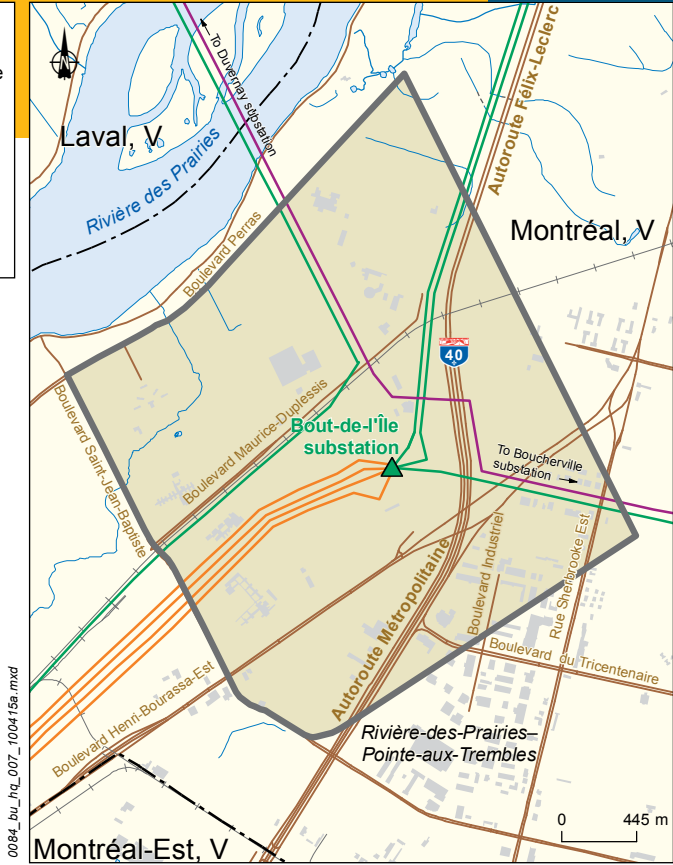
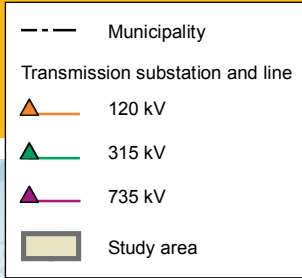
Some of the residential streets within the study area are adjacent to the substation or other Hydro-Québec facilities. The company is intensifying efforts to incorporate impact mitigation measures into its project design process.

The mitigation measures include:

- Using less noisy equipment to protect the soundscape
- Conserving wooded areas around the substation to conceal both existing and future equipment
- Including mitigation measures in the tender documents to reduce the inconveniences caused by construction

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1. A static VAR compensator is a device consisting mainly of capacitors that help reduce losses and voltage drops on the power system.



Existing substation



After expansion (simulation)



## Project schedule

DRAFT DESIGN	
Public consultation	Spring 2010
Information on solution selected	Spring – summer 2010
PROJECT	
Filing of impact statement	Fall 2010
Permitting	Winter 2011–2012
Construction	Spring 2012 – fall 2014
Commissioning	Fall 2013 – fall 2014

## Public participation

Hydro-Québec is implementing a public participation program throughout the study process to know the community's expectations and concerns about the project. Since fall 2009, Hydro-Québec has held information sessions with the government departments, managers and elected municipal officials concerned. In fall 2010, the information and consultation process will continue with community organizations and area residents.

Hydro-Québec will study the views presented and take them into consideration when determining the final characteristics of the project as well as the mitigation measures to be implemented.

## For more information

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