

RÉSEAU ÉLECTRIQUE MÉTROPOLITAIN

Introduction to the
CDPQ Infra Model

> November 7



- Caisse de dépôt et placement du Québec (CDPQ) is a global institutional fund manager
- 41 clients and net assets of \$270.7 billion as at December 31, 2016
- Active direct infrastructure investor globally since 1999, currently managing over \$14.7 billion in assets worldwide
- International offices in New York, Washington, Mexico City, Paris, London, Singapore, Delhi, Shanghai and Sydney
- CDPQ has developed an expertise in passenger transportation, with investments that include:



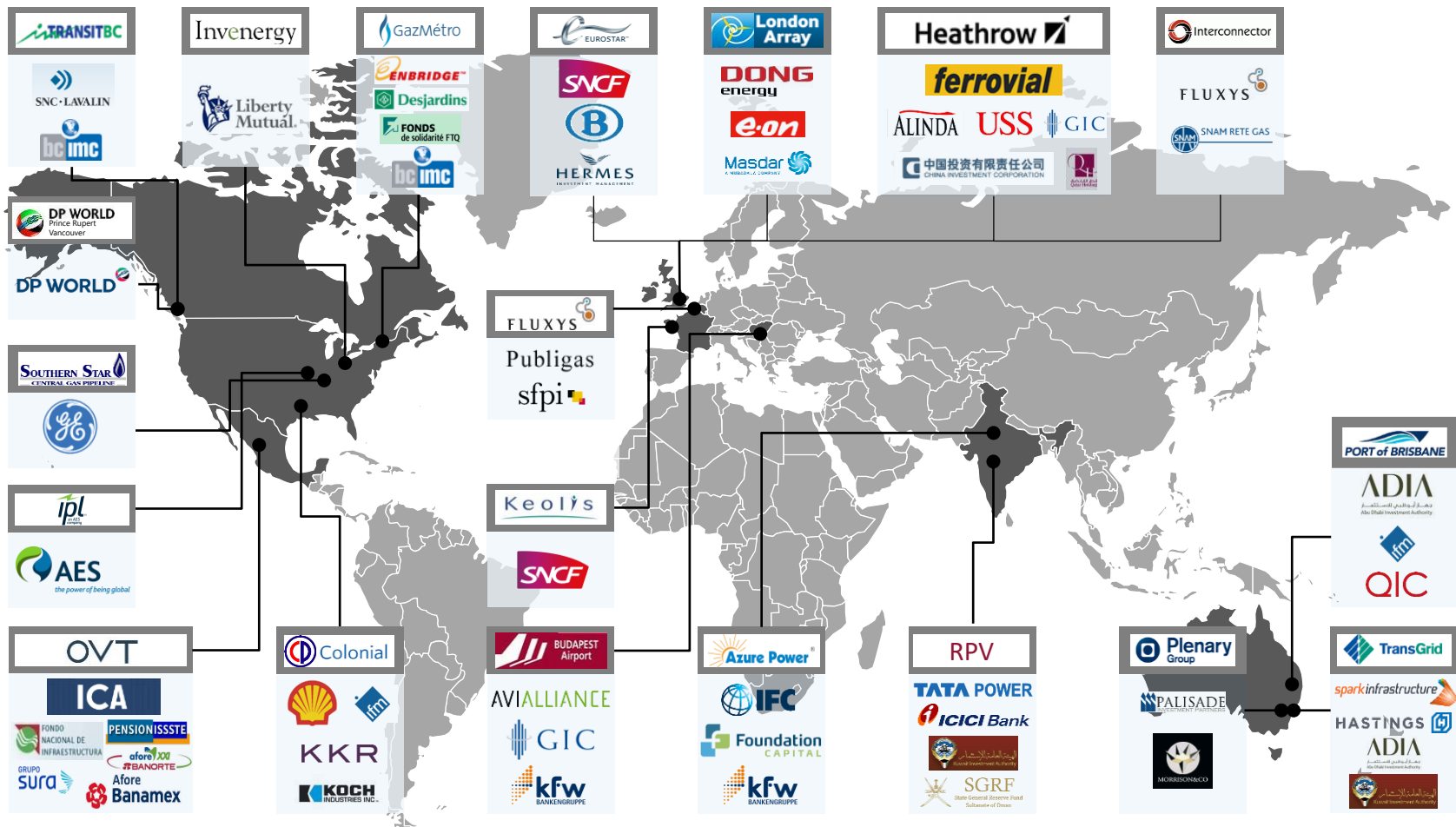
Eurostar



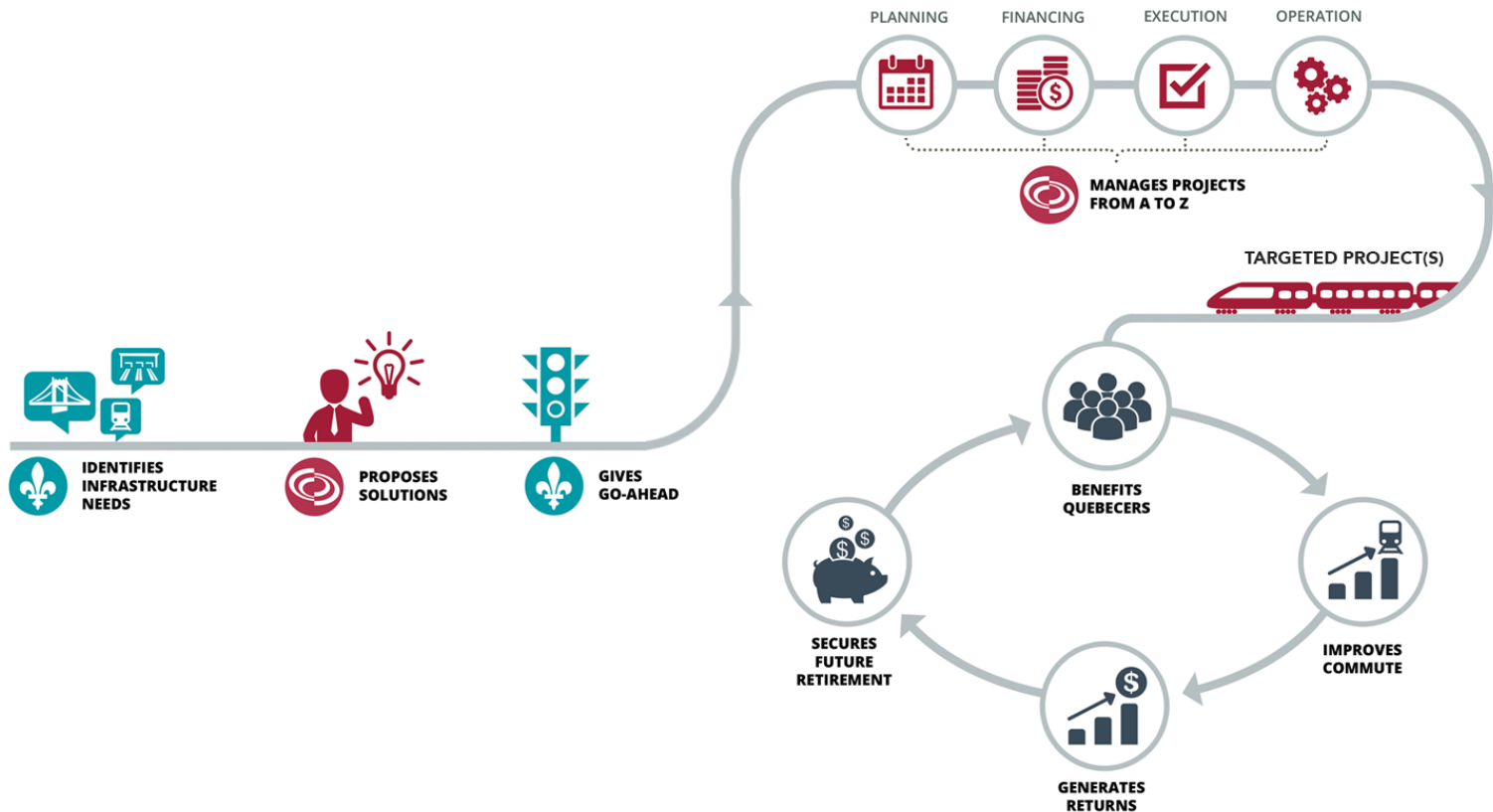
InTransit BC



Heathrow Airport Holdings



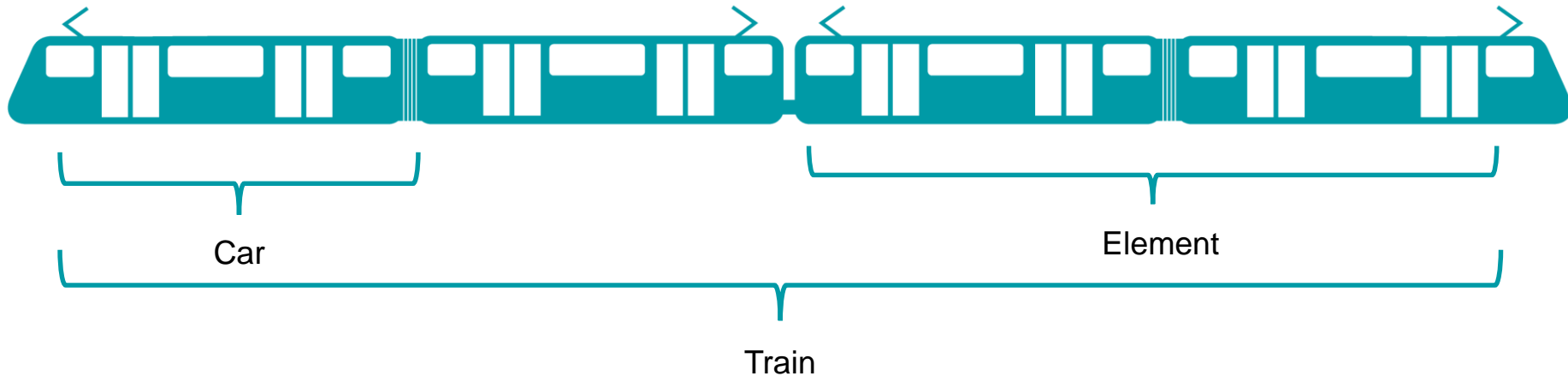
A NEW MODEL: CDPQ INFRA



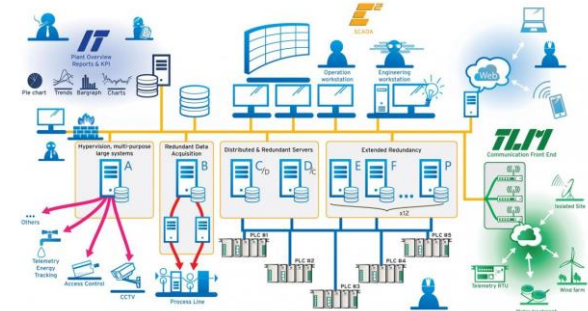
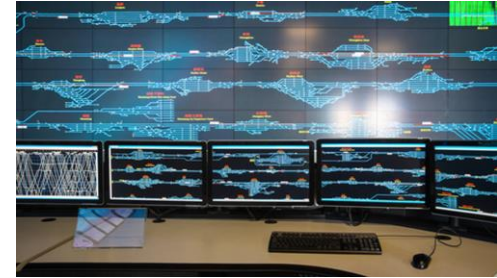
TECHNOLOGY: AUTOMATED LIGHT METRO



- > Automated electric light metro cars
- > 1500V DC catenary power supply
- > Initial fleet of **240 cars**
- > Capacity 150 passengers per car
- > Maximum speed 100 km/h
- > Continuous vestibule configuration



- > Fully automated (GoA4: grade of automation level 4)
- > Single control and operation center
- > Smart video surveillance
- > Intrusion detection
- > Remote station opening and closing
- > Integrated SCADA (Supervisory Control And Data Acquisition)
- > Passenger information on board and in stations
- > Wifi on board and in stations
- > Cybersecurity

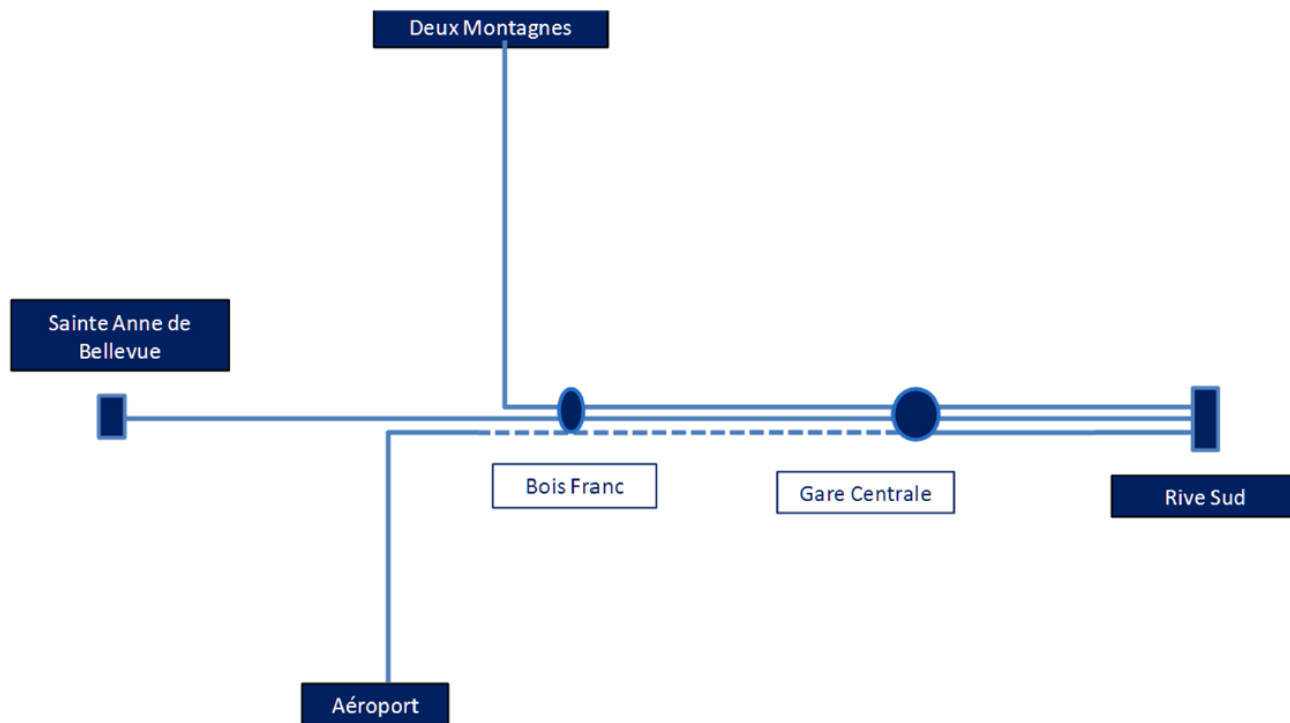


SPECIFIC OPERATIONAL FEATURES

- > Station, car and platform screen doors winterized
- > Mix of elevated sections, at-grade guideways and tunnels
- > Reuse of legacy corridor
- > Reuse of historic Mont-Royal tunnel (NFPA 130 challenge)
- > 70 m deep downtown station

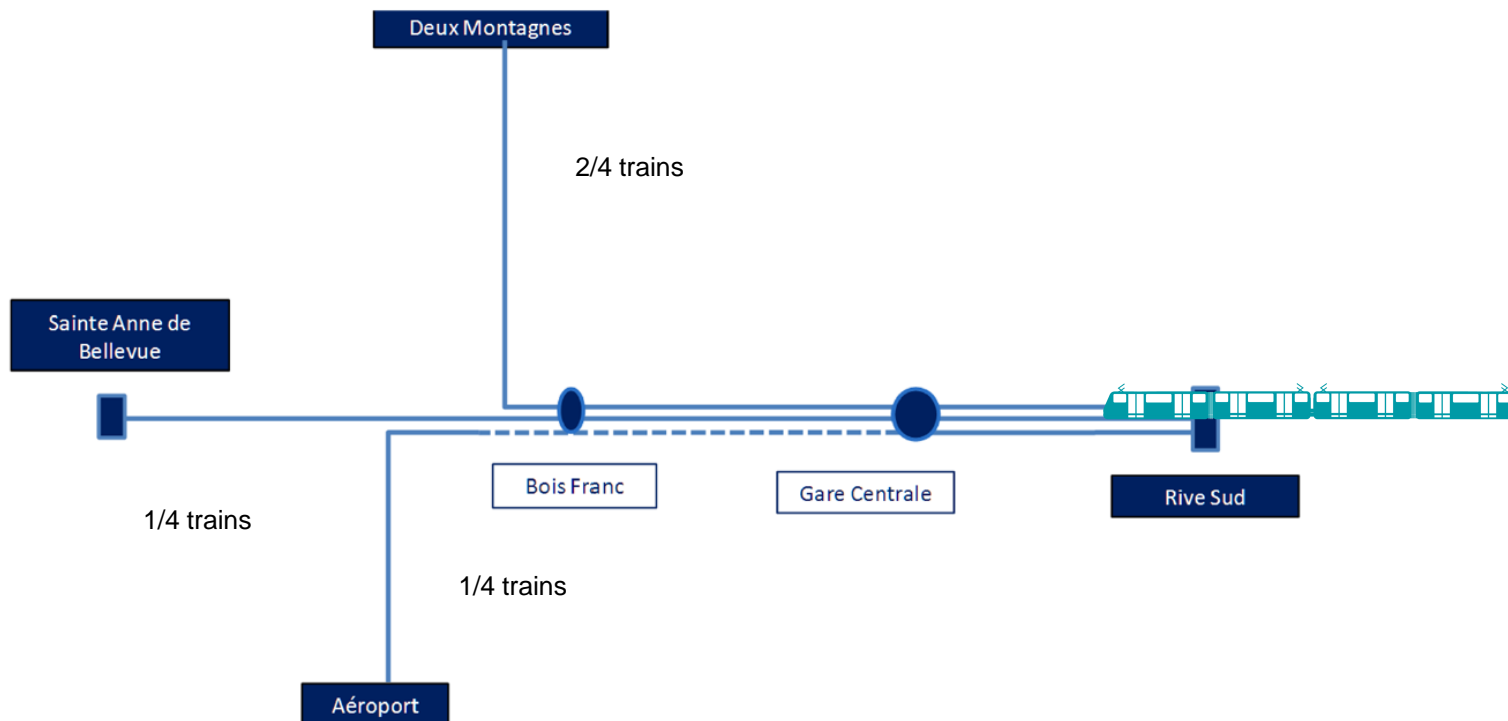


> Three-branch network with main corridor

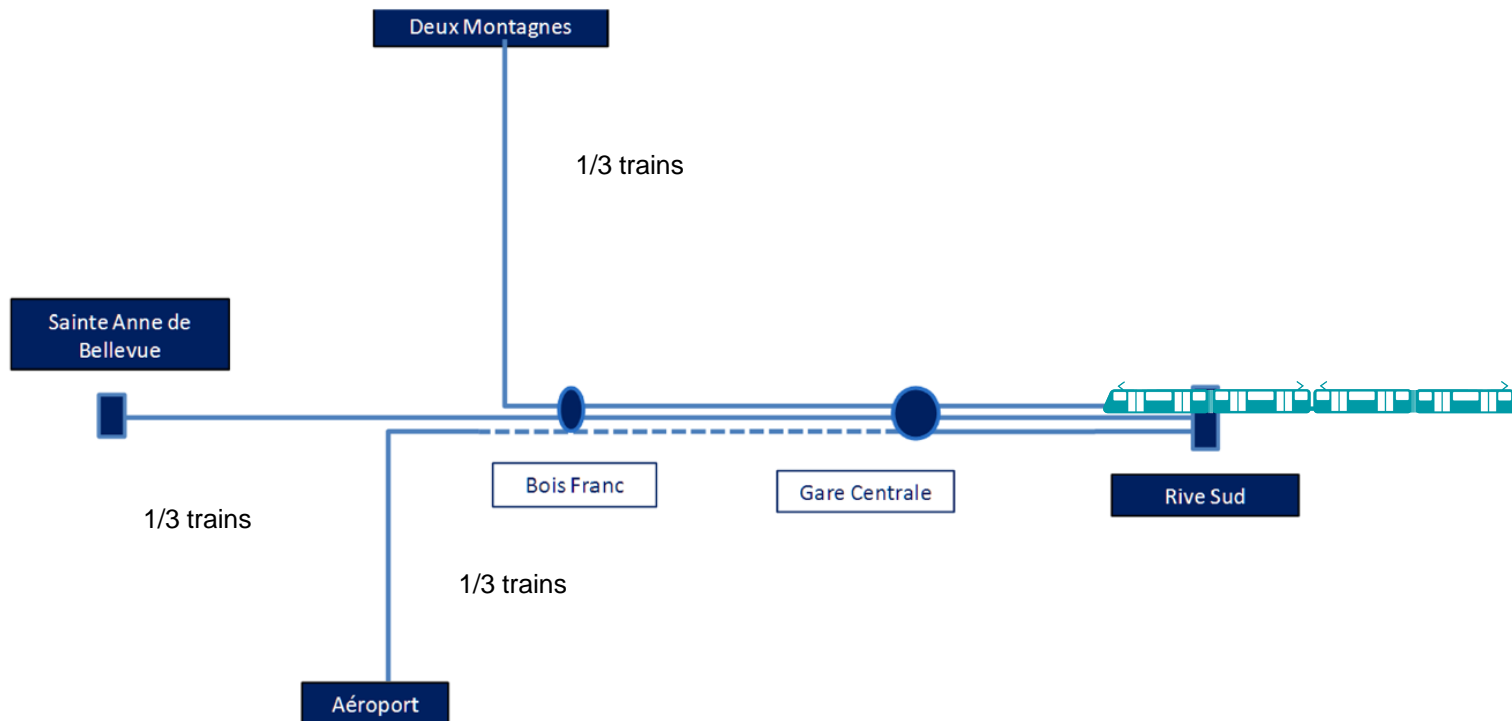


SPECIFIC OPERATIONAL FEATURES

> Peak hours



> Off-peak hours

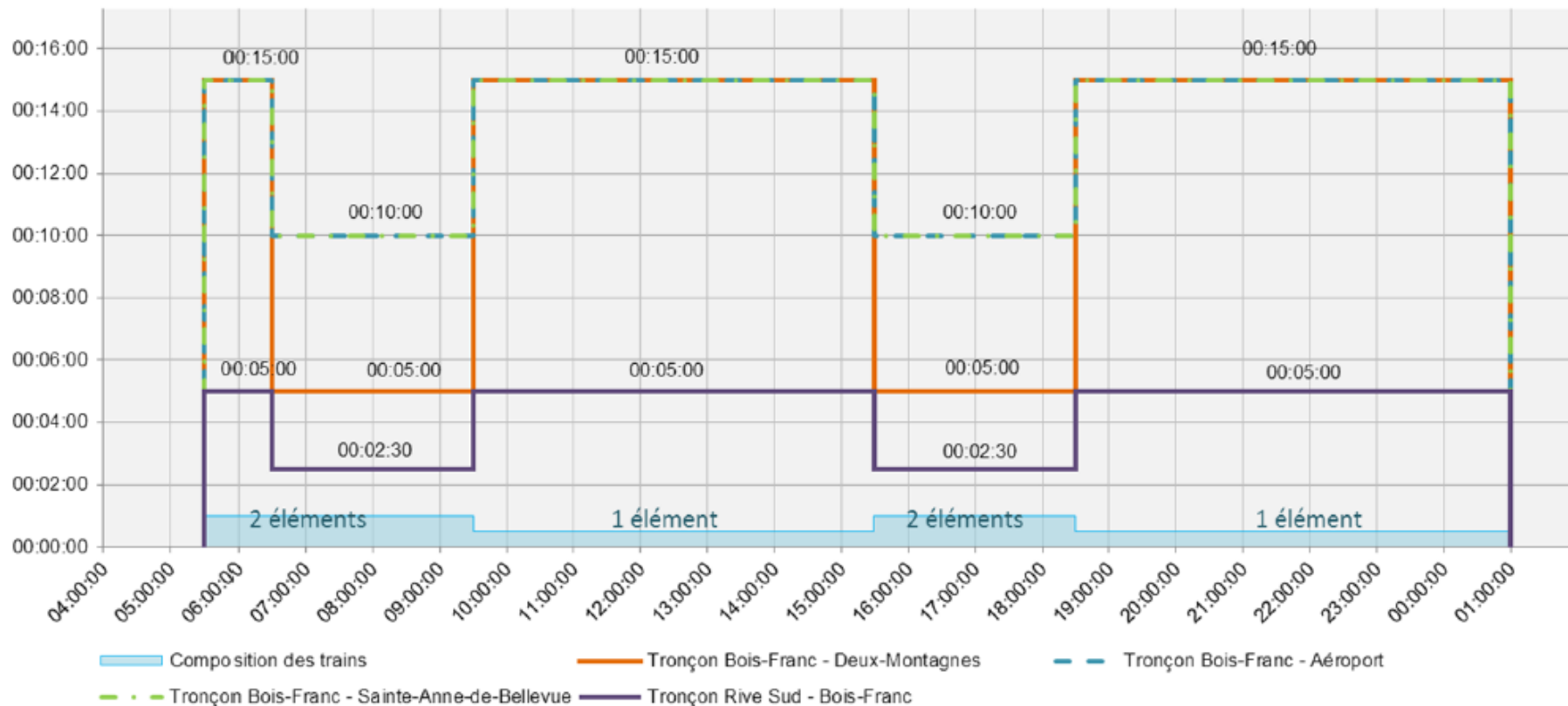


SPECIFIC OPERATIONAL FEATURES

- > 4 service levels expected over time, with 150 – 90 seconds headway in main corridor
- > Commuter service in terminal stations: high ridership during peak hours – 4 car-trains (2 elements)
- > 2-car trains (1 element) to provide attractive off-peak service frequency (5 min headway)
- > Automated coupling/uncoupling process



SPECIFIC OPERATIONAL FEATURES



ECONOMIC AND ENVIRONMENTAL BENEFITS

POTENTIAL BENEFITS

DURING CONSTRUCTION (4 YEARS)

+ 8,500 *

Direct and indirect jobs
generated each year

+ \$3.7B *
contributed to GDP

ONCE NETWORK IS COMPLETED AND IN OPERATION

reduction of
680,000 **
tonnes of GHG emissions
for the first 25 years of
operation

- > Serves sectors with strong economic development potential and a territory covering the main employment hubs of the region
- > Vector for **\$5 billion in private investments** for real estate development along the network
- > Reduces economic losses related to road congestion. Cost are estimated at **\$1.9 billion/year** in the metropolitan area
- > Is inherently green as the REM is an electric network

* Preliminary estimates based on the Institut de la statistique Québec's intersector model.

** Preliminary estimates based on a study by Steer Davies Gleave.

	CDPQ Infra Equity	Government of Quebec Equity	Government of Canada Equity	Total Equity
Investment Amount	\$2,670M	\$1,283M	\$1,283M	\$5,236M
%	51.0%	24.5%	24.5%	
Hydro-Québec – Electrification of transport	\$295M			
ARTM Contribution – Land value capture sharing	\$512M			
Total	\$6,043M			



Over 300

Meetings with stakeholders (including municipalities and transit companies)



8,000

Pages of environmental studies filed with the BAPE



16,000

Citizens reached through open days and activities on the ground



1,000

Answers provided to questions from citizens

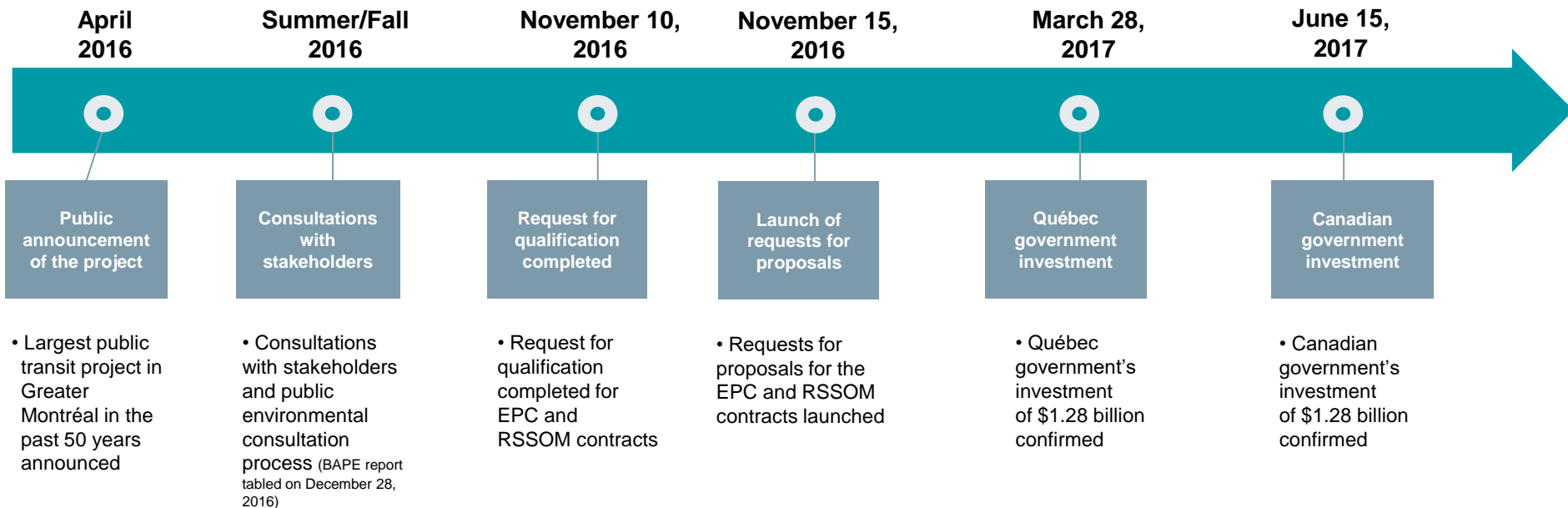


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Cities and boroughs visited

- > Borough of Saint-Laurent
- > Brossard
- > Île-des-Sœurs
- > Pointe-Claire
- > Kirkland
- > Deux-Montagnes
- > Laval
- > Downtown Montréal

KEY MILESTONES IN THE LAST 18 MONTHS



Proposals under analysis to choose
RSSOM and EPC contractors

