



RAIL SUMMIT

TORONTO – MAY 13TH 2016

CANARAIL

➤ YOUR RAIL PARTNER

AGENDA



1. Who Are We?
2. How Are We Organized?
3. Flagship Projects
4. Current Canada-based Infrastructure Projects

WHO ARE WE?

- Founded in 1990 – HQ in Montreal (Canada)
- Our core business: all (only !) railway disciplines
 - As **CANARAIL**: Specific heavy haul rail solutions
 - As **SYSTRA Canada**: Specific passenger rail solutions
- Services:
 - Consulting
 - Technical Assistance
 - EPC(M)
- A wide range of clients:
 - private sector (mining companies, contractors, operators)
 - public sector (transport authorities/agencies, governments)
 - International Donors (World Bank Group, Asian Development Bank, African DB)



AFRICAN DEVELOPMENT BANK GROUP



1. WHO ARE WE?

2. OUR ORGANIZATION

3. FLAGSHIP PROJECTS

4. CURRENT INFRA. PROJECTS



HOW ARE WE ORGANIZED?

→ 2 operational divisions: **Infrastructure & Rolling Stock**

→ Exhaustive rail expertise at every project stage

CIVIL ENGINEERING, TRACK & INFRASTRUCTURE	ROLLING STOCK AND WORKSHOPS	RAILWAY OPERATIONS	SIGNALS & TELECOMMUNICATIONS	STUDIES	INSTITUTIONAL & MANAGEMENT CONSULTING	SUPPORT SERVICES	RAIL VEHICLE DESIGN
 <ul style="list-style-type: none"> ➤ Conceptual and preliminary design ➤ Detailed engineering ➤ Construction supervision ➤ Tendering services ➤ Inspection services ➤ Maintenance standards and practices ➤ Technology assessment 	 <ul style="list-style-type: none"> ➤ Rolling stock design and specifications ➤ Tendering & inspection services ➤ Reliability-based maintenance for locomotives ➤ Workshop management ➤ Workshop design ➤ Fleet maintenance management systems ➤ Technology assessment ➤ Tendering and procurement services 	 <ul style="list-style-type: none"> ➤ Transportation planning for services and commodities ➤ Simulation ➤ Capacity analysis ➤ Yard and terminal design and operation ➤ Train control and dispatching systems ➤ Operating and safety rules ➤ Accident investigations ➤ Intermodal studies 	 <ul style="list-style-type: none"> ➤ Network & traffic studies ➤ Maintenance audit ➤ Construction supervision ➤ Systems Assessment ➤ Network design and traffic forecast ➤ Preparation of tender documents ➤ Technical supervision 	 <ul style="list-style-type: none"> ➤ Feasibility studies ➤ Economic and financial analysis and modeling ➤ Cost-benefit and economic impact studies ➤ Profitability analysis ➤ Project financing ➤ Rail traffic costing ➤ Traffic and revenue forecasting ➤ Development of marketing expertise ➤ Business plan development 	 <ul style="list-style-type: none"> ➤ Privatization and concessioning / transaction advisory services ➤ Restructuring of parastatal railways ➤ Manpower planning ➤ Regulatory, legal & policy issues ➤ Corporate planning ➤ Financial modelling ➤ Private sector participation / private public partnership 	 <ul style="list-style-type: none"> ➤ Technical assistance ➤ Management & operational support ➤ Secondment of railway personnel ➤ Environmental impact assessment ➤ Social analysis and resettlement planning ➤ Training 	 <ul style="list-style-type: none"> ➤ Crash Energy Management (CEM) design ➤ Locomotive design and re-engineering ➤ Passenger car interior design ➤ Rail vehicle systems design and integration ➤ Structural design and finite element analysis (FEA) ➤ Fibreglass Reinforced Plastic (FRP) design ➤ Repair and upgrade cost estimating ➤ Fuel consumption / TPC studies

1. WHO ARE WE?

2. OUR ORGANIZATION

3. FLAGSHIP PROJECTS

4. CURRENT INFRA. PROJECTS

FLAGSHIP PROJECTS



Northern Afghanistan Rail Study (2014-ongoing)

600km rail project - Funded by Asian DB. Disciplines covered: Infrastructure (track, engineering, buildings, shops, and mining operation interfaces), systems, operations, rolling stock, and market study.

04/2016: Award of FS for Herat – Turghundi (200km); Critical studies to CAREC



Refurbishing of Rocky Mountaineer GoldLeaf Bi-Level Cars (2014-ongoing)

Full EPC responsibility: Engineering, Manufacturing and installation shop drawings, Project Management, Supplier and Material selection, Procurement. Site Supervision (resident personnel at workshop), and Warranty



North South Railway – Studies - EPCM + Procurement of Rolling Stock (2005 - Ongoing)

2,400km mixed line project which included the concept, preliminary and detailed studies, and construction supervision.

- Infrastructure: track, civil engineering, buildings, systems, and operations.
- Rolling Stock: procurement and commissioning of shops and rolling stock

1. WHO ARE WE?

2. OUR ORGANIZATION

3. FLAGSHIP PROJECTS

4. CURRENT INFRA. PROJECTS

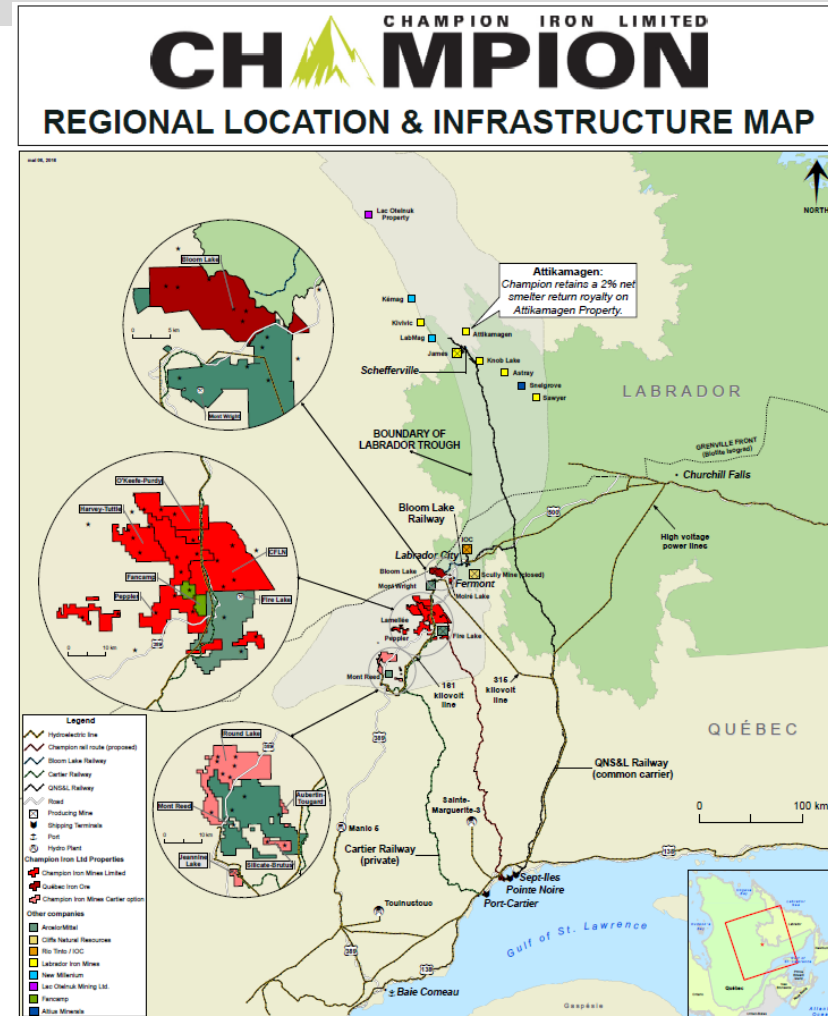
CURRENT INFRASTRUCTURE PROJECTS- PLAN NORD'S RAIL STUDY (1)

→ Purpose

- To address transportation needs while considering future users expectations
- To allow a **multi-user** operation model
- To promote investment and economic development in the Labrador Trough for international markets

This study aims at setting out optimized solutions (technical, operational and financial) for a multi-user railway solution between Pointe-Noire and Fire Lake North (Labrador Trough)

LA SOCIÉTÉ FERROVIAIRE
DU NORD QUÉBÉCOIS,
SOCIÉTÉ EN COMMANDITE



CURRENT INFRASTRUCTURE PROJECTS- PLAN NORD'S RAIL STUDY (2)

→ Scope (1)

- Compilation of studies and historical data related to the definition of the route that led to the actual designed route
- Evaluation of the available transport capacity for additional external tonnage on the existing railroads (CdF Cartier, Bloom Lake Railway, QNSL and Chemin de Fer Arnaud)
- Evaluation of the available capacity at the existing ports at Sept-Iles and Port-Cartier.
- Techno-economic analysis of using other existing rail infrastructure



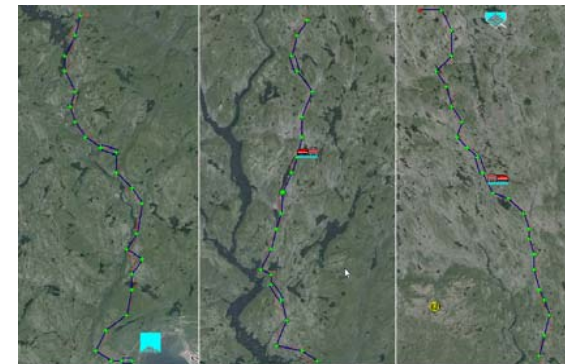
CURRENT INFRASTRUCTURE PROJECTS- PLAN NORD'S RAIL STUDY (3)

→ Scope (2)

- EPC of all site operations (including ground investigations/surveys)
- Evaluation of drainage basins
- Determination of the minimum cut and fill volumes required.
- Evaluation of the tunnels, structures and culverts
- BOQ
- Simulation of the cycle times & operating plan
- Signaling & Telecom
- Rolling stock and MOW equipment
- Evaluation of operations and maintenance workforce.
- OPEX/CAPEX
- Constructability
- Financial Model



Site investigations



Simulations

1. WHO ARE WE?

2. OUR ORGANIZATION

3. FLAGSHIP PROJECTS

4. CURRENT INFRA. PROJECTS

CURRENT INFRASTRUCTURE PROJECTS – PLAN NORD’S RAIL STUDY (4)

→ The lessons

- The G of QC stepped in to address an issue which drives the long term economy of QC/Canada
- The only viable approach was to understand and involve the interests of the private (mining) sector by adopting a public/private partnership
- The ‘multi-user’ approach is the future in a CAPEX-driven market
- Importance that a master plan is developed with input from all relevant parties ex. miners, first nations, port, investors, government agencies etc.

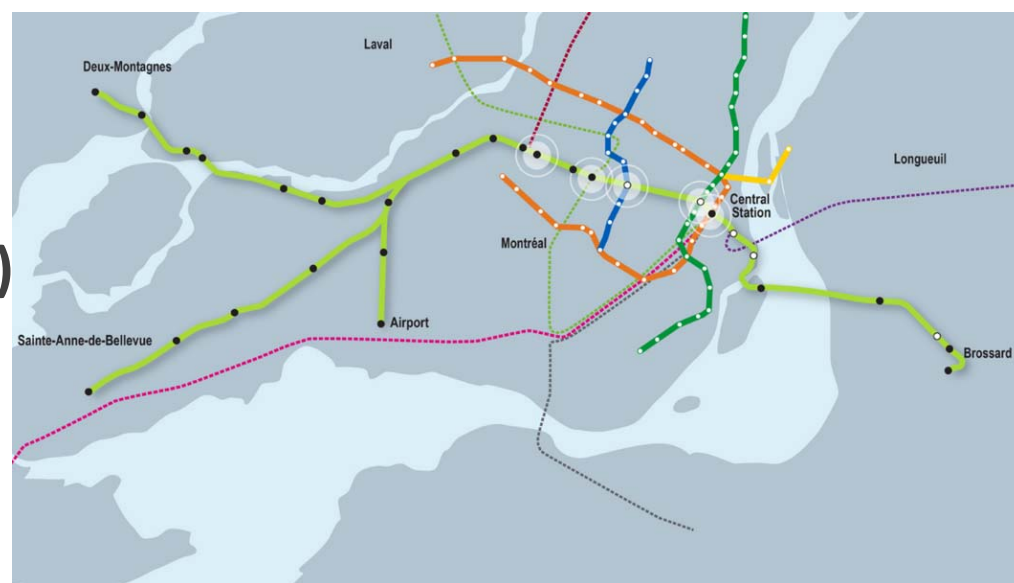
CURRENT INFRASTRUCTURE PROJECTS- MTL's LRT (1)

→ The Project

- A 67km/\$5.5bn integrated network linking downtown Montreal, South Shore, West Island, North Shore and the airport
- Project sponsored (and partly financed) by CDPQ Infra
- Automated – Electrified
- Conversion of *Deux-Montagnes*

→ Our Scope (in partnership with Hatch)

- Technical Rail Studies
- Preparation of technical specs



25 CANARAIL
ANS/YEARS



➤ THANK YOU