



Media briefing June 2019

Overview of REM's
construction sites



Agenda

- The REM project
- Project scope and challenges
- Major accomplishments in 2018-2019
- 2019 construction goals
 - South Shore
 - Deux-Montagnes
 - Sainte-Anne-de-Bellevue/Airport
- Question & answer period



The REM project



Structure of the project

Project Office



Réseau
express
métropolitain

Project Execution



Engineering, procurement and construction of the infrastructures



Rolling stock, systems, operation and maintenance services



Project Integration

Mobilité Montréal committees

Work impact management committees

Coordination committees – ARTM and transit authorities

Coordination committees – government departments, municipalities and partners

More than 20 work planning and monitoring committees



Project



100% automated light rail project

67 km of track

26 stations in the Greater Montréal area

3 connections to the Montréal metro

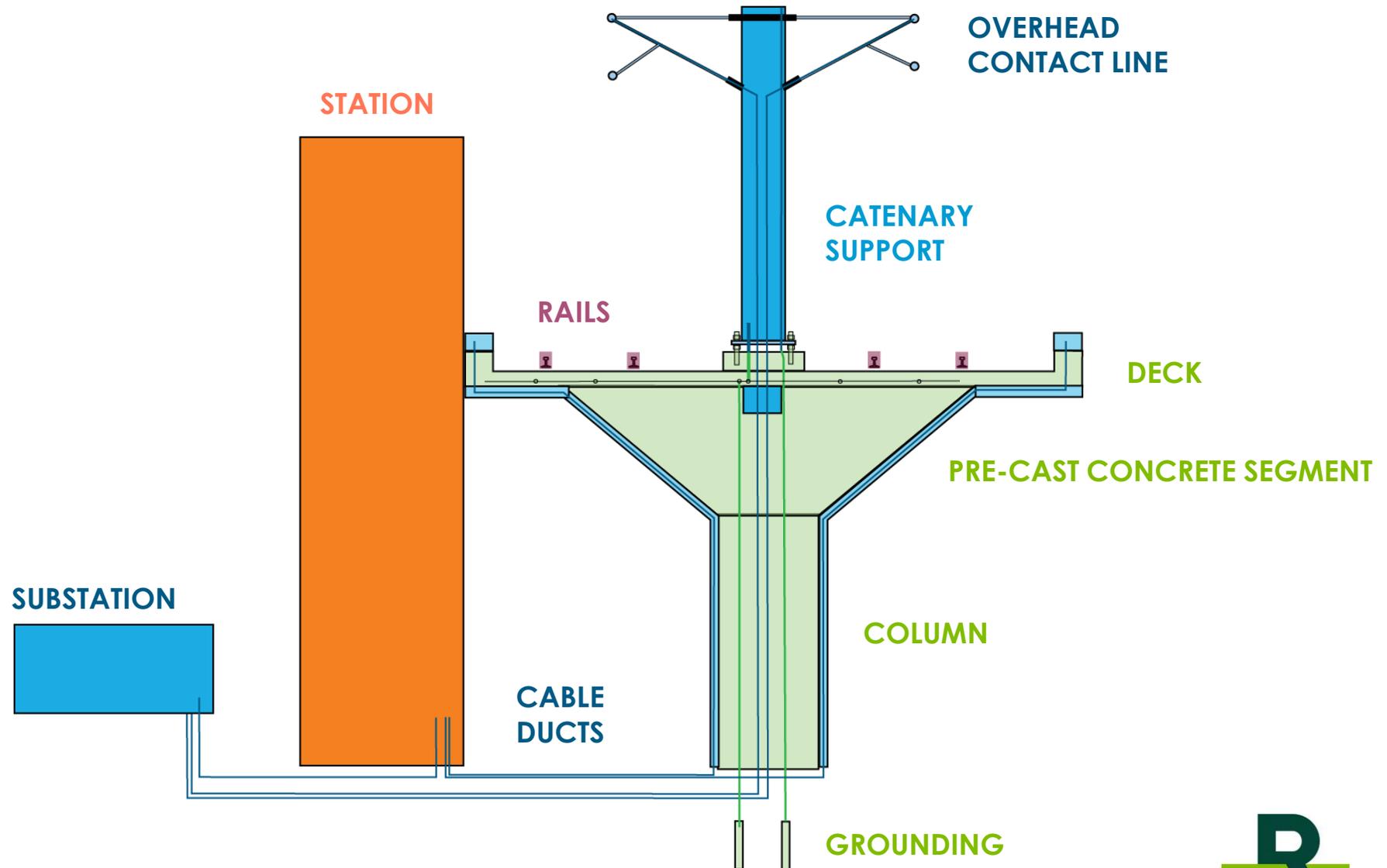




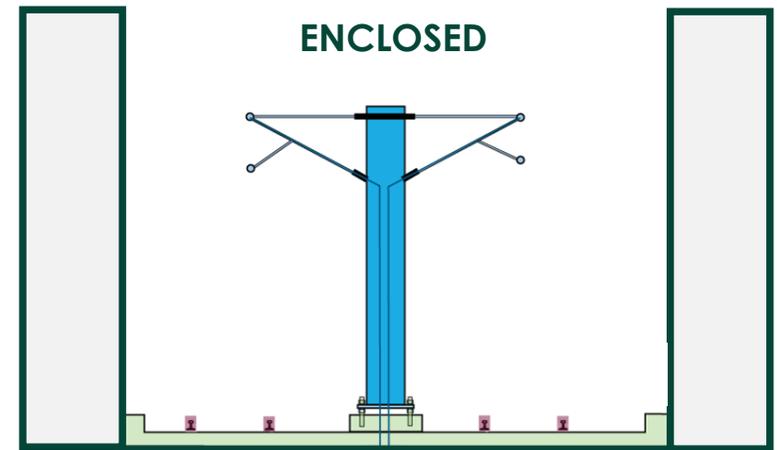
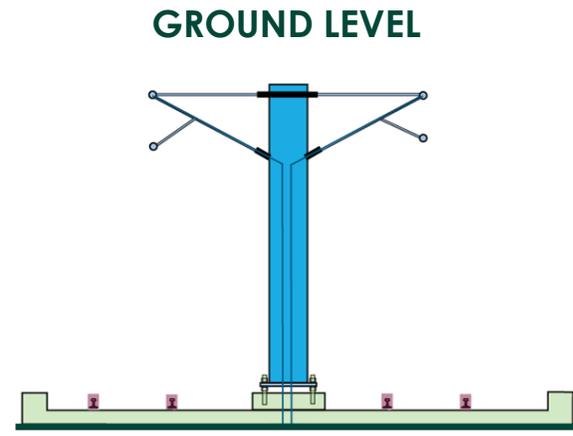
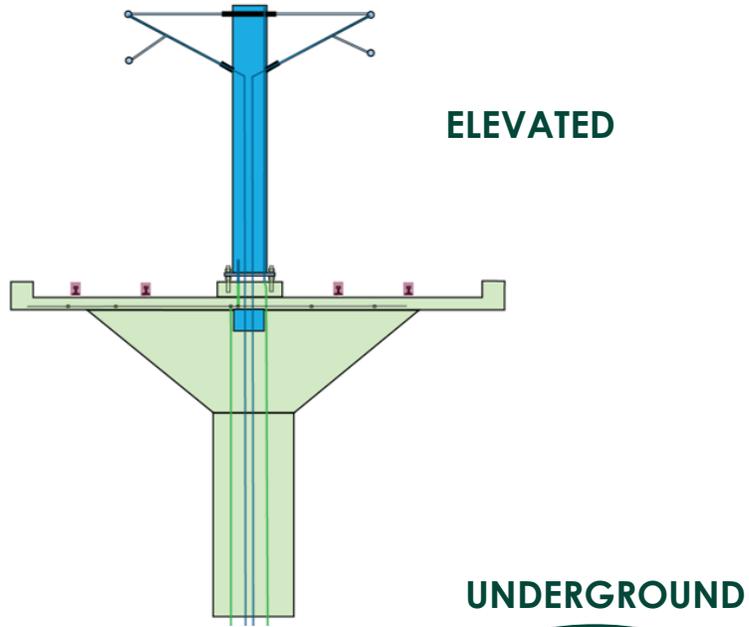
Project scope and challenges



A completely new system



Varied settings



Scope of the work to perform



67

KM OF TRACK OF WHICH
18.2 KM
ARE ON ELEVATED STRUCTURE



14

PARK-AND-RIDE
LOTS



26

STATIONS



5

KM OF TUNNEL TO BE
MODERNIZED



3.5

KM OF TUNNELS



8
ELEVATED
STATIONS



13
GROUND-
LEVEL STATIONS



5
UNDERGROUND
STATIONS



5

BRIDGES

1.16 KM



2

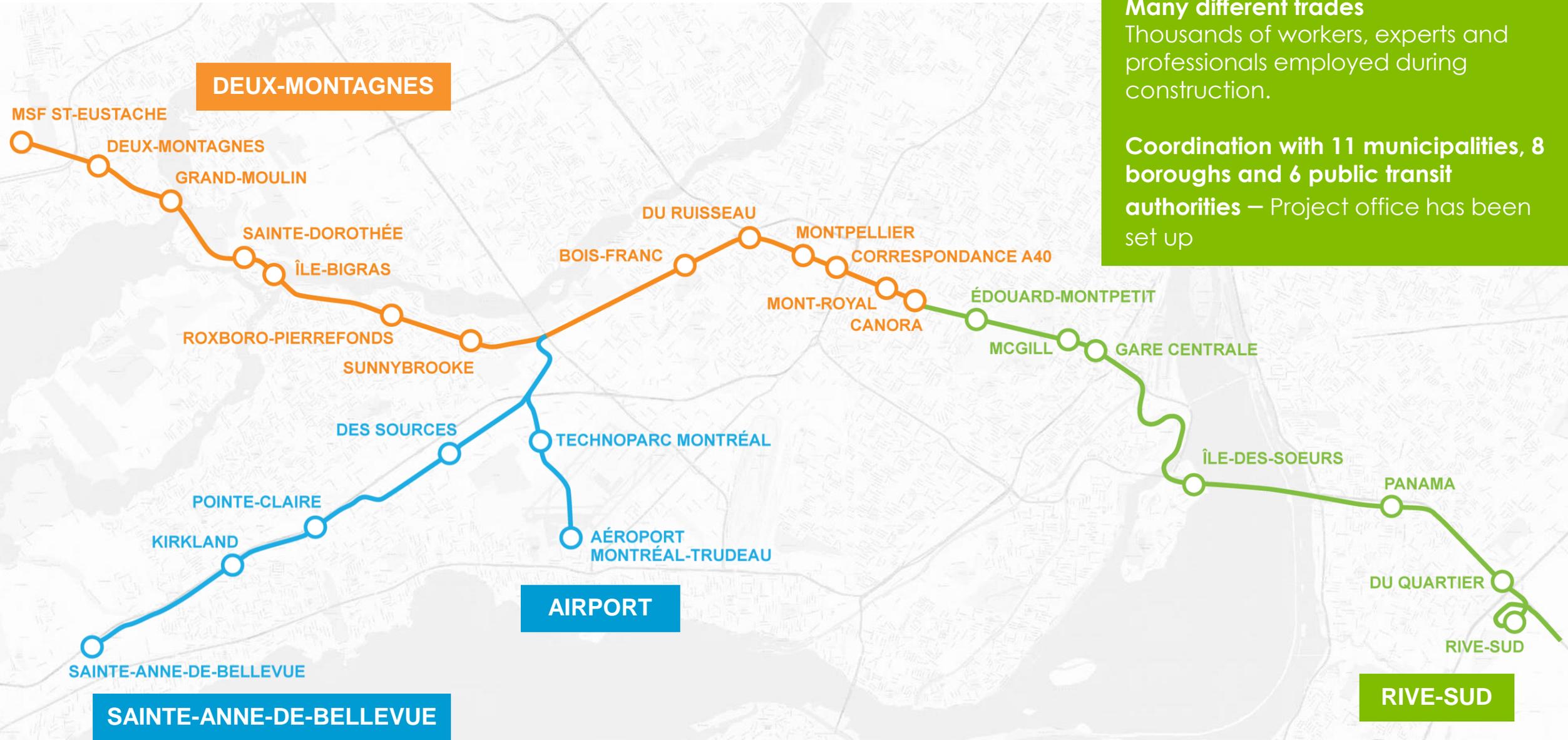
MAINTENANCE
CENTRES



11

BUS
STATIONS

Challenges and issues



Linear project

A 67-km route, which is almost as long as the Montréal metro.

Many different trades

Thousands of workers, experts and professionals employed during construction.

Coordination with 11 municipalities, 8 boroughs and 6 public transit authorities – Project office has been set up

Project schedule





Major accomplishments in 2018-2019





April 12, 2018

SIGNATURE OF THE CONTRACT



July 16, 2018

DEUX-MONTAGNES

FIRST CONSTRUCTION SITE OPENS
AND ST-EUSTACHE MAINTENANCE
CENTRE CONSTRUCTION BEGINS

July 17, 2018

RIVE-SUD

FIRST CONSTRUCTION SITE ON THE SOUTH SHORE OPENS AND FIRST PILE IS PLACED





May 2019



February 26, 2019

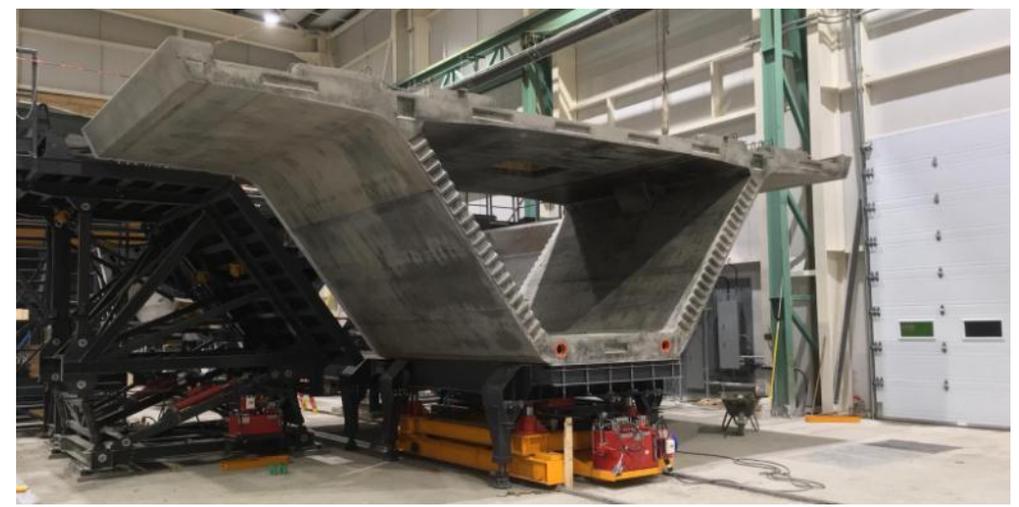
RIVE-SUD

FIRST PREFABRICATED NEBT
CONCRETE BEAM IS POURED

November 2, 2018

**SAINTE-ANNE-DE-BELLEVUE/
AIRPORT**

FIRST BATCH OF CONCRETE IS Poured FOR
PREFABRICATED SEGMENTS





April 2019

October 31, 2018

SOUTH SHORE (CROSS-COUNTRY)
LACHINE CANAL
BACKFILLING WORK

November 3, 2018

SAINTE-ANNE-DE-BELLEVUE/
AIRPORT
DEMOLITION OF THE CN BRIDGE

May 2019





May 2019

November 17, 2018

DEUX-MONTAGNES

PILE DRIVING AT THE
CANORA AND MONT-ROYAL
STATIONS BEGINS

January 15, 2019

SOUTH SHORE
EXCAVATION FOR THE
MCGILL STATION
PEDESTRIAN TUNNEL BEGINS

May 2019





February 11, 2019

**SAINTE-ANNE-DE-BELLEVUE/
AIRPORT**

TECHNOPARC:
DRILLING FOR THE
SECANT PILES BEGINS

October 22, 2018

SOUTH SHORE

ÉDOUARD-MONTPETIT STATION:
EXCAVATION BY CONTROLLED
BLASTING BEGINS





March 11, 2019

SOUTH SHORE

SOUTH SHORE MAINTENANCE
CENTRE: FOUNDATION
CONSTRUCTION BEGINS





2019 construction goals



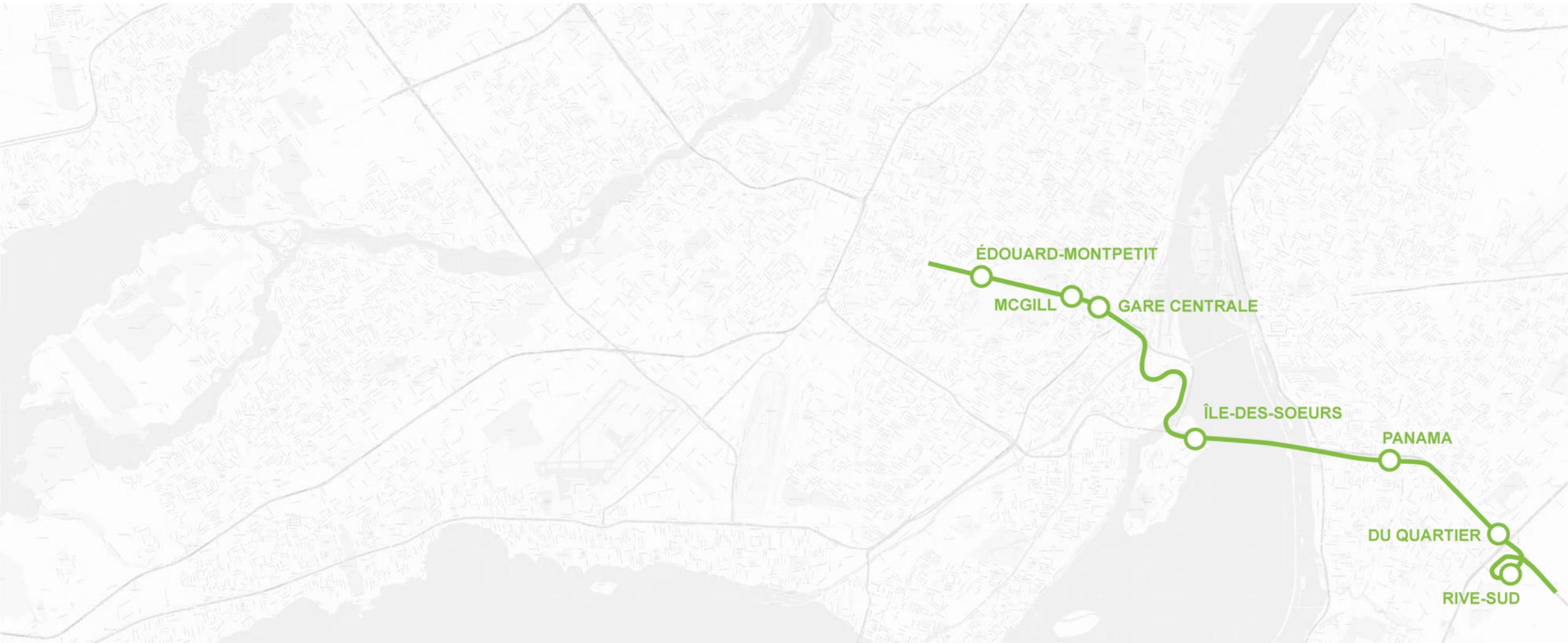


South Shore

Réseau
express
métropolitain



South Shore



South Shore work zones



Édouard-Montpetit

McGill

Gare Centrale



Île-des-Sœurs

Panama



Du Quartier

South Shore

Nature of the work – South Shore



8

STATIONS



2

ELEVATED
STATIONS



3

GROUND-LEVEL
STATIONS



3

UNDERGROUND
STATIONS



2

BRIDGES

70

METRES OF EXCAVATION
AT
ÉDOUARD-MONTPETIT STATION



5

KM OF
TUNNEL TO BE
MODERNIZED

120

COLUMNS



1

MAINTENANCE
CENTRE

270

NEBT CONCRETE
BEAMS

Brossard

Work in progress:

- Construction of the Rive-Sud and Du Quartier Stations, the maintenance centre and control station
- Installation of the first components of the elevated structure and track sub-structure in progress.

Challenges:

- Work performed in the middle of Highway 10.
- Work carried out in several phases, in order to limit impact on motorists and public transit users.
- Most structures will be completed by fall of 2019, for test track commissioning in 2020.



Cross-Country

Work in progress:

- Construction of cast-in-place columns
- Installation of the first components of the elevated structure
- Lachine Canal work completed before it opened, in order to minimize impact on shorelines

Challenges:

- Building in an industrial environment, over a very active CN railway, without hindering current service
- Prefabricating the NEBT concrete beams ourselves in the area, in order to minimize impact on traffic



Gare Centrale

Work:

- Preparatory work for future accesses and mechanical room, beginning fall 2019

Challenges:

- Working in a very dense and active environment, trying to disrupt the residents' daily lives as little as possible.
- Construction on a heritage site



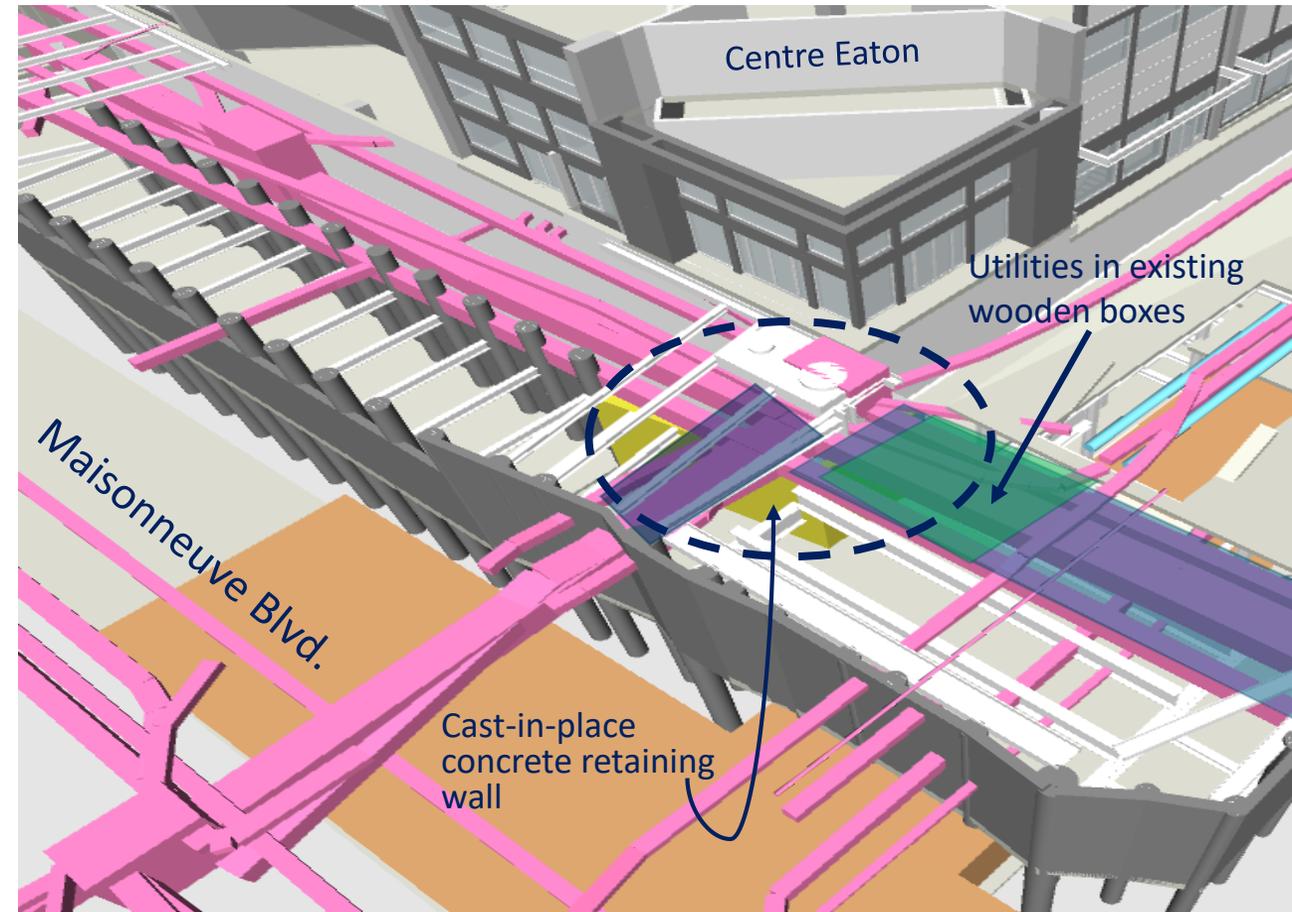
McGill station

Work in progress:

- Excavation of the pedestrian tunnel
- Start of excavation for the main station in summer 2019

Challenges:

- Working in a very dense and active environment, trying to disrupt the residents' daily lives as little as possible.
- Performing the work without affecting the many public utilities



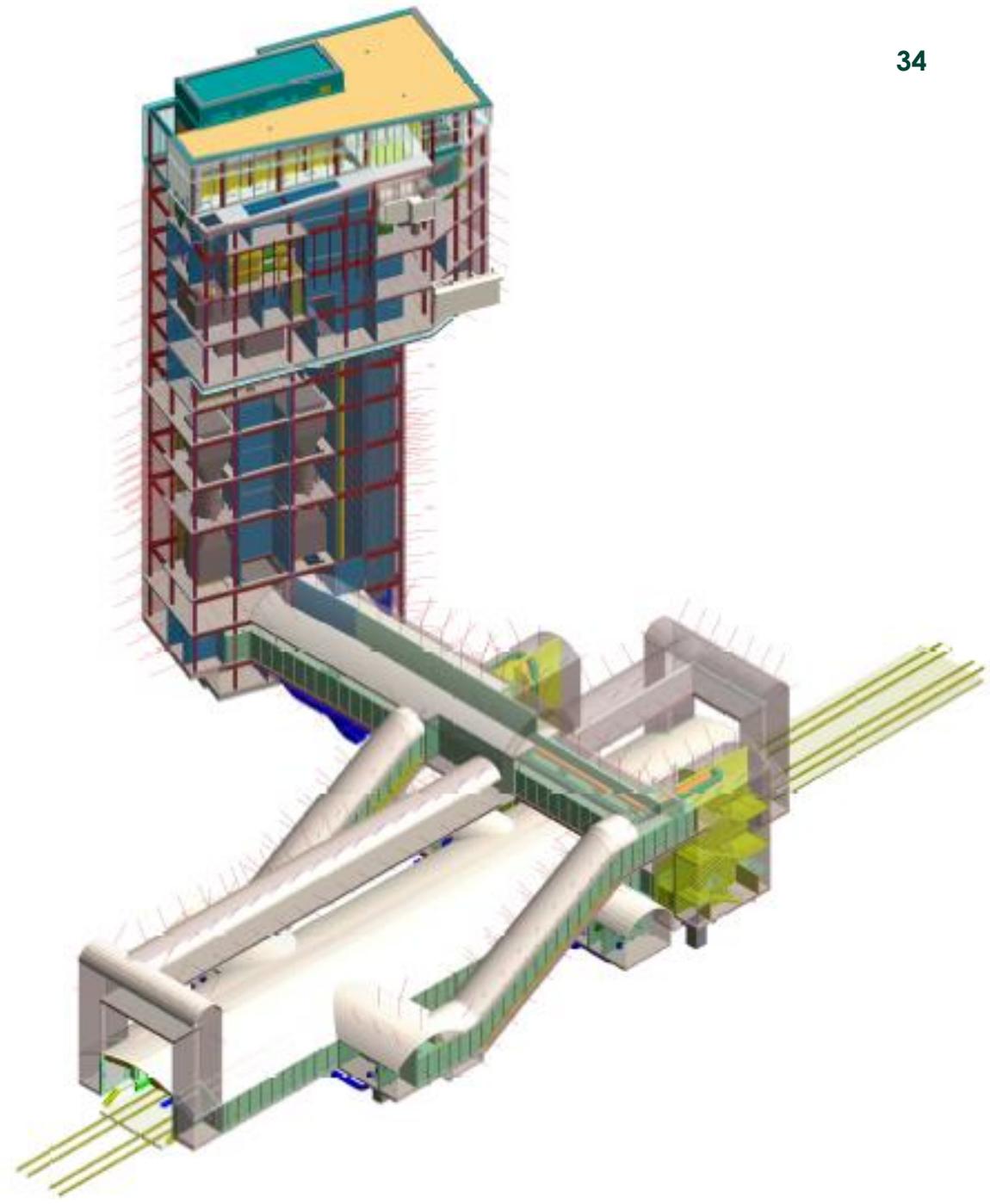
Édouard-Montpetit station

Work in progress:

- Summer 2019:
 - Shaft excavation will be completed (-58 m)
 - Start of excavation of galleries to connect to the Mont-Royal Tunnel

Challenges:

- Proximity of residents and nature of our work
- Performing the work without affecting the many public utilities
- Finding working methods that are both effective and safe

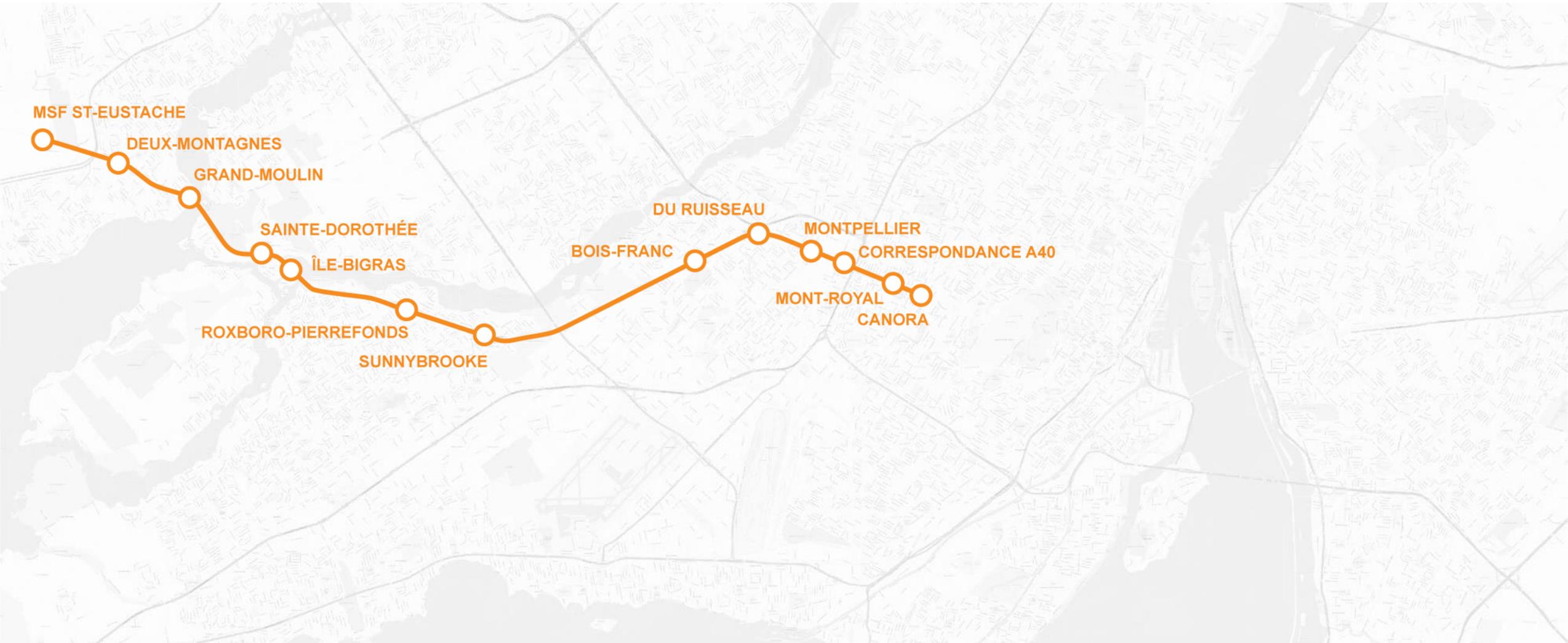




Deux-Montagnes



Deux-Montagnes



Deux-Montagnes work zones



Nature of the work – Deux-Montagnes



12

STATIONS

460

CONCRETE SEGMENTS



3

BRIDGES



1

MAINTENANCE
GARAGE



3

ELEVATED
STATIONS



9

GROUND-
LEVEL STATIONS



0

UNDERGROUND
STATIONS

43

SPANS

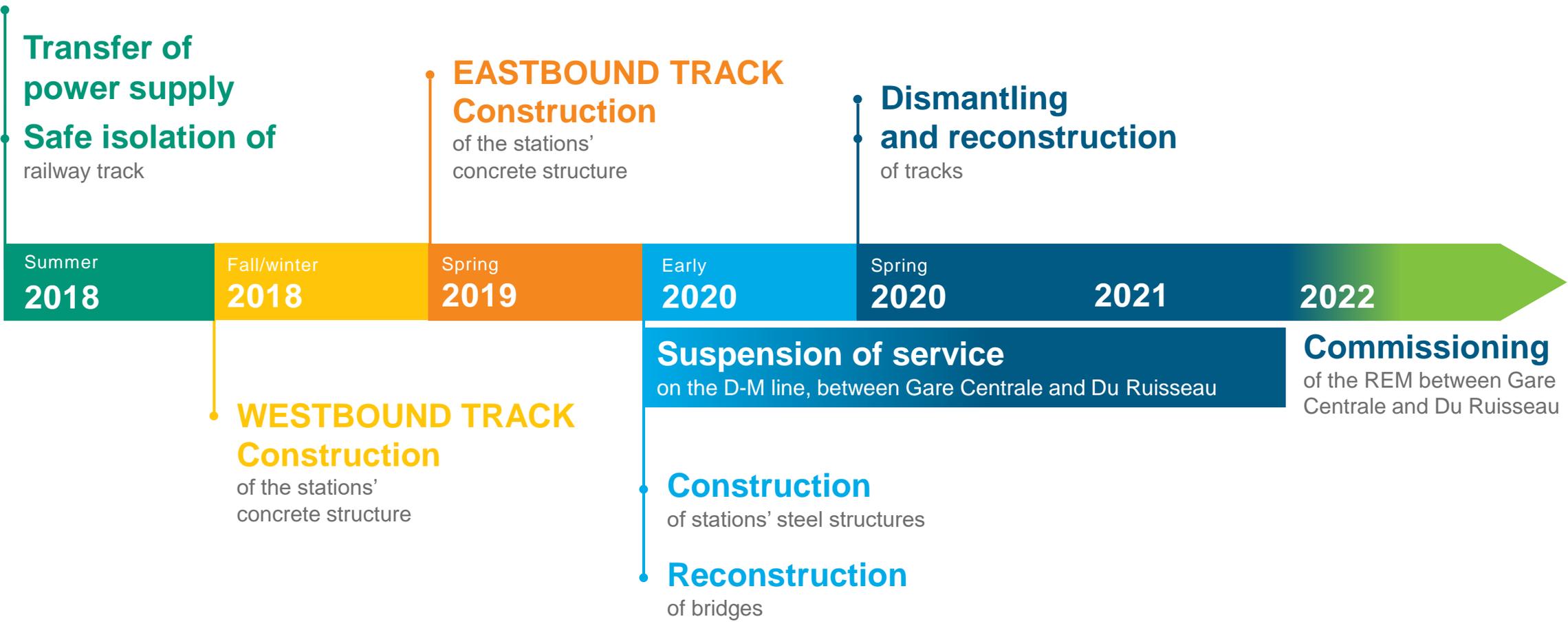
16,8

KM OF TRACK
AT GROUND LEVEL

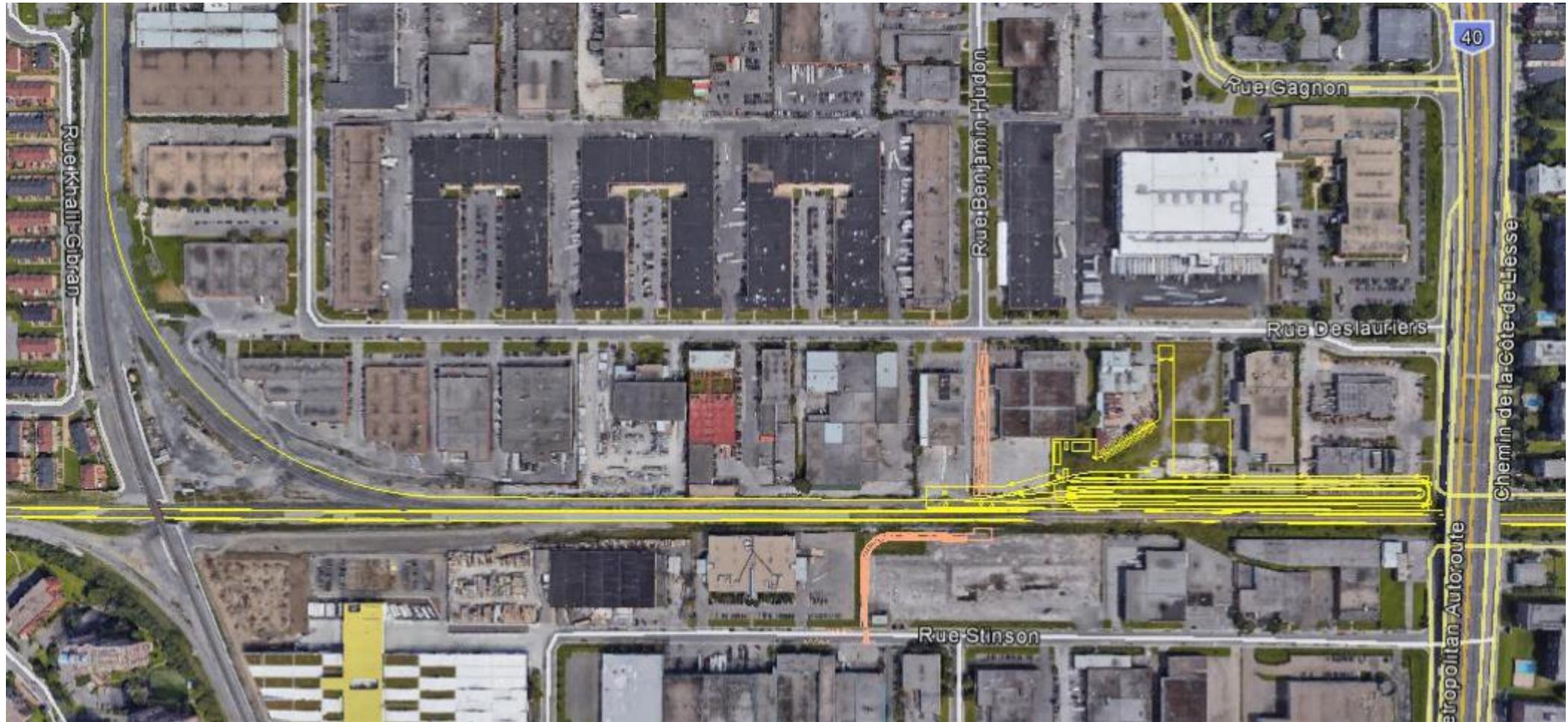
16,8

KM ELEVATED
STRUCTURE

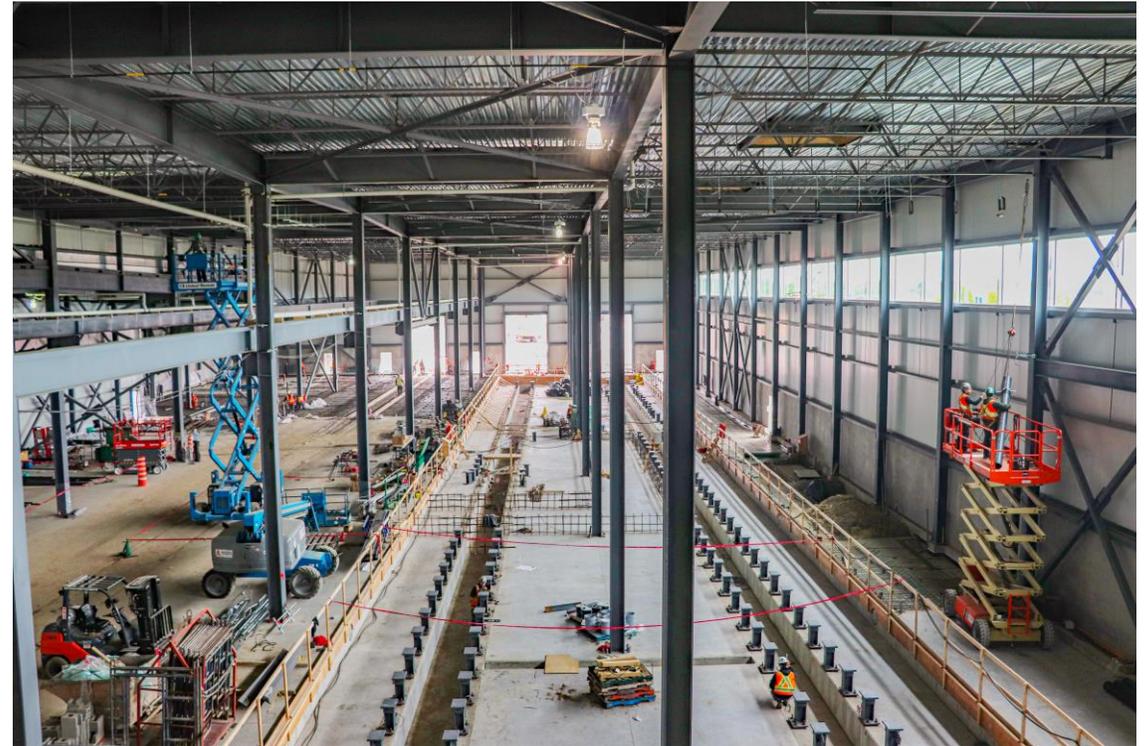
Canora and Mont-Royal Stations



End-of-line garage on exo's Mascouche line



St-Eustache maintenance centre



Work sequence

Early 2020

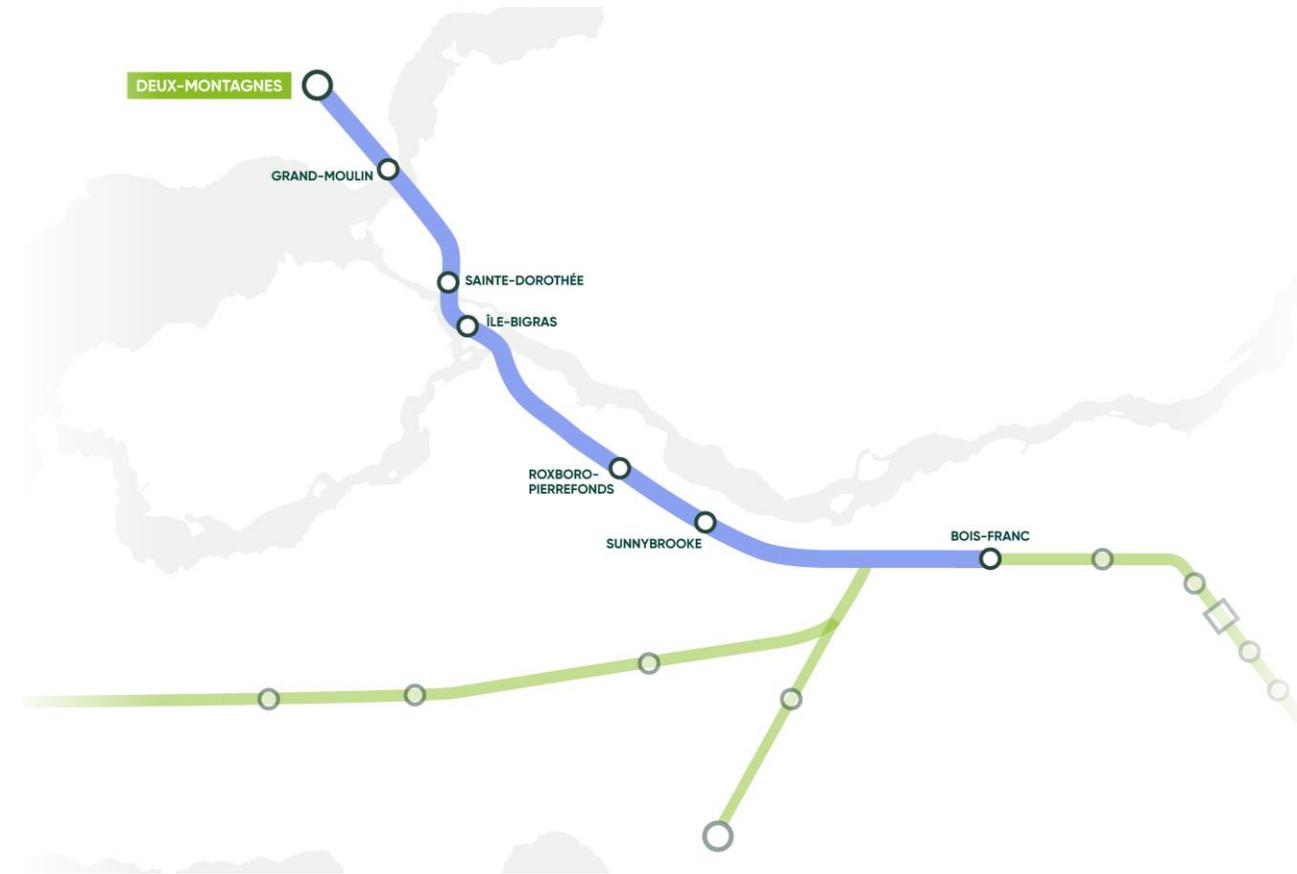
- Construction of the central segment of the REM
- Closure of the Mont-Royal Tunnel
- Suspension of train service between Gare Centrale and Du Ruisseau (Deux-Montagnes line)
- Trains stopped at Ahuntsic station (Mascouche line)



Work sequence

Mid-2021

- Work will intensify between Bois-Franc and Deux-Montagnes
- Complete suspension of train service on the Deux-Montagnes line



Commissioning of the Deux-Montagnes branch

2022

- Central segment of the REM will open (Gare Centrale to Du Ruisseau)



Commissioning of the Deux-Montagnes branch

2023

- Commissioning of the northern REM segment



Canora



Mont-Royal



Repair of Grenet and Côte-Vertu railway structures



Construction of two new bridges crossing Rivière-des-Prairies

Summer 2019 to December 2020

- Construction of a temporary jetty and dock
- New dual-track REM railway bridge and repair of the existing bridge





Sainte-Anne-de-Bellevue/ Airport

Réseau
express
métropolitain



Sainte-Anne-de-Bellevue/Airport



Sainte-Anne-de-Bellevue

Kirkland

Pointe-Claire

Des Sources

Technoparc

Airport

Saint-Charles Blvd.

Des Sources Blvd.



SADB/Airport work zones



Nature of the work – SADB/Airport



6

STATIONS



3.5

KM OF TUNNELS CONNECTING
THE TECHNOPARC TO THE AIRPORT



1

MAINTENANCE
GARAGE



3

ELEVATED
STATIONS



1

GROUND-
LEVEL STATION



2

UNDERGROUND
STATIONS

14.5

KM ELEVATED
STRUCTURE

366

SPANS

4102

CONCRETE SEGMENTS



Construction of the tunnel to the airport



Construction of the tunnel to the airport

Summer 2019

- Tunnel boring machine assembly begins

Fall 2019

- Tunnel boring machine operation begins





Construction of the elevated structure

Réseau
express
métropolitain



Elevated track construction principle

1. Concrete segments are prefabricated



2. Concrete segments are transported to the site



3. Concrete segments are re-assembled on the launching beam to build the spans



Advantages of the launching beam

- Limits amount of work at heights
- Quality of the structure built is increased due to prefabrication
- Decreased impact on road traffic
- Repetitive process requiring minimal workers and equipment
- Increased speed with this construction method



Concrete segments are prefabricated

- Length: between 2.80 and 3.79 m
- Width: 9.30 m
- Height: 3 m
- Weight: between 42.3 and 57.7 tons

4102 concrete segments will be prefabricated by BPDL in Saint-Eugène-de-Grantham. 550 have been completed and installation began at the beginning of the month of June.



Concrete segment installation method



Concrete segment assembly method

- Two launching beams work together simultaneously.
- Each launching beam erects one span every two days.
- Twelve concrete segments are delivered each day from the prefabrication plant (Saint-Eugène-de-Grantham).
- Operations will run six days/week, day and night.
- Operations will be from summer 2019 through fall 2022.





Question & answer period



Presentation
and information
available at
rem.info/en

Thank you!

