Reliability and efficiency

A high-frequency metro

DEUX-MONTAGNES
GRAND-MOULIN
SAINTE-DOROTHÉE
ÎLE-BIGRAS

17 min

5 min in peak hour
15 min off-peak hours

ROXBORO-PIERREFONDS
SUNNYBROOKE
BOIS-FRANC
DU RUISSEAU
MONTPELLIER
CORRESPONDANCE A40

12 min

SAINTE-ANNE-DE-BELLEVUE
KIRKLAND
POINTE-CLAIRE
DES SOURCES
TECHNOPARC MONTRÉAL

10 min

MONT-ROYAL
CANORA
ÉDOUARD-MONTPETIT

2 min 30 in peak hour
5 min off-peak hours

4 min

MCGILL
BONAVENTURE GARE CENTRALE
BASSIN PEEL

9 min

10 min in peak hour
15 min off-peak hours

AÉROPORT MONTRÉAL-TRUDEAU

ÎLE-DES-SOEURS

16 min

PANAMA

DU QUARTIER
RIVE-SUD

100% automated

2 cars during off-peak hours

4 cars during peak hours

A system designed to tackle Québec winters

❄ **Snow and ice management, depending on the weather**

Ice scrapers on the pantograph

Heated windshields

RIVE SUD

Heated automatic couplers at the ends

Double glazing

Heated door thresholds and floors

Ice protection equipment

Winter climate testing phase prior to commissioning in one of the best climatic chambers
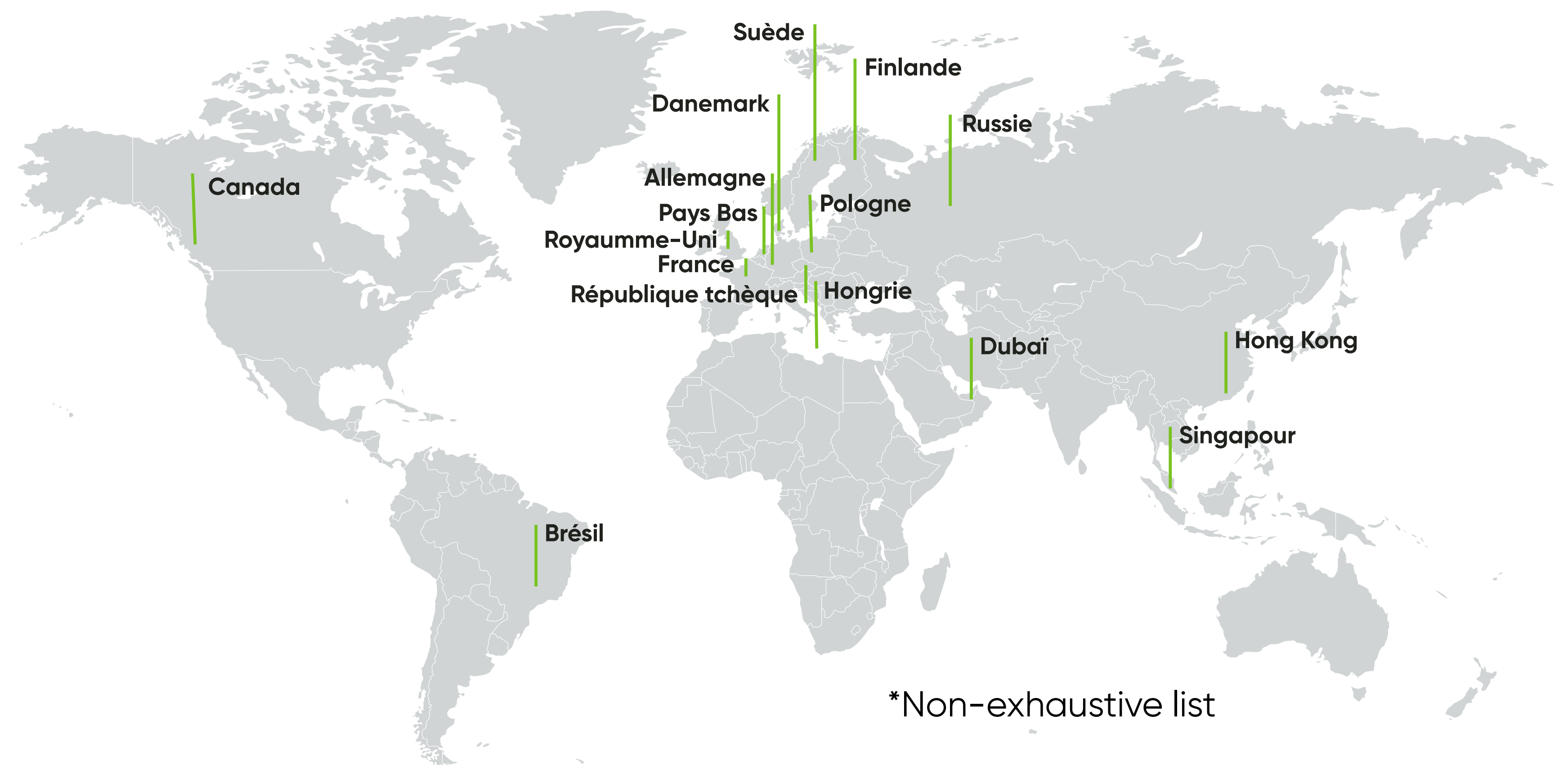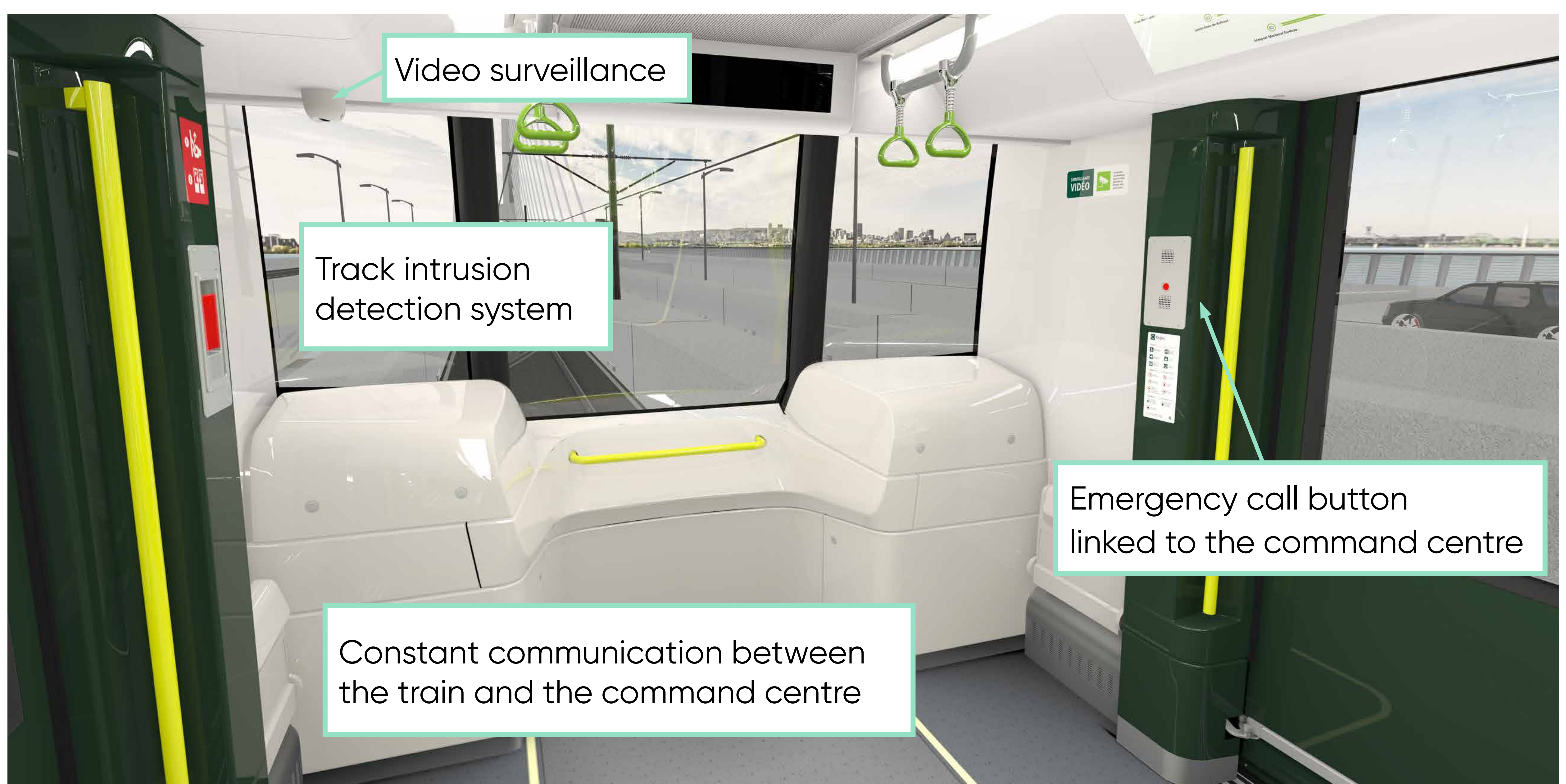
Security

Automation and command centre

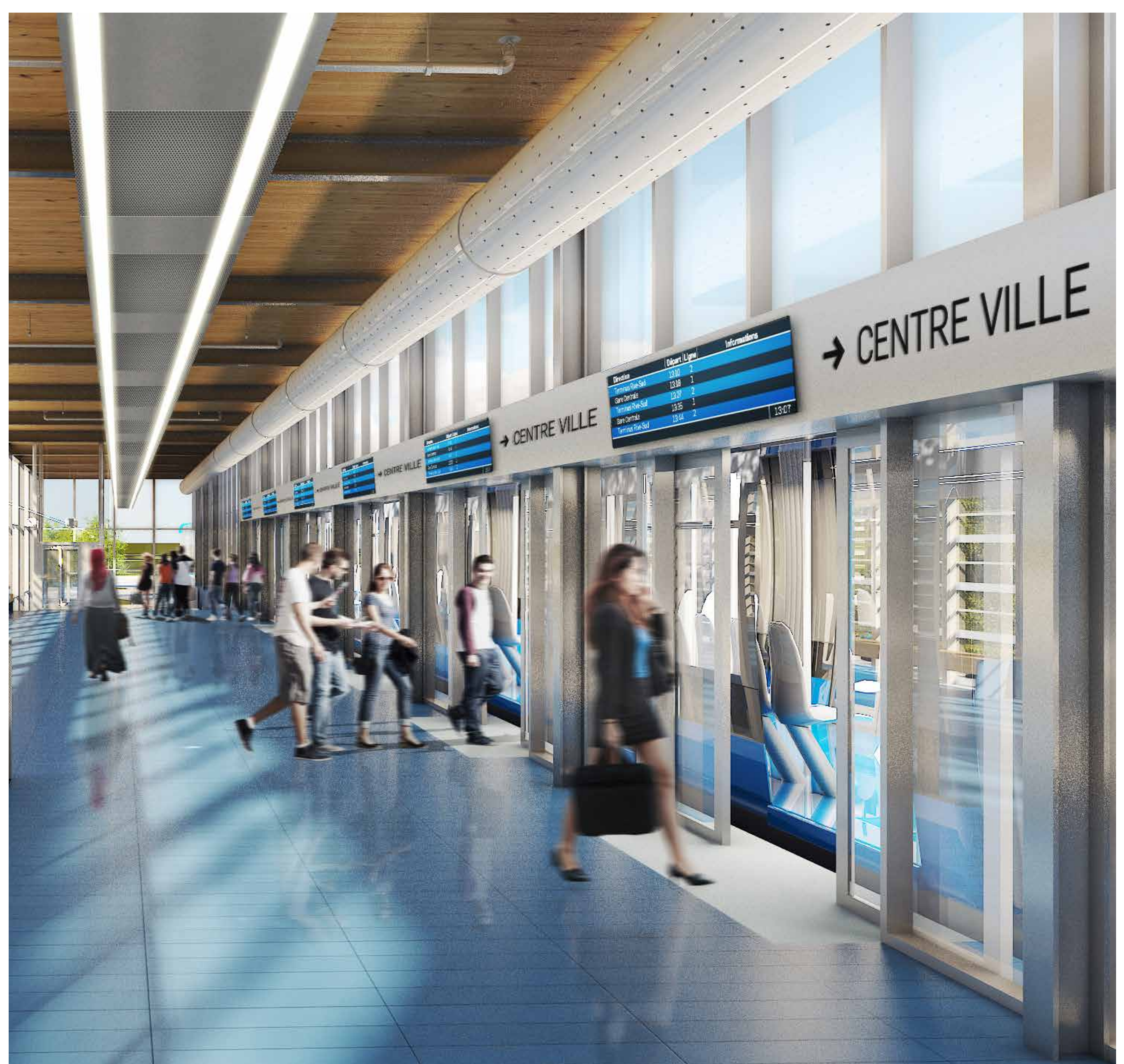**Automated metros have shown high levels of resilience and average reliability rates in excess of 99%**

Canada
Suède
Finlande
Danemark
Russie
Allemagne
Pays Bas
Royaumme-Uni
Pologne
France
Hongrie
République tchèque
Dubaï
Hong Kong
Singapour
Brésil

*Non-exhaustive list

Technology that has been proven in several countries across the globe

Video surveillance

Track intrusion detection system

Emergency call button linked to the command centre

Constant communication between the train and the command centre

Platform screen doors

In addition to protecting users, the platform screen doors significantly increase the reliability rate

- Prevents passengers from falling on the tracks and reduces the risk of accidents
- Allows for better insulation of stations as the temperature and ventilation can be more effectively monitored
- Reduces the energy consumption of the REM network
- Prevents the piston effect caused by the movement of trains (the air stream felt by passengers that can knock them off balance)
- Allows for fluid entry and exit of passengers

Passenger cabin

Wraparound window at the front: a unique passenger experience

The train is automated so users can enjoy the space where a driver would usually sit

Griffintown

View of downtown Montréal

Crossing over the Samuel-De Champlain Bridge

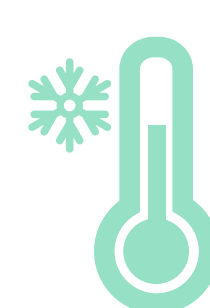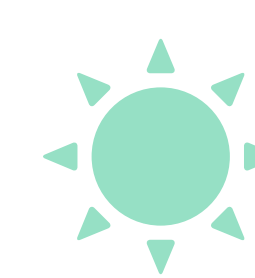Bridge crossings on the North Shore
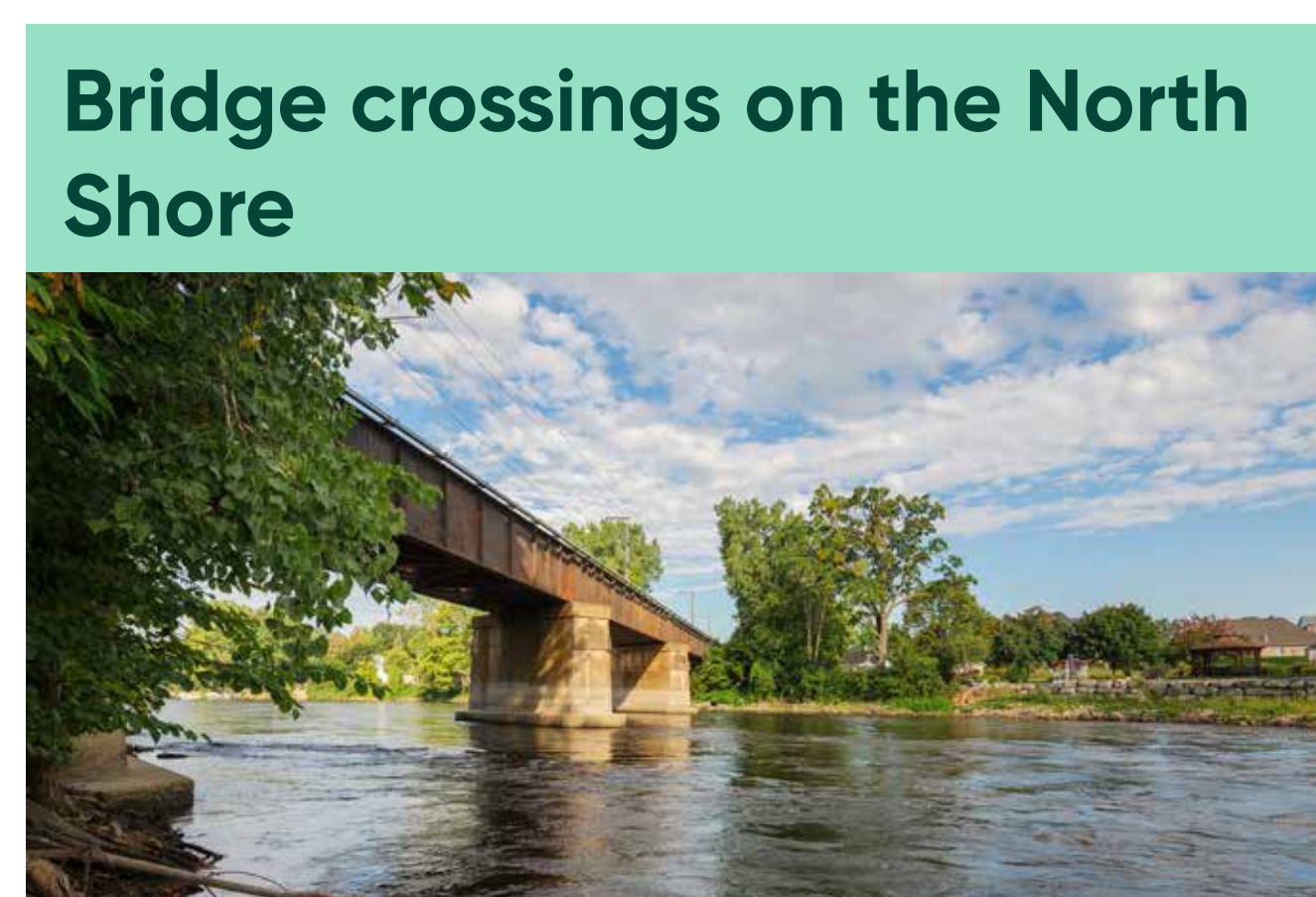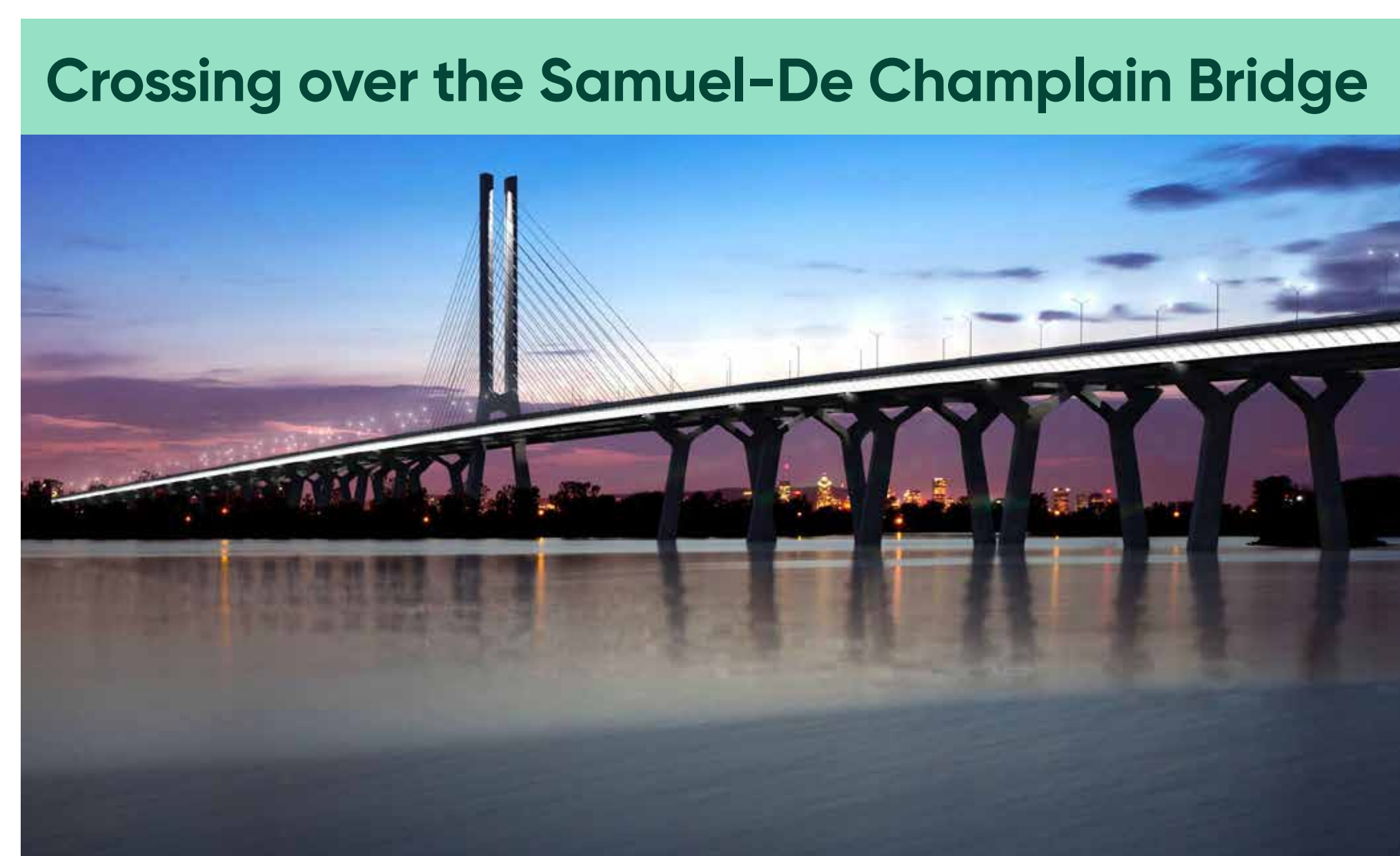
Breathtaking views of Greater Montréal

Services and comfort

Wi-Fi

Heated floors and air conditioning

Abundant lighting

Accessibility and passenger movement

Universal access

Level of colour contrast designed to facilitate the visually impaired

Handrail

ZONE RÉSERVÉE PRIORITY AREA

Intercom system at user height (to call the command centre in the event of an emergency)

Passenger information broadcast at all times (both sound and visual)

Image for information purposes only

CONFIGURATION UNITE SIMPLE/SINGLE UNIT CONFIGURATION

4 reserved spaces per off-peak hours departure
8 reserved spaces per peak hours departure

Universal access required from the outset and consultations aimed at making adjustments to address specific needs

Free-flowing passenger movement

Reserved space for:

Families with strollers

Cyclists with bicycles

Commuters with luggage

Seats that are positioned laterally allow for free-flowing passenger movement
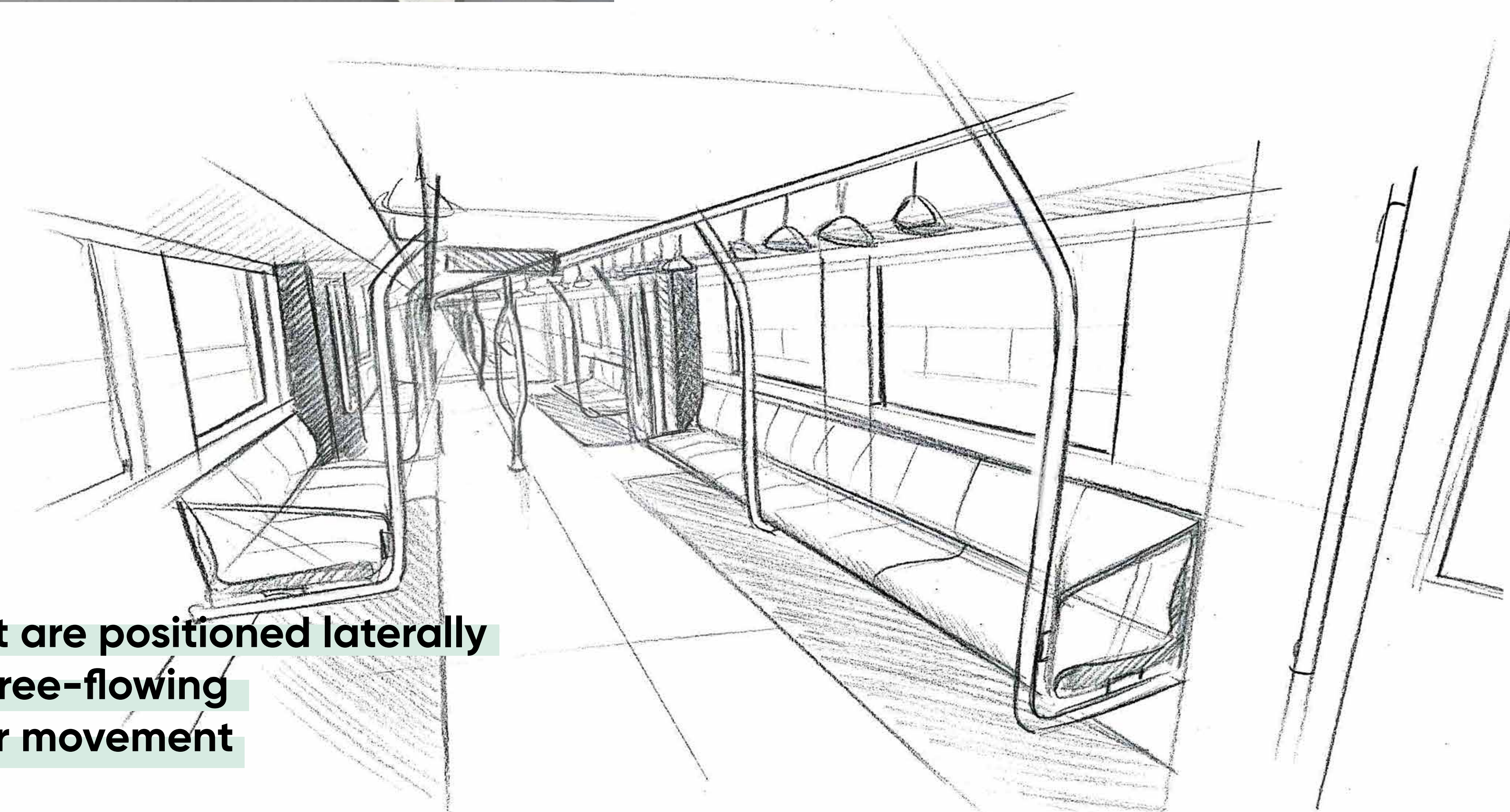
Signage and soundscape

Audible signals
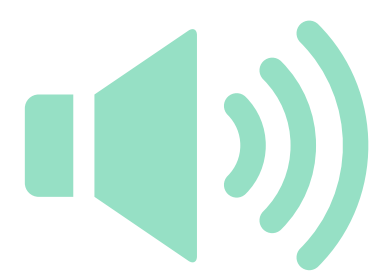
An audible signal when doors open and close and when the train departs from or arrives at a station, for example

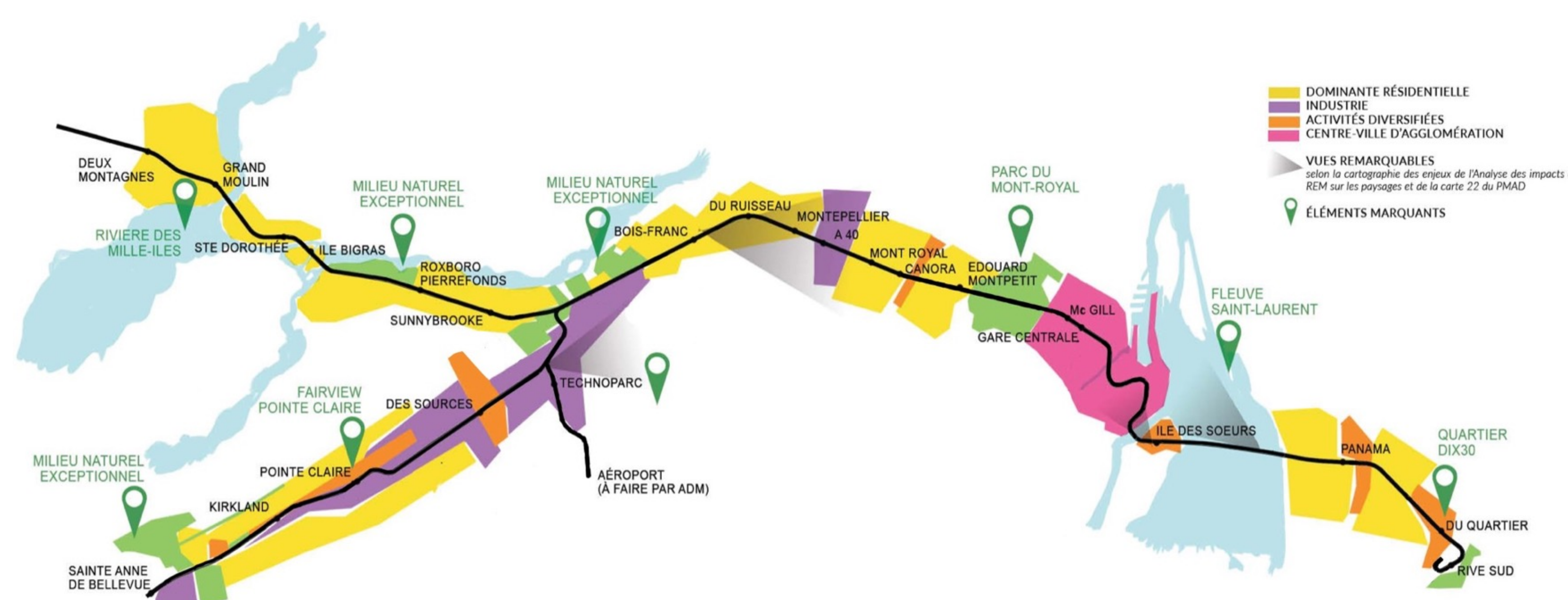A characteristic and audible voice announces passenger information

Sounds facilitate the movement and traffic of **all users**, including the visually impaired
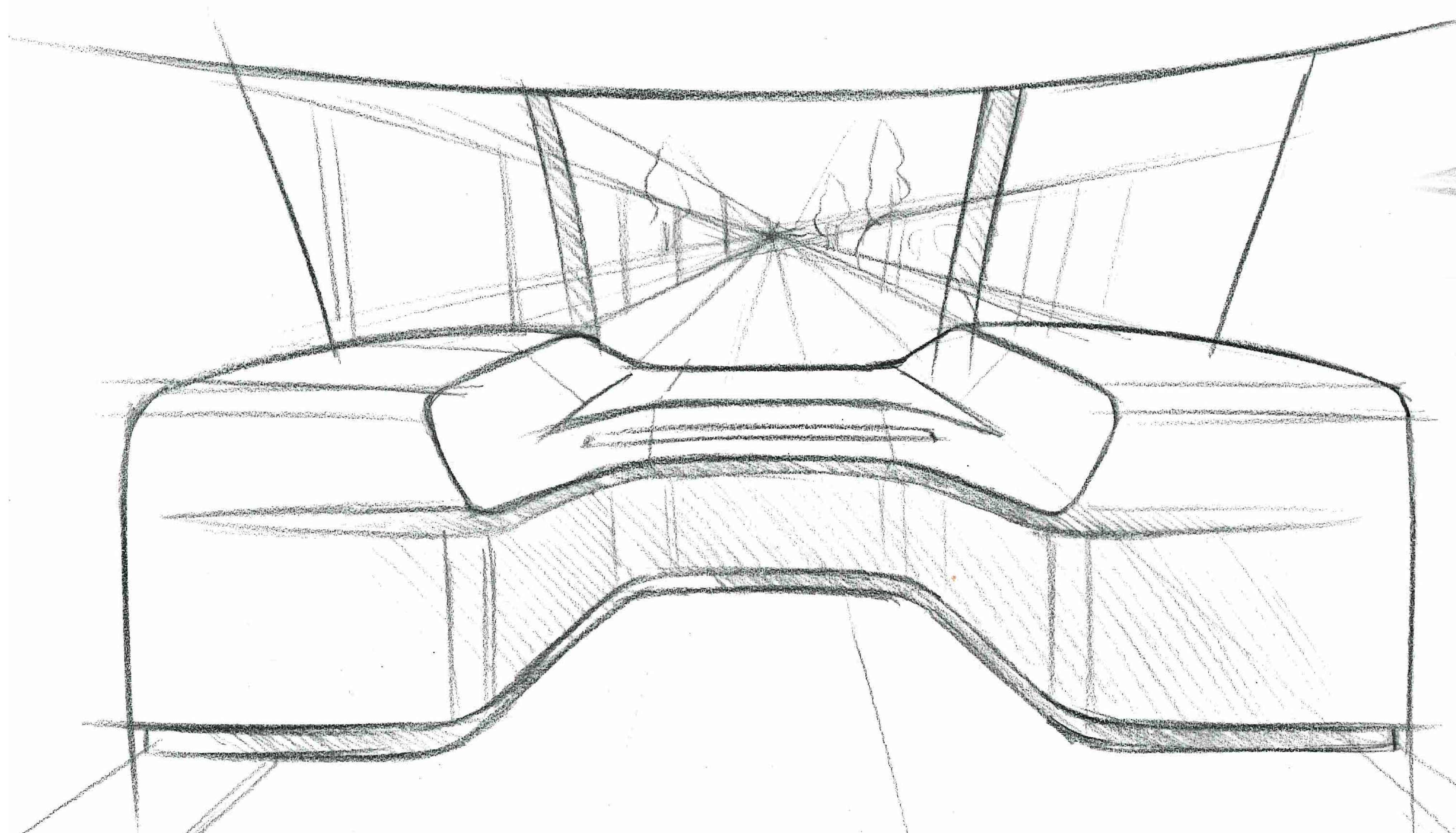

Soundscape

In addition to providing audible signals, how can sound enhance the user experience and highlight the surrounding landscape

A user experience that can:

– Change over time (seasons, special events, time of the day, etc.)
– Highlight the impressive views offered by REM routes
– Enhance the user experience and create a sense of well-being

26 integrated and enclosed stations

Enclosed stations

REM stations will be inside enclosed and sheltered buildings. Passengers will be protected from inclement weather while they wait on the platform
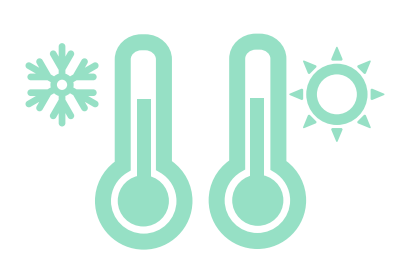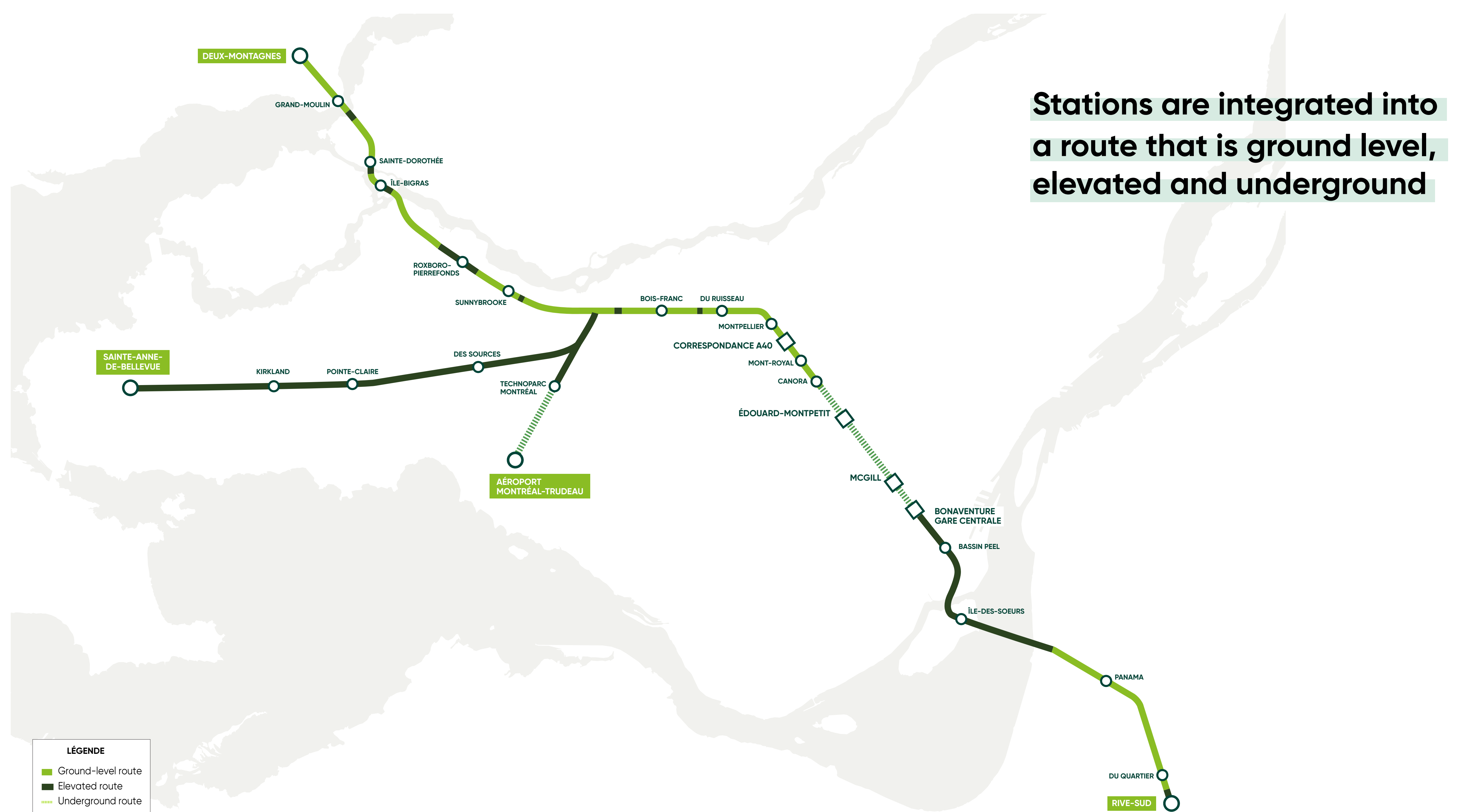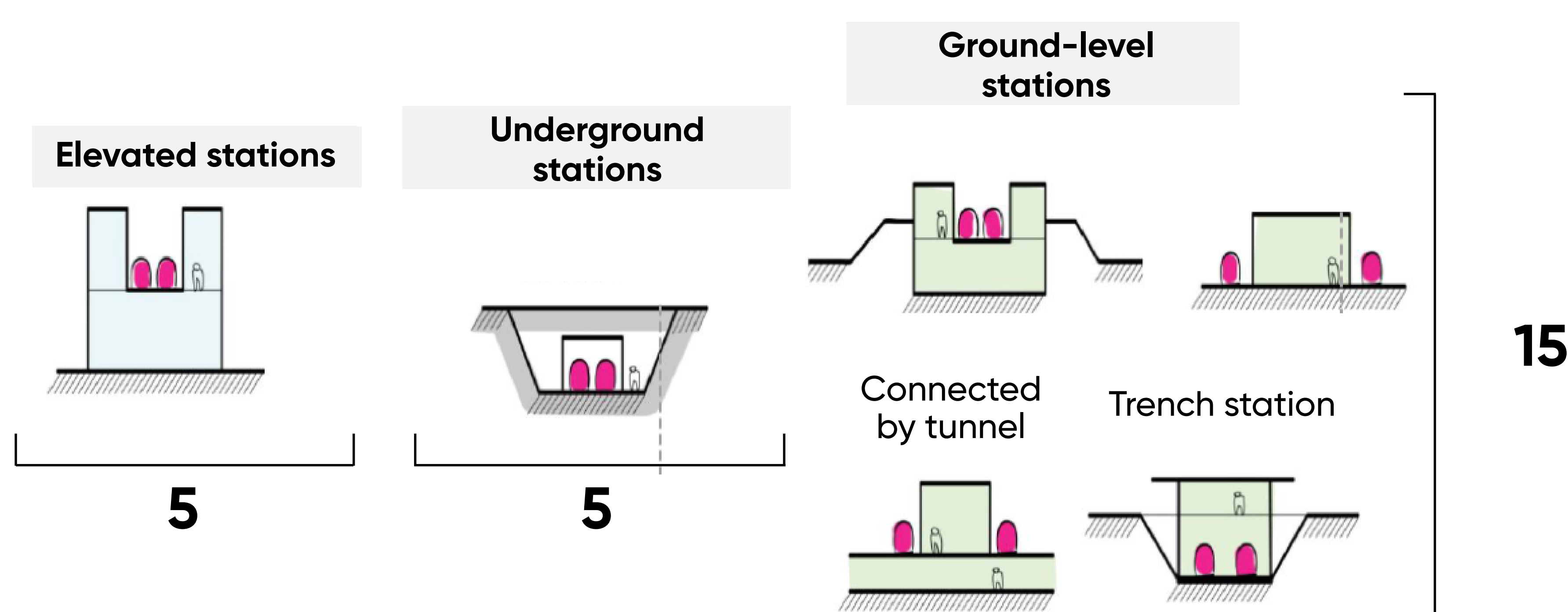
❄️🌡️☀️ Sheltered stations

📶 Wi-Fi

🏛️ Platforms are 80 m long

Categorization

Stations are integrated into a route that is ground level, elevated and underground

LÉGENDE
- Ground-level route
- Elevated route
- Underground route

Removal of existing level crossings along the Deux-Montagnes lines, for optimal security.

Elevated stations — **5**

Underground stations — **5**

Ground-level stations

Connected by tunnel

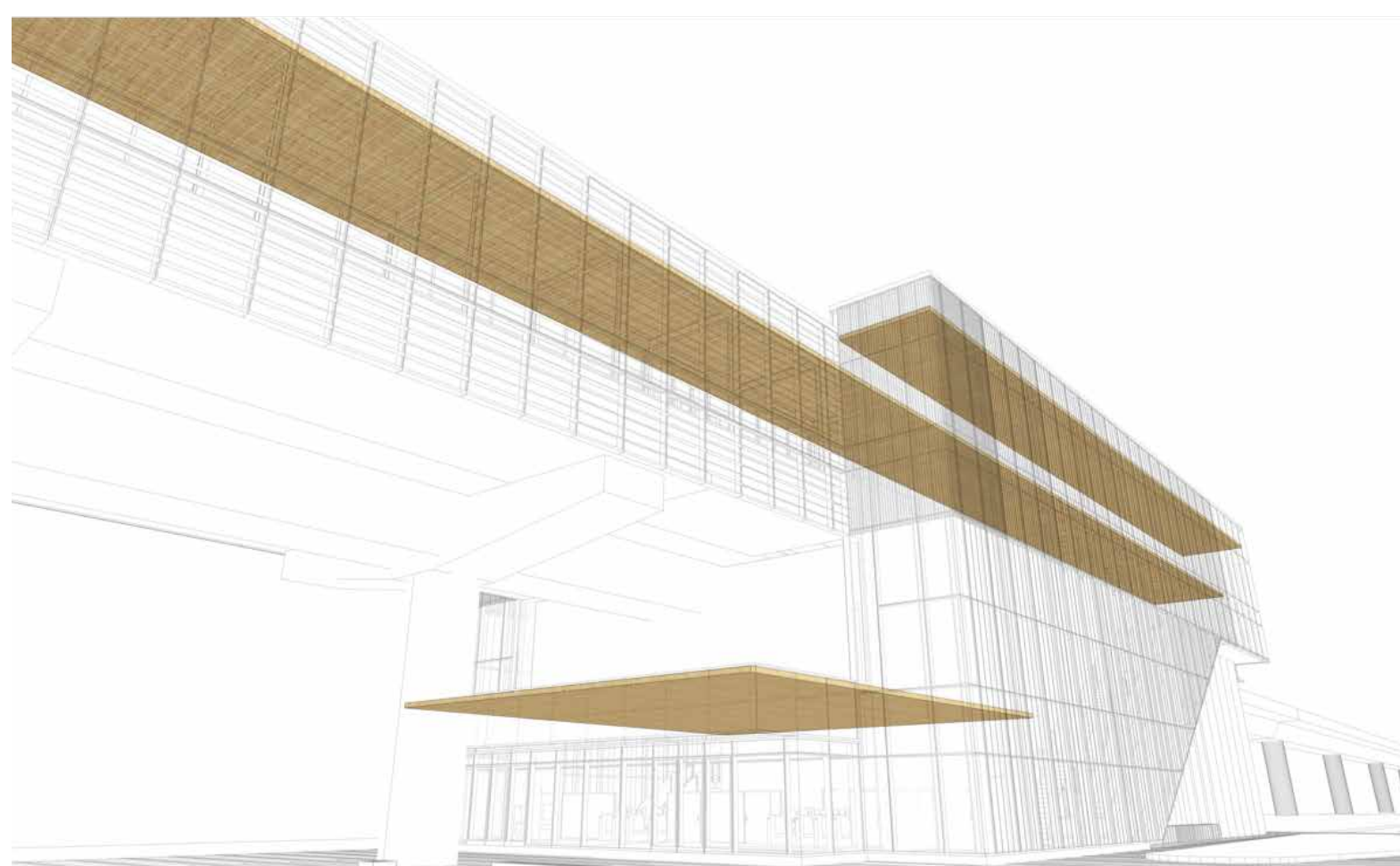Trench station

15

# Architecture

Materials and design principles

Glass
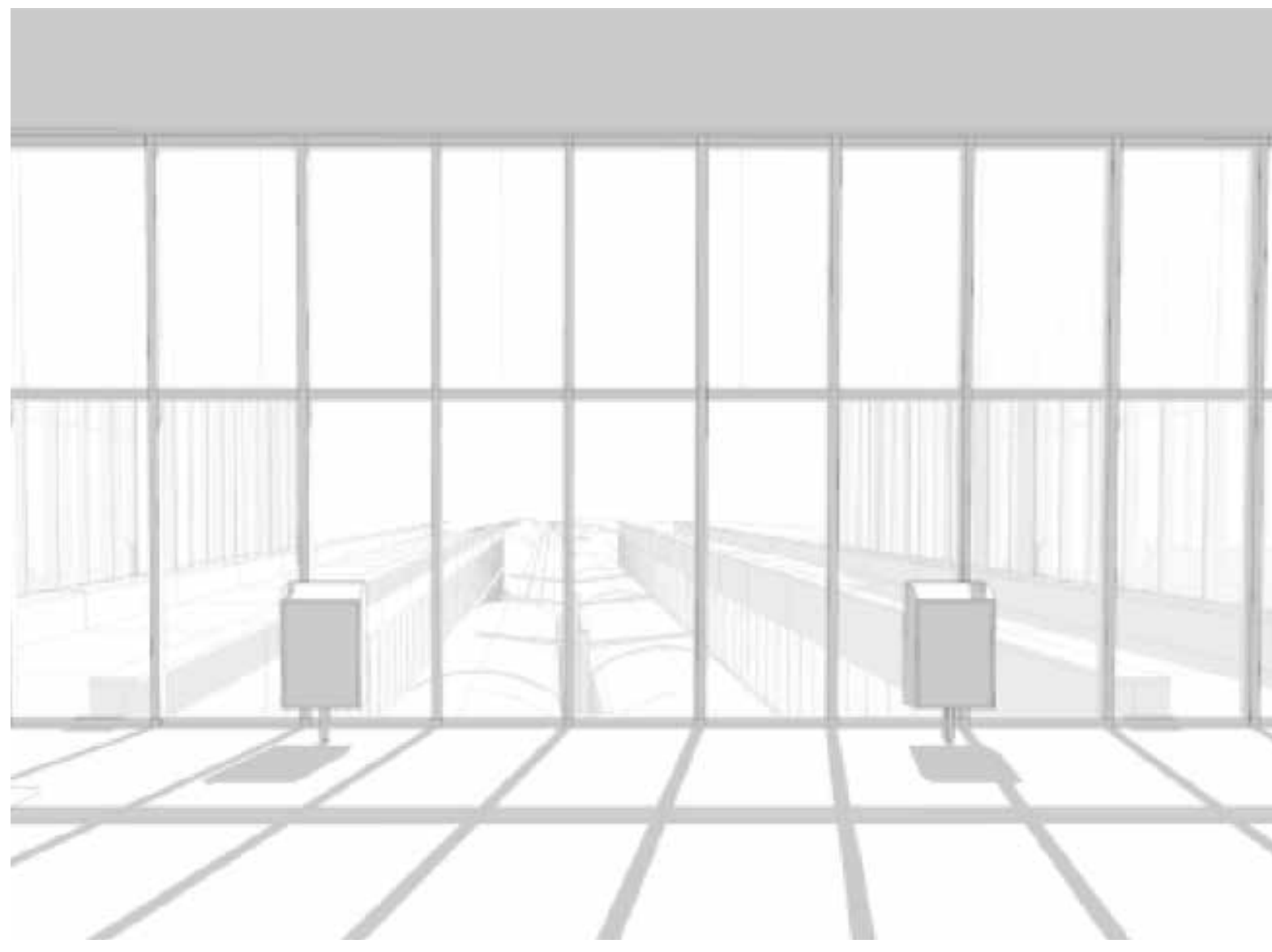
In order to let in as much natural light as possible and for increased safety, the stations are transparent (the concept of seeing and being seen). Fritted glass is used to filter the light.

Wood

Wood is used on station ceilings to provide warmth in the space. This material is used throughout the building and is an integral part of the architectural concept.

Movement
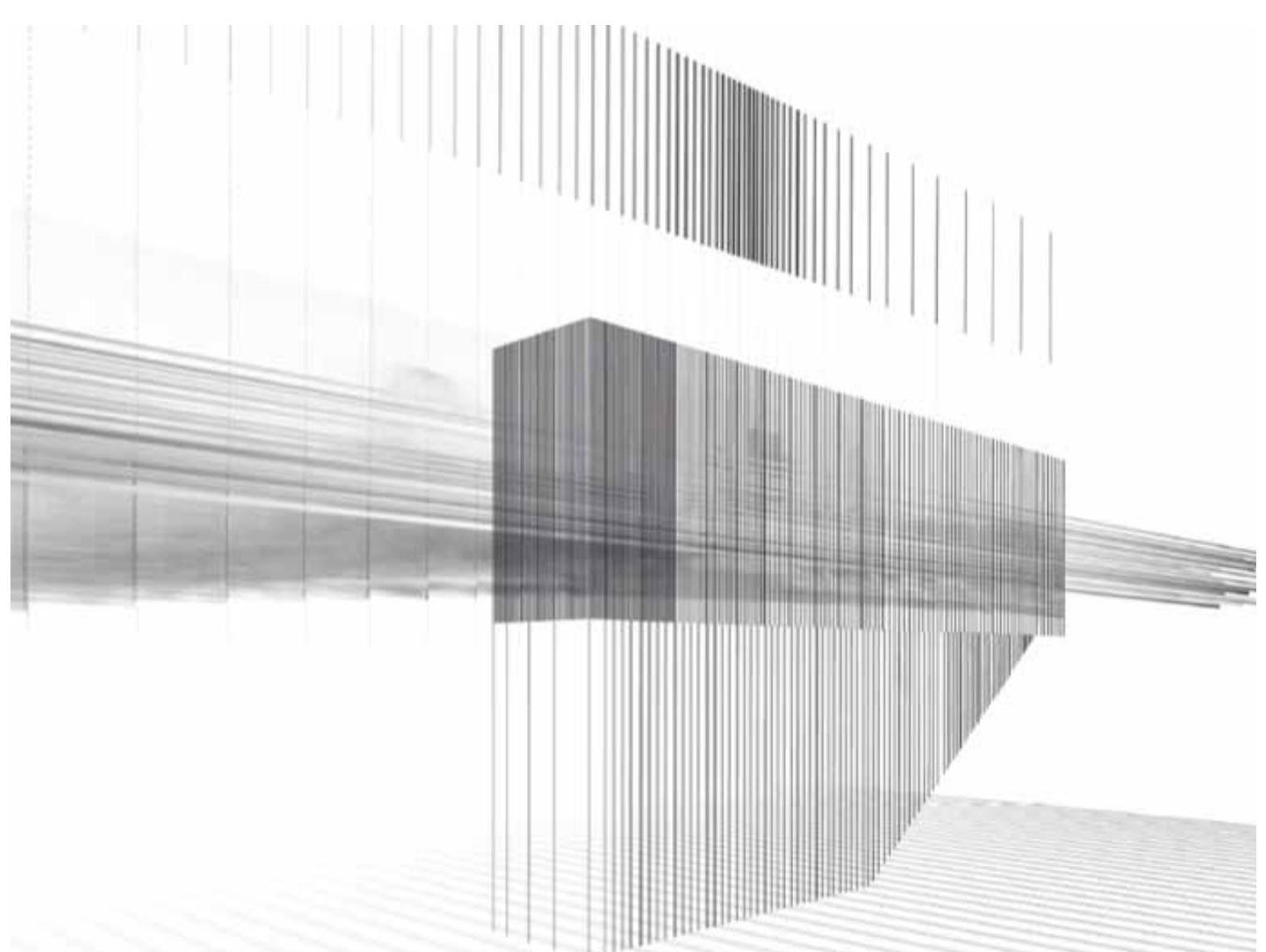
The expression of movement is a theme that is interpreted in a different way in each station. The use of horizontal and vertical lines serves to express movement in the stations.

Colour strategy

So as to represent the passenger's journey, each branch of the network may be identified by a particular colour that would be visible in the stations, furniture and vegetation.
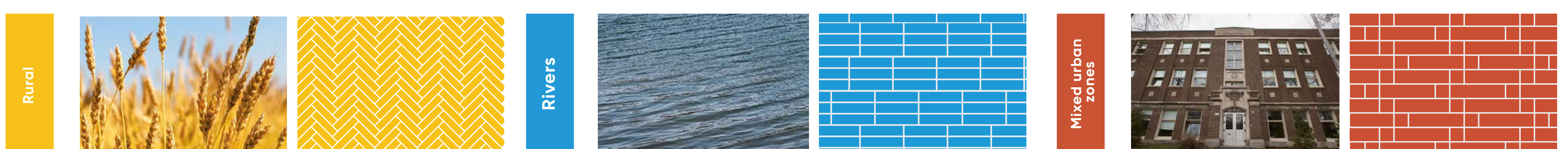
Coloured surfaces will be visible throughout the stations (tiles, for the most part)

Architecture

Signature stations

Vertical screens will be used to integrate the stations into their surroundings while highlighting their distinctive characteristics. This will facilitate:

1 The creation of a filter for the light

2 The creation of depth perception effects that align with the architectural language

3 The creation of movement that passengers can see while the train is in motion

4 Better integration of the stations into the neighourhoods

Deux-Montagnes
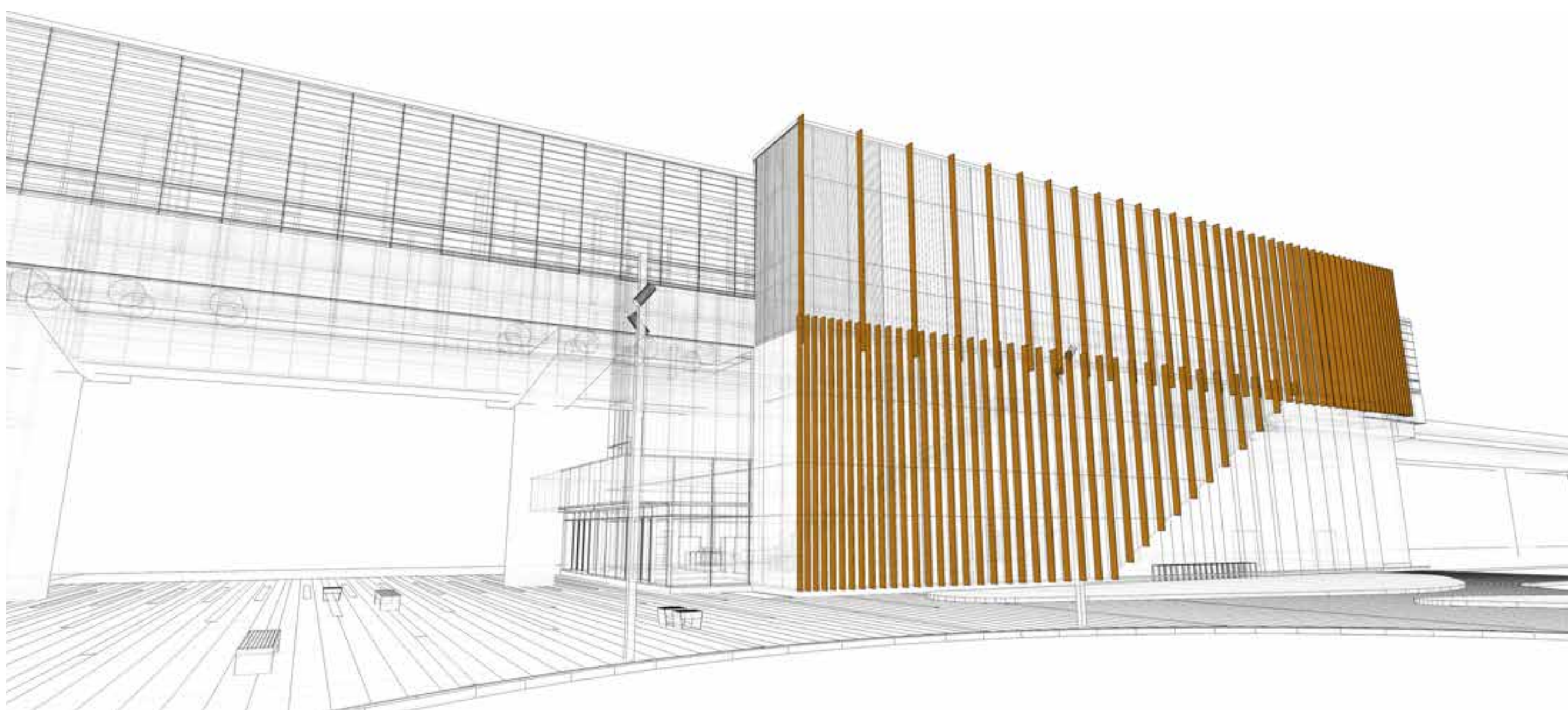
The station will be integrated through the addition of a screen of vertical slats that recall the wood inside the station and the surrounding natural landscape
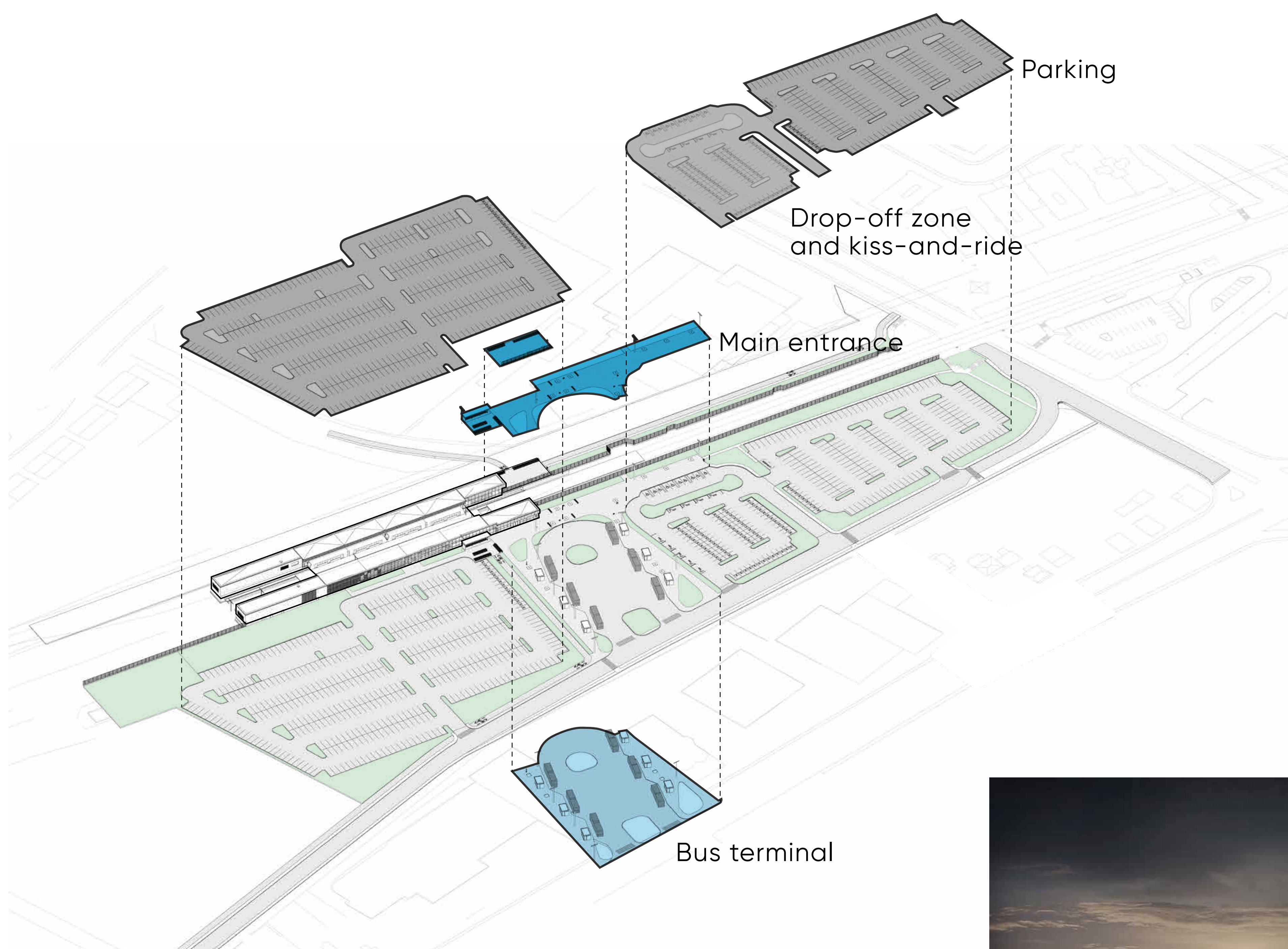
Île-des-Sœurs

In a nod to the transit corridor of the new Samuel-De Champlain Bridge, cables will be used to create a screen that is reminiscent of the bridge's cables

Onsite amenities and user routes

The onsite zones

Parking

Drop-off zone
and kiss-and-ride

Main entrance

Bus terminal

Across the entire network:

Bus platforms:
105 platforms

Parking:
± 9500 spaces

Bicycle racks:
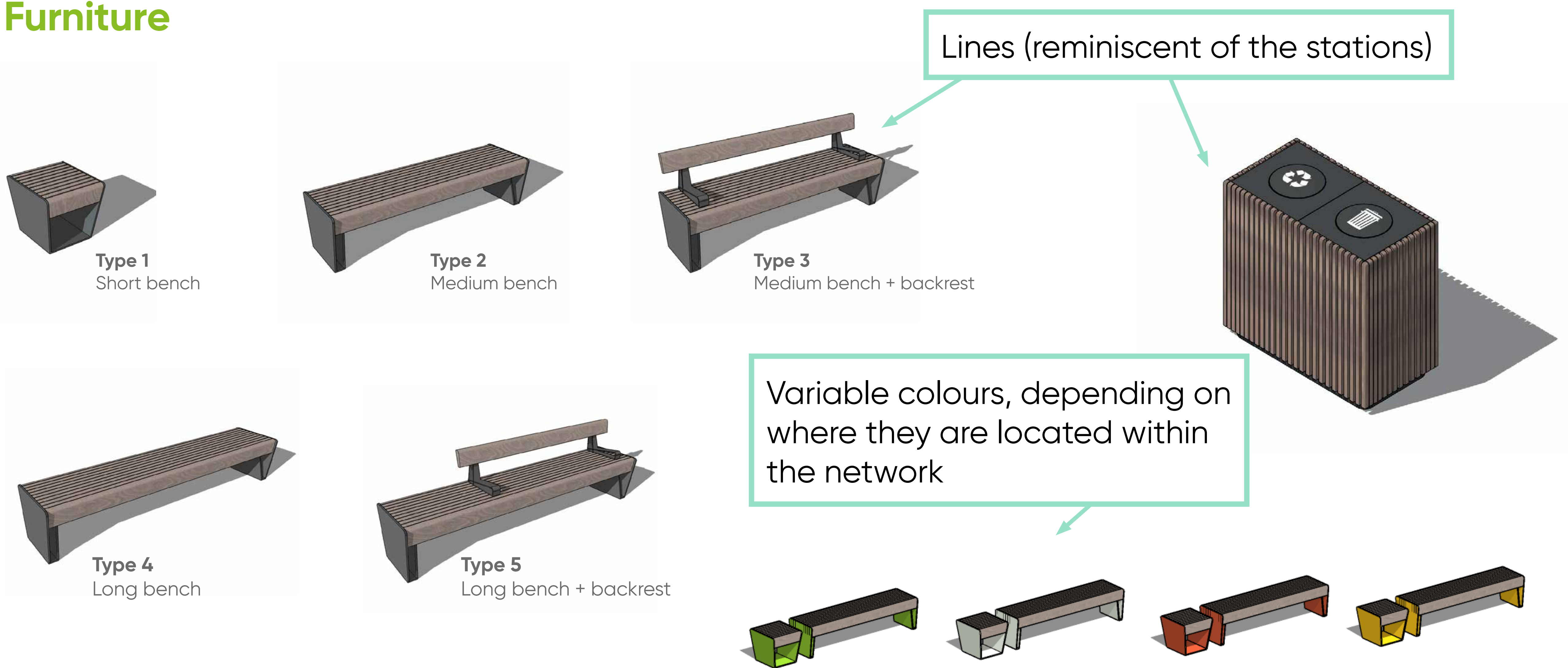± 1400 racks

User routes

Bicycle racks and bus shelters

Painted galvanized steel

Support 6 places

Bicycle rack (10 spaces)

Support 8 places

Wood

Frosted
glass panel

Painted galvanized
steel
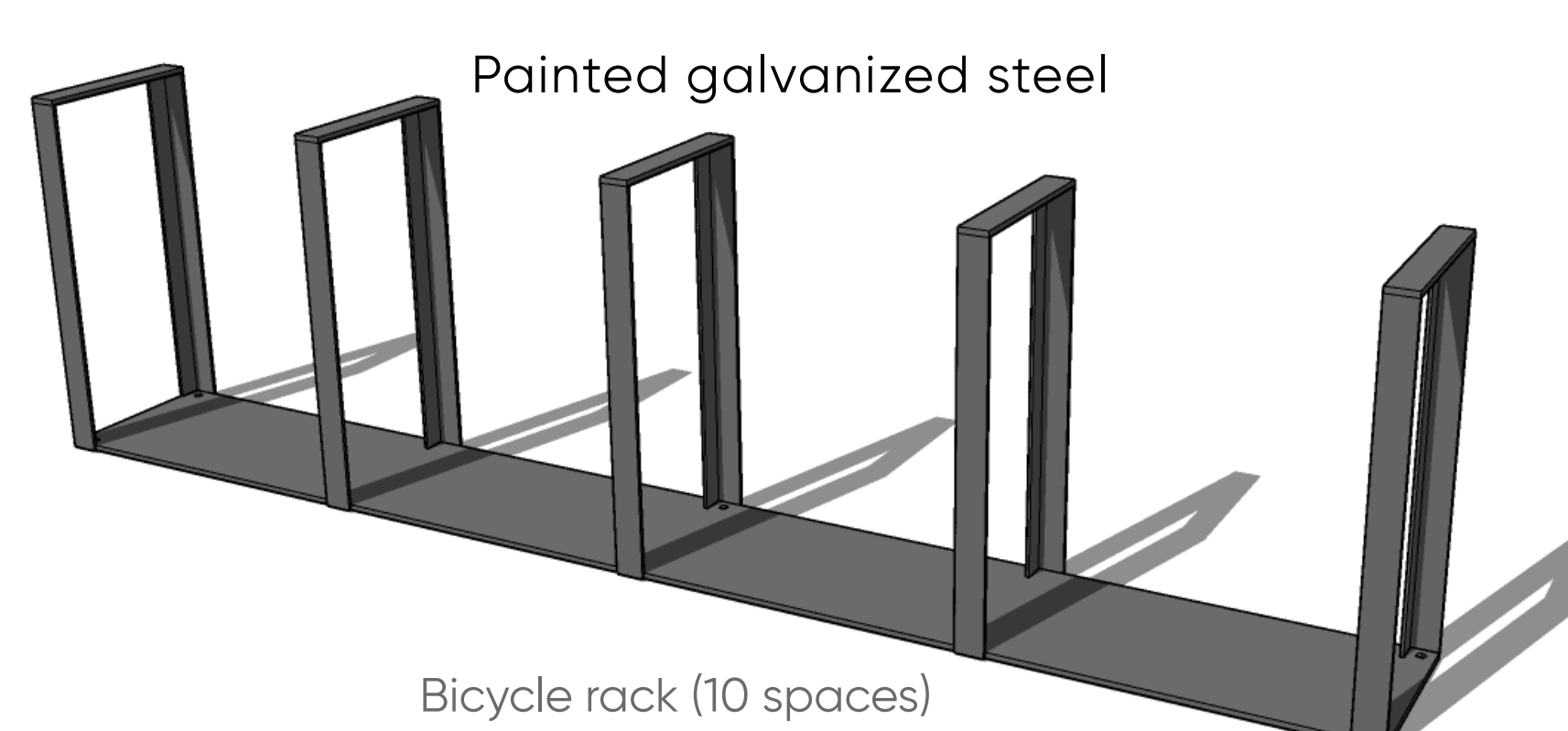
**The use of wood and
glass in the bus shelters
and bicycle rack zones
is reminiscent of the
station architecture**

Onsite amenities and user routes (cont'd)

Furniture

Type 1
Short bench

Type 2
Medium bench

Type 3
Medium bench + backrest

Type 4
Long bench

Type 5
Long bench + backrest

Lines (reminiscent of the stations)

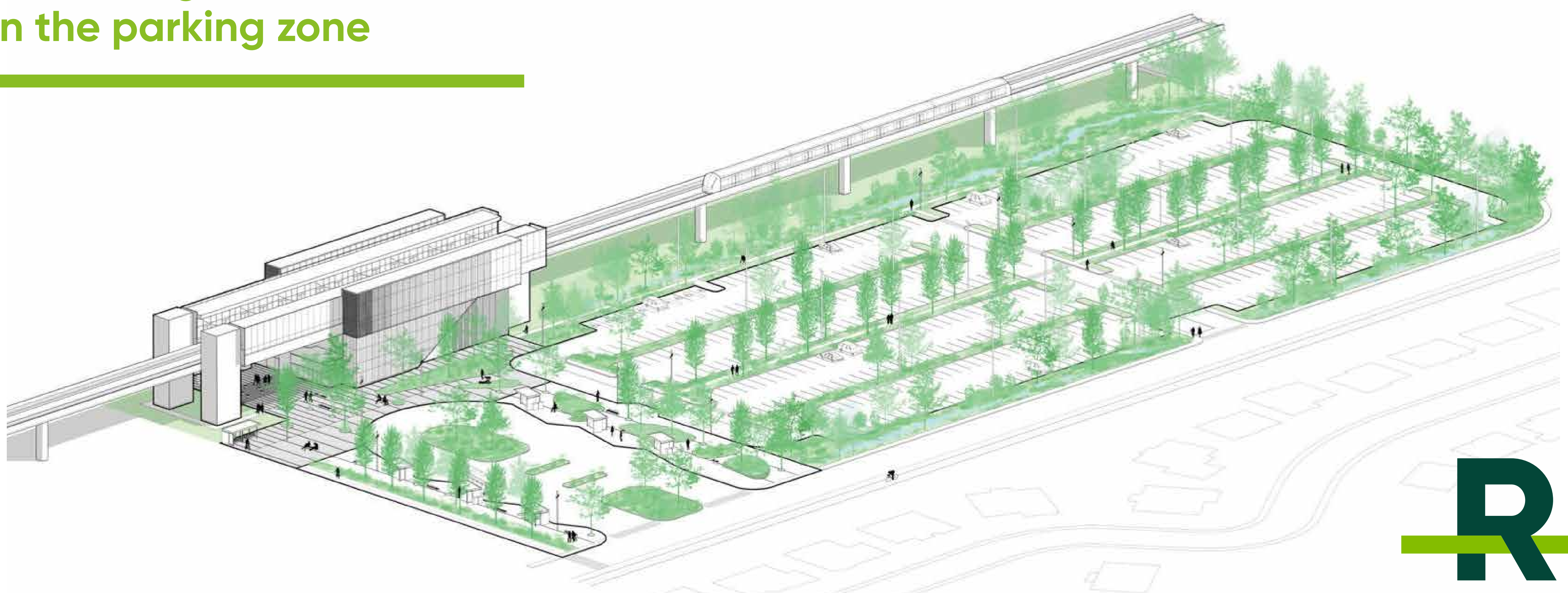Variable colours, depending on where they are located within the network

Vegetation

Vegetation of various colours and varieties will be planted on the station sites. The choice will be influenced by the colour strategy of the architectural charter
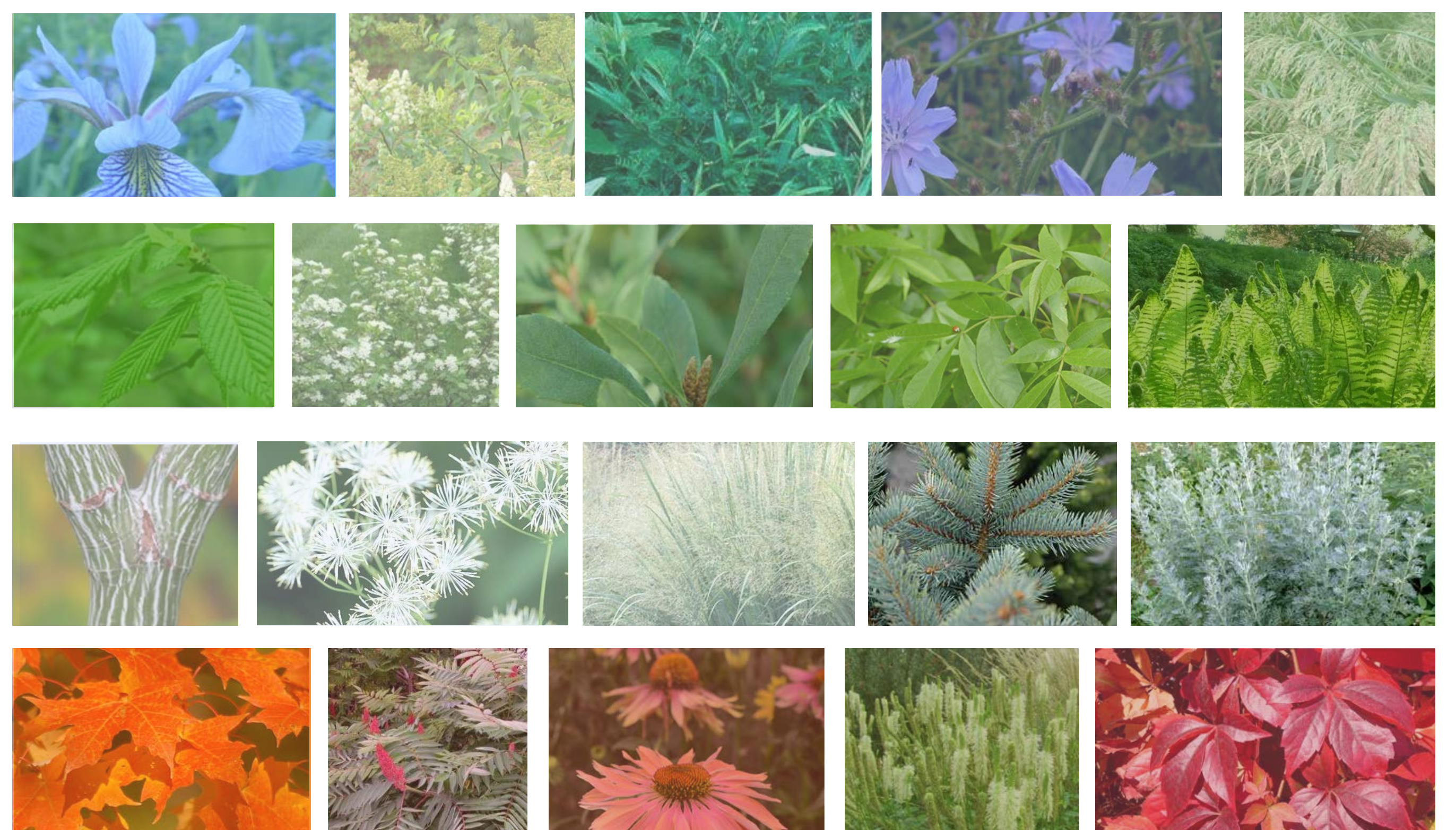
Placement of the vegetation:
– Main entrance
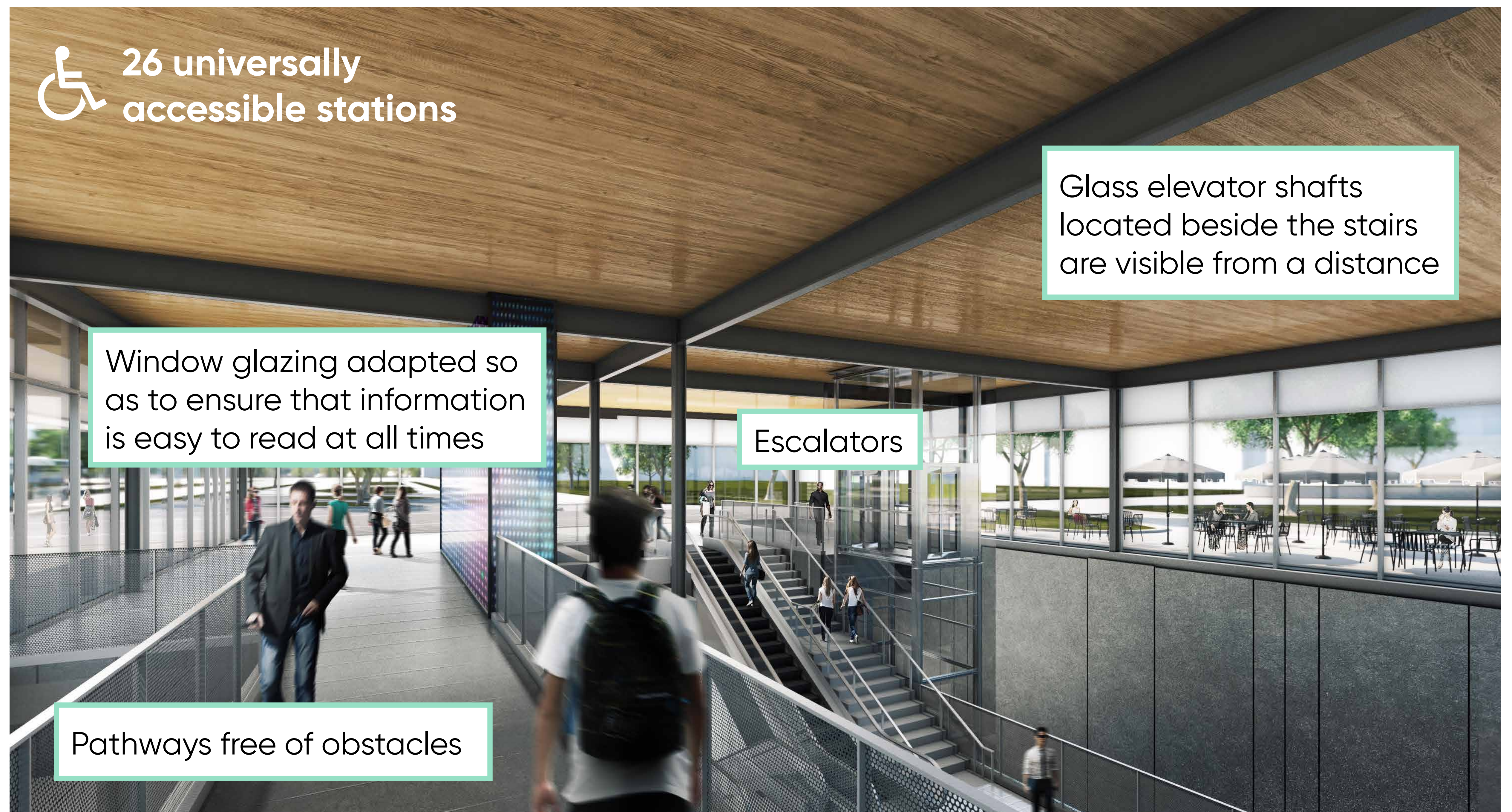– Between the site and the tracks
– Parking zone and pedestrian walkway
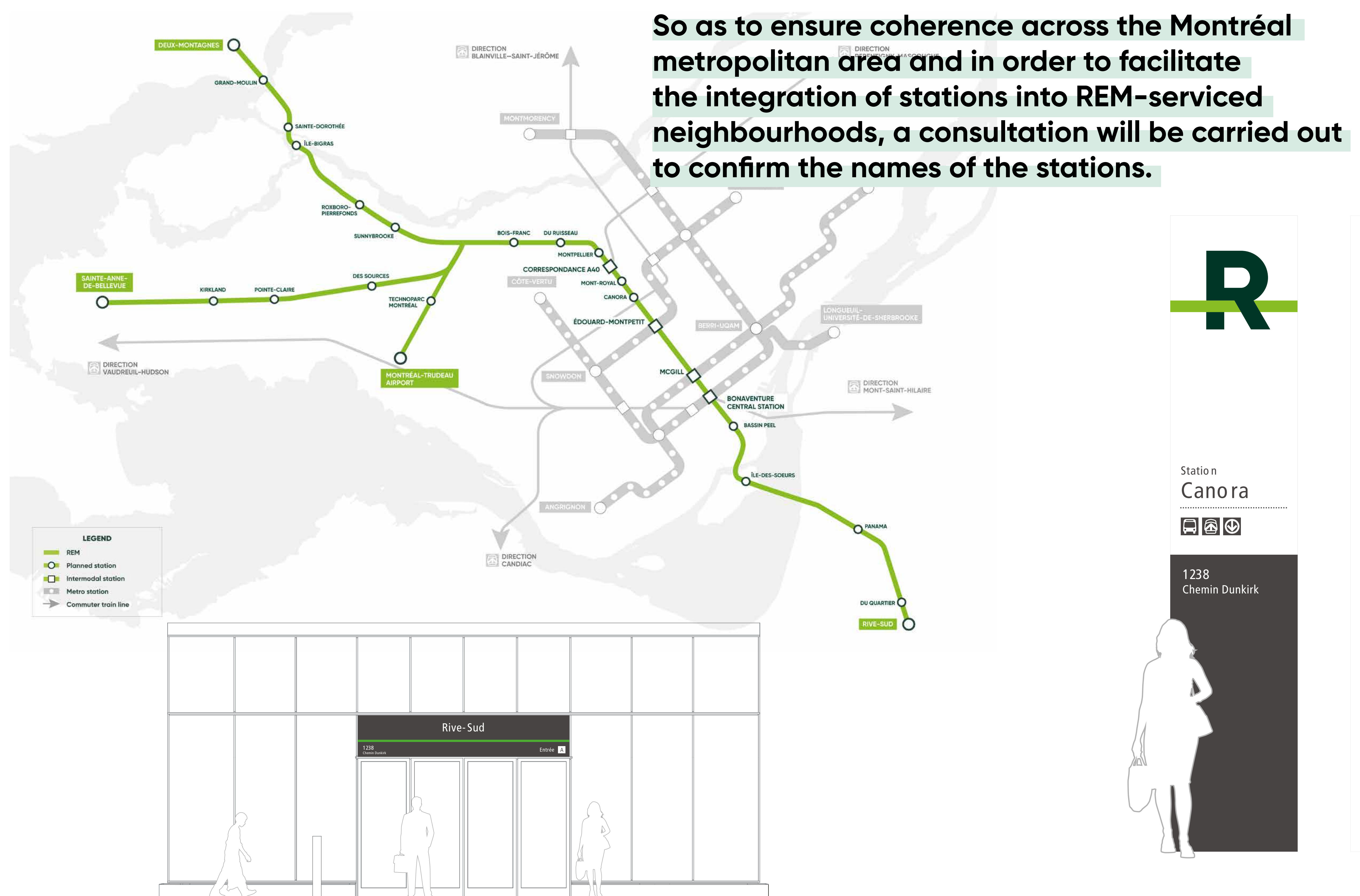
Minimizing heat islands in the parking zone

# Accessibility and passenger movement

Universal access

♿ **26 universally accessible stations**

Glass elevator shafts located beside the stairs are visible from a distance

Window glazing adapted so as to ensure that information is easy to read at all times

Escalators

Pathways free of obstacles

Toponyms and signage

So as to ensure coherence across the Montréal metropolitan area and in order to facilitate the integration of stations into REM-serviced neighbourhoods, a consultation will be carried out to confirm the names of the stations.

Consultation is underway with partners and citizens to ensure that REM signage is integrated into that of the metro, bus and commuter train networks

Station
Canora

1238
Chemin Dunkirk

Rive-Sud

Canora
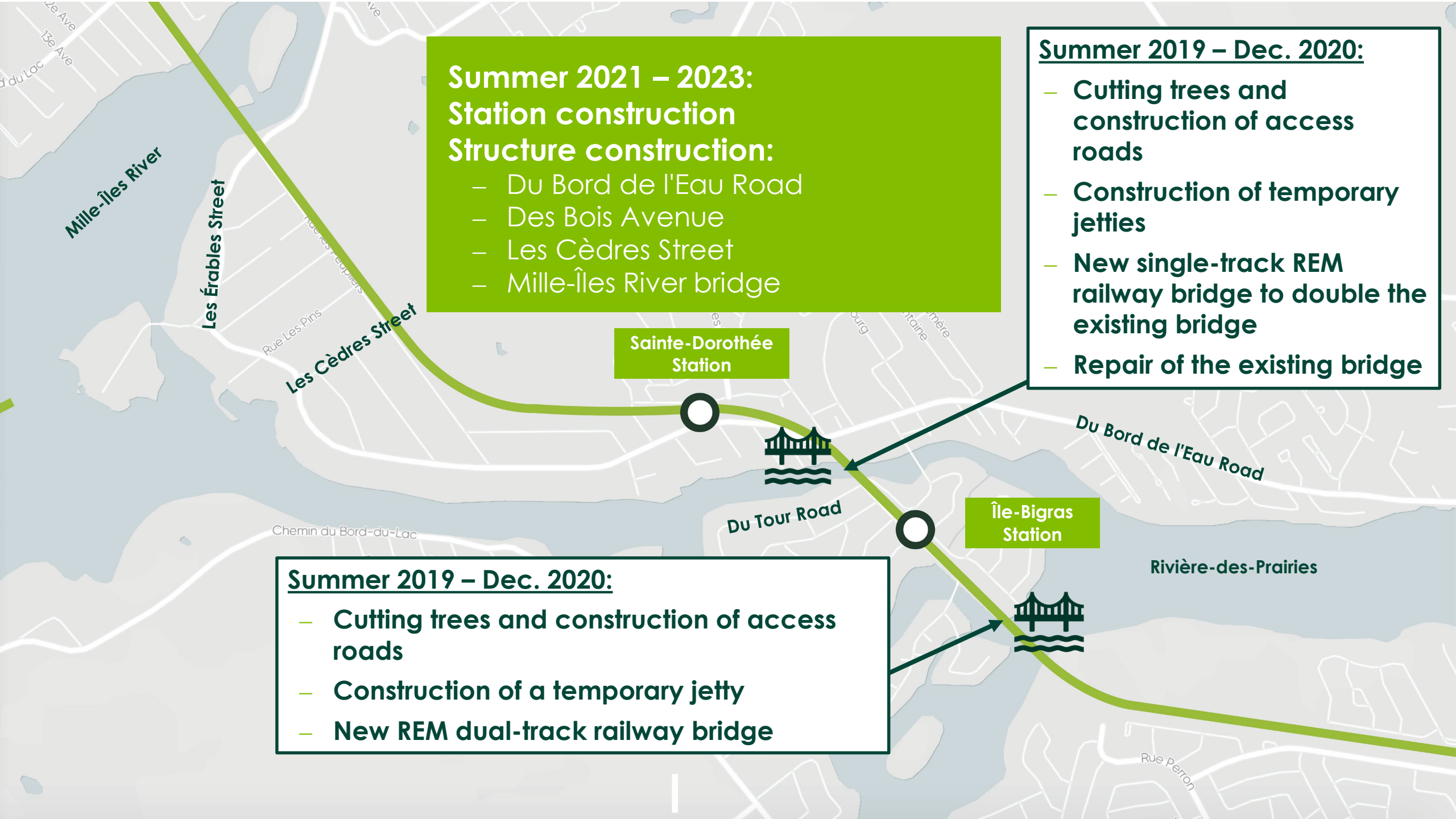
Summer 2021 – 2023:
Station construction
Structure construction:
- Du Bord de l'Eau Road
- Des Bois Avenue
- Les Cèdres Street
- Mille-Îles River bridge

Summer 2019 – Dec. 2020:
- **Cutting trees and construction of access roads**
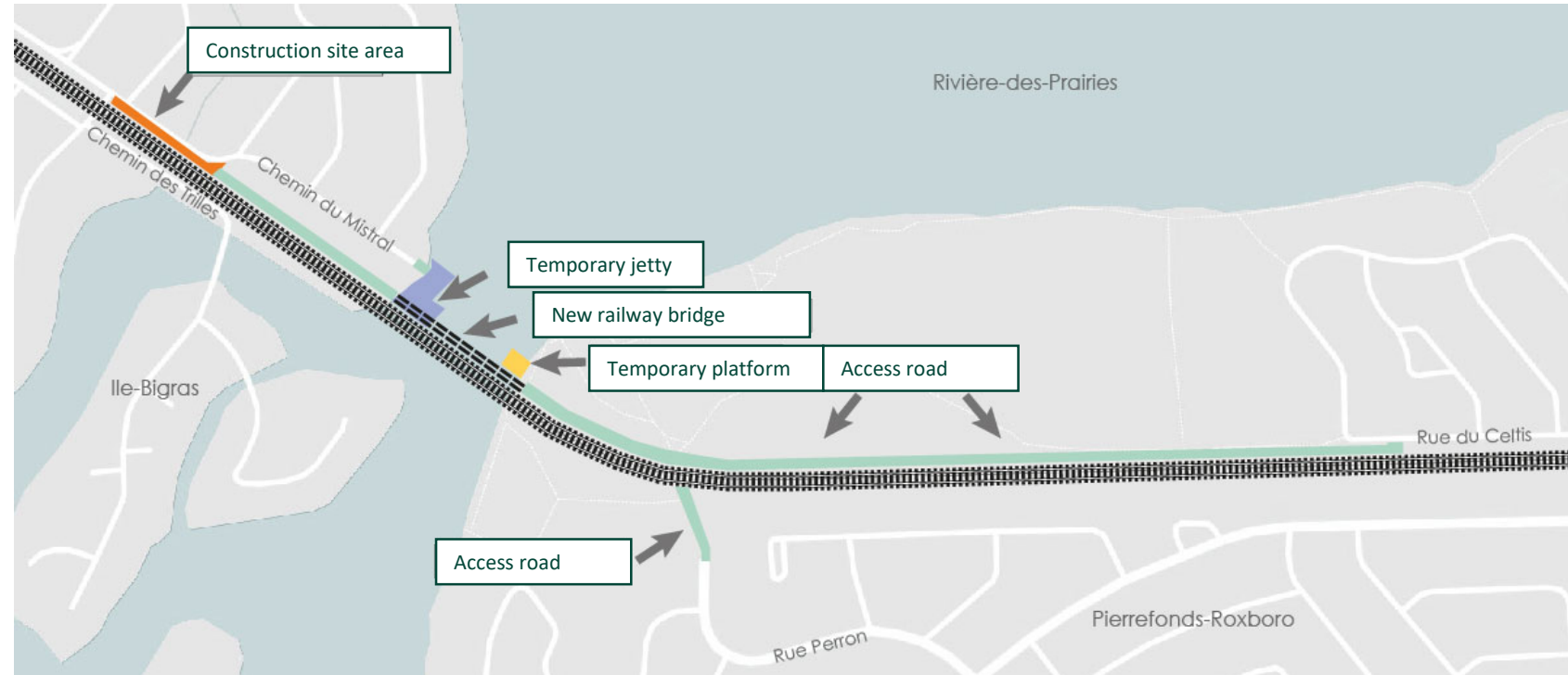- **Construction of temporary jetties**
- **New single-track REM railway bridge to double the existing bridge**
- **Repair of the existing bridge**

Summer 2019 – Dec. 2020:
- **Cutting trees and construction of access roads**
- **Construction of a temporary jetty**
- **New REM dual-track railway bridge**

Mille-Îles River

Les Érables Street

Les Cèdres Street

Rue Les Pins

Sainte-Dorothée Station

Du Bord de l'Eau Road

Du Tour Road

Chemin du Bord-du-Lac

Île-Bigras Station

Rivière-des-Prairies

Rue Perron

Rivière-des-Prairies

Montréal-Île Bigras sector

Work scheduled to begin in July 2019

- **New, dual-track REM railway bridge,** adjacent to the existing bridge between Montréal and Ile-Bigras

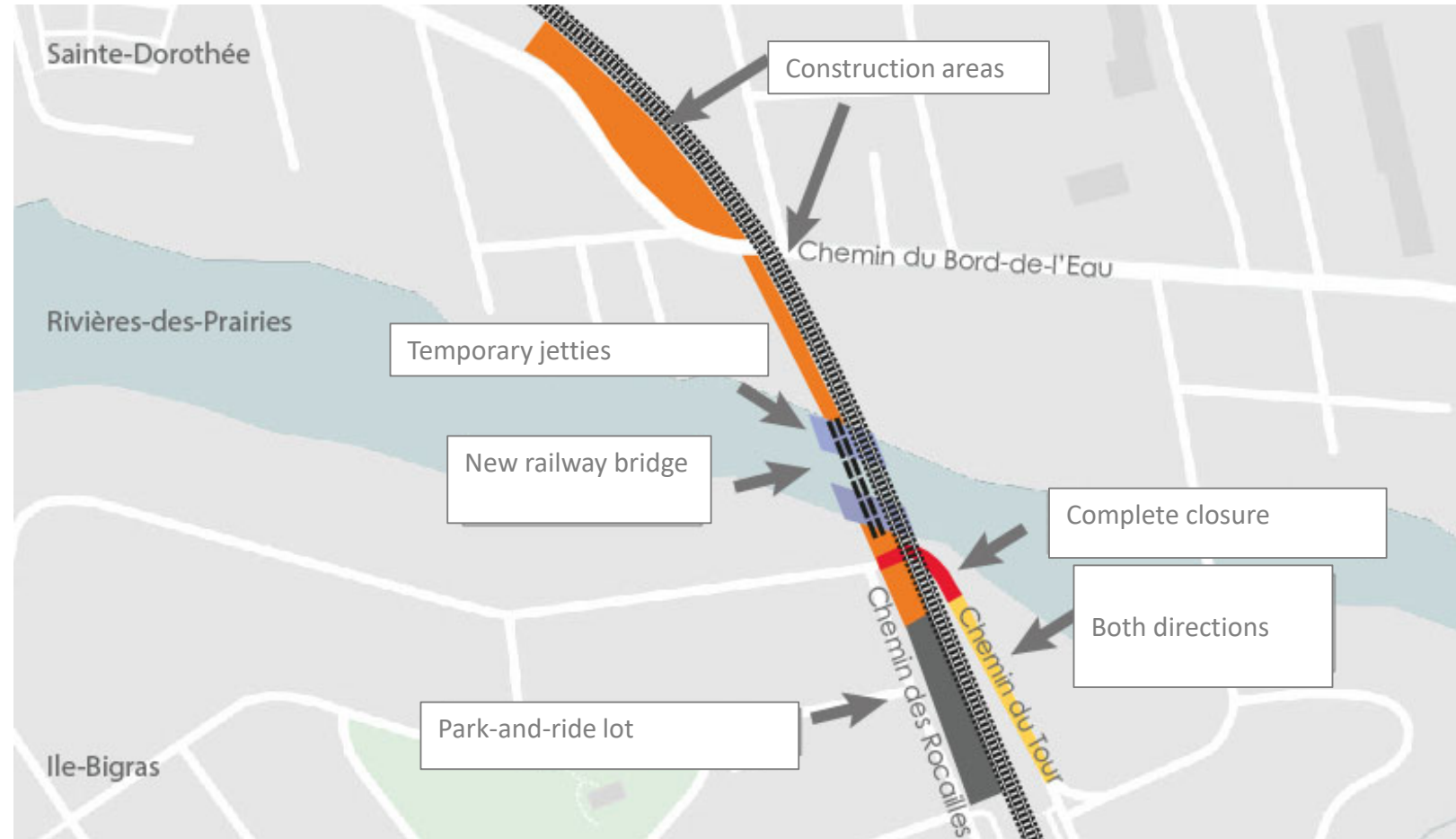- **Preparatory work** on the north and south sides of the Rivière-des-Prairies bridge

Rivière-des-Prairies

Île Bigras – Sainte-Dorothée sector

Work scheduled for summer 2019 to December 2020

- **Construction of a new single-track REM railway bridge** to double the existing bridge

- Repair of the existing bridge

- Park-and-ride lot will be maintained

The REM: quieter technology

Current exo trains – 300 metres

2 cars during off-peak hours — 40 metres — 14 hours/day

4 cars during off-peak hours — 80 metres — 6 hours/day

REM cars

— Weight: 180 tons

— No train whistles at station arrival

— No grade crossing alarms

— Electric brakes

— Welded rails with rubber pads across the entire network

LAVAL

exo

STL

MONTRÉAL

SAINT-EUSTACHE

DEUX-MONTAGNES

GRAND-MOULIN

SAINTE-DOROTHÉE

ÎLE-BIGRAS

ROXBORO-PIERREFONDS

SUNNYBROOKE

Dollard-des-Ormeaux

BOIS-FRANC

DU RUISSEAU

R

MONTPELLIER

MONT-ROYAL

CÔTE-VERTU

Mont-Royal

148
640
344
15
440
148
13
117
19
40
520
640

Legend:
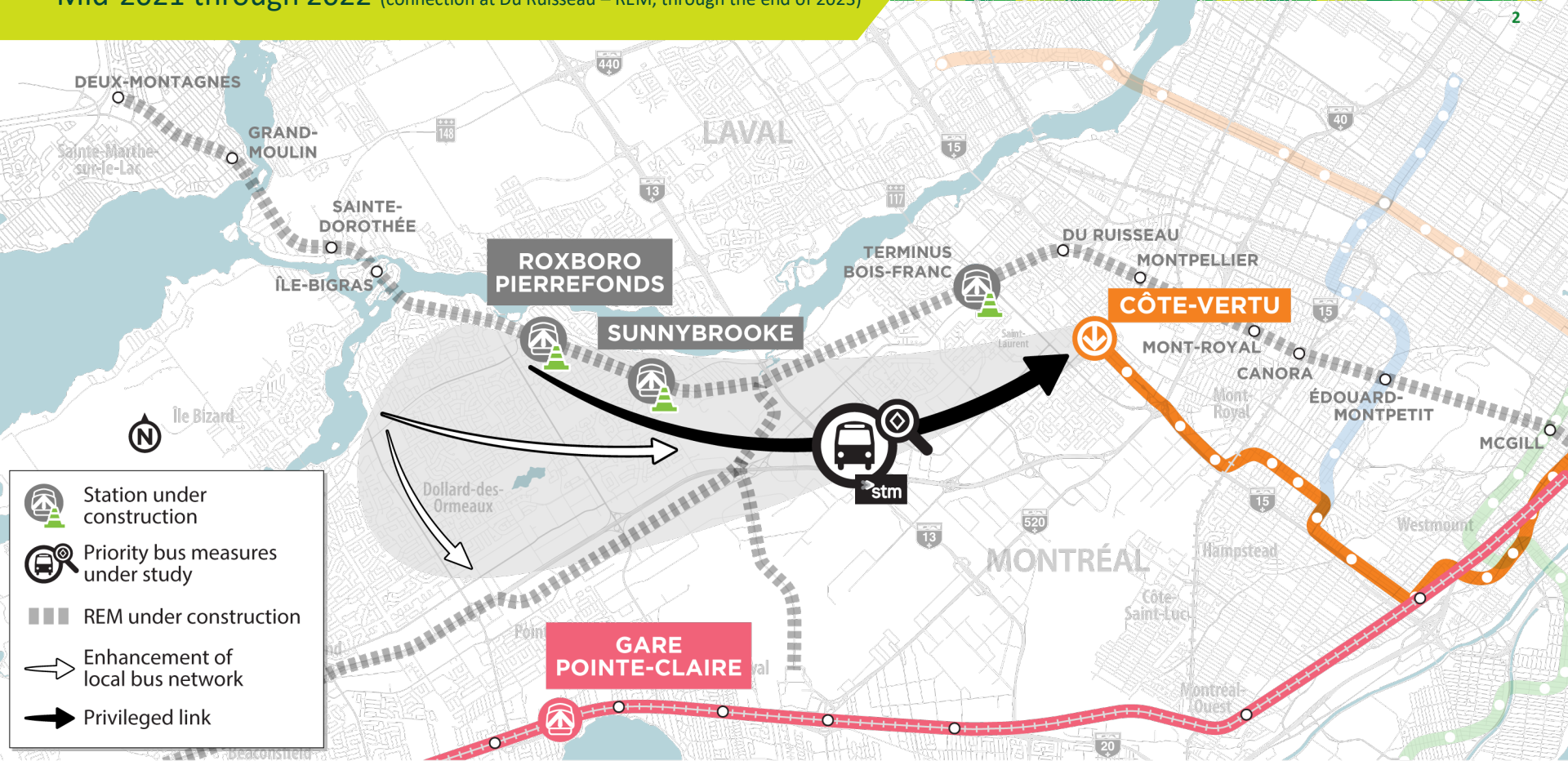
- Station under construction
- Priority bus measures
- Future REM route
- REM under construction
- Bus shuttle route in 2021
- Bus shuttle route in 2022