Information meeting on noise from passing REM cars in Griffintown – Highlights and answers to questions Highlights and answers to questions

Date and time: September 27, 2023, 6:30 to 8:00 p.m

Location (hybrid):   Plaza Centre-Ville, 777 boulevard Robert-Bourassa
Online, via the icastPro platform

Meeting highlights

- More than 220 participants in person and online
- 4 speakers present:
    - Mario Beausoleil, Chief Operating Officer, CDPQ Infra
    - Elizabeth Boivin, Director of Environment, CDPQ Infra
    - Isabelle Lachance, Chief Community Relations Officer, CDPQ Infra
    - Pierre Guillot-Hurtubise, Facilitator

Meeting agenda:
- Introduction of REM team
- Question period: answering participants' questions in person and online

Contents of the presentation:
- Background
- Noise measurement campaign results
- Diagnosis: sources of noise
- Identified mitigation measures
- Timetable and next steps

Main topics addressed during the question period:
- Disturbance caused by noise from REM cars

- Questions about the diagnosis and choice of mitigation measures (including the potential addition of noise barriers)
- Clarifications on the effectiveness of identified measures (e.g., longevity, winter conditions)
- Concerns about the timetable for installing absorbers on the section between Central Station and De la Commune bridge

The recording of the meeting and the documentation presented at the meeting are available at the following link: https://rem.info/en/events/information-meeting-griffintown-sector

Back to main topics

Installation of dynamic absorbers on the section between Central Station and De la Commune bridge

We are looking to install dynamic absorbers between the De la Commune bridge and Central Station, in addition to the acoustic grinding to be carried out in November. The structure is different at this point on the South Viaduct, and further analysis is underway due to the technical complexity. The timetable will be confirmed as soon as possible.

Addition of noise barriers

Given the configuration of residences (high condominium towers) in relation to the structure in many of the areas reporting complaints, the installation of noise barriers offers little in the way of significant acoustic gains. In light of our diagnosis and the advice of our international railway acoustics experts , the addition of measures directly at source – acoustic grinding and dynamic absorbers – is the best solution for reducing noise for everyone.

With the implementation of mitigation measures, which are currently being rolled out, we are aiming to reduce noise by 5 to 10 dB at the source. Noise monitoring will be carried out at the source, as close as possible to the tracks. The results will be made public.

Noise impact of cars and data presentation

REM is subject to the regulatory framework set by the Quebec government, namely the *Policy on Road Noise*. The data collected by the sound level meters at local residents' buildings have been presented according to this framework, based on a 24-hour period.

For data on the passage of REM cars, please refer to Appendix 5 of the technical report: https://rem.info/sites/default/files/document/pdf/2023-10-26_Rapportprincipal_Bruit_octobre-annexes.pdf

Written answers

Our team answered all questions asked at the meeting, both in person and online.

Presentation begins: 6:30 p.m.

If you have any questions about the project, visit rem.info/en

Image: JF Savaria

Noise from passing cars

Analysis and measures selected for the Griffintown area

September 27, 2023

Réseau express métropolitain

Image: JF Savaria

Agenda

- Background
- Noise measurement campaign results
- Diagnosis: sources of noise
- Identified measures
- Timetable and next steps
- Question period

Background

A regulatory framework in place

Noise from the REM within a framework set
by governmental authorities

Project decree requirements:

Creation of detailed
sound modelling

Implementation of
measures at source and
mitigation measures for
significant impacts

Follow-up program
during operation
beginning in the first year
→ deployed at the start
of testing

A response to exchanges with citizens

1. Implementing noise measurement campaigns and data analysis

   - Seven sound level meters installed between Île-des-Sœurs and Griffintown

   - Additional campaign directly on the tracks

2. Hiring of acousticians from SYSTRA, specialized in railway acoustics and having worked on several networks around the world, to carry out a diagnosis

---

Mandate: identify targeted measures, sector by sector, to reduce noise for all

Noise measurement campaign results in your sector

Summary

Three sound level meters deployed in Griffintown, near the tracks

📍 1085 Smith Street, 11th floor

📍 1330 Olier Street, ground floor and roof (10th floor)

📍 100 Du Séminaire Street, 3rd floor

— REM roue

Île-des-**Sœurs** station
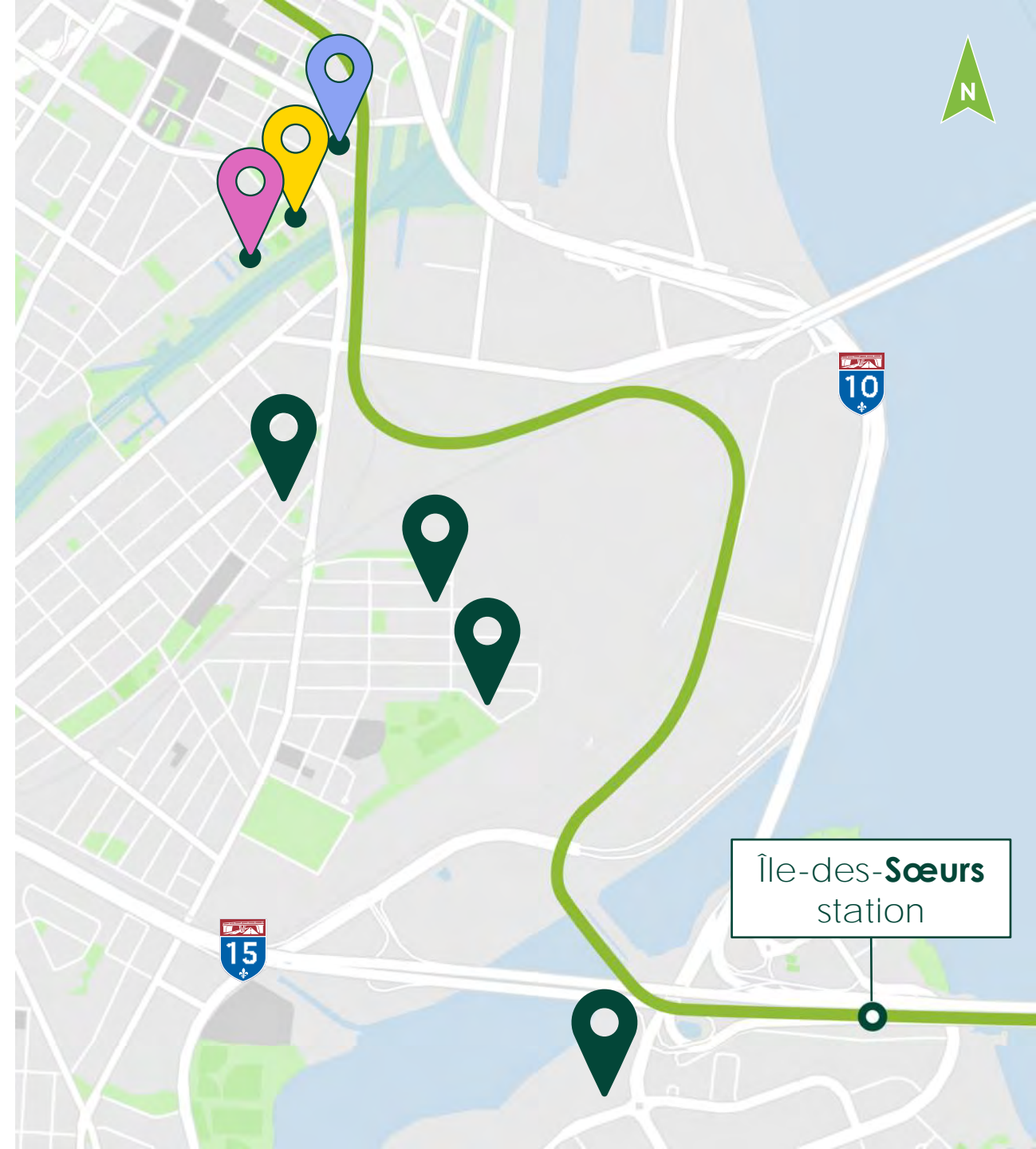
Methodology:

data collected over several weeks to obtain representative data

Results:
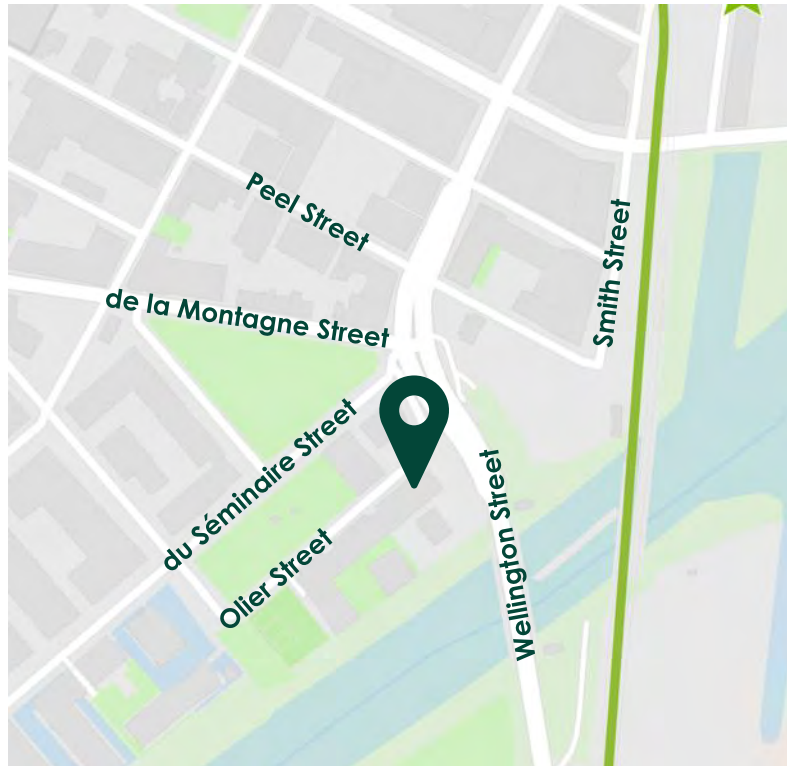
sound modelling data higher than expected in some areas

Approach:

act on the entire section, given the integrated nature of the structure and the proximity of the neighbourhoods

Olier Street (ground floor)

Summary of 2023 results

Ambient noise

55/56

dBA, Leq(A)24h

Ambient noise with the REM

60/61

dBA, Leq(A)24h

Séminaire Street (3rd floor)

Summary of 2023 results
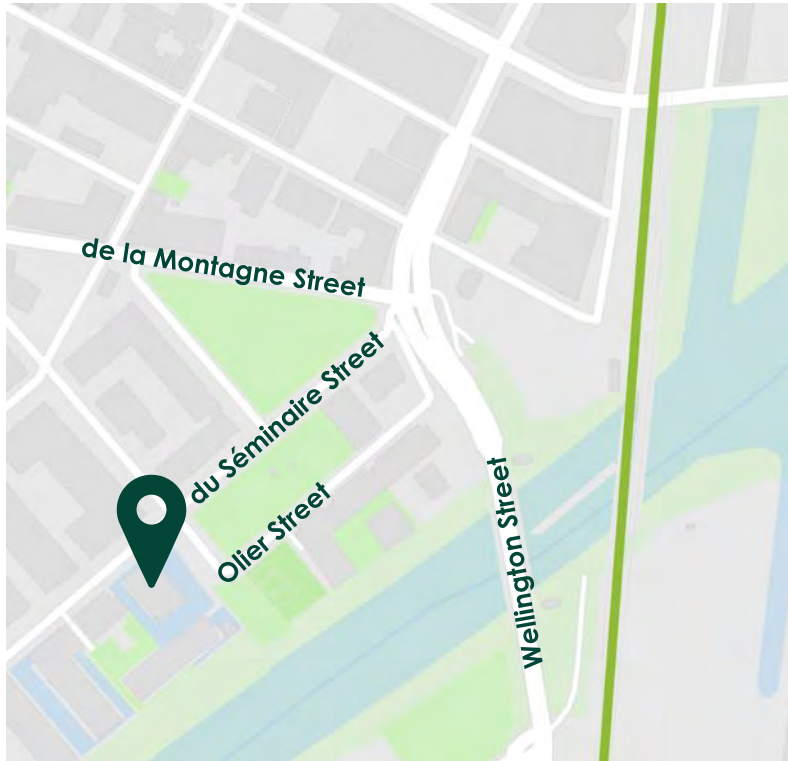
Ambient noise

56/57

dBA, Leq(A)24h

Ambient noise
with the REM

59

dBA, Leq(A)24h

Diagnosis:
sources of noise

Acoustic characterization tests

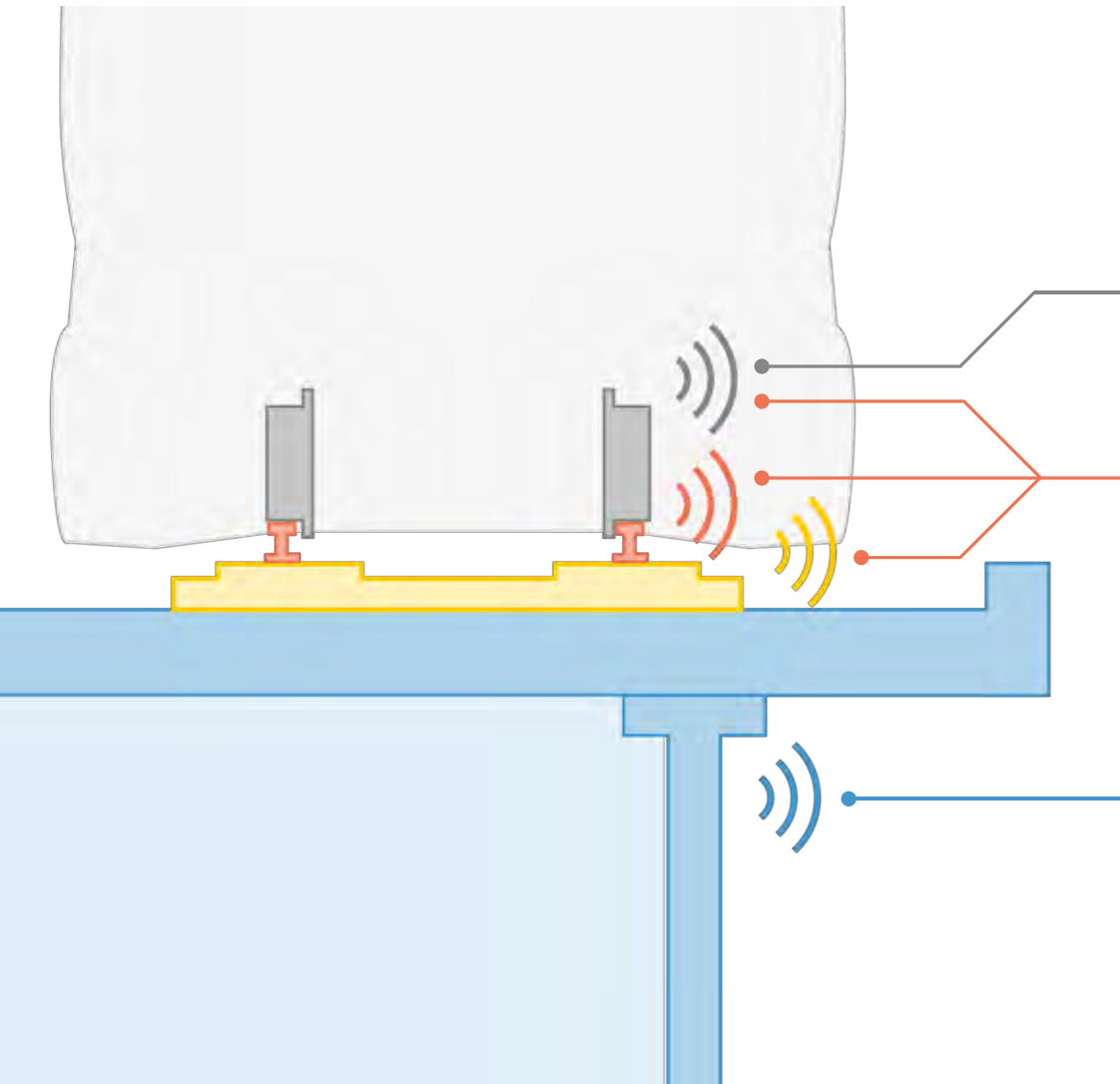Additional measurements taken directly on the tracks to evaluate:

- Noise level (at 7.5 metres)
- Track decay rate
  (rail behaviour)
- Rail roughness (condition of rail surface)
- Vibrations transmitted to the structure

Objective: understand sources of noise to target the most effective measures
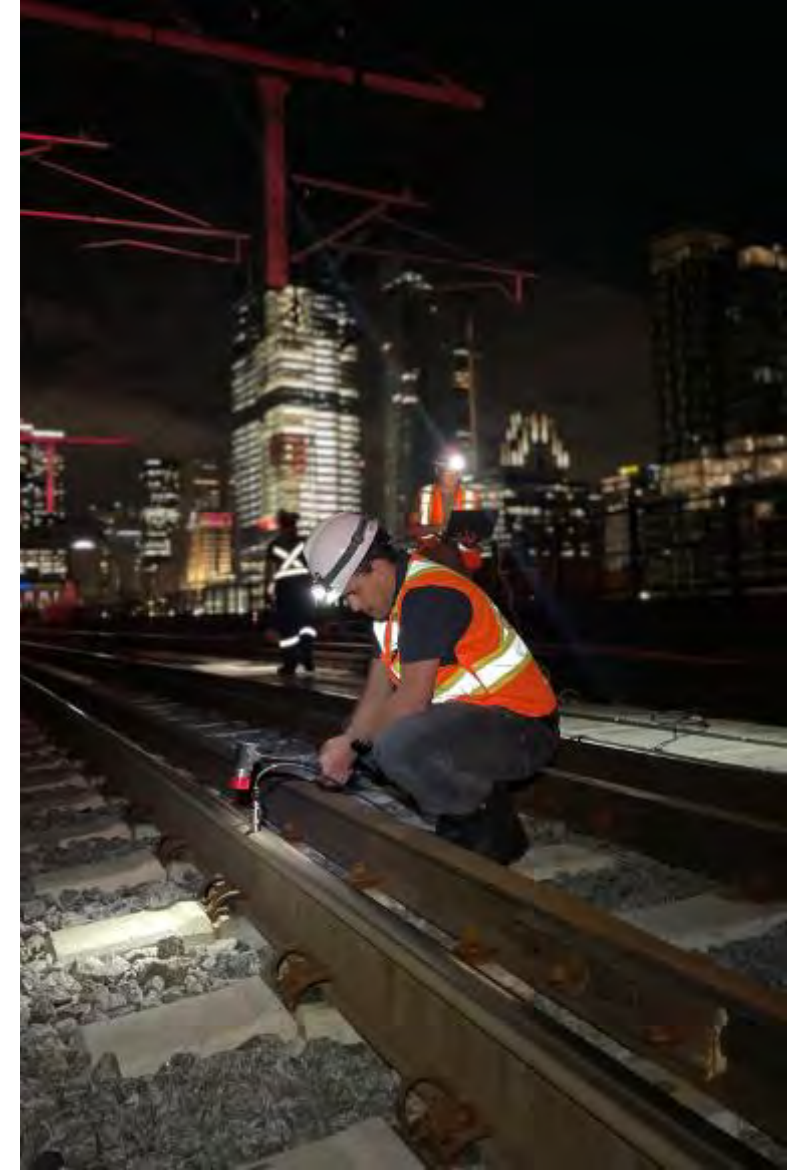
Noise generation mechanisms - Light rail systems
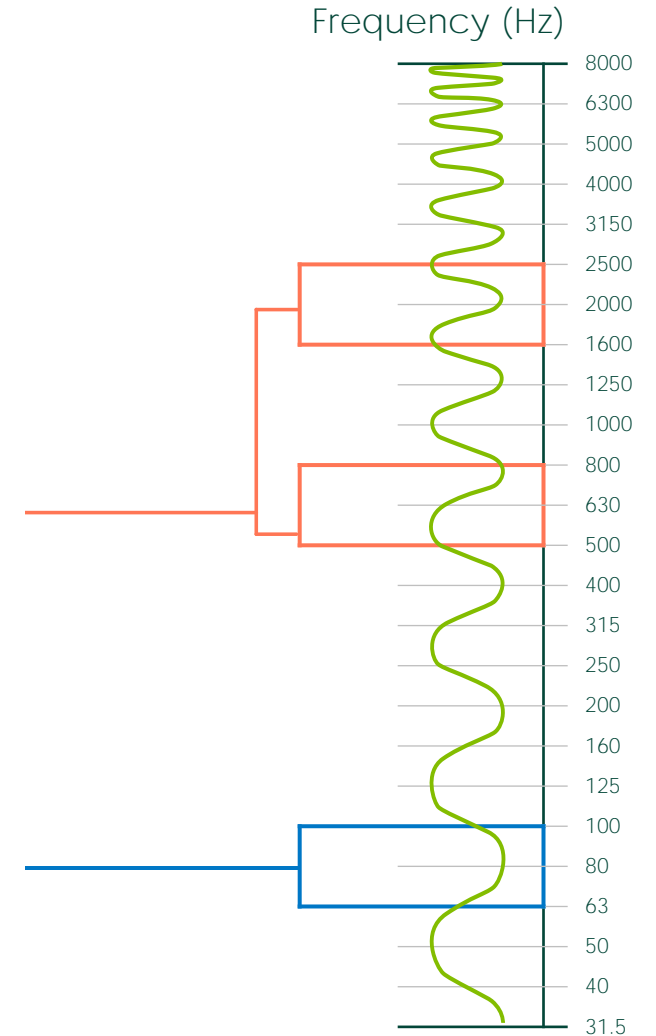
Identified mitigation measures

Identified mitigation measures

The most effective method of noise reduction for all residents:

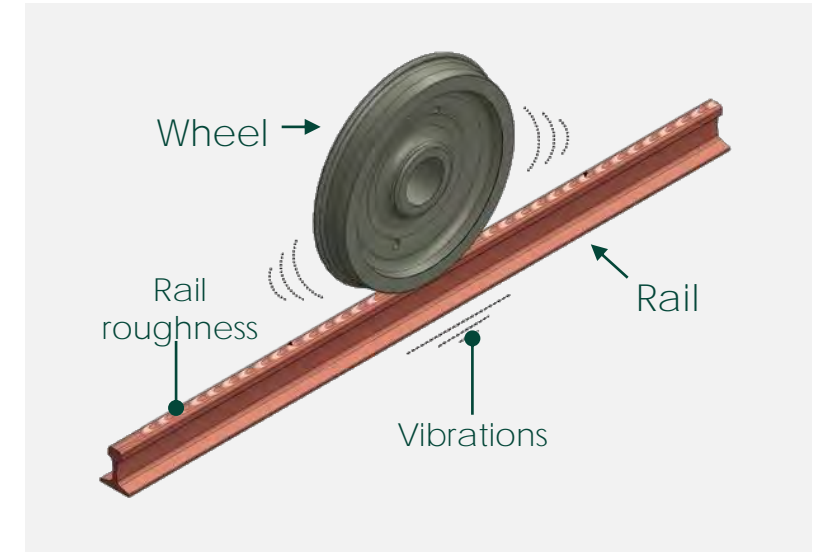at source, targeted to the type of noise

1. Acoustic grinding
to reduce rail roughness

– Rumbling noise
– Rolling noise

Wheel

Rail roughness

Rail

Vibrations

2. Dynamic absorbers
to reduce rail radiation
(propagation of vibrations)

– Rolling noise

PCORP UIC54 2018

Noise barriers

Physical barrier that reduces noise propagation, possible at engineering level but:

- Few or no significant gains expected for all residents, given the type of built environment (density and height)

- Limited effectiveness for high-rise buildings (rolling noise) and for attenuating rumble noise
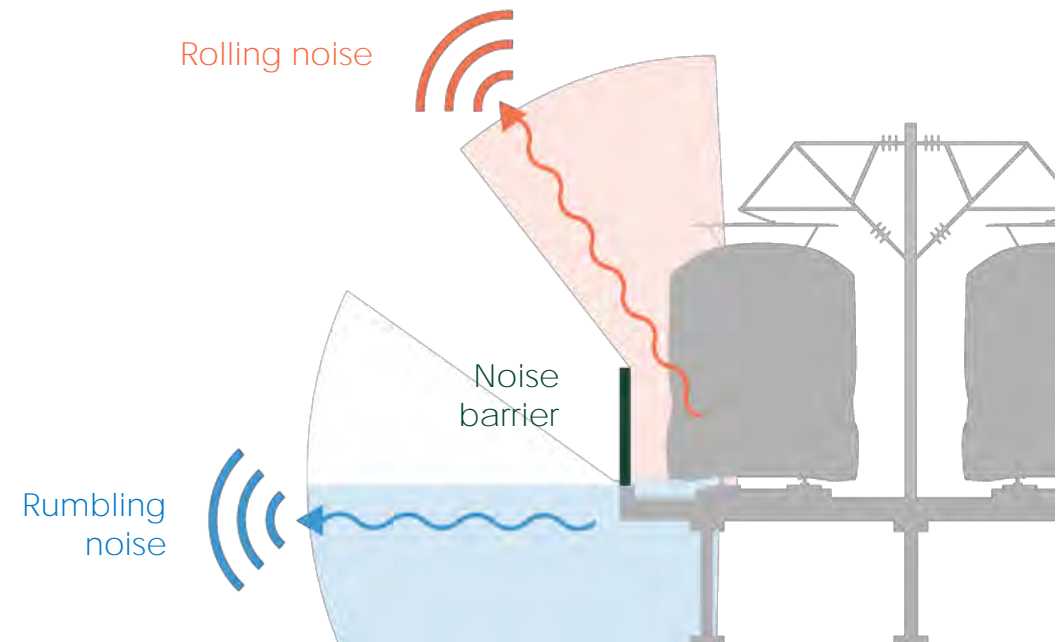
Objective: reduce noise at source to benefit all residents

Rolling noise

Noise barrier

Rumbling noise

Identified mitigation measures

Target reduction of 5 to 10 dB at passage, at the source
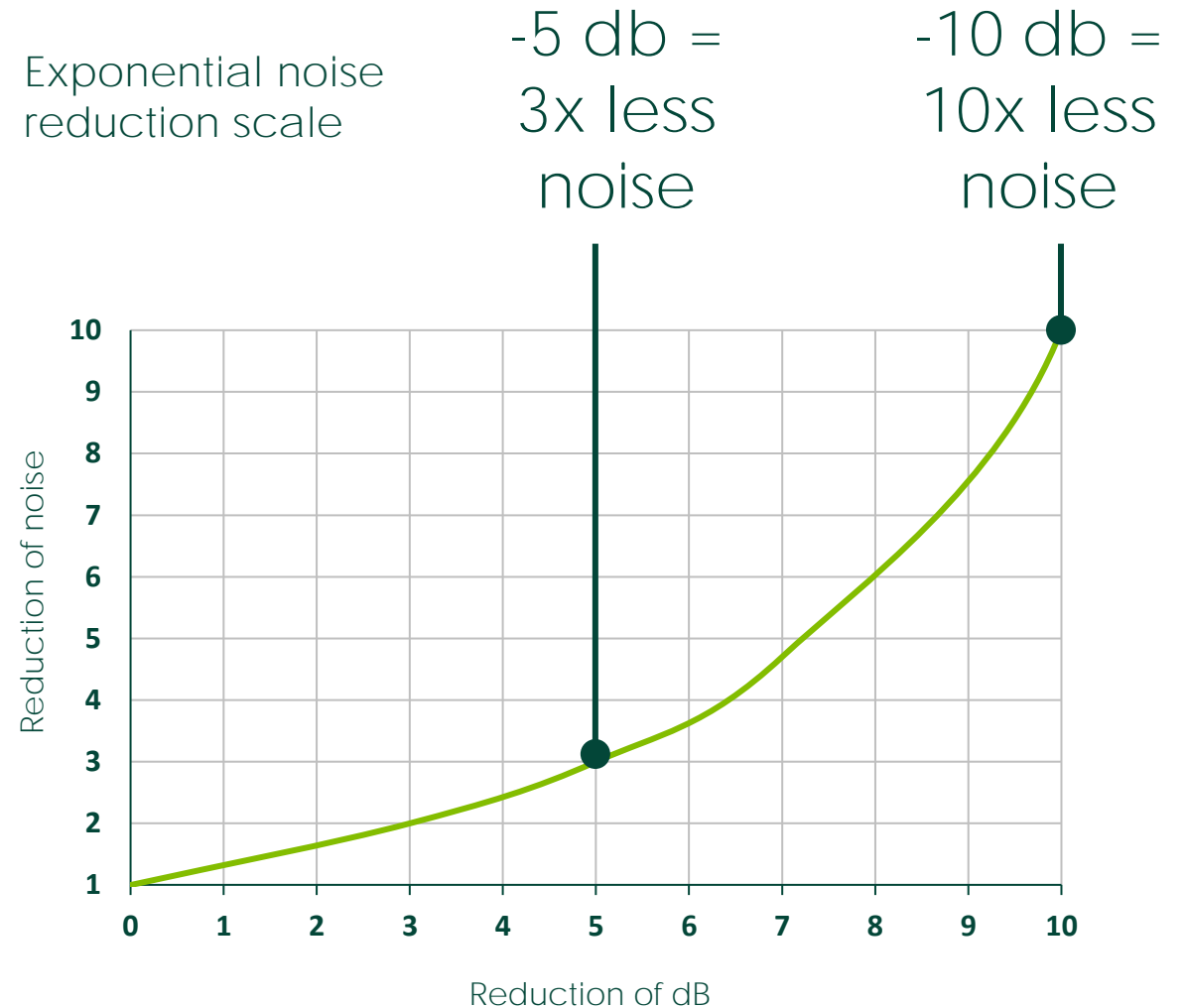depending on lane configuration

1.
Acoustic grinding

2.
Dynamic absorbers

2 to 5 dB + 3 to 5 dB

Exponential noise reduction scale

-5 db = 3x less noise

-10 db = 10x less noise

Reduction of noise

Reduction of dB

Timetable and next steps

Measure for implementation

Grinding

– Objective: smooth the tracks

– Work carried out with specialized machinery

– Around fifty passages required
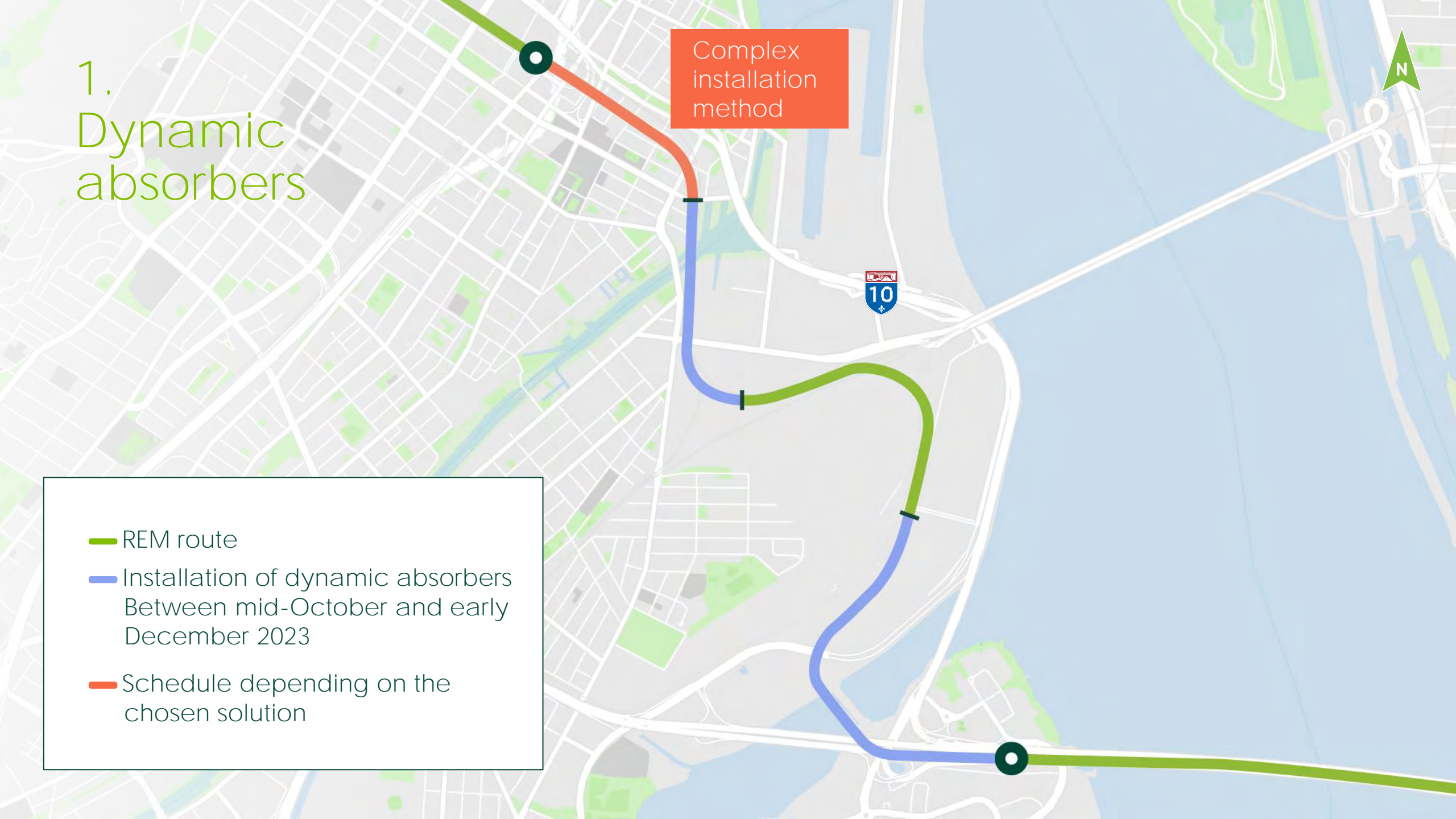

Image: RailTechnology

Dynamic absorbers

– Installed manually on both sides of the rail

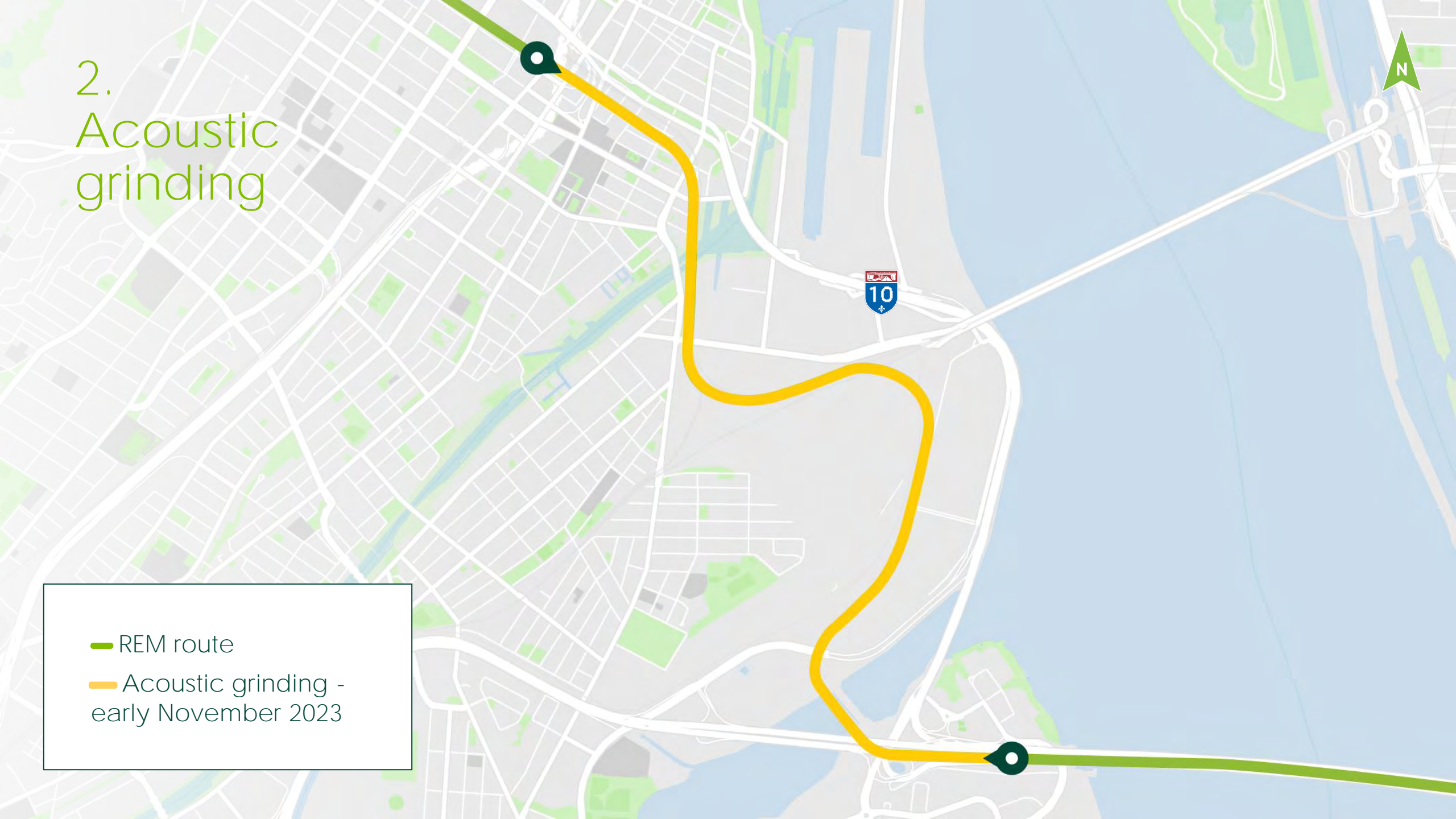– A dynamic absorber is installed for each sleeper

1.
Dynamic absorbers

Complex installation method

REM route

Installation of dynamic absorbers
Between mid-October and early December 2023

Schedule depending on the chosen solution

2.
Acoustic grinding

Legend:
- REM route
- Acoustic grinding - early November 2023

Performing the work

Performed at night between mid-October and early December, **from Sunday to Thursday evenings**

cannot be carried out during network operation

– Network closes at 10 p.m.
shuttles available from Panama to Central Station –
upcoming communications campaign for users

– Grinding:
noise during brief periods as the grinder passes

Next steps

Analysis of the situation
Sound surveys, acoustic diagnostics, on-site tests (Lachine Canal

Identification of target measures

Public feedback

Deployment of measures from October to beginning of December

Public feedback on results

Question period

Réseau express métropolitain

f   REMgrandmtl

🐦   REMgrandmtl

📞   1 833 rem-info
      (1 833 736-4636)

@   construction@rem.info

rem.info