

INFO SHEET – Vibration

March/April 2018

QUICK OVERVIEW

Metrolinx and the City of Toronto are planning six new SmartTrack stations and two new GO stations in Toronto. The potential environmental effects of the new stations are being assessed in accordance with the Transit Project Assessment Process as prescribed in Ontario Regulation 231/08 under the *Environmental Assessment Act*.

Metrolinx is working to understand any potential vibration impacts associated with the new stations.

FACTORS THAT INFLUENCE VIBRATION LEVELS

There are many factors that influence vibration levels, including:

- Soil type and conditions
- Rail condition
- Wheel condition
- Speed of vehicle
- Weight of vehicle
- Suspension system of vehicle
- Track bed (e.g., concrete, ballast)
- Distance between source and receiver

VIBRATION PROTOCOL IS IN PLACE

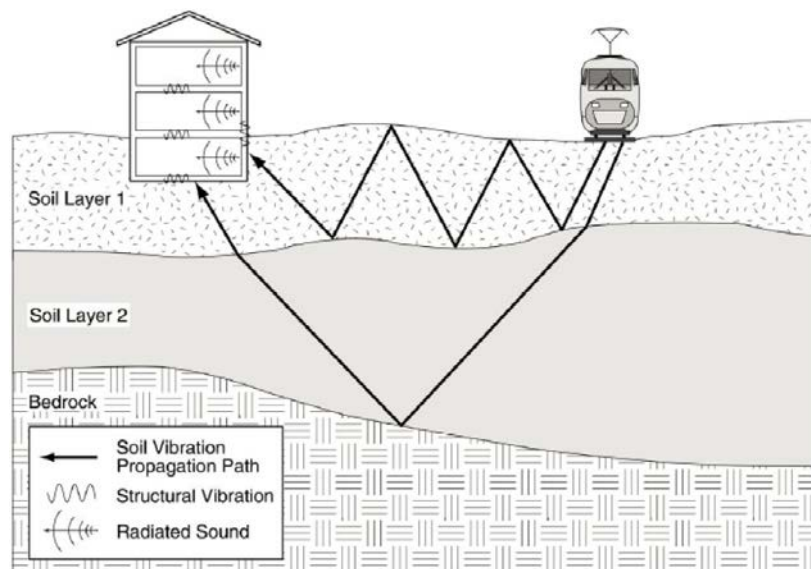
The Ontario Ministry of Environment and Energy (MOEE) and GO Transit have prepared a Draft Protocol for Noise and Vibration Assessment that Metrolinx follows.

The Protocol indicates that if vibration levels of any project exceed the existing vibration level or 0.14 mm/s (whichever is higher) by 25% or more, vibration mitigation needs to be investigated.

Mitigation focuses primarily on using rubber to help cushion the force of vibration and reduce the amount transmitted into the ground.

MEASURING VIBRATION

Vibration is measured in terms of particle velocity in millimetres per second (mm/s). Vibration can be felt by humans at levels as low as 0.10 mm/s and building damage (cosmetic or structural) occurs at levels about 50 times higher than this – around 5 mm/s.



For more information contact: newstations@metrolinx.com or call 416-202-4921