

EA INFO SHEET – Vibration

November 2016

QUICK OVERVIEW

GO Transit Expansion is bringing more train trips to every GO rail corridor. Trains will be running up to every 15 minutes, there will be service in both directions, more all-day service, and there will be faster electric trains. There will also be 150 km of new track (to allow for more uninterrupted service), new bridges and tunnels, and new and renovated stations.

Metrolinx is working hard to understand any potential vibration impacts associated with the expanded service.

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 (concrete, ballast, etc.)
- Distance between source and receiver

VIBRATION PROTOCOL IS IN PLACE

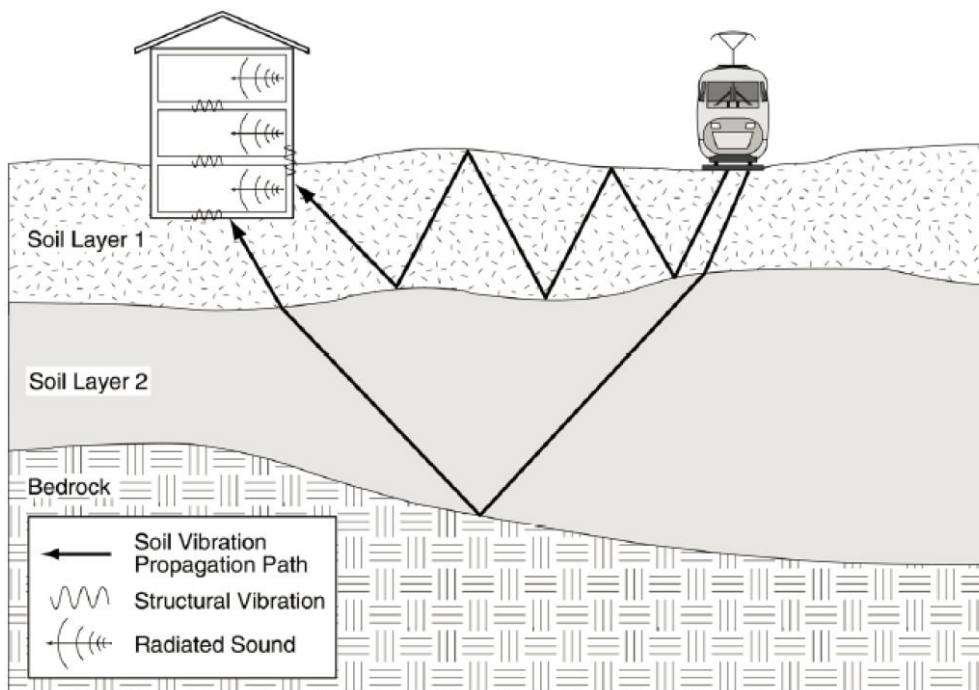
The Ontario Ministry of Environment and Energy (MOEE) and GO Transit have a Draft Protocol for Noise and Vibration Assessment that Metrolinx follows.

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

The types of mitigation that Metrolinx focus primarily on using rubber to help cushion the force of vibration and reducing 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: electrification@metrolinx.com or call 1-800-GET-ON-GO or (416)869-3200