



# Construction Ahead: Finch West Light Rail Transit – Traction Power Substations

## What is the Finch West LRT?

The Finch West Light Rail Transit (LRT) Project consists of an 11 km LRT line that will operate in a semi-exclusive guideway along Finch Avenue West between Humber College and the Finch West LRT Station. The LRT will consist of 18 stops and 8 Traction Power Substations.

## What is a Traction Power Substation?

A Traction Power Substation (TPSS) is a steel building similar in size to a double car garage. The TPSS converts commercial alternating current electricity into the direct current power used by the light rail vehicles.

TPSSs are one component of the overall traction electrification system for the LRT system. TPSS are evenly distributed along the LRT line to deliver direct current power throughout the entire system and will be installed at the following locations:

- Humber College
- Martin Grove Road
- Stevenson Road
- Pearldale Drive / Ardwick Boulevard
- Signet Drive / Arrow Road
- Highway 400
- Tobermory Drive
- Keele Street
- Maintenance and Storage Facility

## Are TPSSs large power plants?

No. TPSSs transform the electrical power from the utility into the 750 volts dc required to power the Light Rail Vehicles.

## What is the power output of a TPSS?

The average power output of a modern light rail TPSS is not large in comparison with typical neighbourhood electric power requirements. Many pad-mounted transformers that are used to provide power to neighbourhoods and commercial office buildings have an equivalent or higher average power output than the modern light rail TPSS.

## Will there be noise and vibration impacts?

There may be low audible noises from the TPSS, similar to an air conditioning unit. Noise control measures will be implemented on a site-specific basis, depending on the nature of nearby land uses. TPSSs are also not a significant source of vibration. The main vibration-generating pieces of equipment are the transformers and

air conditioning units. The low level amount of ground-borne vibration produced by this equipment would not be felt beyond the extents of the TPSS site boundary. All of the electrical equipment in a TPSS is enclosed within a locked building, which provides both security and sound absorption.

The LRT system will be implemented in accordance with federal and provincial and City by-laws related to noise and vibration during construction and operations.

## Will there be health and safety implications? What about electromagnetic energy?

TPSSs are very safe, and are regularly used for light rail projects.

TPSSs can be found in residential neighbourhoods throughout North America and the world, and no study to date has found safety or health issues associated with TPSS in a neighbourhood, adjacent to a senior living facility, or near schools.

Additionally, modern light rail TPSS have more protective features than a pad-mounted transformer in many respects, including:

- All the electrical equipment in a TPSS is enclosed within a locked building providing security and sound absorption (as described earlier)
- The power transformer in a TPSS is a “dry type” transformer, unlike the typical utility pad-mount transformer that uses oil for electrical insulation
- Dry-type transformers do not leak and do not catch fire
- All equipment is enclosed by sturdy, grounded metal compartments
- There are no exposed electrical parts that can be contacted inadvertently, even in the event of unauthorized entry
- There are regular site visits to the TPSS by operations staff to ensure proper operation of the TPSS

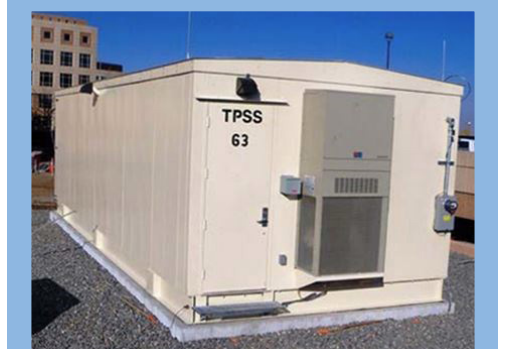
The LRT system, including TPSSs, will be constructed to comply with Health Canada, Safety Code 6 – Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3kHz to 300GHz.

Building an LRT service to support planned growth in Toronto is a large undertaking and we recognize that this work may cause some temporary inconveniences. We will strive to keep any disruption to a minimum.

If you have any questions about the construction activities, please contact us.

A Metrolinx representative will respond to you within 1-2 business days, and will work with you to address any question or concern that you have.

We appreciate your patience as we work to bring the Finch West LRT to the City of Toronto.



## FINCH WEST LIGHT RAIL TRANSIT

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