

West End Substation

Electric and magnetic field (EMF) resource page

What is EMF?

EMF stands for electric and magnetic fields, which are invisible fields, produced anywhere that electricity flows such as transmission lines, household appliances like coffee makers, vacuum cleaners and lights. EMF is present around the wiring in your walls and can be found indoors and outdoors in the environment. People are mostly interested in magnetic fields as they are not easily shielded like electric fields, which is why we focus on magnetic fields.

What are the guidelines for magnetic field exposure?

Health Canada and the World Health Organization endorse the guidelines created by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The guideline for residential exposure is 2,000 milligauss (mG).

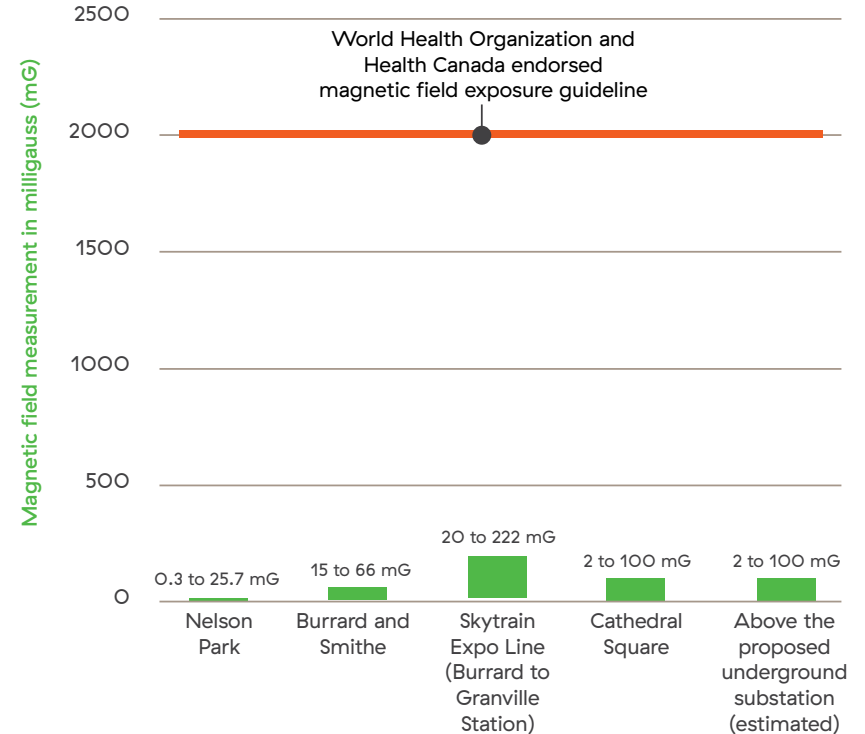
EMF and our proposal for the Lord Roberts Annex property.

Because EMF dissipates very quickly with distance from the source, the EMF inside a future school would be similar to levels inside the existing Lord Roberts Annex currently. The source of any EMF within the future school would be the lights, computers and other electrical equipment found in any other school, not from our substation. Levels of EMF right above the transmission lines, in Nelson Park and the proposed playing field, would also be very low. At peak times magnetic field level right above the transmission line would only be 5% of the World Health Organization endorsed conservative exposure limit, and wouldn't pose any significant risk to the public. The figure above shows some levels currently found around Vancouver, as well as directly above our proposed substation, which would be similar to above our existing underground substation beneath Cathedral Square Park.

While the Stantec study and an independent review by Vancouver Coastal Health both concluded that there were no health and safety issues related to EMF, both suggested additional mitigation measures to alleviate negative public perception.

Magnetic field levels around Vancouver:

We anticipate the levels of magnetic fields above the proposed substation will be similar to those above our underground substation at Cathedral Square.



Our commitment on EMF at the Lord Roberts Annex property and Nelson Park.

- We'll further reduce the magnetic field levels (shown in figure on previous page) within the boundaries of Nelson Park and the VSB property by a minimum of 75%, by burying transmission cables deeper underground and implementing magnetic field shielding.
- We'll commission an independent study of current EMF levels at the existing Lord Roberts Annex property and Nelson Park, and report this publicly.
- We'll confirm the EMF levels expected at and around the proposed substation, based on final design, and report this publicly.
- We'll commission an independent study to verify EMF levels once the substation is in-service and continue to monitor EMF levels and report publicly on an on-going basis.

For more information:

- Email: westendsub@bchydro.com
- Phone: 604 341 1304

To Learn More:

If you would like to learn more about EMF, we recommend the following sources:

BC Hydro's EMF Website

- Find the resources below, and new information on an ongoing basis, at our links pages on EMF: bchydro.com/emf

EMF and Health: Review and Update of the Scientific Research

- This report was prepared by Exponent to assess the current status of research regarding the potential for health effects from exposure to EMF. Exponent is a leading technical and scientific research firm that provides BC Hydro with a regular weight-of-evidence review on current EMF research. bchydro.com/emfresearch

Health Canada

- This fact sheet contains basic information about EMF, typical Canadian exposures, and Health Canada's role. It's Your Health Fact Sheet: Electric and Magnetic Fields at Extremely Low Frequencies hc-sc.gc.ca/hl-vs/alt_formats/pdf/iyh-vsv/environ/magnet-eng.pdf

BC Centre for Disease Control

- This site includes statements from experts, information on scientific studies, and resources for more information. bccdc.ca/health-info/health-your-environment/electro-magnetic-exposures

World Health Organization

- This site from the United Nations health agency provides links to EMF fact sheets, extensive research publications, and general information about EMF: who.int/peh-emf/en

National Institute of Environmental Health Sciences

- The US National Institute site provides information on research conclusions and results, and overall information regarding EMF. niehs.nih.gov/health/topics/agents/emf/index.cfm

The following can also be found at

bchydro.com/westendsub:

- The 2017 letter from Dr. Patricia Daly, Vice-President, Public Health and Chief Medical Health officer, Vancouver Coastal Health is in the section "2017 Consultation and additional materials."
- Electric and Magnetic Fields Report (Appendix E) from the Stantec Study listed as the "2017 BC Hydro Seed: Technical, Environmental and Socio-economic Study" in the section "2017 Reference materials."