

To: Electoral Area Services Committee

Date: 2025-02-13

From: Stacey Barker, Deputy CAO/Director of Regional Services

Subject: Proposed Earthquake Early Warning Station at the Chilliwack River Volunteer Fire Hall

Reviewed by: Jaime Van Nes, Director of Legislative Services
Jennifer Kinneman, Chief Administrative Officer

RECOMMENDATION

THAT the Fraser Valley Regional District Board direct its signatories to enter into a licence agreement with Natural Resources Canada for the installation of an Earthquake Early Warning station at the Chilliwack River Volunteer Fire Hall.

BACKGROUND

Natural Resources Canada (NRC) is in the process of developing an Earthquake Early Warning (EEW) system for at-risk regions of Canada. The system will use a specially designed network of seismic sensors to provide a few seconds to tens of seconds of warning in the event of a major earthquake, allowing protective actions to be taken.

Earthquakes release energy that travels through the Earth as seismic waves. The EEW seismic sensors detect the first energy to radiate from an earthquake, the P-wave, which rarely causes damage. The sensors transmit this information to data centres where a computer calculates the earthquake's location and magnitude, and the expected ground shaking across the region. This method can provide warning before the arrival of secondary S-waves, which brings the strong shaking that causes most of the damage.

EEW alerts are sent to the public through various national alerting systems. This warning can help reduce injuries, deaths, and property losses by allowing time to enact certain precautions such as:

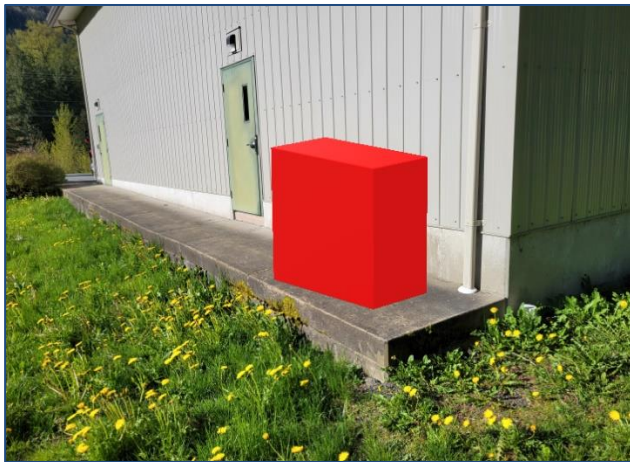
- Stop traffic from travelling onto bridges and into tunnels
- Divert planes from landing
- Halt trains
- Allowing surgeons to stop surgery
- Closing gas valves

It is important to note that the EEW system does not remove the need for other earthquake risk reduction, preparedness, and response measures, such as constructing to building code requirements.

DISCUSSION

NRC contacted the Fraser Valley Regional District (FVRD) with particular interest in establishing a station at the Chilliwack River Valley Volunteer Fire Hall as it was identified as a suitable location for their requirements.

The EEW station will take up little space and will not disrupt fire operations. The dimensions of the station and emergency batteries are expected to be relatively **small (3' by 4' by 4')** and **will be located** within an exterior metal cabinet. The cabinet will be located at the northeast corner of the fire hall on the existing concrete footing. It will also be accompanied by a mounted GPS antenna. Below are example pictures.



COST

The EEW station will be required to be connected to power and internet. The power requirement is minimal (less than 20W) as is internet usage and NRC will take IT security precautions to protect both **the FVRD's and NRC's equipment. The agreement** allows for an annual contribution of \$200 to assist with the provision of the service although the power/internet costs are expected to be much lower.

CONCLUSION

NRC would like to locate an EEW station at the Chilliwack River Valley Volunteer Fire Hall. This station will become an integral part of a much larger early detection system for earthquakes that may impact the area. The resulting licence will provide minimal financial aid to the hall but will serve an important function within the community at large.