

# Earthquake Hazards

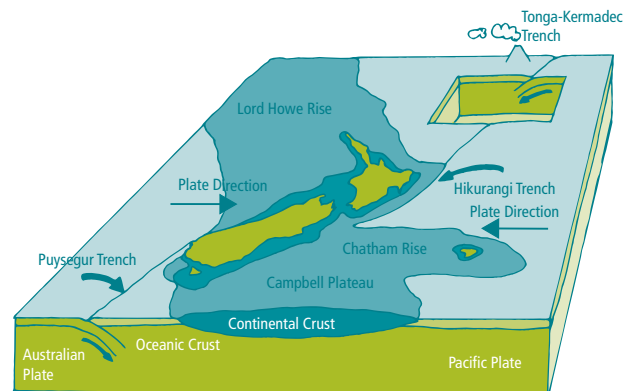
This fact sheet contains information about earthquake hazards in the Wellington Region and advice on what you can do to be prepared.

## Why do we have earthquakes?

New Zealand sits on the boundary of two of the Earth's great tectonic plates - the Australian Plate and the Pacific Plate. The two plates are moving together and past each other, pushing up mountain ranges and deforming and fracturing the land. Caught between the plates, the Wellington Region is criss-crossed by faults like the Wellington Fault and Wairarapa Fault. Pressure from the colliding plates builds up until the rocks suddenly slip, causing an earthquake. The energy is released in waves that cause the shaking that we feel during a quake.

## Did you feel that?

Two scales are commonly used to measure earthquakes. The Richter Scale is a measure of the strength of a quake, or the energy released by it. The Modified Mercalli Intensity Scale is a measure of the effects of a quake at a particular place on people, buildings or the land. The intensity at a point depends on the quake magnitude, the distance from the quake to the point and the local geology at that point. Only people sitting down might feel intensity II, whereas at intensity VII chimneys can break and houses suffer some damage.



## Our biggest quake

On January 23 1855, the Wairarapa Fault ruptured and the entire Wellington Region was tilted westward. About 5000 km<sup>2</sup> of land was shifted vertically, with uplift of 6m near Turakirae Head and 1-2m in the Wellington Harbour. Some subsidence (lowering of the ground) occurred in the Wairarapa. The greatest horizontal movement along the fault was 12m. Features like streams were displaced along the fault. The magnitude 8.1-8.2 quake caused 50 seconds of strong shaking and there were hundreds of aftershocks greater than magnitude 5 in the following weeks.

## The big one

Many of the Region's faults can produce large earthquakes. A large, shallow quake along the Wellington Fault, say magnitude 7.4, would cause strong shaking and considerable damage around the Region. If it happened during the day there could be about 500 deaths, 4,000 injuries and perhaps 1,800 people trapped. If the quake hit at night, fewer people would be hurt. We could expect about 2,800 homes and other buildings to be destroyed and another 100,000 buildings to be damaged in some way.

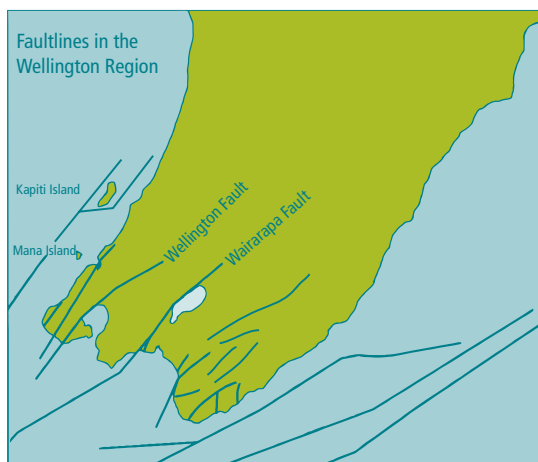
# What should you do in an earthquake?

If you are **indoors**:

- Take cover under a table or brace yourself in a doorway.
- If the table you are under moves, hold onto it and move with it.
- In a high rise building move against an interior wall if there is no other cover.
- Stay under cover until the shaking stops.

If you are **outside**:

- In a high rise area move to a doorway to avoid falling glass and debris.
- Move to a clear area away from trees, signs, buildings and overhead cables.
- If you are driving, slow down, pull over and stop. Stay in your vehicle.



## Further reading

Begg, J. & Mazengarb, C. 1996. *Geology of the Wellington Area*. Institute of Geological and Nuclear Sciences Geological Map 22. Lower Hutt: Institute of Geological and Nuclear Sciences.

Hicks, G. & Campbell, H. 1998. *Awesome forces: the natural hazards that threaten New Zealand*. Wellington: Te Papa Press.

Davey, R.A. Shephard, R.B. 1995. *Earthquake Risk Assessment Study*. Wellington: Works Consultancy Services and Wellington Regional Council. View at the Greater Wellington Regional Council.

## Be prepared

You need to be able to look after yourself for three days. Keep survival supplies:

- Water
- Food (canned, dried, non-perishable)
- Battery operated radio
- First aid kit
- Lighting (torch or cyalume sticks)
- Blankets and warm clothing
- Alternative cooking method (BBQ or gas cooker)
- Pet supplies
- Baby supplies
- Essential medications



For more information, check the Yellow Pages or contact a civil defence emergency management advisor at your local council.

To find out more about the earthquake hazard where you live, check out the fact sheets for Wellington, Porirua, Kapiti or the Hutt Valley.

## CONTACTS AND INFORMATION

Greater Wellington  
Regional Council  
Wellington Office  
P O Box 11646  
T 04 384 5708  
F 06 385 6960  
W [www.gw.govt.nz](http://www.gw.govt.nz)