

**Report** 06.107  
**Date** 27 March 2006  
**File** X/13/03/02

**Committee** Environment Committee  
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## Upper Hutt fault trace project

### 1. Purpose

To inform the Committee of the main points emerging from the Upper Hutt fault trace project report completed for Greater Wellington and Upper Hutt City Council by the Institute of Geological and Nuclear Sciences in December 2005.

### 2. Background

Upper Hutt City is traversed by several active faults including the Wellington, Akatarawa, Moonshine, Otaki Forks and Whitemans Valley faults. While the ground shaking hazard posed by these faults cannot be avoided, damage or loss of life resulting from permanent displacement of the ground surface along the fault trace can be avoided by restricting or prohibiting development along the fault trace.

At present the Wellington Fault is the only fault included in the Upper Hutt District Plan and shown in planning maps. A standard 20m buffer has been placed either side of the fault, regardless of the accuracy of its known location, to create a "fault band". Any new habitable building or structure to be erected within the fault band is a discretionary activity.

The Akatarawa, Moonshine, Otaki Forks and Whitemans Valley Faults are not included in the District Plan, and there is concern that the rules do not provide an appropriate level of protection from fault rupture hazard.

The Ministry for the Environment (MfE) guidelines *Planning for Development of Land on or Close to Active Faults* recommend that active faults are identified and mapped to an appropriate scale and that fault hazard avoidance zones are created on district planning maps and rules put in place to restrict development within these zones. A risk-based approach is suggested whereby the rules put in place depend on fault recurrence interval, fault complexity, building importance category and whether the site is already developed or subdivided.

This project aimed to collate known fault location, complexity and recurrence interval data for Upper Hutt City at an appropriate level of detail for inclusion in the District Plan to enable robust planning measures to be put in place in keeping with the MfE guidelines.

### **3. Results**

Details of known active fault features within Upper Hutt City were obtained from published papers and maps, published GNS Science and Client reports, drill hole data, the Upper Hutt District Plan and the authors' first hand knowledge of the geology and faults in the area. This was supplemented with aerial photography.

Mapped fault features were used to construct fault rupture zones (zones within which future rupture is likely to cause intense ground deformation). In some areas these zones are based on the position of a distinct linear fault line and are relatively narrow (metres wide). In other places, the zone is based on complex fault features or inferred where no fault features are preserved. In these areas the width of the zone is large and reflects both the complexity or uncertainty of the fault location on the ground, and the accuracy of data capture. "Fault Avoidance Zones" were then delineated by placing a 20 metre buffer around the likely fault rupture zone.

Fault avoidance zones for most of Upper Hutt City are given in Figure 1.

The MfE guidelines recommend different levels of building restriction on and near faults depending on the activity of the fault, the complexity of the fault and the nature of the development as per Table 1.

For example, building a normal wooden residential dwelling within the "well defined" fault avoidance zone of the Wellington Fault is recommended to be a non-complying activity for greenfield sites. Building the same building within the "uncertain - constrained" fault avoidance zone of the Akatarawa Fault is recommended to be a permitted activity. This is because the Akatarawa Fault is less active than the Wellington Fault, and the location of the fault is not as well defined, therefore the risk is less. However, building a large public building or emergency facility in the "uncertain - constrained" fault avoidance zone of the Akatarawa Fault is recommended to be discretionary. This is because an emergency facility is a much more important building than a single residential dwelling.

While it looks like there are many zones on the maps, and some of them are very wide, in most cases restrictions will only apply to large buildings (applications for which are not received often, particularly in rural areas) not to normal residential buildings.

#### **4. Next Steps**

Staff met with Upper Hutt City Council staff on Wednesday 29 March to discuss the plan change process. Kapiti Coast District Council is currently undertaking a similar plan change (to be notified in May or June) and the Upper Hutt City Council will follow a similar process. This includes sending out a “fact sheet” to affected landowners on the study and plan change and how it might affect them. A draft plan change will then be developed and this will also be sent out to affected landowners for comment before the plan change is notified.

The fact sheet for landowners will be written over the next month or two and Upper Hutt City Council are compiling a list of affected landowners.

#### **5. Recommendations**

*It is recommended that the Committee:*

- 1. **Receives the report, and***
- 2. **Note the contents.***

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**Attachment 1: Fault avoidance zones in central Upper Hutt city**

**Attachment 2: Recommended resource consent activity status for Greenfield sites**