

5.8 Natural hazards

5.8.1 Introduction

The Wellington region is especially vulnerable to natural hazards, such as earthquakes, tsunamis, floods, landslides, coastal erosion, wind, wildfire, drought and even volcanic activity. The effects of these hazards depend on their scale and where and when they strike. Destructive natural events will occur. We can't avoid them – but we can try to lessen their effects.



The aim is to reduce vulnerability to hazard events and build resilient communities to cope with them should they occur. Several agencies have a role in achieving this aim, including local and central government, the Earthquake Commission and crown research institutes. The new Civil Defence Emergency Management arrangements under the *Civil Defence Emergency Management Act 2002* also encourage individuals and communities to take responsibility for managing their hazard risks.

Greater Wellington has statutory responsibilities for the control of “the use of land for the purpose of avoiding or mitigating natural hazards”, and city and district councils are responsible for controlling the effects of the use, development or protection of land for that same purpose. The *Regional Policy Statement for the Wellington Region 1995* sets out how these responsibilities are shared for our region. In summary, Greater Wellington is responsible for developing objectives and policies while the city and district councils develop rules for land. Greater Wellington is responsible for objectives, policies and rules for the coastal marine area.

How has this arrangement worked? Have the objectives and policies in the Regional Policy Statement provided a good framework for rules in plans? Do people understand more about natural hazards and their likely effects because of the guidance in the Regional Policy Statement?

5.8.2 How successful has the Regional Policy Statement been?

The natural hazards chapter of the current Regional Policy Statement has only one objective, but it is hard to measure. It states that “Any adverse effects of natural hazards on the environment ...are reduced to an acceptable level.”

“Acceptable level” is not defined and will vary from hazard to hazard, place to place, and be different for each affected community at different times. For example, in the *Hutt River Floodplain Management Plan 2001*, the affected community determined it wanted a particular level of flood protection (against a 1-in-440 year event). However, the same level of protection might not be acceptable to another community in another flood-prone area.

The policies in the Regional Policy Statement expand on how we might address the unspecified “acceptable level” – with appropriate information about the region’s hazards, consideration of hazard risk through decision-making on new (and existing) development, and by promoting greater community awareness of hazards.

There is scope in the next Regional Policy Statement to give more specific guidance on “how” we could manage hazard risk.

5.8.3 What's changed and what are the natural hazard issues now and for the future?

Since preparing the current Regional Policy Statement, a lot of work has gone into upgrading the information base to improve decision-making. We now have a better picture of hazards in the region, but we also need a better understanding of the consequences (and risk associated with) hazard events. As a community, we are reasonably knowledgeable about earthquakes, but for most other hazards, we have little understanding of consequences. For all hazards, including earthquakes, we do need to keep up-to-date with constantly emerging information (e.g. changing demographics and locations of new development) and their implications for risk.

The absence of current data about consequences is perhaps even more important for climate change (see chapter on **climate change**). The region may not be able to significantly influence the causes of climate change (although there are energy conservation and other environmental benefits from managing emissions) but, along with the rest of the world, we will certainly feel the effects.

What other natural hazard management issues do we face? We identified several when preparing the current Regional Policy Statement. Our state of the environment report, *Measuring up2005*, confirms their continuing relevance:

- The Wellington region is susceptible to a wide range of natural hazards. Nearly half a million people live and work in the region and realistically, we cannot eliminate the risks so we need to find ways of coping with the consequences of natural hazard events.
- We are constantly learning more about hazards. It is important to keep pace with this knowledge to plan and make well-informed decisions.
- We need more coordination between agencies on hazard research, establishing priorities and responsibilities for communicating information and advice.

- While hazard mitigation works may be necessary (e.g. for flood control), the works or associated structures can create adverse effects on the environment. Conversely, people don't always recognise that some landforms and ecosystems provide a degree of beneficial natural protection against hazards (e.g. wetlands act as sponges to hold excess water). The cause-effect relationships between hazard mitigation measures and environmental processes need to be more explicit when assessing hazards and how we can manage them.

5.8.4 Comments and questions for you to consider

Up-to-date, reliable information is an essential first step in making decisions about new developments and risk associated with their location. This information is also important for managing risk from hazards within existing developed areas. To be effective, this information generally needs to be transferred to "lines on maps" so we know where events might happen, where effects might be felt, where to place appropriate controls and where people can feel confident about living.

While this is desirable it is just not practically possible or financially feasible for many hazards. Perhaps hazard zones could be shown on maps for certain hazards. Over time the characteristics, frequency and consequences of hazard events within these zones could be measured and monitored (e.g. the number of people and buildings affected by particular hazard events, the dollar value of losses or damage). As this information accumulates it will be possible to better understand the risks and for the community to assess whether these risks are of an "acceptable level" or if something needs to be done.

The highest risks for the region come from earthquakes and floods. However, the implications of climate change for rainfall patterns and associated flooding, drought, sea level rise and storm surges are potentially the most serious and far reaching risks to our social and economic well-being. (See **climate change** chapter.)

Question 1:

Do you think we have identified the right natural hazard issues? Are there other issues that we should recognise for the region?

Question 2:

How effective do you feel natural hazard management has been during the last decade? What have been the main factors that influenced our performance? How can we encourage the good factors and reduce the bad ones?

Question 3:

Where do you think the priority areas are for action? Should there be a focus on some areas or specific hazards (such as tsunamis or the effects of climate change) or should there be an across-the-board attempt to deal with all hazards everywhere? What different sorts of information do individuals, communities and authorities need – for themselves or to fulfil their statutory functions?

Question 4:

Do you want the Regional Policy Statement to give policy guidance on natural hazard management? If so, would it be helpful to have guidance on managing hazards in developed areas as well as for new development?

Question 5:

Would it be helpful if the Regional Policy Statement was more specific and directive in its provisions: identifying priorities and specifying responsibilities and timescales for action?

Question 6:

Does the Regional Policy Statement need to address preparedness for natural hazard events or is it sufficient to leave this aspect to the provisions of the Civil Defence Emergency Management Act, and the operative Wellington Region Civil Defence Emergency Management Group Plan?

Question 7:

Is the allocation of responsibilities shown below the most effective way to specify the objectives, policies and methods for the control of the use of land for the avoidance or mitigation of natural hazards?

	Responsibilities for developing objectives	Responsibilities for developing policies	Responsibilities for developing methods
Coastal marine area	GW	GW	GW
Beds of lakes and Rivers	GW	GW	GW
Other land	GW* TA	GW* TA	GW TA*

GW = Greater Wellington Regional Council TA = Territorial authorities (district and city councils)

* = Primary responsibility