

## 28 Natural Hazards

### 28.1 Purpose

The purpose of this chapter is to provide a policy framework to address natural hazards throughout the District. The District is recognised as being subject to multiple hazards and as such, a key issue is ensuring that when development is proposed on land potentially subject to natural hazards, the risk is managed or mitigated to tolerable levels and significant risks avoided. Council has a responsibility to address the developed parts of the District that are subject to natural hazard risk through a combination of mitigation measures and education, to lessen the impacts of natural hazards.

There are no rules in this chapter. It is intended to provide policy guidance on natural hazards that is factored into the consideration of land use and subdivision applications made under the rules in other chapters.

The objectives and policies in this chapter, including the concepts of tolerable risk and significant risk, shall be considered through future plan change processes as well as through applications for resource consent.

### 28.2 Natural Hazard Identification

Natural Hazards that exist in the District include:

- Flooding and inundation
- Erosion and deposition (including landslip and rockfall)
- Land instability
- Earthquakes and liquefaction
- Avalanche
- Alluvion<sup>1</sup>, avulsion<sup>2</sup>
- Subsidence
- Tsunami / seiche<sup>3</sup>
- Fire

The District is located in an inland mountainous environment and as such can also be exposed to climatic extremes in terms of temperature, rain and heavy snowfall. This is likely to increase as a result of climate change.

Council holds information in a natural hazards database which has been accumulated over a long period of time by both the Council and the Otago Regional Council. The database is continually being updated and refined as new information is gathered. Given the ongoing updates occurring, with the exception of flooding information, which has historically been mapped, Council has decided not to map natural hazards as part of the District Plan. This decision has been made due to the fact the maps may quickly become out of date as new information becomes available. Council will rely upon the hazards database in the consideration of resource consents and building consents.

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<sup>1</sup> Increase in the size of a piece of land due to deposits by a river.

<sup>2</sup> Abandonment of a river channel and the formation of a new channel.

<sup>3</sup> Oscillation of water due to earthquake shaking

The database is readily available to the public through the Council website and at Council Offices.

Additional to the Resource Management Act, Council has obligations to address hazards under other legislation such as the Building Act 2004, the Civil Defence and Emergency Management Act 2002 and the Local Government Act 2002. In particular the provisions of the Building Act provide Council with the ability to refuse to issue a building consent in certain circumstances where a property is subject to natural hazards. As such, Council uses the provisions in the District Plan as just one tool to address natural hazard risk.

### **28.3 Objectives and Policies**

**28.3.1 A Objective - The risk to people and the built environment posed by natural hazards is managed to a level tolerable to the community.**

**28.3.1 B Objective - Development on land subject to natural hazards only occurs where the risks to the community and the built environment are appropriately managed.**

#### **Policies**

##### *Determining significant risk and risk tolerance*

28.3.1.1 When determining the significance of the natural hazard risk the following matters shall be considered:

- a. The likelihood of the hazard event including multiple and cascading events;
- b. After taking account of existing and proposed risk reduction measures, the potential consequences including:
  - i. Whether buildings and structures, critical services and lifeline utilities would be functionally compromised in a hazard event;
  - ii. The risk to human life or safety;
  - iii. The scale of potential adverse effects;
  - iv. The displacement of risk.
- c. People's and communities' tolerance of the natural hazard risk.

28.3.1.2 When assessing tolerance of risk the following matters shall be considered:

- a. the nature and scale of the activity;
- b. existing lawfully established land use or zoning;
- c. the actual and potential adverse effects of the natural hazard on people and communities;
- d. those people's and communities' awareness or experience of the risk, including any investigations, initiatives or natural hazard risk engagement that have been undertaken;
- e. the consequence of and response to past natural events;
- f. the effectiveness and implementation of responses, adaptations or mitigation measures.

*Assessment of natural hazard risk*

- 28.3.1.3 Ensure all proposals to subdivide or develop land that is subject to natural hazard risk include an assessment that is commensurate with the level of natural hazard risk including where relevant:
- a. the likelihood of the natural hazard event occurring over no less than a 100 year period;
  - b. the type and scale of the natural hazard and the effects of a natural hazard on the subject land, and proposed activity or development;
  - c. the effects of multiple and cascading hazards;
  - d. the effects of climate change on the likelihood and scale of the natural hazard;
  - e. the potential for the activity to exacerbate the natural hazard risk both within and beyond the subject land;
  - f. the location, design and construction of building and structures to mitigate the effects of natural hazards, such as the raising of floor levels, or relocation of buildings and structures;
  - g. management techniques that avoid or manage natural hazard risk to a tolerable level, including with respect to ingress and egress of both residents and emergency services during a natural hazard event.

*Advice note:*

Council's natural hazard database identifies land that is affected by, or potentially affected by, natural hazards. The database contains natural hazard information that has been developed at different scales and this should be taken into account when assessing potential natural hazard risk. It is highly likely that for those hazards that have been identified at a 'district wide' level, further detailed analysis will be required.

*Management of natural hazard risks*

- 28.3.1.4 Avoid activities that result in significant risk from natural hazard.
- 28.3.1.5 Recognise that some areas that are already developed are now known to be subject to natural hazard risk and minimise such risk as far as practicable while acknowledging that the community may be prepared to tolerate a level of risk.
- 28.3.1.6 Not preclude subdivision and development of land subject to natural hazards which do not:
- a. accelerate or worsen the natural hazard risk to an intolerable level;
  - b. expose vulnerable activities to intolerable natural hazard risk;
  - c. create an intolerable risk to human life;
  - d. increase the natural hazard risk to other properties to an intolerable level;
  - e. require additional works and costs including remedial and maintenance works, that would be borne by the public.

- 28.3.1.7 Except as provided for in Policy 28.3.1.6, restrict activities where the natural hazard risk is intolerable to people and the community (Policy 28.3.1.2).
- 28.3.1.8 Ensure assets and infrastructure are constructed and located to avoid or mitigate:
- a. the potential for natural hazard risk to human life to be exacerbated; and
  - b. the potential risk of damage to property and infrastructural networks from natural hazards to the extent practicable, including consideration of the functional needs of regionally significant infrastructure.
- 28.3.1.9 Where a natural hazard has been identified, but the natural hazard risk to people and communities is unknown, but potentially significant, apply a precautionary approach.
- 28.3.1.10 Enable Otago Regional Council and the Council exercising their statutory powers to undertake physical works for the purposes of natural hazard risk mitigation while recognising the need to mitigate potential adverse effects that may result from those works.
- 28.3.1.11 Promote the use of natural features, buffers and appropriate risk management approaches in preference to hard engineering solutions in mitigating natural hazard risk.

**28.3.2 Objective - The community's awareness and understanding of the natural hazard risk in the District is continually enhanced.**

**Policies**

- 28.3.2.1 Continually develop and refine a natural hazards database in conjunction with the Otago Regional Council.
- 28.3.2.2 When considering resource consent applications or plan changes, the Council will have regard to the natural hazards database.
- 28.3.2.3 Ensure the community has access to the most up-to-date natural hazard information available.
- 28.3.2.4 Increase the community awareness of the potential risk of natural hazards, and the necessary emergency responses to natural hazard events.
- 28.3.2.5 Monitor natural hazard trends and changes in risk and identify actions, including the use of an adaptive management approach, should natural hazard risk become intolerable.

**28.4 Other Relevant Provisions**

**28.4.2 District Wide Rules**

Attention is drawn to the following District Wide chapters.

1 Introduction	2 Definitions	3 Strategic Direction
4 Urban Development	5 Tangata Whenua	6 Landscapes and Rural Character
25 Earthworks	26 Historic Heritage	27 Subdivision

29 Transport	30 Energy and Utilities	31 Signs
32 Protected Trees	33 Indigenous Vegetation	34 Wilding Exotic Trees
35 Temporary Activities and Relocated Buildings	36 Noise	37 Designations
District Plan web mapping application		