

# Chapter 18

## Natural Hazards



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## 18. NATURAL HAZARDS

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### INTRODUCTION

A range of hazards have the potential to affect the Ōpōtiki District. These hazards include:

- Flooding
- Coastal hazards – inundation and erosion
- Earthquake
- Tsunami
- Landslides
- Volcanic activity

The **Council** seeks to build awareness through education and initiatives to support community outcomes when responding to natural hazard management. The **Council** is focused on **building** a safe and resilient community; this will include developing controls that manage use, development and subdivision where risk of natural hazards is high.

The **Council** is committed to giving effect to its responsibilities in managing natural hazards under the RMA. The **Council** has the function of controlling any actual or potential effects of the use, development or protection of land to avoid or mitigate natural hazards.

The RMA also requires the District Plan to give effect to the Bay of Plenty Regional Policy Statement (RPS) and the NZ Coastal Policy Statement (NZCPS). The RPS takes a risk management approach to natural hazards. Risk is the combination of likelihood and consequence. That is, the risk of a natural hazard is determined by a combination of an event's likelihood and its potential consequence ie. the amount of damage it would cause. A risk approach ensures that land use is managed so that the level of control corresponds to the level of risk. Evaluation of risk indicates when and how much risk reduction is required, and when land use controls may and may not be needed. The RPS establishes a framework for identifying whether risk is high, medium or low. High risk must be reduced, new activities must achieve a low level of risk. Medium risk, while tolerable, is not desirable and opportunities to reduce risk from medium levels where it exists should be taken where practicable. NZCPS also requires areas affected by coastal hazards over the next 100 years avoids increasing the risk of social, environmental and economic harm from coastal hazards. This also includes avoiding redevelopment, or change in land use, that would increase the risk of adverse effects from coastal hazards. (Sub 7.91)

**Council** along with key stakeholders and our community are committed to working toward introducing a new management regime which gives effect to the risk based approach. This project will occur within ~~the next~~ three years of the date of plan notification (Sub 24.95).

## 18.1 RESOURCE MANAGEMENT ISSUES

1. Ōpōtiki Township is subject to flood occurrences, with particular areas of the urban area subject to ponding of flood waters.
2. Accelerated land degradation has resulted from inappropriate land practices, such as clearing of steep slopes, overgrazing or over cropping of land, and poor subdivision and development design. Resultant effects include increased sediment run-off, soil structure instability, destabilisation of hill slopes, and increased downstream flooding.
3. There is potential for damage to existing and future coastal and river settlements from the effects of coastal erosion and inundation.
4. There is a need for avoidance or (Sub 7.92) mitigation measures to be taken by those persons wishing to locate on areas susceptible to natural hazards, particularly river inundation and coastal hazard areas.
5. Some parts of the District are unsuitable for development due to coastal erosion and land erosion.
6. There is an increased risk of some areas in the District from flooding due to the inability of watercourses to handle run-off from intensive rainfall, and inadequate on-site ponding.
7. In some instances the effects of natural hazards can be mitigated by the acquisition of esplanade areas adjoining inland and coastal **waterbodies**.
8. The ponding areas within the Ōpōtiki Township that act as natural flood water catchment areas need to be protected from development that may decrease their effectiveness.
9. The need to locate and design new subdivision, use, and development so that the need for hazard protection works is avoided.

~~10. 10.~~—There is increased risk in some areas of the District from fire, particularly where there is plantation forestry and a limited capacity of water for fire-fighting purposes.

11. Giving effect to the Bay of Plenty Policy Statement requires a natural hazard risk management approach. (Sub 17.190).

12. Until District Plan provisions give effect to the Bay of Plenty Regional Policy Statement natural hazard risk provisions, proposals for subdivision, change or land use intensification on urban sites 5ha or greater, are to include their own natural hazard risk assessment. (Sub 17.191)

13. There is potential for adverse effect to historic heritage through works to control hazards (Sub 18.220).

## 18.2 OBJECTIVES AND POLICIES

### OBJECTIVE

- 18.2.1 **Ensuring that the effects of natural hazard occurrence within the District are avoided or mitigated when making resource management decisions.**

### POLICIES

- 18.2.1.1 Control activities and the location of **buildings** to avoid or mitigate the effects of natural hazards.
- 18.2.1.2 Require detailed **site** investigations prior to subdivision, use, or development of land subject to or likely to be subject to natural hazards.
- 18.2.1.3 Apply conditions on subdivision and resource consents to mitigate adverse effects of natural hazards from the use and development of land.
- 18.2.1.4 Ensure that the ponding areas of the Ōpōtiki Township are kept free from activities that affect the effectiveness of the ponding areas.
- 18.2.1.5 Require esplanade reserves or esplanade strips where appropriate as a mechanism to mitigate potential effects from natural hazards.
- 18.2.1.6 Avoid new development in areas at risk of coastal hazards in the Ōhiwa Spit Coastal Hazard Overlay Area.

### OBJECTIVE

- 18.2.2 **Encourage the use of sustainable land management practices that assist in avoiding and mitigating the effects of natural hazards on the land and coastal environment.**

- 18.2.2.1 Encourage land management practices that reduce soil loss.
- 18.2.2.2 Locate and design subdivision, land use, and development within coastal areas so that the need for hazard protection works is avoided.
- 18.2.2.3 Where ~~subdivisional land~~ residential and or business land (Sub 8.259) use activities are threatened by a coastal hazard, the following options will be considered:
1. Abandonment of **buildings** and other assets.
  2. Relocation of **buildings** and other assets.

3. Alteration of **buildings** to reduce vulnerability (including the raising of floor levels).
4. Soft protection works, including beach replenishment.
5. Protection works (protection works should only be permitted where they are the best practicable option for the future).

### 18.2.3 OBJECTIVE

**An informed community aware of the natural hazards that can occur in the District, including the likely frequency, scale, and intensity anticipated from these hazards.**

### POLICIES

- 18.2.3.1 Ensure that all **Council** databases on natural hazards are kept as current as possible.
- 18.2.3.2 Provide the community and resource consent applicants with all available information that **Council** holds on natural hazards within the District.
- 18.2.3.3 **Council** will undertake a programme of natural hazard risk assessment for the District. As this natural hazard information is obtained it will be inserted into the District Plan by way of variation or through the Plan Change process.

### 18.2.4 OBJECTIVE

Ensuring that the effects of any hazard related works avoids effects on matters of national importance

- 18.2.4.1 That any hazard related works that potentially impact on matters of national importance demonstrate consideration of a range of appropriate alternatives to avoid adverse effects on finite resources. (Sub 18.221).

## 18.3 ACTIVITY STATUS

### 18.3.1 PERMITTED ACTIVITIES

- 18.3.1.1 The permitted activities with respect to the management of the effects of natural hazards are:
1. Structures located within the ponding areas, as identified on **Planning Maps 5A, 5C, and 5D and 5e** that have a floor level of 3.6m or higher above ~~Moturiki datum~~ a building platform on natural ground floor level greater than 1% AEP level (Sub 170.194).
  2. Non-habitable network utility structures located within the ASCH area identified on planning maps. (Sub 39.92, 53.53, 54.53, 55.53)
  3. Temporary Military Training Activities.(Sub 19.290)

### 18.3.2 CONTROLLED ACTIVITIES

18.3.2.1 The following activities are controlled activities in any Zone except in the Ōhiwa Spit–Coastal Hazard Overlay Area in relation to natural hazard management. The activities ~~shall (Sub 8.260)~~ ~~may~~ be established after Land Use Consent has been granted by **Council**.

1. Structures located within the ponding areas, as identified on **Planning Maps 5A, 5C, and 5D** and **5e** that have a floor level lower than ~~3.6m above Moturiki datum except where~~ a floor level of less than a 1% AEP event. (Sub 17.195):
  - (a) The structure is a garage or carport.
  - (b) The part of the structure to be so located is a basement.
  - (c) No part of the structure will be used for residential purposes.

### 18.3.3 DISCRETIONARY ACTIVITIES

18.3.3.1 The **Council** may grant or refuse resource consent for a discretionary activity. The following activities may be established after Land Use Consent has been granted by **Council**.

1. Activities undertaken within the urban areas of the Ōpōtiki Township, excluding the Woodlands residential area, that adversely affect the functioning or capacity of the Volkners Island ponding area, including the deposition of any fill within the Volkners Island ponding area as shown on Planning Maps **5A, 5C, 5D** and **5E**.
2. With the exception of **buildings** located within the Ōhiwa Spit Coastal Hazard Overlay Area activities located within Areas Sensitive to Coastal Hazards (ASCH) as ~~defined by the Operative Regional Coastal Environment Plan, that are~~ identified in planning maps:
  - (a) A new structure requiring consent under the Building Act, other than decks, fences and internal alterations, and
  - ~~(b) Any new network utility. (Sub 30.92)~~

18.3.3.2 Applications for resource consent must include as assessment of the coastal hazard risk, which is to take into account the following:

1. Erosion impacts of sea level rise: apply NH11 B providing for climate change for erosion impacts of sea level rise (Sub 17.196) the Intergovernmental Panel on Climate Change best estimate should be used (currently IPCC 1995 IS92a scenario of) 0.49m by the year 2100.
2. Shoreline response to erosion and flooding: scientifically appropriate models should be used.
3. At least 100 year planning horizon.
4. Historical long term trends in the erosion or accretion of the shoreline.
5. Short term fluctuations in the shoreline.

~~5-6.~~ Impacts of coastal inundation considering the cumulative effects of sea-level rise, storm surge and wave height under storm conditions (Sub 17.20).

~~6-7.~~ A factor of safety.

*Provided that:*

- (a) With the exception of **buildings** located within the Ōhiwa Spit Coastal Hazard Overlay Area when resource consent application is lodged with **Council**, and is accompanied with a report from a suitably qualified person detailing:
  - i. The impacts of the perceived hazard on the proposed activity; and
  - ii. The impacts of the proposed activity on the perceived hazard; and
- (b) Where the outcome of the report indicates that the activity will not result in an increase of adverse effects from coastal hazards ~~there will be no significant effects from the activity, (Sub 18.3.3.2)~~ then the activity shall be a controlled activity.
- (c) **Buildings** within the Ōhiwa Spit Coastal Hazard Overlay Area shall be non-complying activities.

- 18.3.3.3 Activities located within areas sensitive to coastal hazards (ASCH) as ~~defined by the Operative Regional Coastal Environment Plan identified on Planning Maps (sub 17.196)~~ [or identified coastal hazard areas] where a report from a suitably qualified person detailing:
- (a) The impacts of the perceived hazard on the proposed activity; and
  - (b) The impacts of the proposed activity on the perceived hazard; and
  - (c) Where the outcome of the report indicates there will be no significant adverse effects from the activity, or from the hazard.

#### **18.3.4 NON-COMPLYING ACTIVITIES**

18.3.4.1 Any new **building** (including structures) as defined in the Building Act 2004 within the Ōhiwa Spit Coastal Hazard Overlay Area shall be a non-complying activity.

18.3.4.2 In addition to the information required to be lodged with an application for resource consent, any application within the Ōhiwa Spit Coastal Hazard Overlay Area must be accompanied by a report detailing consultation with Iwi.

### **18.4 ASSESSMENT CRITERIA FOR CONTROLLED ACTIVITIES**

18.4.1 The **Council** has reserved control over the following matters.

18.4.1.1 Natural hazard mitigation matters

1. The extent to which the effects of the hazard, or the effects of the activity on the hazard, can be remedied or mitigated.
2. The ground level or floor level **height** required to give protection.
3. Mitigation measures used to avoid, remedy, or mitigate the adverse effects of erosion, falling debris, subsidence, slippage or inundation.
4. The need for the erection of sea walls and their subsequent environmental effects.
5. Adequacy of existing outfalls and any need of upgrading.
6. Any need for retention basins to regulate the rate and volume of surface run-off.

18.4.1.2 Extent of the natural hazard

1. The extent to which the natural hazard applies only to part of the **site**, and consequently whether the proposed activity would be unaffected by the hazard, and would not in turn affect the hazard itself.
2. The extent to which the activity would worsen the risk posed by the natural hazard, or would accentuate the effects of the natural hazard.
3. The type of flooding likely to be experienced, whether it is stormwater, ponding, tidal inundation, or some combination of circumstances which could lead to surface flooding.

18.4.1.3 Stability and geology of the site

1. The need for a geotechnical assessment of the **site**.
2. The geology of the **site** including any relationship of effect on areas of actual or potential instability of the **site**. Any susceptibility of the hazard from over steepening of the slope and/or water saturation.

18.4.1.4 Excavation and fill effects

1. The nature of any fill and its effects on the stability of the **site**, and the potential of the fill to become unstable during natural hazard events.
2. Whether there is a need for large excavations to be carried out in stages, with each stage being retained before the next stage is started.
3. The effects of any proposed filling being undertaken to avoid inundation and the consequential effects on the natural drainage pattern adjoining the land.

18.4.1.5 Effects on the environment and adjoining properties

1. Effects of the activity on the functioning of the District's flood ways.
2. Any flooding being accentuated on adjacent sites, or of additional water being directed onto adjacent sites as a result of the activity.



3. The nature of the activity proposed, and whether the activity will involve the use, storage, or disposal of **hazardous substances**, and the effect of this on neighbouring properties and the environment.

4. The effects of stormwater run-off on neighbouring properties.

5. Any proposed boundary drainage to protect surrounding properties.

5-6. [Effects on significant indigenous biodiversity](#)

**Council** may impose conditions on resource consent for a controlled activity only in relation to those matters stated above.

18.4.1.6 *Historical, cultural and archaeological resources*

1. The effect of the design and layout of the activities in relation to land, buildings, features and water bodies which have historical and archaeological worth.

2. The effects of the activity on the resources of importance to Maori.

3. The effects of the activity on heritage and conservation values, both on the site and adjoining sites.” (Sub 18.222).

## 18.5 ZONE STANDARDS

The standards are stated in each of the Zone sections of the Plan.

## 18.6 OTHER METHODS

18.6.1 Other methods of achieving the objective and policies of this Chapter are:

1. Utilise Sections 71 and 72 of the Building Act 2004 where **buildings** are located within hazard areas.
2. Encourage Coast Care programmes as a mechanism to ensure that the integrity of the coast and dune systems is maintained.
3. Consideration of the effects of land re-contouring and the effects of drainage networks, on areas susceptible to natural hazards when assessing resource consent applications.
4. Encourage landowners to amalgamate natural hazard concerns into **Environmental Plans** that are lodged with the Bay of Plenty Regional Council.
5. Use consent notices as a mechanism to ensure that **buildings** within subdivisions are located on areas within a **site** where the effects of natural hazard occurrence can be avoided or mitigated.
6. As part of the overall state of the environment monitoring programme, **Council** shall:
  - i. Conduct a natural hazard assessment of the Coastal Zone and the Coastal Residential Zone; and
  - ii. Create and maintain a natural hazards register for the District.

7. Make submissions to Bay of Plenty Regional Council's Annual Plan so that the natural hazard study requirements of the Ōpōtiki District **Council** are considered for Annual Plan inclusion.
8. Provide information to raise landowners' awareness of the different management practices that may increase or decrease the potential threat of erosion and other natural hazards.
9. Raise community awareness of natural hazards within the District through the use of Civil Defence education programmes.
10. Through the use of Land Information Memoranda (LIM) and Project Information Memoranda (PIM) to provide information on known hazards to potential developers and applicants.
11. Preparation by Bay of Plenty Regional Council in consultation with Ōpōtiki District **Council** and other interested parties, of a floodplain management strategy for the Waioeka-Ōtara catchment.
12. Preparation by Bay of Plenty Regional Council in consultation with District Council's and other interested parties, of a region wide Natural Hazards Strategy.
13. Preparation by Bay of Plenty Regional Council and Ōpōtiki District **Council** of their respective responsibilities under the Civil Defence legislation for disaster planning, response and recovery.

## **18.7 EXPECTED ENVIRONMENTAL RESULTS**

Below are the anticipated environmental outcomes from the implementation of the objectives and policies of this section.

- A.** Increased awareness by consent applicants, and consent holders, of the effects that natural hazards may have on their activities.
- B.** Placement of structures and vegetation so that the effects of natural hazards are avoided or mitigated.
- C.** Effective functioning ponding areas within the Town.