

**Chapter 62****NATURAL HAZARDS****62.1 INTRODUCTION**

Napier City, like many other cities within New Zealand, is subject to the effects of natural hazards. Since the enactment of the Resource Management Act, the Council has been proactive in the identification of natural hazards within its boundaries and the assessment of the possible effects.

When knowledge of natural hazards is available, the location of new land uses can be managed so that the risk is avoided, remedied or mitigated. Where land uses exist in areas susceptible to natural hazards, the effects of the land uses will be controlled to safeguard the health, safety and wellbeing of the public.

The natural hazard types that have been identified within the City include the following:

**1. Coastal Hazard**

Considerable resources have been allocated to the accurate identification of the coastal hazard within the City. The principal coastal hazard is that of erosion which can be a gradual coastal process. This hazard extends from the mouth of the Inner Harbour at Ahuriri, to the Esk River Mouth at Bay View. The coastal hazard is shown on the District Plan maps as an overlay and is based on the assumption of a long-term commitment to beach renourishment as identified in Dr Jeremy Gibb's report entitled 'Review of the Coastal Hazard Zone Between Ahuriri Entrance and Esk River Mouth'. South of the Inner Harbour at Ahuriri and to the Tutaekuri River Mouth is not identified as CHZ. This is on the basis that the Hawke's Bay Regional Council Monitoring Programme has not identified this area as being subject to a significant coastal hazard, and that in some areas the coastline is accreting. Napier City Council will continue to monitor (jointly with the Hawke's Bay Regional Council) the entire coastline in Napier, and pending new information becoming available (ie: on the basis of changing coastal processes or the effects of beach renourishment) the CHZ may be altered at some time in the future.

Tsunami are also a natural hazard albeit one with prediction difficulties. Depending on their magnitude, they could impact upon the entire coastal area within the City. Their potential effects have to be planned for in terms of the Council's Civil Defence role.

**2. Earthquake Hazard**

Napier City has contributed to a regional study that identifies the seismic hazard. History shows the very real risk for the area. The study was designed to accurately identify and locate active faults and liquefaction areas. There are no known major active fault lines within the Napier City territorial boundary. However the effects from faults outside the boundary will still be very significant.

Liquefaction effects are potentially significant for much of the City with the exception of the hill areas. This is an effect that cannot be avoided, but mitigation is addressed through the building regulations.

### 3. Flooding Hazard

#### Flooding Hazard Area

The Heretaunga Plains are alluvial and there are a number of rivers that traverse this area. Within the Napier City boundary there are two major rivers – the Esk and the Tutaekuri. Considerable flood protection works have been undertaken, especially on the Tutaekuri. However very large rainfall events could exceed the design standards for these works and the potential for flooding exists. The Heretaunga Plains Flood Hazard Study 1999 was carried out by the Hawke's Bay Regional Council on the flood risk from a breach of stop banks along the Tutaekuri River. Major breach scenarios at Taradale and Brookfields indicate that most of the Napier urban area (excluding the Hill areas) would become inundated.

Flood paths and ponding areas have been identified and this information has been used in considering Napier's urban growth options and for the provision of suitable pumping systems to ensure that ponding will not have a significant impact.

This type of flooding is an effect that can and will be mitigated through the use of the building regulations where minimum levels for floor height are required.

#### River Hazard Area

The effects of rising river levels cannot be as easily managed as ponding-style flooding covered by the Flooding Hazard Area. Areas identified within the River Hazard Area will be subjected to fast moving floodwaters during extreme weather events. With River flooding there is a high risk of loss of life if effects are not mitigated effectively. Due to the magnitude of the risk involved, the properties within the 'River Hazard Area' will be subject to more stringent controls than areas within the 'Flooding Hazard Area'.

Local authorities exercising their statutory powers will be permitted to undertake natural hazard mitigation activities where they follow the provisions of the relevant statute and they have expertise in this field, as and where required.

### 4. Slippage/Hill Erosion

The Western Hills form a backdrop to the City. The physical characteristics of this land make some areas susceptible to slippage and erosion. A joint exercise was undertaken with the Hawke's Bay Regional Council to identify the areas on the Western Hills most at risk from slippage. This involved the use of soil maps and physical inspection of the areas by soil experts from the Regional Council. The potential erosion hazard areas have been recorded for indicative purposes. This information will be included on LIMs and PIMs.

The Council is also aware that slippage may be an issue for parts of Scinde Hill. It is intended that a study will be undertaken to assess the risk potential and develop standards to manage that risk.

## 62.2 RESOURCE MANAGEMENT ISSUES

The following resource management issues have been identified as significant:

**62.2.1 Land uses can increase the potential risk from natural hazards.**

Some land uses can exacerbate hazards and this is particularly evident for erosion prone land. The effects of the hazards could significantly increase following additional land use and/or development of the land. It is important that the Council identify the types of land use that could lead to an increase in the risk from natural hazards and control those land uses accordingly.

**62.2.2 Land uses are already established in areas at risk from natural hazards.**

The Council may be able to avoid the effects of hazards where development has not already occurred. However there are instances where the potential risks from natural hazards are likely to have impacts on existing development. The liquefaction areas that affect substantial areas of residential Napier most easily illustrate this scenario.

**OBJECTIVES, POLICIES AND METHODS**

The following objectives, policies and methods apply to all hazard areas throughout the City.

**Objective 62.3**

To manage the effects of natural hazards on land uses throughout the City.

*This objective relates to Issues 62.2.1 and 62.2.2.*

**Policies**

In order to achieve this objective, the Council will:

- 62.3.1 Identify the natural hazards that may have a potential impact on the City.
- 62.3.2 Collect and collate information on natural hazards that have the potential to impact upon the natural and physical resources of the City and make such information publicly available.
- 62.3.3 Monitor the effects of the natural hazards on the City's environment.
- 62.3.4 Control the subdivision, use and development of land to ensure that risks to the community are avoided, remedied, or mitigated.
- 62.3.5 Ensure that practical protection methods are considered.

***Principal Reasons for Adopting Objective and Policies***

*Before the Council can establish a successful management regime for the natural hazards within its area the primary responsibility is to accurately identify the hazards that potentially put the community at risk and to assess the possible impact of the hazards. The task of gathering data on the hazards that affect Napier City has been on-going. It is an area where further information is being added following events that occur throughout New Zealand and when further research is undertaken.*

*Some of the identified hazards could have an impact on the built environment. Where development has not occurred the Council can ensure that it will not occur in areas at high risk from natural hazards. Where*

*development is in existence, a managed approach to development is necessary, so that the level of risk is not increased.*

*The Council will give consideration to the appropriate means to avoid, remedy or mitigate the effects from the natural hazards, In some instances physical works may not be a practical option because of the cost, long term viability or the low probability of the hazard occurring.*

## Methods

- (1) District Plan Rules.
- (2) Establishment of a Hazard Register and provision of known hazard risk information collected and collated by the Council in all LIM's and PIM's.
- (3) Identification of known hazards on the Council's GIS database.
- (4) Physical works such as the beach renourishment scheme, or the provision of pumps to mitigate floodwaters.

### **Reasons for Methods**

*The principal aim of the Council with regard to natural hazards is to ensure that potentially affected landowners are aware of the actual or potential hazard and that any risk is avoided remedied or mitigated. The Council is therefore in the process of identifying known potential risks and ensuring that they are included on the GIS system. A hazard register is being compiled that identifies sites where the potential for a hazard is greater. When applications, LIMs or PIMs are lodged, this information can be brought to the attention of owners or potential owners. In order to avoid, remedy or mitigate effects of known hazards, the Council has developed rules. In some instances physical works may be undertaken.*

## **Objective 62.4**

To control the effects of land uses and development on areas subject to natural hazards throughout the City.

*This objective relates to Issues 62.2.1 and 62.2.2.*

## **Policies**

In order to achieve this objective, the Council will:

- 62.4.1 Direct development away from areas known to be subject to natural hazards.
- 62.4.2 Control existing development in areas subject to natural hazards.
- 62.4.3 Monitor the state of the natural hazard.

### **Principal Reasons for Adopting Objective and Policies**

*It is not only the natural hazards that have effects but consideration also needs to be given to the effects that land uses can have on the hazards themselves and any increasing risk to the environment that may result.*

*The risk to life and property from some natural hazards can be avoided .It is the Council's intention to do this where possible. In such cases the Council can direct development away from the hazard areas.*

*Where the scale of the hazard is relatively small, such as for areas prone to slips, this may be achieved. However where the magnitude/extent of the hazard is largely unknown, such as earthquakes, this is not*

*practicable and it must be recognised that land uses will not affect or worsen these hazards. Building Code requirements can mitigate some of the effects of such hazards.*

### **Methods**

- (1) District Plan Rules.
- (2) Local Authority and Regional Level State of the Environment Reporting.
- (3) Urban Growth Strategies which direct the future growth of the City.
- (4) Powers and responsibilities under other legislation, eg: Building Act 2004.

### **Reasons for Methods**

*Monitoring the effects of land uses on the hazard is particularly important and this can influence whether rules need to be applied. Rather than imposing rules it is preferable to avoid the hazards in the first instance and the Urban Growth Strategy has taken all of the known hazards into account in the process of directing future growth. Where land uses are already in existence rules are necessary to safeguard the land use and also to reduce the level of effect on the hazard itself.*

## **62.5 ANTICIPATED ENVIRONMENTAL RESULTS**

- (1) An environment where the risk to life and property from natural hazards is reduced.
- (2) A community which is better informed / prepared for natural hazards.

## RULES

This chapter of the Plan sets out the activity status for land uses that are located in those areas of the City that may be at risk from natural hazards. Where there are known hazards they are shown on the planning maps. In other instances, potential hazards are listed on the Council's Hazard Register which does not form part of this Plan.

### 62.6 Summary of Rules for Natural Hazards

The following is a quick reference guide that summarises the Natural Hazards Activity Table. It is intended as a guide only and should not be used in place of the Natural Hazards Activity Table elsewhere in this chapter.

Rule Number and Description		Classification	Page Number
Rule 62.7	Repair, maintenance and minor alterations to existing coastal protection works, buildings and structures.	Permitted	7
Rule 62.8	Beach renourishment.	Permitted	7
Rule 62.9	Repair and maintenance of existing network utility operations.	Permitted	7
Rule 62.10	Flood and River-related and Network Utilities works within the River Hazard Area.	Permitted	7
Rule 62.11.1	Any new network utility operation within the coastal hazard area identified on the planning maps.	Controlled	8
Rule 62.11.2	A network utility operation not in existence as at 11 November 2000 located wholly or partly within the River Hazard Area identified on the planning maps.	Controlled	8
Rule 62.12	Any activity referred to in rules 62.7 to 62.10 that does not comply with all the relevant conditions, unless stated elsewhere in this Plan.	Restricted Discretionary	9
Rule 62.13(a)	Land development (including subdivision), other than a prohibited activity, within the coastal hazard area identified on the planning maps.	Discretionary	9
Rule 62.13(b)	Coastal protection works.	Discretionary	9
Rule 62.13(c)	Any activities within the River Hazard Area not already provided for.	Discretionary	9
Rule 62.14	Any new building or structure, other than network utility operations, fences and coastal protection works within the coastal hazard area identified on the planning maps.	Prohibited	9

## DISTRICT WIDE NATURAL HAZARDS – ACTIVITY TABLE

PERMITTED ACTIVITIES	Matters the Council will restrict its discretion to for restricted discretionary activities.
<p><b>62.7 Repair, Maintenance and Minor Alterations of Coastal Protection Works, Buildings and Structures within the Coastal Hazard Area</b></p> <p>1. The repair, maintenance, and minor alteration of buildings and structures in existence as at 11<sup>th</sup> November 2000 located wholly or partly within the coastal hazard area is a permitted activity provided that:</p> <p>a) The provisions of section 36(2) of the Building Act 1991 can be satisfied.</p> <p>b) The conditions and rules for the zone in which they are located are complied with.</p> <p>2. The maintenance and repair of coastal protection works in existence as at 11<sup>th</sup> November 2000 located wholly or partly within the coastal hazard area identified on the planning maps is a permitted activity.</p> <p>a) The works must be undertaken by a local authority.</p> <p>NOTE: For the purposes of this Chapter, “repair and maintenance” means; the replacement and/ or repair of materials in an existing building or structure. “minor alteration” means the building may be altered / changed within the existing building envelope and would include the closing in of an existing veranda or terrace, but would not allow for second storey additions.</p>	<p>The Council will restrict its discretion to the matters referred to in Rule 62.11, including the following:</p> <ul style="list-style-type: none"> <li>- The effects on the coastal hazard.</li> <li>- The degree to which protection works to the land or building have been carried out.</li> </ul>
<p><b>62.8 Beach Renourishment</b></p> <p>1. Beach renourishment wholly or partly within the coastal hazard area identified on the planning maps is a permitted activity provided that:</p> <p>a) It complies in all respects with Rule 44.6 in the Foreshore Reserve Zone Activity Table.</p>	<p>Refer to Rule 44.6.</p>
<p><b>62.9 Maintenance and Repair of Network Utility Operations</b></p> <p>1. The maintenance and repair of network utilities in existence as at 11<sup>th</sup> November 2000 located wholly or partly within the coastal hazard area is a permitted activity provided that:</p> <p>a) The provisions of Section 36(2) of the Building Act 1991 can be satisfied.</p> <p>b) All relevant conditions in the Network Utility Operations Activity Table and Condition Table elsewhere in this Plan are complied with.</p>	<p>The Council will restrict its discretion to the matters referred to in Rule 62.11, including the following:</p> <ul style="list-style-type: none"> <li>- The effects on the coastal hazard.</li> <li>- The degree to which protection works to the land or building have been carried out.</li> </ul>
<p><b>62.10 Flood and River-related and Network Utilities works within the River Hazard Area</b></p> <p>The following are permitted activities in the River Hazard area:</p> <ol style="list-style-type: none"> <li>1. Natural Hazard Mitigation Activities</li> <li>2. Production Forestry for River Control Works</li> <li>3. Construction Maintenance and Operation of Water intakes</li> </ol>	<p>The Council will restrict its discretion to the matters referred to in Rule 62.11, including the following:</p> <ul style="list-style-type: none"> <li>- Availability of alternative sites for the activity</li> <li>- Mitigation</li> <li>- The extent to which public safety can be achieved</li> <li>- Assessment of the probability, magnitude and consequences of the natural hazard event</li> </ul>

<p>4. Construction and maintenance of bridge structures</p> <p>5. The removal, stockpiling and processing of river berm silt or other river control or drainage works carried out by a local authority, exercising its powers, functions and duties under the Soil Conservation and Rivers Control Act 1941, or the Land Drainage Act 1908.</p> <p>6. The operation, maintenance and minor upgrading of underground telecommunication and power and gas lines and support structures.</p> <p>Provided that:</p> <p>a) The temporary or permanent storage or placement of materials that have the potential to become flotsam or jetsam shall take place outside of the River Hazard Area.*</p> <p>b) All conditions in the relevant Activity and Condition Table for the underlying zoning, or in the case of network utilities Chapter 53 applies, can also be complied with.</p> <p>* Natural Hazard Mitigation Activities are exempt from the requirement to meet (a).</p> <p>Advisory note: Any works in the bed of rivers and lakes is regulated by the Hawke’s Bay Regional Council and may require resource consent.</p>	<ul style="list-style-type: none"> <li>- The type, scale and distribution of any potential effects from the natural hazard</li> <li>- The extent to which verifiable new information from a suitably qualified professional demonstrates that any land within an area identified on the District Planning Maps or held within Council databases as potentially subject to a natural hazard is not under threat from the hazard concerned or that the hazard is negligible</li> </ul>
<p><b>CONTROLLED ACTIVITIES</b></p>	<p><b>Matters the Council will restrict its discretion to for restricted discretionary activities.</b></p>
<p><b>62.11 Network Utility Operations</b></p> <p>1. A network utility operation not in existence as at 11 November 2000 located wholly or partly within the coastal hazard area identified on the planning maps is a controlled activity provided that:</p> <p>a) It must comply in all respects with the relevant conditions in the Network Utility Operations Activity Table and Condition Table.</p> <p>The Council shall exercise its control over the following:</p> <p>i) The avoidance, remediation or mitigation of the effects of coastal erosion and inundation on the network utility operation.</p> <p>ii) The avoidance, remediation or mitigation of the effects of the network utility operation on coastal erosion and inundation.</p> <p>2. A network utility operation not in existence as at 11 November 2000 located wholly or partly within the River Hazard Area identified on the planning maps is a controlled activity provided that:</p> <p>a) It must comply in all respects with the relevant conditions in the Network Utility Operations Activity Table and Condition Table;</p> <p>b) It is located within a road reserve and is supported by an existing structure.</p> <p>The Council shall exercise its control over the following:</p> <p>i) The avoidance, remediation or mitigation of the effects of any erosion of river banks and inundation on the network utility operation.</p> <p>ii) The avoidance, remediation or mitigation of any network</p>	<p>The Council will restrict its discretion to the matters referred to in Rule 62.11, including the following:</p> <ul style="list-style-type: none"> <li>- The effects on the erosion hazard.</li> <li>- The degree to which protection works to the land or structure have been carried out.</li> </ul>



<p>utility from causing an increase in the risk of flooding or damage to any property during flood events, (including the risk resulting from trapped debris), or adversely affecting any other lawfully established structure.</p> <p>iii) The life expectancy of the support structure.</p> <p>3. Applications for resource consent will not be publicly notified in respect of network utility operations within coastal hazard areas that fully comply with the standards and terms, and notice of applications need not be served.</p>	
<p><b>RESTRICTED DISCRETIONARY ACTIVITIES</b></p>	<p><b>Matters the Council will restrict its discretion to for restricted discretionary activities.</b></p>
<p><b>62.12 Land Uses Not Complying With Conditions</b></p> <p>1. Any activity referred to in Rules 62.7 to 62.11 that does not comply with all of the relevant conditions in the Natural Hazards activity table and condition table is a restricted discretionary activity, unless stated by a rule elsewhere in this Chapter.</p>	<p>The Council will have regard to the relevant objectives and policies of the Plan and will restrict its discretion to:</p> <ul style="list-style-type: none"> <li>- The matters identified in the second column of the Natural Hazards activity table and/or condition table.</li> <li>- The cumulative effect of non-compliance with more than one condition.</li> <li>- In respect of a controlled activity failing to comply with all of the relevant conditions, those matters the Council had reserved its control over.</li> <li>- The matters set out in Chapter 1.6.5.</li> </ul>
<p><b>DISCRETIONARY ACTIVITIES</b></p>	
<p><b>62.13 Discretionary Activities</b></p> <p>1. The following land uses are discretionary activities. A resource consent application must be made and consent may be declined or granted with or without conditions. The Council will have regard to the objectives and policies of this Plan and the relevant assessment criteria elsewhere in this Plan. The Council's discretion is unrestricted.</p> <p>a) Land development, other than a prohibited activity, within the coastal hazard area identified on the planning maps.</p> <p>b) Any coastal protection works not in existence as at 11<sup>th</sup> November 2000 located wholly or partly within the coastal hazard area identified on the planning maps.</p> <p>c) Any activities within the River Hazard Area not already provided for.</p>	
<p><b>PROHIBITED ACTIVITIES</b></p>	
<p><b>62.14 Prohibited Activities</b></p> <p>1. The following land uses are a prohibited activity for which no resource consent shall be granted:</p> <p>a) Any new building and/or structure, other than network utility operations, fences and coastal protection works within the coastal hazard area identified on the planning maps.</p> <p>b) The relocation of a building or structure, other than network utility operations, fences and coastal protection works, within the coastal hazard area on the planning maps.</p>	

**62.15 PRINCIPAL REASONS FOR RULES****1. Prohibited Activities**

The erection of new buildings and structures in the coastal hazard area is prohibited because it is possible that they could be at risk from the hazard, and their erection could have an adverse effect on the hazard itself. The safety of the property owner, subsequent property owners and their property could be at risk from the hazard if consent was given for building within the hazard area.

**2. Alteration and Modification of Buildings and Structures**

New buildings and structures are prohibited in the hazard areas. However there are a number of buildings already existing within the area. This rule accepts that maintenance and some alteration of the buildings should be able to be undertaken. However, the title will be altered to advise that the land could be at risk from the hazard. This will alert prospective future landowners to the risk involved.

**3. Beach Renourishment**

Parts of Napier's coastline are subject to erosion and inundation. The range of methods available to remedy and mitigate such hazards include beach renourishment. Deposition of sediment along the Westshore and Bay View coastline has been carried out for over a decade. The results of these works have been monitored and results indicate that the beach renourishment works are effective in mitigating the effects of coastal erosion and inundation.

The rules allowing the deposition of sediment along Napier's foreshore areas assist in enabling the Council to undertake works to implement a long term solution to the mitigation of coastal erosion and coastal inundation hazards.

**4. Coastal Protection Works**

Parts of Napier's coastline are subject to erosion and inundation. The range of methods available to remedy and mitigate such hazards include physical engineering works above (and below) the mean high water springs mark. Careful management of coastal protection works is necessary to ensure any adverse effects arising from their implementation are avoided, remedied or mitigated. In particular, this includes the cumulative effects on the coastal environment, the coast's natural processes and its character.

**5. Land Development (Including Subdivision)**

To ensure the integrated management of land use and development, it is appropriate that land development is carefully managed within the coastal hazard area. New buildings and structures associated with land development are prohibited activities (refer to chapter 62.14.1 above). Consequently, subdivision and earthworks within the coastal hazard area require a resource consent.

In assessing an application for resource consent, the consent authority can have regard to the effect of the hazard on the land development and the effect of the land development upon the hazard. Section 106 of the Act provides for careful management of subdivision within areas of land identified as being subject to a natural hazard. The process of subdivision under Section 106 of the Act (where it is to occur in a natural hazard area) is recognised as being "enabling", ie: able to be

undertaken.

The subdivision itself is not likely to have an effect on the environment, however an assumption that building can follow subdivision does not apply in this situation. No buildings or structures will be permitted within the hazard area and this requirement can be lodged on the title. Similarly, subdivision consents within the coastal hazard area are likely to be subject to a requirement to identify a building site outside of the hazard area. This will ensure any newly created sites, ultimately have the ability to accommodate a building. This rule ensures the integrated management of subdivision and land development processes and is consistent with Section 106 of the Act.

## **6. Network Utility Operations**

The rule recognises the importance of utility services to the City, but in order to ensure that the effects of natural hazards and the effects of the utility itself are appropriately managed, various controls are in place. A resource consent may be necessary for any new utility within the hazard areas identified in the Plan.

## **7. Flood and River Related Works within the River Hazard Area**

The rule differentiates between activities that should be located outside the River Hazard Area, and activities that must be located within the River Hazard Areas. This rule recognises that some activities are dependent on proximity to the River and cannot be located outside the River Hazard Area. This includes structures such as bridges, and water intakes, and flood protection works.

## **8. Any activity within the River Hazard Area not listed as 'Flood and River Related Works'**

Areas identified within the River Hazards Area will be subjected to fast moving floodwaters during extreme weather events. This means there is a high risk of loss of life, if effects are not mitigated effectively. Due to the magnitude of the risk involved, namely that lives are at risk and significant material damage may occur, the properties within the 'River Hazard Area' will be subject to more stringent controls than areas within the 'Flooding Hazard Area'. Essentially, if it is possible for a proposed activity to be located outside of the River Hazard Area, this shall be enforced.

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