

# 11 Natural hazards

## 11.1 General

Within the areas identified as "Natural Hazards Areas" the following rules shall apply, in addition to the rules for the zone. Where the rules outlined in Section 11 and the rules for the particular zone are inconsistent, the rules of Section 11 shall have precedence.

Objectives/Policies		
2.4.2	O1	P1

## 11.2 Activity Table

KEY	
P	Permitted activity
D	Discretionary activity
N/C	Non Complying activity
C	Controlled activity
RD	Restricted Discretionary activity
PRHB	Prohibited activity
<i>All activities not listed in the Activity Table are deemed to be non-complying unless otherwise provided for.</i>	
Activity	All zones
<b>All Natural Hazard Areas</b>	
1. Any use, development or subdivision of land within areas identified as Natural Hazard Areas on the planning maps with the exception of upgrading of electrical lines listed as 8.1.1 and 8.1.5. Where the intended upgrading meets the definition provided in the District Plan, such a work shall be permitted.	D
<b>Flooding, Retention Ponds and Spillways</b>	
1. Any use, development or subdivision of land which blocks, impedes or diverts any natural gully system or overland flow path.	D
2. Any use, development or subdivision of land in the water supply catchments above Te Aroha township as defined on the planning maps.	PRHB
3. Any use, development or subdivision of land within the Waihou River floodway, land at the head of debris fans, or land within the flood channels of tributary streams with the exception of upgrading of electrical lines listed as 8.1.1 and 8.1.5. Where the intended upgrading meets the definition provided in the District Plan, such a work shall be permitted.	D
<b>Fire Hazard Buffer</b>	
1. Erection of habitable buildings within an area which is identified on the planning maps as a "High Fire Risk Bush & Fire Hazard Buffer".	C

Objectives/Policies		
3.2.2.1	O1	P1, P2, P3, P4
3.2.2.2	O1	P1

### Explanation

For areas with known or suspected hazards, the most effective control technique available involves the retention of Council discretion in order to avoid or mitigate hazards. Areas subject to natural hazards can be readily mapped to permit ease of reference, facilitating greater public awareness of natural hazards.

Council has already begun programmes to identify areas in the District which are subject to land instability. The land instability notation has been based on soils information and geotechnical and flooding reports for the Te Aroha township area. In order to impose controls on land subject to slippage without being unduly onerous on land not at risk, it is important that this work be continued. The use of GIS as a mapping tool will speed this identification work. Where land is identified as unstable, it is important from a public safety viewpoint to require appropriate studies and impose appropriate controls. It is the intention of the Plan that general controls on buildings will be applied through the Building Act 1991 and in addition controls on all structures and built forms within identified hazard areas will be applied using the discretionary activity status afforded by the Plan.

Large areas of impermeable surface (pavement, roofing, buildings) generate significantly more stormwater runoff than original permeable ground surfaces such as soil covered by pasture or bush. Increased runoff can boost flood loads in rivers and streams and lead to scour or erosion intensifying downstream hazard.

It is, therefore, appropriate to require technical evaluations of the impact of increased stormwater flow from larger developments such as industrial or commercial buildings, carparks or loading and to require increased stormwater loads to be managed or mitigated to avoid downstream effects. This will be particularly important in low lying areas already subject to flood hazard. ~~The coverage area with impermeable surfaces of 1,000m<sup>2</sup> is similar to that applied in other regions.~~ A range of mitigation options will need to be evaluated on a case by case basis in accordance with the Development Manual including stormwater retention ponds, volume and velocity control devices. In general, net stormwater discharge from a site should remain largely unchanged after development takes place. This will ensure that no additional hazard is created.

The forested areas of the Kaimai Ranges and western foothills represent both a valuable resource and a potential fire threat to the residents of Matamata-Piako. The fire hazard line has been drawn around those areas which are identified as "high risk areas" within the Council's rural fire plan. The line has been drawn a standard distance of 200m from the area to be protected. The rules and methods included in this plan are intended to protect the forest resource from accidental fires caused by nearby dwellings and to provide a safety factor for homes and public buildings near forest areas should a fire occur. The methods also enable the controlling of access to high risk areas during dry periods, acknowledging that a possible cause of forest fires is uncontrolled access to these areas during these periods.

The Building Act 1991 contains a range of provisions appropriate for seismic hazard and wind hazard management in the District. To avoid confusion it is considered that the best approach with regard to an essentially undefined seismic hazard is to use the provisions of the Building Act 1991, in the interim until more accurate risk assessment data is available.

Wind zones based on accepted national standards provide the simplest technique for defining the relative degree of hazard for different geographical areas of the District. The wind hazard management and mitigation provisions of the Building Act 1991 will be relied on.

### 11.3 Site suitability

Where Council has reasonable grounds to believe a site which lies outside of the hazard areas may be subject to any natural hazard Council will require any persons proposing to use, develop or subdivide the site to undertake a full site evaluation providing a report from a suitably qualified engineer or other person confirming that the site can be safely developed without adverse effects either on or off the site in accordance with the Development Manual.

Objectives/Policies		
3.2.2.1	O1	P1, P2, P3, P4
3.2.2.2	O1	P1
3.2.2.3	O1	P1, P2
3.2.2.4	O1	P1, P2
3.2.2.5	O1	P1

#### Explanation

Larger areas of the District which are prone to risk from natural hazards have been mapped on the planning maps. However there are some sites in the District which will have escaped attention in the development of the plans which will be unsuitable for development or which will require protection measures. Council will retain the discretion to require site investigations to confirm suitability of the site where it has reasonable grounds to believe the site may be prone to natural hazards disturbance.

### 11.4 Flooding

#### 11.4.1 Design floor levels

In ponding areas within the Waihou River flood plains, at least 80% of the area of the property shall have ground levels 200mm above the design flood level and the building floor levels must be 500mm above the design flood level, i.e. 300mm above ground level. Design flood levels are usually based on the risk factor of 1% annual return period flood event.

## 11.4.2 Design standards for buildings subject to overland flow paths

Buildings subject to overland flow from tributary streams shall meet the following standards:

- (i) Exterior walls should be waterproofed;
- (ii) Large openings to the building should be located away from flowpaths;
- (iii) Minimum floor levels of habitable rooms shall be 500mm above general ground level or above stopbank crest levels or road formation levels.

## 11.4.3 Stormwater flows

Where activities involve the development of large impermeable surfaces including buildings, structures and paved surfaces (exceeding a combined site coverage of 1,000m<sup>2</sup>), Council will require technical evaluations of the existing and anticipated stormwater flows and the necessity or otherwise of retention ponds or other stormwater control and/or mitigation devices.

## 11.4.4 Stormwater design

Detailed stormwater design shall be in accordance with the Development Manual.

## 11.5 Geotechnical structural area

The instability areas shown on the planning maps generally have the following characteristics:

- Land inventory map class VI and above;
- Land inventory map slopes E, F, G (>20°);
- Land inventory map erosion severity 2 and above (moderate and above) including active stream bank erosion;
- Tongues of slump debris.

In the above where use, development or subdivision is proposed a geotechnical assessment may be required in accordance with the requirements of the Development Manual Rule 1.2.2 (vi).

Objectives/Policies		
3.2.2.1	O1	P1, P2, P3, P4

### Explanation

The District contains a number of areas which are identified as susceptible to flooding. The flood hazard line was sourced from the Transitional District Plan which identifies the Waihou Valley Scheme and the Piako River Scheme. Additional information was sought from Environment Waikato to further define flood lines. The Beca Carter Hollings & Ferner flood and land instability report for Te Aroha (1988) was also used. Other small pockets have been shown where it is known the land floods on a regular basis. Flooding can be a threat to the lives of people and can cause damage to property. In areas where flooding is known to occur it is not always necessary to prohibit buildings and structures if they are designed so that the adverse effects of flooding are avoided. The primary means of avoiding adverse effects is to construct floor levels above the known flood levels on the property in question.

Overland flow paths of tributary streams can carry significant volumes of water during times of heavy rain and flooding. Buildings and structures located in these flow paths can be significantly damaged during times of heavy flow. The measures above are measures which can be taken to minimise potential damage to the building in the flowpath.