

DISTRICT-WIDE MATTERS

NH – Natural Hazards

Flood Channel Zones

Introduction

The term natural hazards covers situations where water, air and ground movement have the potential to adversely affect human life and property. They can also have adverse effects upon structural assets and the natural values of areas. The hazards most relevant to the Manawatū District are flooding, earthquakes, land slippage, coastal erosion/deposition and tsunamis (tidal waves). Events such as storms, tornadoes, and volcanic ash showers may also happen, but land use planning could do little to reduce their effects. The potential threats to the Manawatū District are outlined more fully in the *Council's* Civil Defence Plan.

The first way of reducing adverse effects on people, property and natural values from hazard events is to reduce the severity of the event itself, for example by planting stream catchments to reduce the speed of water runoff. The second is to avoid damage by keeping residents and development away from the hazard. The third method is to try and modify the effects of the hazard, e.g. by constructing stopbanks to confine floodwaters.

When it comes to hazard avoidance, the level of risk determines the amount of development which is “acceptable”. For example most people would agree that houses should not be built in places which flood every year, but the risk may be acceptable on a property which is flooded every two hundred years.

Objectives

NH-01

To reduce the potential impact of natural hazard events, where these events represent a significant risk to human health and safety, to natural values or to property due to their potential severity and likelihood of occurrence.

NH-O2	To avoid development which would adversely affect people’s health and safety including by placing unnecessary demands upon response agencies, including Civil Defence, during and after a hazard event.
--------------	---

Refer also: SUB-O6, SUB-O8

Policies

NH-P1	To help improve the level of knowledge about the District’s natural hazards, particularly amongst those at risk.
NH-P2	To take the potential effects of tsunamis, coastal erosion / deposition processes, and the possibility of sea level rise into account when planning for the beach settlements and coastal areas.
NH-P3	To identify areas which are especially prone to damage from earthquakes, and consider special standards for <i>buildings</i> in these areas.
NH-P4	To help reduce the severity of flooding and land erosion events.
NH-P5	To prevent construction of dwellings in areas subject to deep and/or fast-flowing floodwaters.
NH-P6	To ensure that all <i>buildings</i> which are potentially affected by 100 year flood events (i.e. those with a 1% probability of happening in any given year) do not significantly impede or divert the flow of flood waters.
NH-P7	To ensure that dwellings which are potentially affected by 100 year flood events are designed so that floodwaters do not enter them.
NH-P8	To ensure that each new subdivided allotment has at least one <i>building site</i> (including effluent disposal area and suitable vehicular access) which is not prone to natural hazards, unless <i>Council</i> is satisfied that no <i>dwelling</i> will be required on the allotment. (SUB-P39).
NH-P9	To require that the stability of new <i>buildings</i> in areas which are potentially susceptible to land movement is investigated and assessed.

Rules

NB – Words in italics have a specific definition contained in the Definitions chapter. Some of the activities listed below, particularly those marked ^{MWRC}, may also require consent from the *Regional Council*.

Permitted Activities (PER)

The following are *permitted activities* in the Flood Channel Zone provided that they comply with NH-ST1 to NH-ST11.

NH-R1	Reserves	
NH-R2	<i>Farming</i>	
NH-R3	Mineral exploration, prospecting or extraction activities, provided that the amount of material does not exceed 1,000 cubic metres per calendar year.	
NH-R4	Extraction of more than 1,000 cubic metres of sand and/or gravel per year from a river beach, provided the <i>site</i> of the extraction is further than 500 metres from the nearest <i>dwelling</i> ^{MWRC}	
NH-R5	<i>Pig Farming</i> , provided the activity does not involve:	
	NH-R5.1	More than two breeding sows, of which no more than 10 of the progeny can be retained beyond the weaner stage of eight weeks of age, or
	NH-R5.2	More than 12 growing pigs only, up to the bacon weight age
NH-R6	<i>Signs</i> which comply with SIGN-R1, SIGN-R2, SIGN-ST1 to SIGN-ST3.	
NH-R7	Formation of vehicle crossings onto roads. NB: Consent from the <i>road</i> controlling authority is required for vehicle crossings onto Limited Access Roads	
NH-R8	<i>Earthworks</i> ancillary to <i>permitted activities</i> or to approved <i>controlled, restricted discretionary or discretionary activities</i>	
NH-R9	Planting, tending or removing shelter belts	

<p>NH-R10</p>	<p>Within the Flood Channel <i>Zone 2</i> only, planting, tending and harvesting forests, woodlots, or specialised tree crops. ^{MWRC}</p>
<p>NH-R11</p>	<p>Clearance, modification or harvesting of <i>indigenous vegetation</i> if it qualifies as a permitted activity under HH-APP4. ^{MWRC}</p> <p>NB: This rule shall not apply to the heritage places listed in HH-APP1 or HH-APP2. Rules on the modification of these places are instead contained in the HH – Historic Heritage chapter.</p>

Controlled Activities (CON)

The following shall be *controlled activities* in the Flood Channel 1 *Zone* and Flood Channel 2 *Zone*, provided they comply with the standards in NH-ST1 to NH-ST11 below.

<p>NH-R12</p>	<p><i>Accessory buildings</i> ^{MWRC}</p>
<p>NH-R13</p>	<p><i>Farm buildings</i> ^{MWRC}</p>
<p>NH-R14</p>	<p>Other <i>buildings</i> ancillary to the primary permitted use of the <i>site</i> ^{MWRC}</p>
<p>NH-R15</p>	<p><i>Milking sheds</i></p>
<p>NH-R16</p>	<p><i>Pens housing animals.</i></p>

Reservation of Control (RC)

The matters over which *Council* has reserved its control and in respect of which conditions may be imposed are set out in NH-RC1 to NH-RC2:

<p>NH-RC1</p>	<p><i>Relocated buildings</i> – Refer to matters of control provided for in REL-R1.</p>
<p>NH-RC2</p>	<p><i>Buildings</i> on Land Subject to Inundation and <i>Buildings</i> in the Flood Channel <i>Zones</i>. (GRZ-R14 to GRZ-R19, NH-R12 to NH-R16)</p> <p>(<i>Building</i> consent may be granted subject to Section 36 of the <i>Building Act</i> 1991).</p>

	NH-RC2.1	The design, construction, and location of <i>buildings</i> having regard to their potential effect on flood water flows.
	NH-RC2.2	The minimum floor level of <i>buildings</i> . <i>Non-accessory buildings</i> should be designed so as not to be entered by a 100-year flood (i.e. a flood event with a 1% annual probability of occurring).
	NH-RC2.3	The location and design of vehicular access to the <i>building</i> .

Standards for Permitted and Controlled Activities –

For the Flood Channel *Zone*, the *permitted* and *controlled activities* specified above must comply with the following standards:

NH-ST1	Height	
	NH-ST1.1	Maximum <i>height</i> – 10m
	NH-ST1.2	No part of any <i>building</i> shall exceed a <i>height</i> equal to 3.0 metres plus three quarters of the shortest horizontal distance between that part of the <i>building</i> and the nearest <i>site</i> boundary. (Refer Figure 16)

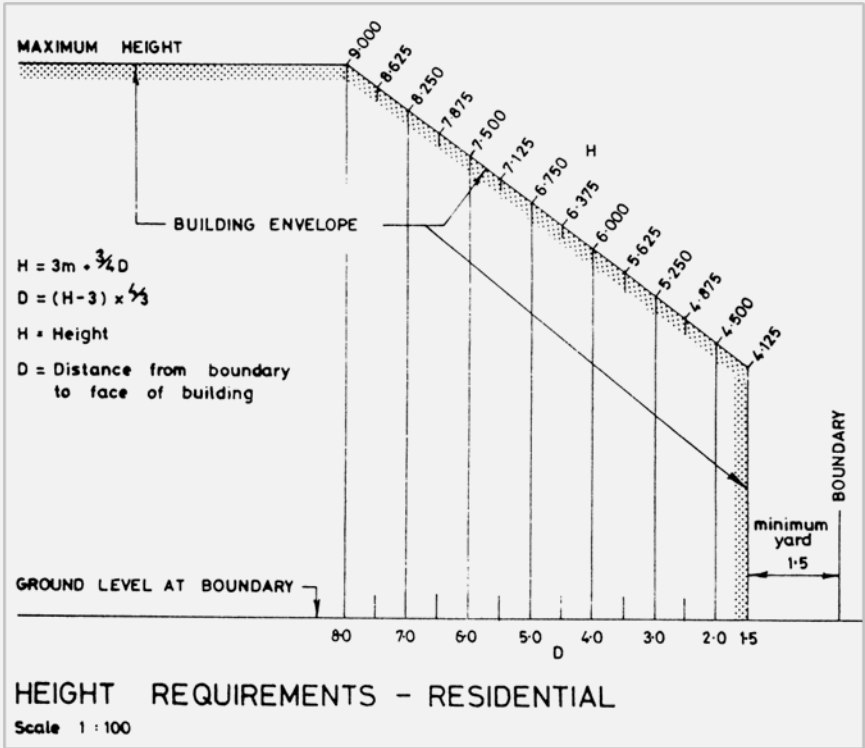


Figure 16 Height Requirements – Residential

<p>NH-ST1.3</p>	<p>No part of any <i>building</i>, structure, <i>mast</i>, tree or other object shall penetrate any of the climb surfaces, transitional surfaces, horizontal surfaces or conical surfaces associated with Palmerston North Airport or Feilding Aerodrome. These surfaces are shown in GRUZ-APP2. Where two or more surfaces intersect, the lower shall apply.</p>										
<p>NH-ST2</p>	<p>Floor Area - Maximum <i>gross floor area</i> – 55m²</p>										
<p>NH-ST3</p>	<p>Yards</p> <table border="1"> <tr> <td data-bbox="375 1430 565 1503"> <p>NH-ST3.1</p> </td> <td data-bbox="565 1430 1320 1503"> <p><i>Accessory buildings</i> - Front yards 10m; Other yards 1.5m</p> </td> </tr> <tr> <td data-bbox="375 1503 565 1862"> <p>NH-ST3.2</p> </td> <td data-bbox="565 1503 1320 1862"> <p><i>Milking sheds and pens housing animals</i> (either permanently or temporarily), including <i>pig farming</i>:</p> <table border="1"> <tr> <td data-bbox="565 1608 732 1713"> <p>NH-ST3.2.a</p> </td> <td data-bbox="732 1608 1320 1713"> <p>From any General Residential <i>Zone</i> or Settlement <i>Zone</i> – 100m</p> </td> </tr> <tr> <td data-bbox="565 1713 732 1787"> <p>NH-ST3.2.b</p> </td> <td data-bbox="732 1713 1320 1787"> <p>Front yards – 10m</p> </td> </tr> <tr> <td data-bbox="565 1787 732 1862"> <p>NH-ST3.2.c</p> </td> <td data-bbox="732 1787 1320 1862"> <p>Other yards – 30m</p> </td> </tr> </table> </td> </tr> </table>	<p>NH-ST3.1</p>	<p><i>Accessory buildings</i> - Front yards 10m; Other yards 1.5m</p>	<p>NH-ST3.2</p>	<p><i>Milking sheds and pens housing animals</i> (either permanently or temporarily), including <i>pig farming</i>:</p> <table border="1"> <tr> <td data-bbox="565 1608 732 1713"> <p>NH-ST3.2.a</p> </td> <td data-bbox="732 1608 1320 1713"> <p>From any General Residential <i>Zone</i> or Settlement <i>Zone</i> – 100m</p> </td> </tr> <tr> <td data-bbox="565 1713 732 1787"> <p>NH-ST3.2.b</p> </td> <td data-bbox="732 1713 1320 1787"> <p>Front yards – 10m</p> </td> </tr> <tr> <td data-bbox="565 1787 732 1862"> <p>NH-ST3.2.c</p> </td> <td data-bbox="732 1787 1320 1862"> <p>Other yards – 30m</p> </td> </tr> </table>	<p>NH-ST3.2.a</p>	<p>From any General Residential <i>Zone</i> or Settlement <i>Zone</i> – 100m</p>	<p>NH-ST3.2.b</p>	<p>Front yards – 10m</p>	<p>NH-ST3.2.c</p>	<p>Other yards – 30m</p>
<p>NH-ST3.1</p>	<p><i>Accessory buildings</i> - Front yards 10m; Other yards 1.5m</p>										
<p>NH-ST3.2</p>	<p><i>Milking sheds and pens housing animals</i> (either permanently or temporarily), including <i>pig farming</i>:</p> <table border="1"> <tr> <td data-bbox="565 1608 732 1713"> <p>NH-ST3.2.a</p> </td> <td data-bbox="732 1608 1320 1713"> <p>From any General Residential <i>Zone</i> or Settlement <i>Zone</i> – 100m</p> </td> </tr> <tr> <td data-bbox="565 1713 732 1787"> <p>NH-ST3.2.b</p> </td> <td data-bbox="732 1713 1320 1787"> <p>Front yards – 10m</p> </td> </tr> <tr> <td data-bbox="565 1787 732 1862"> <p>NH-ST3.2.c</p> </td> <td data-bbox="732 1787 1320 1862"> <p>Other yards – 30m</p> </td> </tr> </table>	<p>NH-ST3.2.a</p>	<p>From any General Residential <i>Zone</i> or Settlement <i>Zone</i> – 100m</p>	<p>NH-ST3.2.b</p>	<p>Front yards – 10m</p>	<p>NH-ST3.2.c</p>	<p>Other yards – 30m</p>				
<p>NH-ST3.2.a</p>	<p>From any General Residential <i>Zone</i> or Settlement <i>Zone</i> – 100m</p>										
<p>NH-ST3.2.b</p>	<p>Front yards – 10m</p>										
<p>NH-ST3.2.c</p>	<p>Other yards – 30m</p>										

	NH-ST3.3	All other <i>buildings</i> (including <i>Farm buildings</i>)
	NH-ST3.4	<i>Buildings</i> shall be kept at least 10m clear of the top edge of any public drain or watercourse.
NH-ST4	Visibility at Railway Crossings - Compliance with TR-ST1 and TR-APP5.	
NH-ST5	Access - Compliance with TR-ST1.	
NH-ST6	Farm Loading Ramps -	
	NH-ST6.1	Farm loading ramps shall be designed so that vehicles using the ramp do not have to reverse onto or off an arterial route, or park on any part of the carriageway of any arterial route while loading or unloading.
	NH-ST6.2	The minimum sight distance from any farm loading ramp which is designed so that vehicles using it have to park on any part of a non-arterial route, shall be 110m. If this sight distance is not available, the landowner shall provide advance warning to approaching traffic that the loading or unloading is taking place.
NH-ST7	Noise - Compliance with NOISE-R1.	
NH-ST8	Shelter Belts and Tree Planting	
	NH-ST8.1	Without the written consent of the adjoining landowner concerned, no shelter belt, woodlot or tree plantation shall be permitted to grow to over 4 metres in <i>height</i> :
	NH-ST8.1.a	Within 5m of any <i>northerly boundary</i> of the <i>site</i> , or within 10m of any other boundary of the <i>site</i> except a <i>road</i> boundary, or
	NH-ST8.1.b	Within 30m of any rural <i>dwelling</i> on another property, or
	NH-ST8.1.c	Within 30m of any property zoned General Residential or Settlement.
	NH-ST8.2	Without the consent of the roading authority, no vegetation which might obstruct vehicle lines shall be permitted to grow within 30 metres of the centre of any intersection.

	NH-ST8.3	No plantation forest shall be permitted to grow within 50 metres of the edge of any <i>wetland</i> listed in HH-APP1, if that <i>wetland</i> is in the coastal area shown on the planning maps.	
NH-ST9	Fencing of Properties		
	NH-ST9.1	Where any activity involves keeping male entire adult cattle or male entire horses in a paddock or enclosure which adjoins another property, those boundaries shall have a live electric wire in addition to, or attached to, the boundary fence, e.g. on outriggers. For the purposes of this rule “adult cattle” are defined as those which are at least one year old.	
	NH-ST9.2	The rule shall not apply to <i>road</i> boundaries or to situations where the adjoining landowner concerned has given their written consent to a different standard or fence (or to no fence) being provided.	
NH-ST10	Roading Impacts		
	NH-ST10.1	Suitable areas shall be provided on the <i>site</i> for stockpiling, logging and loading operations associated with forest harvesting. No such operations shall be undertaken on the <i>road</i> reserve without the consent of the roading authority. No stockpiling areas shall be located within the Flood Channel Zones.	
	NH-ST10.2	No activity shall result in the generation of heavy traffic movements which involve:	
		NH-ST10.2.a	The weight of the loads concerned exceeding any weight restrictions on the bridge or culverts which are to be used
		NH-ST10.2.b	The length of the loads concerned requiring the vehicle to utilise the <i>road</i> shoulder, water table or <i>road</i> verge when negotiating bends
NH-ST10.2.c	The timing of the vehicle movements in relation to prevailing ground conditions resulting in damage to the structural integrity of the <i>road</i> carriageway, or		

		NH-ST10.2.d	The frequency of loads and spacing between them resulting in damage to the structural integrity of the <i>road</i> carriageway.
<p>NB: The onus will be on the landowner and operator of the activity to consult with the roading authority at an early stage to determine whether their proposals are compatible with the roading network in terms of the above. <i>Council</i> is not obliged to upgrade any <i>road</i> and may seek contributions from the landowner in such cases (Refer to the FIN – Financial Contributions chapter).</p>			
NH-ST11	Glare - Compliance with TR-ST2.		

Restricted Discretionary Activities (RDIS)

The following activities are *restricted discretionary activities* in the Flood Channel Zones:

NH-R17	Any <i>permitted activity</i> or <i>controlled activity</i> specified above which does not comply with any of the relevant standards in NH-ST1 – NH-ST11.
NH-R18	<p>Clearance, modification or harvesting of <i>indigenous vegetation</i> if it qualifies as a <i>restricted discretionary activity</i> under HH-APP4.</p> <p>NB: This rule shall not apply to the heritage places listed in HH-APP1 or HH-APP2 of the Plan. Rules on the modification of these places are instead contained in HH – Historic Heritage Chapter.</p>

Matters of Discretion:

Applications for *restricted discretionary activities* shall be assessed against the matters set out below:

NH-MD1	In assessing applications for <i>restricted discretionary activities</i> <i>Council</i> has reserved its control over matters related to the effect of allowing non-compliance with the particular performance standard (or standards) which the proposal has failed to meet. Conditions may be imposed to avoid, remedy or mitigate the effects of non-compliance.
---------------	---

NH-MD2	In assessing applications which have become <i>restricted discretionary activities</i> due to non-compliance with the Plan’s performance standards, but which otherwise would have been <i>controlled activities</i> , Council has also reserved its control over the matters in NH-RC1 to NH-RC2 which relate to that type of <i>controlled activity</i> .						
NH-MD3	In assessing applications for clearance, modification or harvesting of <i>indigenous vegetation</i> (GRUZ-R33 and NH-R18) Council has restricted the exercise of its discretion to the potential impact of the proposed activity upon: <table border="1" data-bbox="375 606 1321 800"> <tr> <td data-bbox="375 606 581 722">NH-MD3.1</td> <td data-bbox="581 606 1321 722">Areas of significant <i>indigenous vegetation</i> and significant habitats of indigenous fauna</td> </tr> <tr> <td data-bbox="375 722 581 800">NH-MD3.2</td> <td data-bbox="581 722 1321 800">The intrinsic values of ecosystems.</td> </tr> </table>	NH-MD3.1	Areas of significant <i>indigenous vegetation</i> and significant habitats of indigenous fauna	NH-MD3.2	The intrinsic values of ecosystems.		
NH-MD3.1	Areas of significant <i>indigenous vegetation</i> and significant habitats of indigenous fauna						
NH-MD3.2	The intrinsic values of ecosystems.						
NH-MD4	In relation to new <i>buildings</i> within the Inner Control Area or the Outer Control Area (NOISE-APP1) <table border="1" data-bbox="375 905 1321 1434"> <tr> <td data-bbox="375 905 581 1142">NH-MD4.1</td> <td data-bbox="581 905 1321 1142">The degree to which the adverse <i>effects</i> of aircraft noise will be mitigated through <i>building</i> construction methods which meet the noise insulation rating for <i>Schedule P, Schedule Q</i> or <i>Schedule R</i> (NOISE-SCHED1, NOISE-SCHED2 or NOISE-SCHED3) as applicable, including a 5dB safety margin.</td> </tr> <tr> <td data-bbox="375 1142 581 1247">NH-MD4.2</td> <td data-bbox="581 1142 1321 1247">The health, safety and amenities of occupiers of the <i>building</i> in relation to airport noise.</td> </tr> <tr> <td data-bbox="375 1247 581 1434">NH-MD4.3</td> <td data-bbox="581 1247 1321 1434">The potential <i>effect</i> of residential or communal use of the <i>building</i> upon the continued operation and efficiency of Palmerston North Airport, by way of pressure for curtailment of aircraft operations.</td> </tr> </table>	NH-MD4.1	The degree to which the adverse <i>effects</i> of aircraft noise will be mitigated through <i>building</i> construction methods which meet the noise insulation rating for <i>Schedule P, Schedule Q</i> or <i>Schedule R</i> (NOISE-SCHED1, NOISE-SCHED2 or NOISE-SCHED3) as applicable, including a 5dB safety margin.	NH-MD4.2	The health, safety and amenities of occupiers of the <i>building</i> in relation to airport noise.	NH-MD4.3	The potential <i>effect</i> of residential or communal use of the <i>building</i> upon the continued operation and efficiency of Palmerston North Airport, by way of pressure for curtailment of aircraft operations.
NH-MD4.1	The degree to which the adverse <i>effects</i> of aircraft noise will be mitigated through <i>building</i> construction methods which meet the noise insulation rating for <i>Schedule P, Schedule Q</i> or <i>Schedule R</i> (NOISE-SCHED1, NOISE-SCHED2 or NOISE-SCHED3) as applicable, including a 5dB safety margin.						
NH-MD4.2	The health, safety and amenities of occupiers of the <i>building</i> in relation to airport noise.						
NH-MD4.3	The potential <i>effect</i> of residential or communal use of the <i>building</i> upon the continued operation and efficiency of Palmerston North Airport, by way of pressure for curtailment of aircraft operations.						

Discretionary Activities (DIS)

The following shall be discretionary activities in the Flood Channel Zones:

NH-R19	Mineral exploration, prospecting or extraction activities. ^{MWRC}
NH-R20	Crushing, screening or processing sand or gravel. ^{MWRC}
NH-R21	<i>Dwelling</i> units in the Flood Channel 2 zone only, except if sited in the Air Noise Area (NOISE-APP1). ^{MWRC}

NH-R22	<i>Signs</i> on private property which provide advance warning to motorists of retail sales outlets, restaurants or <i>tourist facilities</i> in the General Rural Zone, provided that:	
	NH-R22.1	The <i>signs</i> are located no further than 1km from the same business concerned if both are located on the same <i>road</i>
	NH-R22.2	The <i>signs</i> are located no further than 5km from the business concerned if the business is down a side <i>road</i> .
NH-R23	Coastal protection / river control structures located within 50m of Mean High Water Springs. ^{MWRC}	

Assessment Criteria:

The criteria by which applications will be assessed are set out in GEN-AC1 to GEN-AC25.

Non-Complying Activities (NC)

NH-R24 Any activity which is not categorised by this chapters being a *permitted, controlled, discretionary, restricted discretionary, or prohibited activity* shall be a *non-complying activity*.

Prohibited Activities (PR)

The following shall be prohibited activities in the Flood Channel 2 Zone, if sited in the Air Noise Area (Refer NOISE-APP1).

NB: These activities have been expressly prohibited and no resource consent shall be granted.

NH-R25	Veterinary Clinics and Veterinary Hospitals
NH-R26	<i>Dwelling</i> units and residential accommodation, including relocated dwellings
NH-R27	<i>Family flats</i>
NH-R28	Craft Workshops and Studios
NH-R29	<i>Home occupations</i>

NH-R30	Retail sales from craft and workshop studios, <i>home occupations</i> , and farm produce
NH-R31	<i>Education Facilities</i> and Day Care Centres
NH-R32	Cemeteries and Crematoria
NH-R33	Parks, reserves, open space and scenic reserves
NH-R34	Hospitals and homes for the aged
NH-R35	Hotels and Taverns
NH-R36	Lodges, hunting, tour party and recreational bases
NH-R37	Marae
NH-R38	Places of assembly and libraries
NH-R39	Restaurants, reception rooms and <i>tourist facilities</i>
NH-R40	Travellers' accommodation
NH-R41	Communal activities
NH-R42	Motor Caravan Rallies
NH-R43	<i>Motor Caravan Sites</i>

Explanation

The functions of territorial authorities under *the Act* include the “implementation of rules for the avoidance or mitigation of natural hazards...” Having a land use pattern which can coexist with natural hazards also helps to achieve *the Act’s* goal of long-term sustainability.

Under Section 36 of the Building Act a *building* consent can only be refused if the new structure would make a hazard problem worse, e.g. by accelerating ground slippage or erosion. Otherwise a *building* consent must be issued, and *Council* can register a certificate on the land title to note the hazard and to absolve itself from liability. The only way of exercising effective control is therefore instead through Regional and District Plans.

The *Regional Council* has identified its role in natural hazard management as:

1. Providing information on flooding and other hazards, particularly those of regional significance.
2. Identifying what form of development may or may not be suitable in areas subject to various hazard risks, especially flooding. This involves discussion with territorial authorities.
3. Providing flood protection works, warning systems, and education about these systems.
4. Requiring that land be designated under the District Plan, where appropriate, for river control purposes.
5. Controlling the use of land in the beds of rivers and adjacent land designated or zoned for river control. (i.e. between the stopbanks).
6. Soil conservation controls and works, to prevent unsuitable development of erosion prone land and to promote sustainable use of “at risk” catchments through planting etc.
7. Controlling the use of land to avoid or mitigate any adverse effects of land movement resulting from soil disturbance and vegetation clearance.
8. Regional Civil Defence response.

The District *Council* will be responsible for:

1. Working with the Region to gather hazard information, particularly where local detail is required.
2. Controlling *building*, associated development and the use of land in hazard-prone areas, except that identified in 5 and 7 above.
3. Promoting sustainable use of hazard-prone areas through the District Plan and perhaps assisting in limited cases with the Region’s soil conservation programmes.

4. Local Civil Defence response and recovery programmes.

Under the Building Act, *Council* is required to keep information about hazards and to pass it on to the public. A great deal still however needs to be learnt about hazards in the District. Comparatively little is known about seismic, tsunami and land subsidence hazards in particular. Even this Plan’s flood hazard information was prepared at a broad scale. More detailed survey work is often needed to define the degree of flood risk to any particular property.

The District’s coastal area is potentially threatened by tsunami, coastal erosion and by shifting sand/sandblows. The NZ Coastal Policy Statement also requires that the possibility of sea level rise be considered. While stabilisation planting and sensible land use practices can reduce sand movement hazards, the only fully effective response to tsunami, marine erosion and sea level rise is avoiding development in the coastal area. (Refer CE-O1, SUB-O8)

The Building Code requires that *buildings* be designed/protected so that water from a 50 year flood event would not enter them. This provides authority for setting minimum floor levels, and is very much a “bottom line” requirement. District Plan rules may be more stringent.

Based on recommendations from the *Regional Council*, this Plan sets out two Flood Channel *Zones*. These are shown on the District Planning Maps.

The Flood Channel 1 *Zone* comprises three areas where, based on flood flow velocities and/or depths, development is inappropriate and new dwellings are a *non-complying activity*. These areas are:

1. Downstream of the Flyers Line, Hamilton’s Line and Kopane spillways. All of these places are subject to deep, fast-flowing water on a reasonably regular basis. In addition, development within these areas has the potential to either dam or divert floodwaters and cause previously non-floodable areas to flood.
2. The Taonui Basin. The depth of ponded floodwater can be approximately 4 metres at the downstream end of the basin and depths of over one metre are common over much of the remainder.
3. Between the stopbanks of the Manawatū and lower Oroua Rivers. Floodwater between the banks is deep and fast-flowing. Any development within the floodway also reduces the effectiveness of the stopbanking system.

The Flood Channel 2 *Zone* identifies other areas which are likely to be inundated by a 100-year flood event and/or affected by poor drainage. In these areas however the flood risk is such that development may be able to proceed as a discretionary activity if appropriate conditions are imposed, e.g. minimum floor levels. *Council* will consider the impact of any such dwellings upon the available Civil Defence response. It would be undesirable to have people in pole houses or on “islands” during flooding if their access is lost and extra demands are placed on limited rescue resources.

Non-residential *buildings* in the flood plain can also have adverse effects. They can make flood control measures less effective by impeding floodwaters, and can divert water into places which would not otherwise be floodable. They will therefore be a *controlled activity* in both Flood Channel Zones.

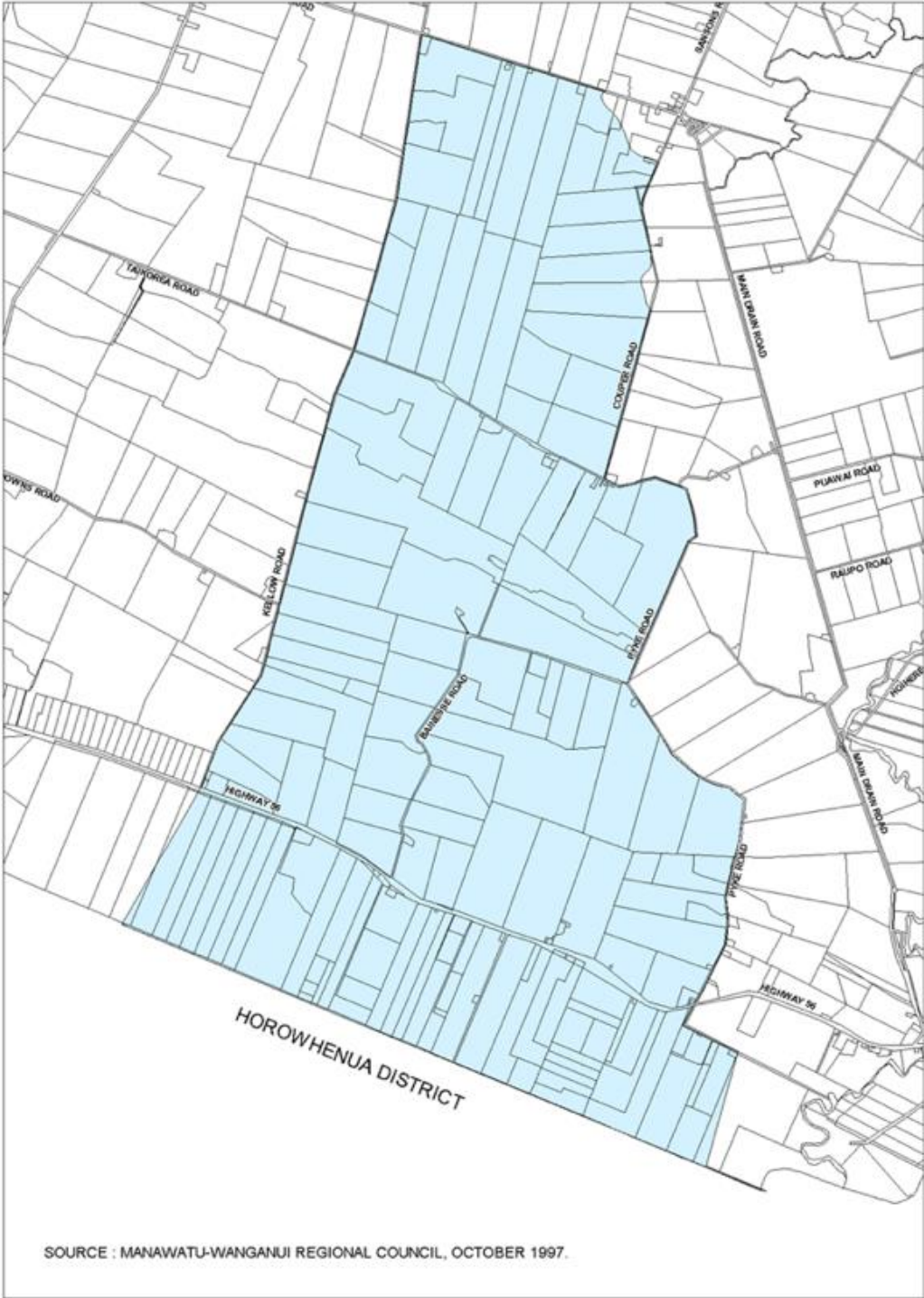


Figure 17 - Location of Localised Ponding Area

Figure 17 shows an area between Pyke, Kellow and Milner Roads which contains a high concentration of small lakes which appear following a wet winter or intense localised rainfall. This area is shown for information only and does not have any special controls associated with it.

Examining a *site's* potential for landslip hazards is part of the “duty of care” involved in the *building* consent process, i.e. reasonable steps must be taken to find out the extent of the possible problem. This duty exists whether or not Section 36 of the Building Act is being used. Using Section 36 is not automatic, and depends upon what geotechnical reports say about the particular *site*.

Methods

District Plan Methods

- The NH-Natural Hazards chapter, and SUB-ST24.

Other Methods

- Appropriate information-gathering exercises on natural hazards.
- Providing hazard information to landowners and interested agencies via the LIM system and other avenues.
- Information and education initiatives aimed at achieving more compatible use of potentially unstable hill country and sand country. *Council* will support *Regional Council* and landowner initiatives.
- Building Act requirements, (including possible geotechnical reports and Section 36 registration).
- Effective Civil Defence and other responses to hazard events.
- Taking natural hazards into account when designing and constructing *Council* works.
- Stormwater control features for new subdivision and *buildings* in areas where stormwater runoff causes or aggravates flooding problems.
- *Council* involvement in soil stabilisation measures, particularly to protect public assets such as roads.
- Local Government Act requirements which protect the structural integrity of the District’s roads by requiring consent for excavations within 20 metres of a *road*.

- Policy on assistance toward hazard protection for listed heritage *buildings*, (e.g. earthquake strengthening, fire-proofing).
- In exceptional cases assistance toward removing or stopbanking dwellings in flood prone localities.

Environmental Results Anticipated

1. People living in new houses do not place unnecessary demands upon response agencies, including Civil Defence, during and after a hazard event.
2. The potential effects of tsunamis, coastal erosion or deposition processes, and the possibility of sea level rise, are minimised by limiting the growth of Himatangi Beach and Tangimoana.
3. No new dwellings are built in areas known to be subject to deep and/or fast-flowing floodwaters.
4. Any new *buildings* which are potentially affected by 100 year flood events are designed so that they would not significantly impede or divert the flow of flood waters.
5. All new dwellings are designed so that floodwaters from floods smaller than a 100 year event do not enter them.
6. No new dwellings are damaged or destroyed by land instability (except those which are subject to Section 36 of the Building Act 1991).

Monitoring and Review Procedures

The procedures to be used will include:

1. Working with the *Regional Council* to gather information about natural hazards and to maintain a hazards database.
2. Reporting on growth of the beach settlements and on levels of damage to new dwellings and *buildings* from flood events and land instability.
3. Reviewing all *building* consents granted for structures in the Flood Channel 1 and 2 *Zones* for *Regional Council* input and conditions such as minimum floor levels.
4. Debriefs after Civil Defence Emergencies include details of assistance sought from people in new dwellings in hazard-prone areas.
5. Monitoring how effective rules and other methods have been in controlling development in areas at risk from natural hazards, and changing these methods if necessary.