

NH - Natural Hazards

This chapter is affected by proposed plan changes

Plan Change 1B (Liquefaction risk management for new buildings) proposes amendments to the following provisions in this chapter:

- Policy NH-EQ-P17
- Rules NH-EQ-R23 and NH-EQ-R24 (these rules have legal effect once a decision on submissions relating to the rule is made and publicly notified)

This chapter contains four sections:

- NH – Natural Hazards Policies
- NH-FLOOD – Flooding Hazards
- NH-EQ – Earthquake Hazards
- NH-FIRE – Fire Hazards

Publicly and privately initiated development must be undertaken in a manner that achieves the objective for natural hazards. The Council has adopted a precautionary and risk based approach to hazard management. The approach includes avoiding new development in areas subject to high risk from hazards, if the hazard cannot be mitigated, and allowing a greater level of development, especially if the hazard can be mitigated, in areas subject to lower risk from hazards or where the hazard has a low probability or long recurrence interval. The approach takes into account the effects of climate change and considers relocation of existing development subject to hazards worsened by climate change effects.

Strategic Context

The primary Objectives that this chapter implements, are:

- DO-01 - Tāngata Whenua;
- DO-03 - Development Management;
- DO-05 - Natural Hazards; and
- DO-017 - Open Spaces / Active Communities

DO-01 Tāngata Whenua

To work in partnership with the *tangata whenua* of the District in order to maintain *kaitiakitanga* of the District's resources and ensure that decisions affecting the natural *environment* in the District are made in accordance with the principles of Te Tiriti o Waitangi (Treaty of Waitangi).

DO-03 Development Management

To maintain a consolidated urban form within existing urban areas and a limited number of identified growth areas which can be efficiently serviced and integrated with existing townships, delivering:

1. urban areas which maximise the efficient end use of energy and integration with infrastructure;
2. a variety of living and working areas in a manner which reinforces the function and vitality of centres;
3. resilient communities where development does not result in an increase in risk to life or severity of damage to property from natural hazard events;
4. higher residential densities in locations that are close to centres and public open spaces, with good access to public transport;
5. management of development in areas of special character or amenity so as to maintain, and where practicable, enhance those special values;
6. sustainable natural processes including freshwater systems, areas characterised by the productive potential of the land, ecological integrity, identified landscapes and features, and other places of significant natural amenity;
7. an adequate supply of housing and areas for business/employment to meet the needs of the District's anticipated population which is provided at a rate and in a manner that can be sustained within the finite carrying capacity of the District; and
8. management of the location and effects of potentially incompatible land uses including any interface between such uses.

DO-05 Natural Hazards

To ensure the safety and resilience of people and communities by avoiding exposure to increased levels of risk from natural hazards, while recognising the importance of natural processes and systems.

DO-017 Open Spaces / Active Communities

To have a rich and diverse network of *open space* areas that:

1. is developed, used and maintained in a manner that does not give rise to significant adverse *effects* on the natural and physical *environment*;
2. protects the District's cultural, ecological and *amenity values*, while allowing for the enhancement of the quality of *open space* areas;
3. supports the identity, health, cohesion and resilience of the District's communities; and
4. ensures that the present and future recreational and *open space* needs of the District are met.

The rules in this chapter apply to all land and activities in all *zones* unless otherwise specified. Provisions in other chapters of the Plan may also be relevant.

Policies - Natural Hazards

These policies apply to all natural hazards (excluding coastal hazards) in addition to more specific policies in this chapter. There are no particular rules aligned with the general policies, rather the rules that follow in subsequent sections of this chapter give effect to those specific policies.

NH-P1 Identify Hazards

The extent of flooding and *seismic hazards* will be identified on the District Plan Maps.

Note: The extent of flood and seismic hazard areas has been modelled to identify development control areas, which are identified on the District Plan Maps to provide certainty to property owners. The identification of natural hazards is an ongoing activity carried out by District and Regional Councils as part of the monitoring of the environment. As more research is undertaken and the information about natural hazards changes, new hazard areas may be identified and

existing areas refined. This redefined information may be shown on the Council's GIS system. Although the GIS maps are not used to determine status under the District Plan, they are useful for the most up to date flood hazard information and may be used under Section 106 of the RMA or the Building Act.

NH-P2 Risk Based Approach

A risk based, all hazards approach will be taken to *subdivision*, *land use*, and *development* within areas subject to the following *natural hazards*:

1. flood hazards;
2. earthquake hazards; and
3. fire hazards.

Hazard categories will be developed for flood and *seismic* hazards to guide decision making and help minimise potential harm to people and damage to property due to these hazards, while allowing appropriate use.

NH-P3 Managing Activities in Natural Hazard Prone Areas

In areas identified on the District Plan Maps, new *subdivision*, use and *development* will be managed in a way that avoids increasing *risks* from *natural hazards*. *Subdivision*, use and *development* will be allowed only where it can be shown that any potential increase in *risk* exposure on or beyond the *land* itself has been avoided, remedied or mitigated.

NH-P4 Precautionary Approach

A precautionary approach will be taken to the management of risks from hazards that may impact on *subdivision*, use and development, where there is uncertainty about the potential *effects* and where the *effects* are potentially significantly adverse.

NH-P5 Protect via Natural Buffers

Natural features that have the *effect* of reducing hazard *risk* by buffering *development* from the *effects* of *natural hazards* will be protected through:

1. *development* controls, including the use of minimum setbacks, from rivers and streams for new and relocated *buildings* (excluding *minor buildings*); and
2. undertaking and encouraging restoration of such natural features.

NH-P6 Public Open Space

The potential to mitigate *natural hazards* and climate change impacts will be considered in relation to the provision, acquisition and *development* of new *land* for public *open spaces* and reserves.

NH-P7 Emergency Management

Preparation for the *effects* of *natural hazard* events will be encouraged through emergency management programmes and procedures, and voluntary action.

NH-FLOOD - Flood Hazards

The District's physical landscape presents varying levels of flood risk to settlements (particularly on the coastal plain). During high rainfall events flooding can occur within minutes of the event and can result in significant damage. Property and structures located in the river and stream corridor, flood

storage areas and overflow paths (including residual overflow paths) are more susceptible to damage from flooding. Buildings in ponding and shallow surface flow areas are also susceptible to damage from flooding. New development within the river corridor, stream corridor, flood storage areas, and overflow paths can cause additional adverse effects to existing development. Buildings and earthworks in ponding and shallow surface flow areas, and fill control areas can push flooding onto additional properties or increase the depth of flooding on other properties. Furthermore, development within river and stream corridors can adversely affect the structural integrity of existing flood mitigation structures and works and increase the potential for damage and loss of life.

The form and location of development of the District's settlements in the past has included the building of flood mitigation works in major rivers and streams to mitigate the adverse effects of flooding and erosion on existing development. However, complete reliance on structural defences to protect the District from flooding is an unsustainable option. This is because the protection structures will need to be built bigger and stronger as climate change effects are felt more acutely and any structure may fail if the flood event exceeds the design specifications.

Land within the floodplain is under increasing pressure for new activities and development. Where subdivision or development is proposed on land subject to flooding, there is a need to ensure the risks from flooding are taken into consideration in the assessment of any resource consent. Where a development proposal relates to the river/stream corridor, flood storage, and overflow paths (including residual overflow paths), as areas most at risk from fast flowing water and debris increasing the level of damage during the flood event, the onus is on the applicant to ensure there will be no additional hazard on-site or off-site as a result of any proposed development. Ponding (including residual ponding) shallow surface flow and fill control areas are also recognised as requiring specific controls, but floodwaters in these areas are less likely to cause erosion as they are slower moving. However, damage from floodwaters in ponding, residual ponding, shallow surface flow and fill control areas is likely to be caused by floodwaters entering buildings (and also mud, sewage and debris in floodwaters).

The Council supports the use of a combination of methods (including physical works where appropriate, the District Plan rules, Land Information Memoranda and building consents) to avoid, remedy or mitigate the potential hazard caused by flooding. The District Plan contains information on flood hazard categories (mapped) and descriptions including direct and residual flood risks related to the estimated 1% AEP flood event and development controls.

1% AEP flood event

The estimated 1% AEP flood event is shown as flood hazard categories on the District Plan Maps. It shows the areas where flood waters would go in a flood event. This event has a 1% probability of happening in any one year. It should be recognised that there can be events greater than the 1% AEP flood event or that flood defences can fail. These areas have been identified as residual hazard risk areas. The Council and the Greater Wellington Regional Council have a responsibility to inform people of this greater risk from hazards.

Hazard categories and definitions

Flood hazard categories (shown on the District Plan Maps) are based on the 1% AEP extent. The purpose of the hazard categories is to describe the varying hazard across the floodplain.

There are two types of flood hazard identified on the District Plan Maps:

- **Direct flood hazard**

The direct flood hazard affects areas that are not protected from flooding by flood protection structures (such as stopbanks or floodwalls) built to the 1% AEP flood event standard. A direct flood hazard can also occur where existing structural protection, built to less than the 1% AEP

standard, is vulnerable and likely to fail in a 1% AEP flood event.

- Residual flood hazard

The residual flood hazard is the additional or 'left over' hazard due to possible breaching and overtopping of flood protection structures (such as stopbanks or flood works) built to the 1% AEP flood event standard. An additional residual flood hazard can occur due to blockage and subsequent failure of overland flow paths. These can be blocked by unconsented building works/debris/fencing/stored building materials/vehicle storage etc

There are nine flood hazard categories these are listed in the table below.

NH-FLOOD -Table 1 - Flood Hazard Categories	Flood Hazard Category	Description
	River corridor	This is the minimum area able to contain a flood of up to the 1% AEP event magnitude and enable flood water to pass safely to the sea. It includes flood and erosion prone land immediately adjacent to the river, where the risk to people and development is significant.
	Stream corridor	This is the minimum area able to contain a flood of up to a 1% AEP event magnitude and enable flood water to safely pass to the stream confluence or the sea. It includes flood and erosion prone land immediately adjacent to the stream.
	Overflow path	Overflow paths generally occur in lower-lying areas on the floodplain which act as channels for flood waters. They can be natural, or artificially formed, and are often characterised by fast flowing water during a flood event. An overflow path is a direct hazard.
	Residual overflow path	A residual overflow path is a residual flood hazard for areas which are protected from flooding by structural measures, such as stopbanks or floodwalls, constructed to the 1% AEP flood standard. The residual hazard is in the event of a failure or overtopping of the flood protection structure.
	Ponding	These are areas where slower-moving flood waters could pond either during or after a flood event. A Ponding Area may be affected by a direct flood risk. Ponding can be associated with rivers and streams as well as the piped stormwater network. Ponding is a direct risk.
	Residual ponding areas	Residual ponding areas related to a residual flood risk for areas which are protected from flooding by structural measures, such as stopbanks or floodwalls, constructed to the 1% AEP flood standard. The residual risk is in the event of a failure or overtopping of the flood protection structure.
	Shallow surface flow areas	These are floodplain areas, typically on steeper catchments, where shallow moving flood waters could occur during a flood event. A shallow surface flow area is subject to a direct flood risk. This hazard is associated with high intensity rainfall that overwhelms the primary drainage paths resulting in shallow flows across the ground surface.

	Flood storage areas	Land that provides flood water storage either during or after a flood event. Flood Storage Areas are located on local streams only. They include land that has been identified as flood prone where loss of storage due to mitigating measures, or filling, will cause flooding elsewhere. Any proposal for development of these areas (including filling) will need to provide compensatory storage below set ponding levels.
	Fill control areas	Fill control areas are undrained “crater” type catchments where filling will raise the level of flooding on the property and on adjoining land.
	District Plan Maps identify the extent of these nine flood hazard categories for the Ōtaki, Waikanae, Paraparaumu and Raumati floodplains. The Council also maintains Flood Extent Maps on GIS that are more regularly updated, although these maps are not used to determine status under the District Plan, they are useful for the most up to date flood hazard information and may be used under section 106 of the RMA or the Building Act.	

Policies - Flood Hazards

NH-FLOOD-P8	Flood Mapping
<i>Flood hazard categories</i> are mapped using the <i>1% AEP</i> flood modelling scenario. The extents and categories consider projected climate change and precautionary freeboard to minimise <i>risks</i> . Residual <i>risks</i> are also mapped where flood mitigation <i>structures</i> are present.	
NH-FLOOD-P9	Flood Hazard Categories
The <i>flood hazard categories</i> have been developed using the following criteria: <ol style="list-style-type: none"> 1. depth and speed of floodwaters; 2. the threat to life; 3. difficulty and danger of evacuating people; 4. the potential damage to property; and 5. the potential for social disruption. 	
NH-FLOOD-P10	Flood and Erosion Free Building Areas
All new <i>allotments</i> must have flood and erosion-free <i>building</i> (excluding <i>minor buildings</i>) areas based on <i>1% AEP</i> flood modelling.	
NH-FLOOD-P11	Flood Risk Levels
A higher level of control on <i>subdivision</i> , use and development will be applied within <i>river corridors</i> , <i>stream corridors</i> , <i>overflow paths</i> and <i>residual overflow paths areas</i> . A generally lesser level of restriction on <i>subdivision</i> , use and development will be applied in <i>ponding</i> , <i>residual ponding</i> , <i>shallow surface flow</i> , <i>flood storage</i> and <i>fill control areas</i> .	
NH-FLOOD-	High Hazard Flood Areas

P12	
<p>Development in the <i>river corridor, stream corridor, overflow path, and residual overflow path areas</i> will be avoided unless the <i>1% AEP</i> hazard can be mitigated on-site to avoid damage to property or harm to people, and the following criteria are met:</p> <ol style="list-style-type: none"> 1. no increase in flood flow or level on adjoining <i>sites</i> or other parts of the floodplain; 2. no reduction in storage capacity on-site; and 3. all flow corridors or <i>overflow paths</i> are kept clear to allow flood waters to flow freely at all times. 	
NH-FLOOD-P13	Ponding, Residual Ponding, Shallow Surface Flow, Flood Storage and Fill Control Areas
<p>When assessing applications for <i>subdivision, use or development</i> within a <i>ponding, residual ponding, shallow surface flow, flood storage or fill control area</i>, consider the following:</p> <ol style="list-style-type: none"> 1. the <i>effects</i> of the <i>development</i> on existing flood mitigation <i>structures</i>; 2. the <i>effects</i> of the <i>development</i> on the flood hazard – in particular flood levels and flow; 3. whether the <i>development</i> redirects floodwater onto adjoining <i>sites</i> or other parts of the floodplain; 4. whether access to the <i>subject site</i> will adversely affect the flood hazard; 5. the extent to which <i>buildings</i> (excluding <i>minor buildings</i>) can be located on areas of the <i>site</i> not subject to flooding; and 6. whether any <i>subdivision or development</i> will or may result in damage to property or harm to people. 	
NH-FLOOD-P14	Flood Hazard Management Activities
<p>Recognise the importance of flood hazard management activities (including gravel extraction) in the <i>River Corridor</i> to the reduction of flood hazard <i>risk</i>.</p>	

Rules - Flood Hazards

The rules in NH-FLOOD shall apply to all land and activities in all zones except:

- a. the Ōtaki South Precinct where the development is in accordance with the structure plan in Appendix 23.

See additional natural hazard related rules within the District Wide Subdivision Matters chapter.

NH-FLOOD-R1	Any activity not specified as a <i>permitted, controlled, restricted discretionary, discretionary, non-complying or prohibited activity</i> in NH-FLOOD rules.
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. The activity complies with all <i>permitted activity</i> standards in rules NH-FLOOD-R2 to NH-FLOOD-R7. <p>Note: See NH-FLOOD-R2 for separation of <i>buildings</i> and <i>structures</i> from <i>waterbodies</i> standards, and INF-MENU in relation to <i>water</i> and <i>stormwater</i> rules for</p>

	all <i>development</i> .
NH-FLOOD-R2	Any <i>building</i> or <i>structure</i> in any zone.
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. Separation from <i>waterbodies</i> <ol style="list-style-type: none"> a. <i>Buildings</i> (excluding <i>minor buildings</i>) shall not be sited within the <i>river corridor</i> or <i>stream corridor</i> (unless they are <i>permitted activities</i> under NH-FLOOD-R7): <ol style="list-style-type: none"> i. For the <i>stream corridor</i> and other <i>waterbodies</i>, including ephemeral and intermittent rivers or streams (except lakes) the minimum setback for any <i>building</i> or <i>structure</i> (other than a bridge or culvert <i>structure</i> for which a <i>resource consent</i> is required from the Regional Council) from the natural banks of any <i>waterbody</i> greater than 3 metres wide shall be 10 metres; ii. For streams/<i>drains</i> less than 3 metres wide, the minimum setback must be 5 metres where the average width of the stream or <i>waterbody</i> is measured as an average within the <i>site</i>. 2. <i>Buildings</i> (excluding <i>minor buildings</i>) must not be sited within 5 metres of a lake.
NH-FLOOD-R3	New or relocated <i>buildings</i> (excluding <i>minor buildings</i>) in <i>ponding</i> , <i>residual ponding</i> and <i>shallow surface flow areas</i> .
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. The <i>building floor level</i> of any new or relocated <i>building</i> (excluding <i>minor buildings</i>) in the <i>ponding</i>, <i>shallow surface flow</i> or <i>residual ponding area</i> shall be constructed above the 1% AEP flood event level.
NH-FLOOD-R4	<p>Earthworks except where associated with the matters listed below:</p> <ol style="list-style-type: none"> 1. the maintenance of a watercourse or stormwater control; 2. activities permitted under NH-FLOOD-R6; 3. maintenance activities within the <i>legal road</i>; 4. private <i>farm tracks</i> which are <i>ancillary</i> to permitted <i>farming</i> activities and are not within an <i>outstanding natural features and landscapes</i>; 5. <i>residual ponding areas</i> where the <i>earthworks permitted activity</i> standards for the relevant zone are complied with (see EW-Earthworks for rules on <i>earthworks</i>); 6. <i>earthworks</i> subject to NH-FLOOD-R8 (i.e. within a <i>flood storage</i> or <i>fill control area</i>); 7. <i>extractive industries</i> (see NH-FLOOD-R7); 8. the removal or replacement of underground fuel storage tanks; and 9. "earthworks" as defined in and regulated by the NESPF.
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. In an <i>overflow path</i> or <i>residual overflow path</i> (excluding fill which is addressed in NH-FLOOD-R10), <i>earthworks</i>:

	<ol style="list-style-type: none"> a. shall not involve the disturbance of more than 10m³ of <i>land</i> in any 10 year period; b. shall not alter the <i>original ground level</i> by more than 0.5 metres, measured vertically; and c. shall not impede the flow of floodwaters. <ol style="list-style-type: none"> 2. In <i>ponding areas</i> (excluding <i>residual ponding areas</i>) and <i>shallow surface flow areas</i>, <i>earthworks</i>: <ol style="list-style-type: none"> a. shall not involve the disturbance of more than 20m³ (volume) of <i>land</i> in any 10 year period; and b. shall not alter the <i>original ground level</i> by more than 1.0 metre, measured vertically. 3. In a <i>Stream corridor</i> or <i>River corridor</i> (excluding fill which is addressed in NH-FLOOD-R15), <i>earthworks</i>: <ol style="list-style-type: none"> a. shall not exceed 10m³ in any 10 year period. This standard applies whether in relation to a particular work or as a total or cumulative; and b. must be carried out by Wellington Regional Council, Kāpiti Coast District Council, the Department of Conservation or their nominated contractors. <p>Note: Any works carried out within the <i>bed</i> of lakes and rivers are within the jurisdiction of Wellington Regional Council and are not covered in this District Plan.</p>
NH-FLOOD-R5	Fences in any flood hazard area.
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. Fences in the <i>river corridor</i>, <i>stream corridor</i>, an <i>overflow path</i> or <i>residual overflow path</i> shall be post and wire and shall not impede the free flow of flood waters.
NH-FLOOD-R6	Flood protection, erosion control and <i>natural hazard</i> mitigation measures including associated <i>structures</i> in the <i>Open Space</i> or Natural Open Space Zones (but not the Private Recreation and Leisure Precinct), and the <i>Stream</i> or <i>River Corridor</i> .
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. All works must be carried out by Wellington Regional Council, Kāpiti Coast District Council, the Department of Conservation or their nominated contractors. <p>Note: Any works carried out within the <i>bed</i> of lakes and rivers are within the jurisdiction of Wellington Regional Council and are not covered in this District Plan.</p>
NH-FLOOD-R7	Gravel extraction activities in the <i>River Corridor</i> on land outside of the <i>beds</i> of any <i>lake</i> or <i>river</i> .
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. All works must be carried out by Wellington Regional Council, Kāpiti Coast District Council, the Department of Conservation or their nominated

	<p>contractors.</p> <p>2. Mobile plants for processing extracted materials, and associated temporary <i>buildings</i> (excluding <i>minor buildings</i>) shall not be located on any site for longer than any 12 month period.</p> <p>Note: Any gravel extraction carried out within the <i>bed</i> of a <i>lake</i> or <i>river</i> requires <i>resource consent</i> from the Wellington Regional Council.</p>	
NH-FLOOD-R8	<p><i>Development and earthworks within any flood storage or fill control area.</i></p> <p>The following are excluded from this rule:</p> <ul style="list-style-type: none"> • earthworks managed under the NESPF • <i>extractive industries</i> (see EW-EXT) • earthworks associated with the removal and replacement of underground fuel storage tanks. 	
Controlled Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. Equivalent compensatory storage or another solution to achieve <i>hydraulic neutrality</i> shall be created. 2. <i>Development</i> proposals shall be accompanied by sufficient hydraulic modelling of relevant streams to fully test consequences of the activity. 3. The <i>building floor level</i> of any new or relocated <i>building</i> (excluding <i>minor buildings</i>) shall be constructed above the <i>1% AEP</i> flood event level. 	<p>Matters of Control</p> <ol style="list-style-type: none"> 1. Future management of the <i>flood storage or fill control area</i>. 2. <i>Natural hazard effects</i>. 3. <i>Nuisance effects</i> including <i>dust</i>. 4. Location and design of <i>buildings</i> and <i>structures</i>. 5. Suitability of access.
NH-FLOOD-R9	<p>Any activity listed as a <i>permitted</i> or <i>controlled activity</i> listed in Rules NH-FLOOD-R1 to NH-FLOOD-R8 which does not comply with one or more of the associated standards, unless otherwise specified.</p>	
Restricted Discretionary Activity	<p>Standards</p>	<p>Matters of Discretion</p> <ol style="list-style-type: none"> 1. Consideration of the <i>effects</i> of the standard not met. 2. Measures to avoid, remedy or mitigate adverse <i>effects</i>. 3. Cumulative <i>effects</i>
NH-FLOOD-R10	<p>In an <i>overflow path</i>, or <i>residual overflow path</i>, fill <i>earthworks</i>, or <i>earthworks</i> which do not comply with one or more of the <i>permitted activity</i> standards under NH-FLOOD-R4.</p> <p>The following are excluded from this rule:</p> <ul style="list-style-type: none"> • earthworks managed under the NESPF • <i>extractive industries</i> (see EW-EXT) • earthworks associated with the removal and replacement of underground fuel storage tanks. 	
Restricted Discretionary	<p>Standards</p>	<p>Matters of Discretion</p>

Activity		<ol style="list-style-type: none"> 1. The <i>effect</i> of the <i>earthworks</i> on the effective functioning of the <i>overflow path, residual overflow path</i> or <i>ponding</i> or <i>shallow surface flow</i> area. 2. The avoidance or mitigation of adverse <i>effects</i> on the effective functioning of the <i>overflow path, residual overflow path</i> or <i>ponding</i> or <i>shallow surface flow</i>.
NH-FLOOD-R11	<p>In a <i>ponding</i> or <i>shallow surface flow</i> area, <i>earthworks</i> which do not comply with one or more of the <i>permitted activity</i> standards under NH-FLOOD-R4.</p> <p>The following are excluded from this rule:</p> <ul style="list-style-type: none"> • earthworks managed under the NESPF • <i>extractive industries</i> (see EW-EXT) • earthworks associated with the removal and replacement of underground fuel storage tanks. 	
Restricted Discretionary Activity	Standards	Matters of Discretion <ol style="list-style-type: none"> 1. The <i>effect</i> of the <i>earthworks</i> on the effective functioning of the <i>overflow path, residual overflow path</i> or <i>ponding</i> or <i>shallow surface flow</i>. 2. The avoidance or mitigation of adverse <i>effects</i> on the effective functioning of the <i>overflow path, residual overflow path</i> or <i>ponding</i> or <i>shallow surface flow</i>.
NH-FLOOD-R12	<p><i>Additions to existing buildings</i> (excluding <i>minor buildings</i>) in any <i>overflow path</i> or <i>residual overflow path</i>.</p>	
Restricted Discretionary Activity	Standards	Matters of Discretion <ol style="list-style-type: none"> 1. The <i>effect</i> of the <i>addition</i> on the effective functioning of the <i>overflow path</i> or <i>residual overflow path</i>. 2. The ability of the design, placement and construction of the <i>addition</i> to achieve <i>hydraulic neutrality</i>. 3. The avoidance or mitigation of adverse <i>effects</i> on the effective functioning of the <i>overflow path</i> or <i>residual overflow</i>. 4. Whether the potential <i>risk</i> to the health and safety of people, and property from <i>flood hazards</i> can be avoided or mitigated.
NH-FLOOD-R13	<p><i>Buildings</i> and plant associated with gravel extraction within the <i>River Corridor</i> that will be located on site for over 12 months.</p>	

Restricted Discretionary Activity	Standards	Matters of Discretion
NH-FLOOD-R14	Any <i>restricted discretionary activity</i> listed in NH-FLOOD-R9 to NH-FLOOD-R13 that does not comply with one or more of the associated standards, unless otherwise specified.	
Discretionary Activity		
NH-FLOOD-R15	<p>In any a stream corridor, or river corridor, fill <i>earthworks</i>, or <i>earthworks</i> that do not comply with one or more of the permitted activity standards in NH-FLOOD-R4.</p> <p>The following are excluded from this rule:</p> <ul style="list-style-type: none"> • earthworks managed under the NESPF • <i>extractive industries</i> (see EW-EXT) • earthworks associated with the removal and replacement of underground fuel storage tanks. 	
Discretionary Activity		
NH-FLOOD-R16	<p>New or relocated <i>building</i> (excluding <i>minor buildings</i>) in any <i>overflow path</i> or <i>residual overflow path</i>.</p> <p>Note: This does not apply to additions to existing <i>habitable buildings</i> which are <i>restricted discretionary activity</i> under NH-FLOOD-R12 or <i>structures</i> permitted under NH-FLOOD-R6.</p> <p>Note 2: Assessment of sites where <i>earthworks</i> have occurred that have redefined the flood hazards on the site will consider the latest information available in addition to the Flood Hazard Maps.</p>	
Non-Complying Activity		
NH-FLOOD-R17	The construction, placement or erection of any <i>building</i> (excluding <i>minor buildings</i>) in the <i>river corridor</i> or <i>stream corridor</i> except where related to gravel extraction activities and permitted by NH-FLOOD-R7 or provided for as a <i>restricted discretionary activity</i> under NH-FLOOD-R13, or structures permitted under NH-FLOOD-R6.	
Non-Complying Activity		
NH-FLOOD- Except as provided for by NH-FLOOD-R6 damage or destruction of flood mitigation		

R18	<i>structures or work (including any planting) in the Natural Open Space Zone and River Corridor.</i>
Prohibited Activity	
NH-FLOOD- R19	<i>Landfills in the River Corridor.</i>
Prohibited Activity	

NH-EQ - Earthquake Hazards

The District is subject to most earthquake hazards including strong ground shaking, liquefaction, fault rupture and earthquake induced slope failure.

Fault Rupture

A fault rupture has the potential to cause significant damage to buildings, structures and life without warning. A large earthquake could cause a fault rupture which may result in significant vertical and/or horizontal movement of land. It is likely that buildings or structures sited over a fault would suffer considerable damage. Therefore, it is important to avoid new buildings and development being sited directly over a fault trace where, based on the level of risk, it is reasonable to do so.

A risk based approach assesses the risk posed by the fault hazard in conjunction with the type of development being sought and then translates that risk into District Plan provisions either allowing or restricting activities. Risk is assessed on the basis of three factors being: the hazard, elements at risk, and vulnerability.

In the instance of a fault rupture hazard, the elements at risk are either individual buildings or subdivisions. The vulnerability is determined by the Recurrence Interval Class (RIC) and Fault Complexity areas (i.e. how defined the fault trace is – Well-Defined, Well-Defined Extension, Distributed, Uncertain-Constrained or Uncertain Poorly Constrained).

The appropriateness of a subdivision and the location and design of proposed buildings can only be assessed when further site specific geotechnical investigations are undertaken for areas where buildings are to be proposed within a Fault Avoidance Area. The geotechnical information will need to be supplied by the applicants to show that the building is not located on the fault trace and/or fault rupture deformation and that the building or building areas are set back from that trace a suitable distance. If this cannot be achieved for whatever reason, then consideration will be given to the risks associated with each fault and the physical limitations of the site.

Five active fault traces¹ have been identified and mapped within the District Plan, and they are as follows:

- Ohariu Fault - the Ohariu Fault is traced from offshore of the south coast of Wellington, through Porirua, and north of Waikanae. It is primarily a right lateral strike-slip fault (west side moves north relative to east side). The Ohariu Fault has an estimated average recurrence interval of surface rupture of 1300 to 3800 years. The fault most recently ruptured approximately 1000 years ago. It is expected that an individual surface rupture, associated with a 7.5 Richter Scale magnitude earthquake, along the fault could generate 3 – 5 metres of right-lateral displacement at the ground surface, with a lesser and variable amount of vertical displacement.

- Northern Ohariu Fault - the Northern Ohariu Fault has an estimated average recurrence interval of surface rupture of between 2000 to 4200 years. The fault most recently ruptured approximately 300 – 1000 years ago. It is expected that an individual surface rupture along the fault could generate 3 – 4 metres of right-lateral displacement at the ground surface.
- Gibbs Fault – the activity and location of the Gibbs Fault is less well constrained than both the Ohariu and Northern Ohariu faults. The Gibbs Fault has a recurrence interval of between 3500 – 5000 years and is thought capable of generating earthquakes in the order of 6.7 – 6.8 (+/- 0.25) Richter Scale magnitude.
- Ōtaki Forks Fault - the average recurrence and timing of faults on the Ōtaki Forks Fault is unknown. However, a 3500 – 5000 year recurrence interval has been estimated and the potential surface rupture has been estimated to be approximately 1 metre.
- Southeast Reikorangi Fault – there is the least information on this fault. It is estimated that the recurrence interval of this fault is 5000 – 10,000 years.

Note: The information on the five active faults has been provided by the Institute of Geological and Nuclear Sciences in their report: Earthquake Fault Trace Survey Kāpiti Coast District dated August 2003, and their updated report August 2007.

Liquefaction

There is potential for liquefaction to result in land subsidence across the District during a large distant earthquake event. Future observed liquefaction events in these areas may be associated with loose sand deposits within the floodplain deposits. There is also potential for lateral spread of the Waikanae and Ōtaki river banks.

During a large earthquake on the Wellington Fault or one of the faults in the District, the likelihood of liquefaction is more varied than a distant earthquake event and will depend on the ground conditions at a particular site.

Slope Failure

The Kāpiti area has significant earthquake induced slope failure hazards particularly in the southern and southeastern parts of the District. For example between Pukerua Bay and Paekākāriki, the terrain is steep and slopes have a very high susceptibility to slope failure which could sever transport links to Wellington.

Tsunami

The District is considered to have a very low level risk from a damaging or catastrophic tsunami. The Kāpiti Coast has the lowest risk in the Wellington Region of a major or catastrophic tsunami, with earthquakes near the Solomon Islands posing the highest degree of risk. The risk for the Kāpiti Coast has been modelled using a distant Pacific sourced 500 year event which results in a wave height of 2.5 – 3 metres. This has been included in tsunami evacuation areas which are not part of this Plan.

While tsunami is acknowledged as a natural hazard for the District, the Council has not adopted District Plan regulations to control the hazard or risk specifically with a tsunami event. The method considered most appropriate for reducing the impact of this hazard is an early warning system and the civil defence plans for emergency response procedures. The provision of information by the civil defence emergency management office also assists community awareness and preparedness.

Policies - Earthquake Hazards

NH-EQ-P15

Activities within a Fault Avoidance Area

When assessing applications for *subdivision*, use and *development* located within a *Fault Avoidance Area*, a *risk* management approach will be adopted and *Council* will consider a range of matters that seek to reduce the *risk* of *building* failure (excluding *minor buildings*) and loss of life from a fault rupture hazard, including:

1. geotechnical information provided by a suitably qualified person demonstrating that any *building* is not located on a fault trace or fault trace deformation and maintains a reasonable setback distance in accordance with any geotechnical recommendations;
2. the intensity of the *subdivision* and nature of future *development* of the *allotment(s)*, including *building* design and construction techniques, and the likelihood of *building* failure or loss of life if the fault ruptured within 50 years; and
3. with the exception of BIC Type 2c, 3 and 4 buildings (see NH-EQ-Table 2 - Building Importance Category (BIC) and Representative Examples), it is not necessary to avoid or mitigate potential *effects* along the Southeast Reikorangi Fault; and excluding the *Well-Defined* and *Well-Defined Extensions Areas*, along the Gibbs and Ōtaki Forks faults.

The *risk* management approach takes into account Recurrence Interval Classes (RIC), *Building Importance Categories* (BIC) and *Fault Complexity*.

NH-EQ-P16	Avoid High Density and High Risk Uses in Fault Avoidance Areas
------------------	--

Higher density and higher risk uses such as *commercial* and *industrial activities*, community *buildings* and multi-unit housing (BIC type 3 and 4 in NH-EQ-Table 2 - Building Importance Category (BIC) and Representative Examples) will be located to avoid Fault Avoidance Areas where they are identified in the Risk Management Approach.

NH-EQ-P17	Liquefaction Prone Land
------------------	-------------------------

Plan Change 1B (Liquefaction risk management for new buildings) proposes amendments to this policy.

When assessing applications for *subdivisions* which are located on sandy, alluvial or peat soils, a *risk* management approach shall be adopted and *Council* will consider a range of matters that seek to reduce the *risk* to people and property, including:

1. geotechnical information from a suitably qualified person on *liquefaction* provided with any *subdivision* or *development* application;
2. the intensity of the *subdivision* and nature of future *development* of the *allotment*, including *building* design and construction techniques; and
3. the risk to people and property posed by the *liquefaction* hazard and the extent to which the activity could increase the *risk* posed by the *natural hazard*.

These investigations may result in identifying that some *allotments* are not suitable for *development* and any such proposal would be declined.

NH-EQ-P18	Tsunami
------------------	---------

Residents will be warned to evacuate high risk areas prior to an anticipated distant source tsunami event and recommended to self evacuate in the event of a local earthquake. There will be no regulatory controls placed on development in high risk areas for tsunami in this Plan.

Rules - Earthquake Hazards

The following rules for fault hazards and *liquefaction* apply to all zones. The rules for earthquake hazards need to be read in conjunction with NH-EQ Table 2 - Building Importance Category Table set out after the earthquake hazard rules. See additional natural hazard related rules within the District Wide Subdivision Matters chapter.

NH-EQ-R20	Any activity not specified as a <i>permitted, controlled, restricted discretionary, discretionary or non-complying activity</i> in the NH-EQ rules.	
Permitted Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. The activity complies with all <i>permitted activity</i> standards in Rules NH-EQ-R20 and NH-EQ-R21. 	
NH-EQ-R21	<p><i>Buildings</i> (excluding <i>minor buildings</i>) within <i>Fault Avoidance Areas</i>.</p> <p>Note: Refer to NH-EQ-Table 2 - Building Importance Category and NH-EQ-Table 3 - Risk Based Matrix</p>	
Permitted Activities	<p>Standards</p> <ol style="list-style-type: none"> 1. Within <i>Well-Defined</i> and <i>Well Defined Extension</i> areas for Ohariu and Northern Ohariu faults: <i>Buildings</i> that are defined as <i>Building Importance Category (BIC) Type 1</i>; that comply with the <i>permitted activity</i> standards for the <i>zone</i>. 2. Within <i>Well-Defined</i> and <i>Well Defined Extension</i> areas for the Gibbs and Ōtaki Forks faults: <i>Structures</i> that are defined as <i>BIC Type 1 and 2a</i>; that comply with the <i>permitted activity</i> standards for the <i>zone</i>. 3. Within <i>Well-Defined</i> and <i>Well Defined Extension</i> areas for the Southeast Reikorangi Fault: <i>Structures</i> that are defined as <i>BIC Type 1, 2a and 2b</i>; that comply with the <i>permitted activity</i> standards for the <i>zone</i>. 4. Within <i>Distributed, Uncertain-Constrained</i> and <i>Uncertain-Poorly Constrained</i> areas for the Ohariu and Northern Ohariu faults: <i>Structures</i> that are defined as <i>BIC Type 1 and 2a</i>. 5. Within <i>Distributed, Uncertain-Constrained</i> and <i>Uncertain-Poorly Constrained</i> areas for the Gibbs, Ōtaki Forks and Southeast Reikorangi faults: <i>Structures</i> that are defined as <i>BIC Type 1, 2a and 2b</i>. 	
NH-EQ-R22	<p><i>Buildings</i> (excluding <i>minor buildings</i>) within <i>Fault Avoidance Areas</i> that:</p> <ol style="list-style-type: none"> 1. do not comply with the <i>permitted activity</i> standards; or 2. are identified as a <i>restricted discretionary activity</i> in NH-EQ-Table 3 - Risk Based Matrix and NH-EQ-Table 2 - Building Importance Category. 	
Restricted Discretionary Activity	<p>Standards</p> <ol style="list-style-type: none"> 1. Geotechnical information must be provided by a suitably qualified person demonstrating that the <i>building</i> is not located on a fault trace or fault trace deformation. The information shall identify the location and depth of the Fault Trace in respect of any <i>building</i> platform. The information must be recorded using 	<p>Matters of Discretion</p> <ol style="list-style-type: none"> 1. The location of any <i>building</i> area relative to the location and depth of fault traces. 2. The location and design of <i>buildings</i> to mitigate <i>effects</i> from a fault rupture hazard. 3. The level of <i>risk</i> posed by the fault trace rupturing. 4. The manner in which the topography,

	<p>Geographical Positioning Satellite (GPS) Information System.</p> <ol style="list-style-type: none"> 2. Within <i>Well-Defined</i> and <i>Well-Defined Extension</i> Areas for the Ohariu and Northern Ohariu faults: <i>structures</i> that are defined as <i>BIC</i> Type 2a and 2b. 3. Within <i>Well-Defined</i> and <i>Well-Defined Extension</i> Areas for the Gibbs and Ōtaki Forks faults: <i>structures</i> that are defined as <i>BIC</i> Type 2b. 4. Within <i>Distributed, Uncertain-Constrained</i> and <i>Uncertain-Poorly Constrained</i> Areas for Ohariu and Northern Ohariu faults: <i>structures</i> that are defined as <i>BIC</i> Type 2b. 5. Within all <i>Fault Avoidance Areas</i> for all faults: <i>structures</i> that are defined as <i>BIC</i> Type 2c. 	<p><i>land</i> features of the <i>subject site</i> and access to <i>infrastructure</i> affect the ability to locate the <i>building</i> area.</p> <ol style="list-style-type: none"> 5. In respect to <i>BIC</i> Type 2c <i>buildings</i>; the nature, scale and use of those <i>buildings</i>.
NH-EQ-R23	Any new <i>building</i> (excluding <i>minor buildings</i>) defined as <i>BIC</i> Type 2c, 3 and 4 located on <i>land</i> with sand or peat soils.	

Plan Change 1B (Liquefaction risk management for new buildings) proposes amendments to this rule, which have legal effect once a decision on submissions relating to this rule is made and public notified.

Restricted Discretionary Activity	Standards	Matters of Discretion
	<ol style="list-style-type: none"> 1. Geotechnical information must be provided by a suitably qualified and experienced person (to building consent level) on <i>liquefaction</i>. 	<ol style="list-style-type: none"> 1. The outcomes of the geotechnical investigation on <i>liquefaction</i> by a suitably qualified and experienced person. 2. Whether the potential <i>risk</i> to the health and safety of the people and property from <i>liquefaction</i> can be avoided or mitigated. 3. The design and location of the <i>building</i>.
NH-EQ-R24	Any activity listed as restricted discretionary in NH-EQ-R22, NH-EQ-R23, and SUB-DW-R9 that does not comply with one or more of the associated standards, unless otherwise specified.	

Plan Change 1B (Liquefaction risk management for new buildings) proposes amendments to this rule, which have legal effect once a decision on submissions relating to this rule is made and public notified.

Discretionary Activity	
NH-EQ-R25	The location of <i>structures</i> defined as <i>BIC</i> Type 3 and <i>Type 4</i> and any <i>Type 1, 2a,</i>

2b, 2c <i>structure</i> associated with a <i>Type 3</i> or <i>Type 4 structure</i> or activity within the <i>Fault Avoidance Areas</i> (NH-EQ-Table 3 - Risk Based Matrix and NH-EQ - Table 2 - Building Importance Category below).	
Non-Complying Activity	

NH-EQ-Table 2 - Building Importance Category (BIC) and Representative Examples	Building Importance Category (BIC)	Description	Examples
	1	Temporary and/or non-habitable structures and additions to existing dwellings with low hazard to life and other properties (provided those <i>additions</i> do not increase the number of dwellings on the <i>site</i>).	<ul style="list-style-type: none"> • Non-habitable stand-alone <i>structures</i> • <i>Accessory Buildings</i> (excluding minor buildings) • Farm <i>buildings</i>, fences • Towers in rural situations • Additions to any dwelling type, including <i>additions</i> to <i>existing</i> two-storey dwellings
	2a	Timber-Framed single-storey residential construction <300m ² .	<ul style="list-style-type: none"> • Timber framed single-storey dwellings <300m² • <i>Minor residential units</i>
	2b	Other Residential Buildings including timber-framed residential construction with a floor area greater than 300m ² and/or with multiple storeys, and specific other residential construction.	<ul style="list-style-type: none"> • Timber framed with multiple storeys • Timber framed houses with area > 300m² • Houses outside the scope of NZS 3604 "Timber Framed Buildings"
	2c	Normal Structures (including <i>structures</i> not in other categories).	<ul style="list-style-type: none"> • Multi-occupancy residential, commercial and industrial <i>buildings</i>
	3	Important Structures that may contain people in crowds or contents of high value to the community or pose <i>risks</i> to people in crowds.	<ul style="list-style-type: none"> • Public assembly <i>buildings</i>. • Theatres and cinemas <1000m² • Car parking <i>buildings</i> • Emergency medical and other emergency facilities not designated as critical post disaster facilities • Airport terminals, railway stations, schools • Museums and art galleries • Municipal <i>buildings</i> • Grandstands • <i>Service Stations</i> • Hazardous facilities

	4	Critical Structures with special post disaster functions.	<ul style="list-style-type: none"> • Major <i>infrastructure</i> facilities • Air traffic control installations • Designated civilian emergency centres, medical emergency facilities, emergency vehicle garages, fire and police stations
Note: <ul style="list-style-type: none"> • <i>Subdivisions</i> located within a <i>Fault Avoidance Area</i> are controlled by separate rules. Where a <i>subdivision</i> has occurred within a <i>Fault Avoidance Area</i> and consent notices control the location of or define a <i>building</i> area – the directions of the consent notices are to be given primacy over these provisions. • The <i>Building Importance Categories</i> of Type 1, 2a, 2b, 3 and 4 are adapted from GNS Science, “Earthquake Fault Trace Survey Kāpiti Coast District,” 2003. 			

NH-EQ- Table 3 - Risk Based Matrix Table for Fault Hazard for Development only for Ohariu, Northern Ohariu, Gibbs, South-East Reikorangi and Ōtaki Faults	Fault Complexity	Recurrence Interval Class II	Recurrence Interval Class III	Recurrence Interval Class IV
		Ohariu Fault and Northern Ohariu Fault >2000yrs - ≤ 3500yrs	Gibbs Fault and Ōtaki Forks Fault > 3500yrs - ≤5000yrs	South-East Reikorangi Fault >5000yrs - ≤10000yrs
LIVING ZONES				
	Well Defined and Well Defined Extension	Type 1: Permitted Type 2a & 2b & 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Type 1 & 2a: Permitted Type 2b & 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Type 1, 2a & 2b: Permitted Type 2c: Restricted Discretionary Type 3 & 4: Non- Complying
	Distributed Uncertain- Constrained Uncertain- Poorly Constrained	Type 1 & 2a: Permitted Type 2b & 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Type 1, 2a & 2b: Permitted Type 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Type 1, 2a & 2b: Permitted Type 2c: Restricted Discretionary Type 3 & 4: Non- Complying
RURAL ZONES				
	Well Defined and Well Defined Extension	Type 1: Permitted Type 2a & 2b & 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Type 1 & 2a: Permitted Type 2b & 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Type 1, 2a & 2b: Permitted Type 2c: Restricted Discretionary Type 3 & 4: Non- Complying
	Distributed	Type 1: & 2a:	Type 1, 2a & 2b:	Type 1, 2a & 2b:

	Uncertain- Constrained Uncertain- Poorly Constrained	Permitted Type 2b & 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Permitted Type 2c: Restricted Discretionary Type 3 & 4: Non- Complying	Permitted Type 2c: Restricted Discretionary Type 3 & 4: Non- Complying
	<p>Note:</p> <ul style="list-style-type: none"> • <i>Subdivisions</i> located within a <i>Fault Avoidance Area</i> are controlled by separate rules. Where a <i>subdivision</i> has occurred within a <i>Fault Avoidance Area</i> and consent notices control the location of a or define a <i>building</i> area – the directions of the consent notices are to be given primacy over these provisions • The information has been modified from table prepared by GNS Science, “Earthquake Fault Trace Survey, Kāpiti Coast District” 2003. • The <i>Building Importance Categories</i> of Type 1, 2a, 2b, 3 and 4 are defined in NH-EQ-Table 2 and are taken from GNS Science, “Earthquake Fault Trace Survey Kāpiti Coast District”, 2003. • The <i>resource consent</i> category applies only to the <i>development of buildings</i>, not to <i>subdivision</i>. 			

NH-FIRE - Fire Hazards

Fire Hazards

The nature of the Kāpiti Coast climate varies greatly, resulting in the District developing a high fire danger, sometimes earlier than the rest of the Wellington Region. Some areas of the District are more prone to wildfire than others. The coastal dune area is very quick to dry out following periods of low rainfall or sustained northwest winds. The lowland hills of the Tararua Ranges are also being increasingly planted in exotic pine which increases the fire risk. The wildfire hazard (risk to life and property) has increased due to increasing development in these high risk wildfire zones. Climate change projections pose an additional wildfire threat with increased propensity for drought and stronger or more sustained wind events.

The rules and standards for managing fire hazards require all rural properties and commercial forests, to have access roads and tracks that are appropriately designed, built, and maintained for entry and exit of fire fighting vehicles. The District Plan also requires that all residential properties in rural areas (developed since 1999) must have a water tank situated on their property, so that it can be used for fire fighting purposes. Developers are also required to have water storage tanks specifically for fire fighting purposes strategically placed in any rural area development. These rules and standards relating to fire hazards are set out in the Rural and Open Space chapters of this Plan.

Policies - Fire Hazards

NH-FIRE-P19	Fire Hazards
<p><i>Risks</i> to people and property from fire hazards will be minimised by:</p> <ol style="list-style-type: none"> 1. requiring <i>plantation forestry</i> and forestry harvesting activities in rural, <i>open space</i>, and natural open space <i>zones</i> to be designed to enable quick response to fire; 	

2. requiring *subdivision*, use and *development* in rural zones to provide *water* for firefighting; and
3. requiring access and adequate fire fighting *water* supplies to be provided for fire appliances in all *zones*.