NH - Natural Hazards

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-O1 - Tangata Whenua;
- DO-O3 - Development Management;
- DO-O5 - Natural Hazards; and
- DO-O17 - Open Spaces / Active Communities

DO-O1	Tangata 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-O3	Development Management	**Amended** 01 Sep 23 PC2

To maintain a consolidated urban form within existing urban areas and a limited number of identified growth areas, and to provide for the *development* of new urban areas where these 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. an urban environment that enables more people to live in, and more businesses and community services to be located in, parts of the urban environment:

    a. that are in or near a *Centre Zone* or other area with many employment opportunities; or
    b. that are well serviced by existing or planned public or active transport; or
    c. where there is high demand for housing or for business land relative to other areas within the urban environment;

while accommodating *identified qualifying matters* that constrain development;

4. resilient communities where development does not result in an increase in risk to life or severity of damage to property from natural hazard events;
5. higher residential densities in locations that are close to centres and public open spaces, with good access to public transport;
6. management of development in areas of special character or amenity in a manner that has regard to those special values;
7. 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;
8. 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;
9. management of the location and effects of potentially incompatible land uses including any interface between such uses; and
10. urban environments that support reductions in greenhouse gas emissions and are resilient to the current and future effects of climate change.

DO-O5	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-O17	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 *effect*s 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 r*esidual 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 stop banks 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
Flood hazard categories are mapped using the *1% AEP* flood modelling scenario. The extents and categories consider projected climate change and precautionary freeboard to minimise *risks*. Residual *risks* are also mapped where flood mitigation *structures* are present.	
NH-FLOOD-P9	Flood Hazard Categories
The *flood hazard categories* have been developed using the following criteria: 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 *allotments* must have flood and erosion-free *building* (excluding *minor buildings*) areas based on *1% AEP* flood modelling.	
NH-FLOOD-P11	Flood Risk Levels
A higher level of control on *subdivision*, use and *development* will be applied within *river corridors*, *stream corridors*, *overflow paths* and *residual overflow path* areas. A generally lesser level of restriction on *subdivision*, use and *development* will be applied in *ponding*, *residual ponding*, *shallow surface flow*, *flood storage* and *fill control areas*.	
NH-FLOOD-P12	High Hazard Flood Areas
Development in the *river corridor, stream corridor, overflow path, and residual overflow path* areas will be avoided unless the *1% AEP* hazard can be mitigated on-site to avoid damage to property or harm to people, and the following criteria are met: 1. no increase in flood flow or level on adjoining *sites* or other parts of the floodplain; 2. no reduction in storage capacity on-site; and 3. all flow corridors or *overflow paths* 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
When assessing applications for *subdivision*, use or *development* within a *ponding*, *residual ponding*, *shallow surface flow*, *flood storage* or *fill control area*, consider the following: 1. the *effects* of the *development* on existing flood mitigation *structures*; 2. the *effects* of the *development* on the flood hazard — in particular flood levels and flow;	

3. whether the *development* redirects floodwater onto adjoining *sites* or other parts of the floodplain;
4. whether access to the *subject site* will adversely affect the flood hazard;
5. the extent to which *buildings* (excluding *minor buildings*) can be located on areas of the *site* not subject to flooding; and
6. whether any *subdivision* or *development* will or may result in damage to property or harm to people.

NH-FLOOD-P14	Flood Hazard Management Activities
Recognise the importance of flood hazard management activities (including gravel extraction) in the *river corridor* to the reduction of flood hazard *risk*.	

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 *permitted, controlled, restricted discretionary, discretionary, non-complying* or *prohibited activity* in NH-FLOOD rules.
Permitted Activity	**Standards** 1. The activity complies with all *permitted activity* standards in rules NH-FLOOD-R2 to NH-FLOOD-R7. **Note:** See NH-FLOOD-R2 for separation of *buildings* and *structures* from *waterbodies* standards, and INF-MENU in relation to *water* and *stormwater* rules for all *development*.
NH-FLOOD-R2	Any *building* or *structure* in any zone.
Permitted Activity	**Standards** 1. Separation from *waterbodies* a. *Buildings* (excluding *minor buildings*) shall not be sited within the *river corridor* or *stream corridor* (unless they are *permitted activities* under NH-FLOOD-R7): i. For the *stream corridor* and other *waterbodies,* including ephemeral and intermittent *rivers* or streams (except lakes) the minimum setback for any *building* or *structure* (other than a bridge or culvert *structure* for which a *resource consent* is required from the Regional Council) from the natural banks of any *waterbody* greater than 3 metres wide shall be 10 metres; ii. For streams/*drains* less than 3 metres wide, the minimum setback must be 5 metres where the average width of the stream or *waterbody* is measured as an average within the *site*.

	2. *Buildings* (excluding *minor buildings)* must not be sited within 5 metres of a *lake*.
NH-FLOOD-R3	New or relocated *buildings* (excluding *minor buildings*) in *ponding, residual ponding* and *shallow surface flow areas*.
Permitted Activity	**Standards** 1. The *building floor level* of any new or relocated *building* (excluding *minor buildings)* in the *ponding, shallow surface flow* or *residual ponding area* shall be constructed above the *1% AEP* flood event level.
NH-FLOOD-R4	*Earthworks* except where associated with the matters listed below: 1. the maintenance of a watercourse or *stormwater* control; 2. activities *permitted* under NH-FLOOD-R6; 3. maintenance activities within the legal *road*; 4. private *farm tracks* which are *ancillary* to *permitted farming* activities and are not within an *outstanding natural features and landscapes*; 5. *residual ponding areas* where the *earthworks permitted activity* standards for the relevant *zone* are complied with (see EW-Earthworks for rules on *earthworks*); 6. *earthworks* subject to NH-FLOOD-R8 (i.e. within a *flood storage* or *fill control area*); 7. *extractive industries* (see NH-FLOOD-R7); 8. the removal or replacement of underground fuel storage tanks; and 9. "earthworks" as defined in and regulated by the *NESCF*.
Permitted Activity	**Standards** 1. In an *overflow path* or *residual overflow path* (excluding fill which is addressed in NH-FLOOD-R10), *earthworks*: a. shall not involve the disturbance of more than 10m^3 of *land* in any 10 year period; b. shall not alter the *original ground level* by more than 0.5 metres, measured vertically; and c. shall not impede the flow of floodwaters. 2. In *ponding* areas (excluding *residual ponding areas*) and *shallow surface flow areas*, *earthworks*: a. shall not involve the disturbance of more than 20m^3 (volume) of *land* in any 10 year period; and b. shall not alter the *original ground level* by more than 1.0 metre, measured vertically. 3. In a *stream corridor* or *river corridor* (excluding fill which is addressed in NH-FLOOD-R15), *earthworks*: a. shall not exceed 10m^3 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. **Note**: Any works carried out within the *bed* of lakes and *rivers* are within the jurisdiction of Wellington Regional Council and are not covered in this District Plan.

NH-FLOOD-R5	Fences in any flood hazard area.
Permitted Activity	**Standards** 1. Fences in the *river corridor*, *stream corridor*, an *overflow path* or *residual overflow path* shall be post and wire and shall not impede the free flow of flood waters.
NH-FLOOD-R6	Flood protection, erosion control and *natural hazard* mitigation measures including associated *structures* in the *Open Space* or Natural *Open Space Zones* (but not the Private Recreation and Leisure Precinct), and the stream or *river corridor*.
Permitted Activity	**Standards** 1. All works must be carried out by Wellington Regional Council, Kāpiti Coast District Council, the Department of Conservation or their nominated contractors. **Note:** Any works carried out within the *bed* of lakes and *rivers* are within the jurisdiction of Wellington Regional Council and are not covered in this District Plan.
NH-FLOOD-R7	Gravel extraction activities in the *river corridor* on land outside of the *beds* of any *lake* or *river*.
Permitted Activity	**Standards** 1. All works must be carried out by Wellington Regional Council, Kāpiti Coast District Council, the Department of Conservation or their nominated contractors. 2. Mobile plants for processing extracted materials, and associated temporary *buildings* (excluding *minor buildings)* shall not be located on any *site* for longer than any 12 month period. **Note:** Any gravel extraction carried out within the *bed* of a *lake* or *river* requires *resource consent* from the Wellington Regional Council.
NH-FLOOD-R8	*Development* and *earthworks* within any *flood storage* or *fill control area*. The following are excluded from this rule: • *earthworks* managed under the *NESCF* • *extractive industries* (see EW-EXT) • *earthworks* associated with the removal and replacement of underground fuel storage tanks.

Controlled Activity	**Standards** 1. Equivalent compensatory storage or another solution to achieve *hydraulic neutrality* shall be created. 2. *Development* proposals shall be accompanied by sufficient hydraulic modelling of relevant streams to fully test consequences of the activity. 3. The *building floor level* of any new or relocated *building* (excluding *minor buildings*) shall be constructed above the *1% AEP* flood event level.	**Matters of Control** 1. Future management of the *flood storage* or *fill control*

		area. 2. *Natural hazard effects*. 3. *Nuisance effects* including *dust*. 4. Location and design of *buildings* and *structures*. 5. Suitability of access.
NH-FLOOD-R9	Any activity listed as a *permitted* or *controlled activity* 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.	
Restricted Discretionary Activity	**Standards**	**Matters of Discretion** 1. Consideration of the *effects* of the standard not met. 2. Measures to avoid, remedy or mitigate adverse *effects.* 3. Cumulative *effects*
NH-FLOOD-R10	In an *overflow path*, or *residual overflow path*, fill *earthworks*, or *earthworks* which do not comply with one or more of the *permitted activity* standards under NH-FLOOD-R4. The following are excluded from this rule: • *earthworks* managed under the *NESCF* • *extractive industries* (see EW-EXT) • *earthworks* associated with the removal and replacement of underground fuel storage tanks.	
Restricted Discretionary Activity	**Standards**	**Matters of**

		Discretion 1. The *effect* of the *earthworks* on the effective functioning of the *overflow path, residual overflow path* or *ponding* or *shallow surface flow area*. 2. The avoidance or mitigation of adverse *effects* on the effective functioning of the *overflow path, residual overflow path* or *ponding* or *shallow surface flow*.
NH-FLOOD-R11	In a *ponding* or *shallow surface flow area*, *earthworks* which do not comply with one or more of the *permitted activity* standards under NH-FLOOD-R4. The following are excluded from this rule: • *earthworks* managed under the *NESCF* • *extractive industries* (see EW-EXT)	

	• *earthworks* associated with the removal and replacement of underground fuel storage tanks.

Restricted Discretionary Activity	**Standards**	**Matters of Discretion** 1. The *effect* of the *earthworks* on the effective functioning of the *overflow path*, *residual overflow path* or *ponding* or *shallow surface flow*. 2. The avoidance or mitigation of adverse *effects* on the effective functioning of the *overflow path*, *residual overflow path* or *ponding* or *shallow surface flow*.

NH-FLOOD-R12	*Additions* to existing *buildings* (excluding *minor buildings*) in any *overflow path* or *residual overflow path*.

Restricted	**Standards**	**Matters**

Discretionary Activity		**of Discretion** 1. The *effect* of the *addition* on the effective functioning of the *overflow path* or *residual overflow path*. 2. The ability of the design, placement and construction of the *addition* to achieve *hydraulic neutrality.* 3. The avoidance or mitigation of adverse *effects* on the effective functioning of the *overflow path* or *residual overflow*. 4. Whether the potential *risk*

		to the health and safety of people, and property from flood hazards can be avoided or mitigated.
NH-FLOOD-R13	*Buildings* and plant associated with gravel extraction within the *river corridor* that will be located on site for over 12 months.	
Restricted Discretionary Activity	**Standards** 1. Proposals shall be accompanied by sufficient hydraulic modelling of the relevant *river* to fully test consequences of the *building* or plant.	**Matters of Discretion** 1. *Effects* of *buildings* and plant in relation to *hydraulic neutrality*. 2. *Effects* of *buildings* and plant on the recreational use of, and *amenity values* of the *river*. 3. *Natural hazard effects*.
NH-FLOOD-R14	Any *restricted discretionary activity* 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	In any a *stream corridor*, or *river corridor*, fill *earthworks*, or *earthworks* that do not comply with one or more of the *permitted activity* standards in NH-FLOOD-R4. The following are excluded from this rule: • *earthworks* managed under the *NESCF* • *extractive industries* (see EW-EXT) • *earthworks* associated with the removal and replacement of underground fuel storage tanks.
Discretionary Activity	
NH-FLOOD-R16	New or relocated *building* (excluding *minor buildings*) in any *overflow path* or *residual overflow path*. **Note:** This does not apply to *additions* to existing *habitable buildings* which are *restricted discretionary activity* under NH-FLOOD-R12 or *structures permitted* under NH-FLOOD-R6. **Note 2:** Assessment of *sites* where *earthworks* have occurred that have redefined the flood hazards on the *site* will consider the latest information available in addition to the Flood Hazard Maps.
Non-Complying Activity	
NH-FLOOD-R17	The construction, placement or erection of any *building* (excluding *minor buildings*) in the *river corridor* or *stream corridor* except where related to gravel extraction activities and *permitted* by NH-FLOOD-R7 or provided for as a *restricted discretionary activity* under NH-FLOOD-R13, or *structures permitted* under NH-FLOOD-R6.
Non-Complying Activity	
NH-FLOOD-R18	Except as provided for by NH-FLOOD-R6 damage or *destruction* of flood mitigation *structures* or work (including any planting) in the Natural *Open Space Zone* and *river corridor*.
Prohibited Activity	
NH-FLOOD-R19	*Landfills* in the *river corridor*.
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* traces 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	**Amended**

		31 Oct 22 PC1B

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* application;
2. the intensity of the *subdivision* and nature of future *development* of the *allotment*; 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 *permitted, controlled, restricted discretionary, discretionary* or *non-complying activity* in the NH-EQ rules.
Permitted Activity	**Standards** 1. The activity complies with all *permitted activity* standards in Rules NH-EQ-R20 and NH-EQ-R21.
NH-EQ-R21	*Buildings* (excluding *minor* buildings) within *fault avoidance areas*. **Note:** Refer to NH-EQ-Table 2 - Building Importance Category and NH-EQ-Table 3 - Risk Based Matrix
Permitted Activities	**Standards** 1. Within *well-defined and well defined extension areas* for Ohariu and Northern Ohariu faults: *Buildings* that are defined as *Building Importance Category* (*BIC*) Type 1; that comply with the *permitted activity* standards for the *zone*. 2. Within *well-defined and well defined extension areas* for the Gibbs and Ōtaki Forks faults: *Structures* that are defined as *BIC* Type 1 and 2a; that comply with the *permitted activity* standards for the *zone*. 3. Within *well-defined and well defined extension areas* for the Southeast Reikorangi Fault: *Structures* that are defined as *BIC* Type 1, 2a and 2b*;* that comply with the *permitted activity* standards for the *zone*. 4. Within *distributed, uncertain-constrained* and u*ncertain-poorly constrained* areas for the Ohariu and Northern Ohariu faults: *Structures* that are defined as BIC Type 1 and 2a.

	5. Within *distributed, uncertain-constrained* and u*ncertain-poorly constrained* areas for the Gibbs, Ōtaki Forks and Southeast Reikorangi faults: *Structures* that are defined as *BIC* Type 1, 2a and 2b.
NH-EQ-R22	*Buildings* (excluding *minor buildings*) within *fault avoidance areas* that: 1. do not comply with the *permitted activity* standards; or 2. are identified as a *restricted discretionary activity* in NH-EQ-Table 3 - Risk Based Matrix and NH-EQ-Table 2 - Building Importance Category.

Restricted Discretionary Activity	**Standards** 1. Geotechnical information must be provided by a suitably qualified person demonstrating that the *building* 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 *building* platform. The information must be recorded using Geographical Positioning Satellite (GPS) Information System. 2. Within *well-defined* and w*ell-defined extension* areas for the Ohariu and Northern Ohariu faults: *structures* that are defined as *BIC* Type 2a and 2b. 3. Within *well-defined* and *well-defined extension* areas for the Gibbs and Ōtaki Forks faults: *structures* that are defined as *BIC* Type 2b. 4. Within *distributed, uncertain-constrained* and *uncertain-poorly constrained* areas for Ohariu and Northern Ohariu faults: *structures* that are defined as *BIC* Type 2b. 5. Within all *fault avoidance areas* for all faults: *structures* that are defined as *BIC* Type 2c.	**Matters of Discretion** 1. The location of any *building* area relative to the location and depth of fault traces. 2. The location and design of *buildings* to mitigate *effects* from a fault rupture hazard. 3. The level of *risk* posed by the fault trace rupturing. 4. The manner in which the

		topography, *land* features of the *subject site* and access to *infrastructure* affect the ability to locate the *building* area. 5. In respect to *BIC* Type 2c *buildings;* the nature, scale and use of those *buildings*.
NH-EQ-R23	[deleted]	**Deleted** 31 Oct 22 PC1B
NH-EQ-R24	Any activity listed as *restricted discretionary* in NH-EQ-R22, and SUB-DW-R9 that does not comply with one or more of the associated standards, unless otherwise specified.	**Amended** 31 Oct 22 PC1B
Discretionary Activity		
NH-EQ-R25	The location of *structures* defined as *BIC Type 3* and *Type 4* and any Type 1, 2a, 2b, 2c *structure* associated with a *Type 3* or *Type 4 structure* or activity within the *fault avoidance area*s (NH-EQ-Table 3 - Risk Based Matrix and NH-EQ - Table 2 - Building Importance Category below).	
Non-Complying Activity		

NH-EQ-	*Building*	Description	Examples

Table 2 - *Building Importance Category* (*BIC*) and Representative Examples	*Importance Category* (BIC)		
	1	**Temporary and/or non-habitable *structures* and *additions* to existing dwellings** with low hazard to life and other *properties* (provided those *additions* do not increase the number of dwellings on the *site*).	• Non-habitable stand-alone *structures* • *Accessory Buildings* (excluding *minor buildings*) • Farm *buildings*, fences • Towers in rural situations • *Additions* to any dwelling type, including *additions* to existing two-storey dwellings
	2a	**Timber-Framed** single-storey residential construction <300m^2.	• Timber framed single-storey dwellings <300m^2 • *Minor residential units*
	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.	• Timber framed with multiple storeys • Timber framed houses with area> 300m^2 • Houses outside the scope of NZS 3604 “Timber Framed Buildings”
	2c	**Normal *Structures*** (including *structures* not in other categories).	• Multi-occupancy residential, commercial and industrial *buildings*
	3	**Important *Structures*** that may contain people in crowds or contents of high value to the community or pose *risks* to people in crowds.	• Public assembly *buildings*. • Theatres and cinemas <1000m^2 • *Car parking buildings* • Emergency medical and other emergency facilities not designated as critical post disaster facilities • Airport terminals, railway stations, schools • Museums and art galleries • Municipal *buildings* • Grandstands • *Service Stations* • Hazardous facilities
	4	**Critical *Structures*** with special post disaster functions.	• Major *infrastructure* facilities • Air traffic control installations • Designated civilian emergency *centres*, medical emergency facilities, emergency vehicle garages, fire and police stations
	Note: • *Subdivisions* located within a *fault avoidance area* are *controlled* by separate rules. Where a *subdivision* has occurred within a *fault avoidance area* and consent notices control the location of or define a *building* area — the directions of the consent notices are to be given primacy over these provisions.		

	• The *Building Importance Categories* 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** **Ohariu Fault and Northern Ohariu Fault >2000yrs - ≤ 3500yrs**	**Recurrence Interval Class III** **Gibbs Fault and Ōtaki Forks Fault > 3500yrs - ≤5000yrs**	**Recurrence Interval Class IV** **South-East Reikorangi Fault >5000yrs - ≤10000yrs**
	RESIDENTIAL 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 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*
	Note: • *Subdivisions* located within a *fault avoidance area* are *controlled* by separate rules. Where a *subdivision* has occurred within a *fault avoidance area* and consent notices control the location of a or define a *building* 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 *Building Importance Categories* 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 *resource consent* category applies only to the *development* of *buildings*, not to *subdivision*.			

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 firefighting purposes. Developers are also required to have *water* storage tanks specifically for firefighting 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

Risks to people and *property* from fire hazards will be minimised by:

1. requiring *plantation forestry* and forestry harvesting activities in rural, *open space,* and natural *open space zones* 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 firefighting *water* supplies to be provided for fire appliances in all *zones*.