Natural Hazards Chapter

NH – Natural Hazards

Background

Upper Hutt City is susceptible to a wide range of natural hazards, including flooding, fault rupture, poor ground conditions and slope instability. When natural hazards occur, they can result in damage to property and buildings, and lead to a loss of human life. It is therefore important to identify areas susceptible to natural hazards and to avoid or manage subdivision use and development, relative to the natural hazard risk posed, in order to reduce the damage to properties and the potential for loss of human life.

The District Plan focuses on the following natural hazards as they are the hazards that present the greatest risk to people, property and infrastructure and their potential effects can be addressed through appropriate land use planning measures:

- Flooding;
- Fault rupture;
- Poor Ground Conditions; and
- Slope instability

Flooding is influenced by climate change. It is predicted that climate change will result in more intense rainfall events, and storm events will become more common. The flooding hazard maps incorporate current climate change predictions.

Upper Hutt City is also susceptible to natural hazards such as severe winds, wildfires, and ground shaking from earthquakes. These hazards are primarily managed by other statutory instruments or processes including the Building Act 2004, Civil Defence Emergency Management Act 2002 and the Local Government Act 1974.

Risk

Risk is a product of both the likelihood of and the consequences from a natural hazard. A risk-based approach to natural hazards balances allowing for people and communities to use their property and undertake activities, while also ensuring that their lives or significant assets are not harmed or lost as a result of a natural hazard event. When addressing the consequences from natural hazards, priority has been given in this plan as follows to:

- The protection of people including loss of life and injury;
- Maintaining key infrastructure to ensure the health and safety of communities;
- Maintaining the functionality of buildings after a natural hazard event and the ability for communities to recover.

While in most instances development is unable to change the likelihood of the risk, incorporating mitigation measures or avoiding any further development in certain hazard areas can reduce the consequences from natural hazards, thereby over time reducing the associated risks. Potential mitigation measures that can be incorporated into developments to reduce the consequences of natural hazards include:

- Building design and location (for example minimum floor levels);
- Raising ground levels to avoid inundation;
- The creation of flood water detention areas to protect areas from inundation;
- The introduction, retention or improvement of existing natural systems;
- Use or size of materials in infrastructure design and building construction;
- The type of activities within buildings and structures; and
- The use of soft engineering options (for example sacrificial fill).

Natural hazards are addressed within the following four chapters:

- Natural Hazards
- Subdivision;
- Earthworks; and
- Energy Infrastructure and Utilities.

~~The particular geology, hydrology and topography of the Hutt Valley make Upper Hutt vulnerable to a variety of **natural hazards**. Earthquakes and flooding are the most important **natural hazards** that threaten Upper Hutt's communities.~~

~~**Natural hazards** cannot be prevented, but the **effects** they have on people and the **environment** can be mitigated. Flood protection measures and **land** use planning are two ways to minimise risks.~~

~~The **Council**'s function is to manage the actual and potential **effects** of the use, development or protection of **land**. This includes the use of controls to avoid, remedy, or mitigate the **effects** of **natural hazards**.~~

~~*Resource Management Issues*~~

~~**NH-I1** *The potential damage, disruption and threats to the safety of the community and property as a result of **activities** located on or near an area prone to seismic hazard.*~~

~~Within Upper Hutt, the Wellington Fault occupies the north-western margin of the Upper Hutt/Te Marua basins. The north-west side of the valley is the eroded fault scarp of the Wellington Fault. In many parts of Upper Hutt the exact location of the active fault is unknown. The level of accuracy ranges from~~

+/- 5m within Totara Park, to more than +/- 50m between the Silverstream Bridge and south of Totara Park. The variation in accuracy is due to the lack of surface evidence like active faulting and other surface obstructions.

The adverse **effects** of earthquakes impact on both physical resources and people. Fault ruptures are the most obvious cause of damage but ground shaking is more widespread. The severity of the **effect** depends upon factors like distance from the fault, local topography, geological conditions and ground **water** conditions. Showing the active fault on the Planning Maps assists in identifying areas most likely to be affected by earthquakes.

A major earthquake in Upper Hutt is likely to damage resources and injure people. **Buildings** and infrastructure that straddle the fault may be severely damaged. The severity of damage in other areas of Upper Hutt will vary depending on the location. Conditions such as soil structure, ground **water**, and local topography as well as geological conditions will either attenuate or amplify the earthquake. There are also areas that may be prone to liquefaction and seismically induced slope failure.

NH-I2 *Inappropriate development and **activities** located within floodplains that may result in damage to infrastructure and property and the obstruction of flood flow paths.*

Upper Hutt is dissected by several tributary **rivers** which flow into the main Hutt River.

The area most at risk is the Hutt River floodplain. Recognising this, the Wellington Regional Council has undertaken protection works, such as stopbanks and **river** bank stabilisation. These stopbanks run parallel to the developed urban area from Totara Park to Trentham Memorial Park. During a large flood the stopbanks may be breached, causing severe damage and disruption to the City. The stopbanks have a maximum design flood capacity so that it is possible in a significant flood event that they could be overtopped or a breach could occur causing significant damage and disruption to the City.

In addition, the Heretaunga Flood Detention Embankment and outlet control **structure** (referred to as the Heretaunga Retention Dam) has been designed to reduce the frequency and severity of flooding in the downstream urban areas along the Heretaunga Drain. A line defining the predicted maximum extent of ponding behind the Heretaunga Dam has been identified on the Planning Maps. So that the ponding capacity of the Heretaunga Dam is not compromised, **earthworks**, buildings or **structures** should not be undertaken within the area encompassed by the Retention Line as shown on the Planning Maps.

Subdivision in the rural areas is likely to increase the potential for development close to **rivers** and will require careful consideration.

It is recognised that there are varying levels of risk within an identified **Flood Hazard Extent**. High hazard areas include Stream and **River Corridors, Overflow Paths** and **Erosion Hazard Areas**. In these higher risk areas flood **waters** can be both deep and fast moving and the risk of erosion is high. In some cases, parts of the **Erosion Hazard Area** may be less susceptible due to the characteristics of the location and thus represent a lower risk to people and property. Lower hazard areas within identified **flood hazard extents** predominately comprise **ponding areas** but can also include lower risk parts of the **Erosion Hazard Area**. Development should avoid higher hazard areas, with sufficient mitigation applied to lower hazard areas.

~~Certain upstream **activities** can increase the frequency and magnitude of flood events. For example, removal of vegetation can result in increased **water** run-off, sedimentation and debris blockages, thus creating significant risks.~~

~~**NH-I3** *The need for on-going **river** management **activities** and development of flood protection works along the Hutt River.*~~

~~The Hutt River's **water** levels are subject to wide and sudden fluctuations. In order to avoid, remedy or mitigate the potential adverse **effects** of inundation, there is a need to manage **activities** on and near the Hutt River, and to provide for flood protection work.~~

~~**NH-I4** *The existing community in the Pinehaven catchment are susceptible to flood hazards.*~~

~~The Pinehaven Stream flows through an urbanised community. The development around the stream has limited the natural function of the stream and its floodplain. The **Stream corridor**, **Overflow paths** and **land** along the stream banks are the most sensitive areas to inappropriate development that can adversely affect the function of the floodplain and exacerbate the risk from flooding.~~

Objectives

~~**NH-O1** *The avoidance, remedying or mitigation of the adverse **effects** of **natural hazards** on the **environment**.*~~

~~The **Council** has the responsibility under **the Act** to protect all aspects of the **environment**, not just people and property, from the adverse **effects** of **natural hazards**. **Amenity values** of an area and its ecological systems should also be protected against **natural hazards**.~~

~~It is not always feasible or practicable to avoid, remedy, or mitigate all potential **effects** of **natural hazards** at all times for all aspects of the **environment**. Some priority must be placed on human life and property, but preferably this can be achieved in conjunction with achieving other goals. The goal in managing the **effects** of **natural hazards** within the City, therefore, is the avoidance, remedying or mitigation of the adverse **effects** of **natural hazards** on the **environment** as appropriate to the circumstances, with priority on community protection.~~

NH-O1 *Risk from Natural Hazards*

Subdivision, use and development within the Natural Hazard Overlays ~~does not significantly increase~~ minimises the risk to life or property.

NH-O2 *Identify **Flood Hazard Extents** and **Erosion Hazard Areas** in order to avoid or mitigate the risk to people and property and provide for the function of the floodplain.*

The extent of the threat from flood hazards and erosion hazards must be identified within the Pinehaven Stream and Mangaroa River catchments. The types of hazards within an identified **Flood Hazard Extent** can vary, with high hazard areas and lower hazard areas that need to be considered when planning for future development.

High hazard areas within the **Flood Hazard Extent** comprise the Stream and **River Corridor**, **Overflow Paths** and the **Erosion Hazard Area**. These are characterised by areas of moving flood **water** which may also be deep or fast and includes areas most at risk to erosion during a flood event. These are identified on the Hazard Maps. **Subdivision** within high hazard areas should be avoided given the threat these areas represent to people and property.

Outside the high hazard areas, but still within the **Flood Hazard Extent**, are lower hazard areas generally comprising the **ponding areas** and some parts of the **Erosion Hazard Area**. These areas are generally characterised by still or slow moving flood **water** and a lower risk of erosion. These areas are identified on the Hazard Maps. **Subdivision** or development may be possible in these areas subject to appropriate mitigation (such as raising the floor levels above the 1 in 100-year flood level).

All development should be undertaken in a manner that provides for the function of the floodplain to **discharge** flood **waters** and thereby ensure that the **effects** from flooding are not exacerbated on the **site**, adjacent **properties** or the wider **environment**.

NH-O3 *To control **buildings** and **activities** within the upper areas of the **Pinehaven Catchment Overlay** to ensure that peak **stormwater** runoff during both a 1 in 10-year and 1 in 100-year event does not exceed the existing run off and therefore minimise the flood risk to people and property within the **Flood Hazard Extent.***

Development in the **Pinehaven Catchment Overlay** needs to be controlled to ensure that **stormwater** runoff does not exacerbate the impact of flooding in the lower catchment. Most of the upper catchment is currently undeveloped and any new development has the potential to affect the **land** use and peak **stormwater** runoff. This objective seeks to ensure that the peak **stormwater** runoff does not increase, thereby increasing the flood risk downstream.

Policies

~~**NH-P1** *To identify and mitigate the potential adverse **effects** of **natural hazards** that are a potentially significant threat within Upper Hutt.*~~

~~Adequate information is necessary to make informed decisions on developments that may be affected by **natural hazards**. The main objective relating to **natural hazards** is knowing where they can occur so that the **effects** can be avoided, or the appropriate management strategies can be put in place.~~

The **Council** will co-ordinate the provision of information identifying these hazards and the areas at risk. This can be used by developers, the community and the **Council** to consider the potential risks when making decisions on developments and deciding on possible mitigation measures where **natural hazards** are involved.

The **Council** will recognise the high and low hazard areas within the identified Pinehaven Stream and Mangaroa River **Flood Hazard Extents**.

High hazard areas comprise moving **water** that can also be deep and are the areas most at risk from erosion during a flood event. Accordingly, **subdivision** and development within high hazard areas should be avoided given the threat they have to people and property.

Lower hazard areas are generally characterised by still or slow moving flood **water** and a lower risk of erosion. In these areas, it may be possible to undertake development provided appropriate mitigation is implemented (for example floor levels above the 1 in 100 year flood extent or being **setback** from the stream or **river** bank).

Some parts of the identified **Erosion Hazard Area** within the Mangaroa **Flood Hazard Extent** may represent a lower risk depending on the characteristics of the **site** and its location in relation to the **river**. Where a site specific assessment identifies there is a lower threat then the erosion hazard may be considered a lower hazard area and assessed in accordance with the lower hazard policies.

NH-P2 *In areas of known susceptibility to **natural hazards, activities** and **buildings** are to be designed and located to avoid, remedy, or mitigate, where practicable, adverse **effects** of **natural hazards** on people, property and the **environment**.*

This policy lessens the risk factor by restricting developments in hazard prone areas. These controls include appropriate separation distances from a **river** or fault, or designing **structures** and **site** development to meet acceptable levels of safety. This also enables applicants to consider the potential risks when making decisions on developments.

The **effects** of permitting more intensive **subdivision** (and subsequent development and infrastructure) could be substantial and controls on **subdivision** can reduce these.

NH-P1 *Identification of Natural Hazards*

Identify and map natural hazards and take a risk-based approach to the management of subdivision, use and development within the natural hazard overlays based on the following:

a) The consequence of the natural hazard on people and property; and
b) The level of risk presented to people and property from a natural hazard

NH-P2 *Less Hazard Sensitive Activities within the Mangaroa Peat Overlay, ~~High~~ Slope Hazard Overlay and Wellington Fault Overlay.*

Allow for Less Hazard Sensitive Activities within the Mangaroa Peat Overlay, ~~High~~ Slope Hazard Overlay and Wellington Fault Overlay

NH-P3 *Hazard Sensitive and Potentially Hazard Sensitive Activities within the poorly constrained or the uncertain constrained areas of the Wellington Fault Overlay.*

Provide for Hazard Sensitive and Potentially Hazard Sensitive Activities within the poorly constrained or the uncertain constrained areas of the Wellington Fault Overlay provided:

(a) New buildings and building platforms are located to avoid the fault, as advised by an appropriately qualified specialist.

NH-P4 *Hazard Sensitive and Potentially Hazard Sensitive Activities within the well-defined or well-defined extension areas of the Wellington Fault Overlay.*

Avoid the construction of new buildings, undertake substantial additions to existing buildings, or subdivision associated with, or the of establishment, of Hazard Sensitive and Potentially Hazard Sensitive Activities within the well-defined or well-defined extension areas of the Wellington Fault Overlay, unless it can be demonstrated that:

a. The activity or subdivision has a critical regional or nationally important operational and functional need to locate or occur within the High Hazard Areas and locating or occurring outside the High Hazard Areas is not a practicable option; and

b. The building, activity or subdivision incorporates mitigation measures that demonstrate that risk to people, and property is avoided; and

c. For additions to existing buildings, the change in risk from fault rupture to people, buildings is not increased.

NH-P5 *Hazard Sensitive and Potentially Hazard Sensitive Activities within the Mangaroa Peat Overlay.*

Allow for subdivisions that results in the creation of vacant allotments in the Mangaroa Peat Overlay, provided:

a. It can be demonstrated through a geotechnical investigation that the subdivision will not increase the risk of damage to property due to the building platform being located on good ground; or

b. A geotechnical assessment shows that there is the ability for appropriate mitigation options to be incorporated into the design of a future building to ~~reduce~~ minimise the likelihood of damage as a result of poor ground conditions on the identified building platform.

NH-P6 *Earthworks in the ~~High~~ Slope Hazard Overlay.*

Provide for earthworks in the ~~High~~ Slope Hazard Overlay, where:

a. A geotechnical assessment confirms that the proposed earthworks will ~~not unacceptably increase~~ minimise the risk from slope instability to people, and buildings; and

b. The earthworks will not increase the risk of slope failure at adjacent sites.

NH-P7 *Subdivision where additional building platforms are created in the ~~High~~ Slope Hazard Overlay.*

Provide for subdivision that creates additional building platforms in the ~~High~~ Slope Hazard Overlay where:

a. A geotechnical assessment confirms that the site is suitable for subdivision, use and development, and that the risk from slope instability can be avoided, remedied or mitigated.

b. The subdivision ~~will not increase or accelerate~~ does not cause land instability on the site or adjoining properties

NH-P~~3~~8 *Avoid development within high hazard areas of identified **Flood Hazard Extents** and **Erosion Hazard Areas.***

The high hazard areas present a threat to people and property as they can contain both fast and deep flowing **water** in a 1 in 100-year flood event, or are at risk of bank collapse which has the potential to damage **buildings** and threaten lives.

The policy provides directive for careful consideration of development within the high hazard areas, with a strong directive to avoid development in these high hazard areas.

NH-P49 *To control development (including **buildings**) within the lower hazard areas of identified **Flood Hazard Extents** and **Erosion Hazard Areas** by requiring mitigation to minimise the risk to people and property.*

The policy recognises that there are lower hazard areas within the identified **Flood Hazard Extent** and some parts of the **Erosion Hazard Areas**. The lower hazard areas are characterised by still or slowly moving **water** and a lower risk of erosion. As such, development within these lower hazard areas can be appropriate provided measures are incorporated to mitigate the risk.

NH-P510 *Enable planned **flood mitigation works** within identified **Flood Hazard Extents** that decrease the flood risk to people and property or maintain the function of the floodplain.*

Flood mitigation works are undertaken to reduce the flood risk to people and property. This policy supports **flood mitigation works** as they are consistent with the purpose of providing for the continued function of the floodplain.

NH-P611 *Within the Pinehaven **Flood Hazard Extent**, reduce blockage potential from fences, **buildings** and driveways in high hazard areas through design controls on development.*

Driveway crossings and **structures** over the stream channel within the **flood hazard extent** can impede flood flows. The flood risk and damage to people and property can be exacerbated by blockages of debris accumulating against fences, **buildings** and driveways crossing the stream. The blockage potential is compounded by the character of the catchment being urbanised and confined. This policy encourages fences, **buildings** and driveways to be appropriately designed.

NH-P712 *Development within the **Pinehaven Catchment Overlay** is designed to ensure that the peak **stormwater** runoff, during both a 1 in 10-year and 1 in 100-year event, shall be at a rate no greater than when compared to the pre-development situation.*

Development in the **Pinehaven Catchment Overlay** needs to be controlled to ensure that **stormwater** runoff does not exacerbate the impact of flooding in the lower catchment. The upper catchment is currently mostly undeveloped and any new development has the potential to increase peak **stormwater** runoff.

NH-P813 *Within the Mangaroa **Flood Hazard Extent** enable accesses positioned above the 1 in 100-year level to serve **residential units** where located within the lower hazard areas and avoid locating accesses to serve **residential** units within high hazard areas.*

This policy enables access way and driveways to ~~-~~**residential units** in the Mangaroa **Flood Hazard Extent** to be above the 1 in 100-year flood level when located in the lower hazard areas. It discourages access routes being located in high hazard areas where access ways could be compromised and **properties** become isolated during a 1 in 100-year flood event. The policy encourages access ways to be safely located as they assist with evacuation, if required, during a flood event.

NH-P~~9~~14 *Within the Mangaroa **Flood Hazard Extent**, enable non-habitable **accessory buildings** within the lower hazard areas.*

This policy recognises that the Mangaroa **Flood Hazard Extent** is predominantly rural. Rural **activities** are often supported by **accessory building**s, therefore it is appropriate to provide for these in lower hazard areas where they are unlikely to present a blockage issue, or are less likely to be structurally compromised during a flood event.

Rules

Activities Tables

Policies NH-P1 – NH-P14

Permitted Activities			**Zones**
NH-R1	Less Hazard Sensitive Activities within the Wellington Fault Overlay, ~~High~~ Slope Hazard Overlay and Mangaroa Peat Overlay	**PER**	*All*
NH-R2	Additions to a building in the Wellington Fault Overlay a. Where the proposal meets NH-S1	**PER**	*All*
NH-R~~1~~13	**Flood mitigation works** undertaken or approved by a local authority	**PER**	*All*
Pinehaven Flood Hazard Extent and **Pinehaven Catchment Overlay**			
NH-R~~2~~24	Within the **Ponding Area** of the Pinehaven **Flood Hazard Extent** the alteration and addition to existing **buildings**, or construction of **accessory building**s are a Permitted Activity provided the **gross floor area** is less than 20m^2 and the proposal complies with the relevant zone standards for permitted activities and meets NH-S~~1~~2.	**PER**	*All*

Mangaroa Flood Hazard Extent			
NH-R~~3~~5	Within the **Ponding Area** of the Mangaroa **Flood Hazard Extent** (outside the **Erosion Hazard Area**), the construction of a new, or alteration and addition to an existing, **accessory building** is a Permitted Activity where the proposal complies with the relevant zone standards for permitted activities and meets NH-S~~2~~3.	**PER**	*All*
NH-R~~4~~6~~4~~4	Within the Ponding or **Erosion Hazard Area** within the Mangaroa **Flood Hazard Extent**, the primary driveway or vehicle access serving the **residential unit** is a Permitted Activity provided it meets NH-S~~3~~4.	**PER**	*All*

Standards for Permitted Activities	
NH-S1	Additions to a building in the Wellington Fault Overlay Where: a. The additions do not increase the Gross Floor Area of a Hazard Sensitive Activity in the Wellington Fault Overlay by more than 25m^2 and are within the uncertain poorly constrained or the uncertain constrained areas of the Wellington Fault Overlay. b. The additions do not increase the Gross Floor Area of a Potentially Hazard Sensitive Activity in Wellington Fault Overlay by more than 40m^2 and are within the uncertain poorly constrained or the uncertain constrained areas of the Wellington Fault Overlay.
NH-S~~1~~2	Within the **Ponding Area** of the Pinehaven **Flood Hazard Extent** the alteration and addition to existing **buildings**, or construction of **accessory buildings** are a Permitted Activity provided the **gross floor area** is less than 20m^2 and the proposal complies with the relevant zone standards for permitted activities. (1) Additions and alterations are not below the floor level of the existing **building**, and do not exceed 20m^2 in area. (2) Must not be within the **Stream Corridor** or **Overflow Path** (3) Only one addition to the existing **building** following the date of notification of this plan change.
NH-S~~2~~3	Within the **Ponding Area** of the Mangaroa **Flood Hazard Extent** (outside the **Erosion Hazard Area**), the construction of a new, or alteration and addition to an existing, **accessory building** is a Permitted Activity where the proposal complies with the relevant zone standards for permitted activities. (1) The construction or additions and alterations are not within the **River Corridor**, **Overflow Path** or **Erosion Hazard Area**. (2) The construction or additions and alterations comply with the relevant zone standards for permitted activities.

NH-S~~3~~4	Within the **Ponding** or **Erosion Hazard Area** within the Mangaroa **Flood Hazard Extent**, the primary driveway or vehicle access serving the **residential unit** is a Permitted Activity. (1) The access is above the 1 in 100-year flood level, and (2) Does not cross an **Overflow Path** or **River Corridor**

Controlled Activities			**Zones**
Potentially Hazard Sensitive Activities and Hazard Sensitive Activities in the Wellington Fault Overlay			
NH-R7	Where: a. The building is being constructed on a site that is vacant as at 30 March 2022 and the building platform is located within the uncertain poorly constrained or the uncertain constrained areas of the Wellington Fault Overlay. The matters of controlled are limited to: a. The ability for the building to maintain life safety as a result of fault rupture b. The location of the building relative to the fault line and any mitigation measures to reduce the impacts from fault rupture. Note: The position of the building relative to the fault trace shall be determined by a suitably qualified geotechnical or geological specialist.	**CON**	*All*
Pinehaven **Flood Hazard Extent and Pinehaven Catchment Overlay**			
NH-R~~5~~8	Driveways and bridges over the Pinehaven Stream that meet the requirements of NH-S~~4~~5. **Council** may impose conditions over the following matters (1) Design of the crossing to avoid obstructing the **Stream Corridor** from conveying flood **water**.	**CON**	*All*

Standards for Controlled Activities	
NH-S~~4~~5	Driveways and bridges over the Pinehaven Stream

	(1) Only one crossing per **property** (2) No fences (excluding required support rails) are to be constructed along the bridge crossing

Restricted Discretionary Activities			**Zones**
Additions to a building in the Wellington Fault Overlay			
NH-R9	Where: a) Compliance is not achieved with NH-R2-1(a) or b) The additions are located within the well-defined or well-defined extension areas of the Wellington Fault Overlay. Matters of discretion are restricted to: a) The change in risk to life as a result of the additions being undertaken on the site; and b) The location of the additions relative to the fault line and any mitigation measures to reduce the impacts to life and buildings from fault rupture	**RDIS**	*All*
Potentially Hazard Sensitive Activities and Hazard Sensitive Activities in the Wellington Fault Overlay			
NH-R10	Where: a. The building is not located on a vacant site as at 30 March 2022 and the area where the building is to be located is within the uncertain poorly constrained or the uncertain constrained areas of the Wellington Fault Overlay. Matters of discretion are restricted to: a. The ability for the building to maintain life safety as a result of fault rupture b. The ability for the building to remain structurally sound as a result of fault rupture; and c. The location of the building relative to the fault line and any mitigation measures to reduce the impacts from fault rupture.	**RDIS**	*All*

	Note: The position of the building relative to the fault trace shall be determined by a suitably qualified geotechnical or geological specialist.		
Pinehaven Flood Hazard Extent and Pinehaven Catchment Overlay			
NH-R~~6~~11	Within the **Ponding Area** of the Pinehaven **Flood Hazard Extent** the construction of new **buildings**, or alteration and addition to existing **buildings**, including **accessory building**s over 20m^2, that are not Permitted Activities and meet the requirements of NHS-~~5~~6. **Council** will restrict its discretion to, and may impose conditions on (1) **Building** floor level. (2) **Building** location within the **site** (3) **Building** floor area (4) **Effect** of displacement of flood **waters** from the **site**.	**RDIS**	*All*
NH-R~~7~~12	**Visitor accommodation** or residential accommodation **activities** within the Commercial Zone of the Pinehaven **Flood Hazard Extent** that meets the requirements of NH-S~~6~~7. **Council** will restrict its discretion to, and may impose conditions on: (1) Where residential accommodation is proposed, the susceptibility of the **activity** to flood hazards and whether appropriate mitigation can be achieved.	**RDIS**	*All*
NH-R~~8~~13	Any part of a fence within an **Overflow Path** of the Pinehaven **Flood Hazard Extent** that meets the requirements of NH-S~~7~~8. **Council** will restrict its discretion to, and may impose conditions on: (1) **Effect** on the **Overflow Path's** ability to convey flood **water** along the identified route shown on the relevant hazard map.	**RDIS**	*All*
NH-R~~9~~14	Any **building** within the **Pinehaven Catchment Overlay** that meets the requirements of NH-S~~8~~9. **Council** will restrict its discretion to, and may impose conditions on: (1) To avoid, remedy or mitigate the **effects** of any increase in risk to people or property as a result of the peak runoff. (2) Ability for the proposed development and proposed design to ensure peak flow of **stormwater discharge** will be no greater than pre-**subdivision** levels and thus achieve **hydraulic neutrality**. (3) Mitigation measures proposed to achieve **hydraulic neutrality**.	**RDIS**	*All*

	(4) **Effect** on the Pinehaven **Flood Hazard Extent**.		
Mangaroa **Flood Hazard Extent**			
NH-R~~10~~15	Within either the **Ponding Area** or **Erosion Hazard Area** of the Mangaroa **Flood Hazard Extent**, where one or more of the following occurs: (1) The construction of new **residential units**; (2) The alteration and addition to existing **residential units**; (3) Construction of accessory buildings in the Erosion Hazard Area (4) Construction of otherwise permitted non-residential buildings; (5) Residential accommodation for caretaker activities in the General Industrial Zone. and the requirements of NH-S~~9~~10 are being met. **Council** will restrict its discretion to, and may impose conditions on: (6) Assessment of the appropriateness of the proposed building location in terms of area and position in relation to the flood hazard and erosion risk and any recommendations of the report required by Section 2.4.10 of Part 1 of this Plan; (7) Where residential accommodation is proposed, the susceptibility of the activity and whether appropriate mitigation can be achieved	**RDIS**	*All*
NH-R~~11~~16	Within the Ponding Area of the Mangaroa Flood Hazard Extent, the primary driveway or vehicle access serving the **residential unit** where below the 1 in 100 year flood level. **Council** will restrict its discretion to, and may impose conditions on: (1) The suitability of the proposed access to facilitate evacuation during a 1 in 100 year flood event.	**RDIS**	*All*

Standards for Restricted Discretionary Activities	
NH-S~~5~~6	Within the **Ponding Area** of the Pinehaven **Flood Hazard Extent** the construction of new **buildings**, or alteration and addition to existing **buildings** Standards: (1) The **Finished Floor Level** must be above the 1 in 100-year event level for **residential activities**, or; (2) The **Finished Floor Level** above the 1 in 25-year event level if a **commercial activity** within the Business Commercial Zone. (3) The **buildings**, additions or alterations must not be within the **Stream Corridor** or an **Overflow Path**.
NH-S~~6~~7	**Visitor accommodation** or residential accommodation **activities** within the Commercial Zone of the Pinehaven **Flood Hazard Extent**.

	Standard: (1) **Activities** must be in **buildings** with a **Finished Floor Level** above the 1 in 100-year event level.
NH-~~7~~8	Any part of a fence within an **Overflow Path** of the Pinehaven **Flood Hazard Extent**. Standard: (1) The design of the fence must not obstruct the direction or route of the **Overflow Path**.
NH-S~~8~~9	Any **building** within the **Pinehaven Catchment Overlay**. Standards: (1) Achieves **hydraulic neutrality** (2) Provision of a report by a suitably qualified and experienced person providing an assessment of the ability for the **site** to achieve **hydraulic neutrality** in accordance with the requirements of Section 2.4.11 of Part 1 of this Plan.
NH-S~~9~~10	Within either the **Ponding Area** or **Erosion Hazard Area** of the Mangaroa **Flood Hazard Extent**. Standards: (1) Finished Floor Level above the 1 in 100-year event level for: (2) The construction of new **residential units**, (3) The alteration and addition to existing **residential units**, (4) Construction of otherwise permitted non-residential buildings, (5) Residential accommodation for caretaker activities in the General Industrial Zone. (6) Building must not be located within an Overflow Path or River Corridor. (7) Where the proposal is located within the Erosion Hazard Area, provision of a report by a suitably qualified and experienced person is required to determine the erosion risk in accordance with the requirements of Section 2.4.10 of Part 1 of this Plan.

Discretionary Activities			**Zones**
NH-R1217	**Buildings** and **structures** to be erected within the 1% (1 in 100 year) flood extent of the Hutt River, as shown on the Planning Maps.	**DIS**	*All*
NH-R1~~3~~18	Any new **habitable building** or **structure** to be erected within the fault band identified on the Planning Maps.	**DIS**	*All*
Pinehaven **Flood Hazard Extent** and **Pinehaven Catchment Overlay**			
NH-R~~14~~19	Any part of a **building** within an **Overflow Path** of the Pinehaven **Flood Hazard Extent**.	**DIS**	*All*

Mangaroa **Flood Hazard Extent**			
NH-R~~15~~20	Within the **Ponding Area** of the Mangaroa **Flood Hazard Extent**, where one or more of the following occurs; (1) The construction of new **residential units**; (2) The alteration and addition to existing **residential units**; (3) Construction of otherwise permitted non-residential **buildings**; or (4) Residential accommodation for caretaker **activities** in the General Industrial Zone; which have a **Finished Floor Level** below the 1 in 100 year flood level.	**DIS**	*All*
NH-R~~16~~21	Within the **Overflow Path** of the Mangaroa **Flood Hazard Extent**, where one or more of the following occurs; (1) The construction of new-**residential units**; (2) The alteration and addition to existing **residential units**; (3) Construction of **accessory buildings**; or (4) Construction of otherwise permitted non-residential **buildings**.	**DIS**	*All*
NH-R~~17~~22	Within an **Overflow Path** of the Mangaroa **Flood Hazard Extent**, the primary driveway or vehicle access serving the **residential unit**	**DIS**	*All*

Non-Complying Activities			**Zones**
Potentially Hazard Sensitive Activities and Hazard Sensitive Activities in the Wellington Fault Overlay			
NH-R23	Where: a. The building is located within the well-defined or well-defined extension areas of the Wellington Fault Overlay.	**NC**	*All*
Pinehaven Flood Hazard Extent and Pinehaven Catchment Overlay			
NH-R~~18~~24	Within the Pinehaven **Flood Hazard Extent**, any Permitted, Controlled or Restricted Discretionary Activity which fails to comply with any of the relevant Permitted Activity conditions, Controlled or Restricted Discretionary Activity Standards or Terms and is not identified as a Discretionary Activity, is a Non- Complying Activity.	**NC**	*All*
NH-R~~19~~25	Any **building**, **structure** or fence within the **Stream Corridor** of the Pinehaven **Flood Hazard Extent** (except where provided for under the rule for driveways and bridges as a Controlled Activity).	**NC**	*All*
Mangaroa Flood Hazard Extent			
NH-R~~20~~26	Within the **River Corridor** of the Mangaroa **Flood Hazard Extent**, where one or more of the following occurs: (1) The primary driveway or vehicle access serving the **residential unit** is located in the **River Corridor**;	**NC**	*All*

	(2) The construction of new **residential units**; (3) The alteration and addition to existing **residential units**; (4) Construction of **accessory buildings**; (5) Construction of otherwise permitted non-residential **buildings**; or (6) Residential accommodation for caretaker **activities** in the General Industrial Zone.		

Matters for Consideration

Matters that may be relevant in the consideration of any resource consent include the following:

NH-MC1	**Flood hazards** (1) Whether the proposed development would increase the level of risk or jeopardise the safety of the occupants and other persons. (2) The **effects** of any **earthworks** or infilling. (3) In addition, where located within the Pinehaven **Flood Hazard Extent**: (a) **Effect** on the **Overflow Path's** ability to continue conveying flood **water**. (b) Any increase in risk to people or property as a result of the **building** location. (4) In addition, where located within the Mangaroa **Flood Hazard Extent**: (a) Assessment of the appropriateness of the proposed **building** location and floor level in terms of area and position in relation to the flood hazard and erosion risk. (b) Where residential accommodation is proposed, the susceptibility of the **activity** and whether appropriate mitigation can be achieved. (c) Assessment of the **effect** of the **building** on the function of the floodplain and whether it would unacceptably obstruct or divert floodwater flows within the **Flood Hazard Extent**. (d) The suitability of the proposed access during a 1 in 100-year flood event, and its **effect** on obstructing or diverting **Overflow Paths** or floodwater flows within the **Flood Hazard Extent**.

Note

Network Utility Structures are addressed through the provisions within the Network Utilities (NU) Chapter. For the avoidance of doubt any **Network Utility Structure activity** undertaken by a **network utility operator** within the **Flood Hazard Extent** subject to the provisions of the Network Utilities (NU) Chapter, will prevail over the provisions of this Natural Hazards (NH) Chapter.

Advice Note

For any **activity** within the Stream/**River Corridor**, **Overflow Path**, **Ponding Area** or **Erosion Hazard Area**, applicants are advised to consult the Wellington Regional Council to determine if regional consent is also required.

Methods

NH-M1 District Plan provisions consisting of the following:

(1) Control of the location, and design of **subdivisions** through standards for **subdivision** and **building** design to avoid or mitigate the risk from **natural hazards**.
(2) Management of the location and use of **buildings** in close proximity to earthquake faults and areas susceptible to inundation.
(3) Restriction of **activities** and **structures** within the **river** berms of the Hutt River.
(4) Management of **activities** involving the removal of vegetation and **earthworks** located on unstable slopes.
(5) Information on Planning Maps. These indicate the type and extent of the flooding and fault band hazards.

NH-M2 To maintain an up-to-date Hazard Register which will record areas and sites of known or potential hazards. The information will be used in the building consent process, as well as for land information memoranda, project information memoranda, and resource consent processes.

NH-M3 Information on liquefaction and slope failure hazards, which is held by the Council, will be supplied to persons applying for land information memoranda and project information memoranda.

NH-M4 The use of sections 72 - 76 of the Building Act 2004 and compliance with the New Zealand Building Code in the Council's building consent process for the structural safety of buildings to withstand wind, inundation, earthquakes and unstable ground.

NH-M5 The continued civil defence emergency management role of the Council, and its staff, under the relevant legislation.

Anticipated Environmental Results

The following results are expected to be achieved by the objective, policies and methods in this chapter. The means of monitoring whether this Plan achieves the anticipated results are also set out below.

Anticipated environmental results		Monitoring indicators	Data source
NH-AER1	Subdivision, use and development within the Natural Hazard Overlays	The impacts on new development from natural hazard events	**Council** complaints register

	~~does not significantly increase~~ minimises the risk to life or property	Number of approved resource consents in high hazard areas Value of insurance claims from natural hazard events A review of conditions of approved resource consents	**Council** resource consent records for compliance with conditions **Council** and Wellington Regional Council records
NH-AER~~1~~2	The avoidance, remedying, or mitigation of adverse environmental **effects** of **natural hazards** on communities, including mitigation measures in place in areas identified as being of high risk	Effectiveness of conditions of consents and methods used in managing adverse **effects** Development in areas subject to **natural hazards** Reduction of downstream **effects** caused by flooding events Number of resource consent applications approved or declined in areas identified in the District Plan as being susceptible to **natural hazards** and whether these numbers change with time The economic and insured costs from flood hazard events and whether these decrease in time, allowing for changes in inflation The number of section 74 certificates imposed on the titles of **properties** at the time of **building** consent and whether these decrease in time	**Council** complaints register **Council** resource consent records for compliance with conditions
NH-AER~~2~~3	Prevention of development which increases the level of risk in areas identified as being at high risk from **natural hazards**	Development in areas subject to **natural hazards**	**Council** and Wellington Regional Council records
NH-AER~~3~~4	Communities informed about, and prepared for, the occurrence of **natural hazards**	Consultation and community initiatives	Various