Overview

The Waikato Regional Policy Statement requires an integrated and holistic approach to the management of natural hazards. The Manawatū-Whanganui Regional Policy Statement seeks to avoid or mitigate the adverse effects of natural hazard events on people, property, infrastructure and the wellbeing of communities. Accordingly, this plan identifies areas where some types of new development must be avoided because of the risk from natural hazards. It also recognises that in some of these areas, there is already existing development. In these instances, the provisions seek to manage natural hazards through mitigation and adaptation measures so that the risk to people and property is not increased.

This chapter manages land use in areas subject to risk from natural hazards outside of the coastal environment. Natural hazards within the coastal environment (coastal erosion and flooding) are addressed in the coastal environment chapter. In accordance with the two regional policy statements, it adopts a risk-based approach to natural hazard management which requires management of activities based on the level of risk and whether the risk is considered acceptable or intolerable. Identifying and understanding the scale and likelihood of a natural hazard event and its likely consequences, is central to the risk-based approach. The risk that a natural hazard poses to the community depends on its nature, magnitude and extent, the anticipated frequency of occurrence and the vulnerability of the environment to the hazard.

In Waitomo district the more frequently occurring natural hazards are flooding, severe storms, drought, volcanic ashfall and land instability (land slips and subsidence). The lower reaches of the Awakino, Mokau, Mangapu and Marokopa Rivers and the Mangaokewa Stream are vulnerable to flooding, however ongoing river maintenance activities designed to increase the conveyance of floodwater and remove channel blockages, has reduced the flooding risk. The two primary sources of flooding are river generated, when high flows lead to the overtopping of the river banks, and surface ponding.

Droughts and severe storms also occur in the district with reasonable frequency. Climate change has the potential to exacerbate the risk of these natural hazards. The Ministry for the Environment projects that the effects of climate change on the district will include increased storm events (including extreme winds), higher annual rainfall and more frequent heavy rainfall events during the winter months. This can contribute to an increase in erosion, land instability and river flooding. For this reason, an allowance for the projected effects of climate change has been included in the 2D flood modelling of key risk areas within this district plan (Te Kūiti and Piopio).

In Te Kūiti and Piopio, Building Platform Suitability Area C is the 100 year average recurrence interval (ARI) events for current climatic conditions with rainfall projected to a 2120 future time horizon based on a Representative Concentration Pathway (RCP) of 8.5. These areas were identified through detailed hydraulic 2D modelling. In Te Kūiti, High Risk Flood Zone also been identified. These are areas within the flood plain where the depth of flood water in a 1% Annual Exceedance Probability (AEP) flood event exceeds 1 metre and the speed of flood water exceeds 2 metres per second, which is considered

to put the community at an unacceptable (or intolerable) level of risk in terms of the potential for loss of life, injury or serious damage to property. Subdivision and new activities within the High Risk Flood zone are carefully regulated.

In the Waitomo Valley Road area, Building Platform Suitability Area C is the qualitative floodplain extent which was estimated based on hydraulic constriction at the Waitomo Valley Road bridge and site observations. In this way Building Platform Suitability Area C was developed, although it is recognised that the methodology in this area contains more uncertainty than the modelling for Te Kūiti and Piopio. As such, the plan identifies:

Building Platform Suitability Area C which is the floodplain area in Te Kūiti and Piopio identified on the planning maps for 100 year ARI events (current climatic conditions) with rainfall projected to a 2120 future time horizon based on RCP 8.5. It is also the floodplain area identified in Waitomo Valley Road.

The High Risk Flood Zone (HRFZ) which is the area identified on the planning maps in Te Kūiti that is subject to river or surface flooding during an event with an annual exceedance probability of no more than 1%, and during such an event:

1. The depth of flood waters exceeds one metre; or
2. The speed of flood waters exceeds two metres per second; or
3. The flood depth multiplied by the flood speed exceeds one.

Due to the slope gradient and land cover type, large areas of the western ranges have a very high landslide susceptibility. In Te Kūiti, the weak, clay-rich mudstone rocks (Mahoenui Group) are susceptible to changes in moisture content which can result in large-scale instability and shallower creep movement. While this type of land instability is caused by weak geology, steep geomorphology or seismic events, the primary trigger for landslide occurrence is prolonged or intense periods of rainfall. Other land instability types observed around Te Kūiti include toppling of the ignimbrites in steep areas and shallow down-slope movement of material that occurs along a surface of weakness. This plan maps and applies rules to Building Platform Suitability Areas A and B in Te Kūiti. Landslide susceptibility is a measure of an area's propensity to either generate, or be affected by landslides. Outside of these mapped areas, assessment matters are included in the subdivision rules that require site suitability, including the potential for the subdivision and consequential development to create new or exacerbate existing natural hazards, to be evaluated. As such, the plan identifies:

Building Platform Suitability Area A (BPS-A) which is the susceptibility area in Te Kūiti identified on the planning maps that has a high propensity to either generate, or be affected (inundated) by landsliding.

Building Platform Suitability Area B (BPS-B) which is the susceptibility area in Te Kūiti identified on the planning maps that has a medium propensity to either generate, or be affected (inundated) by landsliding.

While the district has a low risk of volcanic eruptions, our proximity to the Taupo Volcanic Zone means that there is a risk of ashfall. The area of ash deposition is dependent on the wind direction, weather conditions and the size of the eruption. Ashfall can disrupt services, damage infrastructure, affect water supplies and sometimes, ashfall can contain harmful toxic fluorine compounds. Less frequent natural hazards such as wildfires, volcanic eruptions and earthquakes do not require a district plan response. Wind and seismic loadings are controlled by the Council under the Building Act 2004. There are no active faults located in the district and there is a low percentage of unconsolidated sediments (one of the three factors used in identifying liquefaction risk), except in Te Kūiti where the proportion is much higher at 53%. However, given that the reduced

seismic risk compared to neighbouring areas where numerous active faults are located, it is possible that the liquefaction hazard is also relatively low. Liquefaction areas have not been identified on the planning maps, however, provisions in this plan require assessment of this natural hazard in respect of subdivision or structure planning where a potential liquefaction hazard has been identified on a site.

Objectives

Refer also to the relevant objectives in Part 2 District - Wide Matters and Part 3 - Area Specific Matters

NH-O1. Ensure that communities are resilient to the risks that natural hazards pose on people, property, infrastructure and the environment by providing for subdivision, use and development of land only where these risks are avoided or appropriately mitigated.

NH-O2. Avoid new subdivision, use and development in Hazard Areas where it will increase the risk to or vulnerability of people or communities.

NH-O3. Where new development is proposed in Hazard Areas, require that site-specific hazard assessments are undertaken as appropriate and ensure that where risk becomes intolerable, development is avoided.

NH-O4. Improve response to and recovery from natural hazard events by encouraging community awareness and use of information and methods contained in Community Response Plans.

NH-O5. Manage land use to minimise the potential adverse effects of climate change, including applying the precautionary approach where there is incomplete information.

Policies

Refer also to the relevant policies in Part 2 District - Wide Matters and Part 3 - Area Specific Matters

NH-P1. Provide for the relocation of existing buildings to a safer position on the same site or outside of a Hazard Area.

NH-P2. With the exception of small additions to buildings and non-habitable accessory buildings without a floor, avoid locating new buildings in the High Risk Flood Zone because of the significant risk to people's safety and property.

NH-P3. Manage the increased risk to people's safety and property resulting from additions to existing buildings located within the High Risk Flood Zone by:

1. Limiting the additional ground floor area permitted; and

2. Ensuring a range of risk reduction options are assessed including minimum floor levels with a freeboard suitable to the setting that will provide protection from flooding; and
3. Avoiding large additions to existing buildings that would increase risk to people's safety and property.

NH-P4. Provide for people's wellbeing and changing circumstances within Building Platform Suitability Area C by:

1. Enabling small additions to existing buildings housing sensitive activities; and
2. Not placing increased requirements on accessory buildings and shipping containers used for non-habitable purposes; and
3. Managing increased risk to people and property for medium to larger scale additions and new and relocated buildings housing sensitive activities by requiring compliance with minimum floor levels. Where compliance with minimum floor levels is not achieved a range of other risk reduction options will need to be assessed; and
4. Providing for earthworks to create a building platform for a new building or addition to an existing building.

NH-P5. Manage earthworks, excavation and filling of land within Hazard Areas by:

1. In Building Platform Suitability Area C, ensuring that the potential adverse effects of land disturbance activities on flood storage capacity, overland flows and run-off volumes on surrounding properties and infrastructure, are avoided or mitigated; and
2. In the High Risk Flood Zone avoiding earthworks unless the natural hazard risk can be adequately avoided, remedied or mitigated; and
3. Restricting the volume, depth and height of earthworks to avoid exacerbating or intensifying existing landslide susceptibility or generating the potential for landslide susceptibility to arise; and
4. In Building Platform Suitability Areas A and B, ensuring land disturbance activities which require a resource consent are designed and supervised by an appropriately qualified and experienced geo-professional; and
5. In Building Platform Suitability Area A, reducing the risk of landslide from earthwork activities by carefully managing the location, volume and depth of excavation and fill and only allowing earthworks where:
   (i) The soil type and density is appropriate; and
   (ii) Measures to maintain slope stability are technically and economically achievable; and
   (iii) Effects on adjoining properties and infrastructure can be avoided in the first instance, then remedied or mitigated.

NH-P6. Reduce the level of risk from new buildings and additions to existing buildings in Building Platform Suitability Area A by:

1. Avoiding new buildings unless they can be relocated; and
2. Ensuring additions to existing buildings do not exacerbate the level of risk.

NH-P7. In Building Platform Suitability Area B, ensure any new or relocated building and any addition to an existing building is fully assessed so that the level of risk can be appropriately managed.

NH-P8. Provide for flood management/protection works and drainage works undertaken by regional and local authorities.

NH-P9. Avoid discharge of stormwater directly to ground in Building Platform Suitability Areas A and B unless:

1. A geo-professional assesses the site as suitable for the proposed discharges; and
2. Any adverse effects on the site and receiving environment can be appropriately mitigated.

NH-P10. On land that is potentially prone to liquefaction, before new subdivision, use or development occurs, require an assessment by a geo-professional that reflects the type and scale of the activity, its overall vulnerability to the effects of liquefaction and the appropriate mitigation measures needed to reduce risk to an acceptable level.

NH-P11. Provide for subdivision, use and development outside Hazard Areas where natural hazard risk has been appropriately assessed and can be adequately avoided, remedied or mitigated and does not transfer or exacerbate risk to adjoining properties.

NH-P12. Increase resilience to the projected effects of climate change by:

1. Requiring assessment for new development where relevant, that provides for 100 year ARI events with rainfall projected to 2101-2120 according to the RCP 8.5 scenario; and
2. Facilitating community discussion on adaptive pathways to manage the risks associated with climate change and incorporating them, where appropriate, into the district plan through plan changes; and
3. Adopting a precautionary approach towards new subdivision, use and development where this may have potentially significant or irreversible adverse effects, but there is incomplete or uncertain information; and
4. Providing sufficient setbacks from river margins when assessing new development; and
5. Encouraging the incorporation of sustainable design measures including low impact stormwater management, urban design and green infrastructure; and

6. Protecting the ability of natural defences such as natural floodplains, to provide natural hazard mitigation.

NH-P13. So that communities can better respond to and recover from natural hazard events, enable access to information about hazards through:

1. The provision of natural hazard technical information and mapping on the Council's website, the Waikato Regional Council Hazards Portal, this district plan and accompanying planning maps; and
2. The provision of education, provision of information and community engagement; and
3. Alignment with the work of other agencies including Iwi Authorities and the Waikato and Manawatū-Whanganui Regional Councils.
4. Awareness and use of information and methods contained in Community Response Plans.

Rules

The rules that apply to activities in Hazard Areas are contained in the table listed below. To undertake any activity, it must comply with all the rules listed in:

- NH - Table 1 – Activities Rules; and
- Any relevant provision in Part 2 District-Wide Matters; and
- Any relevant provision in Part 3 Area Specific Matters.

Where an activity breaches more than one rule, the most restrictive status shall apply to the activity.

Refer to Part 1 - How the Plan Works for an explanation of how to use this plan, including activity status abbreviations.

Note: See the rules in the coastal environment chapter for coastal hazards.

NH - Table 1 – Activities rules

Information requirements	
All resource consent applications for land use activities or subdivision undertaken within or partially within a **hazard area** must provide the information required in Appendix 1.	
The rules apply to all zones **Where there is a conflict between rules in this plan, the rules in this table prevail**	
NH-R1.	**Relocation of an existing building in a hazard area**
Activity Status: PER **Where:** 1. An existing building as at 20 October 2022 which is threatened by a landslide or flood hazard may be relocated to a safer position on the same site or outside of a hazard area as a permitted activity; and 2. For the purposes of this rule, the minimum setback from road boundary requirement in the underlying zone does not apply.	**Activity status where compliance is not achieved: N/A**
NH-R2.	**Park furniture, new access points or pedestrian accessways, walkways and cycleways in all hazard areas**
Activity status: PER **Where:** 1. The activity is undertaken by the Waikato or Manawatū-Whanganui Regional Councils, Waitomo District Council or on their behalf by an approved contractor.	**Activity status where compliance is not achieved: RDIS** **Matters over which discretion is restricted:** (a) Whether the activity improves public access and /or acts to improve natural character and ecosystems; and (b) The location and extent of the works; and (c) Whether the activity would create new or exacerbate existing natural hazards.
NH-R3.	**Flood management/protection works and drainage works in all hazard areas**
Activity status: PER **Where:** 1. The activity is undertaken by the Waikato or Manawatū-Whanganui Regional Councils, Waitomo District Council or on their behalf by an approved contractor.	**Activity status where compliance is not achieved: DIS**

NH-R4.	Construction of park facilities
Activity Status: PER **Where:** 1. This rule applies to buildings only; and 2. Any building must be specifically designed to be readily relocated; and 3. Any addition to an existing building is a discretionary activity.	**Activity status where compliance is not achieved: DIS**

The following rules apply to Building Platform Suitability Area C in all zones

NH-R5.	Additions to an existing building, or construction of a new building housing a sensitive activity
Activity Status: PER **Where:** 1. Accessory buildings no more than 30 m^2 and shipping containers used for non-habitable purposes are permitted subject to zone requirements; and 2. Subject to zone requirements, additions to an existing building housing a sensitive activity must not increase the ground floor area of the building by more than 15 m^2 in total over the lifetime of this plan commencing from (the operative date); and 3. Any new building housing a sensitive activity must achieve: (i) A finished floor level located 0.5 above the 1% AEP flood level, where this level taken from the bottom of the floor joists; or (ii) Where concrete, the top of the finished floor level must be at least 0.5 m above the 1% AEP flood level; AND 4. NH-R5.3 also applies to the establishment of shipping containers used for residential purposes. It does not apply to shopkeeper's dwellings in Te Kūiti CBD precinct (PREC5); and 5. Compliance with the finished floor level specified in NH-R5.3 must be demonstrated	**Activity status where compliance is not achieved: RDIS** (a) Effects on existing overland flow paths, surface drainage patterns, flood storage capacity and runoff volumes; and (b) Effects on adjoining properties and infrastructure, including cumulative effects and the potential for the activity to create, transfer or intensify hazard risks on adjoining sites; and (c) Consideration of alternative locations; and (d) Consideration of the projected effects of climate change; and (e) Whether flood risk can be managed through appropriate building materials, foundation and building design, site layout, geotechnical setbacks, minimum floor levels, structural or engineering solutions; and (f) The ability to set an appropriate floor level for the addition; and (g) Any mitigation measures to reduce the risk to people's safety, well-being and property.

by a suitably qualified and experienced engineer. *Note: Also see SUB-R19.*	

NH-R6.	Earthworks

Activity Status: PER **Where:** 1. The earthworks are to create a building platform for a new building or addition to an existing building are permitted provided that the earthworks volume and filling height is only to the extent necessary to achieve compliance with NH-R5.3. OR 2. For all other earthworks: (i) The maximum volume of filling above natural ground level must not exceed 20 m^3 per site and or exceed a maximum cumulative volume of filling and excavation of 50 m^3 per site over the lifetime of this plan commencing from (the operative date); and (ii) Earthworks must not exceed a maximum height of 0.2 m of filling above natural ground level; and (iii) Earthworks must not exceed a maximum depth of excavation of 0.5 m below natural ground level.	**Activity status where compliance is not achieved: RDIS** **Matters over which discretion is restricted:** (a) The location, timing, design and density of soil disturbance and vegetation removal activities; and (b) Any measures necessary to rehabilitate the land following the completion of the activity; and (c) The findings of any risk assessment; and (d) The method of sediment retention and sediment runoff control to be adopted; and (e) Effects on existing overland flow paths, surface drainage patterns, flood storage capacity and runoff volumes; and (f) Effects on adjoining properties and infrastructure, including the transfer of flooding risk; and (g) Mitigation proposed including compensatory storage, foundation design, site layout, geotechnical setbacks, the use, maintenance or enhancement of natural features or other flood management measures.

The following rules apply to High Risk Flood Zone (HRFZ) in all zones

NH-R7.	Accessory buildings

Activity Status: PER **Where:** 1. Accessory buildings no more than 30 m^2, used for non-habitable purposes that do not have a floor are permitted subject to zone requirements; or 2. Farm buildings that do not have a floor are permitted subject to zone requirements; and 3. The use of shipping containers within a HRFZ is a discretionary activity.	**Activity status where compliance is not achieved: DIS**

NH-R8.	Additions to an existing building

Activity Status: RDIS

Where:

1. An addition to an existing building must not increase the ground floor area of the building by more than 15 m^2 in total over the lifetime of this plan commencing from (the operative date).

Matters over which discretion is restricted:

(a) Effects on existing overland flow paths, surface drainage patterns, flood storage capacity and runoff volumes; and

(b) Effects on adjoining properties and infrastructure, including cumulative effects and the potential for the activity to create, transfer or intensify hazard risks on adjoining sites; and

(c) Consideration of alternative locations; and

(d) Consideration of the projected effects of climate change; and

(e) Whether flood risk can be managed through appropriate building materials, foundation and building design, site layout, geotechnical setbacks, minimum floor levels, structural or engineering solutions; and

(f) The ability to set an appropriate floor level for the addition; and

(g) Any mitigation measures to reduce the risk to people's safety, well-being and property.

Activity status where compliance is not achieved: NC

NH-R9. NH-R10.	Construction of all other buildings Earthworks
Activity Status: NC	**Activity status where compliance is not achieved: N/A**

The following rules apply to Building Platform Suitability Areas A and B in all zones	
NH-R11.	**Earthworks**
Activity Status: PER in BPS-B **Activity Status: RDIS in BPS-A** **Where:** 1. The maximum volume of filling must not exceed 20 m^3 per site; and 2. Earthworks must not exceed a maximum height of 1 m of filling above ground level; and 3. Earthworks must not exceed a maximum depth of excavation of 1 m below ground level.	**Activity status where compliance is not achieved in BPS-A: DIS** **Activity status where compliance is not achieved in BPS-B: RDIS** **Matters over which discretion is restricted:** (a) The location, timing, design and density of soil disturbance and vegetation removal activities; and (b) Any measures necessary to rehabilitate the land following the completion of the activity; and

	(c) The method of sediment retention and sediment runoff control to be adopted; and (d) The findings of any geotechnical assessment; and (e) For new tracks and driveways, measures taken to follow the contour of the landscape and avoid large batter slopes or retaining walls; and (f) Measures to maintain slope stability or prevent exacerbation of any pre-existing deep-seated land instability; and (g) Effects on adjoining properties and infrastructure from subsidence or landslip as a result of the earthworks; and (h) Mitigation proposed to ensure the geotechnical and geological stability of the site following the completion of earthworks.
NH-R12.	**Additions to an existing building, or construction of all other buildings**
Activity Status: DIS **Where:** 1. The application must be accompanied by an assessment undertaken by a suitably qualified and experienced geo-professional which addresses the matters set out in Appendix 1; and 2. In BPS-A all new buildings must be specifically designed to be able to be readily relocated.	**Activity status where compliance is not achieved: NC**
Advice Notes:	
Note: All earthworks must also comply with NATC-R4 and all buildings and structures, must also comply with NATC-R2. However, where there is a conflict between rules in this plan, the rules in this table prevail. *Note: See the rules in the coastal environment chapter for coastal hazards.*	