



Flood Hazards and the One Plan

Information for Territorial Authorities in the Manawatū-Whanganui Region



Introduction

The purpose of this information sheet is to support staff at the region’s territorial authorities (TAs) and their consultants in giving effect to the natural hazards policies in the One Plan. It assumes that you have already read Chapter 9 of the One Plan and provides additional information on the One Plan provisions relating to natural hazards, in particular flooding and Policy 9-2: Development in areas prone to flooding.

Overview of One Plan provisions

The One Plan principally manages the effects of natural hazards by setting out objectives and policies in Chapter 9.

The main purpose of Chapter 9 is to avoid increasing the risk to people and property from natural hazards, by limiting development in areas where natural hazards, especially floods, are likely to occur.

Chapter 9 divides responsibilities for avoidance and mitigation of natural hazards under the RMA between Horizons and the TAs in the region:

- Horizons sets region-wide policy – through the One Plan.
- TAs implement the policy by making rules in their district plans and granting or declining consents – there is a clear expectation in Policy 9-1 that TAs will develop their own objectives, policies and methods (including rules to control land use in line with Policy 9-2) as district plans are reviewed.
- Horizons implements the policy using other methods – especially by gathering, analysing and communicating information (for example, where flooding will or is likely to occur). There are no rules in the One Plan regulating development in flood prone areas, only policies.

Horizons carries out other activities relating to natural hazards under other legislation, including river and drainage schemes, and emergency management.



Policy 9-2: Development in areas prone to flooding

Policy 9-2 sets the framework for development in floodways and in areas which would be inundated in a 0.5% AEP flood event (“floodable areas”).

The policy provides for Horizons’ and TAs’ response to a range of development scenarios in areas with different levels of susceptibility to flood events. It does not cover the effects of stormwater, which is managed by TAs.

The general approach of this policy is:

- Avoidance of further development in floodways.
- Mitigation in areas that would be covered by water in a 0.5% AEP flood event (‘floodable areas’).
- Avoidance of greenfield development in floodable areas.

Floodways - Rangitikei, Manawatū, Horowhenua and Palmerston North

The six floodways in the region are the Mākirikiri Floodway in the Rangitikei District, Reid Line, Taonui Basin and Kōpane Floodways in Manawatū District, Moutoa Floodway in Horowhenua District and Flyers Line Floodway in Palmerston North City. These areas are all mapped and can be found in the Schedule J of the One Plan. More detailed information is available on request from Horizons’ District Advice team.

Planning for climate change

It is predicted that a flood protection design that would protect against the current 0.5% annual exceedance probability (or AEP, also often called a 1 in 200 year flood) flood event will only be effective against 1.0% AEP (1 in 100 year) flood in 2050, because of the effects of climate change.

One Plan Policy 9-2 therefore uses 0.5% AEP as the minimum level of flood protection for development in flood-prone areas in the region. Requiring mitigation or protection against a 0.5% AEP flood event now will maintain a standard of not less than 1.0% AEP protection into the future.

To put this into context, consider the February 2004 flood event. This flood affected 70 percent of the region. Hundreds of people were evacuated from their homes, thousands of animals relocated or lost, and 200 million tonnes of soil washed off hillsides and down rivers. Infrastructure – roads, bridges, energy supply, telecommunications, water and sewage services – was substantially disrupted and the estimated economic impact on the region was \$300 million.

In spite of its severity and extent, this flood exceeded the 1 in 100 year level (1.0% AEP) at only six of the 40 water level monitoring stations across the affected parts of the region. The flood was assessed as reaching a 1 in 200 year level (0.5% AEP) in only the Ōroua, Turakina and Whangaehu Rivers.

Most of the flood protection works (stopbanks) in the region are designed to withstand the current 1% AEP flood event, a 1 in 100 year flood.

The intent of Policy 9-2(a) is to avoid risk to people and property from the floodway, and to ensure the effective functioning of the floodway by avoiding the placement of buildings, solid fences, etc in a place where they will impede the flow of water.

New structures or activities, or increasing the scale of an existing structure or activity in any floodway should be avoided.

The only exceptions to this policy are:

- If there is a functional necessity for a structure or activity to be located within a floodway, such as infrastructure associated with flood mitigation.
- Within the Taonui Floodway, development associated with the existing use of production land (for example, a hayshed). This floodway has a much larger and wider area which means the velocity of the flood flow is slower. See below for more detailed information about this floodway.

These exceptions would not ever apply to an occupied structure (as defined below).

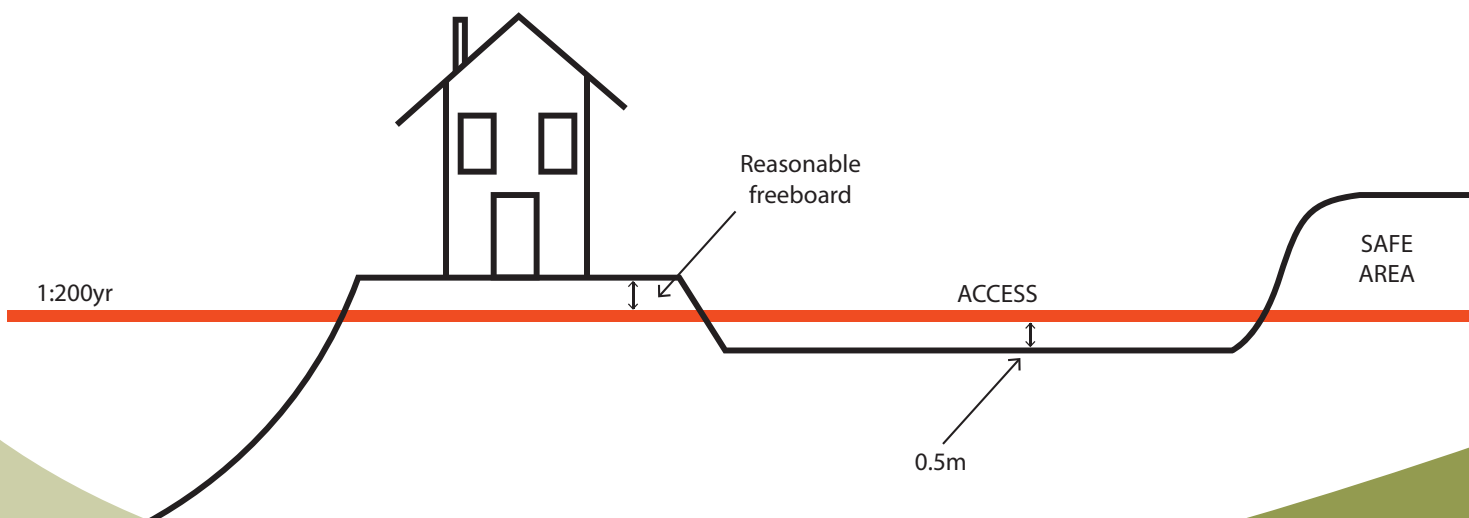
Floodable Areas – all TAs

The intent of Policy 9-2(b) is to reduce the risk to people living and working in floodable areas by limiting development in these areas. This is achieved by generally avoiding new structures or activities, or an increase in the scale of existing structures or activities, unless there are flood control measures in place to protect against a 0.5% AEP flood event or the structure is designed to mitigate the effects of a flood of this size. There are some exceptions set out in the policy.

Mitigation in floodable areas

Mitigation for occupied structures in a floodable area is set out in Policy 9-2(d) and includes ensuring that the floor or ground level is above the 0.5% AEP flood level, including reasonable freeboard. NZS 4404:2010 *Land development and subdivision infrastructure* provides guidance on flood clearance levels which should be used to when implementing this policy.

There must also be a safe way out from the structure, to a place where people can be rescued from. This would normally be an accessway that would not be covered by more than 0.5 m of water in a 0.5% AEP flood event, but the depth of the water will vary depending on the speed of the flood flow. Horizons' District Advice Service can provide specific advice. The drawing below illustrates what the mitigation measures will look like.





Horizons' approach – scenarios and examples

The approach Horizons advises regarding any particular situation is largely based on whether or not the development will result in an increase in the number of people living or working in an individual building or in an area.

Examples of how the following scenarios covered by Policy 9-2, in relation to flooding, would land in practice are summarised in Table 1, at the back of this information sheet.

Subdivision in flood prone areas without flood protection for at least a 0.5% AEP event should be avoided.

While subdivision does not in itself increase the adverse effects of a flood event, the structures that would result on the subdivided land are likely to be 'occupied structures' so potentially increase the risk to people and property and reduce the effectiveness of existing flood protection. For this reason, subdivision in these areas is discouraged.

New occupied structures in urban or rural areas that have little or no flood protection (protection for a 1.0% AEP or 1 in 100 year event or less) are discouraged for the same reason. The exception to this is new occupied structures in established urban residential areas, which are allowed but must have floor level and access mitigation as set out in Policy 9-2(d). Minor extensions to occupied structures (such as increasing the living space), which are not for the purpose of increasing the number of people using or living in the building, do not have to

meet these mitigation standards, but larger extensions (such as increasing the number of bedrooms) will need to incorporate the mitigation requirements.

Horizons recommends that all structures, including those on production land, be designed with raised floor levels as described in Policy 9-2(d), to reduce the risk from flooding to the people living and working there.

How does Horizons identify floodable areas?

The Hazards Mapping Group at Horizons is responsible for identifying areas that are known or predicted to be inundated in a 0.5% AEP throughout the region. This information is being provided to TAs to assist them in planning to reduce the risks from these flood events, including by updating their district plans.

For information about particular areas or properties, relating to the Hazards Mapping Project, contact Horizons' District Advice team by visiting their webpage:

<https://www.horizons.govt.nz/managing-natural-resources/district-advice>.



What is an 'occupied structure'?

Policy 9-2 generally refers to "any new structure or activity, or any increase in the scale of any existing structure or activity". However, parts of the policy distinguish between 'non-habitable' structures on production land, which do not require mitigation, and 'occupied structures' which require raised floor levels and a safe route to an area where occupants can be rescued. Neither of these terms has been defined in the RMA or the One Plan.

- A non-habitable structure on production land includes any structure where people will not sleep, on land used for horticulture, agriculture, pastoral farming, forestry, etc.
- All other structures where people sleep or work are considered to be occupied structures.

If in doubt, contact Horizons' District Advice team by visiting their webpage:

<https://www.horizons.govt.nz/managing-natural-resources/district-advice>.

Rule 17-15: Activities affecting Schedule B Value of Flood Control and Drainage

This is the only rule in the One Plan that regulates specific activities not carried out by or on behalf of the Regional Council, in floodways and floodable areas

when they are also adjacent to a water body identified in Schedule B of the One Plan as having a Value of Flood Control and Drainage. Horizons' District Advice team can advise you whether a proposal will trigger this rule.



Additional information

Horizons is available to work with TA staff to address issues arising around all natural hazards, not just flooding.

For further information about the One Plan provisions or for advice regarding specific development proposals or land areas, contact Horizons' District Advice team, by visiting their webpage: <https://www.horizons.govt.nz/managing-natural-resources/district-advice>.

Horizons has other resources about the One Plan provisions and what they mean. These are available on request or can be downloaded from the Horizons website www.horizons.govt.nz.



Taonui Basin – responding to questions

One of the areas that staff in Manawatū District Council and Palmerston North City Council are likely to be asked about is the Taonui Basin. This area includes three mapped floodways and a mapped floodable area. It will be necessary to determine which of the mapped areas the proposed site is located within.

Horizons' position is that there should be no more development (i.e. new or extended structures or activities) in the Kōpane or Flyger's Line floodways. This means that no one should build or extend a house, dairy shed, power pylon, etc, or subdivide, within these floodways.

The Taonui Floodway, however, is a 'basin' rather than a channel so flood flows are slower than in all the other floodways, reducing the risk to people and property. For this reason there can be limited development within this area, including non-habitable structures to support production land (such as a hayshed) but excluding occupied structures.

In the floodable area, Horizons discourages any new subdivision or new occupied structures (except new occupied structures in an existing urban area provided they are designed with sufficient floor level clearance and access mitigation) as these are likely to increase the number of people living in an area with a high risk of flooding.

Minor extensions to occupied structures in the floodable area (such as adding a garage or extending a living area) should be allowed. Larger extensions to enable more people to use an occupied structure will need floor level and access mitigation.

New or extended non-habitable structures (such as a dairy shed or hayshed) on production land in the floodable area should be allowed. Other new or extended non-habitable structures in the floodable area should also be allowed provided they are designed with adequate mitigation. However, Horizons recommends that all non-habitable structures should have floor level mitigation as a minimum.

Horizons does not have any rules restricting new or extending structures or activities in the Taonui Floodway or Floodable Areas, except Rule 17-15, which only regulates activities in the strip of land beside a water body. All other regulation is the responsibility of TAs through their district plans; Horizons only has policies which set out the framework for those regulations.

TAs and the public can make property enquiries to the Horizons' District Advice team by submitting these on the online form, which can be accessed from their webpage:

www.horizons.govt.nz/managing-natural-resources/district-advice.

Table 1.

EXAMPLE	OCCUPIED STRUCTURE		NON-HABITABLE STRUCTURE		SUBDIVISION
	NEW	INCREASE SCALE	NEW	INCREASE SCALE	
FLOODWAYS Mākīrīkiri, Moutoa, Reids Line, Taonui Basin	Avoid	Avoid	Avoid (unless functional necessity)	Avoid (unless functional necessity)	Avoid
	Allow	Allow	Allow	Allow	Allow
	Allow (with floor level and access mitigation)	Allow (minor extensions or larger extensions with floor level and access mitigation)	Allow (recommend floor level)	Allow (recommend floor level)	Discourage (advocate to avoid)
	Discourage (except in established residential areas with floor level and access mitigation)	Allow (minor extensions or larger extensions with floor level and access mitigation)	Allow (recommend floor level)	Allow (recommend floor level)	Discourage (strongly advocate to avoid)
INUNDATED IN 0.5% AEP (1:200YR) FLOOD EVENT Urban ≥ 0.5% AEP flood protection, e.g., Palmerston North, Balgownie industrial. Urban ≥ 1.0% AEP ≤ 0.5% AEP flood protection, e.g., Lower Manawatu Scheme, Ashhurst. Urban ≤ 1.0% AEP flood protection, e.g., Marton, Bulls, Ohakune	Allow	Allow	Allow	Allow	Allow
	Allow (with floor level and access mitigation)	Allow (minor extensions or larger extensions with floor level and access mitigation)	Allow (recommend floor level)	Allow (recommend floor level)	Discourage (advocate to avoid)
	Discourage (except in established residential areas with floor level and access mitigation)	Allow (minor extensions or larger extensions with floor level and access mitigation)	Allow (recommend floor level)	Allow (recommend floor level)	Discourage (strongly advocate to avoid)
	Allow	Allow	Allow	Allow	Allow
Rural ≥ 0.5% AEP flood protection Rural ≥ 1.0% AEP ≤ 0.5% AEP flood protection Rural ≤ 1.0% AEP flood protection	Allow	Allow	Allow	Allow	Allow
	Allow (with floor level and access mitigation)	Allow (minor extensions or larger extensions with floor level and access mitigation)	Allow (recommend floor level)	Allow (recommend floor level)	Discourage (advocate to avoid)
	Discourage (except with floor level and access mitigation)	Allow (minor extensions or larger extensions with floor level and access mitigation)	Allow (recommend floor level)	Allow (recommend floor level)	Discourage (strongly advocate to avoid)