

## APPENDIX 3 – MARKED UP VERSION FOLLOWING SUBMISSIONS

(Extract from District Plan Chapter 8 – Recognition and Reduction of Hazard Potential)

Note that the changes as a result of submissions are highlighted grey in the text.

# 8 RECOGNITION AND REDUCTION OF HAZARD POTENTIAL

Wanganui District is affected by a number of natural hazards. Parts of the urban area are particularly prone to flooding, while the coast and hill country are affected by land instability and erosion. The District is also dissected by fault lines and is vulnerable to sea level rise and tsunami. The natural hazards occurring within the District have an impact on current and future development. They can cause loss of human life and significant damage to private property, roads and other District assets. They can also cause damage to the natural environment.

In addition to natural events, hazards are associated with hazardous facilities, ie the storage, use and transportation of hazardous substances. These facilities are commonly found in both the rural and urban parts of the District. Hazardous substances, like agricultural sprays, industrial chemicals or fuel, have properties which are, or when in contact with air or water are, potentially flammable or explosive, and toxic. If hazardous facilities are not located appropriately or managed properly, the accidental release of, or loss of control of, hazardous substances can cause short or long term damage to human health and contamination of land, water, air, or damage to ecosystems.

It is recognised that while a hazard may be present, the hazard potential is only realised when there are land use activities, buildings or structures and important natural values in the vicinity of the hazard. It is not possible to eliminate hazards, but it is possible to manage the location, design and operation of land use activities and hazardous facilities to avoid, remedy or mitigate the potential adverse effects of hazards on human life, property and the environment.

The Resource Management Act requires both the Regional and the District Councils to share responsibility for the natural hazards of flooding, subsidence, and seismic, volcanic and tsunami hazards; and for hazardous substances. The Regional Policy Statement further defines the

appropriate management responsibilities of local authorities for natural hazards and hazardous substances.

## **8.1 ISSUES**

### **8.1.1 Variety of natural hazards**

The Wanganui District is affected by a number of natural hazards\*. The most significant ones are flooding, storms, tsunami, erosion and earthquakes. Knowledge of the location and characteristics of natural hazards\* and their impacts on surrounding development \*and the environment\* is far from comprehensive. This along with lack of public awareness hinders the avoidance and mitigation of those hazards.

### **8.1.2 Inappropriate land use in areas at risk of natural hazards**

Inappropriate land use and occupation of areas at risk from earthquake, flooding, ponding land instability can cause unnecessary risks for people and property.

### **8.1.3 Identification of hazardous substances**

Information on the location of hazardous facilities\* and their impact on people and communities and the environment\* is not complete.

Most of the known hazardous facilities\* are located within the urban area of Wanganui. The majority of these are in industrial areas, with other concentrations in commercial areas, eg service stations. Location of hazardous facilities\* in residential areas is increasing. This is associated with home occupations. In the rural areas, agrichemicals are commonly stored on farms.

A number of sites\* within the District have been identified as potentially contaminated, assessed and confirmed as contaminated or formerly contaminated.

Contaminated sites are sites\* where hazardous substances\* occur in concentrations which are likely to pose an immediate or long term hazard to human health or the environment\*. Sites\* of this nature may have been used in the past, or are being used, for industrial processing, storage of hazardous substances\*, or dumping of hazardous wastes. This has implications for the Manawatu-Wanganui Regional Council, Wanganui District Council, land owner, occupier, polluter and neighbouring land owners/occupiers. The Manawatu-Wanganui Regional Council has identified through its Regional Policy Statement the need to prepare a

regional inventory of contaminated sites. Wanganui District Council, along with the Manawatu-Wanganui Regional Council, has an active responsibility in contaminated sites' management. Once comprehensive information is available, Wanganui District Council\* may instigate a Plan\* change if appropriate, require redevelopment of the land or initiate other enforcement action.

Part of this issue\* is the recognition and realisation that many of the methods\* used for the disposal of hazardous waste in the past have been inadequate.

Many facilities are either inappropriately sited or unable to cope with the increased levels of waste being deposited. Accordingly, the Wanganui District has few suitable facilities available for the disposal of hazardous waste and the District lacks a dedicated hazardous waste treatment facility. This is also recognised as a national and regional waste management issue.

Identification and recognition of hazards is an essential part of risk management. Action is required to:

- a. Improve the information base regarding hazards in the District, including *natural hazards\** and contaminated *sites\**.
- b. Increase community knowledge and awareness of risks.
- c. Establish the level of risk that the community is prepared to accept to guide future *development\**.

#### **8.1.4 Reduction of hazardous substances**

With respect to hazardous substances\* and facilities, and the risk they pose, the hazard is principally defined by the characteristics of the intrinsic properties of the substances and facilities, eg flammability of chemicals and their storage areas. The risk is defined by the probability of occurrence combined with the potential effects\* of that occurrence.

It is not possible to control the properties of hazardous substances\*. However, it is possible to reduce the hazard potential to protect human life, property and the environment\*.

To reduce hazard potential, the following matters need to be addressed:

- a. The location, design and operation of new *hazardous facilities\** in environmentally sensitive areas and areas with high concentrations of population.

- b. Protection of existing developments in high risk areas.

Coordinate actions between the Manawatu-Wanganui Regional Council and Wanganui District Council having regard to the provisions of the Regional Policy Statement for Manawatu-Wanganui:

Contaminated sites – This is an issue where there is dual responsibility between the regional and district councils. The District Council will address contaminated site issues as they arise through resource consent processes and will otherwise liaise with the Regional Council to ensure coordinated responses to this issue.

#### **8.1.5IX1 Flood Hazard Risk**

Much of the urban area of Wanganui is built upon the banks of the Whanganui River (Te Awa Tupua). Some of the lower lying areas towards the bottom of the catchment, along with some tributaries and drains including Churton Creek and the Matarawa Stream, are prone to occasional flooding putting people, and property and infrastructure<sup>1</sup> at risk.

## **8.2 OBJECTIVES**

### **8.2.1 Informed community of natural hazard risks**

A community informed about the potential risks of natural hazards to people and property in the Wanganui District.

### **8.2.2 Avoiding and mitigating natural hazards**

The risks of natural hazards through inappropriate subdivision and development are avoided or mitigated whilst minimising adverse effects on natural, cultural and ecological values.

### **8.2.3 To ensure that development of the Wanganui Riverfront recognises and mitigates against the potential flood hazard from the Whanganui River.**

The Regional Policy Statement states that new structures or activities, or the increase in the scale of an existing structure or activity is not permitted in the Wanganui riverfront area (because this area is likely to be subject to 1 in 200 year flood event) unless the flood hazard is avoided or mitigated.

Conventional flood avoidance structures such as stop banks or walls, or raising ground levels above the flood hazard would be inappropriate in the

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<sup>1</sup> Horizons Regional Council

Wanganui riverfront development area. These methods would result in the loss of the visual and physical connections between the central city area and the Whanganui River. As there are significant buildings and activities established in the riverfront area, and the area has been identified for future development, the conventional techniques alone would not be feasible. For these reasons, in the Wanganui riverfront area, mitigating the risk to life and property, associated with the flood hazard is preferred.

#### **8.2.4OX1 Floodwater inundation**

Minimise the risk to people, and property and infrastructure<sup>2</sup> from floodwater inundation.

### **8.3 POLICIES**

#### **8.3.1 Promote improved understanding of natural hazards**

Promote improved understanding of natural hazards as development constraints and better knowledge and awareness of the risks to people and property in the Wanganui district.

#### **8.3.2 Protection from Natural Hazards**

Avoid or minimise risk of loss of life or injury or environmental damage due to use or development in hazard prone areas.

#### **8.3.3 Natural Hazard precautionary approach**

Adopt a precautionary approach in relation to use or development affected by potential natural hazards, especially where hazards are not well understood or the effects of natural processes are difficult to assess or where the effect of activities on natural hazards are not well understood.

#### **8.3.4 Geotechnical report**

In assessing resource consents Council will require confirmation, including as appropriate the preparation of a geotechnical report, as to the suitability of the site for subdivision, use or development and that the effects of the hazard shall be avoided, remedied, mitigated.

#### **8.3.5 Land instability**

Identify areas susceptible to land instability where assessment of the hazard risk is required before land use or subdivision activities are carried

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<sup>2</sup> Horizons Regional Council

out. Where there is an unacceptable geotechnical risk consent shall be declined.

### 8.3.6 Contaminated soils

Ensure that land affected by contaminants in soil is appropriately identified and assessed at the time of being developed and if necessary remediated, or the contaminants contained, to make land safe for human use.

### 8.3.7 Flood hazards

In relation to flood hazards, avoid subdivision and sensitive or inappropriate new development in areas identified as being inundated by a 1 in 200 year (0.5% AEP) flood event unless flood hazard avoidance or mitigation is achieved.

### 8.3.87 Floodwaters

In designing earthworks or roadworks any adverse effects of diverting floodwaters should be avoided, remedied or mitigated.

### 8.3.9 8 Flood mitigation within the riverfront zones Arts and Commerce and Riverfront Zones<sup>3</sup>

Utilise alternative flood hazard mitigation techniques within the Arts and Commerce Zone and Riverfront<sup>4</sup> Zones. Alternative techniques, including but not limited to, building design that either protects buildings from inundation or allows quick recovery following inundation. The characteristics of flooding in the Whanganui River are very well understood. Given the history of flooding, data available, including the rainfall and river levels, reliable models have been developed to predict the timing and degree of flood hazard in the Whanganui riverfront area. Therefore, there is sufficient warning time for alternative techniques to mitigate a 1 in 200 year flood event in the Whanganui Riverfront Zone.

### 8.3.109 Adopt a 1 in 200 year flood level

Subdivision and land use development must be managed within the any area identified as being subject to inundated in a 1 in 200 year flood event, different flood hazard avoidance or mitigation methods are required.<sup>5</sup>

### 8.3.104 Community awareness of hazards

Promote better community knowledge and awareness of risks associated with natural hazards and hazardous facilities

<sup>3</sup> Horizons Regional Council

<sup>4</sup> Horizons Regional Council

<sup>5</sup> Horizons Regional Council

A fundamental requirement of risk management is knowledge about the location and impact of natural hazards and hazardous facilities on people, communities and the environment, and awareness about the degree of risk present.

Traditionally, there is reluctance to identify and recognise hazards as development constraints. This is due to a lack of, or inadequate, knowledge and information, and concern that the identification of hazards can alarm people and reduce the value of properties. However, not recognising the presence of hazards can also lead to increased risks of environmental damage, property damage or loss of life.

Current information about hazards and associated risks is limited and not readily available. Work will be required to extend, update and continuously monitor and review the information available. While it may not be possible to provide definitive or predictive information about hazards and their associated risks, the availability of information should be regarded as a trigger mechanism, or a warning system, for potential land owners and developers.

This policy represents a long term, indirect approach to risk management. It requires resources to be devoted to information gathering and establishing links with the community. There are existing mechanisms which can be tapped into for implementation, eg civil defence activities, use of Project Information Memoranda and Land Information Memoranda etc.

The use of cleaner and safer production guidelines will complement District Plan conditions and terms.

The guidelines will be voluntary and self-regulating. They will be particularly useful for small industrial or commercial operators or home occupations involving the use of hazardous substances.

The approach is also consistent with the requirements of section 35 of the Resource Management Act 1991.

### **8.3.112      Manage hazardous facilities**

Ensure the location, design and management of all new hazardous facilities can meet identified safety standards.

Facilities or activities involving hazardous substances may cause adverse environmental effects when the substances are not adequately controlled

and escape into the environment. Such releases, whether accidental or brought about by poor management practices, may cause environmental contamination and damage, and endanger human health, and cause damage to or loss of property.

To avoid, remedy and mitigate potential adverse environmental effects, these facilities and activities need to be located appropriately and managed correctly. The site design, layout and operational management procedures can greatly affect the risks to people and the environment from hazardous facilities.

Due to the high risks and seriousness of potential damage to human life and the environment, specific controls relating to the location, design and management of hazardous facilities are considered necessary and appropriate. Such controls are considered effective in directly influencing the nature and scale of adverse effects and the level of risk presented by hazardous facilities.

#### **8.3.12PX1 New buildings in flood prone areas**

Avoid the erection of new buildings in areas of higher probability of floodwater inundation (Area A) where this may induce or accelerate the impacts of flooding on people and property.

#### **8.3.13PX2 Reduce risk to existing buildings**

Reduce the impacts of floodwater inundation in flood prone areas, by requiring that alterations or additions to existing buildings and structures adopt resilient building methods.

#### **8.3.14PX3 Hazard Mitigation**

Mitigate flood hazard impacts associated with the erection of new buildings and structures within areas of moderate probability of flood water inundation (Area B).

#### **8.3.15PX4 New allotments in floodable areas**

Avoid subdivision which creates new allotments on sites within a flooding overlay<sup>6</sup> where future development may increase the exposure of people and property to the impacts of flood<sup>7</sup> inundation from a 1 in 200 year flood event.<sup>8</sup>

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<sup>6</sup> Horizons Regional Council

<sup>7</sup> Horizons Regional Council

<sup>8</sup> Horizons Regional Council



**8.3.16PX5 Critical infrastructure in floodable areas**

Avoid the establishment of new critical infrastructure within a flood risk overlay unless there is satisfactory evidence to show that critical infrastructure;

- a. Will not be adversely affected by a 1 in 200 year flood event
- b. Will not cause any adverse effects on the environment in the event of a flood
- c. Is unlikely to cause a significant increase in the scale or intensity in the event of a flood
- d. Cannot be reasonably located in an alternative location

**~~8.8~~ RULESPERFORMANCE STANDARD – FLOOD HAZARD**

~~8.8.1~~ ~~Within the Arts and Commerce zone and Riverfront zone, structures shall be required to meet the following:~~

~~New buildings and additions to buildings are required to be designed and constructed, using resilient building methods,<sup>9</sup> to either:~~

~~Be protected from inundation; or~~

~~Be able to recover efficiently following inundation.~~

**8.8.1RX1 Permitted Activities**

The following are permitted activities (excluding sites within the Riverfront and Arts and Commerce and Riverfront<sup>10</sup> Zone) provided they comply with the performance standards specified for the flood hazard or underlying zones<sup>11</sup>:

- a. Earthworks
- b. Building maintenance and minor works
- c. Upgrades to critical infrastructure.
- d. New or upgraded non-critical infrastructure

**8.8.2RX2 Restricted Discretionary Activities**

The following are restricted discretionary activities (excluding sites within the Arts and Commerce Zone and Riverfront Zone)<sup>12</sup> provided they

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<sup>9</sup> Horizons Regional Council

<sup>10</sup> Horizons Regional Council

<sup>11</sup> Horizons Regional Council

<sup>12</sup> Horizons Regional Council

comply with the performance standards specified for the flood hazard or underlying zones<sup>13</sup>:

- a. New buildings and structures in Flood Risk Area B
- b. Additions and alterations to existing buildings
- c. Subdivision to create boundary adjustments or conversion of leasehold to freehold titles

Council shall restrict its discretion to the following matters:

- i. The establishment of a suitable finished floor or ground level after allowing for<sup>14</sup> freeboard above the 200 year flood level on the subject site.
- ii. The provision of, and ability to achieve safe access/egress
- iii. In addition to establishing a finished floor or ground level in (i) above, the requirement for, and provision use of, resilient building design features methods that provide resilience for up to a 1 in 200 year flood event<sup>15</sup>
- iv. The avoidance of significant diversion of flood flows as a result of the development

Note: For the purposes of this rule, buildings or structures associated with critical and non-critical infrastructure are excluded.<sup>16</sup>

### **8.8.3RX3- Discretionary Activities**

The following are discretionary activities(excluding sites within the Arts and Commerce Zone and Riverfront Zone)<sup>17</sup>:

- a. New critical infrastructure and works to critical infrastructure not provided for as Permitted or Restricted Discretionary Activities
- b. Earthworks that do not comply with performance standard ~~RX5(2)~~ 8.9.3.<sup>18</sup>

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<sup>13</sup> Horizons Regional Council

<sup>14</sup> Horizons Regional Council

<sup>15</sup> Horizons Regional Council

<sup>16</sup> Wanganui District Council and Chorus NZ Ltd

<sup>17</sup> Horizons Regional Council

<sup>18</sup> Chorus

#### **8.8.4RX4 Non-Complying Activities**

The following are discretionary non-complying<sup>19</sup> activities(excluding sites within the Arts and Commerce Zone and Riverfront Zone)<sup>20</sup>:

- a. Subdivision, excluding boundary adjustments or conversion of leasehold to freehold titles.
- b. New buildings and structures in Flood Risk Area A
- c. New buildings and structures and additions to existing buildings and structures that do not comply with performance standard

8.9.2RX5(1)<sup>21</sup>

Note: For the purposes of this rule, buildings or structures associated with critical and non-critical infrastructure are excluded.<sup>22</sup>

### **8.9 PERFORMANCE STANDARDS**

**8.9.18-8.1** Within the Arts and Commerce zone and Riverfront zone, structures shall be required to meet the following:

- a. New buildings and additions to buildings are required to be designed and constructed, using resilient building methods,<sup>23</sup> to either:
  - b. Be protected from inundation; or
  - c. Be able to recover efficiently following inundation.

**8.9.2RX5** For all new buildings or additions to existing buildings, the following minimum freeboard level above the 0.5% AEP (200 year event) shall be required:

- a. 0.5 metres for occupied buildings, AND
- b. 0.2 metres for non-habitable buildings
- c. No freeboard will be required for
  - i) carports and other similar non-enclosed structures, and,
  - ii) non-critical infrastructure, and;
  - iii) either overhead or underground critical infrastructure, and;

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<sup>19</sup> Wanganui District Council, Horizons Regional Council and Chorus NZ Ltd

<sup>20</sup> Horizons Regional Council and Chorus

<sup>21</sup> Chorus NZ Ltd

<sup>22</sup> Chorus NZ Ltd, Wanganui District Council

<sup>23</sup> Horizons Regional Council

- iv) other critical infrastructure where inundation by floodwater in a 200 year event will not adversely affect the level of service provided.<sup>24</sup>

d – Earthworks shall not alter the finished ground level does not alter the existing ground level when completed.<sup>25</sup>

### **8.9.3 Earthworks**

Earthworks shall not alter the existing ground level in a manner that diverts flood flows or adversely affects channel capacity.<sup>26</sup>

## **Chapter 13 - Definitions**

**Building maintenance and minor works** – With regard to the provisions for Flood Area A and B, means activities required to restore buildings or structures<sup>27</sup> to a good or sound condition after decay or damage with similar materials of buildings and structures.<sup>28</sup> This includes internal refurbishment and internal alteration, and excludes additions to the exterior footprint.

**Critical infrastructure** - With regard to the provisions for Flood Area A and B, means infrastructure necessary to provide services which, if interrupted, would have a serious effect on the people within the Region or a wider population, and which would require immediate reinstatement. Critical infrastructure includes infrastructure for:

(a) electricity substations

(b) strategic road and rail networks (excludes Wanganui Branch Rail Line)<sup>29</sup>

(c) telecommunications cabinets and cellular service infrastructure, excluding underground and overhead services and associated support structures.<sup>30</sup>

**Finished ground level** – The level of ground, whether cut or fill, as a result of earthworks.

**Existing ground** – For the purposes of Rule RX5 means the level of ground when the subject allotment/s were created, and any works permitted by a Building Consent to establish building foundations.

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<sup>24</sup> Chorus NZ Ltd

<sup>25</sup> Wanganui District Council and Horizons Regional Council

<sup>26</sup> Wanganui District Council and Horizons Regional Council

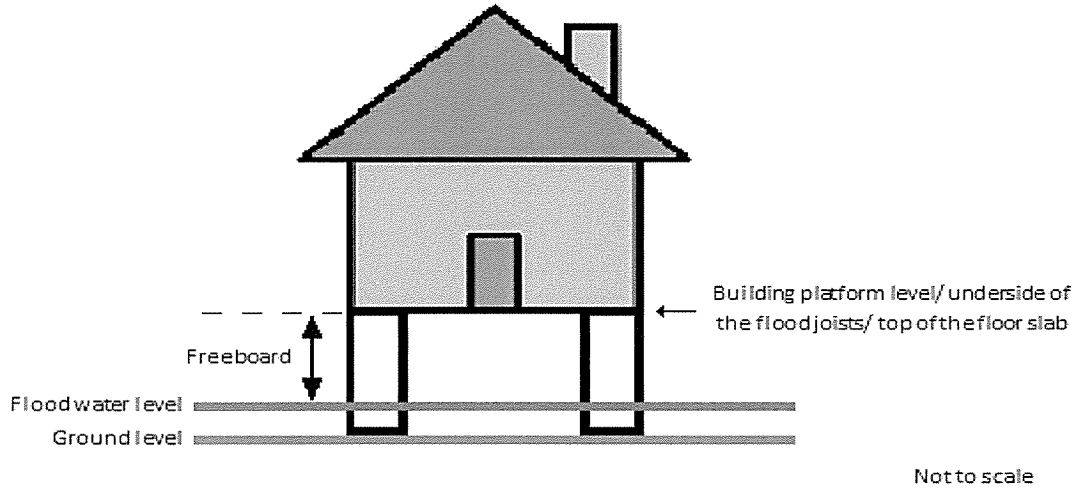
<sup>27</sup> Wanganui District Council

<sup>28</sup> Wanganui District Council

<sup>29</sup> KiwiRail

<sup>30</sup> Chorus NZ Ltd

**Freeboard** - The distance measured from the top of the estimated flood water of the 200 year flood event to the building platform level, or the underside of the flood joists or the top of the floor slab, whichever is applicable as shown below:



**Non-habitable structures** – With regard to the provisions for Flood Area A and B means any building or structure where people will not sleep or work.

**Occupied structures** – Buildings or structures where people sleep or employed in work.

**Resilient building methods** – means methods that will, where appropriate to the building and nature of the hazard, limit damage and aid recovery from a flood event. Such methods include, but are not limited to, raising floor or foundation levels, surrounding a building with flood proof materials, sealing all openings below flood levels, elevating electrical systems, and providing flood water passage.

**Safe access/egress**<sup>31</sup> – With regard to the provisions for Flood Area A and B, means an area that provides passage from a building to a site that is free from inundation for evacuation or access through flood waters that are no deeper than 0.5 metres and have a velocity of more than 1m/s in a 200 year flood event., or some other combination of water depth and velocity that can be shown to result in no greater risk to human life, structures or property.<sup>32</sup>

**Upgrades** – With regard to the provisions for Flood Area A and B, means works to provide for an increase in carrying capacity, efficiency, or security of electricity and telecommunication facilities, utilising existing support structures or structures of a similar scale or character and includes the:

- (i) addition of circuits and/or conductors;

<sup>31</sup> Horizons Regional Council

<sup>32</sup> Horizons Regional Council

- (ii) re-conductoring of the line with higher capacity conductors;
- (iii) re-aggng of conductors;
- (iv) addition of longer more efficient insulators;
- (v) addition of earthwires (which may contain telecommunication lines, earthpeaks and lightning rods);
- (vi) replacement or alteration of an existing telecommunication antenna.
- (vii) widening of existing roads.

Minor upgrading does not include an increase in the voltage of the line unless the line was originally constructed to operate at the higher voltage but has been operating at a reduced voltage.

**Flood Risk Area A 100-year flood event** – Means the area between the lines marked as Flood Level 100 Year Event on the Wanganui District Planning Maps shown in Flood Area A that identifies the modelled and estimated physical extent of flood waters in an event with an Annual Exceedence Probability (AEP) of 1%<sup>33</sup>

**Flood Risk Area B 200-year flood event** – Means the area between the lines marked as Flood Level 200 Year Event and Flood Level 100 Year Event on the Wanganui District Planning Maps shown in Flood Area B that identifies the modelled and estimated physical extent of flood waters in<sup>34</sup>

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<sup>33</sup> Horizons Regional Council

<sup>34</sup> Horizons Regional Council