APPENDIX 5 – SECTION 32 EVALUATION

Existing Plan Provisions that are not part of Plan Change 33 – are highlight

Recommended 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.

8.1.5~~IX1~~ 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 at risk.

Comment

Issue 8.5.1~~IX1~~ compliments the two existing Issue statements adopted as part of Plan Change 25. These are not under review, but included for completeness. While the Plan Change focuses solely on the flood hazard in the lower Whanganui River catchment, the Issue identifies that the hazard exists in other parts of the urban area. Suitable information is not yet available to manage these other areas.

1.2 Recommended OBJECTIVES

Objective 8.2.4~~OX1~~ Floodwater inundation *Minimise the risk to people, property and infrastructure from floodwater inundation.* ***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.*	
Comment	The existing relevant Plan Objectives are included for information and completeness only. The following approaches were examined as part of the Plan Change

	process: Status quo The approach of the Operative District Plan is to identify the 50, 100 and 200 year flood probabilities on the Planning Maps. This information has been superseded by the present model supplied by Horizons. The flood hazard in the Riverfront Zone and Arts and Commerce Zone referred to in the One Plan were addressed in Plan Change 21. Therefore, those zones need not be reviewed. However the remainder of the land subject to inundation from the lower Whanganui is not managed. The One Plan directs Council to "*develop objectives, policies and methods for the control of the use of land to avoid or mitigate natural hazards…*" This requires Council to act. WDC and Horizons have functions under both the Local Government Act 2002 and Civil Defence Emergency Management Act 2002. Significant resource has been invested in readiness and response actions. These were tested in the recent October 2013 flood and found to be effective in a 1 in 30 year event. However, this does not control landuse as required by Section 10 of the One Plan, and, at best, will only maintain the existing level of risk. Flood defences Flood defences such as flood banks to avoid flooding have previously been considered by the Horizons Regional Council as a part of their 2012-2022 LTP. Stage 1 of a capital works programme has been completed which involved the establishment of structures to prevent inundation from Te Awa along a stretch of riverbank, for up to a 1 in 200 year event. Consultation for the 2012-2022 LTP included requesting feedback from the community regarding the future of the Lower Wanganui Flood Scheme, Stages 2 and 3. Overall, respondents did not favour continuing the development of flood protection works. As a result, Horizons resolved that no funding be allocated for continued flood control measures. However, this position has been signalled for review later in the LTP. Given the above, reliance on flood defences to protect land from 200 year floods is not a current option. Managed retreat Managed retreat in this context is defined as relocating physical structures away from all land identified as being subject to inundation by flood water. In order to provide for a managed retreat, suitable land has to be acquired and services installed. No parties have identified this as an option under consideration, nor has any party provided any funding for this to occur. The effectiveness of managed retreat is questionable as there is no ability to force landowners to move. For example, if a significant flood event damages a building to the extent that it requires demolition, Section 10 would enable land owners to re-instate a lawfully established building of the same use, character, intensity and scale.

	Existing Objectives Proposed Objective 8.2.4~~OX1~~ is more hazard specific than objectives 8.1.1 and 8.2.2. Their focus includes generally avoiding or mitigating the impact of natural hazards and informing the community about the potential impacts. Given the context described below, a flood specific objective for flooding is considered appropriate, and not inconsistent with the Operative objectives. Insurance/LIMs Amongst considerations around the development of the Plan Change were the implications regarding insurance. Anecdotally, Anzac Parade landowners have had difficulty in securing insurance for flood events. Since the Christchurch earthquakes, insurance companies have increasingly focused on managing risks associated with natural hazards. This has led to increased premiums and insurance being denied to those perceived to be most at risk. Given the extent of flood hazard areas is only slightly modified, it is not anticipated that Plan Change 33 will significantly affect landowners ability to obtain insurance, except for new land now shown as subject to inundation. Plan Change 33, provides more specific hazard information than was previously available. Details of projected flood water depth are available for each site from Horizons, who can also supply recommendations for minimum floor height/freeboard. Land Information Memoranda (LIMs) will now, identify the potential extent of flooding, as opposed to the previous generic approach of identifying that a property is generally subject to inundation from a 200 year event. Provision of this information through LIMs is not sufficient to give effect to the objectives and policies of the One Plan.
Appropriateness	Avoid, mitigate, minimise Three policy options were investigated during the drafting of Objective 8.2.4~~OX1~~, avoid, mitigate, or minimise in terms of a desired long term outcome. The term avoid was considered in the first instance, which is, in part, consistent with Objective 10-1 of the One Plan. The Concise Oxford Dictionary defines the term 'avoid' as follows: *'Avoid 1. Keep away from; refrain from. 2. escape; evade 3. a. nullify b quash.'* Significant existing development is located within the 200 year flood extent. Flood protection and managed retreat are not considered viable, and it is doubtful that the effects of inundation can be completely avoided, given the right to rebuild offered by s.10 RMA. The second option reviewed was 'mitigate' as defined below: *'Mitigate; Make milder or less intense or severe; moderate.'* This may be inappropriate for existing buildings and structures in order to reduce risk. However, Policy 10-2(c) requires avoidance to be preferred. The preferred option, minimise, is defined as follows: *'Minimi[s]e 1. reduce or estimate at, the smallest possible amount or degree 2. Estimate or represent at less than true value or importance. 3.*

	Attain a minimum value' The term most appropriate is 'minimise'. This identifies that the risk of a flood event damaging people and property can be reduced by either avoidance or mitigation, taking into consideration the type of activity and level of probability. For example, the erection of new buildings in high risk areas must be avoided. However, avoiding risk to existing buildings is not possible and mitigation is more appropriate. This is consistent with Objective 8.2.2. **Conclusion** The proposed Objective 8.2.4~~OX1~~ is appropriate in terms of meeting the purpose of the Resource Management Act. In particular, people and communities will be able to provide for their health and safety and economic wellbeing through the minimisation of their exposure to the flood hazard.

1.3 PROPOSED POLICIES

The following new *policies* are proposed and existing polices(included by Plan changes 21 and 25) are amended as follows:

Relevant Operative Policies (not part of Plan Change 33)

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.

8.3.7 Floodwaters

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

8.3.8 *Flood mitigation within the Arts and Commerce and Riverfront Zones*

Utilise alternative flood hazard mitigation techniques within the Arts and Commerce Zone and Riverfront Zone. ~~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 Wanganui 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.~~

Comment	The above policies were included in the Plan by either Plan Change 21 (Phase 1), or Plan Change 25 (Phase 2). Policy 8.3.3 requires a precautionary approach to decision making, particularly where there is uncertainty or a lack of information. Policies 8.3.7, 8.3.8, and 8.3.10 directly relate to the management of flood hazards.

	Policy 8.3.8 is included for completeness and is not part of Plan Change 33. A minor amendment to Policy 8.3.9 is made in accordance with Clause 16 1st Schedule RMA. It is included for completeness and is not part of Plan Change 33.
Benefits **Costs** **Effectiveness** **Efficiency** **Appropriateness**	As these Operative Policy 8.3.10 was evaluated as part of Plan change 21 and no substantive change is proposed, no additional assessment is deemed necessary. The deletion of Operative Policy 8.3.7 will be assessed with the replacement policies 8.3.12~~PX1~~, 8.3.13~~PX2~~, 8.3.14~~PX3~~, and 8.3.15~~PX4~~.
Principal Alternative	There are no obvious alternatives to what is generally a 'status quo' approach to most of the existing policies, other than remove all of them from the Plan. This is not appropriate as they have all recently been through a thorough Plan change process and rigorous assessment, and would not be consistent with the requirements of the One Plan.

Amended and Proposed Policies

~~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.~~10~~9 Adopt a 1 in 200 year flood level ~~as the required level of flood hazard avoidance or mitigation for new developments in identified parts of the urban area.~~

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~~.

8.3.12~~PX1~~ 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.

8.3.13~~PX2~~ 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.

8.3.14~~PX3~~ 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).

Comment	Policy 8.3.7 was introduced as part of Plan Change 21 and is a generic response to managing flooding in the Riverfront zone. It

	is proposed that this policy be deleted. Plan Change 33 is more specifically focused on compliance with the requirements of the One Plan, and is consistent with the Fact Sheet: Flood Hazard and the One Plan produced as a guidance note by Horizons Regional Council. Proposed policies 8.3.12~~P~~X1 to 8.3.15~~P~~X4 are more specific about the circumstances when mitigation is appropriate and avoidance is necessary. Policy 8.3.10 was inserted into the Plan by Plan Change 21 and related to the Central City and Riverfront areas only. The policy is now proposed to apply more widely, which is consistent with Section 10 of the One Plan. A minor amendment to Policy 8.3.10 is made in accordance with Clause 16 1st Schedule RMA. Policies 8.3.12~~P~~X1, 8.2.13~~P~~X2, and 8.3.14~~P~~X3 are key for decision making. They have been developed in accordance with the Guidance Note on the flooding hazard produced by Horizons to help implement the provisions of the One Plan. They focus on four areas; new buildings, existing buildings, moderate probability and high probability in terms of flood occurrence. There were two principal alternatives considered. The first was a more restrictive approach where all development within the 1 in 200 year risk area was to be avoided. However, that approach did not recognise the non-linear variation in flood probability. The second approach was the opposite approach where mitigation could be applied to the whole risk area. As with the previous approach, this did not recognise that probability was not the same in all parts of the 1 in 200 year flood risk extent.
Benefits	**Environmental** The policies will, over time, improve the effectiveness of the flood plain as obstructions are reduced. The provisions are neutral with regard to flood defences in that it does not promote or require their establishment. Rather, it seeks only to manage land use in areas with a significant likelihood of flooding. **Economic** Policies 8.3.12~~P~~X1 and 8.3.14~~P~~X3 prevent loss for new buildings in areas of higher probability of flooding, while supporting the reduction of impacts on existing investment. Further to this, additional development is provided for, subject to the mitigation of impacts arising from inundation, in areas of moderate probability of flooding. The policies promote works to existing dwellings at risk of inundation to mitigate the impacts of flooding. This may result in additional employment and economic activity. Further to this, houses that have had flood mitigation works undertaken may increase in value.
	Social/Cultural The primary social/cultural benefit, when combined with emergency management, is that people in existing buildings/dwellings are enabled to continue the occupation of

	those buildings and are given options for mitigation of the impacts of inundation. This allows those with strong associations with land, particularly Tangata Whenua, to retain these associations and erect new buildings in areas at moderate risk where the impacts are mitigated.
Costs	**Environmental** There are minimal costs to the environment. However, mitigation measures may include raising floor levels which potentially could have a negative effect on amenity. **Economic** The development potential of land affected by the flood overlay will be reduced, particularly the land affected by a higher probability of inundation.
	Social There are no significant social costs. **Cultural** Discussions with Tangata Whenua have revealed several pieces of land on the true left bank of the Whanganui River to the north and south of the Cobham Bridge occupied by marae, kura kaupapa, and land where papakainga development is contemplated. Some of this land is at high risk of inundation from flood waters. It is recognised that this may be seen as a barrier to development of this land. While this is significant, this reflects the potential harm to people and property from inundation for that land. This is exacerbated by the decision of the community not to fund further flood protection works, particularly in the Putiki area. However, it should be noted that where the effects regarding exposure to risk can be avoided, either by flood protection works or any other means, at least one 'gateway' test is satisfied and development may be able to proceed.
Effectiveness	8.3.12~~PX1~~, 8.3.13~~PX2~~ and 8.3.14~~PX3~~ are effective in that existing activities are able to reduce the impact of a flood event, new sensitive land uses are avoided in the area of higher probability, and the effects of a significant flood event in areas of low probability are mitigated.
Efficiency	Policies 8.3.12~~PX1~~, 8.3.13~~PX2~~ and 8.3.14~~PX3~~ are considered efficient and existing uses are provided for, subject to mitigation for any significant works. In addition, the establishment of new activities in areas of a high probability is avoided, therefore avoiding cost of repair or replacement after a large flood event. In addition, these policies complement the approaches by Civil Defence and Emergency Management by limiting potential costs of recovery, and minimising the size and complexity of response actions such as evacuation.
Appropriateness	Policies 8.3.12~~PX1~~, 8.3.13~~PX2~~ and 8.3.14~~PX3~~ are the most appropriate to meet Objective 8.2.4~~OX1~~ as overall, existing uses are able to reduce the impact of a flood event, new uses are avoided in the area of higher probability, and the effects of a

	significant flood event in areas of low probability are mitigated.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	The risk of acting is that either, there is no significant flood over the lifetime of the buildings/activities identified as being subject to a significant event, and therefore the cost of mitigation is unnecessary. In addition, an event exceeding the predicted 200 year event may occur thereby exceeding the design capability of mitigation works. The risk of not acting is that new activities are established or existing activities are expanded in a manner that does not avoid or mitigate the effects of flood inundation within the areas identified. This will increase the risk to people and property, as opposed to minimise it, as required by Objective 8.2.4~~OX1~~.
Principal Alternative	The principal alternatives were the 'status quo' with a minimum of controls, and in the Riverfront area only. However, this would not minimise the risk to the remaining parts of the catchment subject to a 1 in 200 year flood event.

Policy 8.3.15~~PX4~~ New allotments in floodable areas *Avoid subdivision which creates new allotments on sites ~~within a flooding overlay~~ where future development may increase the exposure of people and property to ~~the impacts of flood~~ inundation from a 1 in 200 year flood event.*	
Comment	Policy 8.3.15~~PX4~~ seeks to avoid the creation of new development rights within the flood overlays where this would result in more people and property being exposed to inundation by flood water. In approving subdivision there is an implied right to develop. Increasing the number of people and introducing property in these areas increases exposure to risk. There are two alternative approaches examined. The first includes the status quo in that there are no specific controls and management is left to section 106 of the RMA where Council 'may' approve subdivision subject to certain hazards. This does not promote consistent decision making and may result in subdivision that is inconsistent with the provisions for future land use that may apply. The second alternative is a mitigation approach. This provides for subdivision subject to the risk of the hazard being sufficiently mitigated. Again, this may be inconsistent with the

	provisions that address land use. Also, the consequences of a 200 year flood event may not be sufficiently mitigated without unintended effects such as diversion of flood flows from raised building platforms, and it is likely that a risk to people will still remain.
Benefits	**Environmental** There are no significant environmental benefits arising from this policy. **Economic** There are no significant employment opportunities arising from this policy. However, it is likely investment will be directed to parts of the Wanganui that are less likely to be interrupted or damaged by flood events.
	Social/Cultural With less new allotments for development, the policy will assist minimise the people and property potentially exposed to floodwater inundation and damage. In particular, the avoidance of disruption to dwellings and lives is significant.
Costs	**Environmental** It is not anticipated that any significant environmental costs will arise from implementing this Policy. **Economic** The cost of avoiding subdivision is the forgoing of development and employment that may otherwise have occurred. However, this is not anticipated to be noticeable, and when balanced against the potential cost of damage or loss, not significant.
	Social/Cultural Maori landowners have aspirations for areas of land, particularly located in the vacitnity of Putiki, to develop papakainga. Some of this land is subject to high and moderate risk of flooding. This may inhibit the ability to partition this land.
Effectiveness	The policy is effective as avoiding the creation of new allotments in the floodable area, minimises the amount of people and property exposed to flooding.
Efficiency	8.3.15~~PX4~~ is efficient in that the expectation of the ability to subdivide and develop land subject to high flood probability is avoided.
Appropriateness	The Policy is considered the most appropriate means to meet Objective 8.2.4~~OX1~~ as it looks to prevent additional allotments therefore eliminating the expectation to develop and potentially put additional persons and property at risk of a flood event.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	The risk of acting is that otherwise indicated in the Pan as being available for development is identified as no longer suitable. The risk of not acting is that additional

	development expectations arise from the creation of new allotments. This would not minimise risk as required by Objective OX1.
Principal Alternative	The principal alternative regarding subdivision is to rely on the general provisions that subdivision is required to address in Section 106 of the Resource Management Act. This can be ad-hoc and inconsistent with the policies addressing land use.

Policy 8.3.16~~PX5~~ – 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.	
Comment	Policy 8.3.16~~PX5~~ looks to improve resilience to and recovery from significant flooding events by avoiding the impacts of flood hazards on critical infrastructure. This will assist any affected community to recover and return to their homes quickly and efficiently with limited interruptions to those services. Other options were considered including no regulation. However, the One Plan identifies critical infrastructure as an area that requires management.
Benefits	**Environmental** There are no benefits to the natural environment, but the physical environment is more likely to be sustained with the improved resilience to flooding provided by this policy. **Economic** The two areas of economic benefit arising from PX5 include the efficient return of services to affected homes and business, and reduced costs to the infrastructure providers for replacement of damaged infrastructure as a result of inundation of flood waters. There are no discernible benefits for employment or growth, other than reduced business interruption.
	Social/Cultural The Policy would allow more efficient recovery by allowing people to return to their homes sooner after a significant flood event which should assist in maintaining community, and therefore social and cultural well-being.

Costs	**Environmental** There are no significant costs to the natural or physical environment. **Economic** The Policy may increase the cost to maintain or develop critical infrastructure to an unknown degree. However, the increased resilience to damage from flood hazards, and improved continuity of services balances these costs.
	Social/Cultural There are no significant social or cultural costs.
Effectiveness	The policy is effective in that it reduces the potential consequences from a significant flood event on both people and property.
Efficiency	Policy 8.3.16~~PX5~~ is efficient as it provides proactive measures that provide for resilience to damage and minimise potential unscheduled replacement and/or repair costs.
Appropriateness	The policy is the most appropriate means to meet 8.2.4~~OX1~~ in that it provides resilience to community's potentially affected by a 1 in 200 year flood event.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	The risk of acting is that additional costs may be placed on critical infrastructure providers for an event that does not occur within the lifetime of that infrastructure. The primary risk of not acting is long term outages of critical services to those properties and businesses affected by a flood event.
Principal Alternative	The principal alternative was to not address infrastructure. However, this may reduce resilience of a community and increase the cost and time required for recovery.

1.4 PROPOSED RULES

The following methods have been identified as being suitable for achieving the relevant objectives and policies.

The following are proposed changes to rules for flooding. Some of the rules will remain unchanged. These rules have proven to be effective in the past in achieving the relevant objectives and policies and it is anticipated that they will continue to do so in the future.

Relevant Operative Rules (not part of Plan Change 33, except for consequential numbering changes)

8.9.1 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 to either:

a. be protected from inundation; or

b. be able to recover efficiently following inundation.	
Comment	The provisions above were introduced as part of Phase 1 – Central City and Riverfront – Plan Change 21.

8.8.1 ~~RX1~~ Permitted Activities *The following are permitted activities (excluding sites within the Arts and Commerce Zone and Riverfront Zone) provided they comply with the performance standards specified for the flood hazard or underlying zones:* *a. Earthworks* *b. Building maintenance and minor works* *c. Minor upgrades to critical infrastructure.* d. *New or upgraded non-critical infrastructure*	
Comment	The provisions are in addition to any rules within the relevant zones. The permitted activity list identifies a range of low risk activities (subject to compliance with performance standards) which will have no effect on flood risk or impact.
Benefits	**Environmental** There are no significant environmental benefits. **Economic** It is not anticipated that significant growth or employment benefits will arise. Enables non-critical infrastructure networks investment in terms of new activities or maintenance or upgrades.
	Social Enables both critical and non-critical infrastructure serving the wellbeing of the community to continue to operate in an effective and efficient manner. **Cultural** Other non-critical infrastructure services will still be available to enable development on Maori land within the flood overlays.
Costs	**Environmental** There are no significant environmental costs. **Economic** Any costs associated with the provisions lie in those activities that are not made as permitted activities. This is more appropriately discussed as part of the rules that do apply.
	Social/Cultural There are no significant social or cultural costs.
Effectiveness	The activities permitted are considered low risk, and therefore do not require management.
Efficiency	The provisions are efficient as enable activities that will not increase risk to people and property, subject to compliance with performance standards.
Appropriateness	The rule is appropriate as the activities are considered to be

	low risk, and consistent with Objective OX1.
Principal Alternative	The principal alternative is to regulate all activities within the flooding overlays. However, the activities are considered to be low risk, and consistent with Objective OX1.

8.8.2~~RX2~~ *Restricted Discretionary Activities*

The following are restricted discretionary activities (excluding sites within the Arts and Commerce Zone and Riverfront Zone) provided they comply with the performance standards specified for the flood hazard or underlying zones:

a. *New buildings and structures in Flood Risk Area B*

b. *Additions and alterations to existing building*

c. *Subdivision to create boundary adjustments or conversion of leasehold to freehold titles*

Council shall restrict it discretion to the following matters:

i. *The establishment of a suitable finished floor or ground level after allowing for 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 use of, resilient building methods the provide resilience for up to a 1 in 200 year flood event.*

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 excludes critical and non-critical infrastructure.

Comment	The Rule seeks to provide for lower risk activities within the flood overlays, subject to mitigation of the impacts of flood inundation.
Benefits	**Environmental** The Rule will limit obstructions within the flood plain. **Economic** Development within the flood overlays is still provided for, particularly in the moderate probability area.
	Social People who have invested in property within the flood overlays can still maintain these, subject to suitable mitigation of potential impacts from flooding. **Cultural** Development of Maori land for papakainga is enabled in areas at moderate risk of inundation, where the impacts from flooding are suitably mitigated.
Costs	**Environmental** There are no significant environmental costs. **Economic**

	There may be additional costs to building to provide for mitigation, including building materials, raising building floor levels.
	Social There are no significant social costs. **Cultural** There may be additional costs to the development of papakainga in areas of moderate risk of flooding.
Effectiveness	The provision is effective as development is provided for in moderate risk areas where the impacts of flooding is suitably mitigated, and minor works to existing buildings are provided for under the same conditions.
Efficiency	The rule is efficient as it enables existing built structures to continue to be maintained and utilised to their full extent, and land with a moderate probability of being inundated to be developed, subject to mitigation.
Appropriateness	The rule is appropriate as it is consistent with PX2 and PX3 which provide for mitigation for existing buildings and enables building in area with a moderate probability of flood inundation, where the impacts of flooding can be mitigated.
Principal Alternative	The principal alternative is to include the erection of new buildings and structures, and alterations and additions to existing buildings within the flood overlays as Permitted Activities. This will not minimise the exposure of people and property to the impacts of flooding either in areas of moderate or high probability of flood inundation.

8.8.3~~RX3~~ *Discretionary Activities* *The following are discretionary activities(excluding sites within the Arts and Commerce Zone and Riverfront Zone):* 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 8.9.3~~RX6~~*	
Comment	Rule 8.8.3~~RX3~~ focuses on new and upgraded critical infrastructure as these play a significant role in resilience and recovery for the wider community. For example, a significant part of the floodable area of Anzac Parade is State Highway, and disruptions to access have implications for homes in the vicinity and businesses in the District. Earthworks have been included as changes in ground level can affect the volume and direction flood flows onto other property when not managed appropriately. This has the potential to increase damage to some property.
Benefits	**Environmental** In managing changes in ground level, flood flows are more

	predictable and receiving properties do not receive floodwaters diverted from other properties. **Economic** It is not anticipated that significant employment or growth opportunities will arise. However, it is not anticipated that the provision will have a noticeable impact on economic activity in the District.
	Social/Cultural The avoidance of flood flows from third parties gives security to people in the event of a significant flood. In addition, new or upgraded critical infrastructure will be more resilient to flood events, improving recovery.
Costs	**Environmental** It is not anticipated that significant environmental costs will arise. **Economic** While earthworks with changes to floor levels will require resource consent, potentially requiring engineering input, it is not anticipated that a significant amount of works will occur. The cost of new or upgraded critical infrastructure may increase as mitigation measures are required. This must be balanced against improved service continuity and resilience.
	Social There are no significant social costs. **Cultural** The aspirations of Tangata Whenua with regard to papakainga housing on Maori land in the Putiki area may be made more difficult to achieve. A number of blocks currently adjoin higher risk areas and significant earthworks may be contemplated. This would require resource consent with specialised engineering input, adding to the cost of developing.
Effectiveness	Managing the resilience of critical infrastructure, and also earthworks, will improve resilience of the community and minimise the risk of the hazard for people and property.
Efficiency	The rule is efficient as it promotes resilient infrastructure less likely to be damaged by a future flood event and require repair or replacement.
Appropriateness	Both 8.8.3~~RX3~~ a and b are appropriate as infrastructure design to cope with a 200 year flood, and managing earthworks will minimise damage to property, and people's wellbeing.
Principal Alternative	The principal alternative is the non-regulation of both critical infrastructure and earthworks, leaving the diversion of flood waters as a civil matter. However, Policy 10-4 of the One Plan requires Council to manage critical infrastructure within the flood overlay. With regard to earthworks, there is significant potential for increased impact during a flood event if works aren't appropriately managed.

8.8.4~~RX4~~ *Non-Complying Activities*	
The following are non-complying activities (excluding sites within the Arts and Commerce Zone and Riverfront Zone): 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 8.9.2~~RX5(1)~~* Note: For the purposes of this rule, buildings or structures excludes critical and non-critical infrastructure.	
Comment	Rule 8.8.4~~RX4~~ addresses the higher risk activities within the flood overlays. This includes subdivision to create additional titles, new buildings and structures in the areas of high probability of inundation, and all buildings where the specified minimum floor level is not met. The Rule reflects Policy 8.3.1~~PX1~~ in that it avoids the development of new buildings in areas of higher probability of flooding inundation. It also reflects 8.8.4~~RX4~~ in that it seeks to avoid the creation of new allotments subject to flooding. Finally, the rule reinforces that new buildings in areas of moderate probability of inundation, and all existing buildings in the flood overlay require suitable mitigation.
Benefits	**Environmental** The Rule helps to avoid new buildings and structures within the flood plain. **Economic** The Rule avoids loss of existing buildings by requiring mitigation works for new or expanded building in areas at moderate risk of flooding.
	Social People do not establish new buildings in the areas identified as being at higher risk of inundation. **Cultural** Damage to people and property on Maori land is avoided.
Cost	**Environmental** There are no significant environmental costs. **Economic** Some land that may have its development potential diminished.
	Social There are no significant social costs. **Cultural** Papakainga type development on Maori land with a higher probability of being affected by flooding are unlikely to be developed.

Efficiency	The Rule is efficient as it minimises the impacts of flooding by preventing the creation of new allotments for development, and the establishment of new buildings in areas of high probability of flooding.
Effectiveness	The provision is effective as the result of the provision is that no new property or people are put at risk.
Appropriateness	The Rule is appropriate as it minimises the risk to people and property by avoiding the expectation of development potential.
Principal Alternative	The principal alternative is to mitigate the impacts of flooding rather than avoid them. However, that is inconsistent with 8.3.1~~PX1~~ And 8.8.4~~RX4~~, and still results in significant impact potential.

8.9.2~~RX5~~ Performance Standards *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;

iv. other critical infrastructure where inundation by floodwater in a 200 year event will not adversely affect the level of service provided.

8.9.3~~RX6~~ Earthworks

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

Comment	The performance standards will mitigate the potential effects of flooding for existing buildings and for new and expanded activities in areas with a moderate probability of flooding. The standard avoids undue diversion of flood flows by altering ground levels. The alternative approach is to not regulate floor height, or the effects of earthworks. However, a requirement of the One Plan is the provision of suitable freeboard above the 200 year flood event. In addition, without managing earthworks, and therefore potentially the diversion of flood flows, significant impacts are still possible,
Benefits	**Environmental** The provisions will reduce diversions of flood flows across the flood plain. **Economic**

	The provision enables the retention of existing investment, while providing for additional works that assist in reducing the impact of a flood event. This may include additional growth in providing mitigation works to affected properties.
	Social/Cultural Specifying suitable and effective mitigation measures allows people to continue to live within their homes and reduce the potential impact of a significant flood event. It also provides for increased safety in areas at moderate risk for new buildings for both freehold and Maori land.
Cost	**Environmental** Raising existing buildings may have an adverse effect on amenity in the area. **Economic** Financial cost is associated with mitigating the impact of floods by requiring increased freeboard height. However, the standard only applies to new buildings and additions to existing buildings where located within the flood overlays and cannot be applied to existing buildings.
	Social There are no significant social costs. **Cultural** The building or relocating of new dwellings with a higher freeboard may increase development costs for papakainga.
Effectiveness	The Rule is effective as raising floor heights of new and additions to existing buildings in moderate probability areas, above the 200 year level will significantly mitigate the impacts of flooding. In addition, managing ground levels is effective in avoiding damage caused by diverting flood flows.
Efficiency	The Rule is efficient as it requires mitigation of the impacts of flooding on additions to existing buildings avoiding damage, and enables new buildings to be established in areas of moderate probability where the effects can be mitigated.
Appropriateness	The rule is appropriate in that it assists in significantly reducing the impact of flood damage to property.
Principal Alternative	The principal alternative of not regulating does not minimise risk to people and property. Without a suitable freeboard, sufficient mitigation will not be achieved as provided for by PX2 and PX3, nor will the freeboard requirements of 10-2(d) are not met.