

Plan Change 34 Flood Hazard

Section 32 report

Taupo District Council

20 October 2017

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1. KEY RESOURCE MANAGEMENT ISSUES

Plan Change 34 helps Council meet its responsibilities to identify flood hazards and manage development to mitigate risks to people and property. Those responsibilities stem from the Waikato Regional Policy Statement and the Resource Management Act 1991.

Plan Change 34 addresses the following resource management issues:

- Flooding from several rivers and Lake Taupō pose risks to people's safety and property
- The operative District Plan does not identify all of the known flood hazard areas associated with rivers and Lake Taupō
- New modelling information shows that some of the flood hazard areas in the operative District Plan are no longer expected to be affected by future flood events
- The current flood hazard information doesn't consider the future effects of climate change and tectonic subsidence
- Recent changes to the Waikato Regional Policy Statement now impose a risk based approach to managing flood hazards which is not mirrored in the operative District Plan
- The operative District Plan provisions do not provide sufficient control over development in high flood hazard areas
- The operative District Plan provisions impose unnecessary regulatory costs on those with a low level of risk.

These issues are addressed by Plan Change 34 in a number of ways:

- Areas affected by the flood hazard are defined spatially and in relation to the depth of likely inundation. This knowledge helps people to make better decisions about how to manage the associated risks.
- Introducing flood hazard information into the District Plan, that includes the likely effects of climate change and tectonic subsidence, provides people making decisions with enhanced knowledge. These effects may not be experienced in the short term, however the planning related decisions to create new allotments or establish built structures will extend well into the future.
- The Plan Change shifts the direction of the District Plan away from a generic assessment of hazards to a risk based approach. This creates a more enabling regulatory environment for activities in low hazard areas, while providing for a more considered decision making in high hazard areas.

2. STATUTORY AND PLANNING CONTEXT

Under the Resource Management Act, the District Plan is required to give effect to any national policy statement, the New Zealand Coastal Policy Statement, a national planning standard and any regional policy statement.¹ Territorial authorities must also have regard to a number of other regulatory and planning documents when preparing or changing a plan.

This section sets out the broad provisions of the statutory and planning documents which are relevant to Plan Change 34, and addresses how Plan Change 34 will give effect to, or have regard to, those documents. The relevant statutory and non-statutory documents for this plan change are outlined in detail in Appendix 1.

Lake Taupō Erosion and Flood Strategy 2009

Taupō District Council and Waikato Regional Council adopted the Lake Taupō Erosion and Flood Strategy in 2009. The strategy provides guidance on the management of erosion and flood hazards around the margins of Lake Taupō. The strategy is based on scientific analysis by Beca (erosion hazards) and Opus (flood hazards).

¹ Resource Management Act 1991, section 75(3)(c).

Importantly in the context of this plan change, the strategy represented the first time that flood hazard around the margins of the lake had been assessed. The strategy established an agreed methodology for the assessment of the flood risk. In addition to the static water level record Opus identified the need to incorporate the effects of seiche² and the likely future effects related to climate change and tectonic subsidence.

The flood hazard was presented using a classification based on a combination of anticipated water depth and velocity. Waikato Regional Council indicated through the Regional Policy Statement an expectation that this classification approach will be consistently applied throughout the region.

A static water level was set for a 1% Annual Exceedance Probability (AEP) event. However the strategy also recognised that wave run up had the potential to pose a hazard to some parts of the foreshore. Although wave run up is related to the lake level, the effects of the hazard were identified as different and require a different management approach.

There was extensive community and stakeholder consultation during the development of the strategy. This involved public testing of the scientific analysis and the policy direction through a special consultative process in accordance with the Local Government Act 2002. Significant stakeholders were involved in that process including the hydro-electricity operators around the lake, Ngati Tūwharetoa, infrastructure providers, environmental groups and the Department of Conservation.

Waikato Regional Policy Statement

The Waikato Regional Policy Statement became operative on 20 May 2016. The regional policy statement introduced a new risk based framework for managing natural hazards including planning for defended areas. The District Plan is required by section 75(3)(c) of the Resource Management Act 1991 to give effect to the regional policy statement.

There are clear directions in the regional policy statement (section 13) that Council should plan for a 1% AEP flood event consistent with the direction in the Lake Taupō Erosion and Flood Strategy. There is also support for the flood hazard classification system based on a combination of water depth and velocity.

3. OPERATIVE DISTRICT PLAN APPROACH

The operative District Plan recognises a number of natural hazards which the district is vulnerable to. These hazards are discussed individually in Section 3I, however two generic objectives, each with associated policies, manage these hazards, including flooding. The current blanket approach to managing activities means a resource consent is required for any development undertaken within a flood hazard area. Flood hazards related only to the Tongariro and Tauranga Taupō Rivers and the Tokaanu Stream are identified and mapped on the district plan maps.

The simplistic approach of the operative District Plan does not use the risk based approach to managing flood hazards as it fails to reflect different risk profiles, creating regulatory costs for low risk activities and failing to appropriately address high risk activities. The flood areas identified on the planning maps do not specify any details such as water depth, velocity or hazard classification.

Operative Objectives and Policies

Objectives and policies for natural hazards are contained in Section 3I of the operative district plan. Section 3I discusses each of the natural hazards within the Taupō district, including flood hazards. The objectives and policies are broad and relate to natural hazards in general rather than the specific natural hazards identified.

OBJECTIVE 3I.2.1 Protection of activities, development and life from the adverse effects of natural hazards.

² Seiche is the free oscillation of a body of water as it 'slops' back and forth in an enclosed, or partially enclosed, basin

POLICIES

- i. Control the design and location of activities and development within identified natural hazard areas, or areas which have significant potential to be affected by a natural hazard, to avoid or mitigate the effects of the natural hazard.
- ii. Manage the location, design, and type of new activities and development to avoid or mitigate the adverse effects of flooding, erosion, ground rupture and deformation, hot ground and land instability on development and the community.

OBJECTIVE 3I.2.2 Activities and development do not create, accelerate, displace, or increase the effects of a natural hazard.

POLICIES

- i. Ensure that activities do not alter or change the nature of a natural hazard event, increase the intensity of a natural hazard event or increase the risk of the event occurring.
- ii. Ensure that activities and structures do not increase the risk to the community or the environment from the effects of natural hazards.
- iii. Ensure that where development occurs within areas subject to the effects of natural hazards, property owners and/or occupiers are informed of and manage the risk.
- iv. Control the location and presence of hazardous substances in areas subject to natural hazards to ensure that there is no increase in the effects of the natural hazard or risk to the community from hazardous substances.

Operative Rules

Section 4e.9 of the District Plan contains two rules specific to activities within the flood hazard areas identified on planning maps. Rule 4e.9.1 requires any activity (land use and subdivision) within an identified flood hazard area to be considered as a controlled activity for which a resource consent is required. The activity must also demonstrate compliance with the underlying environment (zone) rules and performance standards and shall not be identified elsewhere in the District Plan as a discretionary activity or located within an Erosion Hazard Area. If the proposal is unable to comply with any of these requirements, the activity status is elevated to a discretionary activity under Rule 4e.9.2.

Due to the horizontal alignment of the flood hazard area rules with other parts of the district plan, activities may also be considered as a controlled, restricted discretionary, discretionary or non-complying activity in other parts of the plan such as the Residential Environment. Activities within flood hazard areas therefore may be subject to additional matters of control, assessment criteria or open to any matter depending on the activity status applied through rules in the underlying Environments (zones). Assessment criteria is provided to help determine effects of the activity.

4e.9 Flood Hazard Area

4e.9.1 Any activity within the Flood Hazard Area which:

- i. complies with all the rules and performance standards for the Environment within which it is located;
 - ii. is not identified as a discretionary activity within another part of this Plan; and
 - iii. is not in the Erosion Hazard Area,
- is a controlled activity.

The matters which the Council reserves control for the purpose of assessment are:

- a. the minimum floor level of any structure;
- b. earthworks and any alteration of ground level;
- c. the location of any building or structure in relation to any overland flow path;
- d. the distance of any building or structure in relation to the banks of the river and Lake Taupō;
- e. the storage and use of any hazardous substance, excluding those substances used or stored for domestic purposes.

4e.9.2 Any activity within the Flood Hazard Area that is not a controlled activity is a discretionary activity.

ASSESSMENT CRITERIA

- a. Degree to which building, structural or design work to be undertaken can avoid or mitigate the effects of the natural hazard.
- b. The nature of the activity, its intended uses including whether the use is temporary or permanent and the degree to which other people are put at risk as a result of the activity.
- c. Degree to which the activity may increase, worsen or alter the effect of the natural hazard.
- d. Any increase of/in the flood hazard to other sites, including any effect on drainage function (outside of the bed of a river) during a flood event from the proposed activity.
- e. Any risk to the structure or proposed activity from erosion.

Issues

The following issues have been identified in relation to the operative provisions of Section 31 Natural Hazards as they apply to flood hazard.

1. Flooding from several rivers and Lake Taupō adversely affects people's safety and property. Rivers around Lake Taupō and Lake Taupō itself have a history of flooding as the result of high rainfall events. For example, severe flooding occurred in parts of the district in 1998 and in 2004. Flooding occurs as the result of rainfall events increasing the volume of water in rivers and Lake Taupō which then flows over the banks and floods adjoining land and lakeshore properties. Flooding can put people's lives in danger and property (land and buildings) can be lost or damaged.

The operative District Plan does not identify all of the known flood hazard areas associated with rivers and Lake Taupō. The operative district plan only identifies flood hazard areas around the Tongariro River, the Tauranga Taupō River and the Tokaanu Stream. We know from past flooding events that flooding can also occur from the Hinemaiaia Stream, the Kuratau River, the Whareroa Stream and Lake Taupō. These rivers and the lake were modelled because of their history of flooding and their location next to urban areas where there is a greater level of risk to people and property. There are a number of other waterways within the Taupō District which were not included in the study because they are spring fed and therefore not as susceptible to flood flows, have a small catchment area, or they are located in areas where there are relatively few people, limited property at risk and outside future growth areas.

2. New modelling information shows that some of the flood hazard areas in the operative District Plan are no longer expected to be affected by future 1% AEP flood events. Flood modelling continues to be refined and produce more accurate delineation of flood hazard areas. District Plan provisions need to be based on the most accurate information available.
3. The current flood hazard information doesn't consider the future effects of climate change and tectonic subsidence. The RMA requires the Council to have particular regard to the effects of climate change. As the district plan manages the subdivision and development of land which establishes buildings that are invariably occupied for more than 50 years it is important to include the effects of climate change and tectonic subsidence. This is because these two factors will impact flood extent, depth and frequency in the future.
4. The operative District Plan does not use a risk based approach to managing flood hazards as required by the Waikato Regional Policy Statement. The operative objectives and provisions do not consider the likelihood and consequence of flooding and do not manage development to

ensure that risks are reduced to an acceptable or tolerable level. Instead, the operative district plan identifies the flood hazard area and requires all development in these areas to apply for a resource consent to ensure that activities, development and life are protected from the adverse effects of flooding and activities and development do not create, accelerate, displace, or increase the effects of flooding. There is no distinction in the current management approach between areas that may have 10cm or over 1 metre of flooding. There is an assessment of the likelihood of flooding happening through the identification and mapping of flood hazard areas in a 1% AEP flood but without consideration of the potential effects of climate change. However, there is no assessment of the consequence of this flooding.

5. The operative District Plan provisions do not provide sufficient control over development in high flood hazard areas. The Waikato Regional Policy Statement requires the Council to control subdivision to avoid new structures within high flood hazard areas and habitable structures, significant community infrastructure and lifeline utilities where they will put a community at intolerable risk. The current District Plan provisions do not avoid increasing the exposure of people and buildings in the high flood hazard areas.
6. The operative District Plan provisions impose unnecessary regulatory costs on those with a low level of flooding. The flood hazard areas in the operative district plan do not distinguish between low and high flood hazard areas and impose the same rules across the flood hazard area. Therefore anyone wanting to undertake an activity in the flood hazard area is required to apply for a resource consent however severe the potential flooding may be. It is important to minimise regulatory costs for those properties where the risk to safety from flooding is low (the low or medium flood hazard areas).
7. The operative District Plan does not identify residual risk zones or control subdivision, use and development within these zones.

4. TECHNICAL INFORMATION ON FLOOD HAZARDS

Flood reports

After the development of the Lake Taupō Erosion and Flood Strategy, Opus International Consultants were engaged by Taupō District Council and Waikato Regional Council to assess and report on the flood hazards associated with the following:

- Hinemaiaia River;
- Tauranga-Taupō River;
- Tongariro River;
- Tokaanu Stream;
- Kuratau River;
- Whareroa Stream; and
- Lake Taupō.

These rivers and the lake were modelled because of their history of flooding and their location next to urban areas where there is a greater level of risk to people and property. There are a number of other waterways within the Taupō District which were not included in the study because they:

- Are spring fed and therefore not as susceptible to flood flows;
- Have a small catchment area; or
- Are located in areas where there are relatively few people, limited property at risk and outside future urban growth areas.

The assessments by Opus were presented in a suite of reports which were made available to the public. The reports were written for lay readers; however they are supported by a technical compendium describing the underlying assumptions and methodology. The technical compendium therefore provides the scientific basis and detailed analysis which underpins the various flood hazard reports. The flood reports are provided in Appendix 2 and the Technical Compendium is provided in Appendix 3.

Each report examines the catchment of the waterbody, analyses the flow regime of the waterbody, and other factors that affect flooding. The reports identify other factors that affect flooding such as sediment transport, lake level, ground deformation, climate change and waves. A computational hydraulic model developed using the MIKE suite of software of a 1% Annual Exceedance Probability (AEP) flood, adjusted for the effects of climate change was used to identify and map the areas affected by flooding, including depth and velocity of flooding from rivers. The depth of flooding from Lake Taupō was also identified from an analysis of water level variability, the effects of seiche and climate change, and topography. The reports then use the Waikato Regional Council flood hazard classification to categorise the flood hazard as high, medium or low. In addition to the reports the flood maps were provided to the Council in an ARC GIS format with data layers showing water velocity, depth and a combination of the two variables to identify the flood hazard classification.

The reports modelled a 1% AEP flood, considering the likely effects of climate change and tectonic deformation for the rivers, streams and Lake Taupō and mapped these flood hazard areas. The use of a 1% AEP event reflects the accepted best practice and is in accordance with the requirements contained in the Waikato Regional Policy Statement³ and the direction around hazard assessment in the New Zealand Coastal Policy Statement.⁴ The use of a 1% AEP event also recognises that subdivision of land establishes urban land uses that persist for over 100 years, and that buildings are invariably occupied for more than 50 years.

Although a number of the flood models used a finer grid, the results from the flood modelling in the reports were presented spatially in a series of cells based on a 5m by 5m grid. This grid of cells sat over the top of a digital terrain model developed using LIDAR survey information. The use of the 5m grid reflected a compromise between wanting to provide a high level of detail at a property level, while recognising that computer based modelling of the hazard has limitations. The data was presented to Council and made available to the public in an ARC GIS format with data layers showing water velocity, depth and a combination of the two variables to identify the hazard classification (high, medium and low). The public were therefore able to look at their properties and see the extent and depth of the proposed flood hazard notation.

Flood hazard classifications

The individual reports show the flood hazard as a product of the depth of water and its velocity – how fast the water is moving. There are low, medium and high classifications for a 1% AEP flood hazard. These are defined by their potential impact on people and property. The hazard has been mapped using the Waikato Regional Council Flood Hazard Classification as follows:

High hazard (red)

The Waikato Regional Policy Statement defines a high hazard as: “land that is subject to river or surface flooding during an event with an annual exceedance probability of no more than one per cent, and during such an event:

- the depth of flood waters exceeds one metre;
- the speed of flood waters exceeds two metres/second; or
- the flood depth multiplied by the flood speed equals or exceeds 1.”

Medium hazard (orange)

A medium hazard is defined as:

- the speed of flood waters is greater than one metre/second but equal to or less than two metres/second ; or
- the flood depth multiplied by the flood speed is equal to or greater than 0.5 and less than 1”

³ Waikato Regional Policy Statement, Implementation method 13.2.6.

⁴ New Zealand Coastal Policy Statement, Policy 24.

Low hazard (yellow)

A low hazard is defined as:

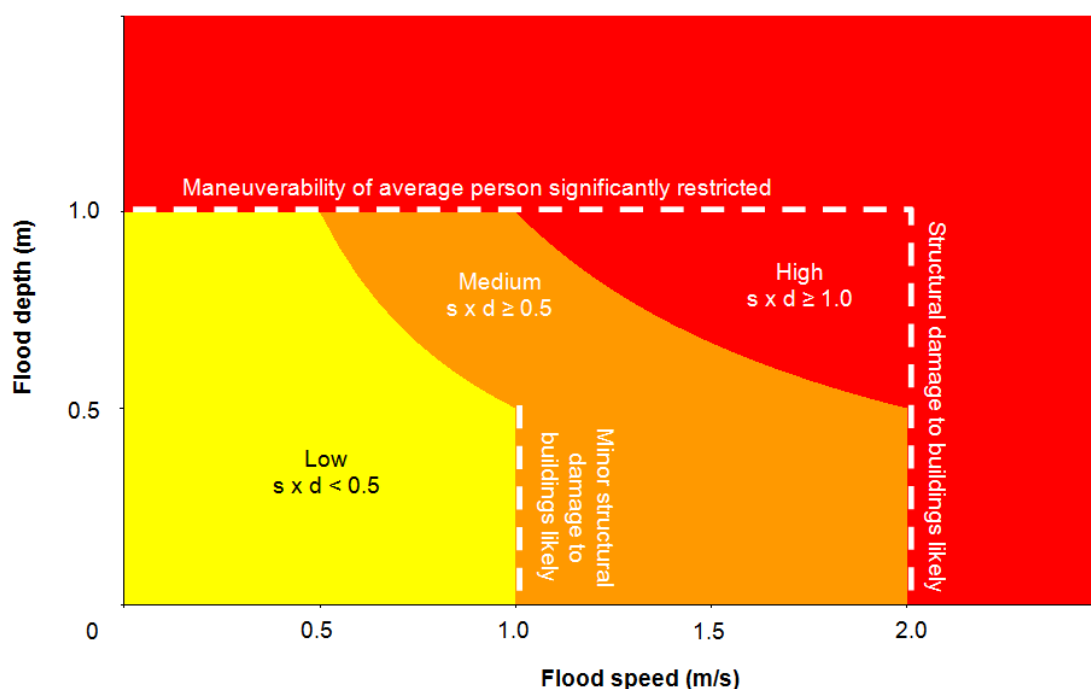
- the depth of flood waters is one metre or less;
- the speed of flood waters is one metre/second or less; or
- the flood depth multiplied by the flood speed is less than 0.5.”

Waikato Regional Council Flood Hazard Classification (Environment Waikato, 2008)

Description of river flood hazard categories

Category	Impact on people	Damage to property
Low	The combined depth and speed of floodwaters are unlikely to impede the manoeuvrability or stability of the average person.	Damage to property is likely to be non-structural and mainly due to inundation and deposition of sediment.
Medium	The combined depth and speed of floodwaters are likely to start to impede the manoeuvrability or stability of the average person.	Damage to property is unlikely to be structural provided that weak points such as windows and doors are retained above flood level.
High	The combined depth and speed of floodwaters are likely to significantly impede the manoeuvrability or stability of the average person.	Damage to property is likely to be widespread and structural, including instances where buildings have been raised above the ‘flood level’.
Defended	This flood hazard category identifies land that is within an identified river flood hazard area but has been subsequently included in a flood protection scheme that is managed and maintained by Environment Waikato.	

River flood hazard classification matrix (Environment Waikato, 2008).



Reference: Environment Waikato. 2008b: Karaka Stream river flood hazard assessment. Environment Waikato Technical Report April 2008 (Doc # 11301821).

Residual risk and defended areas

The Waikato Regional Policy Statement requires the Taupō District Council to identify and manage activities in residual risk zones:

“13.2.6 Control of subdivision, use and development (residual risk zones)

District plans shall identify residual risk zones and shall control subdivision, use and development within these zones so that residual risk is minimised. In doing so, particular regard shall be had to:

- a. the level of service provided by the structural defences;
- b. the physical, environmental and financial sustainability of the structural defences over a period of at least 100 years;
- c. the impact caused by an overwhelming or a structural failure of protection works; and
- d. a reduction in the ability of a community to respond to and recover from a natural hazard event.”

Residual risk is defined in the RPS as “*the risk associated with existing natural hazard structural defences such as stopbanks and seawalls, including the risk of failure of a defence or of a greater than design event occurring*”. Residual risk zone as “*an area subject to residual risk – that is the area that would be at risk from a natural hazard event but for a structural defence.*”

WRC and TDC have met regularly through the preparation of the flood hazard plan change to ensure that the relevant sections of the RPS are given effect to in the TDC plan change. Through these meetings the following have been agreed by both parties:

1. The definition of residual risk areas

That residual risk zones (to be included in District plans) are only to include areas that would be at risk from a natural hazard due to a failure of the defence structure during a specific hazard event. (A1576824)

2. That residual risk zones should be called defended areas.

That all areas landward of the structural defence (Residual Risk Zone) to be classified as ‘Defended Area’ and to include the level of service of the defence structure, i.e. “Defended Area up to 1% AEP (excluding the effects of climate change)”. (A1576824). It was agreed that the term defended areas was easier for people to understand as it described their purpose.

3. The purpose for identifying defended areas

The purpose of defended areas is to:

- inform/remind people that they are protected from flooding by a flood protection scheme and there is an element of risk e.g. the stopbank breaching;
- ensure that people (both landowners and councils) recognize this risk when they make development decisions that will result in development, designed to last 50+ years, behind a stopbank.

4. How to identify residual risk areas.

The process for identifying defended areas was agreed with WRC (via a conference call between TDC and WRC on 15 December 2015) as being as follows:

- a. Identifying the areas that would flood but for the presence of stopbanks. This was done by comparing the model without the structural defences (‘all stopbanks down’) at the current 1% AEP (or 2% AEP for the Tauranga Taupō River) flood to a model with the structural defences at the current 1% AEP (or 2% AEP for the Tauranga Taupō River). The current AEP event does not include the effects of climate change. It was used because this is the scale of event that the flood protection scheme has been designed for.

WRC confirmed that an assessment of single and/or multiple localised failures is not considered feasible with current information. Therefore, the 'all stopbanks down' approach is currently considered the most appropriate method to identify the areas potentially affected from a breach of the stopbank in a 1% AEP event.

Expert advice from Opus indicated that flooding from a breach in the stopbank at any point, in a 1% AEP event, is unlikely to significantly extend any further than the identified defended area. This provides an indication of the properties that are benefiting from being behind a stopbank.

WRC supplied GIS layers for land around the Tauranga Taupō River and Tongariro River. The Tongariro River model that WRC used is the OPUS pre 2004 2D model which they added the flood defences (2011 'As built' and Awamate stop bank) that were not captured in the OPUS models (2004/2009). Duncan Grant (Senior Engineer in the Technical Services | Integrated Catchment Management Directorate) from WRC manually went through the OPUS bathymetry and checked the crest heights of the flood defences against the 2011 survey data and corrected as appropriate.

- b. The defended areas were subsequently overlain with the 1% AEP flood (including climate change). Any of the defended areas that were overlaid by a flood hazard were removed. As the current 1% AEP event is smaller than the 1% AEP event (including climate change) the modelling shows some of the defended areas as also being potentially affected by flooding in the future. Taking a precautionary approach the more restrictive flood management provisions of the plan change were applied.
- c. The remaining defended areas were mapped as defended areas on the same maps as the flood hazard. The mapping shows the anticipated spatial extent rather than simply referring to the property. This is intended to provide landowners with more information to make land use decisions. (Option 1 in the WRC letter dated 18 November 2015. A1576824).
- d. The mapping of the defended areas resulted in many isolated cells amongst areas of flooding. In a practical sense that information would not have better informed property owners when they came to make land use decisions, instead it was more likely to have caused confusion. In response, data was removed where there were less than five contiguous cells as these isolated pockets of defended areas were considered too small to influence decision making on future land uses. WRC agreed that it was appropriate to remove these isolated small areas of defended areas and let TDC decide the size criteria to determine which were removed. This approach still gives effect to the RPS by identifying the residual risk zones, but does so at a resolution and scale which makes sense from a decision making perspective on individual properties. The resulting layer was named defended areas.

5. Defended areas are mapped for information only.

The RPS requires that TDC controls "subdivision, use and development within these zones (residual risk zones) so that residual risk is minimized."

At the meeting between TDC and WRC on 3 July 2015 it was agreed that:

- TDC will determine the appropriate level of control following discussions with the community and consideration of the tests set out in section 32 of the RMA.
- The minimisation of risk in these areas could be addressed through existing underlying planning provisions rather than applying an additional set of controls over defended areas
- There may be alternative options for informing residents in defended areas of the risk they may face e.g. LIMs.

WRC confirmed that the purpose of identifying defended areas (residual risk zones) is to inform people that they are protected from flooding by a flood protection scheme and there is an element of risk e.g. the stopbank may breach. The Regional Policy Statement requires councils to control subdivision, use and development within defended areas so that residual risk is minimised.

Council has identified the defended areas on the District Plan maps in accordance with the RPS. That information will also be made available through Project Information Memoranda when people undertake building projects.

Council believes that the minimisation of the residual risk in defended areas can be achieved without the need for rules in the District Plan due to existing effective mechanisms. Firstly, the defended areas are largely over existing and developed residential properties so the risk is already in existence. Although the District Plan provisions enable some extension of existing buildings, this is limited and is unlikely to substantially increase the number of people or building stock at risk. Secondly, any subsequent subdivision that might intensify residual risk can be managed through section 106 of the RMA. While lastly, the Rural Environment provisions impose a minimum lot size of 10 hectares further curtailing intensification on rural properties.

Council tested whether this approach reflected an acceptable level of risk to the community through the second phase of consultation. Council wrote to ratepayers who owned land identified in the defended areas to inform them that they had defended areas on their property but that no rules would apply as they were just for information purposes. Feedback was received from six ratepayers that had defended areas on their property. Once the concept of defended areas, and that the Council was not proposing rules for these areas, was explained only one ratepayer still had some concerns. Their concern was that the defended area on their property meant their property was protected from flooding by the WRC flood scheme, therefore the property is in a direct benefit area and required to pay rates to WRC for the flood scheme. However, they consider that their property is not protected by the WRC flood scheme and therefore should not have to pay WRC rates for the flood scheme.

Extreme wave activity

In addition to Opus assessing the flood risks around the margins of Lake Taupō, potential risk from extreme wave activity was also looked at.

While there are historical records for levels of the lake, there is none for wave activity. To judge the effects of extreme wave activity, Opus needed to combine the actual lake level record with the results from a computer model (Lakewave). Lakewave uses a variety of measures like beach profile, grain size of the sand on the beach and wind strength to help estimate the likely wave activity. There are a limited number of wind recording stations in the Taupō District, with the record from the official wind recording station at the Taupō airport used to inform the computer modelling. This is considered a major constraint on the usefulness of the modelling results as the Taupō airport wind record is likely to overestimate the wind strength on other parts of the lake.

Given the size of the lake, it was necessary to group areas likely to respond similarly together to enable the modelling to be undertaken. There were 10 distinctive response areas identified; each containing parts of the lakeshore with similar characteristics like prevailing wind and beach profile. Opus identified that the results from the modelling were more indicative rather than actual wave activity, but that they still indicate some areas will be more affected by extreme wave activity than others. The results are considered likely to be conservative, indicating greater wave run-up than will actually occur. Although the modelling work enabled Opus to identify properties potentially affected by extreme wave activity, the modelling could not take into account features like fences, vegetation or buildings which would impact how far a wave might move in from the shoreline.

While Opus have clarified that this information is useful as a guide, the constraints of the data availability (e.g. limited number of wind recording stations) and the modelling mean that analysis for individual properties is not possible. A memo from Opus explaining this is provided in Appendix 4.

Despite the limitations of the technical data, Council received feedback during consultation from Mercury Energy and the Omori Kuratau Preservation Society. They considered that the plan change should address extreme wave activity.

Council worked with Opus, NIWA and WRC to better understand the nature of the hazard, the limitations to the modelling and how best to improve the modelling data to a point where it could be used to support regulation in the District Plan. A number of elements became clear through those discussions:

- The effects of an extreme wave activity hazard are likely to be quite different to those of a flood. Where a flood hazard generally results in water inundating property, the extreme wave activity hazard was more likely to result in erosion of the lake foreshore.
- The planning response to extreme wave activity is likely to be different to that of flooding given the different nature of the effects.
- For the modelling results to be of use they need to be calibrated. This will necessitate the collection of wave and wind data in multiple locations around the lake over time.
- Discussions and site visits with technical staff from WRC indicated that the risks associated with extreme wave activity are unlikely to be as extreme as the modelled results from Opus.

In response, Council has decided not to include extreme wave activity as part of this plan change. This is because:

- The technical data from the modelling cannot be supported by expert opinion when applied at a property specific level for the purposes of resulting land use and subdivision.
- Substantial further work is required to better understand the nature and extent of the hazard and that will require time and resources. It would be counterproductive to delay the incorporation of the flood hazard information into the District Plan.
- The nature of the extreme wave activity hazard and the flood hazard are quite different. It is likely that a completely separate set of objectives, policies and rules would be required.
- Most of the areas that are likely to be significantly affected by extreme wave activity are already developed so the risk already exists.
- There are a range of existing mechanisms in place that can effectively manage the extreme wave activity hazard:
 - The foreshore protection area goes all the way around the margins of the Lake and requires a resource consent for buildings within 20m of the lake edge.
 - The Rural Environment provisions impose a minimum lot size of 10 hectares, effectively controlling the intensification of undeveloped rural land.
 - The identified future urban growth areas are not located in areas likely to be susceptible to extreme wave activity.
 - Section 106 of the RMA enables Council to consider the effects of subdivision on natural hazards.

It is anticipated that further investigation into the extreme wave activity hazard will be prioritised as part of the wider review of the natural hazards section of the District Plan.

5. QUALITY ASSURANCE PROCESSES

In October 2014 Council decided to commission a peer review of the methodology used in the flood hazard report to:

- ensure Council can have confidence in the data before it was released to the public.
- look holistically at all of the technical data rather than on an individual report basis after the plan change was notified.

The flood assessments prepared by Opus were independently peer reviewed by the National Institute of Water and Atmospheric Research (NIWA). NIWA's review⁵ confirmed that the methodology used was appropriate, while highlighting a number of more minor improvements that could be made to the reports. Council contracted both NIWA and Opus to discuss and address the minor improvements suggested by NIWA and provide a report on those changes. The peer review discussion report⁶, which was signed by both Opus and NIWA, outlines those changes that were made and provides a justification where it was decided that no change was required. As a result some of the original river and lake flooding reports were updated. Since the individual reports were written for the layperson, Opus was also contracted to prepare a technical compendium⁷ to address the gaps in technical information identified by NIWA in their peer review.

⁵ National Institute of Water & Atmospheric Research Ltd 2015: Peer review of Taupō District flood hazard reports

⁶ Opus International Consultants Ltd 2015 Peer Review Discussion Taupō District Flood Hazard Studies

⁷ Opus International Consultants Ltd 2015 Technical Compendium Taupō District Flood Hazard Studies

The peer review report prepared by NIWA is provided in Appendix 5, the peer review discussion prepared by Opus is provided in Appendix 6 and the Technical Compendium prepared by Opus is provided in Appendix 3.

As a result of this work the technical data has been peer reviewed and there is agreement on the assumptions and methodologies used in the flood hazard reports being the most appropriate for the purpose. This review process, combined with Waikato Regional Council's technical review of the Opus reports, provided Council with the confidence in the robustness of the technical information underlying the plan change.

The various flood hazard studies included consideration of the potential effects of climate change as recommended by the Ministry for the Environment in their guidance for local government. Subsequent to this, the Intergovernmental Panel on Climate Change has released more recent reports on global climate change culminating in the Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5)⁸. Opus reviewed these reports and the subsequent advice from the Ministry for the Environment. There are significant challenges downscaling the global models to particular catchments. In addition, the more recent climate scenarios are different to those used in the earlier guidance material. This makes a direct comparison difficult. Despite these difficulties, Opus were able to confirm that the climate change projections used in the modelling of the flood hazard for Lake Taupō and its various tributaries are consistent with, and within the range of, those projections provided in the latest Intergovernmental Panel on Climate Change reports. On that basis, and recognising the inherent uncertainty in modelling extreme flood events, they recommended that there was no need to adjust the climate change assumptions adopted for the various flood hazard models.

6. ENGAGEMENT

Council undertook two rounds of engagement with those directly affected by the new flood hazard information. Approximately 1280 properties are affected by flood hazard, (approx.104 of which are also affected by defended areas). Approximately 94 properties are only affected by defended areas and approximately 260 properties are currently in the flood hazard area in the operative District Plan but are not affected by the new flood hazard data.

The focus of the initial engagement was on sharing the information around the extent of the flood hazard and the nature of the risk. It extended from November 2015 for several months and enabled interested people to meet with council officers to better understand how the flood hazard was identified and what it might mean for them. During that period of initial engagement we also tested the following set of principles that would ultimately be used to guide the drafting of the proposed District Plan provisions:

- Principle 1 – Discourage development in high risk flood areas
- Principle 2 – Manage development in low and medium flood areas
- Principle 3 – Recognise existing investment
- Principle 4 – Plan for vulnerable people and emergency services
- Principle 5 – Provide for infrastructure that is not vulnerable to flooding

The feedback provided from the community and stakeholders assisted with the development of draft plan provisions.

In early 2016 a second letter and a copy of the draft provisions were sent to affected ratepayers and stakeholders for consideration and feedback. This second period of engagement was open for two months from 29 February 2016 and 63 responses were received. Of those responses, five property owners indicated that they believed there were differences between the digital terrain model underpinning the flood modelling and the current ground levels of their properties. This information was reviewed by Opus and resulted in a number of changes to the flood hazard areas.

⁸ IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland,

During this second period of engagement we also contacted those ratepayers whose properties were identified in the defended areas. The defended areas were identified through modelling by Waikato Regional Council to establish which properties would be at risk of flooding if flood stop banks were to fail. There is no intention to impose rules on the use of that land given the uncertainty around the level of risk associated with the hazard.

During the preparation of the plan change quality assurance processes identified that incorrect flood hazard layers for Tokaanu had been presented during consultation. This was subsequently corrected and those affected property owners were advised and invited to discuss the matter further with Council (May 2017).

For further information on the engagement undertaken and responses received see Appendix 7.

7. DECISION MAKING

Taupō District Council

Council has been involved in the development of this plan change through regular Council workshops. The following workshops/meetings have been held with Council:

<i>Date</i>	<i>Content</i>
25 March 2014	Background, technical data, Waikato Regional Policy Statement, what has been done so far, issues we have identified and key steps going forward
28 April 2015	Peer review of flood hazard assessments, Mapping application created to view extent of flooding and Ongoing discussions with Waikato Regional Council
28 July 2015	Lake level management by Mercury and Waikato Regional Council.
4 Aug 2015	Background to the project, planning approach, residual risk, communications, road map and wave run-up.
2 Feb 2016	Feedback from first round of consultation, defended areas, draft objectives, policies and rules and process from here.
20 June 2016	Feedback from consultation, draft objectives, policies and rules, wave run up and process from here.
10 Nov 2016	Update of technical data including individual site reassessment, revised mapping tool and Tokaanu data; update of planning provisions including subdivision and infrastructure rules and the importance of the Section 32 report; wave run up and the process from here
28 Feb 2017	Update of project and detailed explanation of the plan change including proposed approach for extreme wave overtopping
26 Sept 2017	Final plan change and Section 32 report. Approval for public notification.

Councillor working group

A councillor working group of three councillors was established in May 2015 to ensure members get a good understanding and involvement in the plan change, provide guidance to staff and to act as an advocate for the plan change.

<i>Meeting date</i>	<i>Topic</i>
26 May 2015	Introduction to the project and work streams
23 June 2015	Planning philosophy, consultation approach
7 July 2015	Residual risk
28 July 2015	Wave Run-up

Meeting date	Topic
1 September 2015	Recap, update and any questions
2 Feb 2016	Responses from first round of consultation, residual risk, draft objectives policies and rules.
29 August 2017	Briefing on the final plan change and Section 32 report

The Tongariro Turangi Community Board

The Tongariro Turangi Community Board has been updated on the progress of this plan change through the plan change development. The Tongariro Turangi Community Board were briefed as follows:

Meeting date	Topic
14 July 2015	Background, technical data, Waikato Regional Policy Statement, what has been done so far, peer review of flood hazard assessments, mapping application and ongoing discussions with Waikato Regional Council
8 Sept 2015	Background to the project, planning approach, residual risk, communications, road map and wave run-up.
14 March 2017	Update of project and detailed explanation of the plan change including proposed approach for extreme wave activity

8. EVALUATION OF PROPOSED OBJECTIVES

Section 32(1)(a) of the Resource Management Act requires the Council to examine the extent to which the objectives are the most appropriate way to achieve the sustainable management purpose of the Resource Management Act.

Any proposed objective and policy framework must give effect to higher order statutory directions.⁹ The objective and policy approach for Plan Change 34 is therefore directed by, and must give effect to, the Waikato Regional Policy Statement.

Appropriateness of the objectives

The new objectives proposed are:

3l.2.3 Keep people safe during a flood event with an annual exceedance probability of 1% and ensure that emergency services remain able to operate.

Objective 3l.2.3 seeks to keep people safe and ensure that emergency services are able to operate during a flood event with an AEP of up to 1%. The objective guides and determines whether development in a flood hazard area is appropriate and will therefore avoid inappropriate development to ensure that people will be kept safe and emergency services will be able to operate during a 1% AEP flood.

3l.2.4 Buildings and infrastructure are located and designed to ensure continued operation and to avoid structural damage during a flood event with an annual exceedance probability of 1%.

⁹ Resource Management Act 1991, section 75(3)(c).

Objective 3l.2.4 seeks to ensure that buildings and infrastructure are located and designed so damage to buildings is avoided and infrastructure can continue to operate during 1% AEP flood event.

Table 2 outlines the reasons these objectives are appropriate.

It is intended that the new objectives will address the management of development within flood hazard areas. The existing Natural Hazard objectives 3l.2.1 and 3l.2.2 will be retained in the District Plan as they will address the management of development within other natural hazard areas, but not flood hazard areas.

These objectives and related policies in the plan change also address the identified resource management issues by:

- directing the management of land use and subdivision to reduce the risks posed to people and property from flood hazards;
- incorporating all the known and verified flood risks into the District Plan and removing the flood hazard information that is no longer relevant;
- ensuring that the future effects of climate change and tectonic subsidence are built into the ongoing management of flood hazards;
- applying a risk based approach to the management of flood hazards;
- ensuring that Council is able to actively discourage activities and subdivision in high risk areas that will create intolerable risks to the community; and
- applying a risk based approach to reduce the regulatory costs for land owners in low and medium risk areas by enabling design led approaches to mitigate the hazard.

In order to evaluate whether the proposed objectives are the most appropriate way to achieve the purpose of the Resource Management Act they have been assessed by the extent to which they give effect to the relevant directions in the Waikato Regional Policy Statement (see **Table 1** overleaf).

The Waikato Regional Policy Statement gives effect to higher order statutory directions and achieves the sustainable management purpose of the Resource Management Act. It describes how natural hazard management will be undertaken in the region and, in particular, how different responsibilities associated with hazard management will be divided between the regional council and territorial authorities. Therefore by setting objectives and policies which give effect to the Waikato Regional Policy Statement, Plan Change 34 is effectively achieving the sustainable management purpose of the Resource Management Act.

In relation to natural hazards, the overarching objective in the Regional Policy Statement is:

3.24 Natural Hazards

The effects of natural hazards on people, property and the environment are managed by:

- a) Increasing community resilience to hazard risks;*
- b) Reducing the risks from hazards to acceptable or tolerable levels; and*
- c) enabling the effective and efficient response and recovery from natural hazard events.*

This objective is supported by policies and implementation methods which seek to:

- Implement a risk based approach to the management of natural hazards
- Identify (on planning maps) areas of high, medium and low flood hazard areas for a 1% AEP flood
- Incorporate the future effects of climate change and tectonic subsidence
- Manage the development of new buildings, subdivision, assembly care and community care activities, emergency services, and infrastructure activities to ensure that people and property are safe in flood hazard areas
- Ensure that the risk to people, the community, property and the environment does not exceed acceptable levels or risk is reduced to tolerable levels

- Avoid new buildings in high flood hazard areas as an intolerable risk due to the risk to life and property
- Control subdivision to avoid new buildings in high flood hazard areas
- Control new buildings, including habitable structures, new assembly care and community care activities, new emergency services, new subdivision and new infrastructure within high flood hazard areas and manage them in medium and low flood hazard areas
- Identify residual risk zones and manage activities within them to minimise risk

The objectives of the RPS were also assessed against a number of specific criteria in order to determine whether the objectives proposed are the most appropriate way to achieve the sustainable management purpose of the Resource Management Act (see **Table 2** overleaf).

TABLE 1

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
<p>3.24 Natural Hazards</p> <p>The effects of natural hazards on people, property and the environment are managed by:</p> <p>a) Increasing community resilience to hazard risks;</p> <p>b) Reducing the risks from hazards to acceptable or tolerable levels; and</p> <p>c) enabling the effective and efficient response and recovery from natural hazard events.</p>	<p>Policy 13.1</p> <p>Natural hazard risks are managed using an integrated and holistic approach that:</p> <p>a. ensures the risk from natural hazards does not exceed an acceptable level;</p> <p>b. protects health and safety;</p> <p>c. avoids the creation of new intolerable risk;</p> <p>d. Reduces intolerable risk to tolerable or acceptable levels;</p> <p>e. enhances community resilience;</p> <p>f. is aligned with civil defence approaches;</p> <p>g. prefers the use of natural features over man-made structures as defences against natural hazards;</p> <p>h. recognises natural systems and takes a 'whole of system' approach; and</p> <p>i. seeks to use the best available information/best practice.</p>	<p>13.1.1</p> <p>Regional and district plans shall incorporate a risk-based approach into the management of subdivision, use and development in relation to natural hazards. This should be in accordance with relevant standards, strategies and plans, and ensure that:</p> <p>a. new development is managed so that natural hazard risks do not exceed acceptable levels;</p> <p>b. intolerable risk is reduced to tolerable or acceptable levels</p> <p>c. the creation of new intolerable risk is avoided;</p> <p>d. any intolerable risk as a result of existing use and development is as low as reasonably achievable; and</p> <p>e. where intolerable risk remains, the risks will be managed until an acceptable level is achieved.</p>	<p>Objective 3I.2.3 and objective 3I.2.4 both introduce a risk based approach into the management of flood hazards in the Taupō district.</p> <p>The flood hazard has been classified into low, medium and high flood hazard areas based on the Waikato Regional Council classification system. This has enabled the plan change to target activities in the different flood hazard areas with different levels of regulation.</p> <p>In accordance with the policy direction in the Regional Policy Statement, the objectives and related policies send clear signals that substantial further development in high flood hazard areas will be avoided. Such development is recognised as potentially creating an intolerable risk to the community.</p> <p>In contrast, the objectives and policies also look to reduce regulatory costs for activities in the low and medium flood hazard areas through a strong focus on design as a way to mitigate the effects. This policy direction has been reflected in the permissive activity statuses in the provisions.</p> <p>The move to a risk based approach underpins the objectives of the plan</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
			change and provides a contrast to the blanket approach in the operative provisions.
		<p>13.1.2</p> <p>Waikato Regional Council will identify primary hazard zones in consultation with key stakeholders including but not limited to territorial authorities, tāngata whenua, infrastructure providers, and affected communities and these shall be recognised and provided for in regional and district plans.</p>	<p>This implementation method is not relevant to the plan change. Waikato Regional Council has yet to define any primary hazard zones in the Taupō district.</p>
		<p>13.1.3</p> <p>Waikato Regional Council will collaborate with territorial authorities, tāngata whenua and other agencies to undertake assessments of coastal and other communities at risk or potentially at risk from natural hazards, and develop long-term strategies for these communities. The strategies will, as a minimum:</p> <ol style="list-style-type: none"> a. include recommendations for any hazard zones that should be applied, including primary hazard zones; b. identify risks to the community and existing infrastructure from natural hazards; and c. identify options for reducing the risks to the community to an acceptable level and the relative benefits and costs of 	<p>Although developed prior to the Regional Policy Statement, the Lake Taupō Erosion and Flood Strategy (2009) was collaboratively developed and does provide direction on the management of hazards.</p> <p>The outcomes and policy direction of the Lake Taupō Erosion and Flood Strategy have been reflected in the plan change provisions and especially in the two objectives. Specifically, the Plan Change:</p> <ul style="list-style-type: none"> • Takes a long term approach to managing flood hazards including taking account of climate change and residual risk and having a precautionary approach. • Respects the natural river and catchment processes.

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
		<p>those options, including taking into account any effects on:</p> <ul style="list-style-type: none"> i. public access; ii. amenity values; or iii. natural character (including natural physical processes, indigenous biodiversity, landscape and water quality) 	<ul style="list-style-type: none"> • Takes a management approach based on a hierarchy of responses with the most favoured being avoiding the risk in the first instance where the risk is intolerable. • Encourages people to make sure that structures that they build will not unduly increase the risk from flooding.
		<p>13.1.4</p> <p>Waikato Regional Council will establish and co-ordinate a regional natural hazards forum to promote organisational integration and information sharing across jurisdictional and plan boundaries.</p>	<p>This implementation method is not relevant to the plan change.</p>
		<p>13.1.5</p> <p>Waikato Regional Council will:</p> <ul style="list-style-type: none"> a. collaborate with: <ul style="list-style-type: none"> i. territorial authorities to support the collection and analysis of natural hazard risk information; ii. territorial authorities, the Ministry of Civil Defence and Emergency Management, the Waikato Civil Defence and Emergency Management Group and other agencies to develop and implement public education and awareness programmes on 	<p>This implementation method is not directly relevant to the plan change as it relates to Waikato Regional Council functions. Nevertheless, the plan change will enable collaboration with and information provision to the Waikato Regional Council, such that it can achieve these methods.</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
		<p>natural hazards and their associated risks;</p> <p>iii. agencies involved in the property market, including insurance companies, lending agencies and real estate agencies to promote understanding and awareness of natural hazard risk to properties; and</p> <p>iv. research organisations; and</p> <p>b. store all natural hazard risk information that is available and relevant to the Waikato region, and share this information with territorial authorities and other relevant stakeholders; and</p> <p>c. advocate for:</p> <p>i. a proactive approach to natural hazard identification in district and regional plans;</p> <p>ii. the use of best practice approaches, including mātauranga Māori, to natural hazard identification and management of the associated risks; and</p> <p>iii. a strategic approach to development (including redevelopment) that seeks that any increase in risk from natural hazards (including residual risk) is minimised.</p>	
	<p>Policy 13.2</p> <p>Subdivision, use and development are managed to reduce the risks from</p>	13.2.1	Objective 31.2.3 and the supporting policies give effect to this policy and implementation method by focusing on the

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
	<p>natural hazards to an acceptable or tolerable level including by:</p> <ul style="list-style-type: none"> a. ensuring risk is assessed for proposed activities on land subject to natural hazards; b. reducing the risks associated with existing use and development where these risks are intolerable; c. avoiding intolerable risk in any new use or development in areas subject to natural hazards; d. minimising any increase in vulnerability due to residual risk; e. avoiding the need or demand for new structural protection works; and f. discouraging hard protection structures and promoting the use of alternatives to them, including natural defences in the coastal environment. 	<p>District plans shall control subdivision to avoid creating demand for new structures within identified high risk flood zones and identified primary hazard zones, and areas at high risk of coastal hazard.</p>	<p>importance of keeping people safe. They provide a very directive policy to make it clear that new buildings and major extensions will be avoided in areas with a high flood hazard.</p> <p>Similarly objective 3I.2.4 and its supporting policies emphasise the need to carefully manage activities in the areas with a high flood hazard. Policies i and v note the need to avoid new buildings and vulnerable infrastructure. This recognises that structural damage is likely and difficult to mitigate through design.</p> <p>Some provision is made in the plan change to enable small scale additions to existing buildings. This reflects the well-developed nature of affected residential areas, and a pragmatic recognition that people will continue to live in these dwellings. These small scale additions are not expected to be at a scale that significantly increases the risk to the safety of people or buildings in high flood hazard areas.</p> <p>Lastly, the policy directions in the District Plan related to future urban growth areas and the Rural Environment mean that intensification of rural land in areas with a high flood hazard is very unlikely. Even if an application for resource consent was made there are appropriate mechanisms</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
			to enable consideration of the potential natural hazards.
		<p>13.2.2</p> <p>District plans shall identify the location of areas:</p> <ul style="list-style-type: none"> a. potentially affected by coastal hazards, prioritising the identification of those areas at high risk; and b. affected by high risk flood hazard. 	The plan change does identify the areas affected by a high flood hazard. Objective 31.2.3 which seeks to keep people safe and related policy i which seeks to make sure people are informed of potential flood risks that may affect them.
		<p>13.2.3</p> <p>Regional plans shall control any use or development of structures within identified primary hazard zones to reduce the risk from natural hazards to an acceptable level over time.</p>	This implementation method is not relevant to the plan change. Waikato Regional Council has yet to define any primary hazard zones in the Taupō district.
		<p>13.2.4</p> <p>Regional plans shall:</p> <ul style="list-style-type: none"> a. control activities that divert or discharge flood water, including the importation of cleanfill into floodplains, in order to avoid or mitigate adverse effects of flooding and erosion; and b. ensure that an integrated catchment approach to flood management is adopted. 	This implementation method is not directly relevant to the plan change, however it is worth noting that the Regional Policy Statement clearly identifies that the management of activities that divert flood waters is a regional council function. For this reason the plan change has not sought to control activities such as earthworks or the construction of fences that might divert flood waters.

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
		<p>13.2.5</p> <p>Regional and district plans shall ensure that use and development within high risk flood zones and areas of high coastal hazard risk is appropriate, including by avoiding the placement of structures or development where these would be vulnerable to a natural hazard event or would place a community at intolerable risk. These include:</p> <ul style="list-style-type: none"> a. habitable structures; b. significant community infrastructure such as hospitals and emergency services; and c. lifeline utilities. 	<p>Both objective 3I.2.3 and objective 3I.2.4 seek to give effect to this policy and implementation method. New buildings in high flood hazard areas are to be avoided along with major additions to existing buildings. This is in recognition of the high likelihood of structural damage to buildings even if they have a floor level about the flood peak.</p> <p>While the implementation method specifically refers to habitable structures, the plan change has applied a precautionary approach to all new buildings in high flood hazard areas. This is because a range of buildings can be used for refuge during flood events, and many non-habitable buildings are valuable and house valuable equipment. The need to provide strong direction on the management or significant risks associated with natural hazards has been reinforced by the inclusion of natural hazards in section 6 of the Resource Management Act. This occurred after the Regional Policy Statement was made operative.</p> <p>Objective 3I.2.3 and its related policies specifically address the need to manage the location of community infrastructure including care facilities. More specifically the use of the term "avoid" in the policies</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
			and the non-complying activity status sends a clear signal that these facilities will not be appropriate in high flood hazard areas.
		<p>13.2.6</p> <p>Regional and district plans shall ensure that:</p> <p>a. Subdivision, use and development can only occur in a floodplain with an annual exceedance probability of 1% (where the floodplain does not match the definition of being a High Risk Flood Zone) or in an identified potential coastal hazard area (not being a High Risk Coastal Hazard) area where:</p> <ul style="list-style-type: none"> i. appropriate assessment of the risks has been undertaken and these risks will not exceed acceptable levels; ii. appropriate assessment of the likely effects has been undertaken, including the effects of any new structure or fill on the diversion of overland flows or any consequential increased runoff volumes; iii. the creation of a new, or exacerbation of an existing hazard, including those off site, and any adverse effects are avoided, remedied or mitigated; iv. any adverse effects of a 1% annual exceedance probability flood event on 	<p>Objectives 3l.2.3 and 3l.2.4 and their related policies give effect to this implementation method through a range of policy direction.</p> <p>The identification and classification of the flood hazard into low, medium and high has enabled provisions that can focus on the management of subdivision, use and development in low and medium flood hazard areas. The provisions recognise that it is possible to manage the flood risks through design in low and medium flood hazard areas.</p> <p>The policy framework has an emphasis on giving landowners the flexibility to design structures that are above the anticipated flood levels, or in the case of care facilities and infrastructure, to provide evidence through resource consent processes that appropriate design can mitigate the risks to an acceptable level.</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
		<p>habitable buildings are avoided or mitigated;</p> <p>v. has been designed and located to minimise the level of coastal hazard risk over its intended lifetime; and</p> <p>vi. any hazardous substance stored as part of the development, or during the construction, or found on or near to the site, will not create a hazard; or</p> <p>b. it is essential infrastructure, and:</p> <p>i. it cannot be located elsewhere; or</p> <p>ii. it will not increase the risk of or from natural hazard.</p>	
		<p>13.2.7</p> <p>District plans shall identify residual risk zones and shall control subdivision, use and development within these zones so that residual risk is minimised. In doing so, particular regard shall be had to:</p> <p>a. the level of service provided by the structural defences;</p> <p>b. the physical, environmental and financial sustainability of the structural defences over a period of at least 100 years;</p> <p>c. the impact caused by an overwhelming or a structural failure of protection works; and</p> <p>d. a reduction in the ability of a community to respond to and recover from a natural hazard event.</p>	<p>The plan change identifies residual risk zones as defended areas on the planning maps. This is supported by Objective 3I.2.3 and particularly policy i.</p> <p>Providing this information will enable people to make informed decisions about the potential risks associated with being behind flood protection structures.</p> <p>No further methods were included in the plan change following discussions with Waikato Regional Council staff. This was because:</p> <ul style="list-style-type: none"> The lack of a quantified level of risk in defended areas did not support

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
			<p>imposing regulatory costs on individual property owners.</p> <ul style="list-style-type: none"> • These affected areas are already well developed with limited opportunities for further intensification. • Many of the properties in the defended areas are also affected by the flood hazards and therefore aware of the risks. • There are relatively few residential properties that are located in the defended areas making this a small and confined issue.
		<p>13.2.8</p> <p>Regional and district plans shall control subdivision, use and development outside primary hazard zones, high risk flood zones, floodplains and residual risk zones to ensure:</p> <ol style="list-style-type: none"> a. they do not create or exacerbate natural hazard risks elsewhere; b. they are appropriate by considering: <ol style="list-style-type: none"> i. the likelihood that defensive structures or works will be required to protect the activity from the effects of natural hazards; ii. the vulnerability of the activity to the effects of natural hazards; iii. the potential for adverse effects on the wider local and/or regional community; and 	<p>The Plan Change provides information on the spatial extent of the identified defended areas. However there are no additional rules imposed on land use or subdivision through this Plan Change. This is because the defended areas are largely already developed and therefore the risk is an existing one. Secondly, section 106 provides Council with the ability to manage the risk of substantial intensification of urban areas. Lastly, the Rural Environment provisions impose a minimum allotment size of 10 hectares, further reducing the opportunity for intensification of the risk.</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
		<ul style="list-style-type: none"> iv. whether or not the development is consistent with a growth strategy or structure plan; and c. the role of natural features to avoid or mitigate natural hazards should be recognised and maintained or enhanced. 	
	<p>Policy 13.3</p> <p>The risks associated with high impact, low probability natural hazard events such as tsunami, volcanic eruptions, earthquakes and debris flows are considered, having particular regard to:</p> <ul style="list-style-type: none"> a. personal health and safety; b. damage and/or disruption to essential community services; c. the ability of a community to respond and recover; and d. civil defence readiness, response and recovery planning. 	<p>13.3.1</p> <p>Local authorities should consider the potential effects of high impact, low probability natural hazard events and address these, including by:</p> <ul style="list-style-type: none"> a. where possible avoiding new development in high risk hazard areas (for example, tsunami run-up areas). Development that may be directed away from such areas could include: <ul style="list-style-type: none"> i. residential, commercial and industrial uses (especially those involving hazardous materials); ii. lifeline utilities; and iii. emergency services facilities including police, hospital and fire services; b. using other land use planning measures where it is not feasible to restrict land uses to open-space uses. These may include controlling the type of development and uses allowed in hazard areas, and avoiding high value and/or high occupancy uses to the greatest degree possible; 	<p>This policy and related implementation methods are not directly related to the plan change. The high impact, low probability events that the policy and implementation methods 13.3.1 and 13.3.2 refer to will be managed through a more comprehensive review of the natural hazards section of the District Plan.</p>

Assessment of extent to which proposed objectives give effect to the Waikato Regional Policy Statement			
Objective	RPS Policy	RPS Implementation methods	Plan change objectives
		<ul style="list-style-type: none"> c. for tsunami risk, considering site-specific mitigation measures aimed at slowing, blocking, or redirecting water, or raising structures and habitable areas above the expected level of inundation; d. avoiding or restricting the location of facilities such as hospitals, schools and other facilities that may be difficult to evacuate quickly in areas at risk from tsunami, lahars, lava and pyroclastic flows, and debris avalanches; e. liaising with civil defence and lifeline utility agencies; and f. designing safeguards for critical community networks (for example, water supply). <p>13.3.2</p> <p>Waikato Regional Council will advocate for appropriate consideration and recognition of the likely effects of high impact, low probability natural hazard events, including through regional and district plans, structure plans, growth strategies and resource consent processes.</p>	

The two proposed objectives have also been assessed against the following criteria to ascertain their appropriateness:

TABLE 2

Category	Criteria	Comments
Relevance	Directed to addressing a resource management issue	The objectives directly address the resource management issues. The provisions that achieve the objectives address all the resource management issues.
	Focused on achieving the RPS (and therefore the purpose of the RMA)	The objectives focus on keeping people and buildings safe. The RPS natural hazards objective seeks to manage the effects of flooding on people, property and the environment so the risks are tolerable, people are resilient to risks and the responses to flood events are effective and efficient. Therefore the objectives achieve the RPS and therefore Part II of the RMA. The provisions of the plan change will ensure other aspects of the RPS, such as the risk based approach to managing natural hazards, are achieved by the plan change.
	Assists the council carry out its statutory functions	Councils statutory functions regarding flooding are outlined in section 6 (recognise and provide for the management of significant risks from flooding) and Section 31 (control of effects of the use, development, or protection of land, for the avoidance or mitigation of natural hazards). The objectives will enable Council to carry out these functions.
	Within scope of higher level documents	The only relevant higher-level document is the Waikato Regional Policy Statement. As outlined above the objectives are within scope of the natural hazards section of the RPS.
Feasibility	Acceptable level of uncertainty and risk	The main part of the plan change that contains uncertainty are the flood risk mapping and the defended area mapping. The mapping of flood hazard areas contains some uncertainty as: <ul style="list-style-type: none"> • The flood studies provided a District-scale assessment of the potential flood risk over the longer term but they are going to be used as flood risk

Category	Criteria	Comments
		<p>assessments for individual sites or building platforms.</p> <ul style="list-style-type: none"> • The use of the 5m grid reflects a compromise between wanting to provide a high level of detail at a property level, while recognising that computer based modelling of the hazard has limitations. • The inclusion of 100 year climate change and tectonic deformation data in the model over emphasises the effect of these in the early years of flood modelling • The resolution of the data used in the model, its calibration, changes which have occurred since the model was developed, and the constraints of the actual modelling. <p>However, the flood data is the most accurate data we have and is a significant improvement on the existing flood hazard data in the operative District Plan. WRC has confirmed that the flood data has been mapped at an acceptable scale.</p> <p>The mapping of the defended areas contains some uncertainty as:</p> <ul style="list-style-type: none"> • The methodology used to map the defended areas is a banks down compared with a banks up approach. Practically however, a scenario of all the stop-banks failing at the same time is very unlikely. WRC state that an assessment of single and/or multiple localised failures is not feasible with current information. • The likelihood of a breach in a stop-bank is considered to be extremely low however WRC cannot quantify what this risk is.
	Realistically able to be achieved within the Council's powers, skills and resources	The objectives and provisions can be achieved within Council's powers, skills and resources. Activities and development that require a resource consent will be processed by the resource consents team. Permitted

Category	Criteria	Comments
		activity standards will be checked for compliance through the building consent application process.
Acceptability	Consistent with identified iwi/Maori and community outcomes	<p>The objectives and provisions are consistent with the Council Community Outcomes as they:</p> <ul style="list-style-type: none"> • will not limit the community's ability to prosper in a thriving economy with a diverse range of rewarding employment opportunities; • will not limit a shared responsibility for places we are proud of; and • will ensure that Council is connected with its communities advocating for their social and cultural well-being. <p>By keeping people, buildings and infrastructure safe from the risks of flooding Council is advocating for the social and cultural well-being of the community.</p> <p>The Tūwharetoa Maori Trust Board staff have been involved throughout the preparation of the plan change. Their feedback has been taken into account and addressed. See Appendix 7.</p> <p>There has been very little feedback from property owners during the two phases of consultation prior to notification of the plan change. This indicates that ratepayers and property owners are not concerned about the proposed change of approach to the management of flood risk through the district plan.</p>
	Will not result in unjustifiably high costs on the community or parts of the community	<p>The provisions will reduce the existing costs on some properties, as there is no requirement for a resource consent to erect a building in the low and medium flood hazard areas provided that the floor level is above the flood level.</p> <p>Those landowners with properties in high flood hazard areas will have only a very limited ability to further develop. This reflects</p>

Category	Criteria	Comments
		the clear direction in the RPS. This may affect their property values and ability to secure insurance. However, they can continue to utilise their property and undertake minor additions to their buildings.

In light of the evaluation contained in Table 1 and Table 2 above, the proposed objectives 3I.2.3 and 3I.2.4 are considered to be the most appropriate way to achieve the sustainable management purpose of the Resource Management Act as they give effect to the higher order statutory directions in the Waikato Regional Policy Statement. The objectives also discharge the Council's functions under subsection 31(1)(b)(i) of the Resource Management Act which requires Council to control any actual or potential effects of the use, development, or protection of land including the avoidance and mitigation of natural hazards.

9. PROPOSED DISTRICT PLAN PROVISIONS

The overarching objectives of the plan change relate to keeping people safe and protecting buildings and infrastructure. These new objectives are specific to the flood hazard and will sit separately to the generic natural hazard objectives in the District Plan.

The development of the proposed District Plan provisions was driven by a need to reflect the risk based approach in the regional policy statement. This led to a strong emphasis on avoiding increasing the exposure of people and buildings in the high hazard areas. Conversely, there was also an emphasis on minimising regulatory costs for those properties in the low or medium flood hazard areas.

It was recognised that most of the communities within the identified flood hazard areas were already well established with limited opportunities for intensification or expansion. This drove a need to recognise the existing investment and provide the flexibility for some additional building of a minor scale. Setting that acceptable scale of development relied upon engagement and testing with the community.

The engagement had identified the importance of removing unnecessary compliance costs. In response the proposed provisions look to enable well designed development for new buildings and extensions to buildings in the low and medium flood hazard areas through the use of a permitted activity status. In those situations a minimum freeboard of 300mm was identified, reflecting the historical practice for building consents in the district. In the high flood hazard areas new buildings and large extensions are not encouraged. This reflects the approach in the RPS of avoiding increasing the exposure of people and buildings in the high hazard areas. However as some high flood hazard areas are already developed small extensions to buildings in high flood hazard areas are permitted provided they are no lower than the existing building floor level.

A more conservative approach was identified for emergency services and care facilities for more vulnerable people. Both of these types of activities are discouraged in high flood hazard areas and require a resource consent in the low and medium flood hazard areas. This results from recognition of the importance and vulnerability of these activities in a flood event.

To ensure that the exposure of people and buildings in the high flood hazard areas is not increased subdivision in high flood hazard areas is discouraged except where the building platforms are outside of the high flood hazard area. Subdivision within the low and medium flood hazard areas is not controlled as the rule for new buildings in these areas adequately addresses the potential risks from flooding.

There was also a conscious decision to enable infrastructure maintenance, operation and construction as much as possible through the use of a permitted activity status. This reflected both the direction through national policy statements and standards, as well the desire to minimise compliance costs. However this

desire to be enabling needed to be balanced by the reality that infrastructure covers a wide variety of structures and services, and that some of those may be vulnerable to flood hazards and require assessment.

For further information on the proposed district plan provisions see Appendix 9 and an explanation of the proposed policies and rules see Appendix 10.

10. EVALUATION OF THE PROPOSED PROVISIONS

Having established that the proposed objectives outlined above are the most appropriate way of achieving the purpose of the Act, section 32(1)(b) of the RMA requires Councils to examine whether the provisions are the most appropriate way to achieve the objectives by:

- (i) identifying other reasonably practicable options for achieving the objectives;
- (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and
- (iii) summarising the reasons for deciding on the provisions.

Other reasonably practicable options for achieving the objectives

The following options are considered the most practicable to achieve the flood hazard objectives 31.2.3 and 31.2.4:

- Option 1: Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property (Plan Change 34 as proposed).
- Option 2: Identification of new flood hazard areas and retain operative District Plan provisions.
- Option 3: Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991.

Each of the three options identified above have various benefits and costs associated with them. Each option is briefly evaluated below, while a more detailed assessment is provided in Appendix 10. This detailed evaluation has determined that Option 1 is the best overall option to achieve the objectives.

Option 1: Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property (Plan Change 34 as proposed).

Option 1 would introduce a specific objective, policy and rule framework for flood risk management. The objectives, policies and rules relate to those properties identified as being affected by the flood hazard modelling data provided by Opus. This data identifies low, medium and high flood hazard areas. The rules use the hazard classification to apply different levels of regulation depending on the potential risks.

This option, as directed by the Waikato Regional Policy Statement, is a risk based approach to manage people and property within low, medium and high flood hazard areas. This option will achieve the sustainable management purpose of the RMA by giving effect to the Waikato Regional Policy Statement, and meet the Council's obligations under section 31(1)(b)(i) and section 6(h) of the RMA.

Whilst there are costs to the ratepayer associated with undertaking a Plan Change under the RMA, the introduction of the risk based framework will provide more certainty for communities and developers and avoid inappropriate development within flood hazard areas. This avoids risk and the potential for greater costs to these affected communities and Taupō ratepayers. This targeted style of resource management will also remove the current blanket approach to the management of development in flood hazard areas by being more responsive to the likely level of risk. For example, under this approach some development can be undertaken without resource consent where the risk is considered negligible. In comparison under the operative District Plan all development in flood hazard areas must obtain a resource consent.

Option 2: Identification of new flood hazard areas and retain operative District Plan provisions

Option 2 would retain the operative District Plan objectives, policies and rule framework, but with the planning maps being updated with the new flood modelling data provided by Opus.

Proceeding with Option 2 would still require Council to undertake a plan change. Council would not meet its statutory obligations to give effect to the Waikato Regional Policy Statement as the plan change would not use the risk based approach or avoid intolerable risk.

Option 2 would retain the blanket resource management approach of the operative District Plan. However there would be costs associated with undertaking the plan change process to update the flood hazard areas on the planning maps with the new flood data, costs associated with more properties affected by flooding and therefore more landowners being subject to regulatory costs i.e. resource consents. The possible benefits of identifying low, medium and high flood hazard areas in the District Plan are outweighed by the costs to undertake the plan change, ongoing regulatory costs (as the operative rules will not change) and not meeting legislative requirements.

Option 3: Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991.

Option 3 would involve the removal of the existing flood hazard rules from the District Plan, identification of new flood hazard areas on the District Plan Maps and the reliance of the Building Act to manage buildings in these flood hazard areas.

Utilising the Building Act would allow Council to manage minimum floor levels but only for housing, communal residential and communal non-residential buildings. However, under the Building Act there is no ability for Council to prevent activities from establishing within flood hazard areas. This approach therefore does not avoid risk to people and property to the degree directed by the RPS, so Option 3 would not give effect to the RPS and therefore not meet Council obligations under the RMA.

Option 3 would remove regulatory costs for landowners affected by flood hazards, as resource consents would no longer be required. However, there would still be costs for undertaking the plan change process to introduce the new flood hazard areas onto the District Planning maps and costs of not meeting the statutory requirements or managing the risks of flooding.

For further information on the evaluation of the reasonably practicable options for achieving the objectives see Appendix 9.

Assessment of the efficiency and effectiveness of the provisions in achieving the objectives and reasons for deciding on the provisions

Section 32 (2) requires the assessment of the efficiency and effectiveness of the provisions in achieving the objectives (section 32(1)(b)(ii)) to:

- (a) Identify and assess the benefits and costs of environmental, economic, social and cultural effects that are anticipated from the implementation of the plan change including opportunities for
 - o economic growth that are anticipated to be provided or reduced
 - o employment that are anticipated to be provided or reduced; and
- (b) if practicable, quantify the benefits and costs referred to in paragraph (a); and
- (c) assess the risk of acting or not acting if there is uncertain or insufficient information.

Provisions are the policies, rules or other methods that give effect to the objectives.

The provisions have been divided into the following activity groups for ease of assessment:

- Awareness of flood hazard areas
- New buildings
- Additions to buildings (major and minor additions)
- Assembly care and community care activities
- Emergency services activities
- Subdivision
- Infrastructure

- Defended areas

Awareness of flood hazard areas

Policy 31.2.3i and the mapping of the high, medium and low flood hazard areas and the defended areas on the district plan maps will ensure that individuals and communities are aware of a potential flood hazard that may affect their personal safety and the safety of their buildings and property. These provisions will achieve both objectives 31.2.3 and 31.2.4.

The approach for identifying flood hazard areas is:

- Mapping the high, medium and low flood hazard areas (using Waikato Regional Council's Flood Hazard Classification), for a 1% AEP flood on the district plan maps and attaching rules to them.

The results from the flood modelling have been presented spatially in a series of cells based on a 5m by 5m grid. This grid of cells was placed over the top of a digital terrain model developed using LIDAR survey information. The use of the 5m grid reflected a compromise between wanting to provide a high level of detail at a property level, while recognising that computer based modelling of the hazard has limitations.



The table below outlines the benefit cost assessment and any opportunities for improved or reduced economic growth.

A. Other reasonably practicable options for achieving objectives (s32(1)(b)(i):	
<ul style="list-style-type: none"> • There are no other reasonably practicable options for identifying flood hazard areas where the information is accessible, available to the public and able to be used to manage subdivision, use and development. However mapping could be done at a finer grain which would be very expensive or involving less detail which would not provide accurate enough data for assessing resource and building consents 	
B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> • Communities and individuals are informed of areas subject to flood hazards in a 1% AEP flood. • Gives effect to the RPS implementation method 13.2.2(b) to map in the district plan the high flood hazard areas. • Enables management of subdivision, use and development through the District Plan in flood hazard areas as they are identified. 	<ul style="list-style-type: none"> • Does not provide information to individuals and communities of areas subject to flood hazards in a greater than 1% AEP flood.
Economic	
<ul style="list-style-type: none"> • Assists property owners in being aware of potential flooding and therefore able to direct property investment away from the high flood hazard areas. 	<ul style="list-style-type: none"> • Costs associated with the plan change in particular the cost of running the flood model to produce the flood mapping and quality assurance to ensure it is accurate • Possible change in valuation of existing properties within new flood hazard areas. • Potential impact on insurance costs
Social	

<ul style="list-style-type: none"> • Greater public awareness of flood hazard areas • Health and safety of people enhanced as development is likely to be directed away from flood hazard areas. 	<ul style="list-style-type: none"> • Uncertainty within the community around what impact the plan change may have although this risk minimised through the two rounds of consultation undertaken prior to notification of the plan change.
Cultural	
<ul style="list-style-type: none"> • Three Marae (Waihi Marae, Tokaanu Marae, Poukura Marae) are affected by flood hazards. Proportionally higher area and number of properties that are multiple owned Maori land are affected by flood hazard. 	
C. Economic Growth and Employment Opportunities (s32(2)(a)(i)(ii))	
<p>The mapping of flood hazard areas may reduce the economic growth and employment opportunities in the high flood hazard areas. However there are only two residential zoned sections that have more than 100m² of high flood hazard that are not already developed that would be suitable for development. On the other hand, identifying appropriate locations for development and investment which is not at risk of flood damage or disruption is likely to better enable economic growth and employment opportunities.</p>	
D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))	
Efficiency	
<p>Mapping the low, medium, and high flood hazard areas on the district plan maps is an efficient way to ensure individuals and communities are aware of the location and scale of flood hazard areas. Whilst the one off cost of running the flood hazard models is high it provides an extent and scale of the flooding that can be easily mapped on the district plan maps. The last flood modelling was completed in the 1990s and is no longer accurate, does not include climate change or tectonic deformation and does not identify the scale of flooding, just the extent.</p>	
Effectiveness	
<p>Mapping the low, medium, and high flood hazard areas on the district plan maps is an effective way to ensure individuals and communities are aware of the location and scale of flood hazard areas and to keep them and their buildings and properties safe.</p>	
E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))	
<p>The current flood hazard mapping only identifies flood risk from three rivers does not include climate change or tectonic deformation and does not identify levels of risk. The flood hazard models and resulting mapping is only as accurate as the inputs to the model and accurate on a district rather than property scale. However the new flood information is available at a property scale so can be used by property owners as a conservative indication of flooding in a 1% AEP. If property owners wish to gain more site specific flooding information they can engage a flooding expert to provide this. It is better that people are aware of the conservative extent of flooding at a property level than have no information at all. The conservative nature of the model may overstate the flood hazard but as the rules are relatively permissive and require floor levels to be above individual site flood depths this will ensure that properties are not unnecessarily subject to regulation where there is low risk of flooding. The Technical Compendium states that <i>“while every endeavour was made to use the highest resolution data during the Taupō District flood studies, there remains some residual uncertainty at the specific site or property level. This uncertainty is likely to be greatest at the boundaries of any mapped inundation zone. Consequently the flood hazard areas should be regarded as ‘indicative’ rather than ‘definitive’.</i>” It is recognised that the model is conservative and so can be used by property owners as a conservative indication of flooding in a 1% AEP event, including the potential effects of climate change.</p>	
F. Appropriateness	
<p>Mapping the location and scale of flood hazard areas within the District Plan is an appropriate mechanism for ensuring people are kept safe, emergency services remain able to operate, and buildings and infrastructure are not damaged during a 1% AEP flood event. This is because they will be aware of the location of and depth of flood hazard areas as the flood hazard information on the district plan maps is easy for the public to find and understand. The only alternative practicable mechanisms for mapping this information relate to the scale at which the flood modelling could be undertaken. For example the flood hazard areas could be mapped at a high</p>	

level of detail at a property level, which would be very expensive, or at a greater scale, which would not provide the required certainty for individual property owners. If flood hazard areas are not mapped and this information is not easily accessible people will not know where flood areas are and the depth of flood waters in a 1% AEP flood.

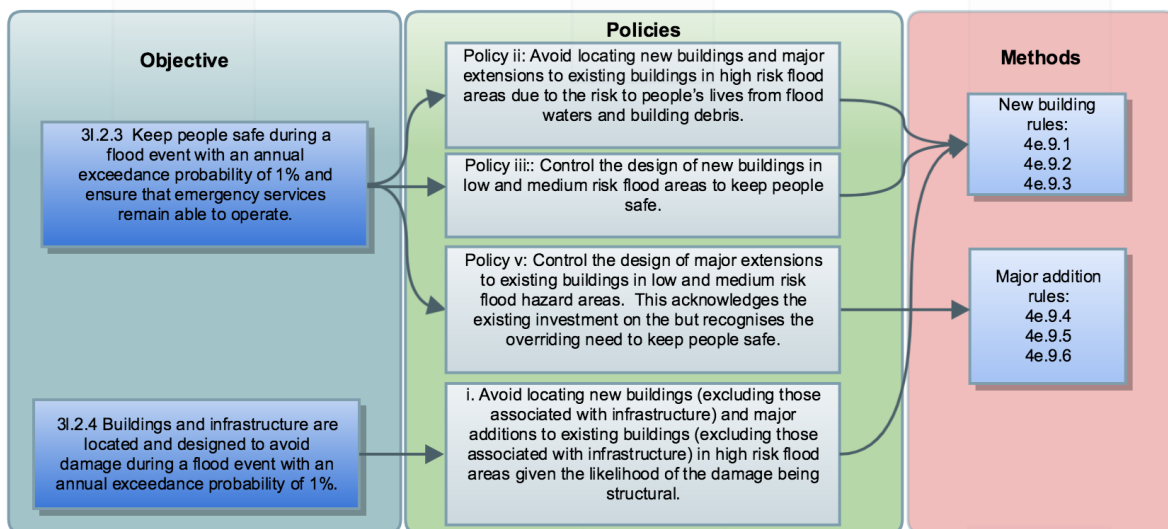
G. Reasons for deciding on the provisions (s32(1)(b)(iii))

The flood model has provided a spatial extent and depth of flood hazards in a 1% AEP flood. This gives effect to the implementation methods 13.2.2 (b) and 13.2.6(a) in the RPS. It will assist landowners to take into account the effect of flood hazards on their safety and that of their buildings and properties when planning to undertake an activity, development or subdivision on a property in the flood hazard area. It is therefore considered to be the most appropriate and effective mechanism in achieving objective 3I.2.3 and 3I.2.4.

New buildings and major additions

Policies 3I.2.3ii, 3I.2.3iii, 3I.2.3v and rules 4e.9.1, 4e.9.2, 4e.9.3, 4e.9.4, 4e.9.5 and 4e.9.6 will ensure that new buildings and major additions are not built in high flood hazard areas where people’s lives would be put at risk during a flood. Major additions are defined as additions with a gross floor area that exceeds 15m². The lower limit of 15m² was chosen, as it was the size of a reasonable ensuite or bedroom and so is an appropriate benchmark between major and minor additions.

Policies 3I.2.3(iii) and 3I.2.3(v) and rules 4e.9.2, 4e.9.3, 4e.9.5, 4e.9.6 will ensure that new buildings and major additions in the low and medium flood hazard areas are designed to avoid flood inundation of buildings so people are kept safe during a flood event. Policies 3I.2.4i and 3I.2.4ii and rules 4e.9.1, 4e.9.2, 4e.9.3, 4e.9.4, 4e.9.5 and 4e.9.6 will ensure that new buildings and major additions are not built in high flood hazard areas, so will reduce the likelihood of structural damage during a flood event, and new buildings and major additions in the low and medium flood hazard areas are designed to avoid damage to those buildings in a flood event. This focus on design in low and medium hazard areas is in recognition of the existing investment in the mostly developed residential areas, and the ability to mitigate the effects through design.



The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth and improved or reduced employment.

A. Other reasonably practicable options for achieving objectives(s32(1)(b)(i):

- The activity status for different activities within flood hazard areas could be varied, for example new buildings in high flood hazard areas could be discretionary and new buildings in low and medium flood hazard areas could be controlled.

B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> The discouragement of new buildings and major additions in high flood hazard areas and control of design of new buildings and major additions in low and medium flood hazard areas will help minimise adverse effects of flooding on the safety of people and property. 	None
Economic	
<ul style="list-style-type: none"> A more permissive approach for new buildings and major additions in low and medium flood hazard areas reduces resource consents costs. Objectives, policies and rules provide certainty that new buildings and major additions will generally be allowed in the low and medium flood hazard areas but discouraged in the high flood hazard areas. Financial impact of a flood event is potentially reduced as new buildings and major additions are discouraged in high flood hazard areas and remain undamaged in the low and medium flood hazard areas. This reduces the cost of response and recovery during and after a flood event. Policy framework supports integrated resource management and aligns to regional flood hazard management objectives. 	<ul style="list-style-type: none"> Potentially high costs for resource consents for new buildings and major additions in high hazard areas but this should send a signal to avoid new development in these areas. Reduced development potential of land in high flood hazard areas. May temporarily reduce property values of land in high flood hazard areas, but will reflect the true value of land over time. Some potential for reduction in investment in vacant land in high flood hazard areas but majority of sites are already developed or rural marginal land. There are only two residential zoned sections that have more than 100m² of high flood hazard that are not already developed that would be suitable for development. Costs associated with the plan change. Monitoring costs for Council in ensuring the District Plan is implemented and adhered to.
Social	
<ul style="list-style-type: none"> Certainty is provided for the community that new development in the high flood hazard areas is inappropriate and new buildings in the low and medium flood hazard areas is appropriate, provided buildings are designed to mitigate the effects of flooding. Health and well-being of communities (people will be kept safe) will be enhanced as new development will be directed away from high flood hazard areas and designed appropriately in low and medium hazard areas. 	None
Cultural	
<ul style="list-style-type: none"> Certainty is provided to Maori Land owners that new development in the high flood hazard areas is inappropriate and new buildings in the low and medium flood hazard areas is appropriate, provided buildings are designed to mitigate the effects of flooding. Health and well-being will be enhanced as new development will be directed away from high flood hazard areas and designed appropriately in low and medium flood hazard areas. 	<ul style="list-style-type: none"> There is a high proportion of multiply owned Maori land within the identified flood hazard areas. There may be some reduction in development potential for this land especially land that is within high flood hazard areas. However much of this land is marginal for development for other reasons. None of these areas have been identified as future urban growth areas. Any loss of development potential is considered to be outweighed by the risk of developing in these flood prone areas. There has been

	limited feedback from maori land owners on this issue.
C. Economic Growth and Employment Opportunities (s32(2)(a)(i)(ii))	
<p>The policy approach for new buildings may reduce the economic growth and employment opportunities in the high flood hazard areas. It provides a clear signal to the market of the risks associated with development in these areas and that investment is better directed to other areas which are not identified as a high flood hazard area. However there are very few high hazard areas that are not already developed that would be suitable for development. There are only two residential zoned sections that have more than 100m² of high flood hazard area that are not already developed that would be suitable for development.</p> <p>The policy approach will support economic growth and employment opportunities in the low and medium flood hazard areas by providing a clear direction that new development is permitted provided it is appropriately designed. The reduced risk of damage and disruption should ensure that investment opportunities and returns are enhanced.</p>	
D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))	
Efficiency	
<p>The amended policy approach for new buildings and major additions will ensure alignment with the RPS risk management approach (Objective 3.24(b) and Implementation method 13.1.1) and control the use and development in high flood hazard areas (implementation method 13.2.5). The proposed provisions are efficient as they clearly state the approach for new buildings and major additions in flood hazard areas and will do so at a lower cost relative to benefits.</p> <p>The proposed approach improves efficiency as it removes the requirements for consent in the low and medium flood hazard areas (provided they meet identified requirements). The significant majority of affected residentially zoned land falls within the low and medium flood hazard areas.</p>	
Effectiveness	
<p>The provisions are very specific about the development of new buildings and major additions in the food hazard areas. This will ensure that intolerable risks to people's safety, their buildings and properties will be avoided through restricting new buildings in the high flood hazard area and by ensuring appropriate design in the low and medium flood hazard areas.</p>	
E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))	
<p>The provisions for discouraging new buildings and major additions in high flood hazard areas (non-complying activity) enable people to provide alternative information (through a flooding expert) to show that their property is not subject to high flood hazards or there is a way of adequately mitigating that hazard.</p> <p>Not acting would result in not giving effect to the RPS risk management approach especially that of not intensifying development in high flood hazard areas as new buildings and major additions in all flood hazard areas are currently a controlled activity under the operative district plan. Not acting would allow inappropriate development and activities within high flood hazard areas resulting in people and property not being safe during a 1% AEP flood event.</p>	
F. Appropriateness	
<p>The provisions for new buildings and major additions achieve the objectives, the purpose of the RMA and give effect to the RPS. The only other practical and effective alternative for managing new buildings and additions within flood hazard areas would be through varying the activity status set by the rules. The proposed rules balance the flooding risk without making regulatory costs too high. This makes the balance of activity statuses the most appropriate way to achieve the objectives.</p>	
G. Reasons for deciding on the provisions (s32(1)(b)(iii))	
<p>The RPS directs Council to ensure that use and development within high flood hazard zones is appropriate, including avoiding the placement of structures or development where these would be vulnerable to a natural hazard event or would place a community at intolerable risk (Implementation method 13.2.5).</p>	

The RPS seeks that habitable structures, significant community infrastructure and lifeline utilities are controlled in high hazard areas. However, Council has decided to include all new buildings and major additions in its approach to restrict intensification in high flood hazard areas to avoid increasing the exposure of people and buildings to flood hazards. Uninhabited buildings can house equipment which has significant value and could be affected during a flood event. Also damage to buildings during a flood event can create debris that would pose a risk to people. In addition workplaces should also provide a place of refuge for people during a flood event.

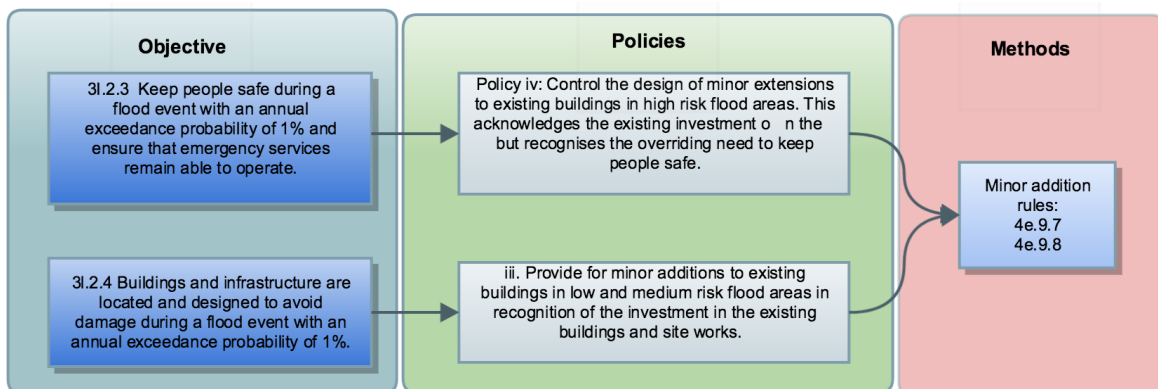
For low and medium flood hazard areas where risks from flooding can be mitigated, it is important to minimise regulatory costs. Provided new buildings in low and medium flood hazard areas have a floor level above the flood level, people's lives will or property will not be at risk during a flood. It is not efficient to require a resource consent to set minimum floor levels when they can be set through the Building Act.

Major additions are defined as greater than 15m². This is based on the reasonable size of a double bedroom and recognises that an addition greater than the size of a double bedroom is likely to increase the number of people living/working in the building, and therefore the number of people at risk from flooding. The upper limit of 15m² has been tested as to whether it was an acceptable level of risk with the community through the engagement process.

In comparison with the operative provisions the plan change reduces regulatory costs and more effectively avoids undesirable development in high hazard areas. For these reasons the provisions are considered to be the best mechanisms for meeting the objectives 31.2.3 and 31.2.4.

Minor additions to buildings

Policies 31.2.3iv, 31.2.4iii and rules 4e.9.7 and 4e.9.8 seek to recognise existing investment in flood hazard areas and ensure that people are kept safe and damage is avoided during a flood event by allowing small additions. This allows for one small addition, such as an ensuite or small bedroom as a permitted activity provided the floor level is no lower than the existing building.



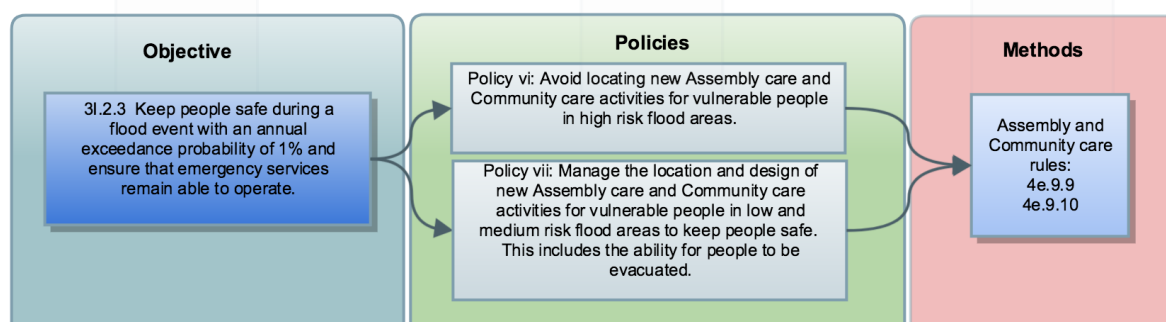
The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth and improved or reduced employment.

A. Other reasonably practicable options for achieving objectives (s32(1)(b)(i)::	
<ul style="list-style-type: none"> The activity statuses of these rules could be varied, for example minor additions could be controlled or additions with lower than existing floor levels could be discretionary. 	
B. Benefits and Costs of Effects (s32(2)(a)::	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> The limit on the size, design and number of additions to existing buildings will help minimise adverse effects of flooding on people and property 	None
Economic	
<ul style="list-style-type: none"> More permissive approach for a small addition in all flood hazard areas means increased certainty and no resource consents costs. Objectives, policies and rules provide certainty that minor additions will be allowed provided they are no lower than existing floor levels. Policy framework supports integrated resource management and aligns to regional flood hazard management objectives. 	<ul style="list-style-type: none"> Monitoring costs for Council to ensure the District Plan is implemented and adhered to Costs associated with the plan change
Social	
<ul style="list-style-type: none"> Certainty provided for the community that one small addition is appropriate. Health and well-being of communities will be enhanced as one small addition to existing buildings will be permitted. 	None
Cultural	
<ul style="list-style-type: none"> Certainty provided for Maori Land owners that one small addition is appropriate. Health and well-being will be enhanced as small additions to existing building will be permitted. 	<ul style="list-style-type: none"> There is a high proportion of multiply owned Maori land within the identified flood hazard areas. There may be some reduction in development potential for this land especially land that is within high flood hazard areas. However much of this land is marginal for development for other reasons. None of these areas have been identified as future urban growth areas. Any loss of development potential is considered to be outweighed by the risk of developing in these flood prone areas. There has been limited feedback from iwi on this issue.
C. Economic growth and employment (s32((2)(a)(i)(ii))	
The policy approach for minor additions is not likely to affect economic growth and employment opportunities in flood hazard areas as the size of additions is small. However it does recognise existing investment and enable people to continue to live in these areas whilst allowing one small addition to their properties.	
D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))	
Efficiency	
The amended policy approach for minor additions will ensure alignment with the RPS risk management approach. The proposed provisions are efficient as they clearly state the approach for minor additions in flood hazard areas and will do so at a lower cost relative to the benefits	

Effectiveness
The provisions are very specific about the development of minor additions in the flood hazard areas and will ensure that intolerable risk to people's safety and that of their buildings and properties will be avoided through restricting the number and size of additions in the flood hazard areas.
E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))
There is a risk that by allowing small additions people will add numerous small additions, especially in the high flood hazard area resulting in intensification of development over time. Although such incremental development is less of an issue in low and medium hazard areas, in high hazard areas it could result in piecemeal intensification. So the rule limits the number of additions to one. The risk of not controlling minor additions is that intensification may occur putting people and buildings at risk from floods. Not acting would result in not giving effect to the RPS risk management approach. Not acting would involve unnecessary costs to property owners as they would have to apply for controlled activity resource consent for any additions.
F. Appropriateness
The proposed provisions are considered the most appropriate practicable mechanisms as they balance the risk to people and property while keeping regulatory costs to a minimum. For these reasons they give effect to the RPS and therefore the RMA.
G. Reasons for deciding on the provisions (s32(1)(b)(iii))
Minor additions are defined as any addition not exceeding 15m ² in area. This threshold at 15m ² is based on the size of a reasonable double bedroom. Small additions to existing buildings, such as an ensuite or bedroom, are unlikely to significantly alter the level of risk to people or property in a flood. These provisions recognise that the flood hazard areas affect established urban areas. It is important to acknowledge the existing investment in properties in these areas and allow one small scale addition. Consultation with affected property owners has reinforced that this is an acceptable level of risk for the community.
There is the potential for a building to be incrementally extended through a series of small additions, however this is unlikely given the additional costs such an approach would incur. Such incremental development is less of an issue in low and medium flood hazard areas, but could lead to intensification in the high flood hazard areas. To address this the rule limits the number of additions to one. Overall, the incremental extension of buildings through multiple small additions is unlikely to be a widespread issue through the residentially zoned land.
In comparison with the operative provisions the plan change reduces regulatory costs and more effectively applies a risk based approach to minor changes to existing buildings. The proposed provisions therefore are considered the best way to achieve Objectives 3I.2.3 and 3I.2.4 which seek to keep people safe during and avoid damage to buildings in a 1% AEP flood event.

Assembly care and community care activities

Policies 3I.2.3vi and 3I.2.3vii and rules 4e.9.9 and 4e.9.10 will ensure the protection of the safety of vulnerable individuals and communities who require a higher than usual level of care. These provisions recognise the reduced ability and negative impact of moving vulnerable people in a flood event and the ongoing impact if this type of facility was damaged in such an event.



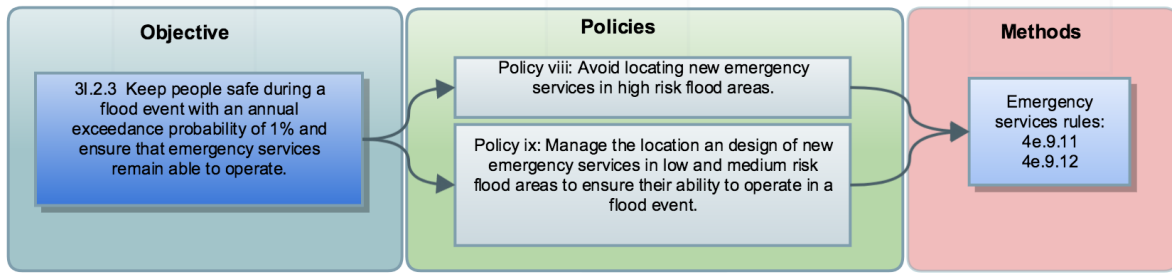
The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth and improved or reduced employment.

A. Other reasonably practicable options for achieving objectives (s32(1)(b)(i):	
<ul style="list-style-type: none"> Alternative activity statuses, for example assembly care and community care activities in high hazard areas could be discretionary and assembly care and community care activities in a low or medium flood hazard area could be discretionary. 	
B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> Limiting development of assembly and community care will help ensure that vulnerable groups or individuals are kept safe in a flood 	None
Economic	
<ul style="list-style-type: none"> Due to the limitation of these facilities in flood hazard areas the cost of response and recovery during and after a flood event is reduced. Policy framework supports integrated resource management and aligns to the regional natural hazard management objective. It goes further than implementation method 13.2.5 which only looks to avoid habitable buildings in areas of intolerable risk. However it gives effect to Objective 3.24(c) which seeks to enable the effective and efficient response and recovery to events. 	<ul style="list-style-type: none"> High costs for resource consent for new assembly care or community care facilities in high flood hazard areas but this should send a signal to avoid new development in these areas. Reduced development potential of land in high flood hazard areas. May temporarily reduce property values of land in high flood hazard areas. Some potential for reduction in investment in vacant land in high flood hazard areas but most are already developed or mainly rural marginal land. There are only two residential zoned sections that have more than 100m² of high flood hazard that are not already developed that would be suitable for development. Monitoring costs for Council to ensure the District Plan is implemented and adhered to Costs associated with the plan change
Social	
<ul style="list-style-type: none"> Risk to those requiring a higher level of care is minimised. Provides certainty that assembly care and community care facilities are not appropriate in high flood hazard areas. In low and medium flood hazard areas they will be appropriately assessed. 	None
Cultural	
None	

C. Economic Growth and Employment Opportunities (s32(2)(a)(i)(ii))
The policy approach for assembly care and community care is not likely to affect economic growth and employment opportunities as demand for this type of development in high flood hazard areas is likely to be low. Any cost is also outweighed by ensuring the safety of vulnerable people and communities during a flood event.
D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))
Efficiency
The new policy approach for assembly care and community care will ensure alignment with the RPS risk management approach.
The proposed provisions are efficient as they clearly state the approach for these facilities in flood hazard areas and will do so at a lower cost relative to the benefits.
Effectiveness
The provisions are very specific about the development of assembly care or community care in the flood hazard areas and will ensure that the risks to people's safety and that of their buildings and properties will be avoided through restricting development.
E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))
A decision not to manage these more vulnerable activities through the District Plan could result in the more vulnerable members of the community being at greater risk both during and after a significant flood event.
F. Appropriateness
The proposed provisions are considered the most appropriate practicable mechanism as they take a stringent approach to development of Assembly Care and Community Care activities. Due to the higher than usual level of care of the occupants of these types of activities, the safety benefits outweigh any potential economic costs of a more restrictive approach. For this reason they give effect to the RPS and therefore the RMA.
G. Reasons for deciding on the provisions (s32(1)(b)(iii))
The RPS specifically identifies that significant community infrastructure such as hospitals and emergency services being located within high flood hazard areas should be avoided. The RPS identifies that this type of infrastructure would be vulnerable during a flooding event and if services were affected would place an intolerable risk on the community. The RPS also requires, through implementation method 13.3.1, that council should avoid or restrict the location of facilities such as hospitals, schools and other facilities that may be difficult to evacuate quickly in areas at risk. The plan change uses the terms assembly care and community care because they cover uses where a high degree of care and service is provided (e.g. early childhood centre), and residential uses where a high degree of assistance or care is given to the principle users (e.g. aged care). These classes of activities come from the Building Code. People who attend or live in care facilities are less able to evacuate buildings in the event of a flood. Specific rules have been developed to limit the development of assembly care and community care activities by making them non-complying in high flood hazard areas, and restricted discretionary in low and medium flood hazard areas. These activity statuses are considered the best mechanisms to ensure that these people are kept safe during a flood.

Emergency services activities

Policies 3I.2.3viii and 3I.2.3ix and Rules 4e.9.11 and 4e.9.12 will ensure that there is a higher test for emergency services, recognising the importance of these services being able to operate during an emergency. Ensuring the ability of these services to respond effectively during an emergency has a wider benefit for the entire community.



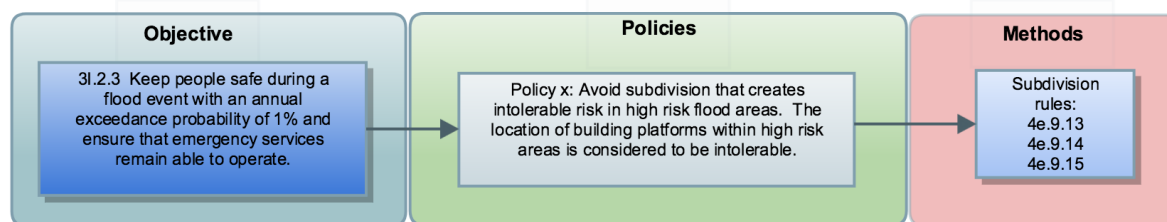
The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth, and improved or reduced employment.

A. Other reasonably practicable options for achieving objectives (s32(1)(b)(i): <ul style="list-style-type: none"> The activity statuses of these rules could be varied, for example development of Emergency Services in high flood hazard areas could be discretionary and Emergency Services in a low or medium flood hazard area could be controlled. 	
B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
None	
Economic	
Economic <ul style="list-style-type: none"> Financial impact of a potential flood event is reduced as emergency services are discouraged in high flood hazard areas and will be assessed through the resource consent process in low and medium flood hazard areas. This ensures that these agencies will be able to respond in a flood event up to 1% AEP and therefore reduces the cost of response. Policy framework supports integrated resource management and aligns to regional flood hazard management objective 3.24(c) and implementation method 13.2.5(b). 	Economic <ul style="list-style-type: none"> High costs for resource consent for emergency services in high flood hazard areas but this should send a signal to avoid this type of development in these areas. Reduced development potential of land in high flood hazard areas. Some potential for reduction in investment in vacant land in high flood hazard areas but the majority of sites are already developed or rural marginal land. There are only two residential zoned sections that have more than 100m² of high flood hazard that are not already developed that would be suitable for development. Monitoring costs for Council to ensure the District Plan is implemented and adhered to. Costs associated with the plan change.
Social	
<ul style="list-style-type: none"> Risk to emergency services reduced which ensures the ability to respond appropriately to a flood event. Certainty is provided for the community that emergency services are not appropriate in high flood hazard areas, and that they will be appropriately assessed in medium and low flood hazard areas. Limiting development of emergency service will help minimise adverse effects of flooding on people and property by ensuring that emergency services have the ability to respond effectively in a flooding event. 	None
Cultural	
None	

C. Economic Growth and Employment Opportunities
The policy approach for emergency services is not likely to affect economic growth and employment opportunities as demand for this type of development in high flood hazard areas is likely to be low (given these types of facilities are generally already established). Any cost is also outweighed by ensuring health and wellbeing to people and communities.
D. The efficiency and effectiveness of provisions (s 32(2))
Efficiency
The new policy approach for emergency services will ensure alignment with the RPS risk management approach and enable the effective and efficient response and recovery from natural hazards. The proposed provisions are efficient as they clearly state the approach for these facilities in flood hazard areas and will do so at a lower cost relative to the benefits.
Effectiveness
The provisions are very specific about the development of emergency services in the flood hazard areas and will ensure that these services are not located in an area where they do not have the ability to respond effectively in an emergency. The approach will ensure that people and buildings are safe and will therefore achieve objectives 3l.2.3.and 3l.2.4.
E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))
Not acting would result in not giving effect to the RPS risk management approach and efficiency of response and recovery. It would also mean that emergency services have the potential to locate in high flood hazard areas and therefore not have the ability to respond effectively in a flood event.
F. Appropriateness
The proposed provisions are the most appropriate practical mechanisms as they take a stringent approach to development of emergency service facilities. Due to the importance of these services having the ability to respond effectively in an emergency situation this outweighs any potentially economic benefits of a more permissive approach. This meets the risk based approach and efficiency of response and recovery required by the RPS.
G. Reasons for deciding on the provisions (s32(1)(b)(iii))
Effective response from emergency services during and after a flooding event is critical in keeping the community safe. The RPS specifically identifies avoiding significant community infrastructure such as hospitals and emergency services being located within high flood hazard areas. It identifies that this type of infrastructure would be vulnerable during a flooding event and if services were affected it would create an intolerable risk for the community. Making emergency services non-complying in high flood hazard areas and restricted discretionary in low and medium flood hazard areas is therefore considered the most effective way to meet the objectives of keeping people, buildings and infrastructure safe.

Subdivision

Policy 3l.2.3x and rules 4e.9.13, 4e.9.14 and 4e.9.15 will ensure that future land development will use the risk based approach, therefore ensuring the safety of people and buildings. Subdivision of land in a high flood hazard area is proposed to be non-complying unless it can be shown that the safety of people or building will not be put at intolerable risk. When subdividing land the effects of flooding can be mitigated by locating proposed building sites out of flood hazard areas. Subdivision in low and medium flood hazard areas has not been controlled as the rules for new buildings in these areas effectively manage the risk from flooding. An advice note will make this clear.



The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth and improved or reduced employment

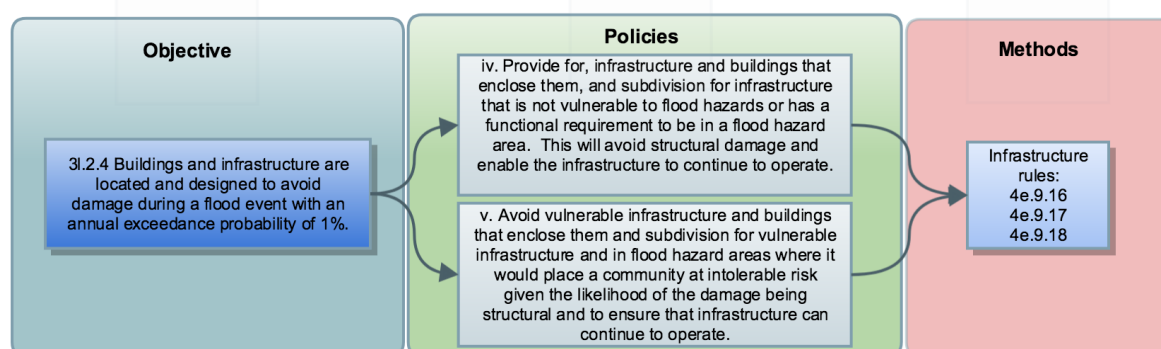
A. Other reasonably practicable options for achieving objectives (s32(1)(b)(i):	
<ul style="list-style-type: none"> The activity statuses of subdivision in high flood hazard areas could be varied. Subdivision in low and medium flood hazard areas could also be managed via a rule in the plan rather than relying on the building rules to manage the risk of flooding but this would be a duplication of the proposed new buildings rules 	
B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> Restricting new building platforms to being outside high flood hazard areas will help minimise the adverse safety effects of flooding on people and property. 	None
Economic	
<ul style="list-style-type: none"> Financial impact of a potential flood event is reduced as subdivision in high flood hazard areas will only be allowed if future buildings are located outside hazard areas thus keeping people and buildings safe. Policy framework supports integrated resource management and aligns with regional flood hazard management objective 3.24 and implementation method 13.2.5. 	<ul style="list-style-type: none"> High costs for resource consent for non-complying subdivision in high flood hazard areas but this should send a signal to avoid this type of development in these areas. Reduced development potential of land in high flood hazard areas. May temporarily reduce property values of land in high hazard flood areas. Some potential for reduction in investment in vacant land in high hazard flood areas but most are already developed or mainly rural marginal land. There are only two residential zoned sections that have more than 100m² of high flood hazard that are not already developed that would be suitable for development. Monitoring costs for Council to ensure the District Plan is implemented and adhered to. Costs associated with the plan change.
Social	
<ul style="list-style-type: none"> The provisions provide certainty by sending a clear message that subdividing and developing new buildings in high flood hazard areas is inappropriate. 	None
Cultural	
<ul style="list-style-type: none"> The provisions provide certainty by sending a clear message that subdividing and developing new buildings in high flood hazard areas is inappropriate. 	<ul style="list-style-type: none"> There is a high proportion of multiply owned Maori land within the identified flood hazard areas. There may be some reduction in development potential for this land especially land that is within high flood hazard areas. However much of this land is marginal for development for other reasons.

	<p>None of these areas have been identified as future urban growth areas. Any loss of development potential is considered to be outweighed by the risk of developing in these flood prone areas. There has been limited feedback from maori land owners on this issue.</p>
<p>C. Economic Growth and Employment Opportunities (s32(2)(a)(i)(ii))</p>	
<p>The policy approach for subdivision may reduce the economic growth and employment opportunities in the high flood hazard areas. It provides a clear signal to the market of the risks associated with inappropriate subdivision and development in these areas and that investment is better directed to other areas, which are not affected by high flood hazard. However there are very few high hazard areas that are not already developed that would be suitable for development. There are only two residential zoned sections that have more than 100m² of high flood hazard area that are not already developed that would be suitable for development. The policy approach will support economic growth and employment opportunities in the low and medium flood hazard areas by providing a clear direction that new development is permitted provided it is appropriately designed.</p>	
<p>D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))</p>	
<p>Efficiency</p>	
<p>These rules will discourage subdivision in the high hazard areas so will achieve the objectives of keeping people and buildings safe. It is efficient to not include a rule for subdivision in the medium or low hazard areas as this would duplicate the rule for new buildings. The amended policy approach for subdivision will ensure alignment with the RPS risk management approach and ensure that people living in the subdivision would not be put at intolerable risk.</p>	
<p>Effectiveness</p>	
<p>The provisions are very specific as to how subdivisions and development may occur in high flood hazard areas to ensure that people and buildings are kept safe in a flood. No rules have been created for subdivision in low to medium flood hazard areas because the rules for new buildings in flood hazard areas ensure that subdivision does not take place if new buildings cannot be built on the new allotments. These provisions will keep people and buildings safe in floods.</p>	
<p>E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))</p>	
<p>Managing subdivision in high flood hazard areas is an important mechanism for avoiding increasing the intolerable risk to the community. A failure to control subdivision could lead to situations where residential scale allotments are created that cannot be built on. Subdivision in the low and medium flood hazard areas is not managed by rules as the rules for new buildings in flood hazard areas adequately address flood risk in these areas.</p>	
<p>F. Appropriateness</p>	
<p>The proposed provisions are the most appropriate as they ensure that people and new buildings in new subdivisions will be kept safe in a flood. No provisions have been included for subdivision in low and medium hazard areas as there is adequate management of safety risks in the rules for new buildings in these areas. This will ensure that there is no duplication between the rules for new buildings and subdivision in the medium and low hazard areas. They implement objective 3.24 and policies 13.1, 13.2. and 13.3 in the RPS</p>	
<p>G. Reasons for deciding on the provisions (s32(1)(b)(iii))</p>	
<p>The Waikato RPS requires the Council to control subdivision in areas of intolerable risk (where the risk to people, property or the environment cannot be justified). The focus of the policy direction is on avoiding development where it will place a community at intolerable risk and only allowing subdivision to take place in flood hazard areas where the risks do not exceed acceptable levels. The proposed approach ensures that subdivision in the high flood hazard areas would have to show that building platforms are outside the high flood hazard areas so people and buildings are kept safe in a flood. Subdivision in the low and medium flood hazard areas is not managed by rules as the rules for new buildings in flood areas adequately address flood risk. Overall these provisions were selected as they are the best mechanism to meet the objectives and the</p>	

requirements of the RPS, while balancing the regulatory costs of the provisions with the level of flood risk.

Infrastructure

Policies 3I.2.3iv and 3I.2.3v and Rules 4e.9.16, 4e.9.17 and 4e.9.18 will ensure that infrastructure can continue to operate effectively during flood events. This will ensure that people are kept safe and that property is not damaged.



The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth and improved or reduced employment.

A. Other reasonably practicable options for achieving objectives(s32(1)(b)(i) :	
<ul style="list-style-type: none"> All new infrastructure in flood hazard areas could be considered a restricted discretionary activity. 	
B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> Locating infrastructure that has the potential to be damaged in a flood event outside flood hazard areas will limit any potential for environmental impacts of this damage. Locating infrastructure not vulnerable to flooding in flood hazard areas will have no adverse effects. 	None
Economic	
<ul style="list-style-type: none"> Locating infrastructure that has the potential to be damaged in a flood event outside flood hazard areas will reduce damage the impact of non-operational infrastructure and the costs of reinstatement following a 1% AEP flood event. No additional costs for locating infrastructure not vulnerable to flooding in flood hazard areas as there is no requirement for a resource consent. 	<ul style="list-style-type: none"> In some situations there may be a higher upfront cost of locating infrastructure outside of flood hazard areas or for meeting higher design requirements. Monitoring costs for Council to ensure the District Plan is implemented and adhered to. Costs associated with the plan change.
Social	
<ul style="list-style-type: none"> Locating infrastructure that has the potential to be damaged in a flood event outside flood hazard areas will limit any potential for 	None

damage and therefore the impact on the community of non-operational infrastructure.	
Cultural	
None	
C. Economic Growth and Employment Opportunities (s32(2)(a)(i)(ii))	
Strengthening infrastructure provisions around design, location and maintenance in flood hazard areas is not anticipated to have a significant effect on economic growth or employment opportunities.	
D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))	
Efficiency	
The provisions relating to infrastructure in flood hazard areas distinguish between infrastructure that has the potential to be damaged in a flood event and types that do not. Those that are not vulnerable to flooding can locate within flood hazard areas without a resource consent, which is efficient. Only those likely to be vulnerable to flooding will be required to go through a resource consent application. This approach results in low cost and higher benefits.	
Effectiveness	
The provisions are considered to be effective to keep people and buildings safe. Only infrastructure vulnerable to flooding will be required to get a resource consent. This process will ensure that infrastructure can only locate in flood areas where it will not be structurally damaged, it will continue to operate and the community will not be put at risk during a flood.	
E. Risk of acting or not acting if there is uncertain or insufficient information(s32(2)(c))	
There is insufficient information to establish exactly which infrastructure is vulnerable to flooding. However it is important that lifeline utilities can continue to operate during a flood. So, it is important to have provisions that manage the construction of infrastructure. It is important that the provisions distinguish between infrastructure which is potentially vulnerable (i.e. above ground) with that which is located underground and can continue to operate during a flood event. If there were no rules infrastructure could locate in flood areas and potentially not be able to operate in a flood thus putting the community at risk.	
F. Appropriateness	
It is appropriate to distinguish between infrastructure that is vulnerable to flooding and that which is not. This means costs are focused on ensuring vulnerable infrastructure is designed and located to withstand floods. No additional regulatory costs are put on infrastructure which is not at risk as there is no need to constrain its development. This approach therefore meets the requirement of the RPS.	
G. Reasons for deciding on the provisions (s32(1)(b)(iii))	
The RPS specifies that lifeline utilities and structures should not be located in high flood hazard areas where these would be vulnerable to a natural hazard event or would place a community at an intolerable risk. Having services up and running during and after a hazard event reduces the impact on the health and well-being of the community, buildings and properties. The provisions distinguish between the infrastructure which is potentially vulnerable (i.e. above ground) with that which is located underground and can continue to operate during a flood event. This ensures that the infrastructure provisions are not overly onerous by placing regulation on all infrastructure, while limiting the development of infrastructure that could be affected during a flood event. Maintenance and upgrading of existing infrastructure, whether above ground or below ground, is permitted as these additions to existing infrastructure will not affect the safety of people or buildings. These provisions are considered the most effective way of meeting the objectives and the RPS.	

Defended areas (also known as Residual Risk Zones)

Policy 31.2.3ii and mapping the defended areas on the planning maps will ensure that individuals and communities are aware of a potential flood hazard from a breach in a stop-bank that may affect their personal safety and the safety of their buildings and property.

The approach for defended areas is to:

- Add the policy: “Ensure that communities are informed of the potential flood hazard (including residual risks) that may affect them.”
- Identify areas that are protected from flooding by flood schemes (defended areas)
- Map these defended areas on the planning maps identifying the % AEP that the flood scheme is designed for
- Note in the District Plan that the defended areas have been identified for information only.

The table below outlines the benefit and cost assessment, any opportunities for improved or reduced economic growth and improved or reduced employment.

A. Other reasonably practicable options for achieving objectives (s32(1)(b)(i):	
<ul style="list-style-type: none"> • Defended areas could be mapped and made available for information but not included in the District Plan. 	
B. Benefits and Costs of Effects (s32(2)(a))	
Benefits	Costs
Environmental	
<ul style="list-style-type: none"> • Knowledge that there is a small risk to properties in the defended areas due to breach in stopbank. However the area identified is unlikely to accurately identify the areas affected by a particular stopbank breach. • Gives effect to the RPS implementation method 13.2.7 that requires district plans to identify residual risk areas. 	<ul style="list-style-type: none"> • Mapping of defended areas implies that this is the area that will get flooded if a stopbank breaches, however it is unlikely to accurately identify the areas within the defended area affected by a particular stopbank breach.
Economic	
<ul style="list-style-type: none"> • No cost for property owners as no rules proposed. • Awareness by landowners of possibility of flooding as result of a breach in stopbank. 	<ul style="list-style-type: none"> • Perception that insurance premium will increase for properties within the defended area. • Perception of possible decrease in land valuation for properties within the defended area. • Very low costs for Council of administering.
Social	
<ul style="list-style-type: none"> • Knowledge that there is a small, but unquantifiable, risk of properties flooding so individual can take care of their own health and safety. 	<ul style="list-style-type: none"> • Potential for some confusion of what this means for individuals, given it is impossible to model accurately.
Cultural	
None	
C. Economic Growth and Employment Opportunities	
Mapping residual risk areas on the district plan maps will not have a significant effect on economic growth or employment opportunities.	
D. The efficiency and effectiveness of provisions (s 32(1)(b)(ii))	
Efficiency	
This mechanism is efficient as it has a low cost as it does not include regulation. However the benefits are low as the areas affected by flooding from a specific stopbank breach cannot be identified accurately.	

Effectiveness
<p>This is not a very effective mechanism to keep people safe during flooding if there is a breach in the stopbank as the mapped defended areas do not accurately predict the specific area within the defended area that will be affected by a specific breach. However the mapping of a defended area will make landowners within that area aware that the stopbank does not offer them absolute protection of their land and assets.</p>
<p>E. Risk of acting or not acting if there is uncertain or insufficient information (s32(2)(c))</p>
<p>The methodology used to map the defended areas is a banks down approach compared with a bank up approach, as explained in Section 4. Practically however, a scenario of all the stopbanks failing at the same time is very unlikely. A more likely scenario is localised stopbank failure(s) somewhere along the stop-bank. WRC have confirmed that an assessment of single and/or multiple localised failures is not considered feasible with current information. Therefore, the 'all stop banks down' approach is currently considered the most appropriate method to identify the areas potentially affected from a breach of the stopbank in a 1% AEP event.</p> <p>The likelihood of a breach in a stopbank is considered low. Despite not being able to accurately identify where in the defended area flooding would occur from a particular breach in a stopbank, the identification of a broad area that may be affected in a breach in the stopbank is a useful mechanism of informing people that they are still at some risk of flooding despite being protected by a stop bank.</p>
<p>F. Appropriateness</p>
<p>This approach is appropriate as although it cannot identify specific areas affected by a specific breach in a stopbank, it does identify the areas that are at a small risk of flooding due to a breach somewhere in the stopbank. This is the best mapping that can be done for this risk. This provision relates to Objective 3I.2.3 which seeks to keep people safe during a flood event with an AEP of 1% and ensure that emergency services remain able to operate. However as it is impossible to accurately identify the areas, within the defended areas, that are likely to be flooded from a particular stopbank breach. This approach will achieve the objective as it will let people know there is a small element of risk from flooding from a stop bank breach anywhere within the defended areas. The provisions cannot produce any further accuracy as no one can predict where or when a stop bank will breach. There are no other mechanisms that can identify more accurately the areas of the defended area that may be affected by a particular breach in a stopbank.</p>
<p>G. Reasons for deciding on the provisions (s32(1)(b)(iii))</p>
<p>The reasons for deciding on this provision are that:</p> <ul style="list-style-type: none"> • There is a level of risk to the safety of people and buildings from flooding from a breach in a stopbank. • The RPS requires the Council to map defended areas. <p>The mapping of the defended areas using the methodology provided by WRC will ensure that people are made aware of this risk and can take it into account when they are planning any development, use or subdivision.</p> <p>The reasons for not including rules to control subdivision, use and development within the defended areas are:</p> <ul style="list-style-type: none"> • The degree of risk cannot be quantified for individual properties making it hard to justify imposing regulatory costs. • These affected areas are already well developed with limited opportunities for further intensification. • Many of the properties in the defended areas are also affected by the flood risk and therefore aware of the risks. • There are relatively few residential properties that are located in the defended areas making this a small and confined issue. • Regulation will not have any material impact on the level of risk of a stopbank breach and may not materially reduce risks

11. SCALE AND SIGNIFICANCE OF THE EFFECTS FROM IMPLEMENTING THE PLAN CHANGE

The level of detail contained in a Section 32 report is determined by the scale and significance of the environmental, economic, social, and cultural effects that will result from the plan change. The new flood hazard information affects¹⁰ just over 1280 properties, just under 800 of which are not already affected by a flood hazard notation in the operative District Plan. Approximately 260 properties affected by the current flood hazard areas in the operative District Plan are no longer affected by the new flood hazard areas.

Most of the communities within the identified flood hazard areas are already well established with limited opportunities for intensification or expansion and the majority of affected properties are in the low and medium hazard areas. As the plan change provisions are targeted to proposed activities and to removing unnecessary compliance costs they propose many activities (including new buildings and additions) in the low and medium flood hazard areas are a permitted activity provided a minimum floor level is met. The environmental, economic, social, and cultural effects of the plan change on the properties in these areas are low. This has been reflected in the low response rate from the two phases of targeted consultation with affected landowners and stakeholders (see section 6 of this report).

In the high hazard areas the proposed approach is to avoid increasing the exposure of people and buildings to flood hazards. This will result in high adverse economic, social, and cultural effects on the properties in these high hazard areas. However only 500 properties¹¹ are affected by high hazard areas and very little feedback has been received from these affected landowners to our targeted consultation. Most the residentially zoned affected properties are only marginally affected (approximately 100m²) with only 38 properties substantially affected.

The impact of the plan change on multiple owned Maori land is relatively high given much of this Maori land is lower lying and adjacent to the lake and rivers. Much of the high hazard flood area is on multiple owned Maori land. Very few owners or representatives of owners on multiple owned Maori land have taken up offers by the Council of site meetings and discussions about the proposal.

We consider that the proposal is of medium scale and significance. For further information on the significance of the effects of implementing the plan change see Appendix 11.

¹⁰ Figures are very approximate and will be recalculated from the revised 2017 mapping tool.

¹¹ Figures are very approximate.

12. APPENDICES

APPENDIX 1 - STATUTORY POLICY CONTEXT

There are a number of statutory documents and legislative frameworks that the district plan must recognise and/or give effect to. These include the Resource Management Act, national policy statements, national environmental standards, regional policy statements and regional plans.

Resource Management Act

The purpose of the RMA as set out in section 5 of the Act is “to promote the sustainable management of natural and physical resources.” Sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while.....avoiding, remedying, or mitigating any adverse effects of activities on the environment.”

Through the Resource Legislation Amendment Act 2017 a new subsection (h) was added to Section 6 of the RMA. It states that the Council, “*in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for.....the management of significant risks from natural hazards.*” It is important to note that this new emphasis on managing the significant risks from natural hazards has come into effect after the Waikato Regional Policy Statement was made operative. It adds weight to risk based approach in the RPS and the proposed provisions in the plan change.

Section 7 of the RMA requires council, in achieving the purpose of this Act, to have particular regard to the effects of climate change. This is relevant in the context of this plan change because the risks from flooding can be exacerbated by climate change increasing the intensity and frequency of rainfall and runoff.

Natural hazard is defined in section 2 of the RMA as being “any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment”. The definition of natural hazards is wide and clearly includes flooding.

Section 31 of the RMA requires the Council to have the function of the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the district. Section 31(1)(b) requires Council to control any actual or potential effects of the use, development, or protection of land, for the purpose of the avoidance or mitigation of natural hazards. Both regional and district councils have jurisdiction over the control of land us for the purpose of avoidance or mitigation of natural hazards. This subsection requires Council to address the avoidance or mitigation of natural hazards in the District Plan.

Section 35 of the Act requires the Council to “gather such information, and undertake or commission such research, as is necessary to carry out effectively its functions under this Act or regulations under this Act.” Section 35(2) requires Council to “monitor (a) the state of the whole or any part of the environment of its region or district (i) to the extent that is appropriate to enable the local authority to effectively carry out its functions under this Act...” This section requires Council to gather information and hold records of areas subject to natural hazards because of its function of controlling the effects of the use and development of land to avoid or mitigate natural hazards under section 31.

National Policy Statements and National Environmental Standards

The New Zealand Coastal Policy Statement is relevant as it provides direction on hazards management albeit in a coastal context. Policy 24 states that hazard risks should be assessed over at least 100 years and should take into account national guidance and the best available information on the likely effects of climate change.

Only the National Policy Statement for Renewable Electricity Generation, the National Policy Statement on Electricity Transmission, the National Environmental Standards for Telecommunication Facilities and the National Environmental Standards for Electricity Transmission Activities are relevant for this plan change. The national direction for electricity transmission, renewable electricity generation and telecommunication facilities is to recognise their vital role in the well-being of and benefits to the country and ensure that councils provide for this important infrastructure in their district plans.

Building Act 2004

The Building Act 2004 provides for the regulation of building work, the licensing regime for building practitioners, and the setting of performance standards for buildings. It manages natural hazards in relation to the construction and modification of buildings. Also relevant are the Building Regulations 1992 (including the Building Code) and

Building (Specified Systems, Change the Use, Earthquake-prone Buildings) Regulations 2005. The key sections of the Building Act 2004 are:

Section 35	Content of project information memoranda
Section 37	Additional certificates that must be attached to project information memoranda.
Section 71	Building on land subject to hazards. Includes a definition of natural hazard for Building Act purposes.
Section 72	Building consents for building on land subject to natural hazards must be granted in certain cases.
Section 73	Conditions on building consents granted under section 72.

Clause E1.3.2 of the Building Code states that surface water, resulting from an event having a 2% probability of being equalled or exceeded each year (i.e. 2% AEP or a 50 year Average Recurrence Interval ARI event), as this is the timeframe for building longevity in the Building Act, shall not enter buildings. The purpose of these provisions is to protect people and property from the adverse effects of surface water, from penetration by water, and the accumulation of moisture from the outside. This section of the building code only applies to habitable buildings, buildings where assistance or care is provided to the principal users e.g. hotel and old peoples home, and buildings that are a meeting place for people where care and service is provided by people other than the principal users e.g. a school or a cinema (housing, communal residential and communal non-residential buildings). This is because the Building Act considers that some activities, like business activities, can tolerate a higher level of risk of flooding.

However, Section 76(2A) of the RMA enables the Building Code requirement to use 2% AEP to be overridden. This sections allows the Council to include rules in a district plan that are for the protection of property from the effects of surface water, which require the building work to achieve performance criteria additional to, or more restrictive than, those specified in the building code. This enables the Council to plan for a greater flood than a 2% AEP as outlined in the Building Code.

It is important that the Building Act provisions and the District Plan provisions work together and do not contradict each other.

Civil Defence and Emergency Management (CDEM) Act 2002

The CDEM Act aims at the comprehensive management of hazards and risks, and emergency response and recovery, through coordinated and integrated policy, planning and decision-making processes at the national and local level. It sets out the duties, functions and powers of central government, local government, emergency services, lifeline utilities and the general public. The Act is administered by the Ministry of Civil Defence and Emergency Management.

A key concept of the CDEM Act is applying the '4 Rs' (Reduction, Readiness, Response, and Recovery) to hazard management. Reduction aims to mitigate or avoid the risks of hazards, readiness to minimise potential impacts from an event through preparedness steps, and response and recovery to address the impacts in an event including any escalation of them. Each 'R' is related to, and overlaps with, the others. For example, recovery can begin alongside response; and reduction measures can be part of recovery activities. RMA planning generally (but not exclusively) falls under 'reduction'. Risk reduction approaches are the primary focus of the provisions in the plan change.

Regional Policy Statement

The Taupō District falls within the boundaries of four regional councils, however the flood hazard study area is contained wholly within the Waikato Regional Council boundaries and therefore only the Waikato Regional Policy Statement is considered directly relevant in this instance.

Waikato Regional Policy Statement

The Waikato Regional Policy Statement was made operative in May 2016. Objective (3.24) seeks to ensure that:

The effects of natural hazards on people, property and the environment are managed by:

- a) increasing community resilience to hazard risks;
- b) reducing the risks from hazards to acceptable or tolerable levels; and
- c) enabling the effective and efficient response and recovery from natural hazard events.

The policies that relate to this objective seek to ensure that:

- Natural hazard risks are managed using an integrated and holistic approach (Policy 13.1);
- Subdivision, use and development are managed to reduce the risks from natural hazards to an acceptable or tolerable level (Policy 13.2); and
- The risks associated with high impact, low probability natural hazard events such as tsunamis, volcanic eruptions, earthquakes and debris flows are considered (Policy 13.3).

There are then a range of implementation methods related to the policies that give direction on how they will be achieved.

The key areas of direction from the RPS for this plan change are:

- Flooding needs to be managed within a risk based framework that enables planning responses to be proportionate to the level of identified risk.
- There is a clear direction to avoid creating new intolerable risk, which in the context of this plan change relates to activities in the high risk areas.
- More vulnerable activities need to be carefully planned for to ensure that the risk remains acceptable to the community.
- The importance of infrastructure to be able to be built and maintained with as few regulatory costs as possible is recognised, but this needs to be balanced with the need to minimise the risk to that infrastructure and the community it supports in a future flood event.
- Areas of residual risk should be identified and managed to minimise the residual risk.

See Section 8 for policies 13.1, 13.2, 13.3 and implementation methods.

Non-statutory Policy Context

Section 74(2A) of the RMA requires the Council, when changing a district plan, to take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority, to the extent that its content has a bearing on the resource management issues of the district.

Ngāti Tūwharetoa Environmental Iwi Management Plan 2003

Te Waipuna Ariki - Water

Issues

- Lack of partnership between regional council and Ngāti Tūwharetoa regarding the management of natural disasters.

Policies/baselines

- Promote and enhance partnerships between ngā hapū o Ngāti Tūwharetoa and central government, regional and district councils on all resource management issues e.g. management of natural hazards including flooding, waste water treatment

Other tools

- Lobby for a Tūwharetoa representative in the monitoring and review process of government policies, regional policy statement, regional and district plans.
- Promote and encourage partnerships and better communication between Ngāti Tūwharetoa and statutory authorities on all resource management issues

Papatūānuku – Land

Issues

- Land degradation and inundation as a result of artificial control of lake levels.

Policies/baselines

- Advocate for the protection of culturally important areas susceptible to erosion and flooding that is induced by human activity

Other tools

- Lobby for a Tūwharetoa representative in the monitoring and review process of government policies, regional policy statement, regional and district plan.
- Make submissions to government policy, district and regional plans
- Develop and promote frameworks that facilitate communication with regional and district councils as well as other owners and users of resources within Tūwharetoa rohe.
- Promote and encourage partnerships and better communication between Ngāti Tūwharetoa and statutory authorities on all resource management issues.

Council staff engaged early in the formulation of the plan change with staff from the Tūwharetoa Maori Trust Board. Regular communication between Council staff and staff at the Trust Board has continued throughout the development of the plan change. Council staff were invited to speak at Korowai Awhina hui in April 2017 on the Flood Hazard Plan Change. Council staff and staff at the Trust Board are organising hui in the southern part of the lake in November 2017, once the plan change is notified, to ensure that land owners and hapu are aware of the Flood Hazard Plan Change and the implications for their land.

Lake Taupō Erosion and Flood Strategy 2009

In 2009 Waikato Regional Council and Taupō District Council jointly adopted the Lake Taupō Erosion and Flood Strategy to guide management of the erosion and flood risk around the Lake Taupō foreshore. It provides a set of principles to guide future decision making and an action plan showing how the two organisations intend to manage the flood and erosion risks around the Lake. The strategy sets out roles and responsibilities, and recommendations along with timeframes and costs. The Strategy went through a special consultative procedure under the Local Government Act that enabled stakeholders and the wider community to make submissions and attend hearings.

With regard to this plan change, the Strategy focuses on:

- Making people aware of where flood risks are and planning appropriately.
- Avoiding new development in severely affected flood areas.
- Making sure that buildings and services are designed to deal with future flooding in less affected flood areas.
- Ensuring that flood modelling will include provision for climate change and tectonic subsidence.
- Signalling that identified flood prone areas will be incorporated into the District Plan, with rules giving clarity about how the flood risk will be managed.
- Undertaking flood assessments for each of the major tributaries into Lake Taupō

Waikato Civil Defence Emergency Management Group Plan 2016/17-2021/22

The plan sets out the arrangements for Civil Defence Emergency Management in the Waikato for a 5 year period. The vision is "We are all Civil Defence" which seeks that people, organisations and communities in the Waikato work together to be more resilient to hazards. Eight goals are outlined to achieve this vision:

- Build and sustain an understanding of hazards and risks
- Reduce risks from hazards to acceptable levels
- Increase community preparedness and ownership
- Enhance capacity to deliver an effective response
- Enhance capability to recover from emergencies
- Maintain effective partnerships
- Maintain effective leadership, governance and delivery arrangements
- Effectively monitor CDEM outcomes

The plan includes an action plan to achieve these goals. The plan identifies the Waikato Regional Policy Statement, Waikato Regional Plan and the Taupō District Plan as regulatory tools that are used. A relevant action in the plan is to review the effectiveness of the Waikato RPS, Regional Plans, District Plans and Long Term Plans as a CDEM mechanism for defining acceptable risk.

APPENDIX 2 – FLOOD REPORTS

Due to the size of the seven flood reports prepared by Opus International Consultants they are not included in the Section 32. They should be read in conjunction with this report. The documents are located on the Taupō District Council website via the following link:

<http://www.Taupōdc.govt.nz/our-council/consultation/Pages/Flood-hazards.aspx#link8>

APPENDIX 3 – TECHNICAL COMPENDIUM TAUPŌ DISTRICT FLOOD HAZARD STUDIES

Due to the size of the Technical Compendium it is not included in the Section 32 report. It should be read in conjunction with this report. The document is located on the Taupō District Council website via the following link

<http://www.Taupōdc.govt.nz/our-council/consultation/Documents/Flood%20Hazard%20Consulation/Opus-technical-compendium-October-2015.pdf>

APPENDIX 4 – MEMO ON WAVE RUNUP FROM JACK MCCONCHIE, 18 AUGUST 2015

Due to the size of the Wave Runup Memo it is not included in the Section 32 report. It should be read in conjunction with this report. The document is located on the Taupō District Council website via the following link:

<http://www.Taupōdc.govt.nz/our-council/consultation/Documents/Flood%20Hazard%20Consulation/Wave%20run%20up/2015-Wave-Run-Up-Report-Opus.pdf>

APPENDIX 5 – PEER REVIEW OF TAUPO DISTRICT FLOOD HAZARD REPORTS BY NIWA

Due to the size of this document it is not included in the Section 32 report. It should be read in conjunction with this report. The document is located on the Taupō District Council website via the following link:

<http://www.Taupōdc.govt.nz/our-council/consultation/Documents/Flood%20Hazard%20Consulation/Peer%20review%20of%20Taupō%20District%20Oflood%20March%202015.pdf>

APPENDIX 6 – PEER REVIEW DISCUSSION DOCUMENT

Due to the size of this document it is not included in the Section 32 report. It should be read in conjunction with this report. The document is located on the Taupō District Council website via the following link:

<http://www.Taupōdc.govt.nz/our-council/consultation/Documents/Flood%20Hazard%20Consulation/Opus%20-%20Peer%20Review%20Discussion%20report%202015.pdf>

APPENDIX 7 – CONSULTATION

Two rounds of consultation with affected landowners and stakeholders were undertaken in November/December 2015 and March/April 2016.

First round of consultation November/ December 2015

Letters

Letters (see Attachment A) were sent out on 6 November 2015 to ratepayers whose properties are affected by the new flood hazard areas. Letters were also sent to owners of properties where the owner was not the ratepayer (mainly Maori trusts). The letter explained that the Council has updated its existing flood hazard data and that their property was within a flood hazard area. The draft planning principles for the new flood hazard areas were also explained. The letter provided further information with the inclusion of the frequently asked questions and process map, the link to the website and mapping tool and the details of the open day they could attend, and contact details for providing feedback or obtaining more information including a site meeting.

Letters (see Attachment B) were also sent to ratepayers whose properties are currently in the flood hazard area in District Plan but are not affected by new flood hazard data.

Open day

An open day was held in Turangi on 21 November 2015. The Waikato Regional Council (WRC) also attended the open day as they manage the flood schemes at Tauranga Taupō and Tongariro Rivers and could answer any queries the public had about these flood schemes. Approximately 25 people attended. Most sought further information on the flood hazard areas and wanted to discuss the management of the Tongariro River flood hazard scheme.

Stakeholder consultation

We met with 10 stakeholder groups and wrote (see Attachment C) to 6 stakeholder groups about the project as follows:

Meeting

NZTA
Tūwharetoa Maori Trust Board
Mercury Energy
Harbourmaster
Genesis Energy
WRC
DoC
King Country Energy Limited
Lakes & Waterways Action Group
Trust (LWAG)
Lake Taupō catchment committee

Letter

Rauhoto Land Rights Committee
Advocates for the Tongariro River
Real estate agents
Kuratau Omori Preservation Society
Hatepe Residents Association
Trustpower

Survey

We ran a survey on the flood hazard Council webpage. The survey asked questions about the proposed planning principles and received the following responses:

Survey questions and responses December 2015

Question	Yes	No	No response/Comment
Should new homes in the low or medium risk areas be allowed without a resource consent, provided they are designed to be above the flood level?	11	0	1
Should extensions to existing homes in flood areas be designed to be above the flood level or at the same level as the existing home?	6	4	1 Dependant on size of addition. As long as doesn't limit height due to height restriction
Should new buildings for vulnerable people be required to locate outside the high risk flood hazard areas?	9	2	1 Reduce risk of flooding first. New innovations may allow safe building in these areas. Flooding areas not big enough to warrant this approach.
Should new buildings for emergency services be required to locate outside the high risk flood hazard areas?	10		2 Remove existing emergency services from flood prone areas.

Should we allow new homes or buildings to be built in high risk flood areas?	6	4	1 If zoned residential should be allowed to build on. Allow if floor is above flood level
Should we assume that Waikato Regional Council will not raise the level of the stop banks along Tongariro sand Tauranga Taupō Rivers over time in response to climate change?	6	4	1 Make NZTA pay for Tongariro River stop banks. All TDC ratepayers should pay for increase in Tongariro stop banks Stop banks are not fail safe Ratepayers don't have bottomless pockets Clean out river channel rather than increase height of stop bank

The response to the survey was low (12 responses) and generally respondents supported the planning philosophy the Council proposed for the new flood hazard areas.

Feedback

We received responses by phone, email and through the open day

We had contact from 25 people, excluding those from the open day and our meetings with stakeholders.

9 emails, 14 by phone, 1 reception, 1 referred by a Councillor. This resulted in 4 meetings on site.

Date	Name	Address
18/11/2015	Richard Kemp	Taupahi Road, Turangi
03/12/2015	Mike Fransham, Kim Miles, Peter	Kokopu Street, Turangi
10/01/2016	Mary Pillot and family	State Highway 41 Turangi
11/01/2016	Graham Catlan, Kinloch Marina	Kinloch Marina

Some individuals corresponded with us through phone, email and meetings.

Issues raised

The main topics for the responses were

1. Requesting further information and to talk through the issues.
2. Issues with how the river and flood schemes are currently managed (especially the Tongariro River).
3. Disbelief that a 1% AEP flood would result in flooding on their land. Therefore they requested removal of the flood hazard from their property.
4. Issues with Waikato Regional Council rates for flood protection schemes.
5. Concern that extreme wave activity was not being addressed through this plan change.

Conclusion

- Very little response from the mail out.
- Most responses requested further information and following a discussion with staff were not concerned.
- Many respondents had concerns about the management of the Tongariro River flood scheme, which is managed by Waikato Regional Council.
- General support for the high level planning philosophy.
- The concerns about extreme wave activity led to further work to see whether it could be feasibly included.

Second round of consultation March/April 2016

Letters

Letters (see Attachment D) were sent out on 26 and 29 February 2016 to ratepayers whose properties are affected by the new flood hazard areas. Letters were also sent to owners of properties where the owner was not the ratepayer (mainly Maori trusts). The letter contained the draft objectives, policies and rules for the plan change, sought feedback, identified where and how to get further information including an invitation to an open day.

Letters (see Attachment E) were also sent to ratepayers whose properties are affected by the new flood hazard areas and also the defended areas. As well as including the draft objectives, policies and rules (Attachment F) for the flood hazard areas the letter explained that defended areas are flood areas that are protected by a flood protection scheme, they will be identified on the district plan maps but the Council is not proposing to have any specific rules attached to them. Letters (see Attachment G) were also sent to ratepayers whose properties are only affected by defended areas.

Open day

An open day was held in Turangi on 19 March 2016. The Waikato Regional Council (WRC) attended the open day as they manage the flood schemes at Tauranga Taupō and Tongariro Rivers and could answer any queries the public had about these flood schemes. Approximately 20 people attended.

Stakeholder consultation

We wrote to 15 stakeholders and 13 infrastructure providers (Attachment H) with the draft objectives, policies and rules seeking feedback:

List of stakeholders and infrastructure providers written to in March 2016

Stakeholders	Infrastructure providers
NZTA	Chorus
Tūwharetoa Maori Trust Board	Transpower New Zealand Limited
Mercury Energy	Unison Networks Limited
Harbourmaster	The Lines Company
Genesis Energy	Vodafone New Zealand
WRC	Spark
DoC	2 Degrees
King Country Energy Limited	Contact Energy Limited
Lakes & Waterways Action Group Trust (LWAG)	Mercury Energy
Lake Taupō catchment committee	Kordia Group Limited
Rauhoto Land Rights Committee	Radio New Zealand
Advocates for the Tongariro River	The Radio Network Limited
Kuratau Omori Preservation Society	Meteorological Services of New Zealand
Hatepe Residents Association	
Trustpower	

We also e-mailed a letter (Attachment I) and the frequently asked questions to the following real estate agents in the district:

- Ray White
- Harcourts
- Bayleys
- LJ Hooker
- B&W Real Estate
- The Property Store

Feedback

We received responses by phone, email and through the open day. We had contact from 63 people (6 of which were from Infrastructure providers) excluding those from the open day. This resulted in 15 meetings most of which were on site (some individuals corresponded with us through phone, email and meetings.)

Date	Name	Address
1/03/2016	Mr Erin Clark	Humu Street, Tokaanu
4/03/2016	Mrs Robyn Pike	Rereahu Avenue, Hatepe
7/03/2016	Bylth King	State Highway One, Turangi
7/03/2016	Mike Tucker	Kokopu Street, Turangi
8/03/2016	Anne Frizelle	Ani Miria Place, Te Rangiita
8/03/2016	Ross Baker	Piri Road, Turangi
10/03/2016	Neville Young	Taupahi Road, Turangi
10/03/2016	James Swetman	Kokopu Street, Turangi
18/03/2016	Warwick Wyatt	Noble Street
29/03/2016	Bruce Coldicutt	Taupahi Road, Turangi
12/04/2016	Russell Boddington	Puanga Street, Tokaanu

21/04/2016	Rod and Noelene Neveltsen, Kuratau Omori Preservation Soc	Kuratau Omori Preservation Soc
11/05/2016	Dianna Marbeck	Taupahi Road, Turangi
9/06/2016	Bernice Te Ahuru	Grace Road, Turangi
1/09/2016	John Campbell	Te Rangitautahanga Road, Turangi

Issues raised

The main topics for the responses were

- Requesting further information and to talk through the issues relevant to their property.
- Feedback on draft rules.
- Issues regarding WRC management or funding of their flood hazard schemes.
- Disbelief that a 1% AEP flood would result in flooding on their land. Therefore request removal of flood hazard from their property. (7)
- Other issues regarding council services (mainly surface flooding from roads and blocked roadside drains).
- The concerns about extreme wave activity led to further work to see whether it could be feasibly included.

Conclusion

- Greater volume of response than from the first round of consultation but still a very low response rate (6%)
- Most responses requested further information and following a discussion with staff were relatively happy.
- The flood modeller was asked to reassess the flood hazard classification for 6 properties.
- Useful feedback from infrastructure providers on the high level planning philosophy and the draft objectives, policies and rules.
- Little feedback on the objectives, policies and rules from owners of affected residential properties.
- The concerns about extreme wave activity were further investigated and expert advice was sought. It became clear that it would be inappropriate to try and deal with this separate hazard as part of this plan change.

Error in Tokaanu flood hazard data

In late 2016, during the quality assurance process, an error was identified in the Tokaanu flood hazard mapping results which were presented for consultation. The data relating to water depth and velocity had been inadvertently switched before loading to the web-viewer tool. This also created errors in the resulting flood hazard layer. This error was subsequently corrected. Those affected property owners (135) were advised of this correction in May 2017 and invited to discuss the matter further with Council staff. Council was contacted by four landowners.

Responses

We received responses by phone and email. We had contact from four people which resulted in one meeting.

Date	Name	Address
31/05/2017	Mr Russell Boddington	Puanga Street, Tokaanu

Consultation with Tūwharetoa Maori Trust Board

The Ngāti Tūwharetoa Environmental Iwi Management Plan seeks to promote and enhance partnerships and better communication between district councils on resource management issues such as the management of natural hazards. The iwi management plan also seeks for involvement of a Tūwharetoa representative in the review of district plans and to develop frameworks that facilitate communication with district councils on resource management issues. Council staff have sought to communicate regularly with staff at the Tūwharetoa Maori Trust Board and to start this communication early in the plan change development.

Consultation with representatives from Tūwharetoa Maori Trust Board has been ongoing through the consultation phases of the draft plan change. The following consultation meetings occurred:

Date	Who	Matters discussed
11 August 2015	Simon Bendall	Provided background to the flood hazard project and ask TMTB what the best approach is to consult with the Trust Board.

Date	Who	Matters discussed
		Simon informed TDC that we should continue talking to him and Alice Barnett.
26 Nov 2015	Simon Bendall Alice Barnett	TDC outlined the process of the flood risk plan change, discussing inputs to the models, the reports, etc. as per the briefing notes provided to TMTB (see objective id A1560514). Specific discussions around some areas, including the marae at Waihi. Simon requested that TDC provide a list of all the Maori land blocks that are affected to enable him to contact them to talk through any concerns they have. Also asked that we send through a copy of the letters. TDC not able to provide this information to third parties from our rating database. Suggested alternative mechanisms for contacting owners of affected Maori land.
31 March 2016	Dayle Hunia (consultant working for TMTB)	Outlined the direction for the plan change, draft objectives, policies and rules and showed the mapping tool. Sought feedback. Dayle interested in impact on Maori land and Marae
19 April 2017	George Asher	General meeting with TMTB officers to discuss a range of Council matters. TDC provided a progress update on the flood risk plan change process and explained both the technical and ongoing engagement work. Noted that officers were targeting July/August for notification and discussed the potential to hold hui near the beginning of the submission period to answer questions. TMTB agreed and offered to organise this hui. The TMTB suggested an extended submission period as it would facilitate engagement, particularly from multiply owned Maori land blocks. TDC agreed to raise this with elected members.
26 April 2017	Korowai Awhina hui (bi-monthly hui of TMTB and representatives from marae)	TDC staff did a presentation on the flood risk plan change to this hui and answered questions. Council staff reiterated that they were happy to be contacted further, including site meetings on individual properties if anyone wanted. Council staff contact information was provided to the secretary for the meeting and sent out to attendees with the minutes.
4 October 2017	Maria Nepia Alice Barnett	Catch up on progress with notification of Plan Change. Agreed that TDC would organize two hui, around the southern part of the lake for land owners and hapu on the flood hazard plan change. TMTB undertook to assist TDC in calling a hui. TDC will manage the logistics and do the presentation. TMTB will look at circulating the panui and assisting at the front end of the presentation. TDC Strategic relationship manager to phone the three affected marae to ensure that they are aware of the effect of the plan change on the marae.

Correspondence

Between April 2015 and June 2017 Council staff corresponded regularly with staff from the TMTB, mostly through e-mail. Details of this correspondence is outlined below.

Dates	Content
30/04/2015, 22/07/2015, 10/08/15	Email to Simon Bendall <ul style="list-style-type: none"> Request to set up initial consultation meeting Request the preferred mechanism to consult with the Trust Board.

Dates	Content
04/04/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • Thanks for the meeting • Attach the insurance info from the Insurance Council
20/05/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • Update on progress • Confirm have written to Poukura Marae, Tokaanu Marae and Waihi Marae at the end of April about flood hazard. • No contact yet from any of these marae. • Rates department cannot generate contact names and addresses for affected Maori. Is there anything else we can do to assist with this?
21/05/2016	Email from Dayle Hunia <ul style="list-style-type: none"> • Request update on timeframes for Section 32 report. Keen to provide a more formal response on Section 32 report. • Need to have a separate conversation about the mapping data. • Can council not show Maori land at a property level just on your flood hazard system or across all of your systems?
23/05/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • Timeframes for the section 32 slightly delayed –possibly August. Rating Dept says they cannot legally use the rates database as the base information for identifying Maori land for our flood mapping tool. Maybe Council GIS team have investigated other ways of identifying Maori land across our systems. Need to broaden the discussion to include them.
20/05/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • Confirmation of sending a further letter to affected marae (Poukura Marae, Tokaanu Marae and Waihi Marae) on 29/04/2016 with screen shots from the mapping tool showing the flood hazard identified on these marae and to get in touch with TDC if they would like to discuss this further. • No response from the Marae. • Confirmation that TDC cannot use our rates database to provide a list of Maori land that is affected by the plan change and asking if there is a different way TDC can assist.
19/05/2016	Email to Alice Barnett <ul style="list-style-type: none"> • Understand TMTB wants to engage on the flood risk plan change. • TDC have been consulting with TMTB through Simon and Dayle Do you want further discussions?
20/05/2016	Email from Alice Barnet <ul style="list-style-type: none"> • TMTB wishes to continue to engage with TDC on the plan change. Your contact is Dayle. • TMTB main interests are impacted Marae and impacts on Maori Land.
13/06/2016	Phone message from Dayle Hunia Email back to Dayle Hunia

Dates	Content
	<ul style="list-style-type: none"> • Timeframes uncertain as trying to get some new data on the wave run up information to progress it in parallel to the flood risk plan change. Should know more after Council workshop on 20 June. • Have amended the draft objectives, policies and rules, (especially for subdivision and infrastructure) and attached them. • Request feedback on them
30/08/2016	Email from Dayle Hunia <ul style="list-style-type: none"> • Request update of progress • Any response from three marae and Turangitukua
31/08/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • The plan change has stalled while we identify the wave run up hazard. • Initial wave run up mapping wasn't accurate enough to use at an individual property level. • Two stakeholders state that wave run up is a known issue and needs to be addressed. • Opus preparing a proposal for remapping. • Section 32 going slowly • Will send latest update of Objectives, policies and rules soon. • Sent out letters to the Poukura, Waihi and Tokaanu marae. Heard back from Poukura Marae. • Briefed Gina Rangi from the Hapu Forum last year and contacted recently to see if she wants to meet and discuss the plan change further. • Not contacted Ngati Turangitukua directly as we have contacted all the affected landowners directly. Advice from Simon and Alice was that was appropriate.
1/09/2016	Email from Dayle Hunia <ul style="list-style-type: none"> • Please send details of request from Poukura Marae • TMTB can then follow up with the marae
1/09/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • Letter to marae attached • Details of Secretary Poukura Marae contact
12/10/2016	Email from Dayle Hunia <ul style="list-style-type: none"> • Requested the latest update on the timeframes for the plan change • Requested the latest version of the objectives, policies and rules. • Asked if TDC had a response from Poukura Marae) and requested contact details. • Confirming that Turangitukua (a PSGE) should be included in consultation in their own right (not as a landowner).
21/10/2016	Email to Dayle Hunia <ul style="list-style-type: none"> • Wave run up is now likely to be a separate plan change progressed at a later date • The next version of objectives, policies, rules will be available soon and will forward it. . • Provided Secretary for Poukura Marae contact details

Dates	Content
	Confirmed a letter has been sent to Ngāti Tūrangitukua Marae chair asking to set up a meeting to discuss the plan change.
4/11/2016	Email to Dayle Hunia <ul style="list-style-type: none"> Attached November 2016 version of draft objectives, policies and rules for the plan change.
1/03/2017	Email to Dayle Hunia <ul style="list-style-type: none"> Attached layman's guide to how and why we did the plan change (A draft of part of our section 32 report for the Plan Change) and requesting feedback. Advised that the detailed Section 32 report is not complete yet but will provided soon.
21/04/2017, 19/04/2017	Email from Alice Barnett <ul style="list-style-type: none"> Inviting and arranging TDC staff to present at the Korowai Awhina hui, (bi-monthly hui of TMTB and representatives from marae) on the Flood hazard plan change on 26 April 2017.
25/07/17	Phone call to George Asher Requesting who we should send the draft section 32 and draft plan change to at TMTB. George requested it be sent to him.
1/08/2017 9:48 a.m.	Email to George Asher Sending Section 32 report and draft plan change to George seeking feedback by 16 August.
22/08/17	Phone call to George Asher Requesting date when TMTB feedback will be received by TDC. George undertook to provide feedback by 31 August
18/09/17	Feedback received from TMTB on Draft Section 32 report
19/09/17	E-mail to Topia Rameka and Maria Nepia outlining response to the TMTB issues that will be inserted into the consultation section of the Section 32 report.
19/09/17	Acknowledgement e-mail from Maria Nepia
12/10/17	Email from Maria Nepia Confirmation of actions agreed at the 4 October meeting with TDC.

Issues raised

The following issues were raised by TMTB through meetings and correspondence with Council staff:

- Concern regarding Council's level of engagement with owners of multiple owned maori land
- Concern regarding Council's level of engagement with affected marae
- Request to have a copy of the draft Section 32 report and to provide feedback on it.

Council's level of engagement with owners of multiple owned maori land

Council wrote to all affected landowners and ratepayers twice through the two periods of pre notification consultation. The first letter was sent in November 2015 and the second letter was sent in February 2016. A further letter will be sent to affected ratepayers once the plan change is notified. These letters were sent to the contact names and addresses for the ratepayer and owner (where known) of the affected property from the Council rates database. TMTB staff requested contact details for all the multiple owned Maori land affected by the flood hazard data. Council rating staff stated that they can not legally use the rates database as the base information for identifying Maori land affected by the new flood hazard data. Council staff asked if there were other ways they could assist with this request. TMTB staff indicated that a hui around the southern part of the lake on notification of the plan change would help ensure that landowners were well informed about the plan change. Council staff agreed that they were happy with this and sought assistance from TMTB for arranging the hui.

Staff at TMTB asked if Council had consulted separately with Ngāti Tūrangitukua about the plan change. Council staff explained that letters were sent to affected ratepayer and so some Ngāti Tūrangitukua would have received letters from the Council about the plan change. TMTB staff explained that Ngāti Tūrangitukua (as a post settlement governance entity) should be included in consultation in their own right rather than as a landowner. Council wrote the Ngāti Tūrangitukua Maori Committee chair, Mr Jeff Bennett, on 13 October 2016 outlining the details of the plan change and asking for feedback. The letter also outlined that Council staff are happy to come and discuss this project further with Ngāti Tūrangitukua. Council staff have received no contact from Ngāti Tūrangitukua from this letter.

Level of engagement with affected marae

Three marae are affected by the new flood hazard data- Poukura Marae, Waihi Marae and Tokaanu Marae. Currently under the operative District Plan only the Tokaanu Marae is identified as being subject to flood hazards. Council staff wrote to Poukura Marae, Tokaanu Marae and Waihi Marae in November 2015 and March 2016 as part of notifying affected landowners of the new flood hazard information and the draft plan change. Council staff wrote again to these three marae on 29 April 2016 outlining the flood risk plan change, including a plan showing the extent and depth of the possible flooding (from the new flood data) across the marae site and asking them to get in touch if they wish to discuss it further. On 29 August 2016 the Secretary of the Poukura Marae left a message at Council reception asking for Council officers to ring her as she would like to make an appointment with him to meet on 31/08/16 to talk about the flood risk plan change. Council officers rang back on 30th and 31st and left two messages but got no response. No response was received from Tokaanu Marae and Waihi Marae.

Provision of the draft Section 32 report to TMTB staff

The laymans guide to why and how TDC undertook the plan change (An enduring story- a draft of part of our section 32 report for the Plan Change) was provided to TMTB staff on 1 March 2017. Council staff requested feedback from TMTB staff but had no feedback. The draft Section 32 report was provided to TMTB staff on 1 August 2017 for their comments. TMTB provided the following feedback¹²:

- The Trust Board have raised a concern about extreme wave activity not being included as part of Plan Change 34. They believe that this creates uncertainty for many Maori land blocks who abut the lake edge. They would like to have further discussions about the potential implications.

Response: Council is not in a position to be able to include the effects of extreme wave activity as part of this plan change. That reflects the lack of robust technical information and a well-defined spatial extent of the potential hazard. Council believes that there are sufficient existing provisions in place to manage the risks associated with extreme wave activity while further investigation into that hazard occurs.

- The assessment of the cultural effects of the Plan Change is not adequate and further engagement is required with the affected Maori land blocks to better understand all of the social, economic and environmental effects.

Response: Council has been engaging with the community, including owners of Maori land blocks, since 2008 on the potential effects of flooding. That prolonged period of engagement started with the Lake Taupō Erosion and Flood Strategy and then the subsequent Lake Taupō and river flood assessments. It provided multiple opportunities for all parts of the community to express their views over the values that are important and the potential effects on those values through the management of the flood hazards. This specifically included multiple opportunities for individual owners of Maori land blocks as well as affected marae. Those values were used to develop the provisions in Plan Change 34.

- Tūwharetoa landowners of multiply owned Maori land have 'sacrificed' their lands to enable the community the opportunity to sustain a desired benefit. This has resulted in an opportunity cost as they have not been able to develop, along with effects on taonga, access and turangawaewae. There has been no recognition of this in the evaluation.

Response: The Plan Change must give effect to the direction in the Regional Policy Statement. This has enabled Council to take a risk based approach to managing the natural hazard, compared to the generic approach currently existing in the District Plan. This means that Maori land blocks that are identified in the flood hazard areas of the operative District Plan will be easier to develop and utilise under the provisions of the Plan Change. In contrast, areas of high risk will become more difficult to build new structures on. This is deliberate and gives effect to the very directive approach in the Regional Policy Statement. While there will be a potential impact on those

¹² See Attachment J – Letter from CEO Tūwharetoa Maori Trust Board 18 September 2017

landowners in the high risk areas, Council believes that the overriding emphasis needs to be on keeping people safe rather than looking to enable utilisation of the land where that would put people in danger. Council believes that the Plan Change appropriately achieves this balance for Maori land blocks as well as other land.

When considered against the whole District Plan, the provisions in Plan Change 34 are unlikely to be significantly more limiting for Maori land blocks, most of which are located in the Rural Environment. Practically, the Rural Environment provisions provide an existing constraint on further intensification with a minimum allotment size of 10 hectares. Council also has to consider the risks from natural hazards as part of section 106 of the Resource Management Act.

- While the Ngati Tūwharetoa Environmental Iwi Management Plan has been recognised in the section 32 evaluation there has been no assessment against its provisions.

Response: The Iwi Management Plan emphasises the importance of developing partnerships to work together on resource management issues. Council has sought to do this with the Trust Board over several years through the sharing of information, discussion on approaches to engagement with Maori and debate over the draft planning provisions. The Plan also advocates for the protection of areas susceptible to flooding that is induced by human activity. Plan Change 34 is aimed at managing flooding that is the result of natural processes rather than being induced by human activity.

- The Trust Board would like to see explicit assessment of Part II of the Resource Management Act and specifically sections 6(e), (f) and (g). They believe that the association between the waterbodies and Ngati Tūwharetoa Hapū, whanau and landowners with ancestral lands, marae, urupa and other wāhi taonga must not be compromised by the District Plan.

Response: Plan Change 34 must give effect to the Regional Policy Statement and in doing so it is giving effect to Part II of the Resource Management Act. The provisions of the Plan Change are aimed at managing new buildings and infrastructure. This is unlikely to adversely affect the association between Ngati Tūwharetoa Hapū, whanau and landowners with their ancestral lands, marae, urupa and other wāhi taonga. The plan provisions may regulate the scale or design of new built structures but only to the point of maintaining people's safety. Furthermore, there are only three marae that are potentially affected by the new provisions. Each of the marae have been communicated with multiple times and the scale of the identified flood hazard is minor. No concerns have been raised about the potential compromise to their ancestral relationships.

- Because Council has received a very low response rate through the various periods of engagement the consultation approach must have been insufficient. The Trust Board would like to work with the Council to develop a more suitable consultation plan.

Response: Council has proceeded in a very slow and methodical manner during the preparation of the Plan Change. There has been a strong emphasis on ensuring that the technical information is as robust as possible. There has also been a similarly strong emphasis on enabling the community and affected land owners sufficient time to come to terms of the new technical information and its potential implications. Council has communicated through letters to those directly affected, through site meetings, telephone conversations and email. There have been hui and direct invitations to those directly affected marae. Those in the community who have wanted to engage on the issue have been encouraged and supported. This has included Maori land block owners and representatives from marae around the Lake.

- While Council and the Trust Board have been in contact over the last two years the first opportunity for substantive discussions took place in April 2017.

Response: Council has been actively engaging with the Trust Board for over two years during the development of the Plan Change. This has involved opportunities to discuss engagement strategies with Maori land block owners as well as affected Marae. There have also been opportunities to provide feedback on draft planning provisions as they evolved, along with early parts of the section 32 evaluation. The Trust Board also had seven weeks to consider and provide feedback on the draft section 32 evaluation.

- The Trust Board has deep concerns with the lack of engagement with Maori landowners and would like to discuss this further as they consider it to be a substantive issue.

Response: Council believes that there has been a comprehensive and integrated approach to the engagement on the Plan Change – not just for Maori landowners but for all affected landowners. The development of the Plan Change has been deliberately slowed to enable sufficient time for people to absorb the technical information,

consider its potential implications and provide feedback to Council on how best to manage the flood hazards. There have been extensive efforts made to engage with Maori landowners including direct written correspondence multiple times, site visits, open days in Turangi, presentations at hui and engagement with representatives from marae. In addition, Council has actively sought to engage with the Trust Board throughout the process of developing the Plan Change and provided multiple opportunities for feedback on the engagement strategies, draft provisions and draft section 32 evaluation.

Consultation with Raukawa Charitable Trust

As the Raukawa/TDC Joint Management Agreement is centred around the Waikato River and doesn't extend to the shores of Lake Taupō Council staff did not consult with Raukawa Charitable Trust during the development of the plan change.

However once the draft section 32 report was completed staff realised that as Raukawa takiwā and area of association does extend to the shore of Lake Taupō staff should have been consulting with Raukawa Charitable Trust Council during the development of the plan change. Council staff contacted staff at Raukawa in July 2017 asking if they wished to review the draft Section 32 report. Staff at Raukawa Charitable Trust requested a copy of the draft section 32 report which was provided to them on 1 August 2017. Raukawa staff explained that as the flood risk plan change does not extend into the Waikato River catchment the TDC Raukawa Joint Management Agreement does not apply. As a result this plan change was not one of Raukawa's current priorities so they decided not to provide any feedback at this time.

APPENDIX 8 – IDENTIFICATION AND ASSESSMENT OF REASONABLY PRACTICABLE OPTIONS (SECTION 32(1)(B) (I))

In determining the most appropriate way to achieve the objectives of the plan change, the options below were considered reasonably practicable options. Please note this assessment has been completed at an option level. .

	Option 1 – Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property.	Option 2 – Identification of new flood hazard areas and retain existing operative District Plan provisions.	Option 3 – Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991
Planning Approach	Introduces a specific objective, policy and rule framework for flood hazard management. The objectives, policies and rules relate to those properties identified as being affected by the flood hazard modelling data. This data identifies low, medium and high flood hazard areas.	Retains the operative District Plan objectives, policies and rule framework, but updates the planning maps with the new flood modelling data	Removes the existing flood hazard rules from the district plan, identifies the new flood risk modelling data on the District Plan Maps and uses the building consent process under the Building Act to manage building location and design in the flood hazard areas.
Relevance			
Directly related to resource management issue?	The option directly addresses the resource management issues.	These options do not address the resource management issue as they are not in alignment with the RPS risk based approach	
Will achieve one or more aspects of the purpose and principles of the RMA?	The option will assist in meeting section 5 of the act as it relates to the safety of communities by applying an appropriate risk based approach to managing flood hazards.	This option does not align with the RPS in taking a risk based approach therefore there is an overall alignment issue with the purpose of the Act.	The option will not assist in meeting section 5 of the act as it relates to the safety of communities, or be consistent with the RPS.
Relevant to Māori environmental issues? (sections 6(e),6(g),7(aa),8)	Natural hazards management has little direct relevance to those Māori environmental issues referenced. Maori issues have also indirectly been addressed through the RPS.		
Relevant to statutory functions or to give effect to another plan or policy (i.e., NPS, RPS)?	This option, as directed by the Waikato Regional Policy Statement, is a risk based approach to manage people and property within high, medium and low flood hazard areas.	These options do not take a risk based approach therefore fail to meet the requirements of the Waikato Regional Policy Statement.	

	Option 1 – Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property.	Option 2 – Identification of new flood hazard areas and retain existing operative District Plan provisions.	Option 3 – Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991
Does the proposal give effect to the key RPS objectives in managing flood hazards?	This option has involved a full review and remodelling of the flood hazard areas around Lake Taupō and has been done to be consistent with the RPS objective.	This option is essentially status quo. This approach would not apply the risk based approach into the District Plan so would not meet the RPS requirements.	This option would use only the provisions of the Building Act to manage the risk of flooding. This approach is not adequate to meet the requirements of the RPS as under the Building Act there is no ability for Council to decline activities from establishing within flood hazard areas. This approach therefore does not avoid risk to people and property to as required by the RPS.
Does it identify flood hazard areas using a risk management framework?	High, medium and low flood hazard areas are identified.	This option would identify flood hazard areas.	This option would identify flood hazard areas.
Is development, use and subdivision managed to reduce risk to an acceptable level?	Use, development and subdivision is controlled and avoided where it would be vulnerable or place the community at intolerable risk.	This option would fail to control or avoid development where it would be vulnerable or place the community at intolerable risk.	Only development under the Building Act would be controlled. Subdivision and other activities would not be managed.
Does it identify and plan for residual risk areas?	Residual risks areas have been mapped but no rules apply in these areas as: <ul style="list-style-type: none"> • The degree of risk cannot be quantified for individual properties making it hard to justify imposing regulatory costs. • These affected areas are already well developed with limited opportunities for further intensification. • Many of the properties in the defended areas are also affected 	Residual risk areas would be identified under this option but no rules would be included to manage activities in these areas.	Residual risk areas would be identified under this option but no rules could be applied to manage activities in these areas.

	Option 1 – Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property.	Option 2 – Identification of new flood hazard areas and retain existing operative District Plan provisions.	Option 3 – Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991
	<p>by the flood hazard and therefore aware of the risks.</p> <ul style="list-style-type: none"> There are relatively few residential properties that are located in the defended areas making this a small confined issue. 		
Usefulness			
Will effectively guide decision-making?	This option will provide specific direction and guidance within the plan to direct development within low, medium and high flood hazard areas and clear direction to limit development in high risk areas.	This option will not provide distinction between flood hazard areas with different level of risk, therefore will not provide effective guidance to decision making.	There will be no ability to manage other activities (aside from buildings) or manage activities within different flood hazard areas under this option so it will not provide for effective decision making.
Consistent with other objectives?	Applies a more detailed risk management approach than is currently applied to other hazards.	This option is consistent with the current approach taken to managing other types of hazards within the District Plan.	It would be inconsistent with the District Plan to manage flood hazards via the Building Act, as this mechanism will not achieve the objective
Achievability			
Will it be clear when the objective has been achieved in the future? Is the objective measureable and how would its achievement be measured?	<p>As the type of land known to be prone to flooding has been identified, it is possible to record development within these areas through the Building Act process and monitoring of subdivision within these areas.</p> <p>Development within these areas can be monitored, including those buildings etc. which have design responses to the hazard on the site.</p>		
Does the council have the functions, powers, and policy tools to ensure that they can be achieved? Can you describe them?	Yes, provisions can be introduced in to the plan through the plan change process and then implemented through s106 of the RMA and through the Building Act.	Yes, s106 of the RMA and Building Act requirements can be applied by Taupō District Council.	The Building Act can be used to manage floor height, however there would be no powers to control other activities or decline new buildings in high flood hazard areas.

	Option 1 – Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property.	Option 2 – Identification of new flood hazard areas and retain existing operative District Plan provisions.	Option 3 – Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991
What other parties can the Council realistically expect to influence to contribute to this outcome?	The affected property owners, building industry and local planning and engineering consultants to be aware of the requirements prior to planning development in flood prone areas.	The affected property owners, building industry and local planning and engineering consultants to be aware of the requirements prior to planning development in flood prone areas.	The affected property owners, building industry and local planning and engineering consultants to be aware of the requirements prior to planning development in flood prone areas.
What risks have been identified in respect of outcomes?	Defended areas have been identified but the actual area that may be affected if there is a breach in the stopbank can not be identified. There is a risk that people and buildings will not be kept safe if a stopbank breaches. Apart from defended areas the risk associated with this option is very low.	This option, which is effectively the status quo, would involve increased regulatory costs and risks to people and building safety due to building in high hazard areas. This approach would not implement the requirements of the RPS.	This involves significant risk in managing activities that are outside of the Building Act, which cannot be managed and may therefore be at risk from flood hazards. Building would be permitted in high hazard areas which is inadequate protection for people and contrary to the requirements of the RPS.
Reasonableness			
Does the objective seek an outcome that would have greater benefits either environmentally or economically/socially compared with the costs necessary to achieve it?	This option imposes less economic costs on the community by restricting the regulatory costs to those where the risk is higher. There will be more certainty that better flood management, and therefore community safety can be achieved. There may be some economic effect due to limiting intensification in the high flood hazard areas and the related temporary reduction in property value and possibly insurance premiums. However this will be minimal given that only 39	Regulatory costs would remain consistent with current costs. There would be no improvement in flood management and therefore community safety. Therefore the costs are greater than the benefits.	Regulatory costs would reduce under this option as resource consents would not be required. However, there would be no improvement in flood management and therefore community safety.

	Option 1 – Create specific objectives and policies and apply a risk based approach with provisions based on the level of risk to people and property.	Option 2 – Identification of new flood hazard areas and retain existing operative District Plan provisions.	Option 3 – Identification of new flood hazard areas and manage the design of buildings and flood risk through the Building Act 1991
	residentially zoned properties have more than 4 squares 100m ² of high flood hazard and of these only two are not already developed that would be suitable for development.		
Economic and Employment Opportunities	There may be a small affect on economic opportunities for owners of high flood hazard properties as development in these areas is inappropriate. However most of the high flood hazard areas zoned residential are already developed.	No anticipated impact on economic or employment opportunities.	No anticipated impact on economic or employment opportunities.
Who is likely to be most affected by achieving the objective and what are the implications for them?	Property owners wishing to undertake development within areas prone to flooding, especially those in high flood hazard areas. Depending on the type and scale of development this is now non-complying. For property owners in medium and low flood hazard areas, a resource consent will be required in some cases, but rules are likely to be less onerous than presently.	There will be no change on those affected and how they are affected through this option.	This approach would remove regulatory costs on landowners as resource consents would no longer be required. However this option does not avoid risk to people and property to the degree that the RPS requires.

APPENDIX 9 - PROPOSED APPROACH

The proposed approach to flood hazards involves new objectives, policies and rules for flooding being inserted into the natural hazards section of the District Plan and the removal of the existing flood hazard rules. Activities and development within the flood hazard areas will not be subject to the broad natural hazard objectives and policies contained in Section 31 of the district plan and new flood hazard rules will replace those contained in Section 4e.9. Minor amendments will also be made to Rule 4e.2.1 – *Foreshore Protection Area* and new definitions inserted into Section 10 of the District Plan.

The new objectives relate to keeping people safe and protecting property. The new policies and methods seek to reflect the risk approach in the regional policy statement. They are centred on not intensifying the risk to people's safety and property in the high flood hazard areas and on minimising regulation for those whose properties are within the low and medium flood hazard areas. The policies and rules cover new buildings, additions to buildings (major and minor), Assembly care or community care activities, emergency services activities, subdivision and infrastructure.

The existing flood hazard areas will be removed from the planning maps and replaced with the new flood hazard areas for the Hinemaiaia-River, Kuratau-River, Lake-Taupō, Tauranga Taupō-River, Tokaanu-Stream, Tongariro River and Whareroa-Stream which will show areas of low, medium and high flood hazard.

The proposed planning provisions are:

PLAN CHANGE 34 FLOOD HAZARD

Update 31.1ii Flooding as follows:
FLOODING

Inundation can occur as the result of water flowing over the top of riverbanks and flooding adjoining land; inflows exceeding outflows from the the capacity of a lake being exceeded and flooding lakeshore properties; and of properties being located in ephemeral waterways. Settlements adjacent to the Waikato and Hinemaiaia River; the Tauranga Taupō River, the Tongariro Rivers, the Tokaanu Stream, the Kuratau River and the Whareroa Stream and Lake Taupō along with other smaller river systems, for example, the Kinloch, Waitahanui, Hinemaiaia, Tauranga-Taupō, Waimarino, Waiotaka, Tokaanu and Kuratau Rivers can be affected by flooding. Other waterbodies in the district can flood but have not been included in flood modelling as they:

- are spring fed so not as susceptible to flood flows, or
- have a small catchment area, or
- are located in areas where there are relatively few people, limited property at risk and outside future growth areas.

In some areas mitigation measures such as stopbanks exist and allow the use and occupancy of the flood plane plain at an acceptable level of risk. These have been identified as defended areas. For the Tauranga Taupo River the defended areas, identified on the planning maps, are defended up to 2% AEP. For the Tongariro River the defended areas, identified on the planning maps, are defended up to 1% AEP. However, activities need to recognise that there is still a hazard when the capacity of the stopbanks is exceeded.

Insert the following text before Objective 31.2.1

The following objectives and policies apply to all natural hazards except flooding. Objectives 31.2.3 and 31.2.4 apply to flood hazard areas.

Delete the word “flooding” from policy 31.2.1ii

Delete the following text “Earthworks may alter the direction and intensity of a flood event by diverting floodwaters or altering drainage functions, while” from the third sentence of the second paragraph under 31.2.2 Explanation

Insert the following text before Objective 31.2.3:

Objective 31.2.3 seeks to keep people safe in a 1% annual exceedance probability flood. Objective 31.2.4 seeks to keep buildings and infrastructure safe in a 1% annual exceedance probability flood.

OBJECTIVE

31.2.3 Keep people safe during a flood event with an annual exceedance probability of 1% and ensure that emergency services remain able to operate.

POLICIES

- i. Ensure that communities are informed of the potential flood hazard (including residual risks) that may affect them.
- ii. Avoid locating new buildings (excluding those associated with infrastructure) and major additions to existing buildings (excluding those associated with infrastructure) in high flood hazard areas due to the risk to people's lives from flood waters and building debris.
- iii. Control the design of new buildings and minor additions in low and medium flood hazard areas to keep people safe.
- iv. Control the design of minor additions to existing buildings in high flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe.
- v. Control the design of major additions to existing buildings in low and medium flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe.
- vi. Avoid locating new assembly care and community care activities for vulnerable people in high flood hazard areas.
- vii. Manage the location and design of new assembly care and community care activities for vulnerable people in low and medium flood hazard areas to keep people safe. This includes the ability for people to be evacuated.
- viii. Avoid locating new emergency services in high flood hazard areas.
- ix. Manage the location and design of new emergency services in low and medium flood hazard areas to ensure their ability to operate in a flood event.
- x. Avoid subdivision that creates intolerable risk in high flood hazard areas. The location of building platforms within high flood hazard areas is considered to be intolerable.

OBJECTIVE

- 3l.2.4 Buildings and infrastructure are located and designed to ensure continued operation and to avoid structural damage during a flood event with an annual exceedance probability of 1%.

POLICIES

- i. Avoid locating new buildings (excluding those associated with infrastructure) and major additions to existing buildings (excluding those associated with infrastructure) in high flood hazard areas given the likelihood of structural damage.
- ii. Control the design of new buildings and major additions to existing buildings in low and medium flood hazard areas to avoid structural damage during significant flood events.
- iii. Provide for minor additions to existing buildings in low and medium flood hazard areas in recognition of the investment in the existing buildings and site works.
- iv. Provide for, infrastructure (and buildings that enclose that infrastructure), and subdivision for infrastructure that is not vulnerable to flood risk or has a functional requirement to be in a flood hazard area.
- v. Avoid infrastructure (and buildings that enclose that infrastructure), and subdivision for infrastructure, that is vulnerable to flood risk in a flood hazard area.

Delete the words "such a minimum floor levels in identified flood prone areas" from Method 3l.3iii

Delete method 3l.3xv

Renumber method 3l.3xvi to 3l.3xv

DISTRICT WIDE RULES

Delete the words "flood inundation or" from the assessment criterion d to rule 4e.2.1 (Any building on or above ground within a Foreshore Protection Area is a discretionary activity.) so it reads "d. The potential for erosion from the District's waterways and lakes"

Remove the existing rules in section 4e.9 Flood Hazard Area (rules 4e.9.1 and 4e.9.2) and insert the following:

These rules apply to the flood hazard areas marked on the district plan maps.

NOTE. There are no rules that apply to the defended areas. These areas are identified on the district plan maps for information purposes only.

New Buildings

- 4e.9.1 Any new building (excluding those associated with infrastructure) in a low or medium flood hazard area is a **permitted activity** provided the floor level is 300mm above the identified maximum flood level.
- 4e.9.2 Any new building (excluding those associated with infrastructure) in a low or medium flood hazard area which does not comply with the standard in rule 4e.9.1 is a **restricted discretionary activity**, with Council's discretion being restricted to:
- a. The degree to which building, structural or design work to be undertaken can avoid the effects of the flood hazard.
 - b. The nature of the activity, its intended uses including whether the use is temporary or permanent and the degree to which people are put at risk as a result of the activity.
- 4e.9.3 Any new building (excluding those associated with infrastructure) in a high flood hazard area is a **non-complying activity**.

Major Additions

- 4e.9.4 Any major addition to an existing building (excluding those associated with infrastructure) in a low or medium flood hazard area is a **permitted activity** provided the floor level of the addition is 300mm above the identified maximum flood level.
- 4e.9.5 Any major addition to an existing building (excluding those associated with infrastructure) in a low or medium flood hazard area which does not comply with the standard in rule 4e.9.4 is a **restricted discretionary activity**, with Council's discretion being restricted to:
- a. The degree to which building, structural or design work to be undertaken can avoid or mitigate the effects of the flood hazard.
 - b. The nature of the activity, its intended uses including whether the use is temporary or permanent and the degree to which people are put at risk as a result of the activity.
- 4e.9.6 Any major addition to an existing building (excluding those associated with infrastructure) in a high flood hazard area is a **non-complying activity**.

Minor Additions

- 4e.9.7 One minor addition to an existing building at the date this rule becomes operative (excluding those associated with infrastructure) in a low, medium or high flood hazard area is a **permitted activity** provided the floor level of the addition is not lower than the existing floor level.
- 4e.9.8 Any minor addition to an existing building (excluding those associated with infrastructure) in a low, medium or high flood hazard area which does not comply with the standard in rule 4e.9.7 is a **restricted discretionary activity**, with Council's discretion being restricted to:
- a. The degree to which building, structural or design work to be undertaken can avoid or mitigate the effects of the flood hazard.
 - b. The nature of the activity, its intended uses including whether the use is temporary or permanent and the degree to which people are put at risk as a result of the activity.

Assembly care or community care activities

- 4e.9.9 Any new assembly care or community care activity in a low or medium flood hazard area is a **restricted discretionary activity** with Council's discretion being restricted to:
- a. The degree to which building, structural or design work to be undertaken can avoid or mitigate the effects of the flood hazard.
 - b. The nature of the activity, its intended uses including whether the use is temporary or permanent and the degree to which people are put at risk as a result of the activity.
 - c. The ability to evacuate during a flood event.
- 4e.9.10 Any new assembly care or community care activity in a high flood hazard area is a **non-complying activity**.

Emergency services activities

4e.9.11 Any new emergency service activity in low or medium flood hazard areas is a **restricted discretionary activity** with Council's discretion being restricted to:

- a. The degree to which building, structural or design work to be undertaken can avoid or mitigate the effects of the flood hazard.
- b. The nature of the activity, its intended uses including whether the use is temporary or permanent and the degree to which people are put at risk as a result of the activity.
- c. The ability of emergency services vehicles to operate from the site during a flood event.

4e.9.12 Any new emergency service activity in a high flood hazard area is a **non-complying activity**.

Subdivision

Note: Refer to the underlying environment rules for subdivision in low and medium flood hazard areas.

4e.9.13 Subdivision of land in a high flood hazard area, is a **restricted discretionary activity** provided that:

- i. building platforms are identified outside high flood hazard areas, and
- ii. recorded through a consent notice on the Computer Freehold Register of the newly created allotments.

With Council's discretion being restricted to:

- a. The design of the subdivision to allow access to the site during a flood event.
- b. The recording of the height of the building platforms through a consent notice.

EXCEPTION:

Rule 4e.9.13 will not apply to subdivision for the purposes of infrastructure, access lots, adjustment of boundaries, or legal protection in perpetuity of Significant Natural Areas.

4e.9.14 Subdivision of land in a high flood hazard area which does not comply with standard i or ii in rule 4e.9.13 is a **non-complying activity**.

EXCEPTION:

Rule 4e.9.14 will not apply to subdivision for the purposes of infrastructure, access lots, adjustment of boundaries, or legal protection in perpetuity of Significant Natural Areas.

4e.9.15 Subdivision providing for infrastructure in a high flood hazard area is a **restricted discretionary activity** with Council's discretion being restricted to:

- a. The location and design of the infrastructure and buildings that enclose the infrastructure.
- b. Whether the infrastructure is a lifeline utility.
- c. Whether the infrastructure can continue to operate during and after a flood event.

Infrastructure

The provisions of the National Environmental Standards for Telecommunication Facilities prevail over the following Infrastructure rules.

4e.9.16 Any maintenance or upgrading of existing or the construction of new:

- below ground infrastructure and buildings that enclose them,
- stormwater infrastructure and buildings that enclose them,
- roads,
- marina facilities and buildings that enclose them,
- hydro electricity generation activities and buildings that enclose them, or
- electricity transmission activities

in any flood hazard area is a **permitted activity**.

For rule 4e.9.16 electricity transmission activities mean part of the national grid of transmission lines and cables (aerial, underground and undersea, including the high-voltage direct current link), stations and sub-stations and other works used to connect grid injection points and grid exit points to convey electricity throughout the North and South Islands of New Zealand.

4e.9.17 Any maintenance or minor upgrading of existing above ground infrastructure (and buildings that enclose them), in any flood hazard area is a **permitted activity**.

For the purpose of rules 4e.9.16 and 4e.9.17 "maintenance" means all activities associated with the protective care and monitoring of infrastructure, in order to arrest the processes of decay, structural fatigue, erosion or dilapidation.

For the purpose of rule 4e.9.17 “minor upgrading” means structure improvement, repair and replacement of worn or technically deficient parts of the infrastructure and accessory buildings and structures of similar character and scale.

4e.9.18 Any new above ground infrastructure (and buildings that enclose them), in any flood hazard area, that does not comply with rule 4e.9.16 is a **restricted discretionary activity** with the matters of discretion restricted to:

- a. The location and design of the infrastructure and building.
- b. Whether the infrastructure is a lifeline utility.
- c. Whether the infrastructure can continue to operate during and after a flood event.

DEFINITIONS

Add the following definitions to section 10 of the District Plan

Annual Exceedance Probability (AEP) - means the probability of a certain design flood flow being equalled or exceeded in any year. A 1% AEP design flood flow has a 1% or 1 in 100 chance of being equalled or exceeded in any year.

Assembly care activity - means a building or use where a large degree of care and service is provided. For example an early childhood education and care centre, college, day care institution, centre for handicapped persons, kindergarten, school or university.

Community care activity - means a residential building or use where a large degree of assistance or care is extended to the principal users. There are two types:

- Unrestrained: where the principal users are free to come and go such as a hospital, old peoples home or health camp.
- Restrained: where the principal users are legally or physically constrained in their movements such as a borstal or drug rehabilitation centre, aged care where substantial care is extended, a prison or hospital.

Defended areas - are areas which would normally flood in a 1% AEP flood event but are protected from flooding by a flood protection scheme managed by the Waikato Regional Council.

Emergency services - means Police, Fire, Ambulance Service, Coastguard, Civil Defence and Emergency Management facilities and welfare centres.

High flood hazard area - is the area where floodwaters in a 1% annual exceedance probability flood are likely to significantly impede the manoeuvrability or stability of the average person and damage to property is likely to be widespread and structural, including instances where buildings have been raised above the ‘flood level’. These areas are shown on the planning maps as high flood hazard areas (red). These areas are defined by:

- i) the depth of flood waters exceeds one metre; or
- ii) the speed of flood waters exceeds two metres/second; or
- iii) the flood depth multiplied by the flood speed equals or exceeds one.”

Lifeline Utility - means entities named or described in Part A, or that carries on a business described in Part B of Schedule 1 of the Civil Defence and Emergency Management Act 2002 and their associated essential infrastructure and services.

Low flood hazard area - is the area where floodwaters in a 1% annual exceedance probability flood are unlikely to impede the manoeuvrability or stability of the average person and damage to property is likely to be non-structural and mainly due to inundation and deposition of sediment. These areas are shown on the planning maps as low flood hazard areas (yellow). These are areas where:

- i) the depth of flood waters is one metre or less; or
- ii) the speed of flood waters is one metre/second or less; or
- iii) the flood depth multiplied by the flood speed is less than 0.5.

Major addition - means any addition to the gross floor area that exceeds 15m².

Marina facilities - means boat ramps, jetties, berth poles, access structures, lights, street furniture, facilities associated with water circulation, power and water supply points for berths and security cameras, fencing and gates.

Maximum flood level - is the maximum depth of inundation as a result of either lake or river flooding.

Medium flood hazard area - is the area where floodwaters in a 1% annual exceedance probability flood are likely to start to impede the manoeuvrability or stability of the average person and damage to property is unlikely to be structural provided that weak points such as windows and doors are retained above flood level. These areas are shown on the planning maps as medium flood hazard areas (orange). These are areas where:

- i) the speed of flood waters is greater than one metre/second but equal to or less than two metres/second; or
- ii) the flood depth multiplied by the flood speed is equal to or greater than 0.5 and less than one”

Minor addition - means any addition to the gross floor area that is equal to or less than 15m².

APPENDIX 10 – EXPLANATION OF THE PROPOSED POLICIES AND RULES

Proposed policies

Section 32 (1)(b) requires the Council to examine whether the plan change provisions are the most appropriate way to achieve the objectives. Having established that the proposed objectives in Section 8 are the most appropriate way of achieving the purpose of the Act, it is necessary to outline how the proposed policies will achieve these objectives.

Policies	Evaluation of Efficient and Effectiveness taking account of Benefits, Costs and Risk
<p>Policy i: Ensure that communities are informed of the potential flood hazard (including residual risks) that may affect them</p>	<p>Objective 31.2.3: Keep people safe during a flood event with an annual exceedance probability of 1% and ensure that emergency services remain able to operate.</p>
<p>Policy ii: Avoid locating new buildings (excluding those associated with infrastructure) and major additions to existing buildings (excluding those associated with infrastructure) in high flood hazard areas due to the risk to people's lives from flood waters and building debris</p>	<p>Efficiency and Effectiveness: Policy i seeks that the communities are made aware of the potential flood hazard that may affect them.</p> <p>Policy ii seeks to avoid new buildings and major additions in high flood hazard areas where people lives would be at risk, while policies iii - v seek to control the design of new buildings and additions to existing buildings within low, medium and high flood hazard areas to recognise existing investment and ensure that people are kept safe during a flood event.</p>
<p>Policy iii: Control the design of new buildings and minor additions in low and medium flood hazard areas to keep people safe</p>	<p>Policy vi seeks to avoid new assembly care and community care activities establishing within high flood hazard areas while policy vii will control the design and location of new assembly care and community care activities in low and medium hazard areas. These policies ensure that vulnerable people are not at risk during flood events.</p>
<p>Policy iv: Control the design of minor additions to existing buildings in high flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe</p>	<p>Policy viii requires new emergency service activities to be located outside the high flood hazard, while policy ix will manage the location and design of new emergency services in low and medium flood hazard areas. These policies ensure that emergency service activities are not located in areas or designed such that they will not be able to operate during a flood event.</p>
<p>Policy v: Control the design of major additions to existing buildings in low and medium flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe</p>	<p>Policy x seeks to avoid subdivision that would create an intolerable risk in a high flood hazard area.</p>
<p>Policy vi: Avoid locating new assembly care and community care activities for vulnerable people in high flood hazard areas</p>	<p>The policies are designed to ensure that the community and users of the district plan are aware of what development and activities are appropriate within low, medium and high flood hazard areas and ensure that people will be kept safe during a 1% AEP flood event.</p>
<p>Policy vii: Manage the location and design of new assembly care and community care activities for vulnerable people in low and medium flood hazard areas to keep people safe. This includes the ability for people to be evacuated.</p>	<p>The policies recognise that areas within the district are subject to flooding and that certain activities and development are not appropriate within low, medium and high flood hazard areas. Without such policies it would be difficult to achieve the objective and would be at a cost to the community and users of the district plan who require such information to make informed decisions. As such it is considered that the policies provide certainty as to what development is appropriate.</p>
<p>Policy viii: Avoid locating new emergency services in high flood hazard areas.</p>	<p>Properties previously not affected by flood hazard may incur additional regulatory and building costs. The benefit of ensuring people are kept safe in flood zones however is considered to outweigh the cost.</p>
<p>Policy ix: Manage the location and design of new emergency services in low and medium flood hazard areas to ensure their ability to operate in a flood event.</p>	

Policies	Evaluation of Efficient and Effectiveness taking account of Benefits, Costs and Risk
<p>Policy x: Avoid subdivision that creates intolerable risk in high flood hazard areas. The location of building platforms within high flood hazard areas is considered to be intolerable.</p>	<p>The risk of not identifying land subject to flooding and establishing a framework such as that proposed, is that inappropriate development and activities could establish within flood hazard areas. People would therefore not be safe nor would emergency services be able to operate during a 1% AEP flood event.</p> <p>The policies align with Objective 31.2.3. Policy i ensures that flood hazard areas are identified to the community while remaining policies provide a clear framework for development and activities within low, medium and high flood hazard areas.</p>
Objective 31.2.4 Policies	Evaluation of Efficient and Effectiveness taking account of Benefits, Costs and Risk
<p>Policy i: Avoid locating new buildings (excluding those associated with infrastructure) and major additions to existing buildings (excluding those associated with infrastructure) in high flood hazard areas given the likelihood of structural damage.</p>	<p>Objective 31.2.4: Buildings and infrastructure are located and designed to ensure continued operation and to avoid structural damage during a flood event with an annual exceedance probability of 1%.</p> <p>Efficiency and Effectiveness: Policy i seeks to avoid new buildings and major additions to existing buildings being undertaken within high flood hazard areas given the likelihood of structural damage during a flood event.</p>
<p>Policy ii: Control the design of new buildings and major additions to existing buildings in low and medium flood hazard areas to avoid structural damage during significant flood events.</p>	<p>Policies ii and iii seek to control the design of new buildings, major and minor additions of existing buildings within low and medium flood hazard areas to recognise existing investment and avoid damage during a significant flood event.</p>
<p>Policy iii: Provide for minor additions to existing buildings in low and medium flood hazard areas in recognition of the investment in the existing buildings and site works</p>	<p>Policy iv recognises that some infrastructure is not vulnerable or has a functional requirement in a flood hazard area and therefore structural damage is likely to be avoided and infrastructure will continue to operate. Policy v ensures that infrastructure vulnerable to flood hazards will not be located in a flood hazard area where it would place a community at intolerable risk due to the likelihood of structural damage and operation ceasing.</p>
<p>Policy iv: Provide for, infrastructure (and buildings that enclose that infrastructure), and subdivision for infrastructure that is not vulnerable to flood risk or has a functional requirement to be in a flood hazard area.</p>	<p>The policies are efficient and effective as will avoid buildings and infrastructure from being located in inappropriate areas. This ensures structural damage is avoided and infrastructure can continue to operate during a flood hazard event and avoid intolerable risk on communities.</p>
<p>Policy v: Avoid infrastructure (and buildings that enclose that infrastructure), and subdivision for infrastructure, that is vulnerable to flood risk in a flood hazard area.</p>	<p>The benefit of these policies will ensure new buildings, additions to existing building and infrastructure are able to be located in flood hazard areas where appropriate and thus avoid structural damage and ensure infrastructure can continue to operate during a flood event.</p> <p>The risk of not controlling the location of new buildings, extensions to existing buildings and infrastructure in flood hazard areas is that inappropriate buildings and infrastructure in flood areas are likely to be damaged and therefore unable to operate during a flood event which would impact on communities and rebuilding costs.</p> <p>Policies 31.2.4 (i) to (v) align with Objective 31.2.4</p>

Proposed rules

A set of rules is proposed to control new development and activities establishing within identified flood hazard areas. The rule framework considers development and activities within low, medium and high flood hazard areas

where the proposed rules range from permitted activities (no resource consent required) to non-complying activities which is development that is inappropriate within specific flood hazard areas. These rules will replace the existing controlled activity and discretionary activity rule in Section 4e of the district plan. The rules are focused on the activities that have been identified, through the policies, as potentially increasing the risk to the safety of people and buildings.

New Buildings

Rules 4e.9.1 and 4e.9.2 recognise that in low and medium flood hazard areas some buildings are appropriate and that people can be safe during a 1% flood event in these areas. Rule 4e.9.1 provides for new buildings in low and medium flood hazard areas as a permitted activity where the building is built 300mm above the identified flood level. Rule 4e.9.2 makes new buildings a restricted discretionary activity when this minimum floor level is not met. This rule requires developers to demonstrate how people in the new building will be kept safe during a flood event. Rule 4e.9.3 makes a new building in a high flood hazard area a non-complying activity. This rule recognises that new buildings in high flood hazard areas are not appropriate as it is highly unlikely that people would be safe during a 1% AEP flood event. This direction is provided by the RPS.

Additions Major

Major additions are defined as any addition exceeding 15m² in area. 15m² was chosen, as it is the size of an average ensuite or double bedroom and so is an appropriate benchmark between major and minor additions. Rule 4e.9.4 provides for major additions in low and medium flood hazard areas as a permitted activity where the floor level is 300mm above the identified flood level. Where developers do not meet this minimum floor level standard, major additions are a restricted discretionary activities under Rule 4e.9.5. Under such an application, the developer will need to demonstrate how people would be kept safe in a 1% AEP flood event if the floor level is not above the flood level.

Rule 4e.9.6 makes any major addition in a high flood hazard area a non-complying activity. This recognises that major additions are not appropriate in high flood hazard areas as this would increase the number of people located in the high flood hazard area which is contrary to the direction established in the RPS.

Additions Minor

Minor additions are defined as any addition not exceeding 15m² in area. New Rule 4e.9.7 recognises that one minor addition to a buildings in all flood hazard areas will be of a scale which will not impact the safety of people during a flood event as long as the floor level is not lower than the existing floor level. However there is the possibility of a number of minor additions over the years resulting in intensification in the high flood hazard areas. So the rule restricts the permitted activity to one minor addition from when the rule becomes operative. Where the floor level of the minor addition is lower than the existing floor level there may a risk to peoples safety. So rule 4e.9.8 requires such an addition to be a restricted discretionary activity and the developer will need to demonstrate how people will be kept safe in a 1% AEP flood event.

Assembly care or community care activities

Assembly care and community care activities are those where care is provided to people. Assembly care facilities are places such as early childhood education and day care institutions or schools. Community care activities are places such as hospitals, aged care, drug rehabilitation centres or prisons. People involved with these activities are generally vulnerable and so Rule 4e.9.10 makes new assembly care and community care activities a non-complying activity in the high flood hazard areas. This will ensure these activities do not locate in the high flood hazard areas and so will ensure that vulnerable people are not put at risk during a flood event. Rule 4e.9.9 provides for these activities to establish within low and medium flood hazard areas as a restricted discretionary activity as this will require that developers demonstrate how vulnerable people will be kept safe during a flood event including the ability to evacuate.

Emergency service activities

Emergency services are Police, Fire, Ambulance Service, Coastguard, Civil Defence and Emergency Management facilities and welfare centres. It is essential that these activities can continue to operate during a flood event and provide sufficiently for the community. Rule 4e.9.11 makes it a restricted discretionary activity to locate a new emergency service activity in the low and medium flood hazard areas. This is so the developer can demonstrate that the emergency services will have the ability to continue to operate during a flood event. Rule 4e.9.12 makes any new emergency service in a high flood hazard area a non-complying activity as it is unlikely that they would be able to operate during a flood event. This gives effect to the direction in the RPS.

Subdivision

The proposed subdivision rules only apply to high flood hazard areas. Rule 4e.9.13 makes subdivisions a restricted discretionary activity provided that all building platforms are located outside the high flood hazard areas and this is recorded through a consent notice on the title. This will ensure that intensification does not occur in the

high flood hazard areas and put more people at risk. This rule gives effect to the direction in the RPS. Where these standards are unable to be met, the subdivision of land within a high flood hazard area is a non-complying activity under Rule 4e.9.14. The rules and the proposed policies will ensure that subdivision will not occur that intensifies uses within the high flood hazard areas where people's safety would be compromised during a flood event.

Subdivision for infrastructure purposes in the high risk areas is a restricted discretionary activity under Rule 4e.9.15. The rule provides for subdivision for infrastructure where it can be demonstrated, through the design and location that the infrastructure can continue to operate during and after a flood event

Infrastructure

Rule 4e.9.16 provides for maintenance, upgrading and construction of new infrastructure that is not vulnerable to flooding as a permitted activity. This list of infrastructure includes infrastructure that an NPS requires the Council to provide for and those that are permitted activities under National Environmental Standards (renewable electricity generation facilities, telecommunication facilities and electricity transmission activities) and those that are not vulnerable to flooding. This is because the infrastructure providers (subject to NPS and NES) already factor resilience into industry practice. So they will either avoid hazards areas or engineer structures so their infrastructure is resilient to flooding risk. Infrastructure that is not vulnerable to flood risk does not need to be managed by the District Plan.

Rule 4e.9.17 provides for the maintenance and minor upgrading of existing above ground infrastructure and buildings that enclose them. The maintenance and minor upgrading of existing above ground infrastructure should not be restricted as it will be no more affected by flood hazard than the existing infrastructure already is. To provide clarity, "maintenance" and "minor upgrading" have been defined for these rules. Rule 4e.9.18 requires above ground infrastructure (excluding those permitted by rule 4e.9.16) that want to locate in any flood hazard area shall be a restricted discretionary activity. The matters of discretion ensure that new above ground infrastructure in flood areas that are lifeline utilities can continue to operate during and after a flood.

APPENDIX 11 - SIGNIFICANCE OF THE EFFECTS

Pursuant to section 32(1)(c), an evaluation report must contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal (section 32(1)(c)). This means that the scale and significance of the effects of the Proposal is the key factor influencing the level of detail required for a section 32 evaluation.

Considerations and criteria for determining scale and significance		Ranking High/Medium/Low
1. Reasons for the change	<ul style="list-style-type: none"> • New updated flooding data • 10-year review • Giving effect to Waikato Regional Policy Statement (operative May 2016) 	<ul style="list-style-type: none"> • New risk based approach, updated flood hazard data and new permissive approach to low/medium hazard areas but more restrictive to high hazard areas. So a medium scale.
2. Degree of shift from the <i>status quo</i> (<i>status quo</i> defined as the current approach)	<ul style="list-style-type: none"> • Addressing an existing resource management issue -flooding • The new flooding data affects a much greater area than the existing flood hazard notation as the new flooding data covers additional rivers and uses updated data and more sophisticated modelling • A major change in the flooding rule framework but becoming more targeted to activity and generally more permissive • Using regulatory control through the RMA and the Building Act. • Discrete provisions that apply to the flood hazard areas identified on the planning maps. • Adding specific flood hazard objectives but leaving the existing natural hazard objectives for the remaining natural hazards. 	<ul style="list-style-type: none"> • While much larger areas of the district are affected the fact that most of these areas are already developed and the rules are generally permissive results in a low scale.
3.Environmental effects	<ul style="list-style-type: none"> • Communities and individuals are informed of areas subject to flood risk in a 1% AEP flood. • Gives effect to the RPS by using the risk approach enables management of subdivision, use and development through the District Plan in flood hazard areas as they are identified • Does not provide information to individuals and communities of areas subject to flood hazards in a greater than 1% AEP flood. 	<ul style="list-style-type: none"> • Knowledge of areas subject to flood risk will ensure people are safe and property is protected resulting in a low scale.

Considerations and criteria for determining scale and significance		Ranking High/Medium/Low
<p>4. Economic effects</p>	<ul style="list-style-type: none"> • Assists property owners in being aware of potential flooding and therefore able to direct property investment away from the high flood hazard areas • A more permissive approach for new building and major additions in low and medium flood hazard areas reduces resource consents costs. • Objectives, policies and rules provide certainty that new building and major additions will generally be allowed in the low and medium flood hazard areas but discouraged in the high flood hazard area. • Financial impact of a flood event is potentially reduced as new buildings and major additions are discouraged in high flood hazard areas and remain undamaged in the low and medium flood hazard areas. This reduces the cost of response and recovery during and after a flood event. • Policy framework supports integrated resource management and aligns to regional flood hazard management objectives • Potential impact on insurance costs for individuals • Reduced development potential of land in high flood hazard areas. • May temporarily reduce property values of land in high flood hazard areas. • Some potential for reduction in investment in vacant land in high flood hazard areas but majority of sites are already developed or rural marginal land. Only 39 residentially zoned properties have more than 100m²of high flood hazard and only two of these are not already developed and would be suitable for development. 	<ul style="list-style-type: none"> • Although the rules are more permissive than the current rules and the financial impact of floods will be reduced there may be adverse effects due to impacts on insurance costs, short term reductions in valuations and a reduction in ability to develop land in areas of high flood hazard. This results in a medium scale.
<p>5.Cultural effects</p>	<ul style="list-style-type: none"> • Three Marae (Waihi Marae, Tokaanu Marae, Poukura Marae) are affected by flood hazards. • There is a high proportion of multiply owned Maori land within the identified flood hazard areas. There may be some reduction in development potential for this land especially land that is within high flood hazard areas. However much of this land is marginal for development for other reasons. Any loss of development potential is considered to be outweighed by the risk of developing in these flood 	<ul style="list-style-type: none"> • Medium scale

Considerations and criteria for determining scale and significance		Ranking High/Medium/Low
	<p>prone areas. There has been limited feedback from Maori landowners on this issue.</p>	
<p>6.Social effects</p>	<ul style="list-style-type: none"> • Greater public awareness of flood hazard areas • Certainty is provided for the community that new development in the high flood hazard areas is inappropriate and new buildings in the low and medium flood hazard areas is appropriate, provided buildings are designed to mitigate the effects of flooding. • Health and well-being of communities (people will be kept safe) will be enhanced as new development will be directed away from high flood hazard areas and designed appropriately in low and medium flood hazard areas. 	<ul style="list-style-type: none"> • Low scale
<p>3. Who and how many will be affected?</p>	<ul style="list-style-type: none"> • Very little public feedback despite two rounds of consultation and two letters sent to each affected ratepayer. • The main areas of the district affected are: <ul style="list-style-type: none"> ○ Hatepe ○ Tauranga Taupō ○ Turangi ○ Tokaanu ○ Kuratau ○ Whanganui Bay ○ Waihaha • Approximately 1280 properties are affected by the new flood data • Approximately 260 properties that are currently in the flood hazard areas in the district plan are not identified as flood areas in the new flood data. • Approximately 94 properties are identified as defended areas only. • 119 residentially zoned properties are affected by high flood hazard. Of these only 39 residentially zoned properties have more than 100m² high flood hazard. The remaining 80 residentially zoned properties only have very small areas of high flood hazard, mainly along the lake or river edge of the property. 	<ul style="list-style-type: none"> • While a large number of properties are affected, we received very little feedback from pre-consultation with these landowners so scale is low.

Considerations and criteria for determining scale and significance		Ranking High/Medium/Low
4. Degree of impact on, or interest from iwi/Māori	<ul style="list-style-type: none"> • There is likely to be a curtailment of development opportunities on some multiply owned Maori land. This will be limited given the rural environment provisions and the fact that these areas are not identified as future urban growth areas. • Little feedback from Maori despite letters being sent to individual landowners and three affected Marae and meetings with the Tūwharetoa Maori Trust Board. 	<ul style="list-style-type: none"> • While large areas of multiple owned Maori land are affected we have received very little feedback from consultation with Maori. Much of this multiple owned Maori land is located in low lying areas that is unlikely to be developed due to its susceptibility to flooding. This results in a low effect.

Flooding is a risk for people, buildings and infrastructure that are located close to rivers or Lake Taupō. Taupō District Council is required by the RMA, the CDEM Act, and the Building Act to manage natural hazards and subsequent risk.

The plan change includes new flooding data that covers a much greater area than the existing flood hazard notation as it includes additional rivers and uses updated data and more sophisticated modelling. The effects associated with implementing the plan change are expected to be largely positive for the community, although it is acknowledged that there will be a relatively small number of individual property owners who may be adversely impacted especially by high flood hazard. They may find it more difficult to access insurance, some effects on valuation of properties and the ability to substantially develop those affected properties will be curtailed.

Also much of the area covered by this new flood hazard notation is already developed so has little potential for further development. The majority of properties located in the low and medium flood hazard areas will be able to be further developed, through a relatively permissive management regime that seeks to avoid unnecessary regulatory costs. This is an improved outcome for these property owners compared to the rule framework in the operative District Plan.

On balance the effects of the plan change are considered significant for a relatively few residential property owners, but of much lower significance for the majority of affected property owners.

APPENDIX 12 - KEY DECISIONS MADE DURING PLAN CHANGE DEVELOPMENT

Decision	Commentary
To prepare the plan change	Directed by the Lake Taupō Erosion and Flood Strategy 2009 and required by RMA and the RPS.
To include six specific rivers and exclude others	<p>The following rivers and streams were assessed:</p> <ul style="list-style-type: none"> • Hinemaiaia • Tauranga Taupō • Tongariro • Tokaanu • Kuratau • Whareroa <p>This was based on these waterways having a history of flooding and the presence of substantial urban areas that would put people and property at risk.</p> <p>Other rivers were not modelled due to a combination of factors:</p> <ul style="list-style-type: none"> • small catchment areas • no history of flooding • an absence of significant urban areas
To include the future effects of climate change and tectonics	<p>Directed by the Lake Taupō Erosion and Flood Strategy 2009, RMA (section 7) and the RPS. New Zealand Coastal Policy Statement (NZCPS) also indicates the importance of addressing climate change.</p> <p>Tectonic subsidence was included given its potential to have a significant impact on the spatial extent of flooding. Areas anticipated to experience long term uplift were disregarded because flood events in the near future would still affect the land.</p>
To include defended areas Not to manage land use and subdivision in defended areas	<p>Directed by the RPS to include areas of residual risk. Discussion with WRC identified a desire to call them defended areas.</p> <p>Decided not to include rules for land use and subdivision activities because the level of risk was unable to be quantified and therefore the cost of regulation couldn't be justified, these areas were already well developed and there was limited ability for further intensification. This approach was agreed with WRC and reflected the limitations of the modelling.</p>
To use the 1% AEP event	Directed to by the RPS. Best practice as identified in the NZCPS. Agreed to through the Lake Taupō Erosion and Flood Strategy.
To map all of the flood hazard information on a consistent grid	The model outputs from the flood assessments of the rivers and Lake Taupō were based on two different grid sizes – 2m ² and 5m ² . Opus agreed to standardise the grid size to 5m ² cells to cater for the overlap of the different model areas. The choice of the larger grid size reflected a balance between providing detail at a property specific level, while still recognising the limitations of the computer model.

Decision	Commentary
To round the depth and velocity data to the nearest centimetre	The original model outputs for depth and velocity went to four decimal places. This implied a level of accuracy in the model outputs that was unrealistic. They were rounded to two decimal places to better reflect the level of accuracy from the model results and to make it easier for users of the data.
To remove flooding under 10cm	The model outputs originally identified inundation below 10cm in depth. It was decided that water below 10cm did not pose a risk to people or property. This was on the basis that the Building Code requires habitable dwellings to have a floor level at least 15cm above the adjacent ground level. This decision was supported by legal advice.
To use the hazard classification matrix from WRC	The Lake Taupō Erosion and Flood Strategy identified that the flood hazard should be classified using a combination of water depth and velocity. The propose matrix had previously been used by Thames Corromandel District Council and was supported by Waikato Regional Council. It was subsequently confirmed in the Regional Policy Statement.
To use 300mm of freeboard	The proposed rules require a minimum level of 300mm of freeboard above identified flood levels. This reflects the historical practice in the Taupō District related to building consents in flood hazard areas. It also reflects the Transitional District Planning documents (Kinloch area). The NZ standard (NZS 4404:2010) provides direction for planning for stormwater and notes that District and Regional plans can set appropriate local standards for freeboard.
To have specific flood hazard objectives	The Taupō District Plan has a single objective for all natural hazards. The RPS introduced a new risk based approach to managing hazards. This needed to be reflected through specific objectives and policies in the plan change. The operative objective and policies are expected to be reviewed as Council progresses plan changes for the various natural hazards.
To have objectives covering both people and property (not to rely on the Building Act)	There is clear direction from the RMA and RPS to manage land use activities to protect people. Council considered the option of leaving the Building Act to deal with the safety of buildings, however section 31 of the RMA requires the district plan to address this issue. Additionally the building code only requires consideration of a 2% AEP event, where as managing the land use through the District Plan enabled Council to plan for the 1% AEP event. The Building Act alone would not have provided the ability for Council to avoid building in high flood hazard areas so we would not have given effect to the requirements of the RPS.
To base the defended areas on todays 1% AEP not including climate change or tectonic subsidence	The methodology was developed by WRC who modelled the risk for TDC. It was based on the existing stop banks at the current level of service. It is acknowledged that this is a snapshot in time.
To remove small isolated defended areas	Removed clusters of 4 squares or less because we considered these small areas did not help inform people about a real risk within these areas. WRC agreed to this approach.
To remove defended areas that were affected by flooding from an alternative source.	Because the flood assessments for the rivers included a bigger design event than the defended areas, there were some defended areas that were also affected by river flooding. These areas were identified as being better managed under the provisions relating to flooding rather than being identified as defended areas.

Decision	Commentary
To remove non-contiguous flood areas from the mapping outputs for the Lake.	This reflected that the modelling was using a bath tub approach which led to anomalies where lower areas near the lake were shown as flooding but there was no way for the water to get there.
Not to include extreme wave activity	The preliminary modelling of the potential wave activity risk produced an overly conservative spatial extent. Limitations on the modelling and a lack of calibration data made the model results unsuitable for regulating land use at a property specific level. It was recognised that further technical work would be required to refine that hazard information. In the meantime land use and subdivision could be controlled through existing Environments and Foreshore Protection Area provisions along with section 106 of the RMA.
To limit building additions to 15 square metres	It was recognised that the flood hazard affected largely established urban areas and that this investment in the existing buildings needed to be acknowledged. A threshold of 15m ² would enable people to make minor additions that were unlikely to significantly alter the level of risk to people or property. This was tested with the community through the engagement processes confirming that it was an acceptable level of risk.
To have a peer review of the Opus reports by NIWA	This was undertaken to ensure Council and community confidence in the technical data that the plan change is based upon. It reinforced the earlier technical reviews of the flood reports by officers from WRC.
To take a targeted approach to managing land use based on risk	Directed by the RPS to take a risk based approach.
To use the care facility definitions from the building code	Using the building code definitions helped to ensure a consistent approach to activities that involve vulnerable people.
To manage the development of all buildings not just habitable buildings	It was recognised that uninhabited buildings could be of significant value or house equipment of high value. Furthermore, any building that is damaged during a flood event could create debris that would pose a risk to people. It was noted that people spend significant time in the workplace and that those buildings should also provide a place of refuge for people during a flood event.
To rely on the underlying rules for subdivision in low and medium flood hazard area	The land use rules related to buildings provided sufficient control without the need for additional subdivision controls in low and medium flood hazard areas.
To have a two step engagement process	This provided sufficient time for people to understand the project, technical data and level of personal risk. The second round enabled further community discussion on draft planning provisions. This gave Council the ability to refine the plan change to reflect the community's acceptable level of risk prior to notification.

Decision	Commentary
To proceed with caution when developing the plan change	There are examples around the country where communities had been rushed into understanding the level of risk associated with hazards. Council needed to undertake sufficient quality assurance to ensure a high level of confidence in the technical information for the community.
To enable infrastructure that was unlikely to be adversely affected by flooding	Engaged with infrastructure providers to clarify which types of infrastructure are more resilient to flood waters. Also recognised the direction in national policy statements and standards as well as the need to locate some infrastructure in flood areas.
Not to review the flood assessments post the 2016 IPCC report	A review of the IPCC report by Opus showed that the climate change component in the flood reports was still within the broad range of potential scenarios mapped by the IPCC.
Not to rerun the flood models in 2016	A significant amount of time has passed since the first flood models were run and actual flooding during that time period could be used to update the calculation of the 1% AEP. Advice from Opus indicated that while there may be some changes in the calculation of the 1% AEP, any such changes are unlikely to result in significant change to the spatial extent of the flood hazard areas. The costs of re running the modelling are not balanced by the benefits.
To assume that stopbanks wont be changed over time	Advice from WRC confirmed that their planning for stopbanks did not include an allowance for climate change. It was recognised that the level of service provided may change over time to reflect the desires of the community and the ability to fund improvements to the stopbanks. There may also be situations where physical constraints prevent further increases in the height of stopbanks. It is impractical for WRC to increase stopbank heights now to provide for climate change or tectonic subsidence which may not occur for 50 years.
The lake level will continue to be a managed	The Lake has been managed since 1941 and has been a significant part of the national electricity generation network. This is unlikely to change into the foreseeable future. Mercury have an existing resource consent to manage the lake which is not due to expire until 2041. While greater than the natural outflow, Mercury has a limited ability to discharge water from the lake through the control gates. During a flood event the inflows into the lake are significantly greater than the maximum outflow capacity and therefore the level of Lake Taupō will rise.

Attachment A - Letter sent on 6 November 2015 to ratepayers whose properties are affected by the new flood hazard areas.

3 November 2015



GREAT LAKE TAUPŌ

Taupō District Council

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Dear Sir or Madam

Flood Hazard District Plan Change

Planning for natural hazards is one of our core requirements under the Resource Management Act 1991. Given we have a lot of waterways throughout the district we are making people aware of areas which may be prone to flooding from Lake Taupō or its major tributaries.

We have updated flood hazard information based on computer modelling of flooding in a 1% Annual Exceedance Probability (AEP) event, or otherwise known as a 1 in 100 year flood. The areas prone to flooding have been classified as low, medium and high risk.

Your property at (PROPERTY ADDRESS) with legal description (LEGAL DESCRIPTION) has been identified as potentially being in a (CATEGORY HERE) risk area. You can see the at-risk areas on our website at www.Taupōdc.govt.nz.

This information will eventually be included in the District Plan however it is too early to say what the rules will be. Our initial thoughts are that in a low or medium risk area, we may require any new building to meet a minimum floor level. In a high risk area a resource consent may be required for any building work. Places where vulnerable people would be such as schools, retirement homes, etc. may be discouraged from locating in high risk areas.

Your input into the process will guide how we manage the level of risk. To make it easy for you to share your views we have a survey available on our website until Thursday 24 December. We will also be holding an open day at the Bridge Motel, Turangi on Saturday 21 November between 10am and 12noon for you to come and speak to us in person. However if you want us to come and see you to talk about this please contact us.

We have included a 'Process Map' which outlines the full process of the Flood Hazard District Plan Change and a set of 'Frequently Asked Questions'.

More detailed information can be found on our website www.Taupōdc.govt.nz. You can also contact the Flood Hazard team by emailing floodhazard@Taupō.govt.nz or by calling 07 376 0899.

Yours faithfully,

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager

WHICH RIVERS WERE MODELLED AND WHAT DID THE REPORTS ON THE RIVERS INCLUDE?

The following rivers were modelled: Whareroa Stream; Kuretau River; Tokaenu Stream; Tongariro River; Tauranga Taupō River; and Hinemaiaia River. These main tributaries are closest to significant urban areas.

Reports prepared for the rivers include: an understanding of the catchment (geology, soils, land use, vegetation, slope); flow regime and flood history; other factors that affect flooding (sediment transport, lake level, tectonic deformation, waves, climate change, land use); modelling methodology; effect of lake level on flooding; flood risk; and the resulting flood hazard (high, med, low).

It is important to note that flood protection schemes on the Tongariro and Tauranga Taupō Rivers have been taken into account.

IS IT LIKELY THAT BOTH THE RIVERS AND LAKE WILL FLOOD AT THE SAME TIME?

It is unlikely that both the rivers and the lake will experience a 1% AEP flood at the same time. This is because the rivers respond rapidly to rainfall while it takes the lake longer to rise because of its large size (i.e. 611km²). We are planning for whichever event is likely to cause the most significant flooding on your property.

WHAT IS AN ANNUAL EXCEEDANCE PROBABILITY (AEP)?

Hydrologists use statistics to estimate the likelihood of different sized floods happening in any given year. This is called the Annual Exceedance Probability (AEP) of the design event. For example, a so-called 100-year flood does not mean that there will be only one flood of this size every 100 years. It means that there is a 1 in 100 chance that a flood of this size (or bigger) may occur in any given year. A flood of this magnitude and frequency is therefore more correctly called a 1% Annual Exceedance Probability (AEP) flood. The 1% AEP flood was chosen as the design event.

WHY PLAN FOR CLIMATE CHANGE WHEN THE DATA IS UNCERTAIN?

While there are differing views on climate change, and its potential effects, we are required by law to take it into account in our planning. The parameters we used are based on standards set by central government. If you want to find out more information on climate change, visit www.taupo.govt.nz and click on the Flood Hazard Plan Change page.

HOW IS IT POSSIBLE FOR MY PROPERTY TO FLOOD IN THE FUTURE WHEN IT HASN'T FLOODED IN THE PAST?

Floods are essentially random events in both time and magnitude. A flood of a particular magnitude can therefore happen at any time. Larger floods are less frequent events. Therefore in general the longer the time period, the larger the flood which might be experienced. The magnitude of floods may also increase as a result of climate and land use change, while the effects of a flood may increase because of land (tectonic) movement.

WHAT CONTROLS ARE IN PLACE WHEN THE LAKE IS IN FLOOD?

There is a High Flow Management Plan (HFMP) that outlines how the Waikato Hydro System is to be managed during high flow conditions. The HFMP is a requirement of Mighty River Power's (MRP) resource consents. The HFMP specifies:

- How MRP will communicate with key stakeholders during a high flow event;
- How the hydro system will be operated to meet dam safety requirements on the Waikato River;
- How the system will be operated to minimise the adverse effects of a flood including the effects on Lake Taupō, the hydro reservoirs and the Waikato River downstream of Karapiro; and
- How MRP will assist WRC in its role as flood coordinator.

There are also controls around when Genesis Energy is required to stop diverting water into Lake Taupō from its Tongariro Power Development Scheme.

WHERE CAN I FIND INFORMATION FROM CIVIL DEFENCE ABOUT WHAT TO DO WHEN THERE IS A FLOOD?

The council has information on what to do when there is an emergency, including detailed information specific to flooding and links to the 'Get Ready Get Thru' website. Please visit www.taupo.govt.nz and click on the Civil Defence Emergency Management page.

WHEN WERE THE LAST SIGNIFICANT FLOOD EVENTS?

This varies from river to river; however, many rivers experienced significant flooding in February 2004 while the lake experienced significant flooding in 1998.

I'M BEHIND A STOPBANK ON THE TONGARIRO OR TAURANGA TAUPŌ RIVERS. WHY ARE YOU SAYING MY PROPERTY WILL FLOOD?

The stopbanks on both rivers provide protection from a flood, however their design is based on protecting property from a flood that could occur tomorrow. On the Tongariro River this is the 1% AEP flood (1 in 100 year event), while on the Tauranga Taupō River it is the 2% AEP flood (1 in 50 year event).

Our flood modelling is looking well into the future and includes the long term effects of climate change, making it bigger than the flood the stopbanks are designed for. WRC may raise the level of the stopbanks over time to account for climate change; however we have assumed that they won't. We know that there are some practical limits to how high the stopbank can be raised, and there is also uncertainty about whether ratepayers will keep funding improvements to the stopbanks. Given this uncertainty we think it is prudent to plan for the stopbanks as they currently are, not how they might be in the future.

FLOOD HAZARD PLAN CHANGE FAQs

WHY IS TAUPŌ DISTRICT COUNCIL DOING THIS?

We are required to under the law. The Resource Management Act (the Act) requires Taupō District Council (the Council) to have a plan explaining how land is managed. This is called the District Plan. Section 31 of the Act specifically requires Council to "control any actual or potential effects of the use, development, or protection of land, including for the purpose of avoidance or mitigation of natural hazards".

WHAT NEEDED FIXING?

The current flood hazard information in the District Plan is out of date and does not include the latest information about the risk of flooding from Lake Taupō and its major tributaries near where people live. Plan change 34 will update the existing flood hazard areas around Tokaenu Stream and the Tongariro and Tauranga Taupō Rivers, as well as identifying new areas potentially at risk from flooding, particularly around the shore of Lake Taupō and on three other tributaries.

WHAT HAS CHANGED SINCE THEN?

Scientific developments now allow us to undertake improved modelling of the potential flood hazard and to include more detailed information about factors which have the potential to increase the flood risk over time, e.g. climate change and ground movement.

WHAT MIGHT THIS INFORMATION MEAN FOR ME/MY PROPERTY?

It will vary from property to property depending on the risk of flooding.

- ▶ **I'm not planning to build, make additions to, or subdivide my property – how does this effect me?**
Unless you are planning further development, no additional restrictions will be imposed.
- ▶ **Will this information go on my Land Information Memorandum (LIM)?**
Yes. We are required by law to record any relevant information we hold on a property on its LIM. Once the Flood Hazard Plan Change is approved the information will be removed.
- ▶ **What will happen to the value of my property?**
We have commissioned a report on the potential effect of the Flood Hazard Plan Change on property valuations. For a copy of that report, visit www.taupo.govt.nz and click on the Flood Hazard Plan Change page. If you have any specific queries, you are best to talk to a registered valuer.
- ▶ **What impact will it have on my insurance costs?**
Each insurance company has its own approach to managing flood risks, so you are best to talk to your insurer directly.
- ▶ **What building restrictions will I be subjected to? When will any possible changes take effect?**
It is too early to determine the restrictions you may be subject to. Council is required by law to manage the use and development of land. Input from the community will guide what level of risk is acceptable and how it will be managed. Please refer to the Flood Hazard Plan Change Process Map for an approximate indication of timing.
- ▶ **What impact will it have on the rates I pay to Waikato Regional Council (WRC) for Project Watershed flood protection?**
WRC collects a Project Watershed rate to pay for flood protection works like stopbanks around the Tauranga Taupō and Tongariro Rivers. This is a targeted rate and is based on the current level of service being provided. The new flood information will not directly result in any change to the rate. When WRC next review the flood protection schemes they will take the new information into account and may reassess the level of service being provided. That could result in a change to the rate in the future, however there would need to be further consultation with the community.

WHO PREPARED THE FLOOD INFORMATION?

We commissioned Opus International Consultants Limited to update our flood hazard information as they are considered experts in the field of flood modelling. An independent peer review was undertaken by NIWA who confirmed that the methodology used was appropriate.

HOW DID THEY DO IT?

The flood hazard information was generated using hydraulic modelling, a set of "best practice" assumptions, and a very detailed model of the land. The results were checked against the actual experience of past flooding events wherever possible to make sure the model and results are as accurate as possible. The modelling took into account the lay of the land but did not include features that may change over time e.g. trees, fences, buildings. These features may have an impact on the flow of flood waters but are unlikely to change the overall area affected by flooding.

⌘ FAQs continued on back page

THE FLOOD HAZARD PLAN CHANGE PROCESS MAP

This diagram shows the steps we have taken to develop the flood hazard plan change so far and the process going forward. The timeframes provided are our best estimate, however they may change depending on what issues are raised by the community.



KEY
 OPPORTUNITY TO HAVE YOUR SAY

Attachment B - Letters sent on 6 November 2015 to ratepayers whose properties are currently in the flood hazard area in District Plan but are not affected by new flood hazard data.

3 November 2015



72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

Dear Sir or Madam

Flood Hazard District Plan Change

Planning for natural hazards is one of our core responsibilities under the Resource Management Act 1991. Given we have a lot of waterways throughout the district, future flooding is a very real possibility.

We have updated flood hazard information based on computer modelling of flooding in a 1% Annual Exceedance Probability (AEP) event, or otherwise known as a 1 in 100 year flood. The areas prone to flooding have been classified as low, medium and high risk.

Your property at xxxxxxxx with legal description xxxxxxxxx is currently identified as being in a flood hazard area in the District Plan. The updated flood hazard information now shows that your property is outside the modelled flood hazard area. To update the district plan with the new information, we need to complete a plan change process. Following this, any flood hazard rules in the District Plan will no longer apply to your property.

We have included a 'Process Map' which outlines the full process of the Flood Hazard District Plan Change. More detailed information can be found on our website www.Taupōdc.govt.nz. You can also contact the Flood Hazard team by emailing floodhazard@Taupō.govt.nz or by calling 07 376 0899.

Yours faithfully



Sue Mavor
Senior Policy Advisor



Nick Carroll
Policy Manager



Hadley Tattle
Policy Advisor

Attachment C – Letter sent on 8 January 2016 to stakeholder groups



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

T 07 376 0899

8 January 2016

Name

Address 1

Address 2

Address 3

Address 4

Dear Sir or Madam

Flood Hazard Plan Change Project

Planning for natural hazards is one of our core requirements under the Resource Management Act 1991. Given we have a lot of waterways throughout the district we are making people aware of areas which may be prone to flooding from Lake Taupō or its major tributaries. We are contacting Name as one of the stakeholders for this project who may have an interest greater than the general public. While you don't appear to be subject to any direct impacts we are interested in any feedback you may have. If you want us to come and discuss this project with you please contact us.

We have updated flood hazard information based on computer modelling of flooding in a 1% Annual Exceedance Probability (AEP) event, or otherwise known as a 1 in 100 year flood. The areas prone to flooding have been classified as low, medium and high risk.

We have directly notified all property owners that are identified as potentially being in a flood hazard risk area in such a flood. You can see the at-risk areas on the mapping tool on our flood hazard plan change page on our website at www.Taupōdc.govt.nz.

This information will eventually be included in the District Plan however it is too early to say what the rules will be. Our initial thoughts are that in a low or medium risk area, we may require any new building to meet a minimum floor level. In a high risk area a resource consent may be required for any building work. Places where vulnerable people would be such as schools, retirement homes, etc. may be discouraged from locating in high risk areas.

We have included a 'Process Map' which outlines the full process of the Flood Hazard District Plan Change and a set of 'Frequently Asked Questions'. You will see from the process map that we have two rounds of consultation prior to notifying the plan change mid 2016. The timeframes noted in the process map are indicative and may well need to change depending on the level of engagement from those affected land owners.

More detailed information can be found on our website www.Taupōdc.govt.nz. You can also contact the Flood Hazard team by emailing floodhazard@Taupōdc.govt.nz or by calling 07 376 0899.

Yours faithfully

Sue Mavor
Senior Policy Advisor

Policy Advisor

Nick Carroll
Policy Manager

Attachment D - Letter sent on 26 and 29 February 2016 to ratepayers whose properties are affected by the new flood hazard areas.



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

T 07 376 0899

Our ref: Property address

26 February 2016

Name
Name
Address 1
Address 2
Address 3
Address 4

Dear Sir or Madam

Flood Hazard District Plan Change

In November we wrote to you about updated flood hazard information which we are we are proposing to include in a plan change to the District Plan. This information showed your property as potentially being in a flood hazard risk area. You can see the at-risk areas on the mapping tool on our website at www.Taupō.govt.nz.

This new information will eventually be included in the District Plan. Following the feedback we received, we have started preparing draft rules for the flood hazard areas. Our key objectives are to keep people safe and to protect property. The broad principles for these rules are to:

- Discourage development in high risk flood areas;
- Control the design of development in low and medium risk flood areas;
- Recognise existing investment in flood areas; and
- Plan for vulnerable people and infrastructure within flood areas.

The detailed draft District Plan provisions are attached.

To share your views on these draft provisions you can contact us by emailing floodhazard@Taupō.govt.nz or by phoning 07 376 0899. We will also be holding an open day at the Turangi Bridge Motel, 4600 State Highway 1, Turangi on Saturday 19 March between 9.30am and 11am so you can come and speak to us in person. However, if you would like us to come and see you in person, please contact us.

More detailed information including the 'Process Map' and 'FAQs' can be found on our website www.Taupō.govt.nz.

Yours faithfully

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager

Attachment E - Letter sent on 26 and 29 February 2016 to ratepayers whose properties are affected by the new flood hazard areas and defended areas.



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

T 07 376 0899

Our ref: Property address

26 February 2016

Name
Address 1
Address 2
Address 3
Address 4

Dear Sir or Madam

Flood Hazard District Plan Change

In November we wrote to you about updated flood hazard information which we are we are proposing to include in a plan change to the District Plan. This information showed your property as potentially being in a flood hazard risk area. You can see the at-risk areas on the mapping tool on our website at www.Taupō.govt.nz.

This new information will eventually be included in the District Plan. Following the feedback we received, we have started preparing draft rules for the flood hazard areas. Our key objectives are to keep people safe and to protect property. The broad principles for these rules are to:

- Discourage development in high risk flood areas;
- Control the design of development in low and medium risk flood areas;
- Recognise existing investment in flood areas; and
- Plan for vulnerable people and infrastructure within flood areas.

The detailed draft District Plan provisions are attached.

As well as being identified as a potential flood hazard area, part of your property is considered as a defended area. These are areas that are protected by a flood protection scheme (e.g. stopbank). You can see the defended areas on the mapping tool.

The Waikato Regional Policy Statement directs us to identify these defended areas in the District Plan. This is to ensure that landowners are aware that there is an element of risk that the stopbank may fail. These areas will be included in the District Plan but we are not proposing to have any specific rules attached to them.

To share your views on these draft provisions you can contact us by emailing floodhazard@Taupō.govt.nz or by phoning 07 376 0899. We will also be holding an open day at the Turangi Bridge Motel, 4600 State Highway 1, Turangi on Saturday 19 March between 9.30am and 11am so you can come and speak to us in person. However, if you would like us to come and see you in person, please contact us.

More detailed information including the 'Process Map' and 'FAQs' can be found on our website www.Taupō.govt.nz.

Yours faithfully

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager

Attachment F – Draft objectives policies and rules sent on 26 and 29 February 2016 with letters.

DRAFT RULES FRAMEWORK FOR FLOOD HAZARD AREAS

DRAFT RULES

Note these rules WILL apply to flood hazard areas marked on the district plan maps.

Note. There are no rules that apply to defended areas. These areas are identified on the district plan maps for information purposes only.

New Buildings

1. New buildings in high flood hazard areas are a non-complying activity
2. New buildings in low and medium flood hazard areas are a permitted activity provided they build above the flood level

Additions

Major

3. Major additions to existing buildings in high flood hazard areas are a non-complying activity
4. Major extensions to buildings in low and medium flood hazard areas are a permitted activity provided they build above the flood level.

Minor

5. Minor extensions to buildings in high flood hazard areas are a permitted activity provided they build above the flood level
6. Minor extensions to buildings in low and medium flood hazard areas are a permitted activity (not subject to any floor levels)

Assembly care or community care

7. Buildings for assembly care or community care uses in the high flood hazard areas are non-complying

Emergency services

8. Location of emergency services in low or medium flood hazard areas are a restricted discretionary activity
9. Location of emergency services in high flood hazard areas are a non-complying activity

Subdivision

10. Subdivision that provides for new residential, commercial or industrial land uses in high flood hazard areas is a non-complying activity
11. Subdivision that provides for new residential, commercial or industrial land uses in low or medium flood hazard areas is a restricted discretionary or controlled activity.
12. Subdivision for other uses(boundary adjustments etc.) is a controlled activity

Infrastructure

13. Any new below ground infrastructure, stormwater infrastructure, roads and hydro electricity generation activities in any flood hazard area is a permitted activity.
14. Any new above ground infrastructure in low and medium flood hazard areas are a controlled activity.
15. Any new above ground infrastructure in high flood hazard areas is a restricted discretionary activity.

DEFINITIONS

Major extension means any addition to the gross floor area that exceeds 15m².

Minor extension means any addition to the gross floor area that is equal to or less than 15m².

Assembly care means a building or use where a large degree of care and service is provided. Such as an early childhood education and care centre, college, day care institution, centre for handicapped persons, kindergarten, school or university.” (from the Building Code)

Community care means a residential building or use where a large degree of assistance or care is extended to the principal users. There are two types:

Unrestrained: where the principal users are free to come and go such as a hospital, old peoples home or health camp

Restrained: where the principal users are legally or physically constrained in their movements such as a borstal or drug rehabilitation centre, an old peoples home where substantial care is extended, a prison or hospital. (from the Building Code)

Low flood hazard area is the area where floodwaters in a 1% annual exceedance probability flood are expected to have a low impact on people and low damage to property. These areas are shown on the planning maps as low flood hazard areas (yellow)

Medium flood hazard area is the area where floodwaters in a 1% annual exceedance probability flood are expected to have a medium impact on people and medium damage to property. These areas are shown on the planning maps as medium flood hazard areas (orange)

High flood hazard area is the area where floodwaters in a 1% annual exceedance probability flood are expected to have a high impact on people and high damage to property. These areas are shown on the planning maps as high flood hazard areas (red)

Defended areas are areas which would normally flood in a 1%AEP flood event but are protected from flooding by a flood protection scheme managed by the Waikato Regional Council.

Infrastructure is

- a) pipelines that distribute or transmit natural or manufactured gas, petroleum, or geothermal energy:
- b) a network for the purpose of telecommunication as defined in section 5 of the Telecommunications Act 2001:
- c) a network for the purpose of radiocommunication as defined in section 2(1) of the Radiocommunications Act 1989:
- d) facilities for the generation of electricity, lines used or intended to be used to convey electricity, and support structures for lines used or intended to be used to convey electricity, excluding facilities, lines, and support structures if a person—
 - (i) uses them in connection with the generation of electricity for the person's use; and
 - (ii) does not use them to generate any electricity for supply to any other person:
- e) a water supply distribution system, including a system for irrigation:
- f) a drainage or sewerage system:
- g) structures for transport on land by cycleways, rail, roads (local and State highway), walkways, or any other means:
- h) facilities for the loading or unloading of cargo or passengers transported on land by any means:
 - i) an airport as defined in section 2 of the Airport Authorities Act 1966:
 - j) a navigation installation as defined in section 2 of the Civil Aviation Act 1990:
- k) facilities for the loading or unloading of cargo or passengers carried by sea, including a port related commercial undertaking as defined in section 2(1) of the port companies act 1988:
- l) anything described as a network utility operation in regulations made for the purposes of the definition of “network utility operator” in section 166 of the Act.

Classes of Activities for Resource Consents (From the Taupō District Plan)

Type of Activity	Do I Need a Resource Consent?	Explanation
Permitted	No	No resource consent is required providing the relevant rules and performance standards of the Plan are met.
Controlled	Yes	Council <i>must</i> grant consent providing all the relevant performance standards of the Plan are met. Conditions may be placed on the consent in respect

		of the matters over which Council has retained control.
Restricted discretionary	Yes	Council <i>may</i> grant consent. Council has restricted its discretion to a limited number of matters as stated in the rule. The assessment of effects will be restricted to those matters of discretion identified in the rule. Conditions may be placed on the consent in respect of the matters of discretion only.
Discretionary	Yes	Council <i>may</i> grant consent, with or without conditions. The assessment of effects is open to all potential effects of the activity
Non-complying	Yes	Council <i>may</i> grant consent (with or without conditions) only if it is satisfied that either: (a) The adverse effects of the activity on the environment will be minor; or (b) The activity will not be contrary to the objectives and policies of the Plan.
Prohibited	No application allowed	No application for a resource consent may be made and the consent authority must not grant a consent for it.

OBJECTIVE

3l.1.3 Keep people safe during significant flood events and ensure that emergency services remain able to operate.

POLICIES

- i. Ensure that communities are informed of the potential flood risks (including residual risks) that may affect them.
- ii. Avoid locating new buildings and major extension in high flood hazard areas due to the risk to people’s lives and the risk from structural damage.
- iii. Control the design of new buildings in low and medium flood hazard areas to keep people safe.
- iv. Control the design of minor extensions to buildings in high flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe.
- v. Control the design of major extensions to buildings in low and medium flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe.
- vi. Avoid locating new care facilities for vulnerable people in high flood hazard area. This applies to buildings or uses that fall within the definition of assembly care or community care.
- vii. Avoid locating emergency services in areas subject to flooding where the anticipated flood waters would inhibit their ability to operate.
- viii. Avoid subdivision that provides for new residential, commercial or industrial land uses in high flood hazard areas, and manage subdivision for such uses elsewhere to ensure that the risk to people is minimised.

OBJECTIVE

3l.1.4 Buildings and infrastructure are designed to avoid damage during significant flood events.

POLICIES

- i. Avoid locating new buildings and major extensions to buildings in high flood hazard areas given the likelihood of the damage being structural.
- ii. Control the design of new buildings and major extensions in low and medium flood hazard areas to avoid damage during significant flood events.

- iii. Provide for minor extensions to buildings in low and medium flood hazard areas in recognition of the investment in the existing buildings and site works.
- iv. Provide for infrastructure that is not vulnerable to flood hazards and control the design of vulnerable infrastructure. This will avoid structural damage and enable the infrastructure to continue to operate.

Attachment G – letter sent on 26 and 29 February 2016 to ratepayers whose properties are only affected by defended areas.



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

T 07 376 0899

26 February 2016

Name
Address 1
Address 2
Address 3
ADDRESS 4

Dear Sir or Madam

Flood Hazard District Plan Change

In November we wrote to you about updated flood hazard information which we are we are proposing to include in a plan change to the District Plan. This information showed your property at Address as being outside the updated flood hazard areas. You can see the at-risk areas on the mapping tool on our website at www.Taupō.govt.nz.

However part of your property has been identified as a defended area. These are areas that are protected by a flood protection scheme (e.g. stopbank). You can see the defended areas on the mapping tool on our website at www.Taupō.govt.nz.

The Waikato Regional Policy Statement directs us to identify these defended areas in the District Plan. This is to ensure that landowners are aware there is an element of risk that the stopbank may fail. These areas will be included in the District Plan but we are not proposing to have any specific rules attached to them.

To share your views on this approach you can contact us by emailing floodhazard@Taupō.govt.nz or by phoning 07 376 0899. We will also be holding an open day at the Turangi Bridge Motel, 4600 State Highway 1, Turangi on Saturday 19 March between 9.30am and 11am so you can come and speak to us in person. However, if you would like us to come and see you in person, please contact us.

More detailed information including the 'Process Map' and 'FAQs' can be found on our website www.Taupō.govt.nz.

Yours faithfully

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager

**ATTACHMENT H – LETTER SENT TO STAKEHOLDERS ON
4 MARCH 2016 WITH A COPY OF THE DRAFT
OBJECTIVES, POLICIES AND RULES.**

4 March 2016

FirstName Surname
Street Address
Suburb
Town / City
COUNTRY



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330
Private Bag 2005, Taupō Mail Centre
Taupō 3352, New Zealand
T 07 376 0899

Dear salutation

Flood Hazard District Plan Change

In November we wrote to you about our updated flood hazard information which we are proposing to include in a plan change to the District Plan. This information shows properties that are potentially in a flood hazard risk area. You can see the at-risk areas on the mapping tool on the Taupō District Council website at www.Taupō.govt.nz.

This new information will eventually be included in the District Plan. Following the feedback we received, we have started preparing draft rules for the flood hazard areas. Our key objectives are to keep people safe and to protect property. The broad principles for these rules are to:

- Discourage development in high risk flood areas;
- Control the design of development in low and medium risk flood areas;
- Recognise existing investment in flood areas; and
- Plan for vulnerable people and infrastructure within flood areas.

The detailed draft District Plan provisions are attached.

As well as identifying flood hazard areas we have identified defended areas. These are areas that are protected by a flood protection scheme (e.g. stopbank). You can see the defended areas on the mapping tool on our website.

The Waikato Regional Policy Statement directs us to identify these defended areas in the District Plan. This is to ensure that landowners are aware that there is an element of risk that the stopbank may fail. These areas will be included in the District Plan but we are not proposing to have any specific rules attached to them.

To share your views on these draft provisions you can contact us by emailing floodhazard@Taupō.govt.nz or by phoning 07 376 0899. We will also be holding an open day at the Turangi Bridge Motel, 4600 State Highway 1, Turangi on Saturday 19 March between 9.30am and 11am. Alternatively we are happy to meet with you to discuss these proposals in person. If you wish to meet with us please contact us with a date, time and location that would suit you.

More detailed information can be found on our website www.Taupō.govt.nz.

Yours sincerely

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

T 07 376 0899

Letter sent to Infrastructure providers

Date

Name

Address 1

Address 2

Address 3

Address 4

Dear salutation

Flood Hazard District Plan Change

In November we met with you to discuss our updated flood hazard information which we are proposing to include in a plan change to the District Plan. This information shows properties that are potentially in a flood hazard risk area. You can see the at-risk areas on the mapping tool on the Taupō District Council website at www.Taupō.govt.nz.

This new information will eventually be included in the District Plan. Following the feedback we received, we have started preparing draft rules for the flood hazard areas. Our key objectives are to keep people safe and to protect property. The broad principles for these rules are to:

- Discourage development in high risk flood areas;
- Control the design of development in low and medium risk flood areas;
- Recognise existing investment in flood areas; and
- Plan for vulnerable people and infrastructure within flood areas.

The detailed draft District Plan provisions are attached.

As well as identifying flood hazard areas we have identified defended areas. These are areas that are protected by a flood protection scheme (e.g. stopbank). You can see the defended areas on the mapping tool on our website.

The Waikato Regional Policy Statement directs us to identify these defended areas in the District Plan. This is to ensure that landowners are aware that there is an element of risk that the stopbank may fail. These areas will be included in the District Plan but we are not proposing to have any specific rules attached to them.

To share your views on these draft provisions you can contact us by emailing floodhazard@Taupō.govt.nz or by phoning 07 376 0899. We will also be holding an open day at the Turangi Bridge Motel, 4600 State Highway 1, Turangi on Saturday 19 March between 9.30am and 11am. Alternatively we are happy to meet with you to discuss these proposals in person. If you wish to meet with us please contact us with a date, time and location that would suit you.

More detailed information can be found on our website www.Taupō.govt.nz.

Yours sincerely

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager

DRAFT RULES FRAMEWORK FOR FLOOD HAZARD AREAS

DRAFT RULES

Note these rules will apply to flood hazard areas marked on the district plan maps.

NOTE. There are no rules that apply to defended areas. These areas are identified on the district plan maps for information purposes only.

New Buildings

1. New buildings in high flood hazard areas are a non-complying activity
2. New buildings in low and medium flood hazard areas are a permitted activity provided they build above the flood level

Additions

Major

3. Major additions to existing buildings in high flood hazard areas are a non-complying activity
4. Major extensions to buildings in low and medium flood hazard areas are a permitted activity provided they build above the flood level.

Minor

5. Minor extensions to buildings in high flood hazard areas are a permitted activity provided they build above the flood level
6. Minor extensions to buildings in low and medium flood hazard areas are a permitted activity (not subject to any floor levels)

Assembly care or community care

7. Buildings for assembly care or community care uses in the high flood hazard areas are non-complying

Emergency services

8. Location of emergency services in low or medium flood hazard areas are a restricted discretionary activity
9. Location of emergency services in high flood hazard areas are a non-complying activity

Subdivision

10. Subdivision that provides for new residential, commercial or industrial land uses in high flood hazard areas is a non-complying activity
11. Subdivision that provides for new residential, commercial or industrial land uses in low or medium flood hazard areas is a restricted discretionary or controlled activity.
12. Subdivision for other uses(boundary adjustments etc.) is a controlled activity

Infrastructure

13. Any new below ground infrastructure, stormwater infrastructure, roads and hydro electricity generation activities in any flood hazard area is a permitted activity.
14. Any new above ground infrastructure in low and medium flood hazard areas are a controlled activity.
15. Any new above ground infrastructure in high flood hazard areas is a restricted discretionary activity.

DEFINITIONS

Assembly care means a building or use where a large degree of care and service is provided. Such as an early childhood education and care centre, college, day care institution, centre for handicapped persons, kindergarten, school or university.” (from the Building Code)

Community care means a residential building or use where a large degree of assistance or care is extended to the principal users. There are two types:

Unrestrained: where the principal users are free to come and go such as a hospital, old peoples home or health camp

Restrained: where the principal users are legally or physically constrained in their movements such as a borstal or drug rehabilitation centre, an old peoples home where substantial care is extended, a prison or hospital. (from the Building Code)

Defended areas are areas which would normally flood in a 1%AEP flood event but are protected from flooding by a flood protection scheme managed by the Waikato Regional Council.

Flood hazard areas

Low flood hazard area is the area where floodwaters in a 1% annual exceedance probability flood are expected to have a low impact on people and low damage to property. These areas are shown on the planning maps as low flood hazard areas (yellow)

Medium flood hazard area is the area where floodwaters in a 1% annual exceedance probability flood are expected to have a medium impact on people and medium damage to property. These areas are shown on the planning maps as medium flood hazard areas (orange)

High flood hazard area is the area where floodwaters in a 1% annual exceedance probability flood are expected to have a high impact on people and high damage to property. These areas are shown on the planning maps as high flood hazard areas (red)

Infrastructure is

- m) pipelines that distribute or transmit natural or manufactured gas, petroleum, or geothermal energy;
- n) a network for the purpose of telecommunication as defined in section 5 of the Telecommunications Act 2001;
- o) a network for the purpose of radiocommunication as defined in section 2(1) of the Radiocommunications Act 1989;
- p) facilities for the generation of electricity, lines used or intended to be used to convey electricity, and support structures for lines used or intended to be used to convey electricity, excluding facilities, lines, and support structures if a person—
 - (i) uses them in connection with the generation of electricity for the person's use; and
 - (ii) does not use them to generate any electricity for supply to any other person:
- q) a water supply distribution system, including a system for irrigation;
- r) a drainage or sewerage system;
- s) structures for transport on land by cycleways, rail, roads (local and State highway), walkways, or any other means;
- t) facilities for the loading or unloading of cargo or passengers transported on land by any means;
- u) an airport as defined in section 2 of the Airport Authorities Act 1966;
- v) a navigation installation as defined in section 2 of the Civil Aviation Act 1990;
- w) facilities for the loading or unloading of cargo or passengers carried by sea, including a port related commercial undertaking as defined in section 2(1) of the port companies act 1988;
- x) anything described as a network utility operation in regulations made for the purposes of the definition of “network utility operator” in section 166 of the Act.

Major extension means any addition to the gross floor area that exceeds 15m².

Minor extension means any addition to the gross floor area that is equal to or less than 15m².

Classes of Activities for Resource Consents (From the Taupō District Plan)

Type of Activity	Do I Need a Resource Consent?	Explanation
Permitted	No	No resource consent is required providing the relevant rules and performance standards of the Plan are met.
Controlled	Yes	Council <i>must</i> grant consent providing all the relevant performance standards of the Plan are met. Conditions may be placed on the consent in respect of the matters over which Council has retained control.
Restricted discretionary	Yes	Council <i>may</i> grant consent. Council has restricted its discretion to a limited number of matters as stated in the rule. The assessment of effects will be restricted to those matters of discretion identified in the rule. Conditions may be placed on the consent in respect of the matters of discretion only.
Discretionary	Yes	Council <i>may</i> grant consent, with or without conditions. The assessment of effects is open to all potential effects of the activity
Non-complying	Yes	Council <i>may</i> grant consent (with or without conditions) only if it is satisfied that either: (a) The adverse effects of the activity on the environment will be minor; or (b) The activity will not be contrary to the objectives and policies of the Plan.
Prohibited	No application allowed	No application for a resource consent may be made and the consent authority must not grant a consent for it.

OBJECTIVE

3l.1.3 Keep people safe during significant flood events and ensure that emergency services remain able to operate.

POLICIES

- i. Ensure that communities are informed of the potential flood risks (including residual risks) that may affect them.
- ii. Avoid locating new buildings and major extension in high flood hazard areas due to the risk to people's lives and the risk from structural damage.
- iii. Control the design of new buildings in low and medium flood hazard areas to keep people safe.
- iv. Control the design of minor extensions to buildings in high flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe.
- v. Control the design of major extensions to buildings in low and medium flood hazard areas. This acknowledges the existing investment on the site but recognises the overriding need to keep people safe.
- vi. Avoid locating new care facilities for vulnerable people in high flood hazard area. This applies to buildings or uses that fall within the definition of assembly care or community care.
- vii. Avoid locating emergency services in areas subject to flooding where the anticipated flood waters would inhibit their ability to operate.
- viii. Avoid subdivision that provides for new residential, commercial or industrial land uses in high flood hazard areas, and manage subdivision for such uses elsewhere to ensure that the risk to people is minimised.

OBJECTIVE

3l.1.4 Buildings and infrastructure are designed to avoid damage during significant flood events.

POLICIES

- i. Avoid locating new buildings and major extensions to buildings in high flood hazard areas given the likelihood of the damage being structural.
- ii. Control the design of new buildings and major extensions in low and medium flood hazard areas to avoid damage during significant flood events.
- iii. Provide for minor extensions to buildings in low and medium flood hazard areas in recognition of the investment in the existing buildings and site works.
- iv. Provide for infrastructure that is not vulnerable to flood hazards and control the design of vulnerable infrastructure. This will avoid structural damage and enable the infrastructure to continue to operate.

Attachment I – Letter e-mailed to the real estate agents in the district (the frequently asked questions was attached)



GREAT LAKE TAUPŌ
Taupō District Council

72 Lake Terrace, Taupō 3330

Private Bag 2005, Taupo Mail Centre

Taupō 3352, New Zealand

T 07 376 0899

11 November 2015

Name

Address 1

Address 2

Address 3

Dear Sir/Madam

Flood Hazard District Plan Change

Planning for natural hazards is one of our core requirements under the Resource Management Act 1991. Given we have a lot of waterways throughout the district we are making people aware of areas which may be prone to flooding from Lake Taupō or its major tributaries.

We have updated flood hazard information based on computer modelling of flooding in a 1% Annual Exceedance Probability (AEP) event, or otherwise known as a 1 in 100 year flood. The areas prone to flooding have been classified as low, medium and high risk. You can see the at-risk areas on our website at www.Taupōdc.govt.nz.

This information will eventually be included in the District Plan however it is too early to say what the rules will be. Our initial thoughts are that in a low or medium risk area, we may require any new building to meet a minimum floor level. In a high risk area a resource consent may be required for any building work. Places where vulnerable people would be such as schools, retirement homes, etc. may be discouraged from locating in high risk areas.

As a real estate agent this information will be of interest to you. We have included with this letter a 'Process Map' which outlines the full process of the Flood Hazard District Plan Change and a set of 'Frequently Asked Questions'. More detailed information can be found on our website www.Taupōdc.govt.nz. You can also contact the Flood Hazard team by emailing floodhazard@Taupō.govt.nz or by calling 07 376 0899

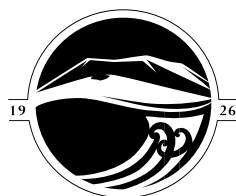
Yours faithfully

Sue Mavor
Senior Policy Advisor

Hadley Tattle
Policy Advisor

Nick Carroll
Policy Manager

Attachment J – Letter from CEO Tūwharetoa Maori Trust Board 18 September 2017



TŪWHARETOA
MĀORI TRUST BOARD

Nick Caroll

Policy Manager

Taupō District Council

Email: NCarroll@taupo.govt.nz

Tēnā koe Nick,

Commentary on the Proposed Plan Change 34 (Flood Hazard)

Thank you for providing an opportunity for Tūwharetoa Māori Trust Board (Trust Board) to comment on the draft Section 32 (s32) Report on the Flood Hazard Plan Change. We acknowledge the Taupō District Council's (TDC) role and responsibility to identify flood hazards and manage development to mitigate risks to people and property.

As indicated by previously, it is often difficult to provide comment on a subject without having sufficient detail to understand the detail of and what the implications of the Plan Change may be. Hence, our previous requests to have an opportunity to review and comment on the draft Section 32 Report.

Below are comments from the Trust Board on the draft Section 32 Report. The Trust Board remains open to working with TDC in good-faith on this Plan Change, and as you will note from our comments below, we consider further work is required prior to notification. We would like an opportunity to meet kanohi ki te kanohi to discuss our comments below.

The Trust Board provide these comments on a without prejudice basis and reserve the right to alter positions on any comments following further analysis of the Proposed Plan Change following notification.

We highlight the Trust Board's ownership of the bed of Lake Taupō and those portions of the beds of the Tongariro River, Waihora, Waihaha, Whanganui, Whareroa, Kuratau, Poutu, Waimarino, Tauranga-Taupō, Waipēhi, Waiotaka, Hinemaiaia and Waitahanui Rivers or Streams, and their tributaries including the Waikato River from its outlet at the Lake Taupō Marina to the Toka-a-Tia. We note that our land will be impacted by the flood hazard notations, and now having a copy of the proposed policies, objectives and rules we are currently analysing how this impacts our property.

1. Comments on the draft s32 Report

Extreme wave activity

On reviewing the draft s32 Report, the Trust Board notes the decision to exclude extreme wave activity from the realms of this proposed Plan Change. We consider that this decision to exclude will likely provide a level



of uncertainty for the many Māori Land Blocks who abut the lake edge and will leave them unsure about what other impacts they can expect in future variations to the District Plan. We would like to discuss these potential implications further with you.

Assessment of Impacts on Māori Land Blocks

As noted in the draft s32 Report, the level of detail contained is determined by the scale and significance of the environmental, economic, social and cultural effects that will result from the Plan Change. In reviewing the whole s32 Report, and notably Appendix 10 (Proposed provisions evaluation), we do not consider that the cultural assessment is sufficient. We do not accept statements such as “any loss of development potential is considered to be outweighed by the risk of developing in these flood prone areas. There has been limited feedback from iwi on this issue”. We would encourage TDC to undertake meaningful consultation with affected Māori Land Blocks to provide TDC with a clear understanding of not only the cultural issues but the environmental, economic and social affects.

Furthermore the Trust Board would also encourage TDC to undertake a process to understand and assess the ‘value’ associated with the Māori land impacted to inform your comments. There are a range of ‘values’ associated with Māori land that are not solely related to their development potential. ‘Values’ may manifest specific cultural, spiritual, environmental and social values for the owners and provide public amenities and ecosystem services of considerable monetary and non-monetary value. In this regard, we caution the use of the notion that “Any loss of development potential is considered to be outweighed by the risk of developing in these flood prone areas.”

As TDC will be aware Tūwharetoa landowners of multiply maori owned land have ‘sacrificed’ their lands to enable the community (including private property owners) the opportunity to sustain a desired benefit. The costs to Māori owners is both monetary (opportunity cost of development) and non-monetary (adverse effects on taonga, access and turangawaewae). There is no material identification or related evaluation of these attributes or their effects on the landowners. As a result, there appears to be insufficient information to enable decision-makers to develop sound understanding of the impact of this Plan Change on Ngāti Tūwharetoa hapū, whanau, landowners and to advise on its relevance to their cultural, social, economic and environmental interests.

Given the magnitude of impact on Māori Land, it would be imperative for TDC to gain this understanding from those impacted to enable a sufficient s32 Report and the assessment required under s32(2)(a) of the RMA.

Ngāti Tūwharetoa Environmental Iwi Management Plan 2003

We note that some sections of the Ngāti Tūwharetoa Environmental Iwi Management Plan 2003 (NTEIMP) has been quoted on page 19 of the s32 Report. However, no assessment has been made against the Plan and its provisions. We would encourage this assessment to be completed.

Assessment of Part 2 RMA Matters

The Trust Board consider it essential that a robust assessment of Part 2 RMA matters be undertaken and recorded in the s32 Report. We consider the following provisions of Part 2 should be included in the assessment of the appropriateness of the Plan Change:

Sections 6(e) "the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga";

Section 6(f) "the protection of historic heritage from inappropriate subdivision, use and development", and;

Section 6(g) "the protection of protected customary rights".

As an example, many Ngāti Tūwharetoa settlements historically, and currently, exist in close proximity to our waterbodies, including the lake. This intimate and generational association between the waterbodies and Ngāti Tūwharetoa Hapū, whanau and landowners with ancestral lands, marae, urupa, and other wāhi taonga



must not be compromised by any District Plan provisions. We welcome discussions with TDC on how to allow for these activities and buildings without being impinged by Council rules.

Engagement with Ngāti Tūwharetoa

The Trust Board note that Council undertook two rounds of consultation with affected landowners and stakeholders in November/December 2015 and March/April 2016 with an extended period being granted to some stakeholders. Based on the incredibly low response rate (~3% and ~6%), we do not accept that the consultation approach has been sufficient.

In partnership with TDC, the Trust Board is able to assist the Council in developing a more suitable consultation plan. We look forward to having continuing our discussions.

The Trust Board and TDC staff have been in contact over the last two years, with the first opportunity for substantive discussions taking place in April 2017. We have also encouraged Council to consult with Ngāti Tūwharetoa hapū, marae and landowners including facilitating a presentation by TDC at a Korowai Awhina hui (26 April 2017).

We note the comments throughout the s32 Report that the impact of the Plan Change on Māori Land is relatively high and that much of the 'high risk' area is on these Māori Land Blocks. We again, reiterate our deep concerns with the lack of engagement with Māori Landowners on the Plan Change. In our experience, we know how important pre-notification consultation is to enabling a robust and transparent plan change and, hopefully, a smoother notification and hearing process.

We would like to discuss this matter with you further before any Plan Change is notified as we consider this a potentially substantive issue.

2. Summary

We hope that the above comments have been helpful and you will note we have concerns about the engagement process to-date, and we welcome an opportunity to discuss our comments further. Please let me know when you are available to meet.

Ngā mihi,



Topia Rameka
CEO

