

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

The following rivers were modelled: Whareroa Stream; Kuratau River; Tokaanu 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; affect 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 Tokaanu 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 affect 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 as it will be in the District Plan.

› What will happen to the value of my property?

We have commissioned a report on the potential affect 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?

Some rules have been proposed for flood risk areas. See the council website www.taupo.govt.nz for more information.

› 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.

* Turnover to see the process map

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