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REGIONAL COUNCIL
Te Pane Matua Taiao

TE KĀURU
UPPER RUAMĀHANGA FLOODPLAIN MANAGEMENT PLAN
Masterton flood hazard
Summary and FAQs

Background and summary

Masterton District Council and Greater Wellington Regional Council are currently looking at options for managing the current and future flood hazard to Masterton from the Waipoua River. This is being done through the Te Kāuru Floodplain Management Plan. As part of this process, draft flood maps have been developed jointly by both Councils. The draft flood maps will be finalised following an independent audit, at which point they will replace the current flood hazard maps for Council uses. The new flood maps and a recommendation on flood management options are both expected in early 2019.

New research has found a future 1% annual chance (also referred to as a 1-in-100 year) flood is likely to have less impact on the Masterton urban area than initially thought.

MDC and the GWRC have been working on maps which indicate the likely extent of flooding in the urban area in the event of a 1% annual chance flood for the present day and in 2090. The maps, which are still in draft stage, show some areas of the Masterton urban area are likely to experience flooding. This is mainly around Oxford Street and areas bordering Akura Road. The depth of flooding varies; much is likely to be up to 30cm but a small number of houses may experience flooding up to two metres.

The flooding risk increases when other potential scenarios are factored in. For example, assuming a higher amount of debris collects on the railway bridge and assuming greater river flows or a “rougher” river channel (Map 3).

There is time to mitigate these potential impacts; Map 3 is focused on future scenarios later this century with the impacts of climate change over time factored in, for example a 20% increase in rainfall.

There are a range of options for mitigating these flooding scenarios. For example, improving stopbank systems, solutions to blockage at the rail bridge and consideration of storage up stream. We will be asking for your feedback on these options in early 2019.

FAQs

What is the status of the information?

The flood maps are currently draft. They will be subject to an independent audit prior to being finalised. Until the new maps are finalised, they will not be used for building controls or other regulation. They will appear on LIMs alongside existing flood hazard information.

What does the draft information show?

The draft flood hazard information generally shows a reduction to the flood hazard in Masterton compared to the existing mapping that was released in 2014. Areas of hazard exist, with Oxford St and Mawley Park being a particular concern, but the main hazard to the town and particularly the CBD exists under a future scenario of climate change to 2090.

A significant area of the town and CBD falls within the future flood spread that includes sensitivity scenarios. The sensitivity scenarios include an area, which is an additional to the estimated 1% annual chance (1-in-100 year) base flood spread. The sensitivity scenarios allow for uncertainties in river flow, channel characteristics and an additional degree of blockage at the railway bridge.

How was the information produced? What are the different maps?

Hydrology (river flows) was developed by a consultant jointly engaged by MDC and GWRC. A new hydraulic model (flood model) was then developed to show how these flows would travel down the river and across the floodplain in a number of different scenarios. This model was calibrated to data we have about previous flood events including the 1998 flood. Both the hydrology and the hydraulic model were independently peer reviewed as agreed by both

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Councils. We have also been working on the ground in Masterton to get valuable local knowledge about flooding history in the area.

A number of scenarios ("what ifs") were considered in developing the flood maps. The 'base flood spread' shows the best estimate of the flood area from the flood model and the 'flood spread with sensitivity scenarios' shows the area that would be flooded under different scenarios. In the end, three scenarios were considered to be important and reasonable to consider:

1. A higher flow – the upper end of the range recommended by the hydrology consultant – because there is a lot of uncertainty about the flood flows in this catchment.
2. A greater degree of blockage at the railway bridge because blockage at the bridge has historically been a problem.
3. Uncertainties in the condition or performance of the river channel.

I'm the owner of a house in an area that looks to be directly impacted, what does it mean for me?

Please talk to GWRC about any site specific advice you may need. Note that the regulatory implications (e.g. new building levels) will be confirmed prior to final flood maps being produced.

Why are the draft maps different to the existing maps?

Mainly due to differences in the hydrology between the different studies, and in the use of new "flexible mesh" hydraulic modelling technology that allows the floodplain to be modelled at a much higher level of detail. The approach used in mapping the uncertainties is also different.

In particular there is a lot of uncertainty regarding the nature of the hydrology of Waipoua catchment and various studies with flood event estimates have been undertaken during this process. The hydrology used for the updated model was undertaken by a consultant, jointly engaged by MDC and GWRC, and also peer reviewed by a jointly-engaged peer reviewer.

What does it mean for insurance?

The current flood maps are still in use and we recommend that residents advise their insurance company if they are in a flood hazard area. However, the maps available on the online GIS viewer include an allowance for climate change. From our conversations with insurance companies we understand that they are usually more interested in flood hazard under today's climate because it reflects the risk they are insuring. GWRC is happy to provide additional information (including maps without climate change included) to assist with any queries from insurance companies.

The new maps will be available showing today's hazard (no climate change) and future hazard (including climate change).

What does it mean for building consents and LIMs?

As the maps are in draft stage, the information will be provided to give context.

What is being done to manage the flood risk?

Work is underway to develop options to manage the flood hazard that is shown in the maps. The focus is on today's flood hazard (e.g. the flood risk to properties in Oxford St) and on more immediate projects to improve the level of flood protection. However, we will also be considering a whole range of options to address the entire flood hazard including in the future, as well as recognising the value of the Waipoua River to Masterton. This will feed into the Te Kāuru Floodplain Management Plan. We will be in touch with you over the coming months as options take shape.

To find out more, visit:

www.tekauru.co.nz