Living with the flood hazard

The Hutt River Floodplain Management Plan provides a high level of protection but **remember floods can happen at any time of the year, night or day.**

The general Flooding Hazard fact sheet provides a lot of useful information on how to be prepared for flooding, but here are some further guidelines:

- Find out about the flood hazard at your home and other places your family use such as work and school
- In the Hutt Valley, the Upper Hutt and Hutt City Councils have the primary responsibility for passing flood warnings to the community and you should contact them if you are concerned about flood risk
- Learn about river flows at the Taita Gorge via the flow phone (this may be very busy if there is a flood alert).

Want to know more?

Try checking the rainfall figures and water level and flow at Taita Gorge by:

- checking out www.gw.govt.nz, go to *Environmental Monitoring*, then find *Rainfall and River flows*, then click on the link for *Hutt at Taita Gorge*
- ringing Greater Wellington on (04) 384 5708 or 0800 496 734.
- ringing the flow phone on 08 322 01 70 (calls cost 12c/minute)

Check out these publications from Greater Wellington – most are available from our website www.gw.govt.nz

1. *The Hutt River – Te- Awa- kai- rangi* – A Modern History 1840 – 1990 – WRC 1991
2. *Living with the River* – Hutt River Floodplain Management Plan: Phase One Summary Report – WRC November 1996
3. *Hutt River Floodplain Management Plan* – For the Hutt River and its Environment – WRC October 2001
4. *Hutt River Floodplain Management Plan*: Environmental Strategy – WRC 2000
5. Newsletters for the Communities of the Hutt River Floodplain, Issues No's. 1 – 7 – WRC 1999 – 2001

Flooding from streams

Never under-estimate the little guys! Events in 1976 and 2004 showed that small streams in the Hutt Valley can cause major flooding to areas nearby:

- December 1976, the Korokoro Stream flooded during a storm event and caused flooding in the Petone area, particularly at the Cornish Street/Hutt Road intersection. During this event in the Hutt Valley the Stokes Valley, Pine Haven and Waiwhetu Streams also flooded.
- February 2004, heavy rain caused the Waiwhetu Stream to burst its banks and caused major flooding to Riverside Drive, the Hutt Park raceway and the industrial area in Gracefield.

Flooding at Riverside Drive from the Waiwhetu Stream, 15-16 February 2004

For more information, contact Greater Wellington

Wellington office
PO Box 11646
Manners Street
Wellington 6142
T 04 384 5708
F 04 385 6960
www.gw.govt.nz

Published November 2007
GW/EM-G-07/268

Quality for Life

greater WELLINGTON REGIONAL COUNCIL | Emergency Management

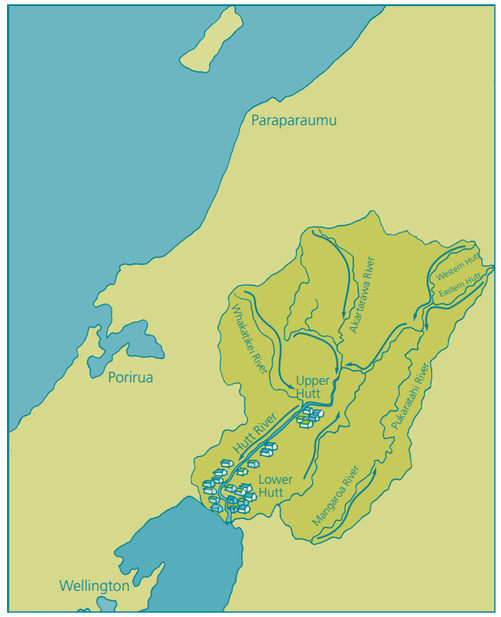
Flooding Hazard – Hutt Valley

This fact sheet is about the flooding hazard in the Hutt Valley. It gives some advice on how to live with this hazard. Flooding Hazard – Hutt Valley is part of a series of fact sheets on natural hazards in the Wellington Region.

For more general information about floods and flooding, take a look at the Flooding Hazard fact sheet. In it you'll find answers to why floods happen, how floods are measured and how you can prepare yourself and your family.

The Hutt River catchment

There's more to the Hutt River than you may think. The river is part of a much bigger system – its catchment. A catchment is an area of land which drains into a river system. Hutt River's catchment contains all the rivers, streams and tributaries that flow down from the Tararua and Rimutaka mountain ranges, and from the Eastern and Western Hutt hills. All these watercourses eventually combine to become the Hutt River itself. This means that a storm or heavy rainfall in almost any part of the catchment could result in extra water flowing down these watercourses and causing a large flood in the Hutt River.



Hutt River floods

The Hutt River has a history of flooding. The first European/Pakeha settlers in the Wellington Region settled around Petone and Lower Hutt in the 1840s. By 1855, after experiencing floods (and earthquakes), many moved to Wellington. A major flood in 1898 covered the entire valley floor. This led to the construction of the first major stopbanks to protect Hutt residents. Some of the original stopbanks are still there today.

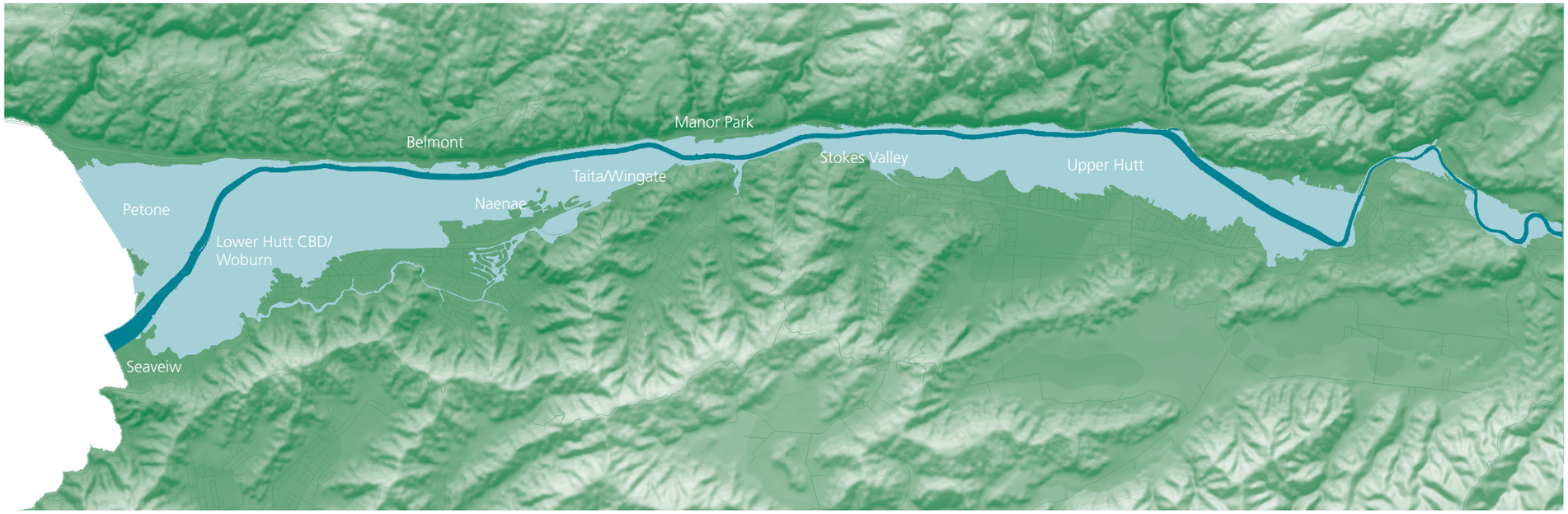
The Hutt River is a vigorous river and, although kept on its present course by stopbanks, it can still flood. Around 70,000 people live on the floodplain, and assets worth $6 billion are at risk. A big flood could cause considerable damage to businesses, services and homes in the Hutt Valley. Floods in 1998 and 2004 reminded us that the hazard is still there – you need to be prepared!

Hutt River Facts

- The catchment area is 655 km^2 – that's more than seven times the area of the Wellington Harbour
- Starting in the Tararua Ranges and ending where the Hutt River enters Wellington Harbour, the main channel is 54km long
- Heavy rain at the top of the catchment can turn into floodwaters at the Hutt River mouth in less than seven hours.

How is the flooding hazard managed in the Hutt Valley?

Because the Hutt River floodplain has been so extensively developed, this stretch of the river needs to have effective and reliable flood protection works to shield the area's people, assets and activities. The flood protection works cannot stop the river flooding, but they can try to keep the floodwater between the stopbanks, stopping the floodwaters from reaching the houses and businesses in the Hutt Valley.



Key

Hutt River

Flooding extent in 440 year flood

This map shows how far the floodwaters on the Hutt River floodplain might spread if a very big flood of 2300 cumecs (see 'Measuring Floods' box) happens while we have the current standard of flood protection. The planned upgrading of the flood protection system over the next 40 years will significantly reduce the extent of flooding.

The map above gives a very general idea of the extent of flooding. There are varying levels of flooding at different places within the flooded area. To find out more, see the further information sources shown on the back page of this fact sheet.

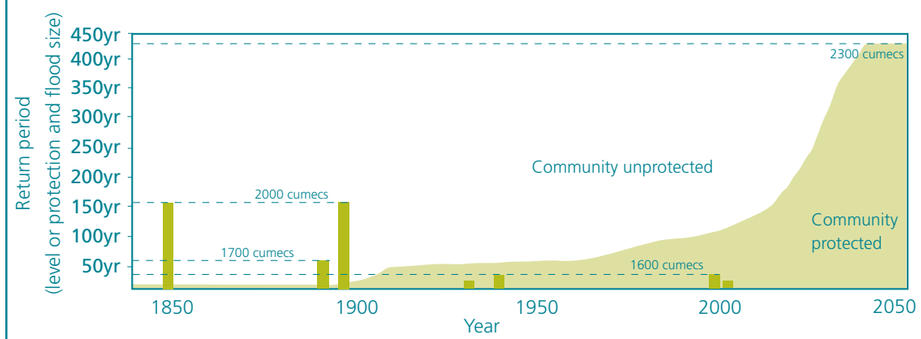
How do we know there might be a flood?

We monitor rainfall in the catchment, together with river flow and levels. These are ways of alerting us to a possible flood risk. There are six rainfall and five river recording stations spread around the Hutt River catchment.

The Taita Gorge river level recording station is the key to monitoring flows from the catchment upstream. It is located at a point in the river downstream from where all the major streams of the catchment join the Hutt River.

Some of the larger flood events, their volume and estimated return periods are shown below.

Major Floods and Flood Protection Improvements on the Hutt River (1850 – 2050)



Key

- Major floods (measured in return period/ cumecs)
- Flood Protection Improvements (standard of protection based on design flood return period)

(Flood protection improvements and major flood events)

The bars on the graph show the major floods on the Hutt River since 1850.The dotted lines and the return periods on the left axis show the **size** of the floods. The flood protection improvements (which started in 1901) are shown as the blocked out area that increases over time. These improvements have already started to provide the community with a higher level of protection, and more improvements will continue until the Plan has been fully implemented. By 2040 these improvements will provide protection against a 440 year (2300 cumec) flood.

It is important to remember that this graph is only an indication of the varying level of protection provided to the community through flood protection improvements on the Hutt River. To find out more, get a copy of the Hutt River Floodplain Management Plan from the Greater Wellington website www.gw.govt.nz.

Measuring floods

The amount of water flowing in a river is measured by a unit called a cumec. Cumec stands for cubic metres of water that flow past a given point in a second.

The frequency of a flood is measured by how often a flood of a particular size is likely to happen. So a 1 in 5, 1 in 50 or 1 in 100 year flood, for example, means that floods of certain sizes are statistically likely to happen once every 5, 50 or 100 years. Another way of saying how frequently a flood might happen is to talk about a return period.

In the case of the Hutt River, we are planning for a very big flood of 2300 cumecs. Such a flood has a return period of about 440 years – it is statistically a 1 in 440 year flood.

That may sound as though a very big flood is only going to happen once in 440 years. But in reality two big floods can happen soon after each other. The return periods are reviewed every ten years.

The figures are just a way of showing flood size and frequency so that we can plan for and have flood protection measures in place to cope with such events.

The Hutt River Floodplain Management Plan

To plan for the flooding hazard in the Hutt Valley, the Hutt River Floodplain Management Plan was developed by Greater Wellington, Upper Hutt and Hutt City councils. The communities in the Hutt Valley played a big part in the process. Collectively it was decided that the level of flood protection preferred is one that will cope with a 2300 cumec flood. The Plan proposes a range of ways to protect the Hutt Valley communities against floods:

- Physical and Structural works: such as stopbanks, protecting and strengthening the sides of the river with rock and plantings (willows and natives).
- Other measures: such as providing information to the public and schools, having a flood warning system and having a family plan for evacuation, or having rules about where people can build a house.

Even though all of the protection works will be fully upgraded and completed by 2040, there is already a high standard of flood protection in many places along the Hutt River. However, it is important to remember that flood protection systems are not a guarantee against flooding in all places. There will always be some areas that are still at risk.