

Tauranga City Council prepares for more intense rainfall



What is the Issue?

In May 2005, the Western Bay of Plenty was hit by intense storms that caused flooding throughout the region. Tauranga and Matata were particularly hard hit and a state of emergency was declared. Stormwater drains were put under considerable stress during the storm. Roads and private property were also substantially damaged by the flooding.

While the annual precipitation in the Bay of Plenty is expected to decrease with climate change, the frequency of extreme rainfall events such as the May 2005 storm, and the subsequent flooding, is projected to increase. The expected changes in rainfall patterns in the Bay of Plenty have significant implications for planning new subdivisions and development, including stormwater infrastructure.

Over the past few years, there has been an increase in commercial and residential development throughout Tauranga. Consideration of climate change impacts in infrastructure planning will help protect these investments into the future.



Bureta Road in Tauranga during the floods in May 2005

Stormwater infrastructure improved

In response to the severe flooding in Tauranga during 2005, the Tauranga City Council undertook a study to determine changes in the region's rainfall. Methodology provided by the Ministry for the Environment in "Climate Change Effects and Impacts Assessment" was used to develop heavy rainfall scenarios for Tauranga under the projected changes in the climate. The new rainfall design charts show that many more intense rainfall events can be expected by 2055.

As a result of the findings, the Council is now considering the predicted climate change impacts in designing all new and upgraded stormwater infrastructure. The Council used the Ministry for the Environment's climate change guidelines for local government to help them identify the risk factors and plan accordingly.



The aftermath of the flood

The Council has also reviewed the design criteria for primary stormwater systems. Previously, the criteria required consideration of the effects of a one-in-five year flood. The new requirement is that infrastructure must be designed to cope with much larger floods on a one-in-ten year scale. The Council has also incorporated increased high intensity rainfall into their planning blueprint for growth and development in the region over the next 50 years. This work involves partnership with Western Bay of Plenty District Council and Environment Bay of Plenty.

Conclusion:

Since the May 2005 floods, some major stormwater upgrades have been completed around Tauranga city, taking into account climate change risks. These upgrades will help to protect the community when the next flood hits the region.



The stormwater upgrades on Bureta Road in March 2007. The open drain has now been piped and a culvert is in place.

Find out more

Links to further information:

- Adapting to climate change: www.mfe.govt.nz/issues/climate/adaptation/
- Local Government New Zealand – Adapting to climate change workshops: www.lgnz.co.nz/projects/ClimateChange/workshop.html
- Climate change mitigation: www.climatechange.govt.nz
- Household sustainability: www.sustainability.govt.nz/

Publications:

See Ministry for the Environment publications:

- Climate change effects and impacts assessment
- Preparing for and adapting to climate change. Look ahead to the future

These are available on www.mfe.govt.nz/publications/climate/ and by emailing publications@mfe.govt.nz

Contact:

Ministry for the Environment

Contact us for more information about climate change or new initiatives:

Phone: (04) 439 7400

Email: info@climatechange.govt.nz

Address: Ministry for the Environment, PO Box 10362, Wellington

Tauranga City Council

Phone: (07) 577 7000

Email: info@tauranga.govt.nz

Website: www.tauranga.govt.nz