



# Your Flood Warning System

## How does the flood warning system work?

The flood warning data that we collect comes from river level recording sites located on the banks of your local rivers.

These recording sites are equipped with one or more sensors, a data logger and communications equipment.

The data is recorded every 15 minutes and transmitted back to a computer at our Palmerston North office, in most cases every 30 minutes.

Within a couple of minutes the data is then sent to our website ([www.horizons.govt.nz](http://www.horizons.govt.nz)) and our interactive voice response system (IVR). The IVR issues the flood warnings.

If you would like more information you can also call the Horizons Waterline on 0508 435 663 to get river level, flow and rainfall information.

## Getting your flood warning information perfect for you

We try to ensure that our systems operate as reliably as possible.

We are always looking for innovative and cost-effective ways to improve the reliability of our systems.

Let us know immediately if you believe something is not working correctly.

We can set a flood warning at a different level if there is a level you prefer, and we can set alarms at most locations and at most levels. You can also have more than one phone number to which warnings are sent. Just give us a call on 0508 800 800 and ask us.

## What changes have we made?

To provide more lead time during heavy rainfall events, we have developed models that will predict river level from actual and forecast rainfall within the catchment. You will be able to see these predictions as they happen on our website.

Flood forecasting for the Manawatu River and its major tributaries upstream of the Manawatu Gorge, as well as the Whanganui, Whangaehu, Turakina, Rangitikei, Oroua and Pohangina Rivers are now available on our website. These river level forecasts should provide a good indication of the magnitude of impending flood events. The accuracy of these forecasts is dependent on data from our network of automatic raingauges and the accuracy of rainfall forecasts.

## What can go wrong?

Please recognise that although we endeavour to provide timely and accurate information based on thousands of data points and state of the art computer systems, there is the chance of technical or human error, and that 100% success all the time is not feasible.

Many things can occur to prevent the data being at the right place at the right time.

### Theft and vandalism

Some of the biggest problems we deal with are vandalism and theft of our recording sites. Many thousands of dollars of equipment is being stolen or deliberately damaged every year.

### Failing equipment

Sensors, data loggers and communications equipment can fail at the recording site, or power failures can

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exceed the backup battery supply. Much of the data we collect is transmitted via radio communication networks that have links in remote areas. These networks are also susceptible to lightning strikes, wind damage and a range of other problems, any one of which can cause a failure of the flood warning systems.

### Failure of your phones and power

We will be unable to contact you to update you on river levels if:

- you are not available to answer the call,
- your cell phone is switched off or out of range,
- you don't have an answer phone or voicemail.

### Check out our website

The Rivers and Rainfall monitoring system is accessible from our website [www.horizons.govt.nz](http://www.horizons.govt.nz). This information allows you to view the most current information on river heights, forecast river heights, and rainfall in your area.

There is also the possibility of failure with your own phones, phone lines and power supply, as demonstrated during the 2004 storm events.

Please note that answer machines may not receive the whole message, but the message will alert you that we have tried to call. If this happens, please call the Waterline immediately on 0508 435 663 and find out the current level of the sites that affect you.

Delays occur in phoning out warnings as the lists gets bigger. Please limit the number of flood phone numbers to a maximum of four, and flood warning levels per site to a maximum of three.

