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Significance of Decision: Receives Only - No Decisions



Report To: Rangitaiki River Forum
Meeting Date: 17 March 2016
Report From: Eddie Grogan, General Manager, Integrated Catchments

Flood Event 19 February 2016

Executive Summary

The 19 February flood event was a “minor flood event” under the definitions in the Lake Matahina Flood Management Plan. This was the first flood event > 300 m³/s since the management plan was finalised.

Some details of the event were:

- The rainfall total in the Upper Rangitāiki Catchment over a 24 hour period was 100 - 130mm.
- The peak flow through the Matahina Dam was 300m³/s via a combination of generation and spilling.

The flood event served as an excellent exercise for the BOPRC flood management team and Trustpower both in terms of the flood management and in refining/calibration of the flood forecasting model that had been developed for the Rangitāiki River.

A presentation is to be provided at the forum.

1 Recommendations

That the Rangitaiki River Forum under its delegated authority:

- 1 Receives the report, Flood Event 19 February 2016.**

2 Background

Trustpower gained a resource consent (#65750) for the Matahina Dam operation in 2012. A condition of the consent was that they produce a “Lake Matahina Flood Management Plan”.

The responsibilities required under the consent and to be covered in the flood management plan included requirements in the event of flood conditions;

- Trustpower to maintain close liaison with BOPRC

- Trustpower to consult on action to be taken
- Trustpower is committed to undertake reasonable requests by BOPRC
- BOPRC responsible for providing warnings to the public

3 **Flood Forecast**

During the week of 19 February 2016 advance warnings of heavy rainfall were received from the MetService. The detail of this heavy rainfall increased as the week progressed.

:eg

Heavy Rain Warning for Bay Of Plenty

Issued 08:55pm Thursday 18 Feb 2016

- In the 18 hours from 9pm Thursday to 3pm Friday, another 100 to 140mm is expected
- Peak intensities of 15 to 25mm per hour, but with localised downpours could reach 40mm per hour during Friday.

4 **Flood Management, Monitoring and Forecasting**

The flood management team has developed a flood forecasting model for the Rangitāiki Catchment. This model uses forecasted rain, rain radar and rain gauges to determine flows within tributaries of the Rangitāiki River and the Rangitāiki River itself.

This forecasting model had not been calibrated with an event prior to the 19 February flood event. It was used for predicting flood peaks for the 19 February flood event but with caution.

On Thursday 18 February 2016 the flood forecasting model predicted that the flow into the Matahina Dam would peak at approximately 3.45pm, 19 February with a peak flow of 345 m³/s. Under the Lake Matahina Flood Management Plan this would be classed as a minor event.

The requirements for a minor event under the plan is to lower the Matahina Lake level in anticipation of the flood peak. The situation was monitored overnight and following further information Trustpower was contacted and requested to start spilling at 11am on 19 February.

Specifically they were asked to:

- Discharge via generation and spilling to a flowrate of 300m³/s to lower the lake level to ½ full (to RL 75.0m)
- Match inflows to maintain the lake level at ½ full

In accordance with the consent and flood management plan BOPRC advised the general public via a media release on the BOPRC website, sent the same media release to local radio stations and sent out an automated message to the flood warning groups for the Rangitāiki Scheme.

The effect of the increase in discharge from the dam was monitored by staff in the field. There were also staff monitoring upstream of the dam at a key gauging site where the Rangitāiki River leaves Waiohou Valley.

The situation was monitored throughout the day. Rainfall ceased in the upper catchment in the early afternoon and at 4.45pm on 19 February BOPRC issued another instruction to Trustpower:

- Trustpower requested to target outflow of 270 m³/s and to monitor overnight.
- Gradual refilling to occur once Whirinaki River has peaked
- Trustpower to use the receding inflows to refill the dam

The situation continued to be monitored over the weekend of 20-21 February.

The interaction with Trustpower through the event was excellent. Trustpower responded immediately to all instructions from BOPRC flood management.

5 **Flood Debriefing**

As with any flood event the flood management team held an internal debriefing session in the week following the event. The aim being to take some learnings from the event so that they could be applied for future flood events.

Some of the key actions from the debriefing were:

- Arrange support for key flood management staff earlier in a flood event
- Undertake a debriefing session with Trustpower
- Investigate the fluctuating flows that came from the Aniwhenua Dam
- Undertake modification to the flood forecasting model to refine/calibrate
- Finalise the flood management page on BOPRC's website
- Re-establish key contact information with NZTA and WDC

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10 March 2016