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Report to the Rural Services and Wairarapa Committee
from Mike Gordon, Hydrologist

Summary of Flood Event – 18 June 2002

1. Purpose

To inform the Committee of the recent flood event in the Ruamahanga Catchment.

2. Meteorological Conditions

A “two headed” low developed in the Tasman off the west coast of the South Island on the afternoon of 17th June moving eastward across the Island with a couple of fronts leading the charge. As it progressed it dragged one of the fronts across the Wairarapa which produced sustained rainfall in the Tararuas during the evening of 17th June and early morning of the 18th.

The low developed a third centre off the east coast of the South Island with the other two centres still to the west. This resulted in the front stalling for a few hours over the Tararuas, prolonging the rainfall. As the main body of the depression moved off to the south-east, the rain eased with a southerly change behind it.

3. Rainfall

Table 1 below summarises the rainfall in the Tararuas and the Wairarapa valley at a number of localities and lists the maximum intensities for periods from 1 hour to 1day. Also included in the table is the Return Periods of the rainfall for the two Tararua sites (the record is either not long enough or the return period is below two years for all other sites).

Table 1 Rainfall Intensities and Totals

Site	1hr	2 hr	3 hr	6 hr	12hr	1 Day
Angle Knob	42.5	81	114.5	185	251.5	278
Return Period	2.3	3.2	3.2	3.2	2.2	< 2
Bull Mound	18	34	49	85.5	117.5	152
Return Period	< 2	< 2	< 2	2	< 2	< 2
Mt Bruce	15.5	28	38.5	56	72.5	86.5
Mangatarere	13.5	26	38.5	61.5	85	112.5
Waingawa	9.5	17.5	23	37.5	51.5	57.5
Masterton	3.0	5.4	6.6	10.4	11.2	20.4
Alloa	8.6	14.4	18.2	26.8	32.2	36.2

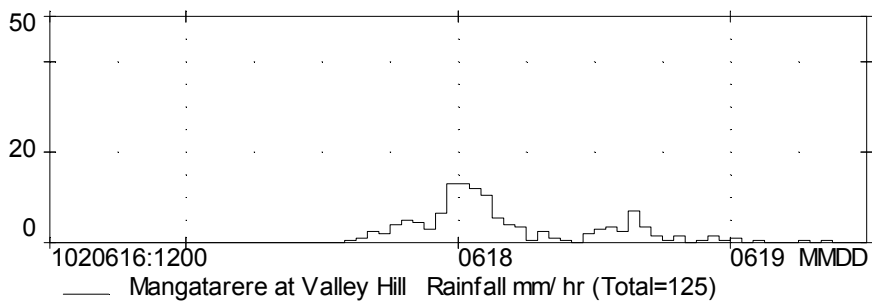
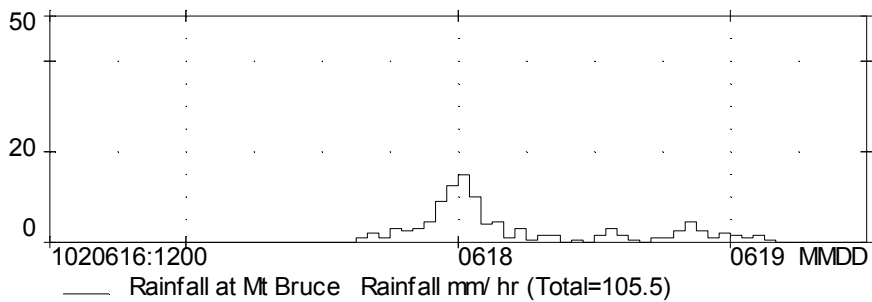
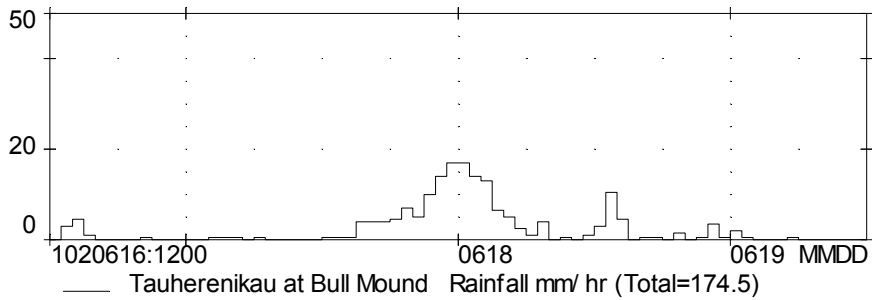
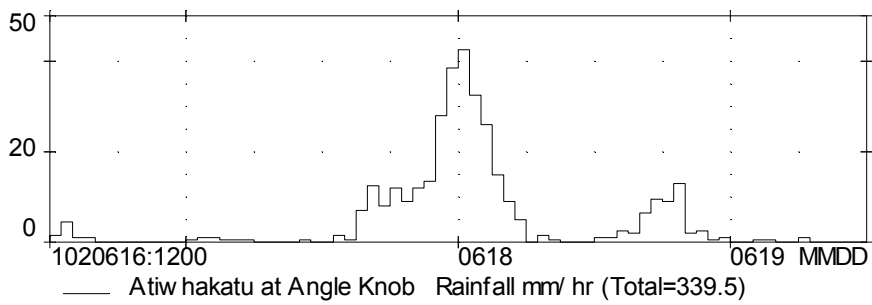
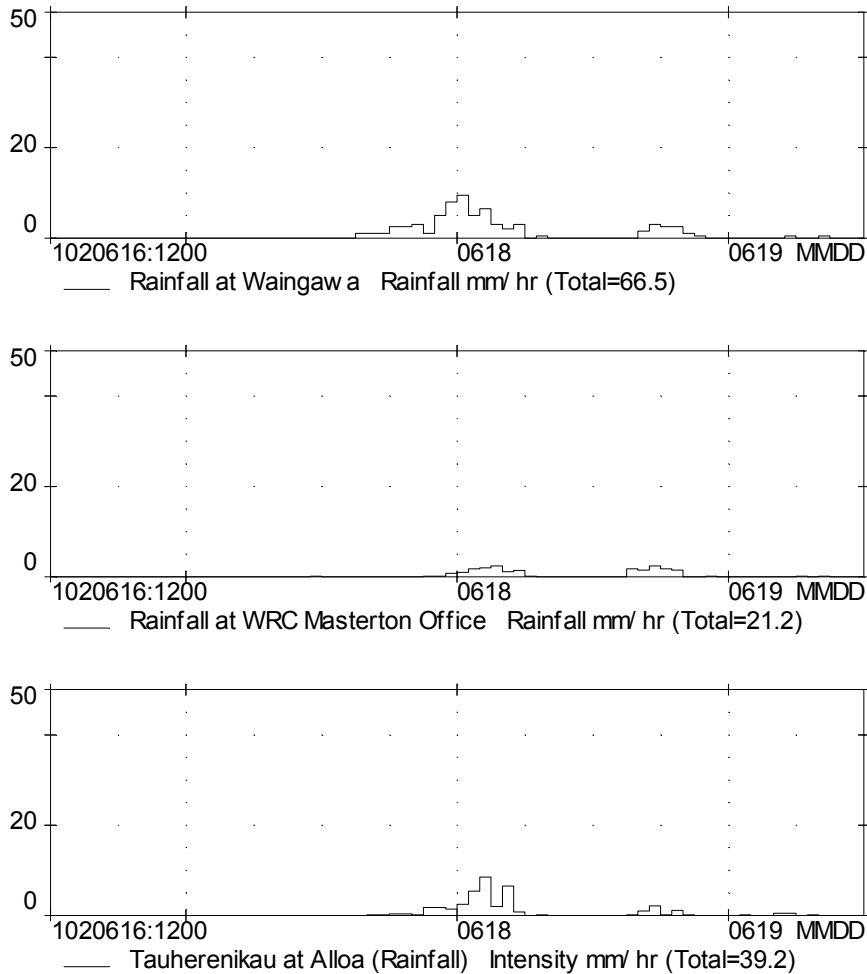
Figure 1 Tararua Rainfall

Figure 2 Tararua Foothill & Valley Rainfall

4. Rivers

With the rain came some runoff affecting the rivers with their headwaters in the Tararuas. The eastern hill country rivers were up a little due to some southerly rain a few days before, but not to any significant degree. (Taueru 3300mm, $\approx 10\text{m}^3/\text{s}$).

River flows peak return periods reached were consistent with the rainfall figures (see Table 1 above).

Reports indicate the Waiohine River peak of just over 4.3m was just at that level where the river begins to spill into the top end of Kuratawhiti Street, north of Greytown. Water from the Ruamahanga River was also reported to have come over the Kokotau Road, but not to a depth requiring road closure.

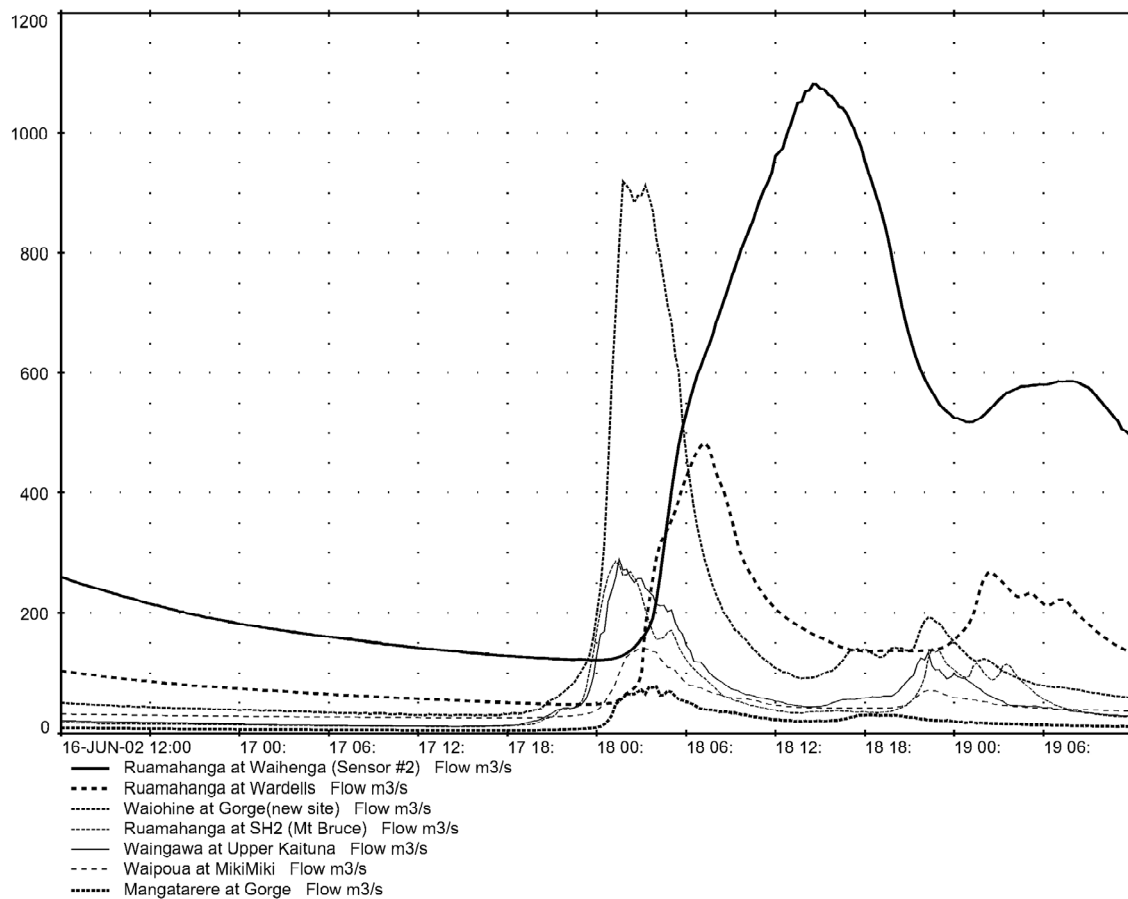
In the Lower Valley floodway system, Jenkins Dip received some flow (estimated $\approx 75\text{m}^3/\text{s}$) and floodwater did spill over both Hikinu I and Awaroa Sills. This necessitated closing of Pahautea Road for a few hours. It was not necessary to close the Pukio Road or Kahutara Road (the culvert was running well but water did not reach the road crest level)

Table 2 summarises river stage and flow peaks and gives their respective return periods.

Table 2 River Peaks

Site	Peak Stage mm	Peak Flow m ³ /s	RT	Date	Time
Wardells	4312 ¹	552	3	18-Jun-2002	06:15
Waihenga	4780 ²	1100	3	18-Jun-2002	14:30
Mt Bruce	3607	286	< 2	18-Jun-2002	01:15
Waiohine	4321	919	2.5	18-Jun-2002	01:45
Waipoua	1814	142	4.3	18-Jun-2002	03:15
Waingawa	2771	289	2	18-Jun-2002	01:30
Mangatarere	1853	78	3.4	18-Jun-2002	04:00

Figure 3 River Flows



¹ Primary sensor suspect, possible stilling well blockage. Value from 2nd sensor.

² Derived from field observation. The 2 sensors at this site were giving different values 4764 & 4864

5. Communications

No additional publicity is proposed.

6. Recommendation

That the Committee receive this report and note its contents.

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