

Rangitāiki River Scheme Review – points for discussion with BOPRC on Thursday 8 June

Introduction

The following points have been developed by the Review Panel team as areas needing clarification or further discussion. These have been developed from:

- the initial briefing from BOPRC
- early review of the documents provided by BOPRC
- early community consultation including community drop-in session

If any of the questions below are not able to be addressed in the briefing schedule for Thursday 8 June, 8.30am-12.30pm, please let us know when and how we will be able to answer this.

We can now confirm that the Review is using the NZS9401:2008 Managing Flood Risk as a framework to determine what information will be relevant and useful. There are six components (outcomes) making up this framework, these are:

- Engaging Communities and Stakeholders
- Understanding Natural Systems and Catchment Processes
- Understanding the Interaction of Natural and Social Systems
- Decision Making at the Local Level
- All Possible Forms and Levels of Management
- Residual Risk.

Information requested.

The Review Panel would appreciate the following information to support the review:

- a. Can you please confirm that 2009 is the most recent cross section survey that has been completed and analysed for monitoring changes in bed levels in the Rangitāiki River?
- b. Can you please provide the Rangitāiki Catchment Programme – Annual Work Plan 2016/17 as well as other documents describing the operational and maintenance works undertaken on the river over the past three years. Please discuss the general approach to maintenance and the main activities undertaken.
- c. Please provide information relating to the BoPRC input or submissions on the Whakatane District Council District Plan (Operative 13 April 2017) on the topic of flood hazard management/planning.
- d. Please provide information relating to stakeholder and community (especially Edgecumbe urban) input into the development of options in managing the flood risk from the Rangitāiki River.
- e. Please provide information relating to stakeholder and community (especially Edgecumbe urban) involvement in the selection of the preferred flood risk management solution for the Rangitāiki River including agreement on the level of service for the structural works.
- f. Please provide information relating to community workshops/meetings/letter drops etc providing information on flood risks and advice on evacuation plans, emergency stores, flood proofing/resilience at property level and insurance.
- g. Please provide information that demonstrates the roles and responsibilities of stakeholders and the community were clear and agreed.

- h. Please provide the communications plan that was used for engaging with the community and stakeholders for the development and agreement relating to the management of the flood hazard from the Rangitāiki River.
- i. Please explain the timeline for the completion of the Reid's Floodway works. In particular, whether there have been any delays resulting from landowners/leaseholders of floodway land and what has been done to accelerate the programme.

Questions and points for discussion

1. Are there sufficient rain gauges in the upper Rangitāiki catchment area to give a clear picture of the likely inflows into the Rangitāiki?
2. How are the gauges monitored?
3. What was the advice received from meteorological forecasters in the 72 hours before the Edgecumbe flood wall breach about the likely rainfall levels in the Rangitāiki catchment?
4. It is noted that the design of the main structural solutions (especially Reid's Floodway) are for the current (without climate change) 100-year flood. It is acknowledged that the 2015-2045 Infrastructure Strategy (Flood Protection and Control Works) provides for "Climate Change Capital Works" of \$760,000 in 2036-2040. Please comment on the adequacy of this strategy for managing climate change effects. Please also comment on whether the works that are currently being constructed can be adapted to allow for a range of future climate scenarios.
5. What studies exist concerning any impact on the stability of the stop banks from Trustpower's management of the Matahina dam which results in regular ramping of the river levels below the dam?
6. What inspections occur of farm drainage systems in the vicinity of Edgecumbe (particularly south Edgecumbe) to ensure that they are being operated in a manner consistent with the purposes of the flood control scheme?
7. What records exist of flow in the drains in the area of the wall? If none, are there any anecdotal observations that the drains were or were not normally flowing? What level do the drains in this area outlet to, or is there a pumped system?
8. What monitoring was done of the construction wall improvements in 1999/2004? Are any as-built records available?
9. Pressure relief wells are specified on the 1999 drg 10/1542/29/7204/01/R0, but without locations being specified. Were these installed, and if so how many are there - drg sheet 02 only states to 'allow for two pressure relief wells at locations in College Road to be specified by the Engineer.' Where are they located? What records exist of the well construction, what diameter are they (this is not indicated on drg 10/1542/29/7204/01/R0 with the other details)? The typical details show them to be capped by reinstated pavement, rather than connected to any drain, so how would flow be expected to escape?
10. Has any maintenance been carried out on the relief wells? Have their depths ever been checked to see if they had taken in material from the surrounding ground?

11. The 1999 drawing sheet 01 calls for the ground conditions in the pressure relief well drill-holes to be recorded. Was this done and is this information available?
12. Surveys carried out in 2002 concluded that the southwest of Edgumbe had subsided by a further half a metre following the two metres of subsidence from the earthquake in 1987. Had any effects on the floodwall been observed from this subsidence, such as deformation or cracking? What surveys exist of the wall for the years following the earthquake, as this further subsidence would suggest that its crest could have subsided to a lower level than designed.
13. A stormwater pipe has been noted near the southern end of the wall protruding from beneath the flood wall into the river. What plans exist showing the design of this including any trench cut-off details. Are there any other such outfalls in the vicinity?
14. What due diligence was undertaken by BoPRC on the Opus 2000 report/design of the College Road Wall remedial works?
15. Why was the Opus 2000 report/design not reviewed/revisited following the 2004 flood or in subsequent years?
16. The 2011 Stormwater Conference paper by Peter Askey of Opus stated – “The general opinion afterwards (after the 2004 Flood) was that if the river had not breached when and where it did (at Sullivan’s bend), it would have breached the bank at College Road within Edgumbe with catastrophic consequences for the town”. Please discuss this statement in terms of which part of the College Road bank is being referred to, what gave rise to these concerns and what was subsequently done about it.
17. Based on the above why has a breach scenario at College Road not been modelled in recent years?
18. It is noted that an earth stopbank has been constructed in place of the failed wall section. What is the reason for this not being previously possible?
19. It is noted that the 2014/15 Asset Management Plan and the 2016 Emergency Management Plan state that the Rangitaiki River urban reach through Edgumbe is not up to the 100-year flood design standard. Please discuss this in terms of hydraulic vs geotechnical design limitations and what the understanding of the “safe” capacity was prior to the flood event.
20. Please comment on your knowledge of the accuracy of the rating curve for the spillway flows from Matahina dam.
21. By 6pm on the 4th of April it was apparent (From Peter Blackwood comms with Trustpower) that this was a major flood event with predicted flow of 700 m³/s. Noting the above points with regard to the capacity of the Rangitaiki urban reach not being up to the 100-year design standard, as well as the previous history of stopbank failures, please discuss why evacuations weren’t considered at this time. Further to this, when the instruction was given to Trustpower at 0040 on 6th of April to open the Matahina spillway gates to 710 m³/s why evacuations weren’t considered at this time.
22. Which of the recommendations made by the Rangitāiki River Liaison Group since the 2004 flood has been implemented in whole or in part and which have not been acted upon?

23. What information does the BOPRC have about the existence of “caves” in the Rangitāiki River stop banks in the vicinity of Edgecumbe? Are there any plans for remedial work on any such “caves”?
24. What studies, if any, have been done of the possible impact of vibrations from heavy traffic along College Road on the stability and effectiveness of the stop banks in that area?
25. Comments were made by a member(s) of the public (Mavis Wilson) that the wall or stopbank were about to collapse before it did so. Are the officers aware of this? If so, do you know what the observations were that led to this, and were these made by officials, or by a member of the public?
26. Observations have been reported that the ground in the garden of a house (on the downstream side of the breach?) was seeping water and spongy prior to the breach. Were the officers aware of this, and was this reported to the Council? Had this occurred previously?
27. Observations have been reported of water spurting up out in the vicinity of the flood wall immediately prior to the breach. What is known about this? Is anything else known about seepage from the ground surface in the area of the breach?
28. Is it correct that a digger was in the process of being unloaded in College Road immediately before the breach?
29. When was the Regional Council or its officers made aware of significant amounts of water passing through the wood and rock retaining wall below the concrete wall in College Road before the breach occurred?
30. What work has been done on the need for further sheet-piling in the Edgecumbe area of the river? Is there any risk that existing sheet-piling may increase stress on the river control system elsewhere?
31. What protocols and procedures are in place between the Regional Council, the District Council and Group Civil Defence to ensure people in Edgecumbe have adequate warning about the need to evacuate their homes?