

Second Submission to the Queensland Flood Enquiry

Management of Wivenhoe Data

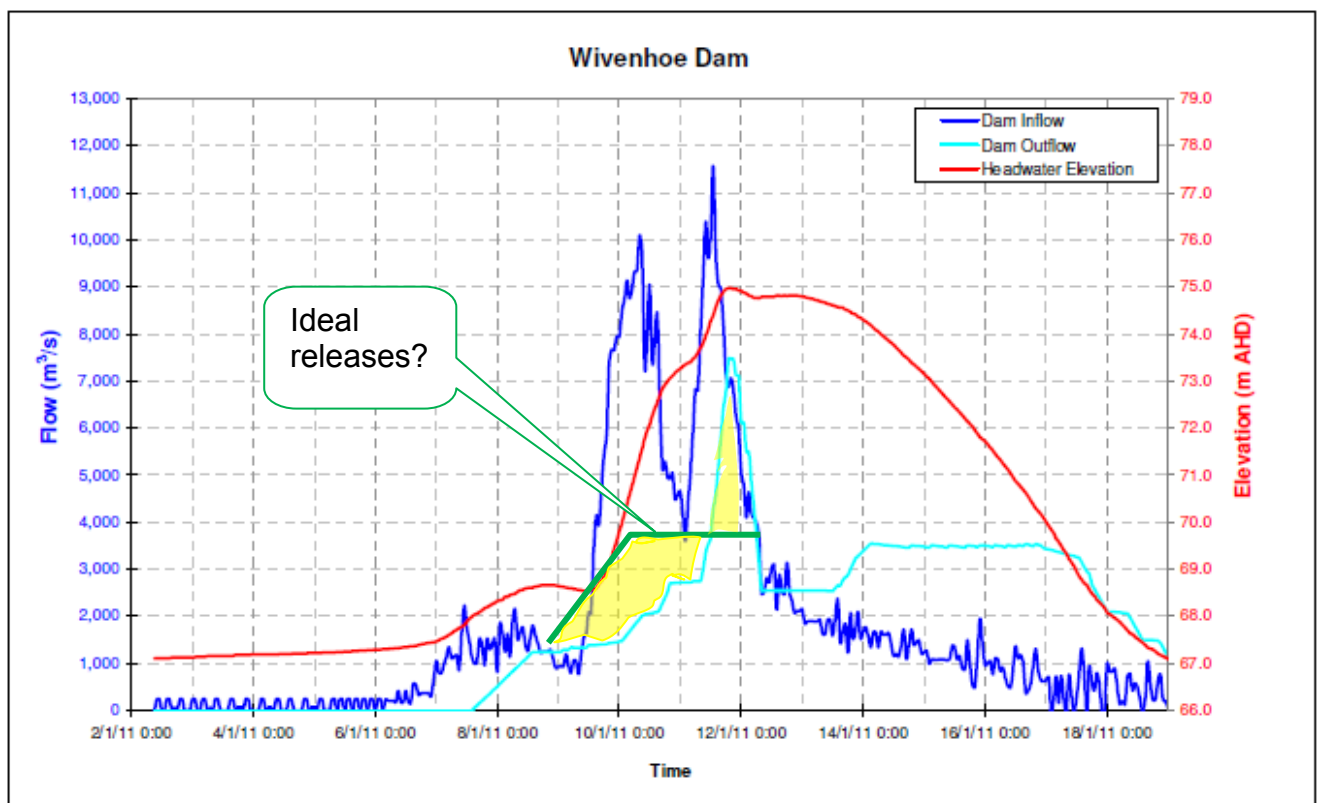
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This submission provides succinct critique of the operation of the Dam during the flood. More importantly, it reminds the commission of the severe consequences of a collapse of the water supply on a major city.

This submission replaces my previous one in response to the belated release of the SEQ Water Report.

Working With Uncertain Rainfall Data

It is clear that with the wisdom of hind sight a heavy release of water starting on Monday 9th would have substantially reduced the impact of flooding in Brisbane. For example, it is easy to see by comparing the areas under the curves in the chart below that the peak release could have been reduced below 4,000 cumecs instead of over 7,000 cumecs.



The SEQ Report into flood event suggests that a reason for the delayed release of water was inaccurate rainfall data. Heavy rain was in fact predicted, but the amount of rain that actually fell is not accurate, which is the nature of weather forecasts. They would be better given as confidence intervals as maximum and minimum likely rainfalls. In a flood event these are likely to be wide apart.

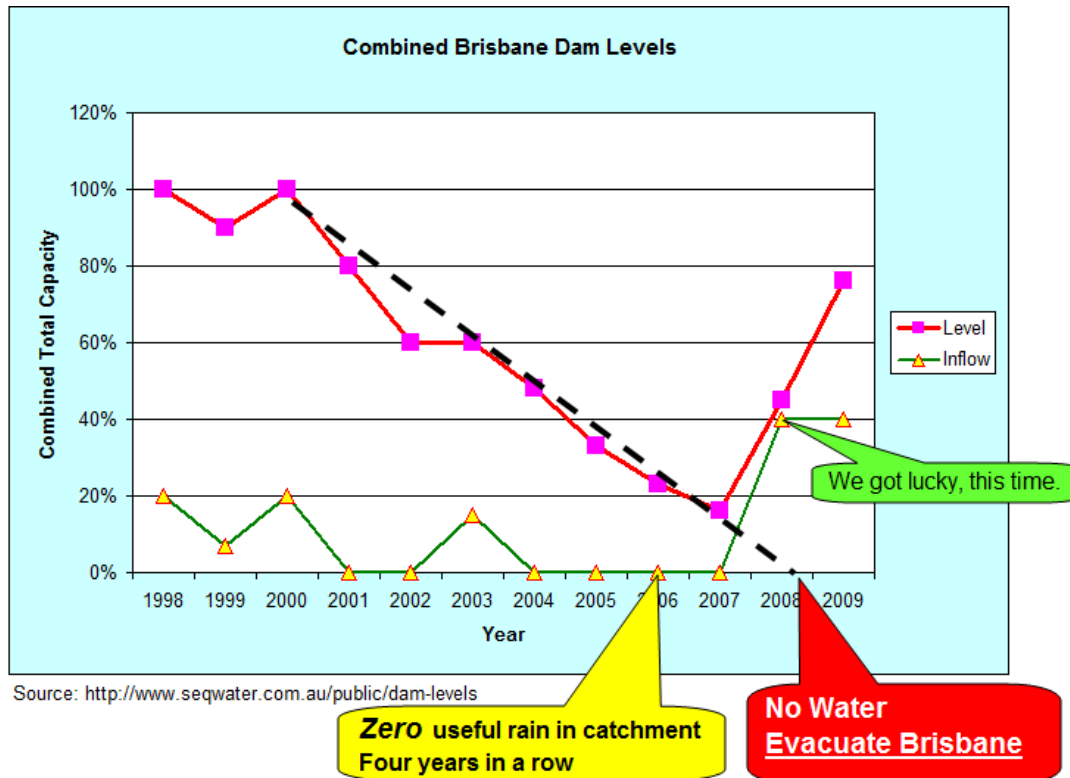
So the real question to be considered is “what was the conditional probability of extended heavy rains given the forecasts as provided”. No indication of that analysis appears.

(It should be noted that the three day forecasts shown on page 57 for 10 January predicted extremely heavy rain – 171mm then 389mm for the Wivenhoe catchment. It is most fortunate that the latter prediction proved pessimistic, as only 140mm was actually recorded for the 3 days from 12pm. Also, it takes several hours for rain that falls to reach the dams, so at least that much notice of rain was definitely available.)

But the key question remains, given the forecasts that were available, was it reasonably likely that there would indeed be an extended flood event, and if so why was water not released earlier.

It is good to see details of the event being made public. It would be good to have the dam manual also released (unredacted!) as it contains tables such as river heights to flows which are useful when interpreting the report. It would also be good see a technical summary to complement the bureaucratic executive summary.

No Water Means Evacuate Brisbane



The chart above summarises the recent period of seven years in which there was minimal useful rain in the catchment. If 2008 had been as dry as the previous seven, then Brisbane would have run out of water.

A modern city cannot operate without water. Talk of trucking in water for a major city is nonsense. Drought is not about brown lawns.

The enormity of that cannot be overstated. Several million people would suddenly have to live elsewhere. There is nowhere for that number of people to go, and certainly no jobs for them elsewhere. And the dam nearly ran dry. It actually nearly happened.

(There is some new infrastructure to stretch the supply, but only one desalination plant has been built and no new dams have or will be constructed.)

Thus the cost of the flood is insignificant compared to the cost of an evacuation. The former has been unfortunate for those directly affected, the latter would be a national disaster.

In this environment, any move to reduce the supply is fraught with danger. The current dam reduction of 25% means that we now have two less years to respond to a future drought. And of course it is not possible to fill a dam after a wet period – it needs to be filled during a wet period.

It should also be noted that flood event was considered to be 1/1,000 AEP according to the SEQ Report. Even if that is optimistic, the cost of flood needs to be divided by the probability that it actually happens. And better dam management could of handled even this event with relatively minor flooding.

Thus any analysis of the operation of the dam has to balance the need for flood mitigation with the need for water security. I would submit that the latter is actually much more important than the former.