

To whom it may concern,

I am a resident of Emerald in Central Queensland, who experienced the flooding in January, 2011 of our recently built 3 month old house. The house was built with the floor height approximately 0.5 meter above the flood levels that occurred in 2008 which was referred to as a '1 in100 year flood'. The resultant height of the January flood (all time record) meant that our house had approx. 100mm throughout the house. This amount of water might not seem a significant amount; however with modern houses that have gyprock walls and compressed fibre materials used in kitchens, a small amount of water can cause large degrees of damage. The final cost to our insurance company will be approx. \$250,000 to repair our house, replace contents damaged and provide alternative accommodation for us while the house is being repaired as well as storage of our procession during this time.

In the township of Emerald I know there are people I've personally met and most likely many more residents who experience similar levels of inundation through there houses that we did with varying amounts of damage and cost. We were lucky that firstly an insurance policy was in place and secondly the policy provided had adequate cover. So the cost to repair our house could be considered the 'true cost' to repair a house such as ours without us carrying over any flood effects which we could not afford to repair. If in Emerald there was conservatively 30 homes which experienced 100mm of water through their homes and incurred 50% of the cost of our house in repairs (\$125,000) as we did, this equates to a considerable expense (\$3,750,000). The mentioned expense I have detailed is anecdotal and further research would need to be conducted to verify the expense. However I firmly believe this expense to be conservative considering I haven't factored into account the cost to small business in the town affected by the floods. Therefore my view is if this 100mm of flood water could have been kept out of these houses and as mentioned small businesses a significant unnecessary expense could have been adverted.

Emerald is a growing town of approximately 10 to 15 thousand people which sits on either side of the flood plain of the Nogoa River. Similar to townships such as Dalby which are situated on a flood plain, the effect of a flood can be catastrophic. Small rises in flood levels as shown in the January floods can be the difference between large and moderate amounts of damage to property, businesses, economy, etc. Unlike a township like Dalby, Emerald has a large dam upstream on the Nogoa River which known as the Fairbairn Dam. The dam was built in the in the 1970's with a conventional spillway and outlets/pumping stations to provide water down stream for mainly irrigation and mining purposes. At the time of construction/design it was either not considered or thought required to incorporate flood mitigation measures into the main dam wall, such as Wivenhoe Dam's flood gates. As a result leading up the January flood the Fairbairn dam was at 100% capacity and didn't have the ability release water. The defining moment for this flood was on top of the persistent rain was the approx. 200mm that fell in the catchment area 4 -5 days prior to the peak of the flood.

The objective of this submission is for the commission to consider the flood mitigation measures for the township of Emerald. The largest in my view is the inability of the Fairbairn dam to release large amounts of water prior to rain events deemed to create a risk to downstream occupants. If mitigation measures could be fitted to the main dam wall or other areas around the periphery of the dam i.e. smaller water courses, the level of the dam could been reduced. Prior to the Christmas/New year period and after the large river flows of early to mid December the Nogoa River for a period of five days was flowing at close to normal levels. In hindsight this period was a perfect opportunity to release a large amount of water to reduce the dam level before the known whether systems presented themselves.

Below are several points regarding the release of water from Fairbairn Dam:

- Existing infrastructure -It would be difficult to incorporate/retro fit a release mechanism to an existing dam wall/structure/spillway such as flood gates due to the existing water in the dam and tapering with the wall's structure would not be advisable.
- Alternative plan - An alternative needs to be considered and my suggestion is retro fitting large pumps known as 'flood lifting' pumps to the dam walls. The size and number would need to be decided; however these pumps are use a lot in the irrigation industry to move large amounts of water in a short period of time. Normally these pumps only have to raise the water a small height i.e. over a bank and gravity does the rest. This style of pump could be easily fitted to the existing main dam wall and any other periphery walls deemed suitable.
- Response plans -Trigger points need to be set for specific releases as a result of events and the level of water within the dam.
- Ownership of the water in the dam -To my knowledge the organisation known as Sun Water controls the water in the Fairbairn Dam. I would believe that Sun Water treats water in the dam as an asset no different to any other business that has stock on hand treats this stock as their assets. Also, I appreciate it would be difficult for Sun Water in certain times to watch water being let down the river and gaining no remuneration for that perceived lost asset. Therefore in crisis times it could be assumed decisions made to release water or not by the owner could be clouded by conflicting interests. To avert is type of situation an overriding bipartisan body would need to have the ability to veto any decisions made by Sun Water in times of crisis or leading up to a potential crisis situation. The crisis situation would be a trigger level in the response plan where the overriding body would take control of the level of the dam. The body of personnel would need to be made up of people who viewed the protection of personnel and property as their main priority.
- Cost – If the earlier costs I eluded too are anywhere near the mark of the true cost to rebuild 30 properties damaged in Emerald by 100mm of water, than the long term savings of adverting this damage could be significant. In a period where it is argued these extreme whether events are going to be more prominent, taking action and burdening essentially a one off cost could create significant savings into the future. So by lowering the flood level by 100mm the expense of \$3,750, 000 could have been adverted. Just think what the figure could have been if the level was lowered by 0.5 meter, 10, 20, 30 million.

In summary, to assist with the flood proofing of towns such as Emeralds dams where once built. Over time, experience has shown us that dams alone are not sufficient to blunt the fury of Mother Nature to reduce the impact on personnel and property. A re-think needs to occur on how we make the most of these pieces of infrastructure and retro-fit dams with equipment to enhance a dams flood mitigation abilities. The damage that occurred in Emerald in January, 2011 can be reduced if time and money are invested to provide a solution. The main point of my submission is water needed to be released from Fairbairn Dam prior to the January flood however the dam doesn't have the ability. If predictions are true and these extreme whether events are going to be more regular, then solutions need to be found and implemented fast. The next wet season is only a matter of 6 to 8 months away and it is anybodies guess what it will present. The solutions I have suggest may not be the answer but all I hope is a person who has read this submission takes on board my ideas as they may lead to a solution.

Regards

Anthony Caffery

