**SUBMISSION TO QUEENSLAND FLOODS COMMISSION OF ENQUIRY**

Submitted by Ian Polman [redacted] - Dated 18 February 2011

Dear Commissioner,

Thank you for the opportunity to make a submission to this most important enquiry.

The focus of my submission is on the ability of the Brisbane River, during times of heavy water flow, to discharge to the sea, the large volumes of water experienced prior to, and during, the floods. I would like to discuss how the current condition of the Brisbane River may have resulted in a significantly reduced ability of the river to discharge that water to the sea, resulting in the high levels of flooding experienced.

By way of background, I work on harbour tugs which are berthed at Whyte Island near the mouth of the Brisbane River. Although the Brisbane River was in very high flow, vessels in the Whyte Island boat passage were unaffected by river flow or unusually high river levels. In fact, river height data, obtained via the internet, showed that the river height at Whyte Island and Fishermans Island continued to oscillate between low and high tides largely as normal.

In contrast, the river height gauges in the city of course showed river levels very much higher than normal, causing flooding in low lying areas along the river.

It is my belief, that the level of flooding along the river was worse than it should have been simply because the Brisbane River could not discharge these volumes of water into the sea fast enough.

Many comparisons have been made to the 1974 floods. One of the events I remember clearly in 1974, was the breaking away of an oil tanker at Kangaroo Point which had the potential to block the river and cause even more severe flooding in the city.

The question I ask here is: “Would a tanker even be able to go that far upriver these days?”

Since shipping has stopped going further up stream than the Hamilton wharves, and since sand mining has been stopped in the upper reaches of the river, dredging of the river has ceased. It is therefore not unreasonable to come to the conclusion that the river is significantly shallower than it used to be in 1974 due to silting.

For a given volume of water, if the river is shallower, then the only way the water can go is sideways. A shallower river also slows down water flow, slowing down drainage to the sea, thereby causing more severe flooding up stream as water backs up.

As I mentioned before, the river levels were normal towards the mouth of the river, yet at near record high levels up river. Somewhere there must be a restriction to river flow – a restriction of either depth, or width, or both.

My suggestion to the Commission is to order a study of the entire length of the Brisbane River, starting from the mouth of the river, to determine where levels began increasing over normal river heights. In this way, determinations could be made as to where water flow in the river was restricted during the periods of heavy water flow.

People with the appropriate expertise should then be able to determine ways to increase the capacity and ability of the Brisbane River to discharge heavy water flow to the sea in a way that causes less severe flooding to low lying areas.

I believe that water flow could be increased by a combination of increasing the width of the river at obvious bottle necks, but more importantly, dredging the river to a suitable depth that would allow higher water flow without causing excessive increase in river height. I believe dredging would need to be done along most of the length of the river guided by the findings of the proposed study.

Reports after the flood suggest that even a meter drop in river height would have saved a significant number of houses and businesses from being inundated with water. The benefit of dredging the river as one method of flood mitigation is that it doesn't require building of infrastructure. It is a relatively simple process.

I admit I am not an expert in this field, but as a Marine Engineer, I understand the concepts of water flow and how restrictions to water flow can cause build up of water upstream. Increasing the ability of the river to carry water to the sea won't prevent all flooding, but I am certain that flood levels would be significantly reduced in future, resulting in significantly less damage.

I hope the commission will seek appropriate professionals to comment on these proposals with a view to putting them into practice.

Yours faithfully

Ian Polman

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