

QUEENSLAND FLOODS COMMISSION OF ENQUIRY

SUBMISSION

By

Howard Gibson

I am a Civil Engineer who started my employment with the Coordinator General's Department at the time that the decisions were made to build the Wivenhoe Dam, and when construction commenced. During this time I was involved, as a junior engineer, in the data gathering for these decisions. Since the 1970's I have worked for the three levels of government in Australia, as well as in private enterprise, for a number of Consultants, in the area of water and wastewater, including many aspects of flood mitigation and drainage, especially in the Department of Local Government/Water Resources Commission/Department of Natural Resources. I am now in semi retirement.

In this submission I wish to cover only a few points, namely:

- 1. The question of community knowledge and awareness,*
- 2. Decisions taken by the Flood Managers,*
- 3. Equity considerations in possible changes to the operating manual, and.*
- 4. Operation of water supply and sewerage services during and following the floods*

1. The Question of Community Knowledge and Awareness

During the 1974 floods, I was in Brisbane and saw at first hand the devastation that it caused. It can rightly be said that at that time, the community awareness to river flooding in Brisbane was close to zero, which of course added to personal losses. Not long after the floods, the decision was made to construct Wivenhoe, which I will come back to later in this submission. Following that decision, the general public was generally of the opinion that a flood of the size of the '74 flood could not occur again in Brisbane. Neither the State, of Local Government did anything to change the general feeling of the community. It has to be added here, that generally, community awareness programs were not greatly used by any level of the government on these types of issues at that time. One thing that the State did do, was to produce a detailed flood map of Brisbane that showed the extent of flooding from the '74 floods. My understanding was that this map was withdrawn a few years after it was published. Even before Wivenhoe Dam was completed, new estates were being constructed in areas flooded by the '74 floods. While it was common knowledge within the Government and the water industry that river flooding was still an issue, no level of Government acted.

Over the last ten or so years there has been an increased use of community awareness programs generally within the community and this has been so with water issues such as water savings, water recycling and environmental issues with water. The Brisbane City Council has acted to some extent in the flooding area by producing maps on creek and overland flood paths. Unluckily this program has largely been a failure, as it was difficult to access and understand the

online maps produced. Even I had problems understanding what the maps really meant, let alone the community. While the professional and semi professional organisations such as Engineers Australia and Australian Water Association had taken a heavy interest in community awareness and actually had produced programs in other areas, they had not, for some reason, addresses the important community issues of flooding. It can generally be said that the majority of developers did understand that the land they were developing was flood prone; although I am sure some developers were ignorant of the full extent of this fact.

2. Decisions Taken By the Flood Managers.

One of the most important things that the Commission has to investigate is whether or not the Flood Manager operated the dam in the “best” manner, given the knowledge it had at the time. I can not answer that question directly. Unluckily the State Government has decided to censor the operating rules for the control of Wivenhoe/Somerset Dam document, and as well the Dam Manager has used the normal “Yes Minister” trick of producing the four volume report on the operation of the dams, which makes it difficult if not impossible for me to analyse the decisions.

What I shall do however, in this section, is to highlight a few points that should be taken into account in deciding if the dam has been operated correctly. Firstly one has to look at the overall conditions in the dam operations manual. This says that the Dam Manager has to operate the dam giving the following priorities:

1. *Safety of the dam itself*
2. *Protection of urban areas from flooding*
3. *Protection of downstream rural areas including bridges*
4. *Storage of urban water supply, and*
5. *Minimising riparian environmental affects.*

There seems to be much evidence to suggest that at the critical time, the Dam Manager may have given more importance to criterion 3 over criterion 2, that is not allowing flooding directly downstream of the dam, hoping that major inflows into Wivenhoe would not occur.

The second point that needs to be raised is that of the rate of water releases. While the operations manual goes into a far amount of detail into how the dam should be operated depending upon the level of water in the dam itself, it basically leaves it up to the Dam Manager to make the decision on the level of discharges to be used at any time based on other criteria. What one has to do here, to see if the dam was operated correctly, is to look at the conditions at the time to see if the information that the dam manager had, should have lead to a different decision on the rate of releases. One has firstly to look at the overall situation in 2010/11 with respect to rainfall. For at least 6 months prior to the flood, the weather bureau, and others, had been prediction extremely heavy rain in SE Queensland with the high possibility of major flooding. This should have alerted the Flood Manager. In the short term, there was constant predictions of very heavy rain in the catchment in about the week prior to the flooding. I was in France at the time of the 2011 floods, and all the information that I saw was for massif flood

rains in the Brisbane River Catchment in the week prior to the floods. The Flood Manager did not seem to act on all this information. It would seem to me that there is a *prima facie* case here that the best decisions were not made. As is quite often the case with Government, it seems like the Flood Manager *may* have taken the conservative approach and procrastinated on their decision till it was all too late. It seems to me that the important point here to note is that, what needs to be investigated is not when the releases started or stopped, but what were the rates of release.

3. Equity Considerations in Possible Changes to the Operating Manual.

One issue that the Commission needs to address is that of possible changes to the operating manual “..in relation to flood mitigation and dam safety”. It is extremely important that the Commission does take into account here the importance of the dam as a water supply storage as well as its secondary role as a flood mitigation storage. In the early 1970’s, the dam sites of Wivenhoe and Wolfdene were being investigated for future water storages. The decision had almost been made to build Wolfdene when the ’74 floods occurred. Based on the added benefit of the flood mitigation effects of Wivenhoe, it was decided that it would be constructed first. (Unluckily political interference prevented Wolfdene from being constructed at a later stage.)

Since construction finished in the late 1970’s, Wivenhoe has been the major water supply storage for Brisbane, with the Wivenhoe/Somerset Dams providing over 70% of the total Storage for SE Queensland and slightly more of the yield. During this period of over 30 years, the residences of SE Queensland have been paying through their water rates, a major component for the interest and redemption for the capital cost of construction of these works, and are still doing so. In the case of flood mitigation, the government decision has been not to charge any levy for these functions. In part, this has been due to the conservative nature of decisions by governments of the left and right not placing undue burdens on constructions in the flood plains (that is, supporting developers at any cost). One also has to look at the type of houses that have been constructed along the river front that were damaged during the floods, and the political pressure that these owners can directly and indirectly put on the Government of the day not to have a levy imposed. (The situation is even worse in the Nerang River Catchment, where previous Governments, that have been referred to by others as being corrupt, have “allowed” so much flood prone development to occur over the last 50 years, which existing levels of government are made to fix, at a cost to all Queenslanders.

It is important that those in the flood plain are required to make some contribution to the existing flood mitigation works, as well as a much increased contribution if any increased flood mitigation component if it is recommended by the Commission. The Commission should also think carefully of the affect of a decreased yield of water supply, if the flood component of Wivenhoe is increased.

4. Operation of Water Supply and Sewerage Services during and Following the Floods

One of the areas that will be investigated by the Commission is the planning of infrastructure prior to the floods, and operation of water and sewerage infrastructure following the floods. One thing that did surprise me here is the amount of infrastructure that *seemed* to be put out of action during the floods. One has to question the planning of all the works at the Oxley Creek STP costing hundreds of millions of dollars, over the last 30 years, when it is known to be in such a flood prone area. Also what needs to be questioned, is why so many on the sewage pumping stations went off line during the floods, when better planning and design would have prevented this. Unluckily very little information is available in the public arena to comment on this further, but I assume will be requested by the Commission. The Commission should make a recommendation on what level of flooding major water and sewerage infrastructure should be able to withstand.

Thank you for allowing me to make this submission.

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