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The Honourable Justice Holmes 11 March 2011
Queensland Floods Commission of Inquiry

Your Honour,

Submission regarding
Preparation by Brisbane City Council
Response to the 2011 flood, particularly to inform the community
Adequacy of forecasts and early warning systems
Implementation of systems operations for dams
Land use planning

I submit that flooding of my home on 12 and 13 January 2011 was due to negligence of those responsible for the delayed and then rapid release of water from Wivenhoe dam. Seqwater state on its website that *"during a large flood similar in magnitude to that experienced in 1974, by using mitigation facility within Wivenhoe Dam, flood levels will be reduced downstream by an estimated 2 metres."* – which would have kept the 2011 flood below my floor boards. This surely assumes that those responsible for flood mitigation remember that the 1974 flood was caused by a moisture laden cyclonic depression that came south along the coast, then went inland to Kingaroy for two days filling Somerset Dam, flooding paddocks in the constituency of the then Premier, who ordered that water be released, not realizing that it would meet a king tide, causing a sudden rise in the Brisbane River, flooding many suburbs and causing many to drown. **The apparent loss of memory of this event is a major reason for the dam operator in 2011 to think it could rely on weather forecasts, and presume that Wivenhoe and Somerset dams no longer needed to be substantially available for flood mitigation during the wettest summer for a century. Major flooding of Brisbane is always caused by intense low-pressure systems, the courses of which are never predictable.**

Insurance Australia Group (NRMA) has provided me with the hydrology report prepared for their *"exclusive use"* by Worley Parsons (which may not be copied) that I contend supports this submission, but which is handicapped by the hydrologist not having been given access to all river level data held by the Bureau of Meteorology. Seqwater on Friday 4 March also refused me access to details of water released from Wivenhoe. After I advised *The Courier-Mail* of this concealment, and it reported the hydrologist's contention that water released from Wivenhoe had contributed to the flooding of Brisbane, on 7 March 2011 Seqwater provided me with some of the data I requested – which I have utilized for this submission. Today the Insurance Council of Australia has publically announced the release of water from Wivenhoe Dam on 11 January 2011 as the "principal immediate cause" of the riverine flood.

Wivenhoe dam was intended to mitigate flooding, not cause it. Sufficient expertise should have been applied to mitigate flooding, however;

In 2006 Wivenhoe dam's flood mitigation capacity was reduced by inserting emergency relief valves down from the top of the dam wall, to avoid danger of the dam collapsing if water flowed over the dam wall. There appears to have been no attention to being correspondingly more astute with flood mitigation procedures, but instead there was **reliance on a manual of procedures that were either inadequate, or were not followed**.

Warnings issued by the Weather Bureau in mid-2010, that the on-set of La Nina weather patterns **indicated a particularly wet summer, should have caused** an intensification of alertness to

releasing water from the dams to ensure **sufficient flood mitigation capacity**. La Nina climaxed in early January 2011.

In the months prior to the January 2011 weather event, the whole of south-east Queensland experienced rainfall that was **very much above average** with **some of the highest accumulations over more than a century**. This resulted in the catchment areas of Brisbane being saturated long before Christmas, causing immediate run-off as the ground was too saturated to permit further infiltration. This should have heightened alertness to flooding and Wivenhoe's level reduced to 50% of water-use capacity in order to have **very much above average** flood mitigation capacity. Seqwater's excuse that it could not rely on weather forecasts brings into question the integrity of those making such claims, when one considers that everyone else in SE Queensland was aware of the **very much above average** rainfall that was occurring, and that **major flooding has always been caused by intense low pressure weather events, the course of which cannot be predicted accurately.**

The intensity of the rainfall in the Brisbane River catchment was such that mitigation of flooding could have occurred if there had been **astute management of flood mitigation procedures commencing when the danger appeared – long before Christmas 2010** – by when it was obvious that there was no need to maintain 100% water use level. Seqwater's excuse that in December 2010 and January 2011 it was prevented for legal reasons from maintaining Wivenhoe at less than 100% of water use capacity, is contradicted by its February action to lower the level to 75%.

It appears that those responsible for management of the dams either lacked experience to understand weather events that could flood Brisbane, or were prevented from mitigation by being required to follow inadequate flood mitigation procedures, or if the procedures were adequate they were not followed. Whatever the reason, the Queensland government is responsible for Seqwater's negligence.

On Thursday 6/1, prior to travelling interstate, I printed the assessment by Brisbane City Council that a 'one in a hundred year' flood would be 10cm below my floorboards.

The Worley Parsons hydrology report states that on Friday 7/1 a low-pressure system developed near Mackay, when there was still time to reduce Wivenhoe's water use capacity to 50% without flooding Brisbane – **but this would have required management capability that apparently Seqwater lacked, or it was refused permission to put flood mitigation as a higher priority than future water use.**

On Saturday 8/1 the low moved closer to the coast, but over the weekend 8/9 January 2011 there was no one with sufficient authority available to order emergency release of water, by when the danger of flooding was obvious. Alternatively, those with the authority delayed action.

On Sunday 9/1 the low intensified and generated large volumes of rain.

On Monday 10/1 the low intensified further and moved closer to the coast, when it was joined by a monsoonal trough descending from the north, leading to further generation of large volumes of rainfall. By this time it was too late to increase flood mitigation capacity, as such water release then would itself flood Brisbane, which was then experiencing sustained heavy rainfall.

Late on 10/1 the low and monsoonal trough moved north-west, easing the intense rainfall across the eastern catchments, but causing intense rainfall to occur in the upper Brisbane River catchment (recorded at Toowoomba and Gatton between noon on 10/1 and 2am on 11/1).

On Tuesday 11/1 I returned from interstate and worked until midnight removing items from my home, at which time floodwater in my street was about 2.25m below my floor level. Then exhausted I left to stay with friends as police had advised not to stay the night, intending to return at 6am.

On W ednesday 12/1 when I returned at 6am th e floodwaters were alrea dy too high for m e to approach my home. At noon the flood level was a bout 0.5m above m y floor level, as photographed by my wife in a boat.

On Thursday 13/1 about 3am the flood peaked at 1.25m above our floor level. Around 10am the flood had receded by about 0.5m as photograph ed by m y neighbour in a boat, and fell to our floor level about 5pm.

As admitted by Seqwate r, the releas e of water from Wivenhoe dam **during the hig h rainfall e vent** was to avoid the collapse of the dam, **because there had been no early flood mitigation release**.

Below I have tabulated January water releases from Wivenhoe, and Seqwater's statements thereon:

Date	**Level %**	**Release Rate ML/day**	**Seqwater statement**
Thu 6	103	nil	To minimize downstream impacts, releases will commence when flood levels in the lower Lockyer Creek subside
Fri 7	106	nil	Releases of 130,000 ML/day will be required
Sat 8	???	100,000	Releases will be reviewed depending on rain, dam inflow & river flow
Sun 9	???	116,000	These releases are expected to continue until next week
Mon 10 morning	140	170,000	To relieve the quickly filling flood storage, and with more rain forecast, releases increased and further increases are planned, to approximately 240,000 ML/day
Mon 10 evening	154	240,000	These releases are a necessity as Wivenhoe is receiving more than twice the equivalent of Sydney Harbour daily
Tue 11 morning	173	236,000	Release will need to be increased further today
Tue 11 5.19pm	190	490,000	This higher release rate will need to be increased further today
Tue 11 10.30pm	190	645,000	At 10pm Wivenhoe's level was falling slowly
Wed 12 morning	190	205,000	Reduced release to allow Bremer & Lockyer to subside. After peak has passed Brisbane will need to increase release rates to 301,000 ML/ day which is not expected to cause a second significant rise in the river but which are needed to create space for further rainfall and inflows
Wed 12 evening	189	215,000	Same statement as for the morning

I comment on the above actions and statements:

Thu 6 Flooding is recognized, but the consequen ces of delaying releas e not yet recognized. I understand that residents near Wivenhoe think the dam level was 134%!!!

Fri 7 The need to release is recognized but action deferred as still no recognition of how the low pressure system off Cairns could impact. **There seems to have been no memory of how the 1974 flood event commenced.**

Sat 8 Release commences, but at a lower rate than the required 130,000 ML/d. Apparently skeleton staff did not record the dam level!!! Still no recognition of the developing low pressure system which had moved closer to the coast.

Sun 9 Release continues at a lower rate than the required 130,000 ML/d. Apparently skeleton staff did not record dam level!!! Still no recognition that the low pressure system was <u>now generating large volumes of rain</u>. Confronted by the now clear danger of causing flooding of Brisbane, and apparently required to consult with Brisbane City Council, Seqwater was frozen into inaction, when immediate increased releases would have avoided the high 11/1 releases. A flood of 2m for 4 days would not have damaged as did the flood of 4m for 2 days.

Mon 10 Media release at 7:15am acknowledges the Wivenhoe is at 140% and Somerset at 150% requiring release rate to be significantly raised first to 170,000 and in the evening to 240,000 ML/d, as a necessity as it was only then recognized that the dam could collapse. However these increased release rates were insufficient to stop the dam level rising to dangerous levels. The Toowoomba flood during the afternoon, followed by the Grantham disaster, would have been a very worrying example of what could happen to Brisbane if Wivenhoe collapsed. By now the priority of saving the dam must have overtaken the concern of flooding some of Brisbane by a few metres.

Tue 11 The dam level is stated to be at 190% throughout the day, which raises questions of the accuracy of these statements, eg I recall some statements that the dam had gone over 200%, while a photograph proves Seqwater's deception. Clearly the time had arrived for emergency releases – which saw release rates increased three times during the day until it was shown that the level had dropped to 189%. However, if the supposedly three statements of the dam being at 190% were understatements, then maybe the level dropped before the final rate increase, **which could indicate that there was not the need to discharge as much as was discharged on 11 January.**

The SEQ Water Grid report "*January 2011 flood event. Summary of dam operations"* dated January 2011, but not released to the public until late on 7 March 2011, at its last page asserts that the time for water to flow from "Dam to Bay" is 24 to 36 hours. While this may be the case when the river is not in flood, it is an intentionaly deceptive statement to put in the 2011 flood report, and deceptive conduct is illegal under the Trade Practices Act, S51A & S52. Many television scenes showed objects floating at a fast rate, and one scene showed a boat with a recorded water speed of 25 knots (approx. 50km/h) travelling upstream, but making no headway. An engineer at Wivenhoe is reported to have said that the start of the huge volume of water released on 11 January would have arrived in Brisbane 6 to 9 hours later.

In normal times the Brisbane River is relatively shallow, causing water flowing to be slowed by friction against the river bed and banks. When the river surface is elevated, there is reduced friction by the river bed, and once the river has broken its banks there is no friction by the banks, and in addition the river's course is reduced as bends are cut across. The effect of releasing a large 'packet' of water during 11 January onto the already swollen river would have been for this discharge to flow over the top of the 10 January discharge, arriving in Brisbane early on 12 January. This 'packet' of water would not have maintained a discreet front and end, but would have spread out along the river, resulting in the last of the 11 January 'packet' arriving late on 13 January. This precisely coincides with the flooding of my house about 200m south of the Brisbane River at Fairfield, and coincides with river height readings at Jindalee.

Wivenhoe operators would have known late on 10 January that the Toowoomba flood contribution coupled with the Wivenhoe release that would take place the next day would flood Brisbane from midday 12 January. If there had been an effective means of advising everyone that they would be flooded 24 hours hence, much property would have been saved. So much equipment and employment, in the industrial area of Rocklea and the Brisbane Markets could have been saved if BCC had gone there and warned the businesses early on 11 January.

Wed 12 The release was dramatically scaled back, which coincides with the end of the flooding of my home on Thursday 13/1.

I therefore contend that the flooding of Brisbane was directly caused by the significant release of water from Wivenhoe on 11 January - confirmed today by the Insurance Council of Aust.

Subsequent to the flood receding, Wivenhoe dam has been emptied down to 75% of its water use capacity as La Nina is still present, albeit weakening, and is expected to have run its course before winter – **an apparent admission that early during the very much above average flood danger season the mitigation capacity should have been increased by releasing water from Wivenhoe down to 50% of water use capacity – which would have averted the flood**.

My submission that water should have been released from Somerset and Wivenhoe long before Christmas 2010 is not based on hindsight, it is based on knowledge that was well known and in the public arena, and was proffered to the dam operators, but was ignored – maybe because the Queensland government feared public disapproval if such release led to re-imposition of water restrictions prior to the next election. This seems confirmed by the government's refusal to lift water restrictions while at the same time shedding 25% of Wivenhoe's total capacity during February.

The above demonstrates that Queensland Government's dereliction of duty caused great anguish and damage to the value of homes and businesses in Brisbane. It is the government's responsibility to ensure that Somerset and Wivenhoe dams are managed to provide effective flood mitigation. I will be claiming against the government for about $50,000 for damage to house and contents, and about $150,000 for loss of land value.

Conclusions

If your inquiry finds that the unpredictable nature of intense low pressure systems means that Brisbane should have all of Wivenhoe available for flood mitigation, then the government could resume the 8,000 houses built where the Wolfdene dam was proposed, and build that dam to provide Brisbane with its water needs. The resumption cost of maybe $6 billion, and the cost of approx. $2 billion to build the dam, will be less than resuming flood affected Brisbane houses, or occasionally compensating Brisbane residents and businesses for flooding their properties.

A much cheaper alternative would be the expansion of the existing Borumba Dam to 2,000,000 ML, 'over the hill' from Wivenhoe to supply Brisbane with its water needs, leaving Wivenhoe for flood mitigation. An expanded Borumba would cost only about $1.4 billion including a hydro-electric power plant. An additional $0.5 billion would provide two-way pipes connecting Wivenhoe, which would facilitate transferring water between them, thereby connecting both to the grid. This additional supply would drought proof SE Queensland, because both could be filled for water use, and only Wivenhoe emptied when an unusual rain event appeared. – refer to http://wivenhoesomersetrainfall.com

If your inquiry finds that better management of Wivenhoe's flood mitigation role can also accommodate Brisbane's water use needs, BCC would not need to change its building height limits.

Yours sincerely,

David Stark