

To the Commissioner,

Major Concerns:

- *Dam Management
- *SEWS guidelines. Lack of formal and serious warning system.
- *Cressbrook Dam and Lake Perseverance overflows please take a close look into their management and the effects down stream.
- *Investigate integrity of pipeline during flood
- *Development approval, densities and impacts scrutinized.
- *Q100 level should only be reviewed after the findings of the Inquiry.
- *Suburban Infrastructure needs urgent upgrading ie sewerage pump stations and storm water drains.

Over the past couple of weeks, I have been scouring the internet and have read hundreds of pages about the flood, news reports, media releases, peoples comments and I have bookmarked dozens of links to articles. In my mind there is no doubt that dam management, poor urban planning and government failure to build adequate infrastructure to supply a burgeoning SEQ has contributed to and exacerbated the January floods.

What about adequate warning of what was about to befall us? I came across the SEWS guidebook online and I believe by not activating this signal to alert the community has been yet another failure

on behalf of our authorities. The SEWS is a distinctive audio signal that has been adopted to alert the community to the broadcast of an urgent safety message relating to a major emergency/disaster. Here is a link to the National guidelines for the use of SEWS: Standard Emergency Warning Signal.

[http://www.ag.gov.au/www/emaweb/rwpattach.nsf/VAP/\(FC77CAE5F7A38CF2EBC5832A6FD3AC0C\)~SEWS_National+Guidelines+Booklet_HR.PDF/\\$file/SEWS_National+Guidelines+Booklet_HR.PDF](http://www.ag.gov.au/www/emaweb/rwpattach.nsf/VAP/(FC77CAE5F7A38CF2EBC5832A6FD3AC0C)~SEWS_National+Guidelines+Booklet_HR.PDF/$file/SEWS_National+Guidelines+Booklet_HR.PDF)

This document would have been created by a team of people; goodness knows how many man/woman hours and money would have gone into its creation and here we have it, a document, a tool, a set of guidelines, an emergency warning system AND it wasn't used!!!! If people were alerted and given adequate warning the losses could have been far less tragic. Essentially it came down to listening in disbelief to (at times conflicting) media reports and press releases and to then guess the potential damage on a personal level. Most importantly lives may have been saved if the SEWS had been activated according to its guidelines. Failure to do so is unforgivable, (in my opinion).

What were they waiting for! Complete failure of the dam wall before they started warning people? I am afraid if that scenario had played out a warning signal and a message of "run for the hills" would have been as useful as you know what and

the outcome would have been a catastrophe of biblical proportions. One would think that with all the lauded mitigation capabilities of the Wivenhoe dam, all the expert opinions, the forecasting and the computer modeling available to us in the 21st Century we could have been protected from what quickly became a man assisted disaster (in my opinion). I am not saying there wouldn't have been any flooding at all, however the extent would have been significantly less if the dam had been operated according to a strong La Nina cycle and a well forecasted wet season. Keeping the dam level at 100% coming in to a wet season meant that any water flowing into the flood mitigation compartment above 100% would have to be released. On Monday the 9th when the Dam was at 148% the dams mitigating capabilities were completely compromised. When all 5 gates were opened on the Tues the 10th the dam was at 175% and this release was absolutely necessary to dispense with the massive amount of water flowing into the catchment and protect the dam's integrity. Activation of the fuse in the auxiliary spillway came within 60cm and I believe at one point there was more water coming into catchment than could be released through the 5 open gates. Apparently there was a period of time on the Tuesday when Somerset Dam's gates were actually closed to hold back water flowing into the flood mitigation compartment of Wivenhoe. The dam level was rising by 5% each hour at one critical point. This could be urban myth but if this is true the operators have failed in

their duty and breached their own rule book. The dam level peaked at about 195%, 60cm below the fuse and frighteningly close to an uncontrolled release that would have potentially added an extra 2 or 3 metres to the flood level that occurred.

During a wet season Brisbane will potentially receive floodwater from one or all 3 or its catchments. Only one can mitigate flooding and that is Wivenhoe, that's its fundamental purpose and that is where its true value lies; in protecting the ratepayers and citizens of the Brisbane Valley. The dam therefore reduces the amount of flood waters entering the Brisbane River from 3 catchments down to 2. That's of course if it is kept at a level that can comfortably allow this primary function to occur. In 1974, there was massive rainfall due to the monsoonal trough following Cyclone Wanda; storm surges and king tides exacerbated the flooding and the releases from Somerset were also criticized for being poorly timed. In 2011 it wasn't so much about the amount of rain that fell, but more so the massive amount of stored groundwater, saturated catchments and full or overflowing dams that occurred during the month of December and into January. There was so much stored water that 17 out of 23 SEQ dams were 100% full or overflowing leading into the flood. Keep in mind a lot of dams have been built since 74 and therefore our potential to store and hold back water has increased dramatically. For example Cressbrook Dam was built in 1983. It lies outside of

Toowoomba east of Crows Nest and forms part of the upper-Brisbane catchment. Lake Perseverance was overflowing Jan 7 and Cressbrook Dam went from 50% full to overflowing during the weekend of the 8th and 9th. When it overflows it flows into Cressbrook Creek and other creeks and tributaries and back into Wivenhoe dam and potentially the Lockyer Valley. This is the very dam we pump water to, to think of all that electricity used to pump water to a Toowoomba dam that had 5 years supply in it back in October 2010. And all those people in Toowoomba still on water restrictions and all those costs are passed on and billed to the residents of Toowoomba. We weren't only at the mercy of Wivenhoe but other full and overflowing dams running into downstream creeks and rivers.

Please I urge you to look further into management of the Toowoomba Dams. The Cooby Dam, Lake Perseverance and the Cressbrook Dam and into the effects the latter two have downstream when they become full and overflow. A serious analysis needs to be done on their impact. These 3

Toowoomba dam levels do not show up on the SEQ dam figures. I find this perplexing and I'm assuming it's because these dams are managed by the Toowoomba City Council. Ridiculous really, because when people talk about the combined SEQ dam levels I would have assumed the Toowoomba dams should form part of that data. If you add the 3 Toowoomba Dams; 20 out of 23 dam were overflowing in SEQ leading into the flood. What hope did we have...really!!!

My understanding is that this year we experienced less rainfall into the catchment than in 74, and we had the great mitigating capabilities of the Wivenhoe Dam to make us feel secure. Sadly and tragically there has been loss of life, tens of thousands of flooded properties, far exceeding 74, and we have a dam designed to mitigate flooding. I would go so far saying Wivenhoe made no difference and in fact if the Brisbane attributed to the massive speed (double that of 74) and volume of the water that occurred. Since March 2010, Wivenhoe has been consistently sitting at 100% FSL with peaks above that as we progressed towards a wet season. In October there were massive dam releases on the 13th when the dam reached 126%. This prompted concerns of a repeat of 74 and we were reassured, by some that Wivenhoe would protect us. This pre season warning went unheeded and FSL was maintained at 100%. After all of this, Wivenhoe dam is being lowered to 75% because of fear of repeat flooding and we now have 25% less of that "Oh so precious" drinking water. Not to mention the ability to raise revenue by pumping water from Wivenhoe to Toowoomba's Cressbrook Dam. All that precious drinking water wasted on destroying lives and thousands of properties, ruining businesses, fracturing communities, smashing the riverscape, polluting our waterways, creating unmentionable amounts of landfill, damaging infrastructure and leaving in its sodden wake a clean up bill of \$440,000,000.

I live in Fig Tree Pocket and am one of the lucky ones. We are now back living in our house, we have insurance and our repairs will only take about 6 months. For others, my neighbours and many in the Fig Tree Pocket community this event is cruel, it had no mercy, it took everything away from some and most away from many. I am still bewildered and I fear many will really struggle well into the future.

I would greatly appreciate your attention to the 7 points I have raised and thank you for your time.

Kind Regards,

Katie Wilson

- P.S Below are a couple of other people's comments that I have pasted because they also reflect my feelings and views.

1) The great shame is that the current flooding of large areas of Brisbane should not have happened. They are a direct result of (past) Government stupidity; and it's typical of today's Governments. In 1974 Brisbane was flooded slightly worse than this time, although the damage this time is much worse because of the advancement since then of Brisbane as

a city . Following the 1974 flood the Qld State Water Commission, which was made up of people who knew what they were talking about (hydrologists, geologists, geophysicists, meteorologists etc) recommended the building of a flood mitigation dam on the Brisbane River well west of the city. This was done in the form of Wivenhoe Dam about 50 Km west of Brisbane (wivenhoe-dam.jpg). At about this time Brisbane's water supply came from 3 small dams around the Brisbane area (Somerset, North Pine and Ennogergera). In about 1980 because of the rapid growth of the population of Brisbane the State Water Commission started agitating for the State Govt to build a substantial water supply dam for Brisbane. The State Govt responded that they didn't need to as they had Wivenhoe Dam. The Water Commission pointed out that Wivenhoe was a flood mitigation dam and NOT a water catchment/supply dam and that the Govt needed to stop dallying and build Brisbane a water catchment/supply dam or

they would have water supply problems by about 2000; they also recommended a few possible sites. In good political response the State Govt disbanded the State's Water Commission. A few years ago Wivenhoe was down to < 20% capacity (515725296_03dbebda57.jpg), and we had severe water restrictions. The State Govt decided to re-establish a Water Commission. Unfortunately this time it was made up of totally useless bureaucrats, with no professional expertise and headed up by a less than useless bureaucrat. Their great plan was to build a water catchment dam (the Traverston Dam) on the Mary River up the coast; this was some of Queensland's most productive agricultural land and was not one of the recommended sites from 20 years earlier. The Traverston Dam when full would have had a average depth of 10 metres and an enormous surface area – unbelievable evaporation as a number of experts pointed out and in a drought would become an

enormous mud bowl. The State Govt spent millions of dollars surveying the area, buying back properties, alienating the locals and designing the dam construction before they had asked the Commonwealth Govt whether they could build the dam. In the end the Commonwealth Govt said no due to environmental reasons and all those tens of millions of dollars had been wasted. It would be a bit like you or I finding a nice block of land, spending thousands on having it surveyed, an architect design a house before finding out if the owner would sell it to us. The end result was that when the drought broke towards the end of last year, the dam filled and the water was stored; after all Brisbane was dependent on this water for its supply. However, when the rains really came a few weeks ago (we have been having almost non-stop rain for several weeks) Wivenhoe (a flood mitigation dam) was starting at 110% full. Thank God the dam had been built to hold 210% of its planned capacity before

water started running over the dam wall and threatening dam wall integrity. It didn't take more than a few weeks and the dam was up to 198% capacity and the flood gates were opened (vfiles31371.jpg) (520430-wivenhoe-dam.jpg). That meant the end of a water mitigation dam because then everything that went into the dam had to be released to protect the dam's integrity. The end result is that Brisbane has had a major flood through a good part of the CBD and suburbs which wouldn't have happened if the dam had been at 20% when the rains started several weeks ago. The problem was that the original Water Commission was right, Wivenhoe was meant to be a flood mitigation dam, in other words you want it kept empty so it can act like a buffer in the event of torrential rain. It was not meant to be a water supply dam, which you want to keep as full as possible for when there is a drought.

2)

The Wivenhoe site was chosen after a dam site survey (early/mid 1970s) of the whole of south east Queensland. Specifically for

Brisbane's long term water needs. I also understand the then government put planning/zoning restriction to stop development on the sites at the top of the list. Effective keep then rural until they would be used.

In the mid late 1980's (about the time Wivenhoe first filled), the then state govt commissioned the Australian Bureau of Statistics to do population growth studies for south east Queensland. The studies said that Wivenhoe would be full utilised in 2010, plus or minus 5 years (depending on different growth assumptions). As a result of this, the then (Ahern?) govt commissioned the building of the second dam (at Wolfdene) from the 1970s site list. The project was approved by Cabinet, land acquisition etc started.

In December 1989, the incoming Goss govt canned the Wolfdene dam for short term budget reasons. The land was sold and the development restrictions lifted. Wolfdene is no longer a viable dam site due to development in the area since 1990.

All this got a public airing about 18 months ago, then the Kruddster become opposition leader. He was the new chief of staff to Queensland's incoming Premier Goss.

During the last week of the 2007 election campaign, I though it was assuming what passes as interviewing these days. In one interview, the Kruddster both attacked the Howard govt for not doing enough infrastructure planning and claimed some credit for the first Goss govt's 'good' budgetary planning. Apparently the interviewer missed that one or chose to let it go through to the keeper.

As a side note, my father says that the NSW govt was warned both at the completion of the Warragamba Dam (1960) and the completion of the Snowy Mountains Scheme (mid 1970s) that Sydney would fully utilise its current dams by about 2000.

So neither state can say 'we didn't see this coming' (even without climate change).

Here are some other statistics and information from others that I have tried to summarise

Q100 LEVEL: here are a few dam statistics

Q100 level were originally based on flow rates of 6 to 7,000 m³/s

3,500 m³/s is the maximum non damaging flow release. In more that this will start to affect roads and bridges etc and cause possible closures.

On **Saturday Jan 8 at 8.26pm** Graham Keegan or SEQ Water advised the Flood Operation Centre in a email to release water at a rate of 1,250 m³/s overnight but not to exceed 1600m³/s. The same email notes awareness of the worsening weather with significant rainfall forecast for the next 4 days. Scenarios included a reduction in release rates to accommodate flooding in the Bremer River and also larger releases if heavy rainfall was to flow into the catchments.

On **Sunday Jan 9 at 8.30pm**, Mr Keegan's email alert advises to keep releases at 1,400 m³/s "for the next 24 hours if possible". He notes however and is aware of major flooding in the catchments with inflows of approx 5,000 c³/s in the upper-Brisbane River and 3,000 c³/s in the Stanley River System. He is also aware of the BOM Severe Weather Warning prediction of heavy rainfall until Tuesday. He concludes that if these totals 8,000 c³/s eventuate, higher releases will be necessary.

On **Monday Jan 10 at 3.25am** the email alerts that rapid increases in river levels and inflow rates had occurred in the upper- Brisbane River. Release rates were increased to 2,600 c³/s with a peak rate of 3,500 c³/s .

On **Monday Jan 10 at 9.03pm** several hours after the severe rainfall in Toowoomba and across the Lockyer Valley, the email advised that the release rate was 2,400c³/s with a possibility of 2,800 c³/s as operators sought to minimise urban flooding.

On **Tuesday Jan 11 at 2.42am** the release rate was 2,730 c³/s. Four hours later the upper Brisbane River experienced another major flood and the new target was to increase flows to 5,000 c³/s

On **Tuesday Jan 11 at 9.50am** the situation had moved into a critical phase as the lake approached the next trigger level.

On **Tuesday Jan 11 at 5.30pm** the release was ramped up to 6,700 c³/s

On **Tuesday Jan 11 at 8.30pm** the release rate was 8,000 c³/s and with the dam expected to reach a maximum level of 75.5 m. This level is 0.1m below the trigger level of an uncontrolled discharge.

This release exceeds the peak flow rate of approx 7,500 c³/s as Savages Crossing during the 1974 floods.

On Sunday the 8th of Dec there was a huge rain event in the catchment with Wivenhoe at 68.55m at the time. If 3,500m³/s is the minimum non damaging flow release then why was this not done on the Sunday at 11am?

Holding back 3,500 m³/s over 44hours is equivalent to 554 Gl. Eventually that and more was released in desperation on the Tuesday and into Wednesday. It's hard to fully determine what the peak flow was but it has been reported to range from 645 Gl up to 800 Gl.

There was simply no other choice, the water was released to protect the dams integrity.

To put it into perspective.

1 kl = 1 cubic metre

645,000,000 cubic metres = 645 Gl

1 cubic metre = a mass of 1 tonne

645 Gl = a mass of 645,000,000 tonnes

This weight is equivalent to 1.9 million fully loaded jumbo jets.

Little wonder there was such power and devastation and I think this following article from The Australian, sort of sums it up.

Dam warnings fobbed off by 'experts'

From: TheAustralian

February 12, 2011

JOCELYN Bailey, a farmer with a cattle property on the Brisbane River beneath Wivenhoe Dam, does not want to hear one more engineer or hydrologist say "you wouldn't understand, you're not qualified", when it comes to managing releases of water from the dam.

Alternatively, you can copy and paste this link into your browser:

<http://www.theaustralian.com.au/news/features/dam-warnings-fobbed-off-by-experts/story-e6frg6z6-1226004673314>

I will close now and I do hope you take into consideration my submission and I wish you all the best in your inquiry and formulating your findings.

Kind Regards,
Katie Wilson

