SUBMISSION FROM Garry R. FORD to QUEENSLAND FLOOD COMMISSION Of INQUIRY

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PREAMBLE

This submission is written from my perspective as a social historian who has researched the history of Queensland professionally, for nigh on forty years, and has had published numerous papers and articles dealing with transport history, educational history, military history and general history of South-East Queensland over that time [an incomplete list appended]. Because of my current circumstances this submission is done from memory.

To retain accuracy Imperial measurements are used, with metric given in square brackets.

It is impossible to study any political or social history in Queensland without studying the effects of the weather – cyclones and floods in particular – on your chosen subject.

Congratulations to the Rt Hon the Lord Mayor of Brisbane, Campbell Newman, for heeding warnings given in my briefing paper prepared during the formation of his "Five Tunnel Proposal" for Brisbane. Many citizens will have listened and prepared for a flood, even if SEQ Water and the State Government didn't and even went as far as to call him an alarmist, overstating the dangers.

History oft repeats unfortunately!

Officials failed to properly heed the early warnings of Mr Henry Plantagenet Somerset in the first and third 1893 floods, and immediately prior to the 1974 flood, I hand delivered a letter to the Rt Hon. The Lord Mayor of Brisbane, Ald. Clem Jones, on the Thursday [City Hall office] before even the Friday creek floods, let alone the later river flood, asking him to urgently have the stored tramway records moved from the underground vault at the Coronation Drive Transport offices, because of an impending major river flood. Transport officials heralded me as a prophet, and I was able to save most and restore the records that were damaged thanks to Mr George Baker, the Assistant Manager, B.C.C. Department of Transport.

Why was I able to predict the 1974 flood as imminent? – by my study of the history of the weather in S.E. Queensland.

Whenever a tropical low / rain depression or cyclone crosses the coast between Maryborough / Bundaberg region and Nambour, without fail, both the Mary and Brisbane rivers will flood! Any significant low over Brisbane floods the creeks and thus the river to a degree.

What follows is a detailed [as far as possible from memory] synopsis of the flood history of Brisbane.

/INTRODUCTION

INTRODUCTION

As part of the requirements in researching my various theses and publications, particularly the education ones and the tramway ones, I have read all available local newspapers – *Brisbane Courier, Daily Mail, The Queenslander, Courier Mail* and *Telegraph* to name the major ones – plus several other primary resources such as the *Parliamentary Papers,* and several well researched secondary sources dealing with S. E. Queensland.

Further, in the period up to World War I, newspapers were very accurate and objective in their reporting – only manner the masses could receive accurate information, even Hansard was reported verbatim in the papers for important debates. Information was printed from correspondents in the smallest of villages, on all matters of things, but especially the weather. In many cases this was the official meteorological reports submitted to government. These reports are probably as reliable as today's computerised radio weather stations, therefore they should not be ignored.

Of particular value was the two volumes of meteorological reports by Inigo Jones [the late Mr Lennox Walker was his protégée] published by the Queensland Government in the thirties [from memory]. The Royal Historical Society of Queensland has copies of at least two volumes. Apart from Mr Jones' theories on the relationship of the weather to sunspots, etc, the main advantage of these publications is that they list all the rainfalls / floods for around the first 90 years of the colony of Queensland. e.g. on 21 January 1887 a record rainfall (and floods) of 18.317" [0.5m] was recorded in Brisbane in a very short period – allegedly one hour. This was therefore a greater fall than the 35.719+" [0.95m] (the gauge actually overflowed so the record is not accurate) recorded at Croamhurst in a 24 hour period, in February 1893.

What really matters though, was the total rainfall leading up to and during the floods, measured in feet [metres], not inches [centimetres] – 1893 over 100" [3m] and 1974 over 60" [1.7m].

RIVER HISTORY OF BRISBANE

Brisbane has a very rich history in floods with verbal and actual evidence going back over 200 years. The first written records of the floods of the Brisbane River were made by Lt John Oxley when he explored the river as far as the Bremer River junction in 1823 [journal]. See also Rev Steele's comments in his history of convict Brisbane.

Oxley's journal refers to trees and other flood debris being found up 20' to 30' [6.5m to 10m] in the upper branches of trees along the northern bank of the Brisbane in the area from the now Garden's Point to around Roma Street Station area. In addition aboriginals told the early settlers of a large flood that covered the area Lt Henry Miller had chosen to establish the first permanent [Humbybong abandoned as no adequate fresh water] settlement in [redacted]. the George Street precinct of today. [Petrie, Pettigrew and others diaries and reminiscences] This flood is thought to have occurred between Lt James Cook's exploration of the east coast and Lt Matthew Flinders' circumnavigation of Australia, circa 1798.

This 1790sflood was reportedly [orally by natives] much larger than the 1893 floods (four in total – three in Jan/Feb over two weeks and one in June) that inundated Central and S. E. Queensland and possibly caused Moreton Bay to break through a sand isthmus to the ocean causing the separation of Moreton and Stradbroke islands, comparing Cook's and Flinders' charts and heeding native tales. In 1974 the Nerang River came close to "breaking through" across the Pacific Highway [flooding at least] the sand isthmus [Surfer's Paradise] around Cavill Ave. If the river's course hadn't been recently altered it would most likely have broken through at Narrow Neck, something long feared.

In 1893 ship captains reported that upon entering Moreton Bay their ships "climbed" over four feet [1.3m] in height, such was the volume of waters flowing into it from the Nerang, Coomera, Albert, Logan, Brisbane, Pine and Caboolture Rivers, and the multitude of creeks in the area.

Dredging

To put this 1790s flood into perspective it must be realised that, at that time, the Brisbane River was not being dredged. The river was a very old river geographically and as such meandered through its large flood plain, much of it swamp downstream of the Bremer Junction, on its way to Moreton Bay. Most of the present CBD was in fact swamp along the banks of Wheat Creek, which ran from the site of Roma Street Station to the river at Eagle Street – Roma Street Parklands, City Hall site, area between Queen and Adelaide sts, Central Plaza, and AMP Buildings. The area from the City Botanical Gardens along Albert Street to Elizabeth Street was known as "Frog's Hollow" for many years after settlement, as it was still a swamp. Reports of the early white settlers have the river being walked across at its bar at low tide and in the City reach in the vicinity of the present Victoria Bridge.

It was not until the wool trade from the downs increased sufficiently in the 1850s, that the need for a river port arose. Till that time cargo was either unloaded / loaded at Cleveland [for Ipswich thence the Darling Downs] or lightered between the mouth of the Brisbane, Brisbane Town, and Ipswich. There was strong competition between Cleveland and Brisbane [despite Brisbane being officially chosen] as the site for the port of entry.

Brisbane finally won out and subsequently the new Queensland Colonial Government embarked upon a programme of river dredging to ensure that large ships of the day could travel not only to Brisbane, but also to Ipswich! Political pressure from Downs voters on Parliament, dictated this decision.

Thus the situation of the 1860s was that ships travelled to Brisbane and Ipswich, directly from Sydney and other ports. This was done as a fop to Ipswich and Downs people who disliked the convict past of Brisbane, and wanted Cleveland as the port. Even the "third" bridge [first Victoria Bridge] opened in 1874 was an opening swing bridge so large ships could still go to Ipswich. It must be noted here that the first temporary wooden bridge was flood damaged in the 1865 floods and the piers for the first permanent Victoria Bridge were washed away in the 1873 flood, delaying its construction.

The propensity to dredge the river, so larger and larger ships could reach Ipswich, resulted in the water level in the river actually falling considerably at Ipswich, and the closing of the Port of Ipswich to large vessels. In Ipswich's madness to remain a port for large steamers rocks and other shoals were blasted out of the river, supposedly to gain a larger draft for vessels – 17 Mile Rocks was one site. Instead, as these rocks caused a weir effect, their removal actually decreased the water level of the river at Ipswich by over 6 ft [1.9m], resulting in many ships no longer being able to reach Ipswich. See Ford, G. R P.G.Dip.A. (History) thesis – *Conflict over constructing Queensland's Southern and Western Railway to deep water, 1865-85* and various government Royal Commissions of inquiry regarding the placement of wharves in the river in the 1860s and 1870s.

The result of this foolishness [blasting rocks] was the relatively urgent railway extension from Ipswich to Brisbane, after ten years of stonewalling caused by Ipswich's desire to be the port for the Darling Downs. There were various inquiries [1873 - 78] then into the best places to site wharves.

The resultant decisions had an important effect on the flood history of the Brisbane river, as the main wharves for South East Queensland were sited initially at South Brisbane, and Creek St, with the main coaling station being along the Kangaroo Point Cliffs, where the river was naturally quite deep, with further future developments [1890s] being downstream from New Farm to Bulimba [actually Newstead]. The Port of Brisbane remained thus until ships became too large to safely reach the City area [and be turned]. The South Brisbane wharves, and the Creek Street Wharves were gradually relegated to coastal shipping only, which eventually was placed out of business by road and rail freight. The wharves were abandoned and areas redeveloped from the 1960s. Eventually even the wharves further downstream, [New Farm and Newstead] were abandoned, and the lower Hamilton Reach Wharves became the head of navigation for all shipping, and now only passenger liners / cruise ships.

Fishermen's Islands became the port by the 1980s. This was the same site that Sir Henry Blackney, member for North Brisbane, first suggested in 1864 when the debate started over whether Brisbane or Ipswich should be the rail terminal ; he choose neither, but rather the islands at the river mouth, where goods were often being trans-shipped to lighters for the journey up to Brisbane or Ipswich.

Ironically, the initial choice of Ipswich as the rail terminus, probably saved Brisbane from many floods over the ensuing 115 years because of the river being dredged to take the

largest possible draft vessels. The coming of the trams in August 1885 was the final nail in the coffin for the Port of Ipswich, as Victoria Bridge's swing span was permanently closed [against Ipswich people's wishes], thus stopping large ships from proceeding upstream past the South Brisbane Wharves. Upstream of Victoria Bridge dredging was now done for sand and gravel only.

From the 1860s, through till dredging above Hamilton Reach ceased under pressure from environmentalists [clean river needed], Brisbane has had a relatively unnaturally deep river, rather than the shallow old river it had been for hundreds or more years.

Floods

Despite the heavy dredging of the river over 130 years, the Brisbane River and its tributaries – Stanley River, Bremer River, Lockyer Creek and creeks below the Bremer Junction, being the main ones – have still managed to flood at least around once every four (4) years on average. These figures are based on a chart prepared by the John Oxley Library after the 1974 flood. A flood was deemed to have occured when the height of the river was 10ft [3.1m] or over, at the Port Office Gauge.

It should be noted that the flood height reached at Mt Crosby was extremely high in 1893, caused by the narrowing of the river into a gorge and the junction with the Bremer below it. Flood gauges still are at the 56m mark, the top 58m one was destroyed some years back! [Outside turncock's cottage on the road down to the weir.] Other gauges on the roads around the gorge area are well over 30m.

The 1893 floods are reported to have headed across to the Logan River, from the Brisbane River, in the vicinity of Gailes, most of the water going via that way. If definitely the case, it gives an idea of the enormity of those floods compared to the 1974 and 2011 ones.

Most of these listed floods were minor, but several were quite significant. While not an exhaustive list floods were recorded in the following years:

- Circa 1790s (very big flood)
- 1840/1 around 30ft [10m]
- 1865
- 1873
- 1886
- 1887
- 1888
- 1890
- 1891
- 1893 (3 Jan/Feb, 1 June) Victoria Bridge partially washed away. Only the flat area of the top end of Brisbane Street, Ipswich, above water. [See flood heights on the walkway down to platform 1 at Ipswich Station.]
- 1895 Temporary wooden bridge filling gap in Victoria Bridge badly damaged. Stradbroke Island almost broken through. Subsequently blasted through to form North and South Stradbroke Is.
- 1898?
  Long dry period till 1908 +
- 1930s (31 or 3? Flood map prepared after it.)

- 1954
- 1967 (June - mainly Brisbane Creeks)
- 1968
- 1972 (June - mainly Brisbane Creeks)
- 1974
- 1988 (just before Expo opening – flooded several pavilions)
- 1989 (Wivenhoe Dam filled for first time and saved a major flood)
- Several creek floods affecting river, in this time period
- 1999 (Wivenhoe Dam again saved Brisbane. Flood heights at Toogoolawah higher than 1893. This flood's water lasted Brisbane till 2010.)
- 2010 smallish, mainly caused by creeks, but still riverine.
- 2011

NB

Most recorded floods were aggravated by king tides occurring at the same time, as the Brisbane and Bremer rivers are tidal up to College's Crossing [Mt Crosby Weir at times] and the Ipswich CBD area respectively.

Based on the flood history the depiction of floods in Brisbane and surrounds should be:

(a) Small – 3m to 6m (regular flood range)
(b) Medium – 6m to 10m (100 year flood range)
(c) Large – over 10m (500 year flood range)

all measured at Port Office Gauge.

Realistically, Q100 flood level should be around 8m – 10m, not 3.4m!

Need to conserve water to reticulate

From this incomplete record it will be seen that the last third of the century is the wettest part, based on over 200 years of records. A further note from reading the papers is that the big floods always come after a prolonged dry spell / severe drought. The 2011 flood was no exception. The tendency is to keep the dams full so water supplies will not be depleted before the next wet – a vicious circular argument.

Readings the reports of the 2011 flood in the media is like reading the reports of the 1893 floods – "Biblical proportions; greatest flood since Noah's; as if the ocean has come into the ranges from Rockhampton to Grafton;" etc.

Why does the Brisbane River System flood?

As stated in the pre-amble there are two types of floods in the Brisbane System – headwater floods and creek / tributary floods.

Once large lows drop their water on the headwaters of any number of the creeks and rivers in the area, floods eventually occur in Brisbane and Ipswich. Potluck determines which are chosen by nature, not man. [1893 flood caused by two cyclones over headwaters of the Stanley River, hence the siting of the dam in the Stanley Gorge.]

It will **never** be possible to stop all flooding in the Brisbane System: adequate flood management is the best that can be hoped for. Even if dams were built on every one of the many rivers and creeks entering the Brisbane River (and Mary River, as both have their headwaters on different sides of the same mountain) there would still be floods, though not very large ones probably, if the dams were left empty until the flood rains arrived.

This is impractical of course, as all the dams double as water supply sources. [The Tugan desalination plant and the S.E. Queensland water grid should assist considerably in permitting water levels to be reduced before a coming wet season, even during a drought period.]

Both the 1974 and the 2011 floods came down Lockyer Creek, Warrill Creek and the Bremer River: what came down the Brisbane and Stanley rivers was successfully stopped by Somerset (on Stanley where 1893 floods came from) and Wivenhoe dams. They both did their jobs well, but could not stop the Brisbane and Bremer rivers flooding because of their location. A similar situation applied regarding the Mary and Nerang dams.

The idea that these two dams would prevent floods in Brisbane and Ipswich was a myth created by the *Telegraph* newspaper in 1951! When Somerset Dam opened it reported that the dam would stop all future floods in Brisbane. When the Wivenhoe Dam was proposed / opened the very **same paper** company had the cheek to say that a newspaper of the day said that when the Somerset Dam was opened there would be no more floods in Brisbane, but they were badly mistaken. The article then when on to say that when the Wivenhoe Dam is finished, there will be no more floods in Brisbane and Ipswich! It is this absolute stupidity and political pressure regarding land values, etc. that has led Lockyer, Brisbane and Bremer valleys' residents into a false sense of security, YET AGAIN!

The Brisbane River has been a slow meandering river that spread out over its vast flood plans between the bordering hills for centuries, until man made it into a fast flowing deep navigate able river. Now man has decided it should return to its former self, without realising the consequences of this decision that would result to the hydrology of the rivers.

From the way development has occurred in Brisbane and Ipswich since the 1960s it is quite apparent that people either don't know about the flood dangers in the area, or don't care as long as they can make a good capital gain by developing / buying a property in the danger zones.

CONCLUSION and BASIC OBSERVATIONS

- Brisbane will flood, and continue to flood, no matter what man legislates; therefore the citizens must become used to the costs and inconvenience.
- People must choose between a river lifestyle with regular floods, or a walled off river with no or little public access to it.
- River dredging must be recommenced to stop a shallower river causing more floods, as the water can't escape quickly enough.
- It is time residents were told the facts about flooding in the Brisbane-Bremer river systems and not fairy tales.
- Since 1974 there has been more paving of land resulting in quicker water run-off ~~and this~~ Run off more quickly occurs and is more frequent [minor floods] as drains quickly enter into the creeks and rivers.
- It is impossible to dam every tributary of the river system.
- There will always be flooding in the river system when lows cross the coast between Maryborough and Nambour.
- There will always be local flooding of the creeks and river in Brisbane, as they can never be dammed fully.
- Warrill Creek, Lockyer Creek, and the Bremer River cannot be dammed any more than they now are without significant loss of prime agricultural land.
- Existing Q100 flood heights for the river systems are totally inaccurate and do not reflect the true flood history of the Brisbane – a height of 6m at the port gauge would only reflect a small to moderate flood.
- Q100 should be at least 8m at Port Office Gauge, now dredging has ceased
- The development of flood prone lands should be halted and reversed. Prior to 1970s the flood planes of the creeks of Brisbane were market gardens and dairy farms, BECAUSE the land was flood prone. The mighty dollar and land shortage caused the foolish development of these lands.
- Flood prone land should be resumed, as happened in the Windsor area after the floods of 1967 to 1974, and converted to uses which can tolerate being regularly flooded. e.g. parks, sports fields, car parks, bikeways, roadways, etc. Any buildings remaining in the areas should be raised to adequate heights, and construction underneath them not permitted. Unfortunately with the passing of time re-development at in correct levels occurred in Northey and Victoria streets Windsor. Flood prone land should not be used for residential purpose unless these residences are above a proper and realistic Q100 level.
- All essential equipment such as electricity substations and telephone exchanges should be above Q100 levels. i.e. put them several floors up in city buildings, not in the basements.
- Drains that flow into the river should be fitted with valves to prevent back flow in times of flood. That is what caused much inner city flooding in 1974 and 2011.
- Flood height markers should be erected on all flood affected streets showing the Q100, where relevant, or lower heights as the case may be.

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The following publications by the author contain some references to flood history of Brisbane area, although most of it is contained in the tramway and railway articles and my theses.

MAJOR PUBLICATIONS

Ford, Garry Robin, 'Development of the horse tramways of Brisbane', *Royal Historical Society of Queensland Year Book of Proceedings,* 9, 5, (1973-4), pp. 115-137.
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Ford, Garry Robin. *Walking tour of Brisbane's past*. Brisbane: GRF Media, 1986.

The following for the Education Department, 1975:-

History of Primary Education in Queensland; History of Special Education in Queensland; History of School Transport; History of School Cadet Corps; Centenary Times;
History of Education prior to 1900 (as part of official Centenary History); Joint researcher for:-Holthouse, Hector. *Looking back.* Brisbane: Department of Education, 1975.

OTHER PUBLICATIONS

Reports and pamphlets of various natures, but mainly of transport, political or historical content too numerous to mention all. e.g.

Ford, Garry Robin. *Proposal for relocation of the Brisbane Tramway Museum to the south bank area as part of Expo 88.* Brisbane: GRF Media, 1983. (Circulation limited to Lord Mayor, Brisbane City Council and various State Government authorities).
Ford, Garry Robin. *Proposal for arterial roadway linking Western, South-Eastern, and Northern freeways, and Gateway Bridge road network.* Brisbane: Brisbane Transport Research Group and GRF Media, 1986. (Circulation limited to Lord Mayor, Brisbane City Council and various State Government authorities).
Ford, Garry Robin. *Fisherman Islands standard gauge railway line proposal.* Brisbane: Brisbane Transport Research Group and GRF Media, 1992. (For State Management Committee, National Party of Australia - Queensland).
Critique of "5 Tunnel Policy" – flood risks for the Liberal Party of Australia, Qld Division.
Australian Dictionary of Biographies entry "Joseph Stillman Badger"
Many articles in Transit Australia and Modern Urban and Mass Transport

THESES

P.G.Dip.A. (History) – Conflict over constructing Queensland's Southern and Western Railway to deep water, 1865-85.
M.A. / PhD. – Role of railways and tramways in the development of Brisbane, 1880 till 1930 (work in progress)