

ITLP

Nominees

Submission to Qld Flood Inquiry

In relation to requests by Flood Authorities for other parties to provide information of means for preventing a reoccurrence of the recent Brisbane/Ipswich Floods.

The recent Brisbane inundation came from two (2) sources – the Bremer River which included the Lockyer catchment with waters from as far west as Toowoomba and the Wivenhoe catchment. The flows down the Bremer were calculated as being around 15.75 GL/hour ($17.5 \times 5 \text{ m/s} \times 50 \text{ meters width} = 15750 \text{ ML/hr}$) or 378 GL per day for 3 days.

If Wivenhoe Dam hadn't been in position according to SEQWater reports the recent Brisbane flood would have topped 7.1 meters (in 1974 the river went to 5.45 meters).

According to reports the Wivenhoe catchment received 2650 GL which when combined with 1300+ GL from the Lockyer/Bremar Catchment meant that the combined total of water to be handled was around 4100 GL. So if we round it up to 4100 GL we have a figure for use in calculations.

It should be obvious that all of this does not need to be captured in to stop a flood. A flood of 2.1 meters on the Brisbane River or 10 meters on the Bremer is considered small. Therefore if flood mitigation systems can capture 1000 + GL on the Bremer and allow for the draining of another 1000-2000 GL from the Wivenhoe dam into storage systems (for later usage) any floods will be mitigated.

In 1998 it was recognised that world food supply would need to dramatically increase in order to guarantee future prosperity and peace. Accordingly the group set about designing systems to supply the irrigated farmland needed to feed a world population of 9 billion and developed the following technology –

- Large diameter piping systems;
- Large scale tanking systems 31-151GL capacity;
- Anti-evaporation systems for water storage; and
- Pump and Solar power systems for moving water (pumping water requires colossal amounts of energy – 50% of LA's power is used on pumping water - sewage and fresh).

To build a 10 million HA irrigation district requires the capture and storage (normally during a flood event) of 100,000 + GL of water (1 GL = 1000 ML). The group designed systems for this and more. The recent flood in Brisbane was barely 4100 GL. In the latest 18 months there have been floods in Brisbane; Nth China, Pakistan, Europe and America all of which could have been captured using these systems.

I suggest it's possible to build systems to take 1100 GL from the Bremer and install a system on the Wivenhoe Dam to channel 1000-2000 GL to Tanks and Tank 2 tanks as noted above perform these tasks. The Tank 2 System was specifically designed to hold enormous volumes of water for irrigation purposes and has immense advantages in respect to flood mitigation –



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1. They are not a dam (called Virtual Dams) they do not need to be located in a valley;
2. They are free standing on vacant land;
3. Channel systems are installed to carry flood flows from rivers into the Tanks so the tanks do not need to be on or impinge on rivers or wildlife;
4. Tanks have special flood capture systems built into them to cater for the speed and volume of water entering them;
5. The systems can be covered so that after water is captured it can be stored in a low evaporation format on a long term basis for later usage.

With fast government approvals a system could be in place before the next flood and as an examination of historical data indicated that could be in the next 2-3 years. After the 1893 flood the river flooded again 3-4 times for the next 5 years. (See Figure 1).

I will be pleased to provide further information of a technical or financial nature if this would assist the Inquiry. By way of example the group recently quoted US\$51.3 million per tank for some 31.5 GL Tanks. It is anticipated 150 GL Tanks will be built for \$131-170 Million. The systems to divert rivers flows into the tanks are separate. It's expected a Lockyer Creek/ Bremer River Tank/ diversion system would cost around \$1.71 billion.

It would be suggested that in the first instance 1100 GL of storage should be developed for the Bremer System with the addition of 2100 GL to the Wivenhoe system at a later date.

Building tanks to catch the Bremer flows would greatly mitigate Ipswich floods and because the water flooding Ipswich then moves down to Brisbane, would also greatly diminish any Brisbane flood. It would also provide additional drinking water storage for Ipswich/Brisbane purposes thereby allowing if required greater releases from Wivenhoe (during a flood event).

A 2100 GL tank system for the Wivenhoe system is expected to cost around \$3.1- 4.1 billion and increase Brisbane's water storage capacity greater clarity can be provided if requested.

