

Submission to Flood Commission 11 February 2011

Need to upgrade current requirements relating to the flood immunity of Water Treatment Plants (WTPs) in Queensland

Background: The widespread devastating flooding experienced by much of Queensland over the past 2 months emphasises the crucial role that WTPs play in the immediate post-flood period.

We have witnessed water having to be trucked into Dalby and other regional towns (try doing that in SEQ!) and water having to be rationed in FNQ after Cyclone Yasi (Townsville, Ingham, Babinda etc) due to power failures etc. A major step in resurrecting inundated residences post-flood has been to hose and squeegee them out before the mud and silt has had a chance to harden.

In small to medium towns the crucial need to maintain the supply of safe drinking water can generally be met by alternative means if the local WTP is rendered inoperable. In an area like SEQ with a population of 2-3 million the maintenance of drinking water supplies to supply basic hygiene and consumption needs of, say, 20 litres/person this would equate to 6,000 tanker loads of water per day (assuming 10,000L tanker capacity). This would pose a considerable logistical and supply issue if the WTPs and interconnecting trunk mains were damaged by a major flood in SEQ or a major provincial centre.

The Status Quo: Recently I spent several months as a part-time employee of the Queensland Water Commission and was surprised to find that the proposed Wyaralong WTP (adjacent to Cedar Grove Weir on the Logan River) was designed with a Q100 flood immunity. I raised my concerns with superiors that a major WTP should be afforded flood immunity at least equivalent to that of a major hospital. Subsequent enquiries revealed that Queensland has a Policy stating that WTPs should be designed to withstand a Q200 flood.

The Preferred Solution: I believe that Water Treatment Plants are of such vital importance to communities that they should be afforded considerably enhanced flood immunity to that indicated under the current State Policy. I think that there should be a range of immunities developed from Q1,000 to Q10,000 depending on particular circumstance.

Presumably a 'Ready Reckoner' could be developed that rated various factors such as:

- Size of population served
- Number of sources of potable water
- Connectivity arrangements (eg. The SEQ Water Grid)
- Alternative supplies that could be harnessed during an emergency. [These could include bottled water; water tankered into an area; smaller supplies that are decommissioned during normal times but which are kept maintained for emergency use; availability of on-site or portable generator sets to maintain power to WTPs; portable desalination/ purification plants (eg. Reverse Osmosis); etc
- Historical flood history and hydrological/meteorological determinations of probable maximum floods

- The riverine geomorphology of the WTP site that would dictate how severe an impact on elevation would be incurred in going from Q200; to Q500; to Q1,000; to Q10,000; etc

Such an approach should be capable of developing suitable flood immunities for new WTPs and for auditing the risk profile of existing WTPs.

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