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The Secretary
Senate Rural and Regional Affairs and Transport
Parliament House
Canberra ACT 2600

Email: rrat.sen@aph.gov.au

Dear Sir/Madam

RE: Inquiry into Additional Water Supplies for South East Queensland – Traveston Crossing Dam Information

I am writing to highlight what I consider to be fatal technical flaws in the proposed Traveston Crossing Dam, and to urge greater consideration be given to storm water recycling within the Brisbane catchment.

Ideally a water supply dam site should meet the following requirements:

1. An adequate catchment to supply the storage

The proposed Traveston Crossing Dam site appears to provide an adequate catchment to supply the storage. However, like the Wivenhoe Dam catchment, it is subject to large variations in rainfall from year to year. It may only fill about once in 10 years, and most likely at the same time as the Wivenhoe Dam fills, while being dry at the same time as Wivenhoe Dam, making it superfluous.

2. A deep valley, so that the surface area exposed to evaporation is minimised

Clearly, the proposed Traveston Crossing Dam will have a very large surface area and shallow depth. Stage 1 will have a maximum average depth (if full) of only 5 m, and Stage 2 only 8 m. (This compares with a maximum average depth of 11 m for Wivenhoe Dam.) The storage will be much shallower than these depths most of the time. The average annual pan evaporation for the area is 1.4 m/year, removing a substantial amount of the stored water.

3. A suitable location for the dam wall; one that is stable, preferably underlain by sound rock, and water tight to minimise seepage losses beneath or around the dam wall

It has been well reported that investigations of possible dam wall sites have shown the foundation conditions for the proposed Traveston Crossing Dam to be poor. The first site investigated showed of the order of 30 m of permeable alluvium underlying the dam wall and poor abutment conditions, and was abandoned. It is understood that more competent foundation conditions were found at the second dam wall site investigated. However, these are still far from ideal. There is also the question of how high flows in the Mary River could be handled should they occur during the construction of a dam wall.

4. A low permeability base to the storage, to minimise seepage losses

The Mary River valley is deeply infilled with alluvium, including sands that are mined. It is likely that the average permeability of these deposits is of the order of 10-7 m/s or 3.2 m/year, resulting in seepage of this order. Combining the annual evaporation and likely seepage gives 4.6 m/year, which would account for most of the storage within the proposed Traveston Crossing Dam without any water being harvested for use.

As highlighted by previous dam site assessments carried out for South East Queensland, and the comments above, the proposed Traveston Crossing Dam is technically a very poor choice for a water supply storage for the region. It has previously been ruled out and should be ruled out again. It is likely to provide a very poor availability of water for use, while quarantining a large area of usable land.

It seems more rational to maximise the use of water resources available within the Brisbane catchment. In particular, storm water should be recycled. Currently, storm water largely ends up in the Brisbane River. However, it could be pumped from the river to Wivenhoe Dam. This would require the construction of weirs at which pumping stations could be built. Depending on the salinity of the water recovered, which would be a function of the rainfall runoff input, it may or may not require treatment, but far less treatment would be required than for the desalination of sea water, and the resulting brine would be much less salty and could probably be fed to the lower reaches of the river, since it is saline over much of its length through Brisbane.

Yours sincerely

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