

A closer look at the Traveston Dam

Dr Peter Wylie

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The Traveston Crossing Dam is the most cost effective option to boost the water supply for Brisbane according to the recently released Environmental Impact Statement (EIS). Concerns about lungfish and Mary River cod are set aside by suggestions that breeding will not be interrupted and the dam is expected to provide suitable habitat for these species.

However, a closer look at the review shows up some problems and unanswered questions.

A problem with the plans for Traveston Dam is the expected yield. The dam will have a capacity of 150,000 megalitres (ML), and is expected to supply 70,000 ML per annum. However, with annual evaporation and seepage of more than 20,000 ML and with a need to leave some water in the dam to maintain a fish habitat, the useful storage is only 100,000 ML or about 17 months of water supply. By comparison, the Somerset and Wivenhoe dams, when full, have more than 3 years of water supply.

The historical flow analysis for the Mary river suggests the dam would have been full three times over the last five years, but it also shows that it would have run out of water twice. A more conservative estimate of water supply from this dam is appropriate, especially if some of the river flow is to be maintained for environmental reasons.

Desalination is a more reliable water supply, according to the EIS, but high energy requirements and water costs are put forward as reasons for not favouring this option.

The energy costs are reported in the EIS at 6.1 MWhr per ML for a desalination plant compared to 1.9 MWhr for the Traveston Dam.

However, other estimates for desalination by Colin Creighton of CSIRO, suggest the power consumption for seawater desalination is less than 3 MWh/ML. He says there has been a significant reduction in energy use in modern desalination plants because of improvements in membrane technology and energy recover systems.

The energy cost of pumping water from the Mary River to Brisbane is also estimated to be much higher by others, at 4.7 MWhr/ML, or more than the energy required for desalination. Pumping costs would apply to desalination, but a plant could be located much closer to Brisbane than Traveston Crossing.

No mention is made of research in harnessing wave power to pump water for desalination. The CETO technology being developed in Australia, is particularly suited to this purpose where most of the energy used in desalination is to pump and pressurise the water.

Capital cost estimates in the EIS are based on the Tugun desalination plant, but should be revisited. A desalination plant of the same size in Perth has cost around half the Tugun plant, which may be expensive because it is being built in a hurry.

A much cheaper alternative to augment urban water supplies is the capture of stormwater. The EIS does not mention the fact there is more than 50,000 hectares of concrete, bitumen and tin roofs in SE Queensland producing around 500,000ML of water per year. Some of this is now being stored in private rainwater tanks and less than one third of it could be captured and stored, but especially in new suburbs and industrial developments, it can be the cheapest and most energy efficient way to improve water supplies.

A report on urban water supply options by Marsden Jacob Associates, puts the cost of stormwater reuse at between \$0.10 and \$1.50 per kilolitre. They compare this with a cost range of \$2.15 to \$12.30/kl for rainwater tanks, while projections are that water from the Traveston dam will cost \$3/kl, around three times the current cost of water in SE Queensland.

An important feature of capturing stormwater is that it will minimise the social impact on rural communities. Whilst the EIS considered social disruption, the fairness of giving up water to a big city, which has more water than it needs, has been ignored.

Brisbane has swiped most of the water from valleys to the south and west and is now moving north. The lack of irrigation water is leading us towards a shortage of milk and vegetables in Queensland, as more and more farmers go out of business. If 70,000 ML of water was available for dairy and horticultural farms, it could result in production worth around \$70 million per year.

The Traveston Dam impact study should have asked city people what they think about taking water from rural communities. People in Perth were asked such a question and less than one-third of respondents agreed with the idea of importing water from rural areas, preferring reuse and desalination options for future water supplies.