

PO Box 201, BEAUDESERT QLD 4285
Mobile: 0407 699 054 Email: contact@larcweb.org
Web: www.larcweb.org
ABN : 49 522 998 528



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

04 April 2007

Dear Sir/Madam,

Re: Inquiry into Additional Water Supplies for South East Queensland – Wyaralong Dam Proposal

This submission is made by the Executive of the Logan and Albert Rivers Catchment Association Inc (LARC) on behalf of LARC. The Executive is comprised of members with extensive experience in catchment management and detailed understanding of the science and issues associated with the Logan and Albert catchment. Members of the Executive Chair of Logan & Albert Task Force auspiced under the SEQ Healthy Waterways Partnership and represent the catchment on the Southern Implementation Groups and Community & Industry Advisory Group managed by the SEQ Healthy Waterway Partnership. The members of the Executive have strong work experience, training, qualifications and representative roles across community, industry and professional environmental management sectors.

Based on flawed Logan Basin Water Resource Plan

The Wyaralong Dam proposal is based upon a modelled surplus of water in the Logan River basin at the Cedar Grove Weir. This surplus is asserted by the Queensland Government in the technical reports prepared for the *Water Resource (Logan Basin) Plan 2007*.

The data used in the modelling for the water resource plan relies upon inaccurate data to make this assessment. LARC provided a detailed submission regarding these flawed assumptions upon the release of the draft Logan Basin Water Resource plan (see attachment 1).

The key relevant points from this submission for the purposes of this inquiry are:

- The past 10 years of the rainfall record are significantly drier than at any time in the preceding 100 years of rainfall data. The modelling uses data preceding this period and has not run scenarios based on the recent climate change influences.
- The current Maroon Dam has been unable to supply irrigators with their current allocation. The water resource plan cannot possibly deliver over and above what has been coming down the river for the past 3 years without further restrictions upon existing water users.
- The hundreds of unsupplemented licence holders do not have meters and they have not been monitoring their use and there is no checking of dam licence provisions to assess the level of water use by unsupplemented irrigators. The model uses rates of application approximately 60% of the locally estimated actual use rates.
- The groundwater data used for the modelling does not take into account the significant increase in the use of groundwater bores across the catchment. There has been no systematic audit of the number, depth and volume of bores in the catchment.

OUR VISION: "The Logan-Albert Waterways will be an increasingly healthy ecosystem supporting the livelihoods and lifestyles of residents and visitors".

Cost and yield

The very high risk and high cost of the harvested water makes this a most unsound water supply option on economic terms alone.

The original decision to opt for the Wyaralong site was based upon the now discredited long term average annual yield of the Teviot Brook of 54,000ML/yr. The use of the long term annual yield is now longer appropriate given the acknowledged need to base assessment of the effectiveness of investment in water supply options on the ability to provide reliable supply during exceptional prolonged drought rather than long term average values that are over inflated by rare very high rainfall events. The grazed, cultivated and irrigated dam catchment area also has high extraction rates of the ground water aquifers. This has increased the need for significant sustained rain to before water flows into the proposed dam site section of Teviot Brook

The Queensland Government asserts, based upon the flawed modelling referred to above, that the combined Cedar Grove weir and Wyaralong Dam will yield up to 21,000ML/yr. This yield is to be taken from the Cedar Grove weir on the Logan River and is not the yield of the Wyaralong Dam on the Teviot Brook which is asserted by the Queensland Government to be 18,000ML/yr.

Brad Witt in his analysis of the available rainfall data reports that *“Every year since 2001/2 (now six years of records), the proposed Wyaralong Dam would have yielded less than half of the anticipated 18,000 ML/yr. The average yield from the dam (to stop it running completely dry) during these last six years turns out to be only between 7,500 and 8,500 ML/year, going as low as 4,500 ML or less in 2002/2003 as the catchment only yielded 636 ML for that year.*

And that *“the average annual contribution for the proposed Wyaralong Dam since October 2002 is only 4000ML/yr. From 2001 it is slightly more at 6,333ML/yr.”*

The topography of the proposed Wyaralong Dam presents a large and shallow water body with an average depth of 5m and over 40% is less than 2m deep. Combined with the very high evaporation rate of 1.7 metres/year, the dam will lose as much from evaporation as it is able to yield (pers. comm. Brad Witt).

The decision to build Wyaralong Dam was based upon incorrect assertions of high catchment yield and low relative cost and this decision is now known to be wrong. The cost of the water from the proposed Wyaralong Dam is now 13 times the original estimates. GHD engineering consultants originally placed the cost of water from the proposed dam at \$4,791 ML/yr (total cost divided by expected yield). The latest estimated construction cost is \$500M but the final cost will not be known until after completion. With a safe yield of less than 8,000 ML/yr and over \$500M the cost is now in excess of \$62,000 ML/yr (pers comm. Brad Witt).

Alternative options

The Queensland Government is both obliged under international best practice for the construction of large dams and have stated that they will undertake to explore and evaluate all reasonable options or alternatives to the use of large dams.

“I wish to stress that if there was a comparable option to the Teviot Brook Dam at Wyaralong that could ensure that the region’s water supply was secured into the future with minimized social impacts, it would certainly be undertaken.” Anna Bligh, Deputy Premier of Queensland, 18th December 2006.

The proposed dams for South East Queensland are not to meet current water shortages rather they are part of the mix of proposed infrastructure to meet future growth in SEQ. The Queensland Government has not presented detailed costed options for: the introduction of localized storm water harvesting treatment and use; localized grey water and indirect potable recycling of sewage water; and maximized use of rainwater harvesting in domestic and commercial development proposals as prerequisites for achieving a sustainable pattern of growth.

For example the use of many smaller localized storm water harvesting has the potential to make a significant contribution to the overall regional water supply but remains poorly explored. There has been limited exploration of the use of storm water storages near water treatment plant that do not need to be large as such a system would be processing the intermediate storm events. The system can include mandate residence time in smaller scale naturalized storage ponds to achieve 'indirect' buffer and ecological processing of contaminants. Such options would also require much lower energy cost for insertion into water network than pumping back up to upper catchment storages such as Wivenhoe.

There appear to be no evidence of a transparent and rigorous assessment by the Queensland Government of these options. The 'Review of the Water Supply Demand Option for SEQ' (White et al) however has explored alternatives in details and clearly makes the case that the construction of these new dams in SEQ are not required, is unsound and unjustified. The Queensland Government have only just announced (3 April 2007) a five-year partnership with CSIRO and others to investigate water supply options. Given the very high environmental, social and economic costs of the dam proposals for limited yield, these alternative options should be given full consideration first.

Systemic inability to provide for genuine environmental flows

The Queensland Government through their water supply corporation Sunwater have to date demonstrated a very poor record of the management of environmental flows from the existing Maroon Dam.

Environmental flows based upon dam releases need an actual allocation of water rather than a modelled volume and requires careful attention to the rate of change in the volume. Sunwater that manage the release of water from Maroon Dam have completely shut down gates and this sudden closing of the gates resulted in mass fish kills immediately downstream and various "strandings" at waterholes further into the Logan River.

Whilst LARC lobbied to have a "tail" added to the gate shut down so it was closed off slowly resulting in a gradual decrease in water over a 2 day period, LARC was told by Sunwater that the amount of water necessary to do this was not being "paid" for by anyone and was therefore not a formal "allocation" and they couldn't "afford" to use that amount of water. As a result Sunwater would not deliver a "tail" to the shut down and the mass fish kills were the result.

Each shut down and start up should include at least a 2 day "tail up or tail down" of the water supply. The gates at Maroon were completely shut down for most of 2005/2006 with only two releases made for urban consumption, during which time any aquatic or terrestrial fauna which had developed hunting and living skills over the past 30 years of constant supplementation of this reach of the river perished as they were not skilled or triggered to move elsewhere to source their water or food.

Assuming a similar commercial arrangement and the lack of accountability, the purported 'environmental flows' from the proposed Wyaralong Dam will have similar devastating results upon

OUR VISION: "The Logan-Albert Waterways will be an increasingly healthy ecosystem supporting the livelihoods and lifestyles of residents and visitors".

the lower parts of the Logan River, instead of the desired intent under the *Water Act 2000* and national guidelines of assisting in the maintenance of the ecological function of the river system.

In addition to these systemic flaws in delivering environment flows to achieve their much needed ecological purpose the monitoring regime that is to be established under the *Water Resource (Logan Basin) Plan 2007* that has been designed on the that assumption that the proposed Wyaralong Dam is in place has received strong criticism by industry and environment sectors in the catchment (Beaudesert Times 28 March 2007).

Impact upon Moreton Bay and Logan River

Moreton Bay is a globally significant water body with very high environmental and social values. Southern Moreton Bay is a major recreational, commercial and environmental part of the whole Bay and is predominately by the influence the condition of Logan and Albert Estuary and the outflow from these rivers.

The internationally recognized Ecosystem Health Monitoring Program Report Card undertaken by the SEQ Healthy Waterways Partnership showed a continuing decline for Southern Moreton Bay from a D+ in the previous year to a D in 2006 and the Logan and Albert Estuaries both failed.

The technical overview report for the Draft Logan Basin Water Resource Plan states quite clearly that there will be impacts downstream on salinity and fish habitat values from the introduction of the proposed water infrastructure.

SEQ Healthy Waterways Partnership modelling of the impacts of the projected growth for South East Queensland states that it would require a scenario of 100% implementation of all available devices for addressing impacts on water quality across the catchment for the water quality in Moreton Bay to stay at its current poor level. Alternatively the high turbidity and nutrients outflows from the Logan and Albert system will begin to affect right across the bay to North and South Stradbroke Islands if we carry on with business as usual.

The inclusion of two new factors to reduce water quality in this catchment will tip the scales and force the Logan River into a reduced capacity to process further nutrients and sediments regardless of the level of infrastructure investment undertaken by other stakeholders.

There has been significant investment of numbers of catchment stakeholders, including all levels of government and thousand of volunteer hours to address the impacts upon Moreton Bay of current land use and management. A decision to knowingly increase the impacts of salinity and decline in fish habitat in southern Moreton Bay by the installation of the proposed Wyaralong Dam without major investment in compensatory environmental infrastructure is clearly unsound.

The Queensland Government (and the Australian Government if it supports the dam proposal) is accountable to the many investors in the Logan-Albert Rivers Catchment to ensure that it reduces its impacts to a zero, just as other future developers within the catchment will be expected to do under new legislation and regulations.

Furthermore in complete disregard of: the community submissions to the Draft Logan Basin Water Resource Plan; the known failing of the Logan Estuary; the decline in Southern Moreton Bay; and the purpose of the *Water Act 2000*, the finalised *Water Resource (Logan Basin) Plan 2007* now excises the middle and lower part of the Logan River system from achieving any significant ecological outcomes.

OUR VISION: "The Logan-Albert Waterways will be an increasingly healthy ecosystem supporting the livelihoods and lifestyles of residents and visitors".

Salinity

Department of Natural Resources and Water monitoring reports that the Teviot Brook is most saline waterway in Queensland outside Murray Darling System. Teviot Brook has very low intermittent flows and will never be able to provide a through flow that will flush the dam. This will only be achieved by the rare extreme rainfall events.

A previously stated the dam site has a very high evaporative rate with as much lost to evaporation as the asserted yield. The proposed new body of water will be starting off saline but this will soon concentrate into a highly saline water body. It will not be a freshwater dam rather a saline water body in a freshwater river system.

The release of highly saline water from this salt water body into Teviot Brook and the Logan River will alter this major regional aquatic and terrestrial biodiversity corridor forever. Saline water that is not extracted at the Cedar Grove along with the overall reduced flow induced by the presence of the dam will increase the length of the estuarine zone to some point further up the Logan River. This is likely to create a longer stretch of brackish water with re-suspension of fine sediments along an increased length of the currently freshwater portion of the river. As previously stated the Logan and Albert Estuaries are already failing. The alteration to the river above this section of the river system will only add to this poor condition rather than ameliorate it.

Endangered flora and fauna

The Wyaralong area has been identified as part of a bioregional wildlife corridor that provides the essential connectivity for maintaining biodiversity. It is part of the matrix of remnant and mature regrowth vegetation that makes the lower part of South East Queensland a Biodiversity Hotspot. The lowland forest and riparian ecosystem are now critical linking areas of state and regional environmental significance (Draft South East Queensland Regional Plan - Office of Urban Management, 2004).

The Wyaralong Dam will flood approximately 1230ha much of which is Endangered Regional Ecosystem 12.3.3 (Eucalyptus tereticornis woodland to open forest on alluvial plains). It is endangered because it has less than 10% of its pre-European extent remaining and this regional ecosystem is under extreme pressure from remnant decline and clearing in the Logan and Albert catchment. The Regional Ecosystem mapping program methodology of the Queensland Herbarium does not map linear regional ecosystems well and more of this endangered ecosystem will be flooded than is identified on the published maps.

The Upper Teviot Brook has a recently observed population of the endangered Queensland Lungfish and the Logan River has been restocked over recent years with the endangered Mary River Cod.

Additional information based upon text from the Traveston Dam

The following points have been summarized and amended from materials prepared by those affected by the Traveston Dam proposal – LARC also submits these points as being equally applicable to the Wyaralong proposal.

There has been a lack of downstream community involvement in the process. There have been a number of public meetings hosted by agents of the Queensland Government in Boonah. There have been none downstream and no acknowledgement in the draft Environmental Impact Statement

OUR VISION: "The Logan-Albert Waterways will be an increasingly healthy ecosystem supporting the livelihoods and lifestyles of residents and visitors".

publicity material of the significant downstream effect of the proposal. The impact upon fishing and the tourist industry in Southern Moreton Bay is not included. It is recommended that the government include in their project cost estimates future compensation for the social, economic and environmental impacts scenarios.

The proponent, Queensland Water Infrastructure Pty Ltd (QWIPL) and the Queensland State Government are effectively one and the same. QWIPL has only one \$1 shareholder (a State Government employee – Premier Beattie) and the majority of the Directors are Queensland Government employees. Further, QWIPL has been granted State Government powers to progress the proposal. The possible future non-government corporate interest in profits resulting from the project casts some doubts as to the validity of the compulsory acquisition of land for the project using government powers. The Queensland Government must not be sole assessor of the impact of this proposal put forward by QWIPL. In effect, this is the proponent self-assessing its own project on behalf of the State and Federal Governments.

The principal people involved in this project are the same principal people responsible for the design, construction, licensing and operation of the Paradise Dam on the Burnett River. The water resource, economic and environmental outcomes promised to the people of Queensland from the Paradise Dam have not been delivered, and we do not wish to see the same mistakes repeated with the Wyaralong Dam proposal.

Perhaps the most worrying aspect of all is that the impacts of climate change on streamflows has not been taken into account in the water planning used to justify this dam. If a conservative approach is used, such as suggested to the Federal Government by the Marsden and Jacobs report to the Federal Government in November 2006, then it becomes clear that the proposed dam would not provide anything like the yields used to justify the proposal economically.

For these and many more reasons, it is essential that the proposal is fully examined in an independent forum such as may be provided by an appropriate form of federal enquiry. Because of the structure of Queensland's parliament, the federal government provides the only layer of independent checks and balances against poor decisions made at the state level in Queensland. It is important that there is an appropriate level of federal involvement to protect the rights of the people of Queensland.

Appropriately with respect to the proposed Wyaralong Dam, the proposal falls clearly within the scope of at least two other major federal policies under which the Federal and Queensland governments have mutual obligations in the form of signed bilateral agreements.

These joint Federal/State policies are

- the National Action Plan for Salinity and Water Quality (NAPSWQ)
- National Water Initiative (NWI)

There may also be relevant commitments under these two policies but are not discussed here:

- National Biodiversity and Climate Change Action Plan (NBCCAP)
- National Agriculture and Climate Change Action Plan (NACCAP)

Since the announcement of the proposal in April 2006, even with the limited amount of specific technical information made available to the public, there has been enough information released and enough time for sufficient analysis to support an argument that the proposal can only result in outcomes that are directly opposed to the objectives of these 4 National Plans. This would suggest that a full investigation of the proposal and the likelihood of it producing a set of outcomes in direct opposition to the intent of these plans is warranted on behalf of the federal government. The Queensland Government is effectively the proponent in this project, and therefore has a clear

PO Box 201, BEAUDESERT QLD 4285
Mobile: 0407 699 054 Email: contact@larcweb.org
ABN : 49 522 998 528

conflict of interest in the administration of its responsibilities under these National Plans. What follows is a very brief summary supporting this argument, with respect to each National Plan.

NAPSWQ:

The Logan River was not included as a Priority Catchment by the Queensland Government under the NAPSWQ for political reasons despite Teviot Brook having been identified as being at risk of increased salinity. The intent of this priority listing is to allocate federal funding to projects designed to slow, halt or reverse the trend in increasing salinity and decreasing water quality in the catchment. As such, the NAP identifies community consultation and involvement as a 'cornerstone' of the plan, and ties the catchment into specific provisions under the NBCCAP and the NACCAP to incorporate climate change scenarios into the hydrological modelling and water resource planning in the catchment.

As previously discussed the Wyaralong Dam will create a highly saline water body and release very saline water into an already compromised Logan River

NWI: Some of the stated objectives of the NWI are to "bring about more profitable use of water and more cost-effective and flexible recovery of water to achieve environmental outcomes" and "more sophisticated, transparent and comprehensive water planning that deals with key issues such as the major interception of water, the interaction between surface and groundwater systems, and the provision of water to meet specific environmental outcomes". In Queensland, this is reflected in a commitment to achieving a consistent set of water resource planning outcomes as reflected in the legislated Water Resource Plans produced for catchments throughout the State.

The final result of the Water Resource Planning procedure for the Logan River has been anything but transparent, and has resulted in legislation which does not adequately protect environmental flow outcomes.

There is ample data and analysis available to show that the Logan River already struggles with low flows and poor water quality, and if current allocations were fully utilized, it could not meet water security expectations and reasonable environmental flow objectives. The Wyaralong dam proposal and the other water infrastructure proposed for the catchment can only result in the significant further over-allocation of the system and severe degradation of environmental values within the catchment. When there are significantly more cost-effective means of providing a similar level of water security to SE Qld, this outcome is in direct opposition to the objectives of the NWI.

We thank you for the opportunity to make a submission to this very important inquiry and we look forward to hearing of the outcome of your deliberations.

Yours Sincerely



Cameron Smeal
Vice President - Logan and Albert Rivers Catchment Association Inc

OUR VISION: "The Logan-Albert Waterways will be an increasingly healthy ecosystem supporting the livelihoods and lifestyles of residents and visitors".