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### **Submission to Senate Inquiry into Additional Water Supplies for South East Queensland - Traveston Crossing Dam Rocky Cutting Option**

#### **FOREWORD**

Rocky Cutting Dam is not cutting edge technology but cutting edge destruction in a rocky gorge. It is stone age dinosaur behaviour in a Gondwanic Regugium where rare and ancient plants and animals will be drowned in a watery grave or destroyed by monstrous bulldozers. The wall itself will be an environmental disaster whilst downstream, biodiversity, river health and estuarine water quality will be impacted by reduced freshwater flows. The lower Tweed is already “stressed”. (NSW Govt. assessment)

The dam is 19<sup>th</sup> century engineering using 20<sup>th</sup> century data to grapple with a 21<sup>st</sup> century problem which requires 21<sup>st</sup> century thinking.

This proposal was rejected in 1972 because **“of the high costs which would have been involved in acquisitions and the relocation of roads and services”**. (p13, Dept. of Public Works NSW, 1977).

The proposal should never have reached the desktop survey stage and must not proceed further unless the commission wants another national stoush like the Gordon below Franklin fiasco.

#### **SUMMARY**

The SMEC Report has ten (10) serious shortcomings:

1. There has been no consideration of Global Warming even though CSIRO scientists and other internationally recognised climatologists consider that serious changes to Australia's rainfall patterns will be significant.

The east coast below the Tropic of Capricorn is expected to become drier. Therefore, drier periods will become longer and more frequent. Queensland has reduced expected yields by 16%, which is considered conservative. A reduction of 20-25% may be more realistic for the life expectancy of the dam. Global Warming will become more severe in the future.

2. SMEC have assumed a minimum annual average yield and demand of 20,000 ML. No percentile (100 year timeframe) figure has been used. Thus in a long dry period, once the 35,000ML storage is used up, there is no likelihood of recharge. The storage capacity is simply not nearly large enough for this dam to be considered a cost effective drought-proof supply option. There is not a sufficient buffer between the 35,000 ML total capacity and an annual demand of 20,000 ML in a dry period.
3. In 1972, a similar dam at Rocky Cutting was rejected because of the high cost of property resumptions and the high cost of road and infrastructure replacement. These costs in 2010 will be far higher.
4. The current drought is probably exacerbated by Global Warming, which is largely caused by historically high greenhouse gas emissions. Pumping water over the McPherson Range is very likely to accelerate (in a tiny way) the Global Warming phenomena, which in turn will tend to make the bio region drier. An inherent structural contradiction in the proposal, which fails to invoke the Precautionary Principle and to lead by example.
5. The site chosen is right in the middle of the CERRA World Heritage Caldera National Parks estate. Biodiversity and threatened species populations in Mt Warning/Wollumbin and surrounding National Parks is the highest for NSW and for almost all of Australia's east coast. It would be extremely bizarre, irresponsible and unacceptable to construct a monstrous dam in the middle of an internationally recognised wildlife corridor. Many threatened species would be drowned.
6. The lower Tweed is a stressed system according to government surveys. A significant reduction in freshwater flow, especially during dry period (the high percentile), will severely impact on water quality and marine life below the dam.
7. The social costs will be very significant because it is likely that the majority of Tyalgum village, as well as many rural residences and farms, will all be submerged or rendered useless by the dam.
8. Three abandoned cattle dips, farm chemical dumps and house sites treated with termite poisons will cause chemical pollution. Highly erodible soils, steep slopes and high precipitation rates will cause siltation and turbidity. High water, air and surface temperatures will cause high rates of evaporation with resulting significant losses in capacity.

High vegetation density rates, high surface temperatures and significant variation of temperature with water depth will cause stratification and entrophication.

None of the above factors are canvassed in the Report but are seen at Doon Doon.

9. Coastal rainfall rates are expected to remain comparatively high when compared with inland sites. Most of the targeted consumers reside on or near the coast. The most cost effective and least damaging supply option is a massive rollout of subsidised rainwater tanks, ponds and wetlands. The area of roofs will keep pace with the projected population increase. Wind does most of the work, households can filter and recycle if they wish.
10. The Terms of Reference for this Report are not clearly stated but are too narrow. The background data is poor and the assumptions facile. This is not a proper document upon which to base decisions which will cost millions of dollars and cause immense environmental damage. There is no discussion on alternatives to the dam proposition, which is not ecologically sustainable.

## CLIMATIC CONTEXT

- For the past fifteen years or more, the Caldera Environment Centre (CEC) has been attempting to get governments to acknowledge and plan for Global Warming.
- For the past eleven years the Commonwealth Government has steadfastly refused to take Global Warming seriously and to act meaningfully.
- CSIRO and British Antarctic Scientists believe that Global Warming and climate change is much more dire than the UN Intergovernment Panel of Scientists predicted in their conservative recent Report.
- This Report makes **no** allowance for the predictions about rainfall and climate change, which the CSIRO and other climatologists are now predicting for Australia's east coast.
- The data presented for the argument centred on the Mt Warning erosion caldera compares 100 year old rainfall data for SE Qld. with 30 year old data for Tyalgum which, after 30 years continuous residence, I can confirm first hand are erroneous conclusions. This bioregion has also experienced 10 years of drier weather like the rest of Australia. We have not had a major flood for many years.
- The most reliable rainfall recently has been along the actual coastline itself. This is where the water is wanted for on-site consumption and where there are 100's of square kilometres of clean roofs waiting for tanks to collect the rain which falls liberally upon them from the grey clouds in the sky.
- The lack of any consideration given to Global Warming makes the Report worthless as a sophisticated analytical tool.

## GEOGRAPHIC CONTEXT

- The Rocky Cutting Dam site lies in the middle of the Oxley River in the middle of the Mt Warning Caldera and in the middle of the Central Eastern Rainforest Reserves of Australia World Heritage National Parks centred on Mt Warning National Park itself. The Oxley River and Rocky Cutting gorge is on the edge of Mt Warning National Park and the dam will create a serious barrier across a recognised wildlife corridor between National Parks, Crown lands and forested escarpments. The dam will present a considerable barrier to mammals of all types.
- No geological survey material was presented in the Report.
- The Oxley River (middle Arm of the Tweed) represents a major part of the estuarine flow. Extraction from the middle Oxley will affect lower Oxley and lower Tweed River health.

## HYDROLOGICAL CONSIDERATIONS

- The rainfall and stream-flow data is purely historical and no forward projections are presented despite Global Warming and anticipated reductions in water availability in the Tyalgum district. The stream-flow data for Tyalgum is limited to the period 1969-1982. (SMEC Report, p18, Table 3.1).
- In-Valley demands for the lower Oxley have not allowed for future residential and farming needs nor for environmental flows because THERE WAS NO REVIEW FOR ROCKY CUTTING IN 2006 as stated in this Report (p24) and figures **for “the Tweed system yields are net of environmental requirements”** (SMEC, p27)
- The method of determining the storage requirement is based upon the desired annual average yield of 20,000 ML. An assumption was then made about the storage size of 25,000 ML to service this yield. However because of Global Warming and the likelihood of prolonged drier periods and uncertainty about weather patterns, the buffer of 15,000 ML could soon be exhausted without any certainty of timely recharge.

The annual average demand based methodology is not as realistic or as reliable as a percentile or 100 year timeframe method. Queensland has adopted a 16% reduction in yields but a 10-25% reduction is probably more realistic given the anticipated life expectancy of the proposed barrier.

- There is no discussion about the proposed hydrological efficiency and evaporation rates.
- Problems of pollution, eutrophication, surface organisms and weeds, stratification or other site-specific maintenance problems for a major artificial water body and barrier in the middle of World Heritage National Parks are not considered.
- **“Regulation of the Oxley River for diversion to Queensland is a significant issue for the Tweed Shire. The levels of regulation below the Rocky Cutting option on the Oxley River is 26% (for a Queensland diversion limit of 20,000 ML/yr).**

***The SMEC Report also adds:***

***“If the measurement location were to be Brays Park Weir (356,000 megalitres per year), with Tweed’s future demand of 28,000 megalitres per year, the levels of regulation from the Rocky Cutting option would be about 11% and 13.5% for diversion limits of 10,000 and 20,000 megalitres per year respectively.***

***However, this does not change the fact that at the Rocky Cutting dam site there will be 26% regulation of flow (it is acknowledged that water is released downstream of the proposed dam to flow to Bray Park Weir for subsequent diversion to QLD).*** (TWS Report, p21)

## HABITAT AND VISUAL CONTEXT

- The Rocky Cutting gorge and adjacent Mt Warning National Park represents a Gondwanic Refugium with many unique characteristics including numerous endangered and vulnerable species of plants and animals. The Caldera National Park's form part of the CERRA estate and represent the highest levels of national biodiversity and threatened species. Some extremely rare trees will be submerged by the dam and many animals, especially mammals, will be severely impacted.

A species list for a small site near the dam wall gives some indication of the extremely high habitat value of the inundated part of the Oxley gorge. (see Appendix 1)

- Down stream ecological health and biodiversity will decline further. The Tweed is already a stressed system as noted by the Healthy Rivers Commission, March 2003, p36:

***“In terms of overall condition, most north coast river catchments are in ‘better than average’ condition compared to other NSW coastal river catchments. However, the Richmond, Tweed and Brunswick are in worse than average condition. Half of the 159 north coast sub catchments are under high environmental stress, while one in six have been identified as having high conservation values.”***

The rare Giant Barred Frog (*Mixophyes iteratus*) could suffer from the proposal.

- Visually, the giant and monstrously high concrete dam wall will totally destroy the visual amenity of the Rocky Cutting gorge, which is a popular parking, viewing, kayaking and swimming place.

## SOCIAL AND POLITICAL CONTEXT

- After 11 years of sitting on his hands concerning climate change, suddenly at the 59<sup>th</sup> minute before the midnight of a federal election, the Prime Minister and the Water Minister have announced – apparently with little consultation – that dams are needed in NE NSW to solve water consumption problems in SE Qld. There is no evidence of other conservancy strategies being canvassed. Why should the creatures of the Mt. Warning erosion Caldera suffer because of a lack of wise strategic planning in SE Qld? Why should the legitimate future water needs of the Caldera suffer in order to satisfy the profligate and unsustainable life style of the Gold Coast, many of whom are merely visitors? Why has the Prime Minister refused to take precautionary steps to remedy Global Warming, which could help to ameliorate the worst impacts of the current drought? A drought which has also impacted on this bioregion.
- The option of a dam at Rocky Cutting has been rejected several times in the past fifty years, because of high land resumption costs and essential new infrastructure (roads, community facilities), which would have to be reinstated or upgraded. But more importantly, no local or state government would have the audacity to insist on such an outlandish adventure.
- Although stated in the Report, there was no review of any Rocky Cutting proposal in 2006. Only a desperate government removed from the local on-site realities would contemplate this proposal. There are other cheaper and less damaging options to supply fresh potable water to SE Qld without any need for pipes and pumps. They are called rainwater tanks and stormwater harvesting facilities (ponds, tanks, wetlands etc).

- The Report (p34, 3.3.2 Environmental Legislative Requirements) states that:

***“The politics of the legislation requirements would need attention, especially EIA actions and NSW National Parks legislation”.***

The implication is that Environmental concerns are merely political difficulties rather than scientific constraints.

- The Report also states (p37 Community Involvement):

***“The NSW government in recent times have established Community Management Authorities (CMA)”***

The implication is that the community can be managed rather than managing the catchment.

- We believe this proposal is politically inspired and is not a fair dinkum rational approach to water consumption in SE Qld.
- The social and economic costs caused by drowning large areas of the Oxley River valley and Tyalgum village are simply unacceptable. Road and infrastructure replacement costs would be huge and cause massive dislocation. For these reasons alone the Rocky Cutting dam fails to be a viable option.

## **COST CONTEXT**

The Rocky Cutting site has been rejected in the past by the NSW Department of Public Works, Tweed Shire Council and consultants to Tweed Shire Council because the cost of land resumptions and infrastructure relocation costs were too high. The environmental and monetary costs today are even higher. The political costs will also prove to be perilous.

In today's climate of Global Warming, CO<sub>2</sub> and greenhouse gas emissions are no longer acceptable. The concrete wall and pipeline with five pumps will have high capital and greenhouse gas costs at the installation stage.

The running costs of five large pumps is simply ruinous in greenhouse terms, even if a 40% rebate can be extracted by a series of generating turbines on the north (downhill) side of the McPherson Ranges. When we subtract a 10-15% loss through leakage evaporation and inefficiencies, the rebate would be more like 25%. Not good enough when compared to rainwater tanks where the “pumping” is provided by the wind blowing the clouds over the target consumer, roofscape, and when solar and windpumps can pump the collected and filtered rainwater from collection tanks up 2 or 3 metres into header tanks.

The recent study by consultants to the Australian Conservation Foundation has shown that heavily subsidised tanks for the majority of coastal residents in SE Qld., would be a cheaper solution than building the Traveston Crossing or northern NSW dams.

## STRATEGIC CONSIDERATIONS

- The National Water Commission should have considered the options of on-site rainwater collection, gray water recycling, waterless composting closets and stormwater harvesting etc., before the knee jerk, 11<sup>th</sup> hour pre-election reaction of commissioning this Report.
- THERE IS **NO** CONSIDERATION OF ANY STRATEGIES TO REDUCE WATER CONSUMPTION.
- We contend that the price of piped municipal water does not reflect real environmental costs. Infrastructure costs, running costs and usage patterns are simply ecologically unsustainable.

E Hopkins  
Coordinator

31 May 2007



## APPENDIX LIST

- Appendix 1** Species List for part of Rocky Cutting Gorge
- Appendix 2** Map of resumed area for Tyalgum village (based on 70m AHD)
- Appendix 3** Comment on the SMEC Report (believed to be compiled by The Wilderness Society) 8 May 2007