

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

Inquiry into Additional Water Supplies for South East Queensland - Traveston Crossing Dam (including) the examination of all reasonable options, including increased dam capacity, for additional water supplies for South East Queensland.

**Dear Secretary**

Attached are a Word format and a PDF format copies of our submission to this Inquiry.

This submission describes various compelling reasons why damming the Oxley River is not a 'reasonable option' in terms of your inquiry. It is our view that Mr Turnbull's 'promising option' of such a dam does not meet the Terms of Reference of your Inquiry.

We will be seeking a decision from Mr Turnbull that the Oxley option is not for consideration in terms of the Inquiry. If that situation eventuates then our submission would be redundant and not relevant to your Inquiry.

However it is expected that we will receive no such decision from Mr Turnbull. Under those circumstances we would expect to be given a chance to provide further oral evidence to the Inquiry.

Given the areas that will be affected by any decisions arising from this Inquiry it would be reasonable to expect the Inquiry to hold oral evidence sessions in the Northern Rivers regions. To that end the Tweed Shire Council chambers would make an excellent venue.

If nothing else it seems reasonable to expect some members of the Inquiry to gain first hand knowledge of the areas under consideration before making any findings on this matter. Therefore we invite members of the Inquiry to visit the area as soon as possible. We understand that members would not want to be overwhelmed by any public action and therefore if members were to attend the area by arrangement with our organisation and/or the Council then we would cooperate by restricting public knowledge about such a visit.

Please advise the likely dates and locations at which oral evidence may be given.

The phone and email contact details of 3 Committee members are provided below in case of communication difficulties.

Peter Bennett (02) 6679 3851 - [P.P.Bennett@optusnet.com.au](mailto:P.P.Bennett@optusnet.com.au) - Chairman.

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We look forward to an opportunity to address the matters in our submission at length.

Regards

Peter Bennett

**submission to**

**the Senate Standing Committee on Rural and Regional Affairs  
and Transport**

**Inquiry into water supplies for south east Queensland**

**on**

**the SMEC report**

**Integrated water supply options for north east New South  
Wales and south east Queensland**

**from the**

**Save the Caldera Rivers Campaign Committee**

**contact**

**Peter Bennett: Chairperson: [bennettp@optusnet.com.au](mailto:bennettp@optusnet.com.au)**  
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### **the committee**

Upon becoming aware of the Snowy Mountains Electricity Commission report on water supply options that identified a dam at Rocky Creek Cutting on the Oxley River near Tyalgum as one of the five options for further investigation, the Tyalgum District Community Association called a community meeting.

This was attended by over 300 people from both the local and broader Tweed catchment communities. At one of the follow up meetings the community became aware of the Senate Inquiry and a steering committee 'Save the Caldera Rivers Campaign Committee' was elected. While the Committee are at this stage focussed on impact issues associated with the Rocky Creek proposal, they also intend to review any of the other Tweed catchment options that were considered during the SMEC study should these be revisited

### **the SMEC study**

As the author's of the SMEC study themselves highlight, their Terms of Reference were limited in both scope and timeframe. In addition, they appear not to have had access to all the up to date technical data available and were unable to obtain input from the relevant New South Government agencies.

From the initial forty water sourcing options considered within the Clarence, Richmond and Tweed River catchments, twenty-six were selected for further study. Fourteen of these were within the Tweed Basin which is surrounded by a caldera of high scenic amenity and environmental significance. One of these, Option TW7 a dam on the Oxley River at Rocky Cutting in the Tyalgum District, was among the five options recommended for further investigation.

This option proposes a 35000 ML dam that would release water to Bray Park Weir from where it could be pumped via five pumping stations to the Nerang River, with the capability of providing 20000ML/annum to south-east Queensland. Although identified as the cheapest of the five options short listed for further investigation, of the 14 options considered within the Tweed catchment, Option TW7 was the most expensive in terms of projected capital costs and the second most expensive in terms of estimated annual running costs.

As a desk top study the report contains minimal consideration of environmental factors and is missing any consideration of the social, broader economic or cultural heritage criteria that may have influenced this preliminary options analysis. Below we have also raised some issues of concern regarding technical aspects of the study as it was scoped. We believe that before any informed decision can be made, far more detailed on the ground analysis and a broad consultation program will be required.

This submission provides an outline of some of the broader issues within the Tweed caldera region with specific reference to option TW7 that we believe would require detailed data gathering and analysis as part of any further investigations.

### **environmental values**

#### ***caldera region***

Tweed Shire is in the NSW North Coast Bioregion recognised as one of Australia's most diverse in terms of its natural terrain, flora and fauna. Much of the Shire lies within the erosion caldera of a 29 million-year-old extinct shield volcano. The volcanic plug, Wollumbin (Mount Warning), and the remaining caldera contribute to both the biodiversity of the area and the region's outstanding scenic values. This area contains a number of National Parks three of which, the Mount Warning (Wollumbin), Nightcap and Border Ranges Parks, are World Heritage listed.

The Shire incorporates eleven ecologically significant areas considered of high conservation value. Bushland constitutes nearly 48 percent of the Shire. The Macleay- McPherson overlap identifies a region, including Tweed Shire, as the transition between two phyto-geographic zones - the region supports both tropical and temperate species, many of which are at the limit of their range.

In terms of faunal species, the Tweed has one of the highest vertebrate diversities of any region in Australia. Figures contained in the Australian Conservation Agency's 1996 State of the Environment Report suggest that the region supports more species of bird, fish, amphibians and mammals than Kakadu, and a similar number of reptiles. Habitat loss caused by land clearing has helped to create a large list of rare, vulnerable and endangered species within the region.

#### ***oxley river and proposed dam site***

The Oxley River and its tributaries form the middle arm of the Tweed River. These streams have eroded the materials that once formed the original shield volcano of which Wollumbin was the core. The resultant broad dished valley to the north-west of the mountain defines the Tyalgum District and encompasses the areas and local communities of Byrill Creek, Brays Creek, Eungella, Pumpenbil, Tyalgum Creek. and Limpinwood. The valley is surrounded by National Parks, with Wollumbin, the McPherson Ranges, The Pinnacle and the Border Ranges being significant features.

The endemic vegetation in proximity to the proposed impoundment is the endangered ecological community - Lowland Rainforest on Floodplain. This is a rainforest community that now occurs only as small remnants in scattered localities on the New South Wales north coast with less than 1000ha in total remaining. Individual species within this endangered community are also identified as endangered, these include: *Diospyros mabacea* (Red-fruited Ebony), *Isoglossa eranthemoides*, *Phyllanthus microladus*, (Brush Sauropus) and *Melicope vitiflora*; recorded vulnerable species include *Syzygium hodgkinsoniae* (Red Lilly Pilly) and *Syzygium moore* (Coolamon). A number of other endangered and vulnerable species are also likely to occur. This habitat supports a rich faunal diversity with platypus occurring in the Oxley River.

### **scenic amenity and character**

#### ***caldera region***

The caldera has a landscape of high natural beauty characterised by a series of valleys surrounded by a ring of high, forested ranges containing a number of steep escarpments, several of which provide spectacular lookouts.

#### ***the tyalgum district***

The Tyalgum District is served by the picturesque and historic village of Tyalgum located where Tyalgum and Pumpenbil Creeks converge to form the Oxley River. A secluded and serene rural landscape complements the spectacular backdrop of the caldera.

### **tyalgum district community profile**

European settlement of the District was established around the logging and beef and dairy industries. Today logging has ceased and the rationalisation of the dairy industry has resulted in a number of properties being sub-divided into smaller parcels. Nevertheless agriculture remains a core part of the local economy. This presently includes beef and dairy farming, aquaculture, organic farming, crops such as bananas, coffee and herbs; together with farm forestry and plant nurseries. Cottage industries have emerged to value add to many of the local crops.

In recent times artists and craftspeople have established local businesses, and information technology has allowed businesses to be conducted from home offices. Tourism based on the district's natural and rural landscapes, country lifestyle, festivals, arts and crafts and outdoor recreational activities, is a growing industry.

However, a significant proportion of the community work off farm and away from the local area in the town of Murwillumbah 22km to the east and across the broader Tweed region. Current access to these areas is via the Murwillumbah – Tyalgum Road, part of which would be submerged by the proposed dam on the Oxley.

Murwillumbah is the main service centre for the district:: providing private and secondary education, medical services and hospital, government agencies, aged care etc

### **community values**

The community places high value on the outstanding natural and rural landscapes of the district, the high conservation value of local flora and fauna, and on the local Aboriginal cultural heritage and the European heritage significance of their village. They are committed to sustainable use of local resources in order to retain the unique natural and rural character of their environment.

### **cultural heritage**

The caldera area including the Tyalgum District is the traditional country of groups belonging to what is today referred to as the Bundjalung Nation. The area contains a number of places of particular significance to the Traditional Owners. Tyalgum Village has an historic streetscape and Tweed Shire Council is currently preparing a Local Area Plan designating this as a Heritage Precinct. A number of individual Village buildings are also to be individually Heritage Listed within the Plan.

### **water infrastructure in tweed shire**

Tweed Shire Council is currently planning for future water needs and deciding on the preferred option for new water supply infrastructure. It is our understanding that a dam at Rocky Cutting is not one of the options being considered. The Rocky Cutting Dam proposal was previously examined in the 1970s when the Shire was developing its current water infrastructure. While modern engineering can make many things possible, at that time there were concerns about the geology of the site and the cost of the project. Importantly also the 1970s report highlighted the high social impact of the proposal (Gutteridge,Haskins&Davey, Report to Tweed Shire Council on Augmentation of Tweed District Water Supply, Feb. 1975)

*Social aspects consequential to construction should also be considered, particularly if a large proportion of the farming or grazing area available to the local community is submerged. This may destroy the area commercially and socially. The Rocky Cutting proposal is relevant in this regard because of its effect on Tyalgum where 35 houses , some shops and the sawmill would have to be moved.*

As a result of these combined factors the proposal was discarded in favour of a site on Doon Doon Creek – the present Clarrie Hall Dam. Council also purchased land on Byrill Creek to hold for future requirements. This is one of the options currently under consideration. The Shire is committed to the principles of ESD and in recognising the finite nature of water resources and the future consequences of global warming, has moved to increase the price of domestic water. This will hopefully both assist in curbing demand and in funding future infrastructure needs.

With respect to the proposal for the Shire providing water to supplement supplies in south east Queensland, it is our understanding that the Queensland Government has indicated they do not wish or require augmentation of supplies from sources in the Northern Rivers region.



## some issues and potential impacts

### **the inundation zone**

The SMEC report provides figures for a dam with a capacity of 25-45000ML. Based on an estimate of average annual inflow, a storage capacity of 35 000ML was proposed. However, the study failed to indicate the storage level that would be required to impound that amount of water. Some of the data on which the TW7 proposal was evaluated was sourced from reports that were compiled some 30 years ago and which contain conflicting information regarding the storage level required.

From an analysis of these previous studies we have calculated that for a scenario of a dam to contain 35000ML, a probable full supply level (spillway level) would be in the order of 61-63 metres AHD. In addition, allowance for around an additional five metres would be required to allow for flooding over the spillway. This would result in a final resumption level of approaching 70 metres AHD and a dam with a surface area of over five square kilometres.

### **some likely environmental impacts**

A 35000ML dam at Rocky Creek Cutting would have a non-mitigatable impact on the area of endangered Lowland Rainforest on Floodplain to be flooded, with significant accompanying loss of habitat. Flooding would also sever wildlife corridors.

The proposed dam site adjoins the Wollumbin National Park and would impact on a small section of the northern edge of the Park. Necessary re-alignment of the Tyalgum-Murwillumbah road would be likely to further impact on the Park and habitat connectivity into and out of the World Heritage areas.

There is also potential for alteration to the flow regime, groundwater levels etc. to have identifiable downstream impacts.

### **some likely social, economic and community impacts**

Based on the scenario of an impoundment to contain 35000ML, the 1970s report earlier quoted was correct in its analysis of the extremely high social and economic impact of the proposal on the Tyalgum District community.

At that size, when at full capacity, the dam would inundate almost half of the Tyalgum Village, large areas of prime agricultural land, significant sections of the Tyalgum-Murwillumbah Road, and sections of the rural road network connecting local areas with each other and the main road. The fabric of the town and the Tyalgum community would cease to exist: with the business area, the community hall and the local school, as well as a number of Village houses predicted to be directly impacted. The integrity of the Village Heritage Precinct would be lost.

Economically, disruption to the local road network during the dam construction phase could be expected to impact on connectivity between local communities and between the district and the service town of Murwillumbah. It

## some issues and potential impacts

can be expected that the growing nature and rural based tourism of the Tyalgum District and the broader Tweed hinterland would be impacted on at both the construction and operational phases of the dam development. The increase in tourism infrastructure on the Tweed coast, as well as greatly improving day tripper access from Brisbane, have seen this area develop a number of recognised scenic tourist loops both from across the McPherson Ranges and from the Tweed coast. The District's agricultural economy also has potential to be impacted, for example, both directly in terms of loss of good quality agricultural land and indirectly with potential restriction on agricultural practices within the dam catchment and on downstream irrigators.

### **scenic amenity and landscape integrity**

The whole caldera region represents a landscape of international significance with high biodiversity and unique geological landforms. While the proposed dam would not directly physically impact on the specific World Heritage areas within the caldera, it will impact on wildlife corridors into those areas, reduce biodiversity, and significantly impact on natural scenic amenity and landscape integrity. This has both biological and economic implications for the region.

### **further technical considerations**

Concern has been expressed regarding a number of technical issues associated with the SMEC study, for example:

- *Yield:* There is some question regarding assumptions on average annual yields and the subsequent comparison between options. While the historical flow records that exist for the stream flow recorder at Eungella show an average flow of 140000ML, flow in recent years has not approached anywhere near that average. Decreases in potential yields resulting from climate change may also have been a useful parameter for analysis of both yield and option costs. The approach to yield also appears not to have assessed potential hydrological efficiency.
- *Contour surveys:* The only level information available for the proposed dam storage is that obtained from the 1:25000 topographic map and only 10 metre contours are indicated in the storage. This is considered inadequate to determine a storage volume to any degree of accuracy and it is considered that estimates based on this data may have an error of up to 20 percent.
- *Geology:* The Rocky Cutting site is located in an area of complex geology and to date has only been the subject of minor geological investigations. Detailed investigations are required in order to identify whether materials such as sandstone, coal seams or other pervious material that would render the site unsuitable for dam construction are present.

### **sustainability**

Australia is one of the driest places on Earth and drought cycles are a naturally occurring phenomena. It is anticipated that climate change will

## some issues and potential impacts

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exacerbate the impact of drought on many areas. Given these factors it would appear prudent that any study on water supply options should incorporate a consideration of the broader issues of sustainability. Building more water storage is not the only strategy available. For example, strategies for the continued and increased modification of consumer behaviour by both regulation and subsidy through initiatives such as: permanent water restrictions, tiered pricing, increased regulation and subsidy for retrofitting water tanks, grey water recycling etc and requirement for these (subsidised) features on new dwellings. Planning to ensure a correlation between population size and available finite resources is also a key factor..

Consideration also needs to be given to the environmental impacts of each option. For example, the energy required for five pumps to lift the water over the McPherson Range.

### **costings**

Assumptions of land resumptions are equal across all options. It is considered that a figure of \$10 million for the Rocky Creek Cutting option is well below the estimated cost of resumption of good quality agricultural land, rural acreages and properties in Tyalgum Village for both the dam site and the major and minor road realignments necessary.

## conclusion

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It is our belief that no informed policy or financial decisions should be made on the water supply options considered in the SMEC study without, as their report in part points out, substantial on the ground analysis and data gathering and a broadened set of criteria (social, economic, environmental, cultural heritage, cost and sustainability). In addition some baseline technical assumptions may need to be revisited.

The release of the SMEC report, followed by the calling of submissions to the Senate Committee allowing an extremely short timeframe for response, has had a negative impact on the communities likely to be directly effected by the adoption of Option TW7. Levels of concern and uncertainty are high. These have been heightened by a complete lack of any public consultation to date.

It can be predicted that, given recent publicity, an immediate economic impact will be the inability to sell properties likely to be directly effected, as well as in the wider District as people making lifestyle choices to move to the area hold off purchasing until there is more clarity on the situation. Some downward movement in property prices in the areas of immediate impact could also be expected.

Through the Save the Caldera Rivers Campaign Committee, the Tyalgum District community provide the following recommendations for the Senate Committee's consideration.

### **recommendation 1**

Prior to any further expenditure being undertaken on the five short-listed water options, the Senate Committee members undertake a familiarisation visit to each location and meet with the local communities and other potentially effected stakeholders.

### **recommendation 2**

Any further investigations should be within the accepted parameters of a comprehensive environmental impact assessment including potential impacts at both the construction and operational phases; and assessed for the proposed storage site, the pipeline corridors and points of discharge.

This would be expected to include: the necessary on the ground technical investigations; detailed environmental analysis; potential social and economic impacts at both the local and regional levels; an assessment of the impacts on the caldera's broader environmental values and landscape integrity and scenic values; potential impacts on Aboriginal Traditional Owner and historic cultural heritage values; a comprehensive public community consultation program; consideration of climate change and sustainability factors; and full and revised costings

**recommendation 3**

That the Tyalgum and District community, through the Tyalgum District Community Association's Save the Caldera Rivers Campaign Committee, are provided with the opportunity to have input into the draft Terms of Reference (ToR) for any follow up studies, as well as to review the proposed final ToR.

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