Submission No 39

INQUIRY INTO ADEQUACY OF WATER STORAGES IN NSW

Organisation: Tweed Heads Environment Group Inc

Date received: 31/07/2012

Tweed Heads Environment Group Inc.

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27 July 2012

The Director,
Standing Committee on State Development,
Parliament House
Macquarie St, Sydney
NSW 2000

Dear Sir,

Re: Inquiry into the adequacy of water storages in NSW by the Standing Committee on State Development

Tweed Heads Environment Group Inc. wishes to make a submission to the Standing Committee on State Development on the adequacy of water storages in NSW and particularly in relation to current and future water storage of the Tweed Shire.

The Terms of Reference for the above Inquiry provides that the Standing Committee on State Development inquire into and report on the adequacy of water storages in NSW, and in particular:
a) the capacity of existing water storages to meet agricultural, urban, industrial and environmental needs,
b) models for determining water requirements for the agricultural, urban, industrial and environmental sectors,
c) storage management practices to optimise water supply to the agricultural, urban, industrial and environmental sectors,
d) proposals for the construction and/or augmentation of water storages in NSW with regard to storage efficiency, engineering feasibility, safety, community support and cost benefit,
e) water storages and management practices in other Australian and international jurisdictions,
f) any other matter relating to the adequacy of water storages in NSW.

Background
In regards to this matter, Tweed Shire Council business paper dated 17 July 2012 advises:

1. That the NSW Legislative Council's Standing Committee on State Development has invited Tweed Shire Council to make a submission to the Inquiry on its adequacy of water storage in the Shire.
2. Council has approved that a submission to the Inquiry should be submitted along the guidelines of Council Meeting (and Business paper) dated Tuesday 17 July 2012, Pages 325-330.

Tweed Shire Council business paper dated 17 July 2012 states the following draft response for its proposed submission to the Inquiry:

- Tweed Shire Council is responsible for the supply of water to the urban and industrial population of the shire.
- Since 2010, two preferred augmentation options have been either (i) recommended by Council officers or (ii) identified by Council, and both are water storages, namely:
  Increasing the capacity of the existing Clarrie Hall Dam at Doon Doon Creek
  Building a new water storage on Byrrill Creek.
  (Council Meeting Date: Tuesday 17 July 2012, Page 327)

In the following Terms of Reference for the above Inquiry Tweed Shire Council business paper dated 17 July 2012 states:

(a) The capacity of existing Tweed water storages to meet agricultural, urban, industrial and environmental needs - **(Tweed Shire Council)**

Council operates three water storages, namely Clarrie Hall Dam, Bray Park Weir and Tyalgum Weir.

Water Storage	**Useable Storage Volume (ML)**
Clarrie Hall Dam	15,000
Bray Park Weir	640
Tyalgum Weir	7.5

Tweed Shire Council further advises that:

- The major network (Tweed District Water Supply - TDWS) draws its water from the Tweed River, upstream of the Bray Park weir. The weir acts as a tidal barrage, preventing salt water from the estuary getting in to the fresh water supply. Flows into the weir are supplemented by releases from Clarrie Hall Dam situated on Doon Doon Creek - a tributary to the Tweed River.
- Clarrie Hall Dam is only used to supplement the town water supply for urban and industrial needs. For much of the year it is natural flows in the Tweed River that supply our water. Water is only released from the dam when flows in the freshwater section of the Tweed River fall below 95%, usually during winter and spring.
- These releases contribute to environmental flows in the river during the drier months of the year, with the water flowing down Doon Doon Creek and into the Tweed River upstream of Uki village. It then flows down to Bray Park Weir, where it is extracted, treated and pumped via a network of over 660km of pipes to 23 reservoirs throughout the shire.
- The Water Sharing Plan for the Tweed River Unregulated and Alluvial Water Sources was gazetted on 17 December 2010 and contained Clause 48 (1) prohibiting construction of a dam at Byrrill Creek.
  The proposal for a future dam at the site has been public knowledge since the mid 1980's and has been incorporated into Council's LEP since 1987 as a Potential Water Supply Catchment Area.
  During that time Council has purchased the majority of property likely to be inundated by a future dam.
  Council has requested this decision be reconsidered.

Our Comment

Tweed Heads Environment Group Inc. as a member of the Community Working Group (CWG) for the Tweed District Water Supply Augmentation Options Study made the following representation on 7 April 2010, to Tweed Shire Council near the close of the community consultation:

Communication dated 7 April 2012
"At the last meeting of the Community Working Group (CWG) on the 1 March 2010, a majority of Community members delivered a letter dated 28 February 2010 to Council requesting an expert Independent Review of the Tweed District Water Supply Augmentation Project.

To date acknowledgement of receipt of this communication has not been received and I look forward to receiving acknowledgement of our request and when consideration of our request will be completed.

WaterTSC advised CWG Members in December 2009 that: "an expert review of the entire process and EIS recommendations will be carried out by an independent consultant to give Council further certainty before applying for development approval."

Tweed Heads Environment Group Inc. advises that an Independent study by Council has still not been carried out.

Such a study should review the Tweed Shires Demand Management Strategy which takes into account recent reduction in population growth rates and frequently used around Australia, newer water technologies of dual reticulation of reclaimed water and bulk stormwater harvesting.

In 2010, the CWG for the Tweed District Water Supply Augmentation Options Study considered that the Water Project Team had not built a convincing business case for either Dam option: A proposed Byrrill Creek Dam or a raised Clarrie Hall Dam, without considering an adequate reduction in Tweed Shire's demand for water including reuse and new supply programs.

***Capacity of existing Tweed District Water Supply (TDWS) - (*Tweed Shire Council)**

Tweed Shire Council business paper dated 17 July 2012 continues:

Despite significant ongoing reductions (of up to 40%) in per capita water use, Council's *Demand Management Strategy* (DMS) (2009) found the existing water supply capacity will be exceeded due to ongoing population growth.
The population of the Tweed is expected to double over the next 30-40 years.
Despite a recent reduction in population growth rates, a significant future increase in population is still expected.
The secure yield of the existing TDWS is approximately 13,750ML/a.
Current water demand for the TDWS is between approximately 9000 and 10,000ML/a.

Due to ongoing population growth current modelling suggests that the secure yield of the existing TDWS may be exceeded by approximately 2023.

Further risks to system capacity exist from climate change impacts. Changes to rainfall patterns and intensities potentially may adversely affect the yield of Clarrie Hall Dam. Sea level rise potentially results in salt water ingress into Bray Park Weir which would need to be raised to avoid the entire TDWS becoming affected by salinity.

Our Comment

Tweed Heads Environment Group Inc. makes the following response in regards to water options:

Reclaimed Water - (95.2% reclaimed water wasted)

Tweed Shire Council's State of the Environment Report 2010 / 2011 reports, that 8726 ML of reclaimed water was dumped annually into the already nutrient rich Tweed River, with only 4.8 % of reclaimed water being reused.

Tweed Shire with a (2010/2011) population of 77,177 connected to potable water could reclaim approximately 7042 mega-litres each year.

This amount could meet Tweed Shire's future (2023) water shortfall of (2950ML/a), for the foreseeable future, thus negating the need of building a costly but risky proposed Byrrill Creek Dam located in the same drought prone Tweed River catchment as the existing (algae prone) Clarrie Hall Dam.

Raising of Clarrie Hall Dam

In 2010 a majority of the members of the Community Working Group for the Tweed District Water Supply Augmentation Project acknowledged in their formal statement that: 'The raising of Clarrie Hall Dam appears the only remaining viable (Dam) option (of the 4 options presented by Tweed Shire Council).

Their conditional support for raising the Clarrie Hall Dam Wall was subject to the following caveats:

- that Tweed Shire Council's demand strategy and water options selection process is in line with national and international performance standards, and appropriate to our environment.
- Council is strongly urged to commission an independent expert review of the need for additional water supply, prior to the commencement of detailed planning or environmental impact assessment of the preferred water supply option.

The Tweed River Town Water Supply

NSW Office of Water - Draft Tweed Area Water Sharing Plan 2009 describes licensed Tweed Shire water use as follows:
Total surface water entitlement of Mid Tweed River Source as 28728 ML/year
* 22 Water Act Licences (96% used for Town Water Supply)

If Tweed Shire Council is concerned that their Tweed River Water Licence Entitlement of 27500ML/annually would not be available due to drought conditions, Council should maximise the use of existing reclaimed and bulk storm harvested water rather than build an expensive proposed Byrrill Creek Dam in the same drought prone Tweed River Catchment that contains the Clarrie Hall Dam with 'poor' water quality?

Grey water for outdoor irrigation

In the Community Working Group meeting of 18 February 2010, Tweed Shire Council project leader Tim Mackney advised: "Council has discounted grey water – may look at again down the track".
This is just one more substantial water source (already at the point of reuse) readily available to Council.

Outdoor irrigation – (120 litres per person per day use grey water)

Prior to the Millennium Drought, residents of SEQ used on average more than 120 litres per person per day for outdoor irrigation. In 2010/2011 Tweed Shire had a population of 77,177 connected to potable water.

The proportion using GREY WATER in Brisbane at 57% (up from 42% in 2008. - (AWA Water Sector News – 21.12.2009)

***(b) Models for determining water requirements for the agricultural, urban, industrial and environmental sectors* (Tweed Shire Council)**

Until the major drought of 2002-03, the secure yield of the TDWS was estimated at 16,700ML/a. The inclusion of this one event into the dataset reduced the estimated secure yield to 13,750ML/a according to DEUS 5/10/20 guidelines. (A difference of $2950ML/a).

(Council Meeting Date: Tuesday 17 July 2012, Page 328)

Our Comment

Tweed Heads Environment Group Inc. supports the following Tweed community recommendation in regards to Terms of Reference Item (b) **'Models for determining water requirements for the agricultural, urban, industrial and environmental sectors'**

At the last meeting of the Community Working Group (CWG) on the 1 March 2010, a majority of Community members delivered a letter dated 28 February 2010 to Council requesting:

"Council is strongly urged to commission an independent expert review of the need for additional water supply, prior to the commencement of detailed planning or environmental impact assessment of the preferred water supply option."

Such an Independent study by Council that would examine their Demand Management Strategy has still not been carried out.

***(c) Storage management practices to optimise water supply to the urban, industrial and environmental sectors* (Tweed Shire Council)**

Council has adopted various storage management practices at Clarrie Hall Dam, Bray Park Weir and Tyalgum Weir. As a LWU and a Local Planning Authority, Council has limited powers to restrict or regulate existing land uses within the water storage catchment area and riparian zones.

A risk assessment using the Australian Drinking Water Guidelines (ADWG) highlights the greatest risks to the quality of Council's water supply arise from poor riparian zone management, inappropriate land-uses, poorly maintained septic systems, and limited powers and resources to manage and regulate the water storage catchment area.

The catchment for Clarrie Hall Dam is approximately 60km2 and is mainly rural in nature with some National Park, environmental and timbered areas. The catchment for Bray Park Weir is approximately 565km2 and includes rural, village, environmental, timbered areas and National Park.
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Our Comment

Tweed Heads Environment Group Inc. advises that:

- Clarrie Hall Dam, built in 1983 is in a category of dams that should be examined for public safety, 25 to 50 years after such dams have been built.
- Some 250 cattle, which graze in the catchment of the Clarrie Hall Dam, contribute significant nutrients to the poor water quality of the dam's water which now requires continuing aeration to reduce alga blooming.

  For the Tweed River water supply, the year 2009 was no exception when several red alerts for blue green algae were in place for most of the spring; with such alerts carrying through until December.

- Council has previously advised in Terms of Reference (a) that:
  "Sea level rise potentially results in salt water ingress into Bray Park Weir which would need to be raised to avoid the entire TDWS becoming affected by salinity".

  In 2010 Council advised the Tweed Community Working Group that high Tweed River tides currently breach the Bray Park Weir, indicating that Council should commence an immediate upgrade of the Bray Park water storage.

***(d) Proposals for the construction and/or augmentation of water storages on the Tweed with regard to storage efficiency, engineering feasibility, safety, community support and cost benefit - (*Tweed Shire Council)**

In October 2009, Council adopted a process to augment the water supply to meet projected demand. The phased approach reduces risks by ensuring the requirements of the previous phases have been met and will not impede subsequent phases. This approach provides both security and flexibility by:

1. Selecting a preferred option (based on the *Tweed District Water Supply Augmentation Options Study, 2010*).
2. Gaining development approval for that option in time to construct by 2023 (so that the Tweed has an augmentation option that can be brought online quickly when required).
3. Committing further resources to construct and operate the approved scheme when it is actually needed.

Council's *Tweed District Water Supply Augmentation Options Study - Fine Screen Assessment of Shortlisted Options* (Fine Screen) (September 2010) suggested that demand will exceed supply in approximately 2023, but noted the actual date this occurs will depend on the success of demand management actions and actual population growth rates.

This study, together with the DMS, investigated more than a dozen options to augment the water supply and assessed each against cost, social, environmental and governance criteria. The option recommended by Council officers was to increase the capacity of the existing Clarrie Hall Dam at Doon Doon Creek.

Since 2010, the two augmentation options either i) recommended by Council officers or ii) identified by Council have been water storages, namely:
• Increasing the capacity of the existing Clarrie Hall Dam
• Building a new water storage on Byrrill Creek
(Council Meeting Date: Tuesday 17 July 2012, Page 329)

Our Comment

Population
Tweed Heads Environment Group Inc. notes that The Demand Management Strategy (DMS) states that the population in 2006 was 73185.
Based on DMS Table 3-2, the annual increase appears to be 2.97% annually with the population reaching 157048 by 2036 with 13.44% of the population of Tweed residents not being serviced by town water.

Council's Section 94 Plan No 22 – Cycleways (October 2009) states that the Tweed Shire's total population will be 105183 in 2021 after being revised downwards of 1.8 % annually.

Tweed Shire Council's Water Supply Demand Management Strategy is significantly vulnerable to climate change by its reliance on a climate dependant Tweed River Catchment source with diminishing river flows being recorded for less than sixty years.

This is a compelling reason why Tweed Council should move towards the sustainable reuse of water, already available in Tweed urban areas.

Council has time not to rush into a new dam option; has time to repair the Clarrie Hall Dam spillway on which there has been an overdue caveat since 2002, and time to embrace more than in the past, a range of water management techniques, including bulk stormwater harvesting, urban water recycling and reuse programs, urban rainwater harvesting and extended urban water use efficiency programs.

Conclusion
Tweed Heads Environment Group Inc. advises that Tweed Shire Council's two augmentation options for water storages are:

- To Increase the capacity of the existing Clarrie Hall Dam or
- To build a proposed water storage on Byrrill Creek (currently prohibited under the Tweed River Area unregulated and alluvial Water Sharing Plan of 2009)

What is missing is from Council's mid 1980's philosophy is a commitment to develop the water sensitive cities (WSC) concept for major development areas at Bilambil Heights Cobaki Lakes, Terranora Heights Kings Forest, West Kingscliff and other projected infill areas containing a projected population of 26,000 by 2036.

The COAG National Water Principle (4) requires that water in the urban context be managed on a whole-of-water cycle basis.
This means that further improvements to water security for urban communities should be approached using a comprehensive and consistent 'integrated urban cycle water management' (IUWCM) strategy which includes 'fit for purpose' water use, the promotion of alternative water sources, and the deployment of decentralised systems, where deployment is cost effective.

The water sensitive cities project (WSC) concept embraces a range of water management techniques, including stormwater harvesting, flood management, urban water recycling and reuse programs, urban rainwater harvesting and urban water use efficiency programs.
The Tweed community is demanding that Tweed Shire Council improve its present limited Demand Management Water Strategy where wastage of reusable water could total 17,000 ML annually by 2036, almost double the potable water now supplied.

Without any improvement to Tweed Shire's presently limited Demand Management Water Strategy Tweed Shire Council's mid 1980's philosophy remains firmly committed mainly to bulk supply Dam options.

(e) Water storages and management practices in other Australian and international jurisdictions
No comment. - **(Tweed Shire Council)**
(Council Meeting Date: Tuesday 17 July 2012, Page 330)

Conclusion
Tweed Heads Environment Group Inc. concludes that there is a substantial cost benefit to the Tweed Shire Council in changing their untried harvesting of bulk stormwater, other reclaimed water reuse at new Greenfield developments being planned for Bilambil Heights, Cobaki Lakes, Kings Forest and Terranora E.
Bulk harvested stormwater would:

- Prevent drainage pollution to damaged receiving waterways, (A cost not adequtely assessed by council)
- Provide habitat and cooling the environment
- Recycle water for fit for use purposes.

Other bulk stormwater harvesting Projects

In their 2001submission to the Senate Environment Communications, Information Technology and the Arts References Committee the Sydney Olympic Water Reclamation and Management Scheme (WRAMS) presented their following conclusion:

- WRAMS solves or manages most of the high priority urban water problems. Australia now needs to make schemes such as WRAMS the norm not the exception.
- If Australia wants to ensure financially viable waste water reuse schemes one of the best was is to support water recycling through legislation which address unsustainable water use practices.
- All levels of government in Australia have a responsibility to promote and encourage sustainable water management.

News Report on water reuse savings
The following water news reports indicate the extent that bulk stormwater harvesting (not just optional household rainwater tanks) is used elsewhere in Australia to minimise the usage of potable water:

Bulk Stormwater Harvesting	

Stormwater Harvesting has been utilised throughout Melbourne, and across Australia, over recent years, and is becoming a more widely accepted and implemented alternative water source. (Stormwater Technical Seminar - 29 May 2012 – AWA Water Events)

Water Sector News 18.10.2010 - The federal government has committed $4.5 million to support a new stormwater harvesting scheme that will significantly reduce the East Dubbo Sporting Complex's demand on Dubbo's potable water supplies. The scheme will supply about 42 million litres of treated stormwater a year, meeting half of the irrigation demands of the sporting facility. (Department of Environment)

In The Media 3.5.2010 - The first designs for Oberon's proposed stormwater harvesting scheme have been completed. The New South Wales government has provided $1.25 million for the project which has been designed to supplement supplies from the Oberon Dam. (ABC News)

Water Sector News 22.3.2010 - NSW Office of Water has developed an interactive map to highlight the broad range of stormwater re-use projects in Sydney. A series of short clips showcasing some of these projects has also been created. (Water for life)

The Government of South Australia has partnered with local councils, City of Marion and City of Salisbury, to bid for Commonwealth funds under the *Water for the Future* program. The joint bid comprises three projects to deliver an extra 1.2 billion litres of stormwater for re-use. (SA Govt)

Water Sector News 15.3.2010 - A new $7.5 million stormwater and aquifer recharge project has been opened by the Minister for Climate Change, Energy Efficiency and Water, Senator Penny Wong. The Stebonheath Park Stormwater Recycling Wetland, part of the Waterproofing Northern Adelaide project, will eventually harvest 570 million litres of water for irrigation purposes and thereby reducing pressure on drinking water supplies in northern Adelaide. (AUS Govt)

Water Sector News – 23.12.2009 - The Stormwater Association of Queensland has argued that the State Government's proposed alternative to the Traveston Crossing Dam overlooks a cost effective and environmentally positive alternative: STORMWATER HARVESTING. A recent study by the Queensland Water Commission found that for many urban development scenarios, stormwater harvesting can cost-effectively provide water for a variety of non-potable uses, thereby reducing pressure on the region's water supply. (SIA QLD)

Water Sector News - 9.11.2009 - Thirteen organisations will share $86 million to undertake innovative STORMWATER CAPTURE projects to help secure water supplies for Australian cities. The projects will help reduce the demand on drinking water supplies by harvesting stormwater for watering sports grounds and parks as well as for use in residential areas. (Minister for Climate Change and Water)

6. Construction work has begun begin on Wannon Water's ROOF WATER HARVESTING demonstration site in Warrnambool. The project will utilise the roof area in the new Russell Creek Residential Estate subdivision as an urban catchment to harvest water. The pipe network will capture rain water collected and transfer it to the existing Brierly basin via the dedicated trunk main. The roof water will be treated at the Warrnambool Water Treatment Plant and then supplied back to the city. (Wannon Water)

Water Sector News - 2.11.2009 - The Premier of NSW has announced a new partnership with the City of Sydney to capture STORMWATER from the streets of Sydney. The first of its kind partnership will save up to 440 million litres of run-off water, or the equivalent total water used each year by around 2200 families. Initially 50 million litres of water in and around Alexandria will be captured and re-used for irrigation at Sydney Park. (Sydney Water)

Water Sector News 6.07.2009 - The SA State Government has put forward a bid valued at $145.1 million for seven STORMWATER projects across the metropolitan area. These projects will harvest up to 8090 million litres of stormwater for treatment through aquifer storage and recovery schemes. The SA Minister for Water acknowledged the key role of local government in compiling the bid, with the majority of projects having council proponents. (SA Premier's Department)

Water Sector News 25.05.2009 - The AWA NSW Water Awards saw two projects take out top honours during the evening, with the NSW Water Environment Merit Award (WEMA) going to Blackmans Swamp Creek STORMWATER HARVESTING by Orange City Council & Geolyse Pty Ltd, for developing a major stormwater use scheme that is set to become an international example of best practice stormwater harvesting.

The Regional Water Supply Strategy by Clarence Valley and Coffs Harbour Councils received the NSW Water Construction Award. (AWA NSW Branch)

Water Sector News 9.02.2009 - The $20 million stormwater RECYCLING plan for the old Cheltenham racecourse site in Adelaide has been expanded to include a 4.5-hectare wetland and Aquifer Storage and Recovery scheme. The scheme aims to provide 1.2 gigalitres per year of treated stormwater for new homes and industrial users to be connected to dual-reticulation systems for non-potable purposes such as garden watering and toilet flushing. (SA Premier's Office) (ABC News)

Water Sector News 13.10.2008 - The Salisbury STORMWATER Harvesting Project has received $6.5 million federal funding to harvest six billion litres of stormwater for Adelaide. The project will use wetlands to clean water and it will be put into the Adelaide Plains aquifer. (ABC News) (SA Premier's Office)

AWA Water News for week ending 27 August 2006 - Prime Minister JOHN HOWARD has announced $2.6m for the Porters Creek Wetland Stormwater Harvesting project on the Central Coast, the 8th New South Wales project to receive funding from the Australian Government's Water Smart Australia Programme. The Central Coast city of Wyong's population is expected to increase by 40 000 by 2025. (Website)

Recycled Water Reuse

Water Sector News 17.08.2009 - As purple taps become an increasingly common sight in new Australian suburbs, a study has found no corresponding jump in gastro cases linked to the RECYCLED WATER they deliver. Researchers checked two years' worth of patient records from GPs located in Australia's largest residential recycled water scheme at Rouse Hill in Sydney's northwest, and they found nothing out of the ordinary. (SMH) (CRC for Water Quality and Treatment) (Sydney Water)

Water Sector News 3.08.2009 - News Clippings - PURPLE PIPES - Homes in the suburbs of Lakeside and Blakes Crossing, in north Adelaide are being fitted with the purple-colour pipes to deliver recycled water to toilets and outdoor taps, similar to the dual-reticulation water supply pipes at Mawson Lakes. (The Advertiser)

AWA Water News for week ending 15 October 2006 - Sydney Water has awarded a contract to John Holland Pty Ltd to further expand Australia's largest residential recycled water plant at Rouse Hill. The ROUSE HILL Recycled Water Plant began operating in 2001. The $52 million contract will see its capacity double. (Website)

Dual reticulation usage in the close-by suburbs of Pimpama and Coomera at the northern end of the Gold Coast is expected to grow from approximately 15 000 people to around 120 000 people by 2056. The Pimpama Coomera Water-Futures Master Plan has been developed by Gold Coast City Council and is the largest integrated water cycle management program in Australia.
The Master Plan aims to reduce the use of drinking water in new homes by up to 84%. Under the Master Plan, all new homes will be supplied recycled water for toilet flushing and outdoor use.
Rainwater tanks will be installed to supply washing machines.
This water saving plan will substantially reduce nutrient levels in Gold Coast receiving waterways
(Revised Draft –SEQ Water Strategy November 2009 - Pimpama Coomera Water-Futures Master Plan)

f) Any other matter relating to the adequacy of water storages in NSW Water Sharing Plan.
***Water Sharing Plan - (*Tweed Shire Council)**

The Water Sharing Plan for the Tweed River Unregulated and Alluvial Water Sources was gazetted on 17 December 2010 and contained Clause 48 (1) prohibiting construction of a dam at Byrrill Creek.
The proposal for a future dam at the site has been public knowledge since the mid 1980's and has been incorporated into Council's LEP since 1987 as a Potential Water Supply Catchment Area. During that time Council has purchased the majority of property likely to be inundated by a future dam.
Council has requested this decision be reconsidered. Council is not asking the government to support the proposed dam on Byrrill Creek.
As with all new dams or dam raisings a robust and transparent environmental assessment process will be required to ensure the most appropriate decision is made. Council's concern is that Byrrill Creek was singled out from all other (third order or higher) streams within the Tweed River Area for prohibition of a water supply work approval in the Water Sharing Plan without any due and transparent assessment process.

***Adaptive Management requirements under the Water Management Act (2000) - (*Tweed Shire Council)**
The use of adaptive management under the Water Management Act (WM Act) creates risks to developers of water storages, including LWUs such as Tweed Shire Council.
Council and its ratepayers require certainty regarding the additional secure yield provided by the construction of a given water storage. (Council Meeting Date: Tuesday 17 July 2012, Page 330)
Council and its ratepayers require certainty regarding the additional secure yield provided by the construction of a given water storage. Adaptive management under the WM Act allows the amount of water Council is permitted to extract to be changed over time.
This reduces certainty regarding the secure yield provided by the construction of a given water storage, effectively putting the community's investment in that infrastructure at risk.

Our Comment

Tweed Heads Environment Group Inc. agrees that Council and its ratepayers require certainty regarding the additional secure yield.
However Council water supply option of providing the additional secure yield with the construction of a 'single' given water storage is considered 'risky' from a guaranteed supply and cost factor point of view.
Building an expensive proposed Byrrill Creek Dam in the same drought prone Tweed River Catchment as the algae prone Clarrie Hall Dam in a climate changing environment is very risky.
The risk of guaranteed water supply to both Tweed Shire Council Dam options is conditional on adequate rainfall supply to the Tweed River Catchment, already subject to drought conditions.

The reuse of Tweed urban reclaimed water, occurring elsewhere in Australia, can provide a secure water future for the Tweed Shire, and should be put in place.

Recommendations for The Tweed Shire and likely for some regional water authorities

- In 2010, the Community Working Group (CWG) for the Tweed District Water Supply Augmentation Options Study considered that the Water Project Team had not built a convincing business case for either Dam option: A proposed Byrrill Creek Dam or a raised Clarrie Hall Dam, without considering an adequate reduction in Tweed Shire's demand for water including reuse and new supply programs.
- CWG members conditional support for raising the Clarrie Hall Dam wall was subject to the following caveats:

(a) That Tweed Shire Council's demand strategy and water options selection process is in line with national and international performance standards, and appropriate to our environment.
(b) Council is strongly urged to commission an independent expert review of the need for additional water supply, prior to the commencement of detailed planning or environmental impact assessment of the preferred water supply option.

- The water sensitive cities project (WSC) concept embraces a range of water management techniques, including stormwater harvesting, flood management, urban water recycling and reuse programs, urban rainwater harvesting and urban water use efficiency programs.
  Without any improvement to Tweed Shire's presently limited Demand Management Water Strategy, Tweed Shire Council's mid 1980's philosophy remains firmly committed mainly to bulk supply Dam options.
  There is urgent need for Tweed Shire Council to implement the water sensitive cities (WSC) concept.
- Tweed Heads Environment Group Inc. concludes that there is a substantial cost benefit to the Tweed Shire Council in changing their untried harvesting of bulk stormwater and reuse of reclaimable water at the Shire's new Greenfield developments at Bilambil Heights, Cobaki Lakes, Kings Forest and Terranora E.
  Harvested stormwater from new developments would also:

(a) Prevent drainage pollution to damaged receiving waterways, (A cost not adequtely assessed by council)
(b) Provide habitat and cooling the environment
(c) Recycle water for fit for use purposes.

- Building an expensive proposed Byrrill Creek Dam in the same drought prone Tweed River Catchment as the algae prone Clarrie Hall Dam in a climate changing environment is very risky. The risk of a guaranteed water supply to both Tweed Shire Council Dam options to the Tweed River Catchment, subject to drought conditions, is conditional on uncertain rainfall predictions.
  The reuse of Tweed urban reclaimed water, occurring elsewhere in Australia, can provide a secure water future for the Tweed Shire, and should be put in place.

Tweed Heads Environment Group Inc. requests that Standing Committee on State Development considers this submission and acknowledges receipt of our submission.

Yours sincerely

Richard W Murray
Secretary
Tweed Heads Environment Group Inc.