Submission No 20

INQUIRY INTO WATER AUGMENTATION

Organisation: Shoalhaven City Council

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Council Reference: 5185E (D16/175017)
Your Reference: R90/1056-12 SM

The Director
General Purpose Standing Committee No. 5
Legislative Council
Parliament House
Macquarie St
SYDNEY NSW 2000

By email only: gpsc5@parliament.nsw.gov.au

Dear Sir,

Inquiry into Water Augmentation in Rural and Regional New South Wales

Please find attached Shoalhaven City Council's submission for the NSW Parliament Legislative Council's General Purpose Standing Committee No.5 inquiry into the augmentation of water supply for rural and regional NSW.

If you need further information about this matter, please contact Carmel Krogh, Shoalhaven Water Group on . Please quote Council's reference 5185E (D16/171055).

Yours faithfully

Carmel Krogh
Director Shoalhaven Water
15/06/2016

Submission by Shoalhaven City Council
Inquiry into the Augmentation of Water Supply
for Rural and Regional New South Wales

Background – Shoalhaven Water

Shoalhaven City Council has responsibility for water and sewerage services for the Shoalhaven Local Government area. The Local Government area includes 49 towns and villages, scattered predominantly along the coast.

Council exercises water supply and sewerage functions under Division 2 Part 3 Chapter 6 Local Government Act 1993 and therefore acts as a "Local Water Utility" (LWU) in addition to its other local government functions. Council meets these responsibilities and delivers water and sewerage services through Shoalhaven Water, a defined Business Group of Council.

Shoalhaven Water supplies potable water and reclaimed water to a variety of customers in the LGA. It operates a number of water storages and is also reliant on storages owned and operated by WaterNSW (formerly the Sydney Catchment Authority).

About 90% of the LGA's raw water is pumped from the Shoalhaven River at Burrier approximately 47 km upstream of the ocean estuary outlet. The water is pumped from Burrier to a 3,800 megalitre off river storage dam at Bamarang near Nowra West. The water is then pumped from the dam to Water Treatment Plants at Bamarang and Flatrock. The treated water is then transferred throughout the City.

Some parts of the southern Shoalhaven area are normally served by the Porters Creek Dam west of Milton which supplies the Milton Water Treatment Plant. The plant treats water for the Milton/Ulladulla/Narrawallee/Mollymook/Kings Point/Burrill Lake/Lake Tabourie areas. Bendalong, Manyana, Conjola & Fisherman's Paradise are supplied from the Northern System, which also supplements the area served by the Milton Water Treatment Plant over peak demand holiday periods or when the operating level in the Porters Creek dam is low.

A fourth treatment plant is located in Kangaroo Valley at Bendeela Pondage and supplies water to the Kangaroo Valley township. This plant is a microfiltration plant and operates using a membrane system.

A 7,600 megalitre storage dam at Danjera acts as an emergency backup supply feed for the Shoalhaven River in times of drought. The combination of Danjera's 7,600 megalitres and the off river Bamarang 3,800 megalitres storage acts to limit the effect of low flows in the Shoalhaven River to provide drought security for the Shoalhaven City water supply system.

The flow in the lower Shoalhaven River is controlled from Tallowa Dam, owned and operated by WaterNSW. Release of water from Tallowa Dam for Shoalhaven use is controlled through a series of agreed protocols between WaterNSW and Shoalhaven Water.

Flows from the Shoalhaven can also be used to supplement Sydney's water supply during a drought. This is achieved by pumping water from Tallowa Dam to Wingecarribee Reservoir in the Southern Highlands. From there it is released and flows down the Wollondilly River to Sydney's Warragamba Dam, or the Nepean River to Nepean and Avon dams, which supply the people of the Illawarra with water.

Rules for environmental flow releases from Tallowa Dam to the lower Shoalhaven River have been implemented by the State Government through the Greater Metropolitan Water Sharing Plan, which came into force on the 1st July 2011.

Shoalhaven Council is the owner of 4 prescribed dams – Bamarang, Cambewarra, Danjera and Porters Creek. Council also supplies reclaimed water to dairy farms and sporting facilities from its 600ML reclaimed water storage at Callalla sewage treatment plant.

Response to Terms Of Reference

Given the possible breadth of the Terms of Reference to this Inquiry, Shoalhaven Council determined to focus on 2 critical aspects of the ToR relevant to the Shoalhaven (items a) and b) of the ToR).

a) Investigate the requirement for a water equation (demand and supply out to the middle of this century) for rural and regional New South Wales

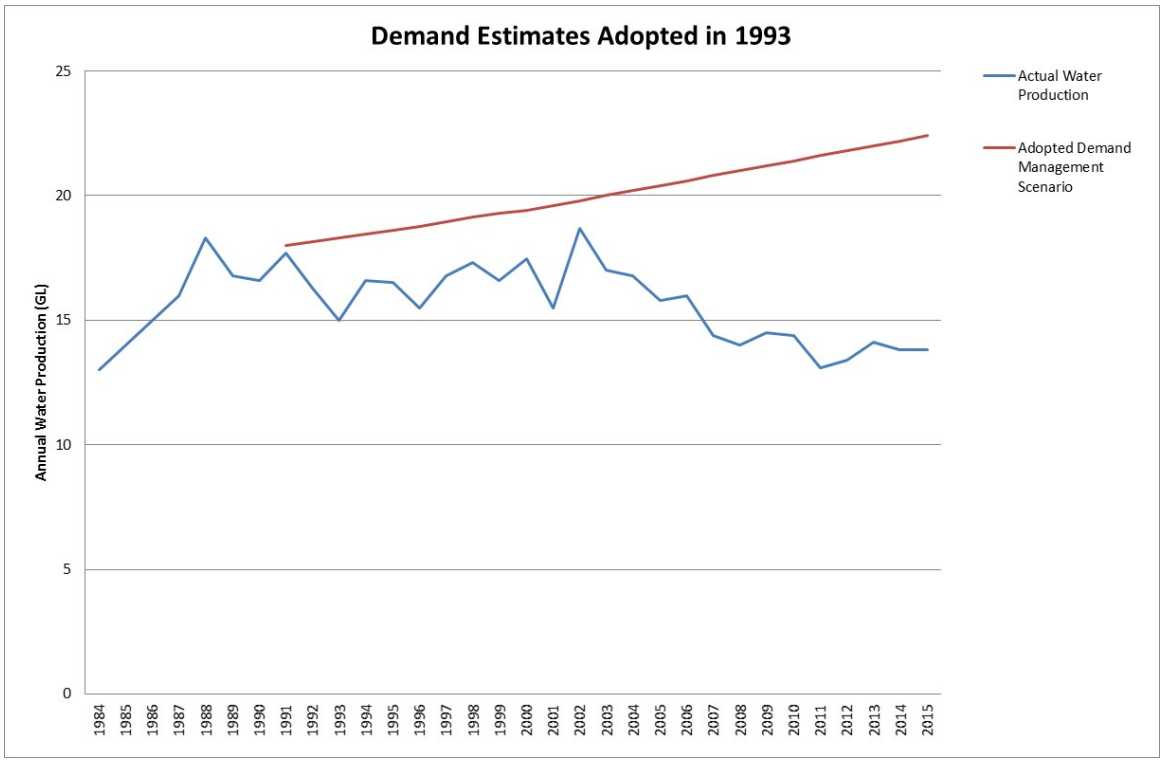
Shoalhaven City Council has been proactive for many years in planning for the security of water supply for the Shoalhaven Local Government Area. Council had negotiated and lobbied the New South Wales State Government for 4 years to provide sustainable outcomes for the Shoalhaven River system. An agreement was finally reached in 2006 that secured water licence entitlements for the Shoalhaven City and provided for positive environmental outcomes.

The mechanisms for Shoalhaven's water security are embedded in Council's extraction licence, the Bulk Water Supply Agreement and the Bulk Water Supply Protocols. The Bulk

Water Supply Protocols are also legislated within the Water Sharing Plan for the Greater Metropolitan Region – Unregulated River Water Sources 2011.

These mechanisms, combined with effective demand management processes have meant that the existing storages within the Shoalhaven system have adequate capacity to meet the demands of the end users.

The graph below shows the actual water demand as the projected demand adopted in 1993 when additional sources of water were being considered.



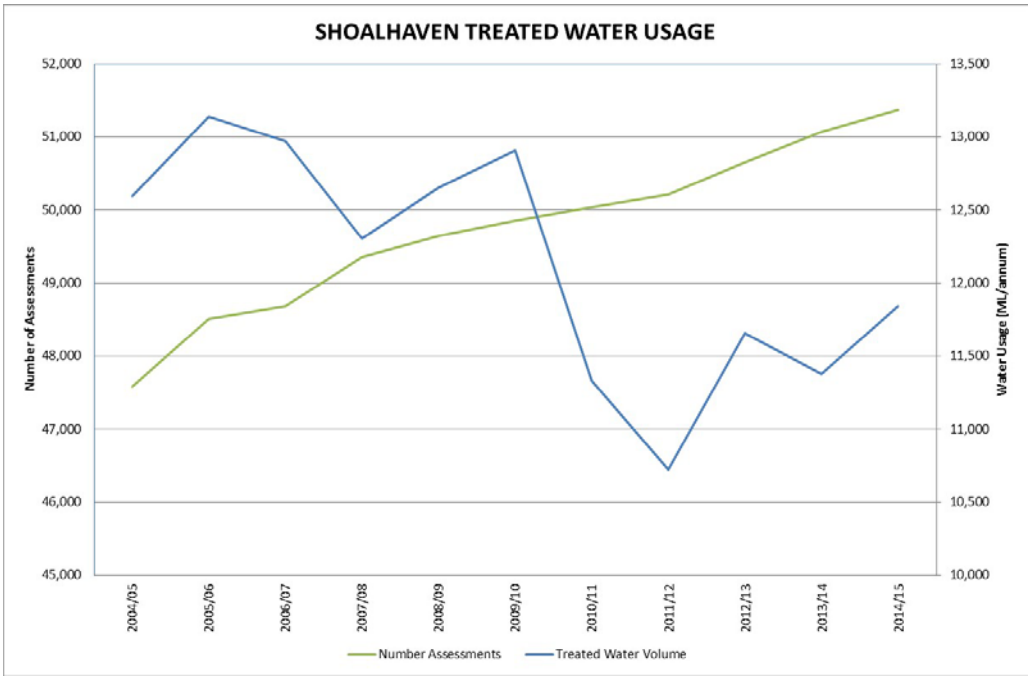
Clearly since the total system demand is at levels equivalent to the mid 1980s, the previous headworks proposals have not been required.

Reductions in total demands have been achieved despite increases in the number of properties connected to the system, as shown in the graph below.

As part of DPI Water's Best Practice Management Shoalhaven Water prepared an Integrated Water Cycle Management (IWCM) Strategy. The strategy identified the preferred options for development of urban water services (water supply, wastewater and stormwater) at Shoalhaven City.
The process taken to develop the IWCM Strategy included:

Consideration of the Concept Study findings and baseline forecasts.

- Development of the long-list of options and assessment criteria for decision making.
- Selection of options for further assessment.
- Detailed options assessment and development of IWCM scenarios.
- Identification of the preferred scenario.



The integrated scenarios incorporate combinations of various demand management measures and an increasing movement towards the integration of water supply, sewerage treatment and stormwater management through cumulative inclusion of rainwater, stormwater, greywater and reclaimed water use. The supply side approach is common to all scenarios, drawing on surface water extractions from the Shoalhaven River, Danjera Creek and Porters Creek, with system capacity requirements sized to suit the town water demands for each scenario.

Council formally adopted its Integrated Water Cycle Management Strategy in June 2008. The focus of Shoalhaven water supply planning is now directed at enhancing the north-south system transfer capacity.

It is therefore considered that appropriate planning has been carried out for the Shoalhaven water supply system. The current protocols as established with the previous

Sydney Catchment Authority are appropriate and provide effective mechanisms to maintain the security of Shoalhaven City Council's Water Supply.

b) Examine the suitability of existing NSW water storages and any future schemes for augmentation of water supply for NSW

There remains outstanding land tenure by WaterNSW previously acquired for a proposed Welcome Reef Dam on the upper reaches of the Shoalhaven River.

The Welcome Reef Dam project has had a long history.

The Snowy Mountains Engineering Corporation prepared an Environmental Impact Report in 1980 for the (then) Metropolitan Water Sewerage and Drainage Board (the Board). The Welcome Reef project had included a dam on the Shoalhaven River about 70km to the east of Canberra and 30km north of Braidwood. The stated purpose of the dam was to supplement the Shoalhaven transfer scheme to meet increased demand from Sydney.

In 1985 the Board advised Shoalhaven Council that they intended to proceed with the Welcome Reef Dam project, but had deferred the project and it had a tentative completion date of 1999.

Further advice to Council in 1991 put the dam construction commencement as 2002. In 1992 a series of public information sessions were held throughout the affected regions.

At the Council meeting of 23 March 2004, Shoalhaven Council resolved to "reject the proposal to resurrect the Welcome Reef Dam concept."

It is clear from the key strategic water planning documents for Sydney that a new dam on the Shoalhaven River is not required nor is it on a planning agenda from a technical perspective. The following excerpts from the 2004, 2006 and 2010 Metropolitan Water Plans demonstrate this:-

2004 Metropolitan Water Plan

> **"*There is no need for a twelfth dam. Another dam would be very costly from a financial and environmental perspective with an estimated cost of over $2,000 million for Welcome Reef Dam. The same dam would be very shallow with a large surface area, meaning that evaporation rates would be extremely high and increase the potential for toxic blue-green algae outbreaks. It would take nearly 10 years to build and fill under average conditions and up to 30 years if current drought conditions continue. A new dam would not make the most of the existing infrastructure and so it is far more effective to extend our current system as proposed in this Plan."***

2006 Metropolitan Water Plan

"The current Shoalhaven Scheme comprises Tallowa Dam and a system of pumps, pipes and reservoirs which were completed in 1976. The scheme was planned as the first phase of a much larger but now abandoned project (the Welcome Reef Dam) for the specific purpose of capturing water from the headwaters of the Shoalhaven River and transferring it to Sydney to boost supplies when the Sydney storage system fell to low levels."

2010 Metropolitan Water Plan

"After extensive research, analysis and community consultation important improvements to the Shoalhaven system were announced in March 2007.

These included:

- ***New environmental flow rules for the lower Shoalhaven River (see page 50)***
- ***Changed operation of Tallowa Dam:***
  - ***Water transfers will begin when Sydney's total dam storage level falls to around 75 percent and continue until total dam storage level rises above 80 percent***
  - ***Water will not be drawn down further than one metre from Tallowa Dam's full storage level – this will be increased to three metres in times of severe drought (see page 56)***
- ***New infrastructure at Tallowa Dam to allow native fish passage and improve the quantity and quality of water releases downstream for the environment (see case study on this page)***
- ***Upgraded picnic facilities at the dam site.***

The Shoalhaven and Wingecarribee communities were also invited to comment on six options to upgrade the water supply transfer system. The options looked at ways to transfer more water from Tallowa Dam to Sydney and the Illawarra, if required in the future. Several options had

the benefit of protecting the health of the Southern Highlands' river system by reducing the use of rivers to transfer water between dams.

Based on community feedback, scientific and engineering investigations, and social, economic and cultural heritage assessments, three options were short listed. Further detailed technical investigations of these options have been undertaken. The preferred augmentation option is a tunnel from Burrawang to Avon Dam.

> ***There are significant costs and lead times for the augmentation and a decision on its timing will depend on factors such as future climate predictions and population growth and demand. These factors will be reviewed over the next few years with a view to having an upgraded system built and operational by around 2025."***

Shoalhaven Council therefore submits in the strongest terms that the Inquiry should reject any proposal to resurrect the Welcome Reef Dam project and the Inquiry should find that the land acquired for that purpose is no longer required.