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Australian Institute Of Urban Studies Sydney's Water Supply – A Reality Check: Is There A Need For A Public Inquiry?

AUSTRALIAN INSTITUTE OF URBAN STUDIES SYDNEY'S WATER SUPPLY – A REALITY CHECK

IS THERE A NEED FOR A PUBLIC INQUIRY?

Thursday, 17 August 2006

The Hon Justice Peter McClellan
Chief Judge at Common Law
Supreme Court of New South Wales

When in 1788 Governor Phillip decided to establish the new colony at Port Jackson rather than Botany Bay a significant reason was the availability of fresh clean water from the Tank Stream. The constant flow from the stream was sufficient for the small settlement's immediate needs. It is no surprise that thought was not given to how those needs could be met when the settlement expanded.

The Tank Stream soon ran into problems leading to a proclamation of the first environmental law in Australia. Governor King's General Order of 14 October 1802 provided

"If any person whatever is detected in throwing any filth into the stream of fresh water, cleaning fish, washing, erecting pig styes near it, or taking water but at the tanks, on conviction before a magistrate, their houses will be taken down and forfeit £5 for each offence to the Orphan fund."

The penalty makes some of today's fines for environmental offences appear modest. Furthermore, the sentence would appear to have been mandatory.

By 1826 the Stream had been abandoned in favour of water supplied by a newly built tunnel from the Lachlan Swamps (Centennial Park) known as Busby's Bore. There was a significant drought in 1852 which resulted in the Botany Swamps water supply scheme which began supplying water to the colony in 1859. It was not long before those supplies proved insufficient. The upper Nepean scheme – involving some 64 kilometres of manmade conduits - was completed by 1888. Another drought in 1901-1902 resulted in two Royal Commissions [1] and the construction of 3 dams between 1907 and 1935. Construction of the dams that served Sydney's south and the Blue Mountains also commenced in this period. The Third and Final Report of the Royal Commission on Sydney Water Supply was handed down in 1903. The Report begins in these terms:

"Owing to the continuance of the late extraordinary drought, and the consequent rather precarious condition of the Sydney Water Supply, it was considered advisable to five times obtain an extension of this Commission; but, happily, the occurrence of good rains, causing the Prospect Reservoir to overflow on the 11th September, 1903, has now removed all fear of a scarcity of water, thus enabling us to submit our third and final report.

The following figures show that our urgent recommendations as to economy in the use of water during the late drought were well carried into effect. For the year 1901-1902 the average daily consumption of water was 21,906,362 gallons, amounting to an average daily per capita use of about 43.03 gallons. This was reduced during the year 1902-1903 (ending 30th June last) to 16,895,867 gallons, or an average daily consumption of about 32.28 gallons per capita.

So great a saving of 25 per cent in a single year was probably chiefly due to curtailment in the use of water for street-sprinkling and municipal flushing purposes, and the abolition of the charge of 10s per annum for the use of hose on small gardens and substitution therefore of payment by measurement; but there is no doubt that the care in prevention of waste exercised by the general public largely contributed to so favourable a result." [2]

There was a severe drought again between 1934 and 1942 prompting the building of Warragamba Dam. The Dam was completed in 1960. Concerns that it may prove inadequate resulted in the Shoalhaven scheme in 1968. [3] Sydney today has a water storage capacity that Tim Flannery describes as "one of the largest domestic water supplies in the world, able to store four times as much per capita as New York's water supplies and nine times as much as London's. [4]

So is there a problem? To that question Barrie Pittock answers that for too long water planning has been "driven by demand and controlled by engineers not by economics or ecological considerations." [5] His proposition is complex. However, it is apparent that as a community we have tended to respond to immediate pressures and, as yet, have not devised a sustainable long-term solution. Events in recent years have provided us with an opportunity to address the identified problems and may bring opportunities for us to implement long-term solutions.

The impact of continuing drought, together with community acceptance that it may be due to some fundamental shifts in our climate, which may be with us for the foreseeable future, and develop further, means that the community is open to discussion about and may be ready to accept solutions which may previously have been considered unacceptable. Our present situation is not so much a crisis but an opportunity.

The present water planning problems have parallels in other areas. Looking at Sydney today it is difficult to comprehend that Governor Phillip commissioned a city plan that provided for broad streets laid out on a rational model. It was envisaged that the main street would be two hundred feet across. Manning Clark tells us that "the very grandeur of the plan, as well as the need to use available labour on the production of food and shelter, caused it to be shelved." [6] Driven by the immediate needs we ended up with a street pattern compromised in width and, until recent redevelopment, characterised by a maze of small and indiscriminate lane and alleyways.

When Sir Robert Menzies was Prime Minister the desire of Australians to own their own home on a ¼ acre block was almost universal. Flats were disliked by most people and were considered an inferior means of providing accommodation for a family. Increasing amounts of capital were invested by individuals in providing a "dream home" forcing Sydney to grow geographically, land prices to increase and a disproportionate amount of the community's capital to be locked into unproductive investment. It is now many years since the planners came to the view that our cherished ambition of a home with backyard, front yard and nature strip was no longer feasible. Acceptance by the general community has been slow. Our halting progress towards coordinated and appropriate medium density development can be seen in the multitude of planning battles fought at a macro and micro level over the last 30 years.

Global warming is now indisputable. This is clear from the Third Assessment Report of the Intergovernmental Panel on Climate Change. In a summary of this report prepared for policy makers the IPCC states that even if we are able to stabilise green house gas concentrations, "surface air temperature is projected to continue to rise by a few tenths of a degree per century for a century or more, while sea level is projected to continue to rise for many centuries. [7] The IPCC is an international organisation which can only operate by consensus, underlining Tim Flannery's quip that "if the IPCC says something, you had better believe it – and then allow for the likelihood that things are far worse than it says they are." [8]

The debate about the consequences of global warming is a debate about probabilities. A precautionary approach is undoubtedly justified. At the very least the potential impacts of climate change adds uncertainty to water planning policies. Pressures on the existing water supply from population growth, at least in the medium term, must increase.

Flannery notes that globally "for every degree of warming we create, our world will experience an average of 1 percent increase in rainfall. But the critical fact ... is that this rainfall increase is not evenly distributed in time and space." [9] Some predictions indicate that average rainfall may decrease in southeast NSW particularly in winter and spring but there may be an increase in extreme rainfall events. [10] If we experience higher temperatures they will almost certainly result in an increased

demand for water. Nine of the 10 warmest years on record occurred in the past decade, and in Australia average temperatures have increased by about .9 degrees in the last century. [11]

The Metropolitan Water Plan estimates that by 2031 Sydney will have a population of about 5.3 million. [12] If it happens that the water from rainfall will diminish in future years there can be little doubt, having regard to our recent experience, that additional measures to augment the existing water supply will be required. This has been recognised by government. Various suggestions having been made including increased storage through additional dams, desalination of ocean waters, increased controls on the individual use of water and recycling. Each option has negatives and each could bring benefits. The presently accepted option as I understand it is desalination if the available stored water falls below 30% of the capacity.

Each of these possibilities may either alone or in combination provide a sustainable water future for Sydney. The choice is one which can only be taken after informed and detailed consideration of the available scientific data and engineering possibilities. However, it would seem unlikely that the solution lies in increasing the dam capacity in valleys in or near the Sydney metropolitan region especially if the rainfall is to decrease. As the recent public debate made plain, desalination raises many complex and difficult issues. It may be expensive and may impose significant negative impacts on the environment.

The problems in the availability and use of water in Australia are not confined to domestic water supplies. As you are all aware there are major issues in relation to the effective use of inland waters for agricultural purposes. In the latter part of the 19th century through until about 1980 the government imperative in every state was to expand the storage facilities and encourage increased irrigation. This process was facilitated by public inquiries. In 1887 a Royal Commission on the Conservation of Water handed down a report that dealt with irrigation and water rights, particularly in relation to the Murray River and areas west of the Great Divide. A Victorian Royal Commission on Water Supply (the Deakin Royal Commission) dealt with similar matters in 1884. At around the same time the same issues were being considered overseas. In 1881 came the Second Report of the State Engineer to the Legislature of California and in 1894 the General Report on Irrigation and Canadian Irrigation Surveys. In Australia, the Snowy River Investigation Committee reported on the diversion of the Snowy for irrigation and the use of hydro-electric power in 1944. As the history of the provision of domestic water supply for Sydney makes plain when major public resource questions have arisen which may impact on many people in the community it has been common for governments to provide for a public inquiry and sometimes a Royal Commission. In the period between the 1864 preliminary report of the Select Committee on the Sydney Water Reserves through to the 1905 report of the Royal Commission on the Sydney Water Supply (Cataract Dam), for example, there were at least three other inquiries, including the Commission that recommended the Nepean scheme in 1868-69 and the Select Committee on Water Supply, Sydney and Suburbs that reported in 1870. In more recent times we have seen the Sydney Water Inquiry, with which I have some familiarity.

Although the process can sometimes be expensive this is not always the case. However, there are some issues of such significance to the community that the appropriate expenditure is justified. This is especially so where the response may prove controversial or the impacts disadvantageous to a group or groups of people. Professor Salter spoke of the utility of public inquiries in the following terms:

“inquiries are justified because they allow for a relatively independent assessment of complex issues that are deemed unsuitable for legislative or judicial scrutiny in the first instance. The issues that attract inquiries are those that have public significance, require open scrutiny, involve a complex determination of fact, and seem to require government action.” [13]

The public inquiry process has the potential to relieve an issue of party political imperatives and provide solutions which will have general community support. It can serve a fact finding function as well as providing the information for effective decision-making and the opportunity for whole of community education. When the issue is one of such fundamental significance as the water supply each of these elements has great significance.

If a different course is taken and the community is asked to accept proposals which are not properly explained and understood, the outcome will be uncertain. There are many illustrations. The most recent, of course, is the community reaction in Toowoomba to the prospect of the use of recycled effluent. Without an effective mechanism to inform the electorate of the nature of any recycling project,

including engineering and health controls, and an understanding of the experience of the many places throughout the world, including Australia, where recycled effluent is used, the immediate reaction to a recycling project will almost certainly be negative. And once that opinion takes hold in the general community it may be impossible for government to displace it. I know this audience appreciates that Buckingham Palace receives water that has gone through 7 stomachs before it reaches the tap. [14] I am not sure if the general public is aware of this fact. In Australia there are already "country utilities recycling effluent for residential use." [15] Charles Essery, who is speaking later, noted in a recent newspaper article that "recycled water is cleaner, safer and healthier than our existing drinking water, at half the cost of desalinated water." [16] This lesser cost is said to be due to the fact that the same technology that is used in desalination (reverse osmosis) is much more efficient when used to recycle effluent. Another of our speakers today Stuart Kahn has emphasised that "trying to squeeze larger chemicals such as human hormones through a reverse osmosis membrane is like trying to push a golf ball through a tea strainer. Reverse osmosis is so effective that some important ions such as carbonate need to be re-added to stabilise the over-purified water." [17]

Although I know a deal about water I do not know of the cost and benefits of recycling and whether it can provide a safe and long term sustainable solution to a city's water supply problems. Nor did the people of Toowoomba before they were asked whether they wanted it.

There are presently problems with the water supply for residential populations in Western Australia, Queensland and NSW. Some areas are at crisis point. The issue is proving difficult for the politicians to manage. The proposal for additional storage in south east Queensland is a major political issue with consequences for the next election in that State. If the situation deteriorates in country towns in NSW and, if the predicted dry spell for the remainder of this year, with elevated summer temperatures, occurs in Sydney, critical decisions will have to be made to secure this city's water supply.

Tonight's seminar will prove a valuable contribution to the public knowledge about these problems and possible solutions. However, in making these introductory remarks can I suggest that the issue is sufficiently complex and the level of public understanding sufficiently inadequate that it may be time to consider whether a national or state based public inquiry, adequately resourced, may be required. There is no reason why such an inquiry need take a lengthy time or impose an unreasonable burden on the resources of the State. But as has been repeatedly demonstrated a properly conducted inquiry has a capacity to bring the general public to an understanding of an issue and acceptance of a solution which might initially have been unpalatable. The question should be asked whether the time has come for such an inquiry in relation to our water supplies.

ENDNOTES

[1] Royal Commission on Sydney Water Supply, which reported in 1903; Royal Commission on Sydney Water Supply (Cataract Dam), which reported in 1905.

[2] Royal Commission on Sydney Water Supply, *Third and Final Report*, 1903, p. 9.

[3] This history of Sydney's water supply is drawn from the Sydney Catchment Authority's website at <http://www.sca.nsw.gov.au/dams/history.html> (viewed 3/8/06).

[4] T. Flannery, *The Weather Makers: The History and Future Impact of Climate Change*, Text Publishing, Melbourne, 2005, p. 131.

[5] B. Pittock (ed), *Climate Change: An Australian Guide to the Science and Potential Impacts*, Australian Greenhouse Office, Canberra, 2003, p. 91.

[6] C. M. H. Clark, *A History of Australia*, Vol 1, Melbourne University Press, Carlton, 1962, p. 115.

[7] IPCC, "Climate Change 2001: Synthesis Report – Summary for Policymakers" available at <http://www.ipcc.ch/pub/un/syreng/spm.pdf> (viewed 3/8/06), p. 16.

[8] T. Flannery, *The Weather Makers: The History and Future Impact of Climate Change*, Text Publishing, Melbourne, 2005, p. 246.

[9] T. Flannery, *The Weather Makers: The History and Future Impact of Climate Change*, Text Publishing, Melbourne, 2005, p.123.

[10] CSIRO, "Climate Change and Australia's Coastal Communities" available at <http://www.cmar.csiro.au/e-print/open/CoastalBroch2002.pdf> (viewed 3/8/06), p. 4; See generally: CSIRO, *Climate Change in NSW – Part 1: Past climate variability and projected changes in average climate*, CSIRO, 2004; CSIRO, *Climate Change in NSW – Part 2: Projected changes in climate extremes*, CSIRO, 2004.

[11] CSIRO, "Fact Sheet: Climate Change is Real" available at <http://www.csiro.au/csiro/content/standard/psrs,...html> (viewed 3/8/06).

[12] *2006 Metropolitan Water Plan*, available at http://www.waterforlife.nsw.gov.au/education_and_resources/resource_centre/publications (viewed 3/8/06), p. 4.

[13] L. Salter, "The Complex Relationship Between Inquiries and Public Controversy" in: A. Manson and D. Mullin (eds), *Commissions of Inquiry: Praise or Reappraise?* Irwin Law, Toronto, 2003, pp. 185-186.

[14] T. Fullerton, *Watershed*, ABC Books, Sydney, 2001, pp. 7-8.

[15] C. Essery, interview quoted in: Anon., "Like the Gobi desert," SMH, 14 June 2005.

[16] C. Essery, "Wasted gigalitres just water down the drain," SMH, 15 February 2006.

[17] S. Khan, "Fears won't wash," Courier Mail, 16 May 2006.