



WATER SERVICES ASSOCIATION  
OF AUSTRALIA

27 September 2006

Ms Roxane Le Gruen  
Committee Secretary  
Senate Rural and Regional Affairs and Transport Committee  
Department of the Senate  
PO Box 6100  
CANBERRA ACT 2601

Dear Ms Le Gruen

**Submission on Water Policy Initiatives Interim Report**

I would like to congratulate the Senate Rural and Regional Affairs and Transport Committee on the release of its Interim Report on Water Policy Initiatives and to thank the Senate Committee for this opportunity to present this submission.

The Water Services Association of Australia (WSAA) is the peak body of the Australian urban water industry. WSAA's members provide water and sewerage services to more than 15 ½ million Australians and New Zealanders as well as to many of Australia's largest industrial companies. WSAA was formed to communicate the urban water industry's views on issues of national importance.

WSAA did not make a submission earlier since it considered the Senate inquiry's terms of reference did not cover urban water issues. However, since reviewing the Interim Report and the comments it contained regarding recycled water and water markets, WSAA has decided to prepare the attached submission.

I would be pleased to discuss any aspect of the WSAA submission with the Senate Committee or its Secretariat. I can be contacted on 03 9606 0678.

Yours sincerely

A handwritten signature in dark ink that reads "Ross Young". The signature is fluid and cursive, with a long, sweeping tail on the letter 'y'.

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**WATER SERVICES ASSOCIATION  
OF AUSTRALIA**

**Submission**

**by**

**Water Services Association of Australia**

**to**

**Senate Rural and Regional Affairs  
and Transport References Committee**

**Water Policy Initiatives**

**September 2006**

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## **1. INTRODUCTION**

The Water Services Association of Australia (WSAA) is the peak body of the Australian urban water industry. Its 29 members provide water and sanitation services to more than 15.5 million Australians and New Zealanders, in addition to many of Australia's largest industrial and commercial enterprises.

WSAA was formed in 1995 to provide a forum for debate on issues of importance to the urban water industry and to be a focal point for communicating the industry's views to the public. WSAA provides a national focus for the provision of information on the urban water industry to all interested parties.

Full WSAA membership is available to water businesses that provide water and/or sewerage services to 50,000 or more customers (i.e. service connections), either directly as retailers or indirectly as wholesalers.

WSAA would like to congratulate the Senate Rural and Regional Affairs and Transport References Committee for publishing its Interim Report "*Water Policy Initiatives*" and is grateful for the opportunity to clarify and expand on a number of issues raised in the Committee's Interim Report regarding urban water matters.

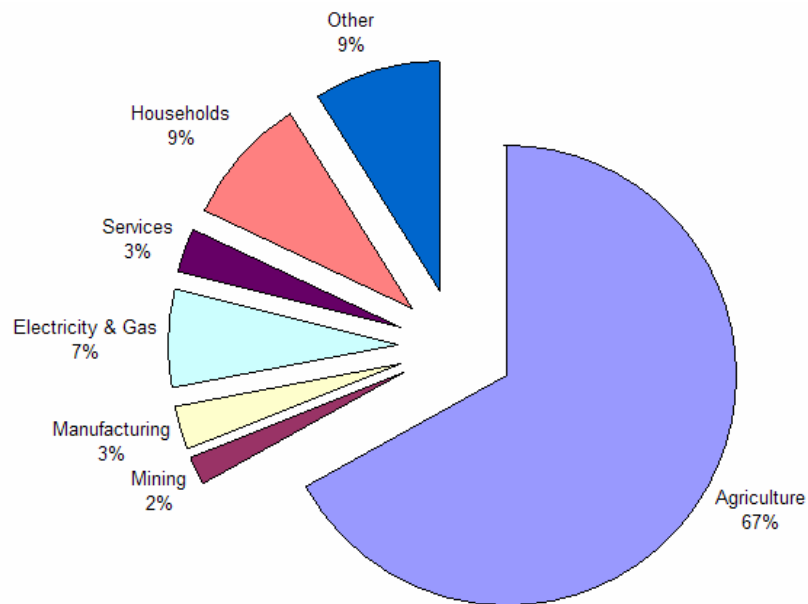
WSAA did not make a submission since it considered the inquiry's terms of reference not to cover urban water issues. However, since reviewing the Senate Committee's Interim Report and the comments it contained regarding urban water, WSAA has decided to prepare a response. Accordingly, this submission concentrates on providing some perspective on water usage in Australia and attempts to correct some misconceptions regarding water recycling that may have arisen from comments contained in the Interim Report. WSAA also makes a number of remarks concerning water trading.

## **2. AUSTRALIAN WATER CONSUMPTION**

The first point that needs to be emphasised is which sectors of Australia use water. Water consumption in Australia is overwhelmingly undertaken by agriculture. The most comprehensive statistics on water use are published by the Australian Bureau of Statistics, Water Account Australia 2000-01. It must be stressed that these estimates are for direct water usage and, as such, do not take into account the differences in data accuracy of urban water (which is well metered) relative to irrigation water (where metering is inadequate) nor do they take into account leakage (which is greater both in absolute and relative terms for irrigation water). Nevertheless, Figure 1 below outlines the latest comprehensive water usage statistics for Australia.

Fig.1

### Water Use in Australia



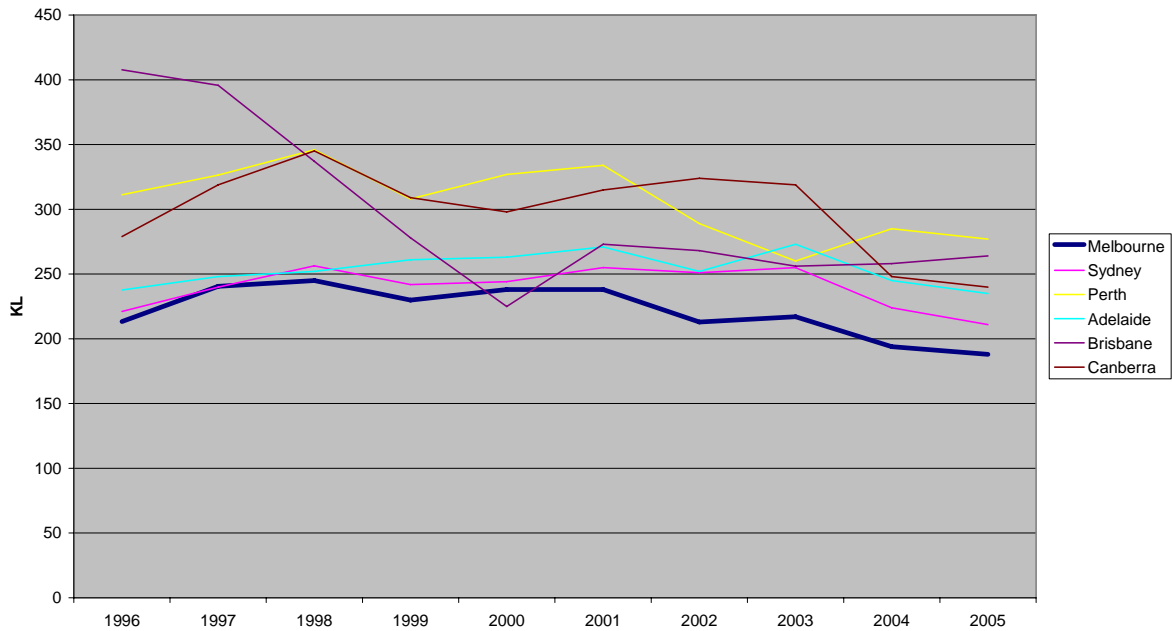
Households are the next most significant water user group in Australia, accounting for 9% of water usage. Leakage in Figure 1 is included in the “Other” category of water usage and is the most significant component of that sector. Electricity & Gas together account for another 7% of water usage. Mining, manufacturing and services use only a small proportion of Australia’s water but each of these industry sectors accounts for a much greater proportion of Australia’s Gross Domestic Product or employment than agriculture (according to the latest ABS National Accounts, agriculture’s share of Gross Domestic Product is less than 3%).

Since agriculture and households are the two most significant users of water in Australia and WSAA represents urban water utilities, it behoves this Association to comment further regarding agricultural water usage. The first comment is that agricultural water usage is so much greater than that of Australian households that no matter how much households reduce their water usage, the net impact on agricultural water usage will be negligible. However, a small increase in the efficiency of agricultural water use (an easy task considering its enormous water leakage) would release amounts of water that Australian cities would regard as massive water volumes.

The second point to note is that Australian households have been taking measures to reduce their water consumption . The level of water consumption per household has been reducing in Australia’s major capital cities over the last decade (see Figure 2 below).

Fig. 2

Water Consumed/Residential Property



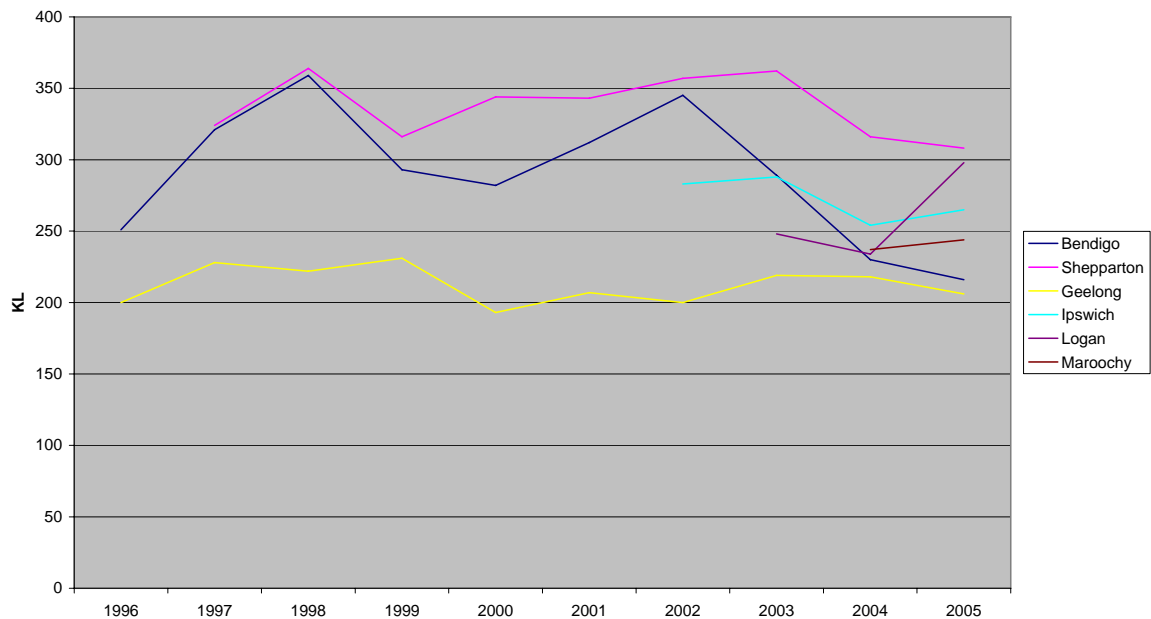
Source: WSAAfacts 2001 to WSAAfacts 2005

While further reductions in per capita water consumption are likely in Australia's capital cities, they will require concerted effort by governments (federal and state), their agencies and utilities to achieve the right policy and regulatory framework to affect these targets. It should be emphasised that demand management improvements to date have tapped into the easiest areas of improvements (eg. dual flush toilets). One would expect the next generation of water conservation measures to be more expensive to achieve and possibly face greater public resistance. For example, while market penetration of dual flush toilets has increased significantly over time, it has taken 20 years to achieve this.

The performance in regional urban centres is different. While the last few years of drought have decreased water usage, the same decreasing trends are not in evidence (see Figure 3 below). One of the reasons for the reason for this difference is the price

Fig. 3

Water Consumed/Residential Property



Source: WSAAfacts 2001 to WSAAfacts 2005

paid for water in regional areas is significantly lower than in capital cities. Indeed some regional urban centres in Queensland still have substantial free water allowances several times larger than the average residential consumption in any Australian capital city. There is no reason why water prices in regional areas should not increase and, indeed, this is part of the reforms included in the National Water Initiative. Higher prices in urban regional areas and in irrigation water are important as these increases would provide funds for investment in much needed infrastructure without the need to rely on government subsidies.

### 3. CHALLENGES FACING THE URBAN WATER INDUSTRY

The Australian urban water industry has been managing reductions in urban water usage as a measured response to the challenges it is facing. The principal challenge is servicing rapidly growing population (see Table 1). Over the next 25 years Australia's major cities are expected to experience an increase of 33% of their population.

The next challenge facing the Australian water industry is responding to the threat of climate change. It is important to understand that the impact of climate change on runoff is substantially greater than the impact on the quantity of rainfall (and hence surface storage). This effect can be largely attributed to changing rainfall patterns and the absence of significant rainfall events. For an illustration of this point see Figure 4 below. It is also worth noting that the water industry will be the first to be impacted by climate change. Modest rainfalls can, for a few years at least, deliver reasonable crops without any runoff and, accordingly, no augmentation to surface storages.

Table 1

City	Current Population <sup>1</sup> (000s)	Expected Population <sup>2</sup> in 2030 (000s)	Increase (%)
Adelaide	1,095	1,182	8
Brisbane	975	1,509	55
Canberra	361	486	35
Darwin	101	168	66
Gold Coast	495	800	62
Hobart	188	215	14
Melbourne	3,583	4,573	28
Lower Hunter	501	585	17
Perth	1,484	2,177	47
Sydney	4,228	5,592	32
<b>Total</b>	<b>13,011</b>	<b>17,287</b>	<b>33</b>

Sources:

1 – WSAA *facts* 2005

2 – ABS High, modified for jurisdictional boundaries.

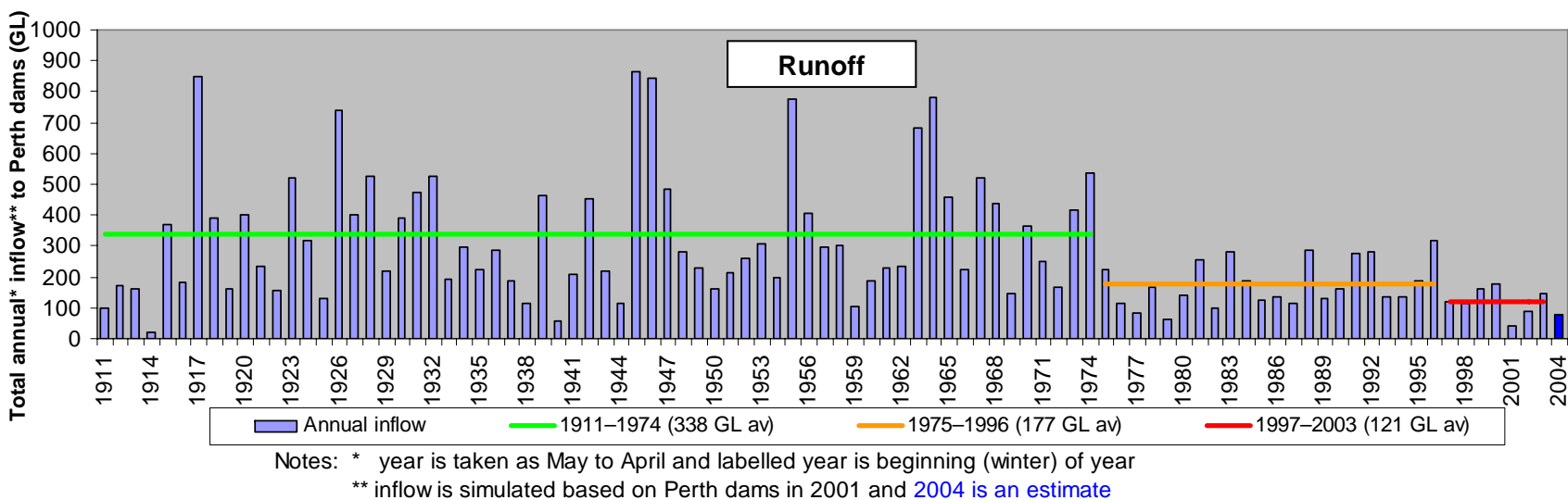
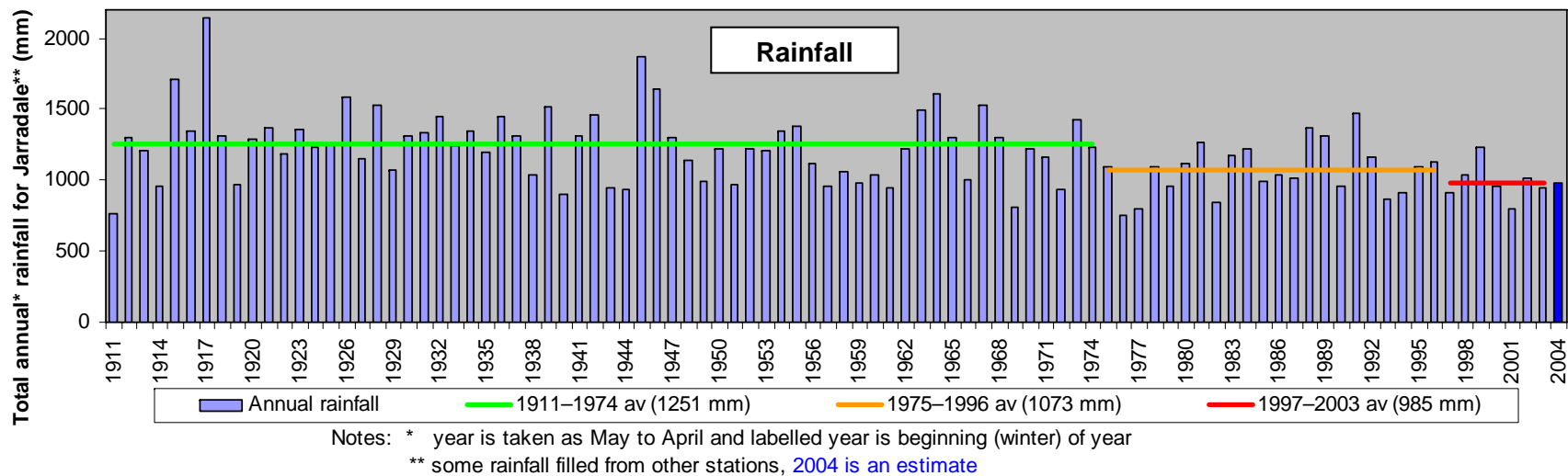
In addition, it is important to recognise that with additional economic growth and wealth creation, Australian communities will have higher expectations of service levels. Water restrictions will not be an exception to this trend and the urban water industry will be expected to provide this higher level of service.

The next challenge will be the environment. There are two principal issues here. The first will be healthy waterways. Both the urban and irrigation water industries will need to make increased environmental flows available to improve the health of our waterways.

The next challenge will be the water and energy tradeoff. The water industry is already a major user of electricity. The water industry will meet the above challenges by diversifying its water sources rather than rely solely on surface water and groundwater. This diversification of water sources (be it recycled water, desalination or water trading) may be associated with higher energy use and, accordingly, the potential for higher emissions of greenhouse gasses. The challenge for the Australian community and the water industry will be managing this trade off.



Fig. 4  
Perth - Catchment Rainfall & Runoff



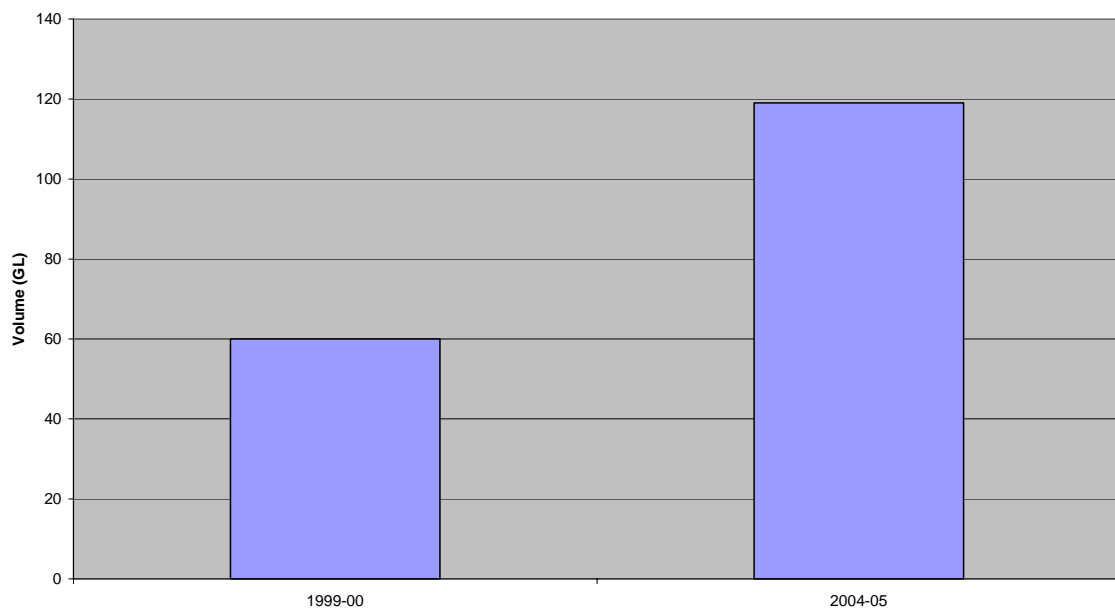
## 4. WATER RECYCLING

As well as managing demand, water recycling has been a supply side option strongly pursued in Australia. Despite comments to the contrary in the media, there has been much activity in this area. As Figure 5 below demonstrates, growth in recycled water volumes produced by urban water utilities has grown substantially in recent years.

However, what is also not generally appreciated is that Australia is at the forefront of water recycling. Indeed, while often commentators reflect favourably on European recycling projects the real statistics show a very different picture of performance in this area. A recent review by the International Water Association (Durham B. and Angelakis A.N; 2006) on the present and future water reuse capacity showed the levels of reuse currently practised in EU countries. Figure 6 below displays the EU reuse performance as well as that of Australia for comparison purposes.

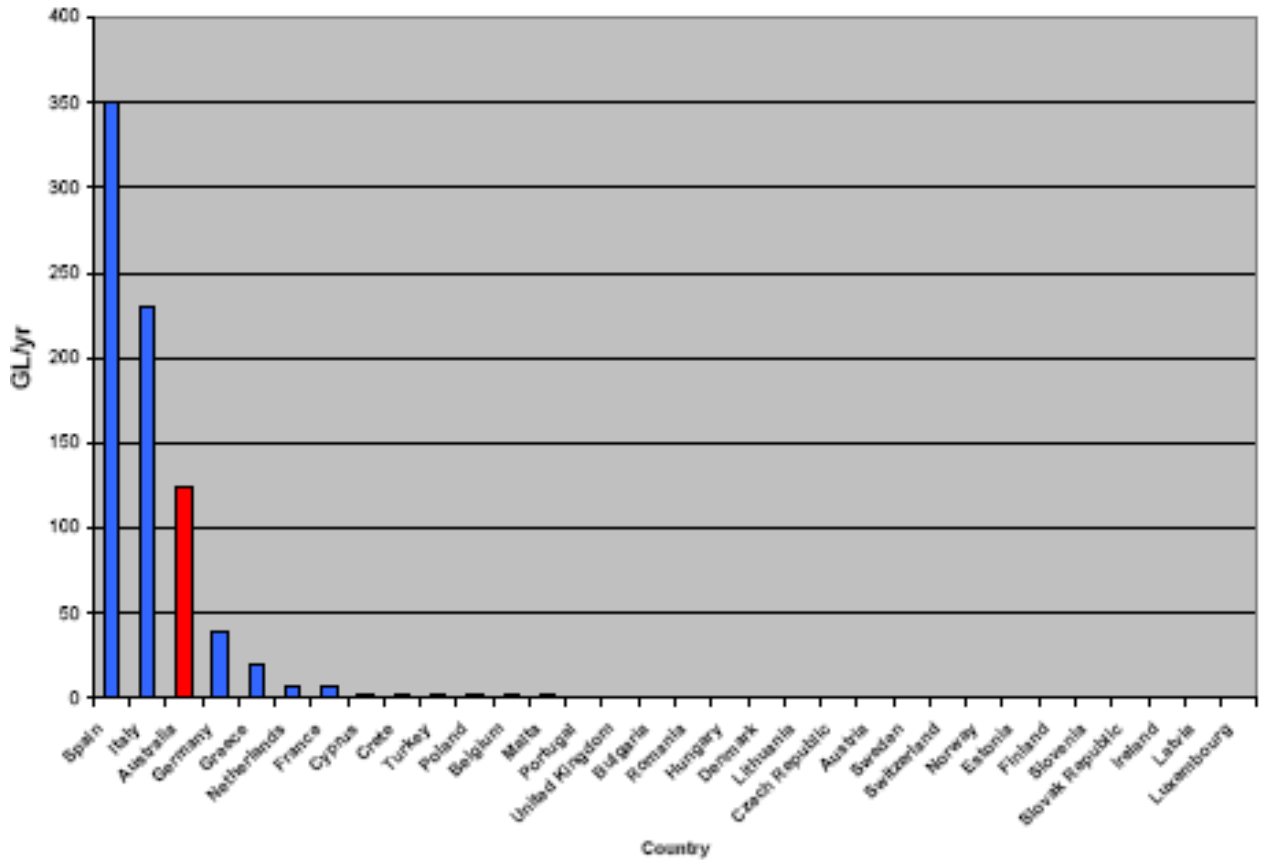
Fig. 5

Growth in the use of Recycled Water in Australian Cities



Source: WSAAfacts

Fig. 6  
**Water Recycled per annum**  
**EU Countries and Australia (planned projects)**



Source: *Recycling Water – Exploring the Issues*, forthcoming WSAA Position Paper, November 2006

The international comparison between Australia and EU countries shows that Australia is not a laggard but a leader in the area of recycling. More importantly, when one takes into account the much larger populations of Spain (just under 45 million people) and Italy (just under 59 million people) compared to Australia’s 20 million, Australia’s recycling efforts on a per capita basis would outrank Italy’s (a mere 60% of Australia’s performance) and the gap between Spain and Australia would narrow to only around 25%.

The superior performance of the Australian water industry in recycling is even more impressive when one acknowledges that Australia’s major population centres are located on the coast. This coastal location makes recycling projects more difficult to justify from an economic perspective since the source of the recycled water is generally the wastewater treatment plant on the coast. These treatment plants can be a considerable distance from the areas where recycled water can be used in meaningful activities (e.g. new growth corridors and commercial/industrial precincts).

Having put Australia's recycling performance into a more realistic footing, WSAA would like to note that water reuse or recycling is not a homogeneous product line. Recycled water is a generic term encompassing a myriad of applications. These applications include:

- Irrigation of non-food crops
- Irrigation of food crops
- Irrigation of pasture for food production
- Irrigation of pasture for non-food production
- Industrial process water uses
- Irrigation of municipal public parks, gardens and golf courses
- Household uses such as watering gardens, toilet flushing via a third pipe
- Supplementing drinking water supplies through Indirect Potable Reuse (i.e. addition to surface water or direct injection into groundwater sources)
- Direct injection into an urban water distribution system (i.e. Direct Potable Reuse).

The quality of recycled water and the risk management processes needed for these alternative applications varies enormously. The cost of provision of these different recycled water applications (which naturally includes transport) also varies with each individual project depending on:

- The quality of the wastewater
- The additional treatment required to ensure the product is fit for purpose for the specific recycled water application
- The distance and vertical height of the transport required to deliver the product to the customer(s)
- The risk management needed of the recycled water applications.

In its infancy, the principal attention of the urban water industry was devoted to the technical issues of the various recycled water applications. And these should not be underestimated. For example, consider third pipe systems. The introduction of third pipe systems constitutes a significant departure from the traditional "once through" system of delivering potable water and then transporting wastewater away. The benefits of the traditional "once through" system should not be underestimated since it was singly responsible for the largest increase in the lifespan of people (well ahead of medicine, antibiotics and other pharmaceuticals) let alone its cost effectiveness relative to the other public health related activities. The risk management activities associated with third pipe system should also not be underestimated. The only third pipe system in the Netherlands was abandoned several years ago following the public health consequences of a number of cross connections and the urban water industry in that country will not contemplate any other third pipe projects for the next few decades.

In regard to the comments contained in the Senate Committee's Interim Report regarding Sydney's recycled water performance, the following points should be noted. First of all, while Sydney's recycled water performance may be much smaller in percentage terms to other Australian cities, the same could not be said regarding:

- The absolute volumes of recycled water Sydney produces, and
- The complexity of the Sydney projects (e.g. Rouse Hill, Sydney Olympic Park and Blue Scope Steel).

The Rouse Hill and Sydney Olympic Park recycled water projects have been the foundation of more sustainable water sensitive urban designs currently being developed around Australia. More recent developments such as Pimpama-Coomera on the Gold Coast would simply not have been possible without the foundations of

the lessons learned from the pioneer work undertaken in Sydney. The emphasis in projects in Sydney has been on using recycled water to replace existing uses of potable water; a more complex and higher value added task.

In particular one should refrain from comparing recycled projects in, say, small inland regional areas (where the differences between the treatment for wastewater disposal and the fit for purpose recycled water treatment is minimal or non-existent and there are numerous farms in close proximity with more complex recycled water projects in large coastal cities (where the wastewater volumes are very large and the potential customers few and a considerable distance from the wastewater treatment plant)).

In respect of future recycled water projects, WSAA would like to note that, as the product line is now maturing, the urban water industry's attention is now turning to the commercial as well as to the technical considerations. WSAA has published a document on the pricing issues (see WSAA Occasional Paper 12, *Pricing for Recycled Water*, February 2005). One issue that stands clear as a commercial impediment to water recycling projects is the price of alternative products. Clearly, the pricing of irrigation water at its low levels is the single most important impediment to the development of recycled water schemes for agriculture and horticulture.

## **5. WATER TRADING**

WSAA has noted the positive comments made by the Senate Committee in its Interim Report regarding water trading. WSAA strongly supports the Senate Committee's call for standardising water rights to facilitate trading. WSAA notes that little was achieved in this area in the 1994 COAG water reforms. WSAA believes that a number of recent research reports in this area by the Productivity Commission and CSIRO have highlighted the benefits to Australia from allowing water to flow to its highest value of use, providing benefits to both farmers and cities.

WSAA, however, is concerned that progress in developing an efficient water trading market is moving too slowly and urges this Committee to add its considerable weight to push the State Governments to achieve real progress in this area. The BCA's recent report *Water under Pressure* noted accurately points out that, despite the long lead times envisaged under the National Water Initiative for water trading, the States have already missed the June 2005 deadline for setting water trading exchange rates and/or tagging of access entitlements. WSAA considers that without impetus from the Commonwealth, the lack of progress in water trading will be repeated in the implementation of other important actions in the National Water Initiative.

## **6. CONCLUDING COMMENTS**

In this submission WSAA has responded to the issues canvassed in the Senate Committee's Interim Report. WSAA had not originally intended to make a submission since the inquiry's terms of reference appeared to be outside the area of interest of the urban water industry.

WSAA's comments in this submission are predominantly concentrated on water recycling and water trading issues. WSAA supports the general thrust of the Committee's positive comments regarding water trading. However, WSAA is concerned that the Committee has failed to appreciate the success of the urban water industry in achieving the milestones in the 1994 COAG water reform agreement and the good progress being made in implementing the urban water actions in the National Water Initiative.

WSAA would urge the Senate Committee to use its influence to ensure that the rural actions in the National Water Initiative are implemented in totality as many of these actions represent unfinished business from the 1994 reform agenda.

WSAA would be happy to discuss any aspect of our submission further.