



Mr Michael Deegan
National Infrastructure Coordinator
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Dear Mr Deegan

I am writing in response to the AECOM *“Review of Regional Water Quality and Security”*, released by Infrastructure Australia on 31 January 2011.

Overall the above AECOM Report does not accurately represent the circumstances relating to drinking water quality, operator training, water pricing and full cost recovery and water security in non-metropolitan NSW. In addition, I am concerned that no opportunity has been provided for comment on a draft of the Report in order to correct the many factual errors in the Report.

I have briefly described these concerns in Attachment 1 for your convenience, and I have itemised these concerns by page and paragraph in Attachment 2, including in some cases suggestions on how these concerns could be corrected.

Contrary to the suggestions of the AECOM Report, the overall performance of the non-metropolitan NSW utilities is good and they provide value for money for the community as demonstrated by the annual performance monitoring system, which has been in place in NSW since 1986. The dire circumstances and poor performance cited in the AECOM Report is misleading and is not the case in non-metropolitan NSW.

The AECOM Report’s ‘one-size fits all’ recommendation of state-owned regional water corporations for non-metropolitan NSW is simplistic, has failed to consider the demonstrated strengths of the NSW utilities and has not been substantiated by robust analysis. Other models are available such as those recommended by the Independent Inquiry for Urban Water Supply and Sewerage for non-metropolitan NSW, including utility alliances, such as the Lower Macquarie Water Utilities Alliance, and council-owned regional water corporations.

Accordingly, it is considered that Infrastructure Australia should update the Executive Summary of the AECOM Report in order to correct the above errors and misleading information, and should publish a revised version of the Report or an Addendum to the Report which addresses the concerns raised in the Attachment.

Please note that this response is of a technical nature from two agencies only and is not a NSW Government response to the report. Accordingly, it would be appreciated if the information in this letter is only used in-house by Infrastructure Australia and not made available to the public.

Should you wish to discuss or clarify any issues, please contact Mr Sam Samra, Senior Manager, Water Utility Performance (02 8281 7435, 0438 466 426, Sam.Samra@water.nsw.gov.au).

Yours sincerely

31.3.2011

David Harriss
Commissioner, NSW Office of Water

SUMMARY OF CONCERNS WITH THE AECOM REPORT: REVIEW OF REGIONAL WATER QUALITY AND SECURITY

Drinking Water Quality

Whilst we recognise there is always a need to continue to improve performance, the AECOM report exaggerates drinking water quality problems in non-metropolitan NSW. As noted in the *2008-09 NSW Performance Monitoring Report*, drinking water quality in non-metropolitan NSW is generally very good, with over 99% of the urban population in non-metropolitan NSW receiving a water supply which complied with the *Australian Drinking Water Guidelines 2004* (ADWG). As shown in item 2 of Attachment 2, 88% of the NSW local water utilities (LWUs) complied with the ADWG for microbiological water quality, 96% for chemical water quality and 98% for physical water quality.

Obvious areas for continuing improvement are the 12 per cent of utilities which almost complied with the microbiological requirements of ADWG and the 4 utilities which almost complied with the chemical requirements. In addition, all utilities will need to prepare and implement a risk-based drinking water quality management plan, which will be required by the NSW *Public Health Act 2010*. The AECOM report is unnecessarily alarmist in regard to the risk of illness in non-metropolitan NSW from toxins, trihalomethanes, carcinogens and cryptosporidiosis (items 23 to 32 of Attachment 2).

Operator Training

The water and wastewater operator training provided by the NSW Office of Water for non-metropolitan NSW LWUs is widely acknowledged as being of a high standard, with the training provided by well respected professionals in water and wastewater treatment. As noted in item 39 of Attachment 2, the operator in charge of a water or sewage treatment works in non-metropolitan NSW is required to be appropriately qualified, and are recognised as such after successfully completing an Office of Water operator training course, which includes written tests, a maths test and an on-site test at the operator's treatment works.

In addition, the Office of Water's water and sewerage inspectors periodically inspect the operation of each LWU water and sewage treatment works and provide feedback and mentoring of the LWU operators. In particular, the substance of recommendations 9 to 11 of the AECOM Report is fully met by the present arrangements in non-metropolitan NSW.

Water Pricing and Full Cost Recovery

Water pricing is a major problem throughout the Report and requires significant action for correction. The concern is that the Report's comments on water pricing are not based on the nationally agreed indicators for this issue and do not make use of the publicly available information on these national indicators. In the case of NSW the Report has failed to take account of the information that is publically available information in the annual *NSW Water Supply and Sewerage Performance Monitoring Report* and *Benchmarking Report* (www.water.nsw.gov.au).

The NSW LWUs are well advanced in pricing and full cost recovery for water supply and sewerage in accordance with the NSW Government's *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007*. Utilities which comply with these guidelines also comply with the *National Water Initiative Pricing Principles, April 2010*.

The AECOM Report is incorrect in stating on page 9 'Water utilities that are operated as part of the local government structure experience rate pegging' – No rate pegging applies for water supply and sewerage in non-metropolitan NSW.

As indicated in items 13 and 14 of Attachment 2, the 'analysis' of water pricing and full cost recovery in the AECOM Report fails to consider typical residential bills, the economic real rate of return, the percentage revenue from water usage charges and the average annual residential water supplied per connected property. These are NWI Performance Indicators, and results since 2005-06 are available in the *National Performance Report for Urban Water Utilities* and the results for each NSW utility are available in the NSW Performance Monitoring Report. The AECOM Report fails to acknowledge that 96% of the NSW LWUs are achieving full cost recovery for water supply and that the NSW LWUs are national leaders in providing strong pricing signals, with 73% of the residential revenue obtained from water usage charges (item 13).

The pricing, water conservation and demand management measures implemented by the NSW utilities have contributed to the 47% reduction in the average annual residential water supplied per connected property over the last 18 years, enabling them to avoid the need for over \$1 billion of capital expenditure and associated increases to the typical residential bills. In addition, the NSW utilities now have sound pricing in place for developer charges, non-residential water supply and sewerage and trade waste.

Water Security

The 'NSW Security of Supply' basis was developed for sizing urban water supply headworks systems in the mid 1980s in order to ensure cost-effective systems are developed which can provide a supply in future droughts without the need for excessive frequency, severity or duration of drought water restrictions. As noted in item 60 of Attachment 2, analysis with the severe 2000 to 2007 drought has demonstrated the robustness of the NSW Security of Supply basis.

Interstate Performance Comparisons

Comparison of the performance of the NSW local water utilities against those of interstate utilities on pages 13 and 14 of the *2008-09 NSW Performance Monitoring Report* indicates:

- Compliance with microbiological water quality guidelines and water quality complaints were similar to most other Australian utilities.
- Water main breaks have remained much lower than all the other states and the capital city utilities, indicating good water main asset condition.
- Average annual residential water supplied per connected property was similar to country Victoria, and lower than all the other Australian states and the capital city utilities, except for Brisbane and Melbourne.
- The economic in real return (water and sewerage) was higher than country Victoria but lower than the capital city utilities.
- Annual median operating cost (OMA - operation maintenance and administration) for water was lower than the country utilities in all the other states but higher than most of the capital city utilities.

**INACCURACIES IN THE AECOM REPORT:
REVIEW OF REGIONAL WATER QUALITY AND SECURITY**

The information provided on non-metropolitan NSW in the AECOM *“Review of Regional Water Quality and Security”*, released by Infrastructure Australia on 31 January 2011 is highly misleading and fails to take account a range of publically available information in the annual *NSW Water Supply and Sewerage Performance Monitoring Report* and *Benchmarking Report* (www.water.nsw.gov.au). This omission needs to be corrected by including such publically available information in the AECOM Review Report as indicated below in order to provide a sound and balanced assessment of the performance of the non-metropolitan NSW water utilities. These corrections and additions substantially alter the findings of the AECOM Report with respect to non-metropolitan NSW.

The inaccuracies in the Report are set out below.

1. Page 1, 2nd para states “only half the very small utilities had water conservation and demand management plans in place”. In fact page 17 of the *2008-09 NSW Water Supply and Sewerage Performance Monitoring Report* shows that 87% of the utilities now have such a plan including 76% of the utilities with under 1,500 connected properties (page 67).
2. Page 1, 3rd para, 4th line - in relation to ‘reform’ the Report should note
 - A. Page 6 of the *2008-09 NSW Performance Monitoring Report* shows that 88% of the NSW Local Water Utilities (LWUs) complied with the *Australian Drinking Water Guidelines 2004* (ADWG) for microbiological water quality, 96% of LWUs complied for chemical water quality and 98% of LWUs complied for physical water quality.

Page 7 of the Monitoring Report shows that in 2008-09, the water supply for over 99% of the urban population in non-metropolitan NSW complied with ADWG for both microbiological and chemical water quality.

COMMENT:

The above provides a factual overview of the generally very good drinking water quality supplied in non-metropolitan NSW.

It is a serious error to assume that solutions for the vastly under-performing Victorian utilities in 1992 are now applicable to the NSW utilities which have been consistently performing well and have publically reported their performance since 1986.

3. Page 1, 7th para, 3rd line - in relation to ‘information’ the Report should note
 - B. It is also important to note that there is comprehensive reporting of the performance of each non-metropolitan NSW water utility in the annual *Water Supply and Sewerage Performance Monitoring Report* and *Benchmarking Report*. In particular Appendix D1 on page 233 of the

2008-09 NSW Water Supply and Sewerage Benchmarking Report shows the detailed water quality compliance information for each water treatment facility (eg. full water treatment works/chlorination station/aeration station/UV disinfection etc.). Appendix D1 also shows the level of treatment provided at each treatment facility in non-metropolitan NSW. Surface water supplies when needed receive full water treatment, with an appropriate level of treatment barriers, and all the potable supplies are appropriately disinfected.

The NSW Office of Water periodically inspects and monitors the performance of each LWU's water and sewage treatment works and provides feedback/mentoring to assist the LWU operator. Refer also to items 39 and 42 below.

4. Page 1, final para, 2nd line - in relation to 'filtration' the Report should note
 - C. Surface water supplies in non-metropolitan NSW receive comprehensive multi-barrier water treatment at the level of sophistication needed to assure a high quality potable water supply. Where source water quality is high and does not require filtration, it is not sensible to burden customers with the high cost of providing filtration. For such water supplies disinfection alone is sufficient treatment.
5. Page 2, 1st para, 6th line - in relation to 'environment' the Report should note
 - D. Each LWU in non-metropolitan NSW returns water to the environment in accordance with its sewage treatment works licence. The performance of each LWU sewage treatment works is shown in Appendix D2 on page 238 of the *2008-09 NSW Water Supply and Sewerage Benchmarking Report*.
6. Page 2, 2nd para, 2nd line - in relation to 'NSW' the Report should note
 - E. The NSW Government's *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007* set out comprehensive requirements for pricing of water supply, sewerage and trade waste by the NSW LWUs. These requirements are based on the *Independent Pricing and Regulatory Tribunal's 'Pricing Principles for Local Water Authorities, 1996'* and include:
 - Preparation of a comprehensive 20 to 30 year strategic business plan and financial plan by each utility and community consultation thereon.
 - Full cost recovery, pay-for-use water pricing, independent of land value.
 - Strong pricing signals to encourage efficient water use.
 - Provisions for assisting vulnerable customers.
 - Sound pricing for non-residential customers.

As noted on page 17 of the *2008-09 NSW Performance Monitoring Report*, the overall level of compliance by the 106 NSW utilities with the 19 requirements of the *Best-Practice Management Guidelines* was 82% in 2008-09.

As noted on page 6 of the *NSW Performance Monitoring Report*, the Statewide Typical Residential Bill for water supply and sewerage has increased by only 2% in real terms over the past 14 years. This is in contrast with the position of other Australian utilities where page 24 of the *National Performance Report 2008-2009* indicates there has been significant real increases in prices to fund increases in operating and capital expenditure.

As noted on page 4 of the *NSW Performance Monitoring Report*, 89% of the non-metropolitan NSW utilities have completed a sound 20 to 30 year strategic plan and financial plan. In addition, strong pricing signals have been provided, with 73% of residential revenue obtained from water usage charges.

As noted on page 10 of the *Performance Monitoring Report*, full cost recovery was achieved by 96% of the NSW utilities for water supply.

As noted on page 8 of the *NSW Performance Monitoring Report*, the Statewide median 'average annual residential water supplied' was 175kL/connected property, which has fallen by 47% over the past 18 years. It was similar to country Victoria, and lower than all the other Australia states and the capital city utilities, except for Brisbane and Melbourne.

7. Page 2, replace the 4th column of Table 1 for NSW with "Local Water Utility set, in accordance with *NSW Best-Practice Management Guidelines 2007* (monitored and publically reported by NSW Office of Water)."
8. Page 3, replace the 3rd column of Table 2 for NSW with '106 Local Councils and Regional Water Utilities'.
9. Page 3, 1st para, 2nd line - in relation to 'report' the Report should note
 - F. Of the 73 urban water utilities reporting in the *2008-2009 National Performance Report*, there was a total of 57 non-metropolitan utilities comprising:
 - NSW – 27 (all eligible utilities)
 - Victoria – 13 (all eligible utilities)
 - Queensland – 6
 - South Australia – 2
 - Western Australia – 8
 - Tasmania – nil
 - Northern Territory – 1 (all eligible utilities)

In addition, the performance of all the NSW water utilities is disclosed in the annual *NSW Water Supply and Sewerage Performance Monitoring Report and Benchmarking Report* (www.water.nsw.gov.au).

10. Page 3, 1st para, final line - in relation to 'whole' the Report should note

G. This is not the case for non-metropolitan NSW. As noted in footnote B, the performance of each water treatment facility in non-metropolitan NSW is shown in Appendix D1 of the annual *NSW Benchmarking Report*.

11. Page 5, final para, final line - in relation to 'risks' the Report should note

H. However, in order to provide a balanced assessment of risks and avoid misleading the reader, broader contextual information needs to be disclosed along the lines shown in footnotes A and B above.

12. Page 6, 2nd para, 1st line - in relation to 'information' the Report should note

I. The exception is the information reported for non-metropolitan NSW as indicated in footnotes A, B and E above.

13. Page 6, 4th para, 3rd line - in relation to 'template' the Report should note

J. It is considered that the template needs to be extended to include at least the following performance indicators from the *National Performance Report 2008-2009*:

- (1) Typical residential bill (NWI Indicator P3 – water supply).
- (2) Economic real rate of return (NWI Indicator F17 – water supply).
- (3) Percent of residential revenue from water usage charges (NWI Indicator F4).
- (4) Average annual residential water supplied per connected property (NWI Indicator W12).

Indicator P3 indicates the overall cost/affordability of the water supply. Indicator F17 broadly indicates whether the utility is achieving full cost recovery. Indicators F4 and W12 respectively indicate whether the utility is providing strong pricing signals and achieving efficient water use. Results for these indicators from the *National Performance Report for Urban Water Utilities* are available since 2005-06.

Results for key performance indicators from the *National Performance Report 2008-2009 for Urban Water Utilities* indicate:

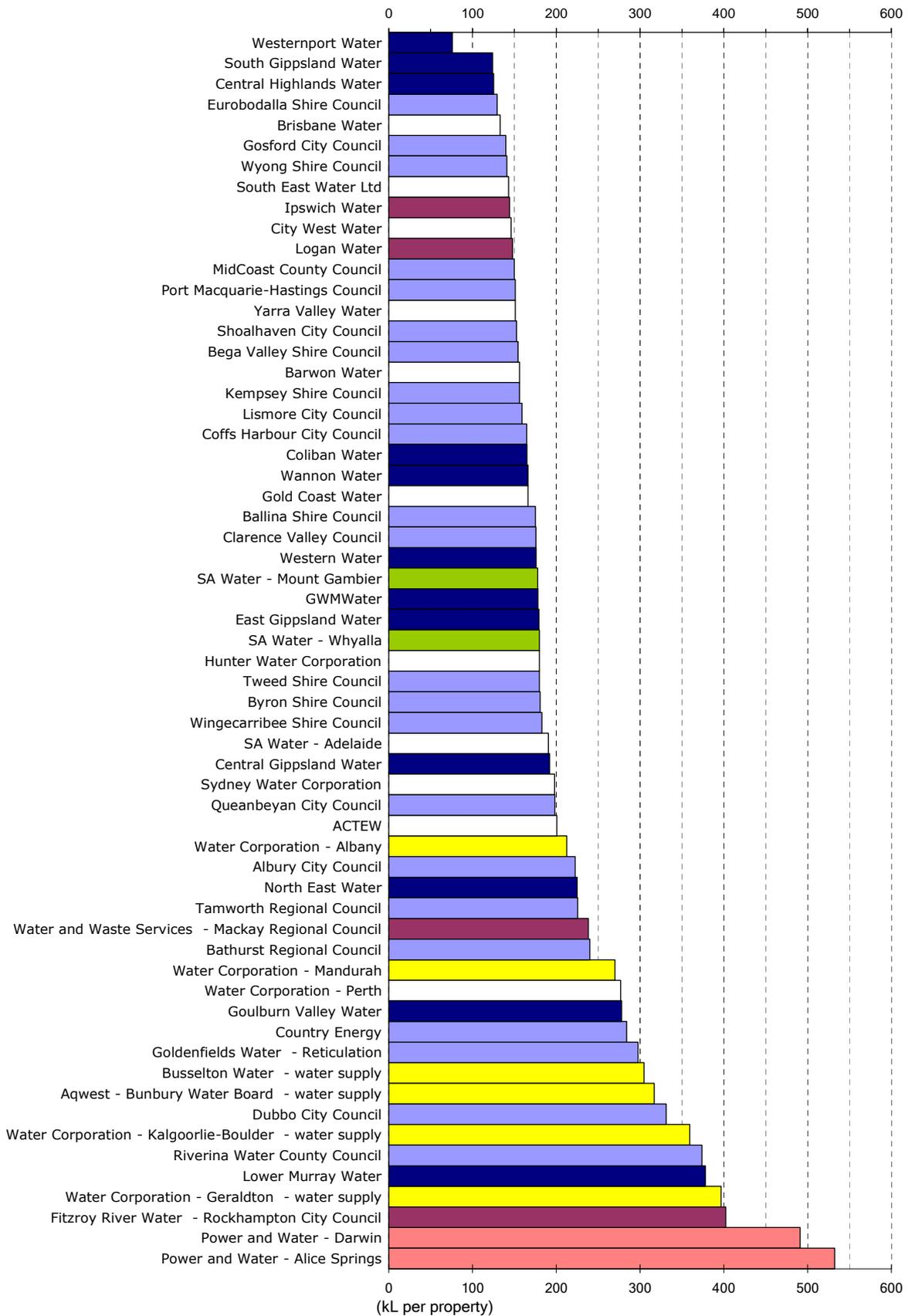
- The 'average annual residential water supplied' per connected property is reported in **Figure 1** on page 6 (NWI Indicator W12), which shows that 12 NSW non-metropolitan utilities are among the lowest 25 utilities reporting in the *National Performance Report 2008-2009 for Urban Water Utilities*.
- The NSW utilities are national leaders in providing strong pricing signals to encourage efficient water use:

- The Statewide median residential water usage charge has increased from 79c/kL to 150c/kL (2009-10\$) over the past 11 years. **Figure 2** on page 7 shows that for this indicator (NWI Indicator P1.3), 13 NSW non-metropolitan utilities are among the highest 20 utilities reporting in the *National Performance Report 2008-2009*.
- The Statewide median residential revenue from water usage charges has increased from 25 per cent to 73 per cent over the past 11 years. **Figure 3** on page 8 shows that for this indicator (NWI Indicator F4), 14 NSW non-metropolitan utilities are among the highest 19 utilities reporting in the *National Performance Report 2008-2009*.
- However, the real Statewide median water supply Typical Residential Bill¹ (TRB) has increased by only 5% over this period (from \$410 to \$430 in 2009-10\$), as shown on page 5 of the *2008-09 NSW Performance Monitoring Report*.

¹ The Typical Residential Bill is the **principal indicator of the overall cost** of a water supply or sewerage system and is the bill paid by a residential customer using the utility's average annual residential water supplied per connected property.

Figure 1

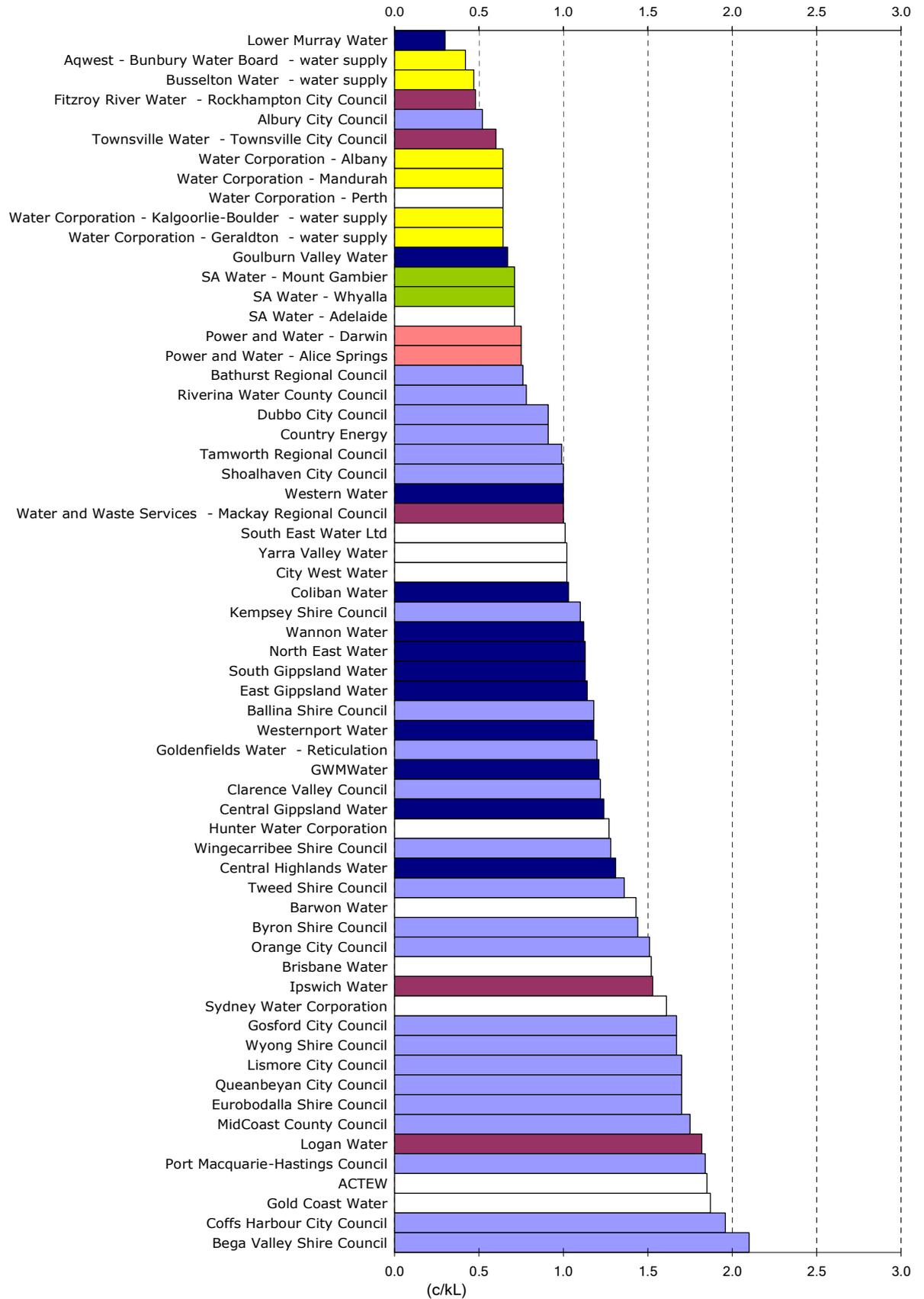
W12-Average annual residential water supplied (kL/property)



Group 1	>100,000 properties	Group 4	Queensland	Group 7	Northern Territory
Group 2	New South Wales	Group 5	Western Australia	COLOUR LEGEND	
Group 3	Victoria	Group 6	South Australia		

Figure 2

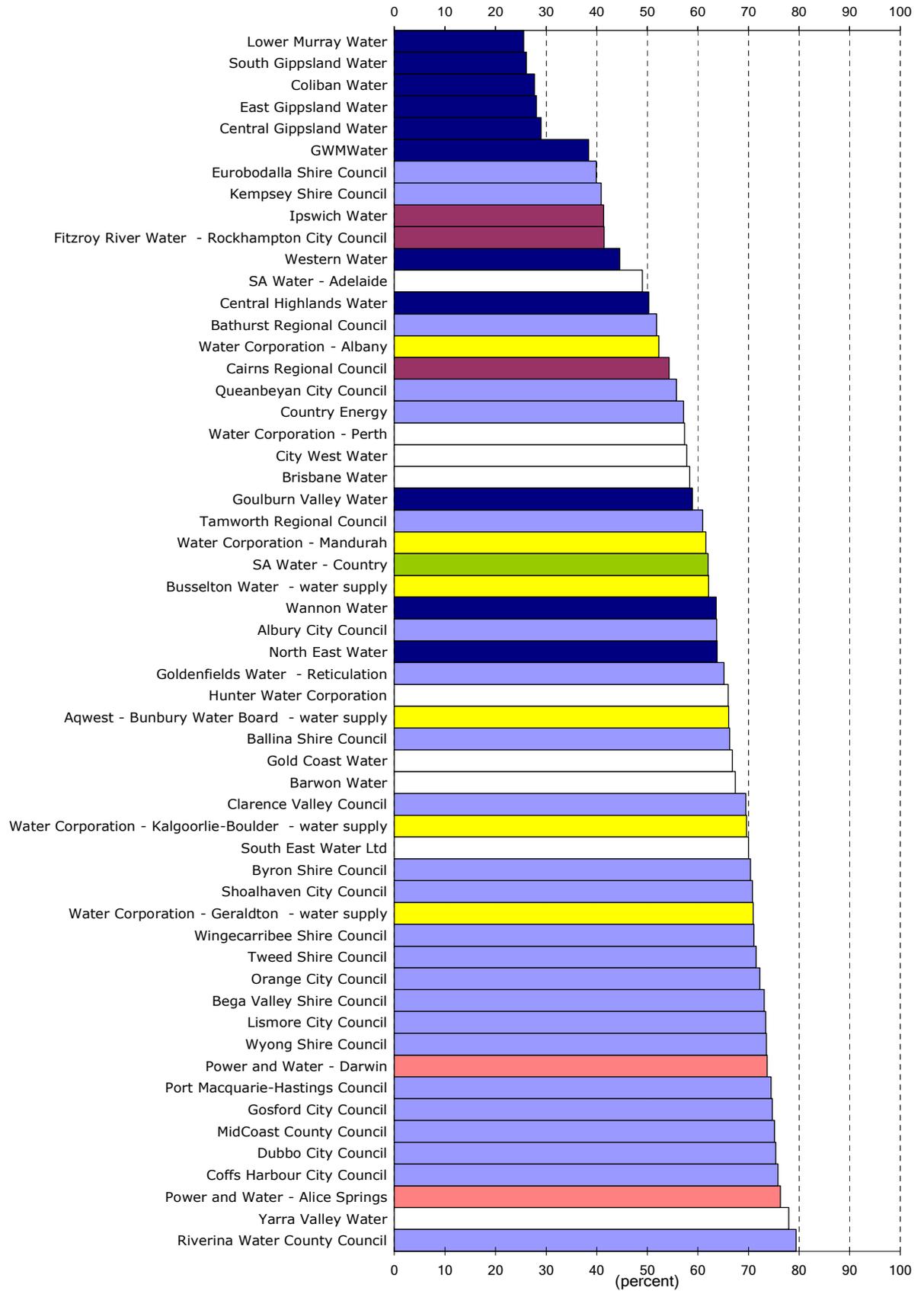
P1-3-Usage Charge 1st Step



Group 1 >100,000 properties	Group 4 Queensland	Group 7 Northern Territory
Group 2 New South Wales	Group 5 Western Australia	
Group 3 Victoria	Group 6 South Australia	COLOUR LEGEND

Figure 3

F4-Residential revenue from usage charges - water (%)



Group 1 >100,000 properties	Group 4 Queensland	Group 7 Northern Territory
Group 2 New South Wales	Group 5 Western Australia	COLOUR LEGEND
Group 3 Victoria	Group 6 South Australia	

COMMENT:

The authors have made a serious error of judgment by failing to consider the above National Performance Indicator W12, for which results are reported for the Australian urban water utilities and all the NSW utilities. Instead, they have persisted with the outdated (2007) Australian Water Association indicator of 'per capita water consumption'. As a result, this indicator is shown as "unknown" for many of the towns in the Report.

14. Page 8 - purple box - the 'analysis' of pricing on pages 8 to 10 of this Report is considered to be of a very low standard. The minimum indicator set required to enable objective analysis of pricing is that shown in item 13 above.

As noted in item 6 above,

- 96% of the NSW LWUs have achieved full cost recovery for water supply.
- Strong pricing signals are provided by the NSW LWUs, with 73% of residential revenue obtained from water usage charges.
- There has been a total real increase of only 2% in the typical residential bill for water supply and sewerage in non-metropolitan NSW over the last 14 years.
- There has been a 47% reduction in the average annual residential water supplied per connected property over the last 18 years.

In addition, utilities which comply with the *NSW Best-Practice Management Guidelines* also comply with the *National Water Initiative Pricing Principles, April 2010*.

15. Page 8, 3rd para, 5th line - in relation to 'water shortages' the Report should note

K. Water shortages as a result of the worst drought in a century are hardly surprising. The LWUs with drought water restrictions and the percent of time these were in place are shown on page 56 of the *2008-09 NSW Benchmarking Report*. Page 3 of the *NSW Performance Monitoring Report* shows details of LWU drought water restrictions since 1986. The results for the 15 years from 1986 to 2000/01 are consistent with the implied target of no drought water restrictions in 90% of years in the NSW Security of Supply Basis (commonly referred to as the '5/10/10 rule').

16. Page 8, 3rd para, final line - in relation to 'governments' the Report should note

L. In non-metropolitan NSW, no dividends are paid by the utilities to the State Government. However, as noted on page 65 of the *2008-09 NSW Performance Monitoring Report*, 3 utilities have paid a dividend from their water supply and sewerage business to the council's general revenue.

17. Page 8, final para - the reference to the 'amalgamations in Victoria' has very limited relevance and is not a substitute for sound analysis of pricing and cost recovery by the utilities. Refer to items 2, 13 and 14 above.
18. Page 9, 5th para, 1st line - in relation to 'government' the Report should note
- M. As noted in item 16 above, no funds or dividends are transferred from non-metropolitan NSW utilities to the NSW Government.
19. Page 9, 2nd last para, final line - in relation to 'cost' the Report should note
- N. This is not the case in non-metropolitan NSW where the Tier 1 water usage charge/kL is required to reflect the utility's long run marginal cost. The *National Performance Report 2008-2009 for Urban Water Utilities* shows that the Tier 1 water usage charge/kL for 13 non-metropolitan NSW local water utilities are among the highest 20 utilities reporting in this national report.
20. Page 10 - the comparison of the Tier 1 water usage charges/kL in Table 1 is highly misleading. Affordability of water supply is best judged by the typical residential bill, which is the principal indicator of the overall cost of the water supply (refer page 55 of the *National Performance Report 2008-2009 for Urban Water Utilities*. Also refer to items 13 and 14 above).
21. Page 10, 3rd para, 3rd line - in relation to 'recovery' the Report should note
- O. As noted at in items 6 and 14 above, 96% of NSW LWUs are achieving full cost recovery for water supply.
22. Page 10, final para, 2nd last line - in relation to 'connected' the Report should note
- P. Opportunities for cost-effective connection of customers from a neighbouring council area are routinely implemented in non-metropolitan NSW. In particular, 4 county councils have been formed to develop and manage regional water supply systems serving a number of council areas. In addition, a joint regional water supply has been developed for Gosford and Wyong Councils and for Clarence Valley and Coffs Harbour Councils. Furthermore, servicing of customers near a council boundary from a neighbouring council's system is also routinely implemented where cost-effective eg. service of Rous customers from the Tweed system and service of Gosford Council customers in Forresters Beach from the Wyong system.
23. Page 11 – purple box, the statement that 'water utilities servicing regional communities struggle to implement and comply with the Australian Drinking Water Guidelines' is not an accurate reflection of the status of the majority of water utilities in non-metropolitan NSW. It is true for a few water utilities. Refer also to items 2 and 3 above.
24. Page 11, 2nd para, In non-metropolitan NSW, appropriate treatment or management is generally provided for water supplies that may be affected by pathogens, toxic cyanobacteria and other contaminants. It is expected that some trihalomethanes are produced in most potable water supplies where they are disinfected with chlorine. The AECOM report does not present a balanced view of the risk and epidemiological uncertainties associated with THMs. Importantly, the report should

acknowledge the recommendation of the NHMRC that action to reduce THMs is encouraged, but must not compromise disinfection, as non-disinfected water poses significantly greater risk than THMs.

25. Page 11, 2.3.1.1, It is incorrect to compare the level of treatment that needs to be provided without recognising the type, characteristics and quality of the source water and the frequency, duration and levels of contaminants present. In non-metropolitan NSW all these factors are taken into account together with source quality management to determine the optimum level of treatment for each water supply. Refer also to item 4 above.

Page 11, 7nd para, In non-metropolitan NSW, where water supplies receive disinfection only and no filtration, the sources of water are generally of high quality, with low contamination risks including trihalomethanes.

26. Page 12, green box - In non-metropolitan NSW, the level of treatment provided for surface waters is generally robust, appropriate, and sufficiently comprehensive and conservative to produce a high quality water supply.

Page 12, box 3 - The second paragraph on the statement of the International Agency for Research on Cancer is taken out of context as it does not relate to the levels found in drinking water. The other conclusion of the Agency provides the context, "The International Agency for Research on Cancer has concluded that the available data for chlorinated water provided inadequate evidence of carcinogenicity in humans". Treatment to remove precursors is to be provided only if essential to reduce trihalomethanes to meet the *Australian Drinking Water Guidelines* as the cost of such treatment is very high.

27. Page 13, box 5 - In non-metropolitan NSW this and all other relevant factors are routinely taken into account in deciding the barriers of treatment provided for each water supply source. Refer also to item 4 above.

Page 13, final para - In non-metropolitan NSW treatment requirements for groundwaters are properly assessed and provided to produce good quality water supplies. Disinfection is provided for almost all potable water supplies sourced from groundwater, together with other treatment as appropriate to comply with the *Australian Drinking Water Guidelines*.

28. Page 15, New South Wales - Table 4

Total coliforms is not a useful indicator of the presence of faecal contamination and no guideline value for this parameter will be set in the revised *Australian Drinking Water Guidelines*.

The **Lead** issue was mainly for Broken Hill water supply and should now be under control with the newly commissioned Broken Hill water treatment works.

TDS is an aesthetic issue and is limited to a few water supplies due mainly to drought.

29. From page 17, box 8 it could be inferred that cases of cryptosporidiosis between 1997 and 2000 in NSW were caused by contamination of drinking water supplies. This is incorrect, and is not claimed by the article to which reference is made.

30. Page 17, 2nd last para - the comment "high probability that it will reach the community before detection" is considered to be alarmist. A well operated NSW water utility would collect daily operational samples and carry out tests to confirm appropriate operation of its water treatment facility and, would undertake monitoring of its distribution system to ensure effective disinfection (in accordance with Appendix E on page 243 of the *2008-09 NSW Water Supply and Sewerage Benchmarking Report*). In addition, the NSW Office of Water periodic inspections of the utility's treatment facilities provide independent review and confirmation of satisfactory operation.

31. Page 18, 1st para, 1st line - 'Free chlorine' residuals are routinely monitored as part of the utility's distribution system monitoring – refer to item 30 above.

32. Page 18, 2nd para - 'Pesticides and herbicides' – All new sources of water are tested for pesticides and herbicides. They would be targeted for testing if any source used for potable water supply is found to contain these contaminants. Herbicides and pesticides are rarely detected in water sources in non-metropolitan NSW.

33. Page 19, 2nd para - this paragraph is incorrect in regard to water treatment works operators in non-metropolitan NSW, where the following arrangements apply:

- The operator in charge of any water treatment works must be suitably qualified; successful completion of the NSW Office of Water's Water Treatment Operator Training Course is such a suitable qualification.
- An operator with a Certificate II, III or IV in Water Industry Operations, but without suitable training and experience in water treatment is not considered to be suitably qualified.
- An operator who successfully completes the Office of Water's Part I and Part II Water Treatment Operator Training courses which involve two written tests, a maths test and an on-site test at the operator's treatment works is a suitably qualified officer. Such an officer receives a TAFE Certificate III qualification – Water Treatment Operator. Such an operator completes the 3 core units as well as the following 8 electives, which are all water treatment related:

NWP210B	Perform basic water quality tests
NWP261A	Operate and maintain water treatment plant & equipment
NWP268B	Monitor, operate and report on chlorine-based disinfection systems
NWP345B	Monitor, operate and control water treatment processes
NWP347B	Monitor, operate and control coagulation and flocculation processes
NWP348B	Monitor, operate and control sedimentation and clarification processes
NWP354B	Monitor, operate and control granular media filtration processes
NWP364B	Perform laboratory testing

- Mentoring of water utility operators is conducted at the periodic Office of Water inspections of each LWU's treatment works.

34. Page 19, 3rd dot point - inadequate skills - not applicable for non-metropolitan NSW - refer to item 33 above.

35. Page 19, 4th dot point - filter failure may be due to poor design among other factors.

36. Page 19, 5th dot point - failures in auditing processes - not applicable for non-metropolitan NSW where Office of Water inspectors periodically inspects and report on the performance of each treatment works.
37. Page 20, 5th para - the criticism of operator training is not applicable to non-metropolitan NSW - refer to item 33 above.
38. Page 20, 3rd dot point - not applicable to non-metropolitan NSW where the operator in charge of each treatment works must be suitably qualified – refer to item 33 above.
39. Page 20, 4th dot point - ‘lack of continuing development’ - not applicable to non-metropolitan NSW where operators are required to attend an Office of Water Water Treatment Update Seminar (or equivalent) at least once every 5 years.

Each NSW utility is required to annually report the qualifications and training provided for all of its operators.

40. Page 20, 5th dot point - ‘underqualified training personnel’ - not applicable to non-metropolitan NSW where the trainers are widely recognised as respected industry experts.
41. Page 20, 6th dot point - deficient Recognition of Prior Learning - not applicable to non-metropolitan NSW. Refer to item 33 above where the written, maths and on-site tests are compulsory.
42. Page 20, 7th dot point - generic training and testing criteria – not applicable to non-metropolitan NSW.
43. Page 20, 8th dot point - operator qualifications without completing filtration or disinfection units - not applicable to non-metropolitan NSW. Refer to item 39 above which shows the 8 water treatment electives which must be successfully completed by each water treatment operator.
44. Page 20, 9th dot point - ‘no more training is required’ - not applicable to non-metropolitan NSW. Refer to item 33 above.
45. Page 20, 10th dot point - poor auditing of training to ensure an operator uses and retains knowledge - not applicable to non-metropolitan NSW where mentoring of operators is conducted at the Office of Water periodic inspections of LWU treatment works.
46. Page 25, 5th para - ‘drought management plan’ - 90% of the NSW utilities have a drought management plan (page 17 of the *2008-09 NSW Water Supply and Sewerage Performance Monitoring Report*).
47. Page 37, purple box - the statement that ‘water utility planning is not carried out at the catchment level’ in NSW is misleading.

Pages 73 to 75 of *NSW Best-Practice Management of Water Supply and Sewerage Guidelines* set out requirements for a utility’s Integrated Water Cycle Management (IWCM) Strategy, including region-wide planning and consultation with stakeholders involving relevant water users, customers,

consent authorities (eg. DECCW), government agencies (eg. NSW Health, NSW Office of Water) and the community.

48. Page 27, final para - 'drought proofing' - this is a deficient concept, as it is not possible to 'drought proof' a utility's surface water supply.
49. Page 28, 1st para - 'water business related planning is not performed well in regional areas' - not applicable for non-metropolitan NSW where 89% of the utilities have completed a sound 20 to 30 year strategic business plan and financial plan (page 4 of the *2008-09 Performance Monitoring Report*). In addition, 68% of the utilities have commenced an IWCM Evaluation or Strategy, of which 46 utilities have completed an IWCM Evaluation and 26 have also completed an IWCM Strategy (page 17 of the *2008-09 Performance Monitoring Report*).
50. Page 28, 4th para - as noted in item 2 above, NSW has been publishing the annual *Performance Monitoring Report* since 1986.
51. Page 28, 5th para - reporting of predicted future water demand, infrastructure requirements, pricing demand are key requirements of each utility's strategic business plan.
52. Page 28, 8th para - the Addendum to the ATSE 2007 report indicated:

Addendum to the ATSE Report

Urban Water: Review of Water Supply Planning for Australia's Non-metropolitan Urban Water Utilities, May 2007

The following corrections are made to the report in relation to water supply planning in NSW:

- On pages 15 and 16, the report states that "all" councils in regional NSW are members of the Water Directorate. The statement should read "almost all" councils, as 94 out of 107 councils are members.
- The two references to "financial incentives (subsidies)" in the Executive Summary and Conclusions should be read as "financial incentives" as many of these incentives are not in the form of subsidies. Similarly on page 16, the statement referring to "dividend (subsidy) payments from Treasury" should be read simply as "dividend payments". The references to subsidies are based on similar statements in the Executive Summary and Section 1.6 of the NSW Government's Integrated Water Cycle Management (IWCM) Strategy Guidelines.
- On page 15, 2nd paragraph, the number of non-council local water utilities should read "three" rather than "six".

The report, which was prepared in late 2006 and printed in May 2007, relies upon information available at the time of preparing the report. The report was prepared at a time of rapid reform in the water industry. For example, since May 2007, the NSW State Government has gazetted its Best Practice Management Guidelines (on 31 August 2007). The authors are pleased to note that the NSW State Government has acted to make completion of Integrated Water Cycle Management (IWCM) Strategies mandatory for Council Owned Water Utilities (COWUs), as recommended in our report. This will improve the degree of compliance with best practice management in water supply planning in NSW as is evidenced by the increased number of COWUs (56%) now starting to prepare IWCM strategies. A number of other points, such as specification of the planning horizon for IWCM Strategies, have now been addressed through that process.

Although some 80 per cent of COWUs in NSW have now prepared Strategic Business Plans, the executive summaries of which provide the water supply and sewerage elements of the councils' annual Management Plan, the introduction of IWCM planning in 2004 and made mandatory in August 2007, will ensure that best management practices advance to encompass climate change and a triple bottom line approach to a full range of demand management and supply enhancement options.

12 October 2007

53. Page 28, final para - 'general lack of planning for water security' does not apply to non-metropolitan NSW where the NSW Security of Supply Basis (commonly referred to as the '5/10/10 rule'²) has been in place in the mid-1980s.

As demonstrated in the above paper for 10 LWU water supply systems, the NSW Security of Supply basis has been found to be robust when tested for the severe 2000 to 2007 drought. In addition, the Office of Water has conducted a pilot study³ to determine the impact of climate change on water security for 11 LWU water supplies in non-metropolitan NSW. Guidelines are being developed which require the NSW utilities to determine the impact of

² P. Cloke, S. Samra – Impacts of the 2001-2007 Drought and Climate Change on Security of Water Supplies in Country NSW, Institution of Engineers of Australia, Water Resources and Hydrology Symposium, Newcastle, December 2009

³ S. Samra, P. Cloke – NSW Response for Addressing the Impact of Climate Change on the Water Supply Security of Country Towns, Institution of Engineers of Australia, Practical Responses to Climate Change National Conference, Melbourne, September 2010

climate change on their water supply along similar lines to that carried out in the pilot study.

54. Page 29, 3rd para - 'There is no nationally consistent measurement or reporting of usage per person. Additionally, while the NPR gathers historical usage but does not report on forecast usage.' - this paragraph is highly misleading as there is a universally agreed national performance indicator - W12 - average annual residential water supplied per connected property which has been annually reported in the *National Performance Report for Urban Water Utilities* since 2005-06. Refer also to item 13 above.

Failure to report and evaluate each utility's performance for this national performance indicator is a fatal deficiency of the AECOM Report.

As noted in item 58 above, forecasts of each NSW LWU's water future water usage is provided in its strategic business plan.

55. Page 30, 2nd para - 'towns without domestic water metering' - there is now only 1 NSW local water utility without a fully metered potable water supply. This utility serves fewer than 500 connected properties.

56. Page 30, final para - 'poor management of assets' - as noted in item 6 above, 89% of the non-metropolitan NSW water utilities have a sound strategic business plan and financial plan, which includes appropriate asset management – operating, maintenance and capital works plans (pages 4 and 15 of the *2008-09 NSW Performance Monitoring Report*).

Refer also to page 13 of the *2008-09 NSW Performance Monitoring Report* which shows that the water main breaks NWI Indicator – A8 for NSW LWUs have remained much lower than all the other states and the capital city utilities, indicating good water main asset condition.

57. Page 31, 2nd para - replace the 1st line with 'In order to better manage water supply systems by quantifying and reducing real water losses, the Water'

COMMENT:

The above corrects misleading bias in the present text.

58. Page 35, 1st para, 5th line - the strong endorsement of 'postage stamp' pricing in this paragraph is highly flawed.

Whilst it may be appropriate for a regional water utility to adopt 'postage stamp' pricing, requiring all regional utilities to do so can have major adverse impacts including:

- Failure of many small expensive water supplies if there is a large reduction in the water usage charge/kL as a result of adopting the same usage charge as that for a large regional city served by the utility.
- Encouraging 'gold plating' as the residents of small towns would then be encouraged to insist on the same levels of service as apply in regional cities irrespective of the cost of service provision, as they would only need to pay the same access and usage charges as apply in the cities. This ignores the lack of economy of scale in

providing small water supply and sewerage systems. The *Handbook for Affordable Water Supply and Sewerage for Small Communities*, Australian Water Resources Council/Water Services Association of Australia, 1999 identifies appropriate design criteria and levels of service for such communities. The NSW utilities have been encouraged to apply the levels of service and design criteria in the Handbook when servicing small towns.

- Postage stamp pricing is not encouraged by the NWI Pricing Principles, April 2010.
- It is noted that some of the existing Victorian urban water utilities still have up to 5 different prices for the towns served.
- Corporatised regional water utilities would be expected to resist providing water supply and sewerage services to presently unserved towns unless grants or community service obligations (CSOs) are provided for the full additional cost of serving the backlog areas.

59. Page 35, Recommendation 2 - the present 7 performance indicators in the National Performance Report are considered to be satisfactory. These are audited in accordance with the Auditing Requirements of the *National Performance Framework 2009-10*.

60. Page 35, Recommendation 3 - agreed.

61. Page 36, Recommendation 4 - NSW complies as the NSW utilities are required to report all the performance indicators of the National Performance Frameworks.

62. Page 36, Recommendation 5 - supported in principle as this is similar to the *NSW Best-Practice Management Guidelines* – however, they should also include strategic business planning and financial planning, asset management and integrated water cycle management in accordance with the *NSW Guidelines*.

Released in 2004 and updated in 2007, the *NSW Best-Practice Management Guidelines* are a proven product, which is strongly supported by the NSW utilities, the NSW Local Government and Shires Associations and the NSW Water Industry Directorate. As noted in item 6, the overall level of compliance by the 106 NSW utilities with the 19 requirements of the *Best-Practice Management Guidelines* was 82 per cent in 2008-09.

63. Page 36, Recommendation 6 - this is substantially in place in the checklists for strategic business planning, financial planning and pricing in the *NSW Best-Practice Management Guidelines*.

64. Page 36, Recommendation 8 - this is deficient. As noted in item 13 above, the pricing of the NSW non-metropolitan utilities is of a high standard. Utilities which meet the pricing requirements of the *Best-Practice Management Guidelines* also comply with NWI Pricing Principles, April 2010.

65. Page 37, Recommendations 9 to 11 - agreed. As noted in items 33 to 40 above, the substance of these recommendations is already met for non-metropolitan NSW.
66. Page 39, 2nd dot point - as noted on page 56 of the *Report of the Independent Inquiry for Urban Water Supply and Sewerage for Non-metropolitan NSW*, as water supply and sewerage may be 30% to 40% of the total revenue of councils, removal of these functions could make the residual operations of many small councils unviable.
67. Page 41, 1st para - 'NWC should initiate a review of pricing in regional areas, which will inform development of appropriate pricing models for implementation by utilities servicing regional communities. This review can commence within the next 12 months.' - this is deficient as noted in item 13, 14 and 58 above.
68. Page 43, Table 11 - NSW has legislated to require mandatory preparation of risk based drinking water management plans by each local water utility in accordance with *ADWG 2004*. Preparation of such plans will also be included in the next update of the *NSW Best-Practice Management Guidelines*.
69. Page 44, Table 13 - an additional barrier is the financial sustainability of the residual operations of the NSW councils. Refer also to item 66 above.

70. Additional NSW Health comments on the AECOM Report

Infrastructure Australia should note that the NSW *Public Health Act 2010* will require suppliers of drinking water to establish and adhere to quality assurance programs. This provides the legislative basis for implementing risk-based management plans.

The statement on pages ii and 11 is an exaggeration and cannot be supported by available evidence ("Although there have been no recorded deaths directly attributed to contaminated potable water in regional Australia, numerous 'boil water' notices and severe outbreaks of water quality related illness have been recorded in regional Australia.").

This should be re-worded as "...numerous 'boil water' notices and occasional outbreaks of water quality related illness...."

The statement on Page 15 is not correct:

"The popular ski holiday destinations of Jindabyne and Smiggin Holes experienced a highly publicised microbial contamination incident in 2009. Approximately 120 guests became ill as a direct result of contaminated drinking water at Smiggin Holes, while a sewer overflow into Jindabyne's drinking water supply went un-detected for three days (Case Study 1, Appendix K)."

These should be described as separate incidents, as follows;

The popular ski holiday destinations of Jindabyne and Smiggin Holes experienced highly publicised microbial contamination incidents in 2009. Approximately 120 guests became ill as a direct result of contaminated drinking water at Smiggin Holes, which is supplied with water from a creek disinfected by ultraviolet light. A sewer overflow into Jindabyne's drinking water supply (Lake Jindabyne) went un-detected for three days, leading to a two week-long boil water alert, but no identified cases of illness (Case Study 1, Appendix K).

References. The reference to Cretikos et al. (2010) is incorrect. See correct citation below.

NSW Health references:

Cretikos M.A., Byleveld P.M. et al (2010) Supply system factors associated with microbiological drinking water safety in regional New South Wales, Australia, 2001-2007. *Journal of Water and Health* 8:257-268.

Li, L., Byleveld P., Leask A. and Smith W. (2009). Assessment of chemical quality of drinking water in regional New South Wales, Australia. In Anderssen, R.S., R.D. Braddock and L.T.H. Newham (eds) 18th World IMACS Congress and MODSIM09 International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand and International Association for Mathematics and Computers in Simulation, July 2009, pp. 4326-4332. http://www.mssanz.org.au/modsim09/J3/li_l.pdf