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Urban Water Inquiry
Productivity Commission
LB 2 Collins Street East
MELBOURNE VIC 3165

Dear Sir/Madam

Re : Draft Report on the Inquiry into Australia's Urban Water Sector

Thank you for the opportunity to provide a submission on the Draft Report on the Inquiry into Australia's Urban Water Sector.

I have limited my comments to matters relating to public health and make no comments on issues such as opportunities for efficiency gains, structural reform and pricing.

As indicated in the background to the terms of reference the urban water sector is responsible for providing sustainable, secure and safe water supplies. While the requirement to ensure safety is not included in the Terms of Reference it is considered that the potential for reforms to impact on public health is a significant issue.

It is noted that the Draft report does refer in places to public health and environmental protection, however, there is limited evidence of consultation with the public health sector including the State health agencies and the National Health and Medical Research Council. Examination of Appendix A indicates no visits to these agencies or presence at roundtables. This appears to be an important oversight.

Specific comments are provided in the following pages.

I hope that some of these comments are useful

Yours sincerely

Dr David Cunliffe
Principal Water Quality Adviser
SA Health

Specific comments: Inquiry into Australia's Urban Water Sector

Page	Section/ Paragraph	Comment
xvii	2	Dot point 2 should include a reference to fit-for-purpose quality of recycled water
xviii	2	The source of the numbers of providers should be cited.
xviii	3	There are also other important characteristics that differentiate water from other services relating to contamination and the transportation, delivery and transmission of disease.
xxv	2	While it is correct that sewage discharge occurs into sources of drinking water this not regarded as being best practice in terms of downstream supplies. Both the Australian and WHO drinking water guidelines recommend prevention of contamination as close as possible to the source including wherever possible removal of contaminated discharges. Where this is not possible additional control measures in the form of treatment processes are required to assure safety of drinking water. However, the presence of sewage discharges increase the level of risk associated with treatment failures (e.g. inadequate design, operational failures). This has been borne out by a range of drinking water borne outbreaks in North America (including Milwaukee), Europe and Australia (in community supplies). Notwithstanding these comments, the influence of sewage discharges into the River Murray from the ACT on the Adelaide water supplies is slight due to dilution and detention. The average *E.coli* counts in the South Australian section of the Murray upstream of the Lower Murray Irrigation Areas demonstrate limited impact.
xxv	3	• Suggested that the appropriate reference for safety is the *Australian Guidelines for Water Recycling: Augmentation of Drinking Water Supplies* as approved and published by NRMMC/EPHC/NHMRC • Where community consultation has occurred the response has generally been problematic particularly where the proposal has involved addition of treated sewage.
xxvi	1	The Australian Drinking Water Guidelines (ADWG) state that they do not describe standards (the distinction between standards and guidelines is important)
xxxii	Box 6	Not sure what the term "non-health critical aspects" refers to? A definition and examples would be useful.
xxxii	1	The last sentence under-estimates the strength of feeling in some sections of the public that are opposed to the addition of recycled water (from sewage) to drinking water supplies for a range of reasons including personal preferences. Some scientists and experts have also raised questions about where potable reuse should be ranked among the hierarchy of potential options for augmentation.
xxxii	3	Relative costs of desalinated water and addition of recycled water have been presented and discussed. As above it is unlikely that costs will be the only factor considered by the public.
xxxvi	Box 7	It seems curious that provision of safe drinking water is not an explicit goal.
xl	2	Horizontal separation of bulk water supply function will need to consider impacts on regulation of water quality. This could be substantial depending on the diversity of sources and suppliers. In

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Page	Section/ Paragraph	Comment
		addition there is likely to be greater complexity involved in mixing waters of disparate physical and chemical characteristics.
xliii	Chapter 3	Shouldn't the primary objectives include providing drinking water, recycled water and sewage services that protect public health in an economically efficient manner? It is contended that public health should be a priority.
xliv	Chapter 6	As above where the views of the community have been sought on potable reuse of treated sewage the responses have been problematic with attitudes influenced by a range of factors including personal dislike.
xliv	Chapter 6. Last dot point	This statement is misleading (see comment on xxv).
l	Draft rec 11.2	As above. Suggest that protection of public health or safety should be an explicit requirement
lii	Draft rec 11.4	While public consultation is strongly supported there are caveats. For example there have been cases where communities have opposed the installation of chlorination required to assure drinking water safety.
lvii	Draft rec 13.5	The recommendation suggests a misunderstanding of the ADWG. The critical element and focus of the guidelines is the design and operation of risk management plans to assure drinking water safety (i.e. health aspects). Safety is verified by assessing the veracity of the plan and by including monitoring of water quality at point of delivery to consumers. Risk management plans should not be applied in isolation to aesthetic issues (as above it is not clear what is meant by non-health critical elements)
5	2	As above. In this context water is unique in regard to transmission of disease.
5	3	For balance the reason that Australia abstained should be included (it was provided)
13	Box 2.1	The summation of the Recycled Water Guidelines is incomplete and presents a subset of the guidance provided. For example, the Phase 1 document which is not cited is the largest component and presents the core elements of the Recycled Water Guidelines including the central risk management framework and the discussion of health-based targets. The Phase 1 document provides guidance on traditional uses of treated sewage for municipal, residential (non-drinking) and agricultural purposes. It also provides guidance on use of greywater.
13	1	The paragraph is misleading. Intentional potable re-use does occur but application is limited to a few countries. While Singapore recycles large volumes of water the contribution to drinking water supplies is relatively small. It started at 1% of reservoir water increasing to 2.5% by 2011.
14	Box 2.2	See comment above
28	1	The greatest use of recycled water is for agriculture. Suggest that this use should be cited.
46	4	Suggest that it should be noted that the private sector manages operations of services on behalf of SA Water which retains overall responsibility.

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Page	Section/ Paragraph	Comment
58	2	The ADWG is used as the basis for defining drinking water safety and quality in most metropolitan and rural areas. The Guidelines are consistently cited across Australia in drinking water legislation, memoranda and codes of practice. In a few cases the guidelines have been translated into standards.
58	3	As above. The scope of the guidelines has been understated. In addition it could be noted that one of the stated purposes of the Australian Guidelines for Water Recycling is to support a nationally consistent approach to recycling of treated sewage, greywater and stormwater.
60	2 Dot point 1	While drinking water is supplied for consumers other than households the ADWG only deals with drinking water quality that is suitable for the general population during the normal course of their life. It may not be suitable for specific purposes such as those undertaken in hospitals (e.g. washing wounds and burns, renal dialysis etc)
65	3	The Australian Guidelines for Water Recycling deal with this issue explicitly and should be cited. The guidelines promote a fit-for-purpose approach and in the case of the example provided identify that the microbiological quality of water required for toilet flushing is 1000-3000 fold below that required for drinking.
86	5	It is accepted that this paragraph cites a contribution from an external body. However, outcome-based regulation is not consistent with the focus of the ADWG and the Australian Guidelines for Water Recycling. One of the drivers for incorporating the risk management framework in the 2004 edition of the ADWG was a general concern that too much attention was being paid to outcome based management with its inherent weaknesses.
112	2	The Australian Guidelines for Water Recycling should be cited in this paragraph. The Guidelines include a module on augmentation of drinking water supplies.
112	3	See comment above. The statement that the Commission is unaware of health concerns associated with water impacted by sewage discharges is interesting. It is correct that Adelaide and other Australian cities are consistently supplied with safe drinking water. However, this does not mean that sewage discharges do not represent a potential health concern for downstream supplies. Where source waters are impacted by sewage discharges the risks and health concerns need to be countered by additional treatment. For example, much of Melbourne's water supply is sourced from a catchment that is protected from human and livestock waste. As a result treatment is limited to disinfection. In contrast water supplied to cities such as Adelaide, Sydney and Brisbane are treated by filtration and disinfection. In some Adelaide supplies dual disinfection is being applied (UV light and chlorination). The level of treatment reflects the potential health concern presented by wastewater discharges. Providing treatment is maintained at appropriate levels the health risks are contained within acceptable bounds. This requires continual vigilance.

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		However, as indicated above there are documented examples in modern cities and communities served by treated water supplies where sewage discharges have led to substantial drinking water outbreaks. The largest recorded outbreak in the developed world (Milwaukee, 1993) occurred in a filtered and disinfected supply served by a water source impacted by sewage and livestock waste. Typing of organisms associated with the outbreak indicated a human source. In short there are health concerns. These can be countered but failures can have significant consequences.
112	4	As above, the impact of sewage discharge from the ACT has minimal impact on Adelaide's water supply due to massive dilution and long detention times.
114	1	It is suggested that the module on augmentation of drinking water from the Australian Guidelines for Water Recycling should be cited here. Endorsement by NRMMC, EPHC and NHMRC provides support that it can be performed safely once a jurisdiction has decided to proceed down this path.
372	Table 13.1	The information presented in this Table for South Australia is incorrect. There are greater numbers of regional utilities than indicated.
387	2	Comments have been provided on the AECOM report which was released in 2010 for consultation. In regard to the examples provided: • the presence of algal blooms can represent health concerns but like other forms of contamination these can be controlled. In the context of this subsection the example is only valid if the algal blooms led to non-compliance with drinking water requirements. If this was the case it needs to be stated. • total coliforms are not considered to be an indicator of the presence of micro-organisms of health concern. In addition to the potential causes identified, total coliforms include environmental organisms that can grow in distribution systems in the absence of faecal contamination.
426	1-2 and footnote 4	As above, the ADWG do not describe standards. More importantly the discussion on this page fails to identify the core feature of the guidelines - the Framework for Management of Drinking Water Quality. The Framework is recognised by water utilities and health agencies as the key for assuring drinking water safety.
426	2 – final sentence	Provision of safe drinking water does not require compliance with all elements of the ADWG in a one size fits all approach. The guidelines promote a risk management plan that is predicated on identifying the significant risks to individual supplies and then applying, monitoring and verifying the effectiveness of appropriate preventive measures. The ADWG states that application of this approach is flexible. Implementation of the elements of the guidelines should be undertaken in a manner that is commensurate with the size, complexity and ultimately the public health risk associated with individual supplies.

Page	Section/ Paragraph	Comment
		The flexibility also applies to parameters with defined health values. Not all parameters will be relevant for all supplies.
427	1	As above, the critical feature of the ADWG for protection of public health is design and implementation of effective risk management plans. The inclusion of wastewater utilities in the last sentence is curious. Guidelines other than the ADWG are more appropriate for these utilities.
427	3 and Draft recommendation 13.5	As discussed in relation to page lvii and 426-427. The recommendation suggests a misunderstanding of the ADWG.