Submission to Environment and Communications Legislation Committee on National Water Commission (Abolition) Bill 2014

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Never Stand Still | Faculty of Engineering | School of Civil & Environmental Engineering

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Summary:

I do not support the abolition of the National Water Commission on the basis that it fragments national leadership of Australia's most valuable economic and environmental resource.

In this submission, I provide the following recommendations:

1. Update the National Water Initiative
2. Maintain the role of an independent statutory authority to provide evidence-based advice to the Council of Australian Governments (COAG) and the Australian Government on national water issues.

The importance of a national approach to water management:

The need to fairly and sustainably manage water supplies on a drought-prone continent like Australia should be inherently obvious. Our ability to do this underpins the viability of diverse national industries including agriculture, mining, tourism, and manufacturing. Indeed, the viability of the towns and cities in which we live depend fundamentally on our ability to provide adequate clean water for a wide range of uses.

But as Australia is a 'land of droughts and flooding rains', the availability of fresh water from the sky varies considerably, -from place to place and from year to year. Streams and rivers transport water across great distances and feed groundwater aquifers underlying enormous areas such as the Great Artesian Basin. With the obvious exception of Tasmania, these surface water and groundwater systems rarely respect State and Territory boundaries. Thus effective management of these resources requires cooperation among these jurisdictions.

Arguably, the greatest achievement of Howard Government was to oversee the development and signing of Australia's National Water Initiative (NWI). This document, signed by the Commonwealth Government and each of the States and Territories between 2004 and 2006, was the first formalised agreement to work together to achieve national water management objectives, following the initial 1994 Water Reform agreement.

The NWI includes commitments to provide water for the environment, address over-allocation of rural supplies, register water rights, develop standards for water accounting, expand water trading, improve water supply pricing and manage urban water demands.

To guide the implementation of the NWI, Howard established a new independent statutory authority, The National Water Commission, in 2004. The National Water Commission was to provide independent, evidence-based advice to the Council of Australian Governments (COAG) and the Australian Government on national water issues.

Throughout the last decade, the oversight of the National Water Commission ensured the implementations of advances in many of the objectives laid out in the NWI. Water trading capacity has improved agricultural productivity for many rural Australians. Formal allocation of water to the environment has revived the long-term survival prospects for wetlands and other ecosystems. Major urban water supplies have been bolstered, drastically reducing the likelihood of water restrictions being imposed for most Australians in the coming decades.

Drought-plagued States of the USA, such as California, Colorado and Arizona, now point to Australia's NWI as a successful example of cooperation to achieve more sustainable water management.

But for all these successes, there remains much more to be achieved. While our State Capital cities have achieved high levels of water supply security, the same cannot be said for many of our regional towns and cities. For example, many in NSW are likely to face severe water shortages before the end of the coming summer. Improvements in water efficiency and water conservation, as well as new water resources will be required. The Commonwealth Government and the National Water Commission played a key role in navigating the water sector through new extremes and supporting the economic viability of many towns and cities during the previous Millennium drought. Without the National Water Commission, there is now no clear avenue through which to drive and harness the benefits from national coordination in water reform.

Equal to the importance of managing water availability is the need to ensure safe water quality. There is evidence that many regional drinking water supply systems fall short of best-practice when it comes to managing water quality, protecting public health risks and ensuring the efficient delivery of water and wastewater management. But demonstrating that this is the case and prioritising needs for improvement are hindered by a current absence of a nationally standardised approach to water quality performance assessment and enabling frameworks for driving greater efficiencies from the institutions governing rural and regional water management.

Ongoing research and development drives innovation and continual improvement in service delivery. Important research contributions come from diverse organisations including the CSIRO, our universities and the water industry itself. During the last decade, the National Water Commission has facilitated great gains in research and development efficiency by encouraging national collaboration among these organisations. Furthermore, the Commission provided an effective conduit for directing the latest research and development into policy and regulation. Without the Commission, the research and development sector lacks a 'line of sight' to embed new findings into practice and ensure Australia remains at the frontier of innovation in water.

Skills and training in the water sector underpin everything the industry is responsible for, including the protection of public health and the environment. However, within the industry, it is commonly recognised that skills and training are poorly coordinated in Australia, largely to the detriment of regional towns and cities. There is an urgent need for nationally coordinated training and certification for many key roles such as the operation of drinking water treatment plants. An organisation like the National Water Commission would be ideally placed to oversee the development of such a process,

including consideration of how large capital city water utilities could assist in the training of regional and rural suppliers.

Ageing water supply and wastewater infrastructure are hidden beneath the ground in many parts of regional Australia, where the responsible organisations simply do not have the means to adequately invest in their ongoing maintenance or replacement. In regional NSW and QLD, these infrastructure are most commonly the responsibility of Local Governments, many of which struggle for ongoing economic viability.

Compared to the capital cities, regional water supply and wastewater facilities tend to be based on small systems with few economies of scale. Factors such as design and performance evaluation can be made more economic where national standards are developed and accepted, thus setting clear achievable bench-marks for compliance. The National Water Commission played a key role in the development of National Guidelines for Water Recycling, thus facilitating safe, economically viable opportunities for towns and cities to reuse municipal wastewaters and conserve fresh water supplies.

Similar nationally consistent guidance is still required in many areas. One example is the need for nationally consistent risk assessment and risk management for situations in which coal seam gas activities may pose risks to groundwater or surface water supplies. The development of national guidelines, endorsed by the Commonwealth as well as the State and Territory governments would greatly aid such risk management. Without national water management oversight, it is unlikely that guidance and endorsement could be achieved, let alone implemented into state and local government regulation in a manner consistent with government ambitions for seamless regulation across the economy. National standards for the economic appraisal of economic performance are also badly needed to ensure lowest cost water supplies for the community – again a potential role for the NWC.

Indeed, national co-operation can unlock solutions to many of Australia's looming water problems and ensure that this is done in an economically viable way. Our State capital cities each run highly profitable water supply utilities, which pay tidy annual dividends back to their State government owners. Sydney Water, for example, pays the NSW State Government a dividend on the order of $300 million per year. This profitability arises from many factors including long-established major infrastructure and the large economies of scale that come with large high-density populations. But many Sydney residents also spend some time in regional Australia and most would presumably prefer to have the benefit of safe and reliable water supplies when they do. Thus, it would make sense to consider cross-subsidisation of regional water supply funding using profits from capital city water supplies.

In the last 10 years, the Australian water sector has been through the most profound reforms in our history, indeed they have had to navigate through new extremes in drought and flood and deal with the increasing risk from a more complex water sources. Without these, many towns and cities may have run dry. But the world in which water is managed continues to change, and there is unfinished business from the NWI. Now is not the time to rest on our past achievements - the drivers may have changed but new issues can and will continue to emerge.

The ability to ensure water is managed efficiently, safely, sustainable and continues to drive economic growth is impeded by the lack of national oversight over Australia's water management. The National Water Commission played a vitally effective role in delivering national water reform throughout the last decade, but it is now unclear how such focussed attention to nationally significant water issues can be maintained. This will be to the detriment of all Australians, but I suspect, more so to those who live in our regional towns and cities.

Recommendations:

I make the following recommendations for the consideration of the Committee. I propose that the Committee adopt these recommendations as recommendations to be included in their final report to Parliament.

1) **Update the National Water Initiative**

As described above, the development and implementation of the NWI has proved to be an extremely valuable and worthwhile process for Australians. However, it is now 10 years old and should be updated. The necessary updates should reflect:

- Developments that have now been made with progressing the NWI (2004-2014);
- Technological developments, which have improved our capacity to implement some urban water management solutions (eg. seawater desalination and municipal water reuse);
- Regulatory developments, which have improved our capacity to implement some urban water management solutions (Australian Guidelines for Water Recycling, enhanced regulatory focus on risk management for drinking water quality);
- Projected increases in both the frequency and severity of extreme weather events; which present additional challenges for water utilities. These include challenges for the supply and management of safe drinking water supplies;
- Enhanced water industry focus on environmental sustainability including energy efficiency and the management of greenhouse gas emissions;
- The specific challenges faced by regional water utilities relating to their ability to fund necessary infrastructure improvements. These challenges relate to the ability to supply sufficient quantities of water, as well as satisfactory management of water quality and risk.

2) **Maintain the role of an independent statutory authority to provide evidence-based advice to the Council of Australian Governments (COAG) and the Australian Government on national water issues.**

The need for national oversight of water management issues in Australia has not receded since the Howard government established the National Water Commission in 2004. Arguably, the issues have changed and the need has increased, particularly with regard to regional Australia.

I am aware of proposals to have some of the activities of the National Water Commission adopted by other agencies including the Productivity Commission, Department of Environment and Infrastructure Australia. However, as uncovered through the NCP (1994) reforms and NWI (2004) reforms, the impact to the national economy is much greater as a whole, rather than a sum of the individual parts. Dispersing this task is sub-optimal for so many reasons.

Water management is a heavily interdisciplinary activity, encompassing fields of science, engineering, social science, geography and economics. The relevant activities within these fields are heavily connected with one another. For example, water management decisions commonly require coordinated consideration of economic viability, environmental sustainability and social impacts. As such, fragmentation of water management oversight between multiple agencies fails to achieve the optimal outcomes and synergies that may flow from a water management-focused agency.

If the National Water Commission must cease to be, the least damaging pathway will be to ensure that its many important functions are passed to a single agency. Such an agency should then be required to

implement the development of dedicated internal division with an ongoing focus on further development and implementation of Australia's National Water Initiative.

About the author:

I am an Associate Professor in the School of Civil & Environmental Engineering at the University of New South Wales. I am responsible for teaching various aspects of water engineering to large (typically 100-300 students) undergraduate and postgraduate classes of Australian and international students. Areas that I cover include water and wastewater treatment, sustainability assessment, risk assessment and management, water quality analysis, and engineering systems and principles. I am a participant in numerous Australian and international research projects, many of them focused on improving approaches to water supply management and risk management in Australia and elsewhere. I work very closely with the Australian water industry, both as a research collaborator and as a consultant for addressing key water quality and risk management issues. I am also closely associated with various Australian water industry bodies including the Australian Water Association (AWA) and the Water Services Association of Australia (WSAA). I am a member of the Water Quality Advisory Committee to the National Health and Medical Research Council (NHMRC) and in that capacity have played an active role in the development and revision of key Australian water quality guidelines including the Australian Drinking Water Guidelines (2011).

Author disclosure:

The following information is provided in the interest of disclosure regarding personal benefit, in terms of research funding, that I have received from the National Water Commission throughout the last decade.

1. I was the recipient of a fellowship from the National Water Commission Fellowships Program. This fellowship was provided during 2008-2009 to undertake research on Quantitative Chemical Exposure Assessment for Water Recycling Schemes. Funding provided from the NWC was $136,000. The final outcomes were published in the following report:

   Khan SJ (2010) Quantitative Chemical Exposure Assessment for Water Recycling Schemes. Waterlines Series No 27, National Water Commission, Canberra. ISBN: 978-1-921107-94-8

2. I was a member of a multi-organisational collaborative research team that received a competitive grant from the National Water Commission under the 'Raising National Water Standards' competitive grants program during 2007-2010. Funding provided from the NWC was $500,000. The final outcomes were published in the following report:

   Reitsema T, Nice HE, Leusch FDL, Quayle P, Chapman HF, Khan SJ, Trinh T, Coleman H, Rawson C, Gagnon MM & Blair P (2010) Development of an 'Ecotoxicity Toolbox' to Characterise Water Quality for Recycling, Water Science Technical Series, Report no. 36, Department of Water, Western Australia. ISBN 978-1-921789-58-8.

3. I was a member of a multi-organisational collaborative research team that received a competitive grant from the National Water Commission under the 'Raising National Water Standards' competitive grants program during 2008-2010. Funding provided from the NWC was $1,015,000. The final outcomes were published in the following report:

   Chapman HF, Leusch FDL, Prochazka E, Cumming J, Ross V, Humpage A, Froscio S, Laingam S, Khan SJ, Trinh T, McDonald JA (2011), A National Approach to Health Risk Assessment, Risk Communication and Management of Chemical Hazards from Recycled Water, Waterlines Report Series No 48, National Water Commission, Canberra. ISBN: 978-1-921853-19-7.

4. I was a member of a UNSW research team contracted to produce a report on emerging trends in seawater desalination. Funding for this report was provided from the National Water Commission, but details of the funds provided were not disclosed to me. The final outcomes were published in the following report:

   UNESCO Centre for Membrane Science and Technology University of New South Wales (2008) Emerging Trends in Desalination: A Review. National Water Commission, Waterlines Report No 9. ISBN: 978-1-921107-69-6.

Concluding comments:

I consider this inquiry to be of great significance to ongoing water management in Australia. As such, I wish the Senate Environment and Communications Legislation Committee well in their important task of reviewing the *National Water Commission (Abolition) Bill 2014*. I trust that long-term visionary planning will be a key characteristic of this process.

I hope that you will find the information and recommendations that I have provided to be constructive, insightful and thought-provoking. I would be most happy to provide any clarification or additional information that may be requested.

Sincerely,

[redacted]

Stuart Khan.