

Submission

Productivity Commission National Water Reform Inquiry Issues Paper

May 2017

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1. Executive summary

LGNSW and the Water Directorate welcome the opportunity to make a joint submission on the Productivity Commission's National Water Reform Inquiry issues paper and comment on progress towards achieving the objectives of the *National Water Initiative (2004)*.

Urban water services in regional NSW

Councils in regional NSW have made significant progress towards achieving the *National Water Initiative*'s objective of efficient and sustainable urban water services.

Councils provide water supply and sewerage services in regional NSW. There are 89 council owned and operated local water utilities (LWUs) providing services to more than 1.8 million people, generating over \$1.5 billion in annual revenue, and holding total water supply and sewerage assets valued at around \$28 billion.

LWUs have been successful in delivering water supply and sewerage services in a safe, secure, efficient and affordable manner. They operate under a comprehensive regime of health, environmental and economic regulation within a stringent performance measurement framework, outlined in the Department of Primary Industries – Water's *Best Practice Management of Water Supply and Sewerage Framework* ("best practice framework").

The implementation of the best practice framework, and the related achievements in the provision of urban water services, have been largely the result of the reform blueprint provided by the *National Competition Policy (1995)* and the *National Water Initiative*.

Under the best practice framework, councils:

- Established business units, separate from their general purpose activities, that are responsible for providing water supply and sewerage services (councils' LWUs);
- Put in place long term, strategic business planning, integrated water cycle management, asset management and financial planning by their LWUs;
- Implemented efficient, consumption based and cost reflective water pricing;
- Made significant progress towards meeting drinking water quality standards and implementing drinking water quality risk management frameworks under the *Australian Drinking Water Guidelines (2011)* (ADWG);
- Manage the water cycle in an integrated way and deliver water sensitive urban design by coordinating their water supply, sewerage, stormwater management and land use planning functions;
- Pursued institutional reform and have established regional alliances of LWUs to share resources, undertake regional water resource planning, and deliver regional water supply infrastructure; and
- Worked in partnership with the NSW Government to identify and provide funding for urban water infrastructure investment in areas of need, i.e. where required service levels would have been unaffordable otherwise.

Councils are best placed to deliver efficient and sustainable urban water services in regional NSW and service provision should remain in council hands. Councils ensure an integrated and locally appropriate approach to water supply and sewerage management and optimal whole-of-community outcomes. Regional alliances of LWUs allow them to capture scale efficiencies and the benefits of regional solutions without having the disadvantages of institutional settings where water supply and sewerage functions are removed from councils.

Councils, together with their regulators DPI Water and NSW Health, have identified, and are addressing, a number of challenges and reform priorities. These include:

- Modernising the regulatory framework towards more outcome and risk based regulation that recognises the maturity of LWUs;
- Implementation of microbial health based targets for drinking water supplies and addressing associated funding needs;
- Water security and climate change impacts; and
- Addressing concerns over private sector involvement and competition.

There is significant scope for a renewed *National Water Initiative* to contribute to addressing these challenges by providing high level policy guidance, independent evidence-based resources, and promoting rigorous cost-benefit analysis of regulatory changes.

Water resource planning and management

A key area of water resource planning and management that requires further progress is the identification of socio-economic impacts of environmental water recovery on regional communities and associated structural adjustment needs. LGNSW and the Water Directorate urge the Productivity Commission to recommend a more systematic and holistic approach to identifying and addressing these impacts and needs.

Importantly, the process of identifying and addressing socio-economic impacts needs to include the comprehensive analysis of localised impacts, identification of options for affected communities to make the transition to a future with less water and provision of structural adjustment assistance where required. To ensure communities understand the need for change and the challenges involved, this process needs to be built on genuine engagement with affected communities.

Critically, addressing socio-economic impacts is a whole-of-government task that cannot solely be performed by bodies such as the Murray-Darling Basin Authority. A key area of improvement for a renewed *National Water Initiative* is the implementation of holistic and comprehensive mechanisms for addressing these impacts.

LGNSW and the Water Directorate trust this submission is of assistance and look forward to continuing to contribute to a national reform blueprint that improves the efficiency and sustainability of water management in Australia.

2. Opening

Local Government NSW (LGNSW) is the peak body for local government in NSW, representing NSW general-purpose councils, associate members including special-purpose county councils, and the NSW Aboriginal Land Council. LGNSW facilitates the development of an effective community based system of local government in the State.

The Water Directorate is a membership association comprising 87 of the 89 councils in regional NSW that provide water supply and sewerage services. The Water Directorate provides guidance, support and advice to members, particularly on technical issues.

LGNSW and the Water Directorate welcome the opportunity to make a joint submission on the Productivity Commission's National Water Reform Inquiry issues paper.

Local government is a major consumer of water and plays an important role in water management and in the provision of urban water services to the community. Councils use water for their community services and continuously aim to improve the efficient use of this scarce resource, including by recycling, stormwater harvesting, and water use efficiency initiatives. In regional NSW, councils provide water supply and sewerage services.

The first part of the submission (section 3) seeks to answer the Productivity Commission's questions on the provision of urban water services as they relate to regional NSW. It outlines the institutional and regulatory framework for the delivery of water supply and sewerage services in regional NSW and demonstrates the significant achievements of councils in delivering efficient and sustainable urban water services. It discusses future challenges, such as climate change, infrastructure funding and the potential introduction of microbial health based targets, and how a renewed *National Water Initiative* can help address them.

The second part of the submission (section 4) seeks to address some of the Productivity Commission's questions on water resource planning and management. In particular, it comments on the management of environmental water and associated socio-economic impacts of water recovery for the environment on regional communities. It urges the Commission to recommend a more systematic and holistic approach to identifying and addressing these impacts.

3. Urban water services in regional NSW

Councils in regional NSW have made significant progress towards achieving the *National Water Initiative*'s objective of efficient and sustainable urban water services.

In regional NSW, outside of the areas serviced by Sydney Water and Hunter Water, councils provide water supply and sewerage services. There are 89 council owned and operated local water utilities (LWUs) providing services to more than 1.8 million people, generating over \$1.5 billion in annual revenue and holding total water supply and sewerage assets valued at around \$28 billion.¹

The delivery of water supply and sewerage services is a significant activity for these councils, often making up a quarter or more of councils' annual budgets and employing a significant proportion of their workforce.

LWUs have been successful in delivering water supply and sewerage services in a safe, secure, efficient, and affordable manner. They operate under strict health, environmental and economic

¹ DPI Water, Draft 2015/16 NSW Water Supply and Sewerage Performance Monitoring Report.

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regulation, which is set out in the Department of Primary Industries – Water's (DPI Water's) *Best Practice Management of Water Supply and Sewerage Framework* ("best practice framework").

The implementation of the best practice framework, and the related achievements in the provision of urban water services, were largely the result of the reform blueprint provided by the *National Competition Policy* (1995), the *National Water Initiative* (2004) and associated initiatives such as the *National Urban Water Planning Principles* (2008), the *National Water Initiative Pricing Principles* (2010), the *National Performance Reporting* and the resources provided by the now abolished National Water Commission.

Under the best practice framework, councils:

- Established business units, separate from their general purpose activities, that are responsible for providing water supply and sewerage services (councils' LWUs);
- Put in place long term, strategic business planning, integrated water cycle management, asset management and financial planning by their LWUs;
- Implemented efficient, consumption based and cost reflective water pricing;
- Made significant progress towards meeting drinking water quality standards and implementing drinking water quality risk management frameworks under the *Australian Drinking Water Guidelines* (2011) (ADWG);
- Manage the water cycle in an integrated way and deliver water sensitive urban design by coordinating their water supply, sewerage, stormwater management and land use planning functions;
- Pursued institutional reform and have established regional alliances of LWUs to share resources, undertake regional water resource planning, and deliver regional water supply infrastructure; and
- Worked in partnership with the NSW Government to identify and provide funding for urban water infrastructure investment in areas of need, i.e. where required service levels would have been unaffordable otherwise.

LWUs' achievements have been demonstrated in previous inquiries such as the NSW Government's 2009 *Inquiry into Secure and Sustainable Urban Water Supply and Sewerage Services for Non-Metropolitan NSW* and the Productivity Commission's 2011 *Inquiry into Australia's Urban Water Sector*.

LGNSW and the Water Directorate call on the Productivity Commission to acknowledge these achievements and recommend the continuation of a well-resourced and supported national water reform blueprint.

3.1. Best practice achievements²

Service coverage

The majority of the population in regional NSW is connected to water supply and sewerage services provided by councils' LWUs.

In 2015/16, LWUs provided drinking water to a permanent population of 1.85 million (98.1% coverage) on 838,000 connected properties through 350 individual water supply schemes. The total amount of drinking water supplied was 300,000 megalitres; an amount which has fallen by

² Performance data provided below is taken from DPI Water's NSW Water Supply and Sewerage Performance Monitoring Report of 2015/16 (in draft form) and earlier years.

23% over the past 25 years. Average annual residential water supplied was 162 kilolitres (kL) per connected property; a reduction of 51% over the past 25 years and an amount lower than the figures for country Victoria, country Queensland and the national median. This significant reduction in water use is the result of demand management, consumption based pricing, and water conservation and efficiency measures.

In 2015/16, 300 sewerage schemes provided sewerage services to 1.75 million people (96.4% coverage) on 760,000 connected properties. This is an increase from less than 250 schemes in 1995/96, serving a permanent population of 1.46 million (92.3% coverage).

Effective and efficient strategic service planning

Under the best practice framework, LWUs have robust long term strategic business plans and integrated water cycle management strategies in place to ensure supply security and determine prudent and efficient service levels and infrastructure investment.

This strategic process includes comprehensive long-term water supply and demand planning, along with drought and demand management. It is supported by robust asset management and financial planning. Throughout the strategic planning process, customers are involved in decision-making to ensure service provision meets the needs and priorities of local communities. Councils, as the sphere of government closest to the community, have the unique ability to involve and engage their LWUs' customers meaningfully and identify their priorities and willingness to pay.

Integrated water cycle management

The best practice framework requires the integrated management of water supply, sewerage and stormwater services having regard to the whole hydrological catchment and associated water management plans.

Integrated water cycle management combines all aspects of the urban water cycle, such as water supply, sewerage, stormwater, recycling, conservation, pollution prevention and flood control, many of which are very local in nature. Integrated water cycle management aims to ensure water is used optimally for urban development, within the natural water catchment and to achieve broader water cycle objectives such as improved environmental, health and amenity outcomes.

Councils and their LWUs are uniquely placed to deliver integrated water cycle management in a holistic way. They are not only responsible for drinking water supply and sewerage but also for stormwater and drainage management, strategic urban planning, land development control, and environmental management. This broad range of responsibilities and their ability to balance community priorities enable councils with LWUs to undertake truly integrated water cycle management.

Case study - Long term strategic service planning and integrated water cycle management in Parkes Shire Council³

Parkes has a population of about 12,000 and is located in central NSW, approximately 400 km west of Sydney. Parkes Shire Council is upgrading the town's sewage treatment system. As part of this project, Parkes Shire Council has been exploring opportunities for the use of recycled water throughout the town. A recycled water strategy explicitly mapped the links between the *UN Sustainable Development Goals*, including climate resilient water supplies, improved green spaces, low carbon water and resilient infrastructure.

In an integrated water cycle management study, Parkes Shire Council analysed existing water sources and water use in town and investigated other options, such as stormwater harvesting, recycled water, groundwater, and dam and river water. The study developed options to optimise water use by industry, for urban green spaces and to supply potable water. The preferred option for recycled water was to use it for community open spaces, including irrigation on the golf course, horse racing track and sports fields. Higher end uses, such as commercial car wash and school ground irrigation (including eco-gardens), were considered but not selected due to their higher treatment requirements and low demand.

Pathogen reduction values for municipal irrigation were selected from the *Australian Guidelines for Water Recycling (2006)*. Considering ingestion and inhalation risks to facility users and neighbours, council determined log reduction values for campylobacter of 3.7, rotavirus of 5.2 and Cryptosporidium of 4.0. Having established the pathogen reduction requirements, a range of technology combinations including membrane, UV and chlorination were evaluated to meet these requirements.

A multidisciplinary team including designers, operators, managers and water quality specialists engaged in a series of facilitated risk workshops covering process risk, water quality risks, constructability, operability and maintainability. In addition to secondary treatment, chlorination and UV were selected to achieve the required removals. Chlorination was designed to achieve a minimum 4 log reduction of virus and bacteria. UV was designed to achieve a log reduction of 4 for Cryptosporidium and log reduction of 2 for virus (Adenovirus Type 40). Real-time monitoring parameters of chlorine contact time and UV dose were selected to monitor the critical control points necessary to assure recycled water safety.

Understanding the end user requirements for the recycled water allowed pathogen reduction targets to be established at the project outset. The treatment train could then be selected to efficiently and effectively meet these targets. The multidisciplinary team approach, including operator involvement in design, provides a high level of confidence that the plant can both treat the water safely and provide operational staff with real-time information on water safety.

Drought and demand management

LWUs have comprehensive drought management, water conservation and demand management strategies in place, as part of strategic business and integrated water cycle management planning.

Drought management includes the adoption of a schedule of trigger points for timely implementation of appropriate water restrictions and/or making supplementary water sources

³ Acknowledgements: Andrew Francis and Julian Fyfe, Parkes Shire Council.

available in accordance with the NSW Security of Supply basis (commonly referred to as the “5/10/10 rule”).⁴

Many LWUs have implemented innovative efficiency and demand management initiatives to ensure efficient use of their valuable water resources and improve environmental outcomes.

Case studies – Demand management

Riverina Water County Council - Urban Nature Strip Lawn Replacement Rebate Scheme (2013)

Riverina Water’s Urban Nature Strip Rebate Scheme offers financial incentives for customers to replace lawn on their nature strips with more water efficient nature strip landscapes (e.g. using native vegetation and rock surfaces) to save potable water used for outdoor irrigation. Prior to the scheme’s introduction, summer demands for water could increase substantially as a result of outdoor irrigation of landscapes, reaching in excess of four times the base winter demand. On a peak summer day it was estimated that 70% of water demand was just to keep lawns alive. The scheme was developed as a pioneering outdoor demand management measure with the overall aim to change the way people use water. The ongoing cultural change will in time extend beyond the rebated nature strips to front and back lawns, neighbours and new developments. This will in turn promote a new understanding about the value of water within the community.

Eurobodalla Shire Council WaterSmart Business Program

The *WaterSmart Business Program* supports non-residential large water users in saving water. Initially, council identified the 30 highest non-residential water users and provided support to help them reduce their water consumption. Participating businesses were provided detailed technical assistance to identify water saving opportunities, ongoing advice for the period of the project (two years from October 2010) and financial support of up to \$15,000 to implement recommended solutions. Water saving activities implemented under the program included: rainwater tanks, dual flush toilets, automatic sensored hand-wash basins, water efficient urinals, air-cooled woks, flow regulators, staff and patron education programs, leak detection and repairs, and low flow fittings and appliances. Due to the high take up by businesses, water savings as a result of the program are projected at 133,543 kL/year; a 45% reduction in water use.

⁴ The NSW Security of Supply basis for sizing water supply headworks was developed in response to the experiences and lessons learnt from the severe 1979-1983 drought. This basis is designed to maintain water supply to customers with only moderate water restrictions during a more severe drought than had been experienced over the previous 100 or more years. Under the “5/10/10 rule”, water supply headworks systems are normally sized so that: (a) the duration of restrictions does not exceed 5% of the time (5/x/x); (b) the frequency of restrictions does not exceed 10% of years (x/10/x) (i.e. 1 year in 10 on average); and (c) the severity of restrictions does not exceed 10%; i.e. systems must be able to meet 90% of the unrestricted water demand (i.e. 10% average reduction in consumption due to water restrictions) through simulation of the worst drought on record, starting with storage at the restriction volume at which restrictions should be applied to satisfy the above 5% and 10% conditions (x/x/10).

Waterwise Bathurst, Bathurst Regional Council

Waterwise Bathurst represents a suite of projects with the objectives of promoting demand management and undertaking effective asset management to ensure long term water security. By using improved technology, managing water assets well and engaging the community about water use, Bathurst Regional Council has conserved water in many areas. Initiatives include:

- Educating and encouraging council staff to be “waterwise” at work and at home;
- Closely monitoring water consumption and working with the community to reduce water wastage;
- Maintaining council’s water assets to a high standard and taking a proactive approach to upgrades;
- Identifying and repairing water leaks quickly and safely;
- Using recycled water as much as possible at the wastewater treatment works (up to 2 million litres per day); and
- Installing water efficient fittings and appliances such as taps and toilets at many council facilities.

One priority project of the *Waterwise Bathurst* program was the supernatant (treated water) recycling project. This project maximised water recycling by upgrading infrastructure at the Bathurst Water Filtration Plant. Modification of the sludge lagoon outlets allowed supernatant to be piped back to the inlet mixing tank, rather than being discharged to the Macquarie River.

Efficiency and best practice pricing

LWUs provide services efficiently, with affordable prices and most achieve full cost recovery. Typical residential bills are similar to the national median and comparable water utilities, and water usage pricing provides strong signals to encourage efficient water use.

LWUs operate under a modern pricing framework including targeting full cost recovery, pay-for-use water pricing⁵ and developer charges.⁶ The pricing framework complies with the requirements of the *National Water Initiative* and the *National Water Initiative Pricing Principles*. To ensure cost-reflective pricing, LWUs operate as separate business units from councils’ general purpose activities. Expenditure and income streams are ring-fenced from councils’ general fund (i.e. internal cross-subsidisation is not allowed unless by way of declared dividend). Since July 2012, all NSW utilities have had a metered potable water supply.

Most LWUs have been achieving positive economic real rates of return and full cost recovery for many years. In 2015/16, the median economic real rate of return was 1.8% for water supply and sewerage, which was higher than country Victoria but lower than the national median and most

⁵ One purpose of cost reflective pricing is to provide signals to consumers about their usage of resources and to decision makers about the affordability of levels of services. In a postage stamp pricing environment, the larger the area and customers base covered by a utility, the more these signals will be diluted by internal cross subsidisation. This is especially relevant with respect to consolidation of utilities in regional areas where supply systems are often small and separated. Smaller, regional utilities are better placed to provide these price signals in form of prices reflective of the cost of a particular supply source and network. This will also provide affordability signals for decision makers to consult upon with the community/customers and/or consider the need for government funding support.

⁶ Developer charges provide an economically efficient and equitable funding mechanism for the delivery of public infrastructure required as a result of new development. Developer charges for water supply and sewerage infrastructure are levied pursuant to section 64 of the *Local Government Act (NSW)* 1993 in connection with division 5 of part 2 of chapter 6 of the *Water Management Act (NSW)* 2000. The NSW best practice framework provides comprehensive guidelines on how to levy developer charges.

capital city utilities. In 2015/16, all LWUs achieved full cost recovery for water supply; and 93% for sewerage. Full cost recovery requires the recovery of efficient costs of service provision, including an appropriate return on infrastructure capital.

The median water supply and sewerage typical residential bill (TRB) was \$1343 in 2015/16, which represents a real increase of only 24% over the past 21 years and has remained below the national median over recent years.⁷

In 2015/16, the median water usage charge was 230 cents per kilolitre, a real increase of 145% over the past 17 years. Water usage charges now represent 73% of residential revenue for water supply, up from 20% in 1996/97, providing a strong pricing signal to encourage efficient water use. The proportion of residential revenue from usage charges is higher than the national median and the figure for all other Australian states and capital city utilities except for Sydney and Canberra.

Safe drinking water

LWUs provide safe drinking water - for the last few years all LWUs have been meeting the microbiological targets of the ADWG and all LWUs have in place drinking water quality management systems in accordance with the risk based framework required under the *Public Health Act (NSW) 2010* and the ADWG.⁸ In 2015/16, the level of water quality complaints of 3 per 1000 properties was low and similar to most other Australian utilities.

The drinking water supply for the vast majority of the urban population in regional NSW complied with microbiological and chemical water quality requirements of the ADWG (99.9% of the population in 2012/13, 2013/14 and 2014/15; 99.8% in 2015/16). This represents a significant increase from 91% in 1991 and is now at a consistently high level.

Since 2013/14 all LWUs have complied with the microbiological targets of the ADWG (benchmark of 98% of samples to be E. coli free); with 99.8% of 20,200 samples tested in 2013/14, 99.9% of the 19,400 samples tested in 2014/15, and 99.98% of 21,600 samples tested in 2015/16 complying.

Highly treated and compliant sewage effluent

LWUs treat sewage effluent to a high standard and generally comply with environmental requirements.

In 2015/16, the proportion of sewage treated to a tertiary level was 95%. This level was similar to what was achieved by utilities in Melbourne, Canberra, Brisbane and Adelaide and higher than the level achieved in country Victoria, country Queensland and the other capital city utilities. A total of 4,290 sewage effluent quality samples were analysed for biochemical oxygen demand (BOD) and suspended solids (SS). 99% of BOD samples and 96% of SS samples complied with the licence

⁷ The median TRB for water supply was \$625; increasing by 22% over the same period. The water supply TRB is now lower than the national median and the TRB in all other Australian states and capital city utilities except Sydney, Melbourne and country Victoria. The median TRB for sewerage was \$718 in 2015/16; similar to the national median.

⁸ The NSW Ministry of Health has been assisting local water utilities in the transition to mandatory drinking water quality systems, including assistance to develop and implement their management systems, identify barriers to implementation, and provide recommendations and solutions (including improved operational monitoring and treatment optimisation). Local water utilities, NSW Health Public Health Units and contractors have reported many benefits, including having one central source of information to manage all components of a water supply; increased awareness of the staff about processes critical to the supply of water; and identifying areas requiring improvement. The close inspection of supply system hardware and the results of monitoring as part of the process of developing management systems highlighted a number of improvements required to better manage water quality needs. NSW Health is working with DPI Water and water utilities to support the ongoing implementation, review and audit of management systems.

requirement set by the NSW Environment Protection Authority. Most LWUs (90% in 2015/16) complied with the 90-percentile limit of BOD in their licence. Over the past 22 years, compliance for BOD increased from a low of 50% to reaching a level of about 90% since 2008/09.

Recycling

Many LWUs (70% in 2015/16) recycle some of their sewage effluent, mostly for agricultural purposes. The total volume of sewage recycled in 2015/16 was 35,500 ML; about 20% of the total volume of sewage collected (compared to 14% in 1998/99).

Since the millennium drought (approx. 2001-2007), LWUs have made considerable progress in the development of water recycling projects, with the focus changing distinctly from water recycling as a waste disposal solution to water recycling as an opportunity to conserve drinking water supplies. Consequently, new projects sought to replace existing uses of drinking water with recycled water, rather than create new irrigation uses for the water. In some cases, this required increased levels of treatment to ensure satisfactory chemical and microbial water quality. New applications for recycled water included industrial uses and increasing attention on household use, such as by the adoption of “purple pipe” dual reticulation systems.⁹

Case study - Ballina Shire Council's Recycled Water Supply (2016)

Ballina Shire Council's Recycled Water Supply program is NSW's first regional operational residential recycled water supply providing recycled water for use in toilets, cold water laundry and for outdoor irrigation via dual reticulation as well as for urban open spaces. The recycled water service will initially be delivered to approximately 160 new houses at Lennox Head and Angels Beach. From there, council will roll out the program to supply approximately 7,200 homes across the council area. Council invested \$85 million in the Ballina-Lennox Head Recycled Water Master Plan to deliver a recycled water service that is safe, available all year round and in times drought, lowers water charges, and reduces the impact of wastewater discharge on the region's waterways.

Workforce skills

LWUs have the skills and capacity to deliver services - every local water utility responsible for providing water treatment has at least one fully qualified water treatment operator to operate the utility's water treatment works, chlorinators and aerators.

There are 429 operators currently meeting the *National Certification Framework for Water Treatment Operators*. In addition, 445 operators employed in operating sewage treatment works are fully qualified wastewater treatment operators. Continuing professional development and updating of operator training and skills is required at least every 3 years.

Performance monitoring, reporting and benchmarking

As part of best practice, LWUs are subject to comprehensive performance monitoring and reporting that is available publicly.

DPI Water monitors and reports on performance of LWUs in its annual *NSW Water Supply and Sewerage Performance Monitoring Report* and *NSW Water Supply and Sewerage Benchmarking Report*. These reports provide a comprehensive suite of performance indicators and benchmarking

⁹ Khan S, Submission to NSW Legislative Council General Purpose Standing Committee No. 5 Inquiry into the Augmentation of Water Supply for Rural and Regional New South Wales, page 5.

data for all NSW LWUs enabling each utility to benchmark its performance against that of similar utilities to facilitate performance improvement.

Performance indicators are designed to be compatible with performance reporting required by the Bureau of Meteorology and provide information required for the Bureau's *National Performance Report - Urban Water Utilities*.

3.2. Regional cooperation among NSW LWUs

LWUs have been seeking service improvements and efficiencies by capturing economies of scale and coordinating service provision on a regional and/or catchment scale.

Based on a model developed by LGNSW and the Water Directorate in 2009 for the NSW Government's *Inquiry into Secure and Sustainable Urban Water Supply and Sewerage Services for Non-Metropolitan NSW*, many LWUs have formed regional water alliances.¹⁰

Alliances such as the Central NSW Councils Regional Organisation of Councils (Centroc) Water Utilities Alliance and the Lower Macquarie Water Utilities Alliance share skills and resources. Shared functions include coordination of supply and demand planning, strategic business planning, joint asset management, drinking water quality management and workforce development. Regional alliances enable LWUs to plan, fund and deliver joint infrastructure necessary to provide secure, safe and efficient regional water supply and sewerage services over the long term.

Centroc Water Utilities Alliance

In the Central West of NSW under the auspices of the Central NSW Regional Organisation of Councils (Centroc), 16 LWUs have formed the Centroc Water Utilities Alliance. The alliance has developed a strategy for sustainable water security across its region over the next 50 years, including augmentation priorities and demand management. The alliance has established a framework for the systematic analysis of the region's water infrastructure needs and strategic prioritisation of members' infrastructure investment. The alliance is successfully implementing regional best practice strategies and joint workforce development.

Lower Macquarie Water Utilities Alliance

The Lower Macquarie Water Utilities Alliance includes 12 LWUs situated around Dubbo in the lower Macquarie River catchment in Western NSW. The alliance is implementing a regional business plan (incorporating existing members' strategic business plans), a regional water quality management plan, and regional water cycle management. The alliance is also looking into developing a joint management of members' water licences and allocation.

Coffs Harbour City Council and Clarence Valley Council Regional Water Strategy

To improve supply security to meet the future needs of the area and to achieve improvements in water quality and environmental flow protection, Coffs Harbour City Council and Clarence Valley Council adopted a joint Regional Water Supply Strategy in July 1997 which includes joint management of water supply dams and networks and joint water efficiency and demand management strategies. The jointly managed infrastructure involves 87 kilometres of pipelines

¹⁰ A detailed illustration of the regional alliance model is provided in appendix 1. The regional alliance model was endorsed by in the final report of the NSW Government *Inquiry into Secure and Sustainable Urban Water Supply and Sewerage Services for Non-Metropolitan NSW*. The appropriateness of the regional alliance model was also acknowledged by the Productivity Commission in its final report of the *Inquiry into Australia's Urban Water Sector* (beside a council owned regional water corporation).

connecting reservoirs with Coffs Harbour's Karangi Dam and the new Shannon Creek Dam. Shannon Creek Dam will secure bulk raw water supply until at least 2030.

County councils and large coastal LWUs

Various special purpose county councils that provide water supply and/or sewerage service have been established under the *Local Government Act (NSW) 1993* representing a regional approach to planning and service delivery. Many coastal LWUs already operate on a catchment-wide scale and have larger populations, enabling them to capture scale efficiencies and benefits from regional solutions.

Case studies – Regional water alliances

Establishing the Northern Rivers Water Group¹¹

The Northern Rivers Water Group (NRWG) is a collection of LWUs concentrated in the Northern Rivers of NSW (Rous Water County Council, Ballina Shire Council, Lismore City Council, Byron Shire Council, Richmond Valley Council, Tweed Shire Council and Kyogle Council) and includes Coffs Harbour City Council and Clarence Valley Council as observing members. Combined, the Councils service approximately 200,000 customers.

The group was initiated due to a strong desire among local water and sewerage managers to share knowledge, ideas and resources. The NRWG has shown strong leadership in resource sharing, joint procurement, and the development of regional partnerships. This is due to the consultative arrangements and relationships developed over time that allow flexibility in the level of involvement each council has in the projects initiated by the group.

The MoU included a number of strategic objectives, which the NRWG is focused on delivering. The key deliverable is the implementation of a regional bulk water supply strategy looking at the longer term (50 year) water supply needs across the region. A final report on the strategy was completed in October 2013 and included a detailed prioritised action plan.

The NRWG has fostered stronger working relationships between the member councils and enabled them to share knowledge in the areas of contract specifications, training opportunities, and changes in regulations. Other achievements include savings in a joint tender for sewer relining and collective bargaining resulting in training courses being located on the North Coast.

¹¹ Acknowledgements: Graham Kennett, Kyogle Shire Council and Andrew Swan, Ballina Shire Council.

Workforce development by the Centroc Water Utilities Alliance¹²

The Centroc Water Utilities Alliance, established in 2009, comprises 14 Central NSW councils including Bathurst Regional Council, Blayney Shire Council, Boorowa Council, Cabonne Council, Cowra Shire Council, Forbes Shire Council, Lachlan Shire Council, Lithgow City Council, Oberon Council, Orange City Council, Parkes Shire Council, Upper Lachlan Shire Council, Weddin Shire Council, Young Shire Council, as well as Central Tablelands County Council (water supply).

In 2011, the alliance initiated a workforce development pilot project to prepare a *Regional Workforce Development Plan* for their local water utility employees. The project expanded on earlier research and studies by producing a detailed analysis of regional vocational education and training needs of employee in five of the alliance's councils - Cowra Shire Council, Lithgow City Council, Forbes Shire Council, Orange City Council and Parkes Shire Council.

The purpose of the project was to demonstrate leadership and ensure staff at each council was skilled and qualified in the competencies required by their organisation and industry, including the *Certification for Operators of Water Treatment Plants*.

The project included a workforce profile of employees and an audit of their vocational training needs. This was based on current attainment of units of competency and future organisational requirements. Preliminary analysis of the workforce had indicated that while 63% had acquired a post-school qualification and 22% were currently studying to receive a qualification, only 37% had attained, or were undertaking, a qualification aligned to the *Water Industry Training Package*.

The completed *Regional Workforce Development Plan* included recommendations on funding programs that could minimise the cost of training to councils. In late 2015, Centroc and the participating councils secured funding of \$30,000 from Training Services NSW to deliver the 76 units identified through the pilot program. Building on the project, councils not previously involved in the initial stage are now engaged in an in-house workforce mapping exercise using templates developed by the project.

3.3. Broader cooperation of the urban water sector in regional NSW

On a broader scale, NSW LWUs and the local government sector have established mechanisms and initiatives to help utilities achieve best practice and tap into efficiencies arising from working together.

The Water Directorate

Notably, in 1999, NSW LWUs established the Water Directorate; a membership organisation for NSW councils that provide water supply and/or sewerage services. The Water Directorate currently has 87 members out of a total of 89 LWUs in NSW.

The Water Directorate provides high quality technical and operational guidance and advice to its members to enable them to achieve best practice. It produces essential documents such as manuals for the operation and maintenance of water supply and sewerage facilities, and numerous guidelines, technical templates and protocols. With its high level of technical expertise in urban water service provision in regional NSW and detailed knowledge of the technical, operational and

¹² Acknowledgements: Meredith Macpherson, Centroc.

managerial challenges LWUs face, the Water Directorate is an important contributor to discussions on urban water provisions in regional NSW.

LGNSW Annual Water Management Conference

LGNSW holds an annual water management conference providing a forum to discuss urban water supply and sewerage matters as well as broader water management issues. The event attracts up to 250 delegates from NSW and interstate, including councillors and council general managers, water managers and professionals, policy makers, and key industry stakeholders. This conference enables councillors and professionals from LWUs to apply the latest developments in urban water management.

Water Loss Management Program

To support LWUs in their efforts to reduce leakage from their drinking water distribution systems, LGNSW and the Water Directorate, in partnership with the Australian Government, established the Water Loss Management Program. This five year program, which concluded in June 2011, provided specialist knowledge, equipment and financial assistance to help councils identify, develop and implement water loss management projects.

The Water Loss Management Program was partly funded by the Australian Government's *Water Smart Australia* program providing funding to councils of up to 33% of the costs of projects directly related to water loss reduction. The remaining project funding was provided by councils. The Australian Government also provided funding for the program management (including staffing costs) with in kind contributions by LGNSW and the Water Directorate.

During its five year term, the program undertook 80 water loss projects with 75 councils. The three main achievements of the program were:

- *Large water and energy savings across councils*
As a result of the program councils have achieved ongoing annual water savings of 5.435 billion litres. This is equivalent to the annual residential supply of water to a city the size of Bathurst in regional NSW. In addition, water savings in funded project zones equate to approximately 98 litres per connection per day. Energy savings have been estimated to be in the region of 1 million KWh (representing emission reductions of 1.2 million kilograms of carbon dioxide). The energy savings equate to the removal of approximately 300 cars from the road per year.
- *Capacity building within many councils*
The program led to a major improvement in the capacity of councils and their staff to measure and mitigate against future water loss.
- *Infrastructure enhancements to allow sustainability of savings*
The program's aim of achieving sustainable water savings led to investment in permanent water flow metering and monitoring technology. The majority of councils that completed a funded project installed permanent metering and monitoring to ensure any future increase in water loss can be addressed earlier.

Aboriginal Communities Water and Sewerage Program

LGNSW and the Water Directorate are working with the NSW Government and the NSW Aboriginal Land Council on a program to deliver improved water supply and sewerage services to discrete Aboriginal communities in NSW.

Under the *Aboriginal Communities Water and Sewerage Program*, which commenced on 1 July 2008, long term funding is provided for councils and their LWUs to provide operational, maintenance, and monitoring services of urban water systems in Aboriginal communities (\$200 million over 25 years jointly funded by the NSW Government and the NSW Aboriginal Land Council).

Drinking water supply and sewerage services have been poor in many Aboriginal communities and most communities lack the resources and skills to operate and maintain systems in the long term. This program addresses the pressing need to improve this situation and bring to an end its negative social, health, environmental and economic impacts.

As a result of this program, 62 discrete Aboriginal communities with a total population of more than 6,000 people are receiving better water supply and sewerage services.

Communities have long term operation and maintenance service agreements in place with LWUs to provide full water and sewerage services equivalent to that in similarly located communities. Risk based water and sewerage management plans have been prepared for each community to improve the understanding of the risks to the water supply and sewerage systems, leading to better management and fewer breakdowns. The program also provides capital funding for essential water and sewerage infrastructure.

3.4. Structural reform

In its issues paper, the Productivity Commission asks what institutional arrangements are needed in the urban water sector to improve the efficiency of service provision. It points out that smaller water utilities may face difficulties in attracting sufficiently skilled staff and meeting important service standards such as water quality, due to their small size and revenue base.

There have been suggestions that to improve efficiency, service provision should be removed from councils and transferred to larger state owned corporations or the private sector. There appears to be an assumption that further pricing reform and structural changes would create incentives to attract private investment in order to redress the perceived problem of under-funded urban water infrastructure. However, attempting to address the need for greater infrastructure investment by way of pricing and structural reform is unlikely to succeed. This would create upward pressure on prices, which will likely run counter to the community's willingness and ability to pay. Communities in regional NSW will support a cost recovery model for urban water services but not a shareholder profit model.

LGNSW and the Water Directorate oppose the transfer of council provided water supply and sewerage services to state owned water corporations or their privatisation. Institutional arrangements need to maintain local government responsibility for the operation and management of water supply and sewerage services and local government ownership of water supply and sewerage infrastructure.

LWUs in regional NSW already deliver services in a safe, secure, efficient, and affordable manner and have demonstrated their ability to identify challenges and implement necessary reform. They ensure an integrated and locally appropriate approach to water supply and sewerage management and optimal whole-of-community outcomes for their communities.

LGNSW and the Water Directorate acknowledge that, particularly for smaller and more remote LWUs, regional solutions are required to facilitate resource sharing and provide skills and

knowledge to assist utilities in undertaking strategic business planning and satisfying regulatory requirements.

However, regional solutions do not require the removal of water supply and sewerage functions from local government. Regional alliances of councils and the existing special purpose county councils already achieve the desired regional sharing of resources and coordination of service planning and provision. These models capture the benefits of regional solutions without having the disadvantages of institutional settings where water supply and sewerage functions are removed from councils. State owned corporations and private corporations could not achieve this.

For example, councils' broad range of responsibilities - not only for water supply and sewerage but also for stormwater management, strategic urban planning, land development control, and environmental management - and their ability to balance community priorities, enables their LWUs to manage the water cycle in an integrated way and deliver water sensitive urban solutions.

Further, the integration of water supply and sewerage function and other general purpose functions allows councils to capture "economies of scope"; i.e. technical and managerial synergies arising from the integration of engineering, asset management and corporate planning systems for water supply and sewerage, roads and transport, communication, waste management, or recreational services. Economies of scope also arise from the ability to effectively and efficiently coordinate strategic land use planning and land use development control with infrastructure intensive services such as water supply and sewerage services.¹³

Finally, the removal of water supply and sewerage functions from councils would have significant impacts on the financial sustainability of councils and on local and regional economies and employment.

Water supply and sewerage services are a major part of most regional councils' operations. They contribute to a critical mass of responsibilities that make councils financially viable and attractive for skilled professionals. Especially in smaller rural council, water supply and sewerage services are a significant part of engineers' and senior managers' workload. These employees are often multi-skilled and shared between general purpose functions and water supply and sewerage functions providing for efficient workforce flexibility. Removal of water supply and sewerage functions from councils would eliminate these synergies, might make attracting and retaining highly skilled professionals unaffordable, or generally reduce the attractiveness of employment with councils for these professionals. Loss of operations and staff in councils would also have serious direct and flow-on effects on small communities and the affected families, particularly in rural areas where councils are often the largest employer.

3.5. Infrastructure funding in areas of need

Notwithstanding the many benefits of regional solutions, in some regional areas, LWUs might not be able to fund the renewal of existing, or the construction of new, water supply and sewerage infrastructure from customer charges. This applies especially in rural and remote areas where the impacts of drought and climate change and the realities of declining populations and low population density are particularly challenging.

¹³ In economic terms, economies of scope occur if it is cheaper for one entity to provide a range of services together (i.e. water supply and sewerage services and other general purpose services), than for each of the services (e.g. water supply and sewerage services) to be provided by separate entities. Economies of scope may arise from integration of technical, managerial and administrative resources.

Regional solutions can help address these challenges. However, some communities might not be able to afford the desired level of water supply and sewerage services, even from a regional perspective. It is also questionable whether utilities should be required to depend on internal cross subsidisation within a regional structure. Horizontal equalisation objectives such as equal supply security, demand restrictions and achievement of comprehensive health and environmental standards, are more appropriately achieved through subsidies funded from a broader base such as general taxation income.

The NSW Government has recognised this funding need. It has been providing infrastructure funding assistance since 1994 by way of the *Country Towns Water Supply and Sewerage Program* and the current *Regional Water and Waste Water Backlog Program*, contributing to the significant progress towards best practice and helping to ensure safe and secure water supply and sewerage services throughout the whole of regional NSW.

LGNSW and the Water Directorate are working closely with DPI Water and NSW Health to identify future funding needs associated with the introduction of microbial health based targets and the impacts of climate change on supply yields and water infrastructure (see below).

3.6. Future challenges and reform priorities

LWUs, together with their regulators DPI Water and NSW Health, have identified, and are addressing, a number of challenges and reform priorities. These include:

- Modernising the regulatory framework towards more outcome and risk based regulation that recognises the maturity of LWUs;
- Implementation of microbial health based targets for drinking water supplies and addressing associated funding needs;
- Water security and climate change impacts; and
- Addressing concerns over private sector involvement and competition.

There is significant scope for a renewed *National Water Initiative* to contribute to addressing these challenges by providing high level policy guidance, independent evidence-based resources, and promoting rigorous cost-benefit analysis of regulatory changes.

Modernising the regulatory framework

LGNSW and the Water Directorate support the continuous improvement of the regulatory regime for LWUs, including the best practice framework, towards modern economic, health and environmental regulation.

DPI Water is working with LWUs, LGNSW, the Water Directorate and other stakeholders on a review of the regulatory environment for LWUs. The purpose of the review is to:

- Recognise the maturity of many LWUs and implement a more outcomes and risk based regulatory framework (e.g. with respect to technical approval and process requirements);
- Streamline regulatory functions of DPI Water as “utility” regulator and functions of the general local government regulator, the Office of Local Government (e.g. requirements and processes associated with strategic service planning, asset management, financial management, and financial accounting and auditing); and
- Strengthen operational powers of LWUs in line with powers given to other utilities such as Sydney Water and Hunter Water.

Microbial health based targets

LGNSW and the Water Directorate urge the Productivity Commission to review the proposal by the National Health and Medical Research Council (NHMRC) to include in the ADWG a microbial health based targets regime for drinking water supplies.

The proposed microbial health based targets regime for drinking water supplies represents a risk based approach to managing drinking water quality aimed at achieving a tolerable (very low) health risk, expressed as a “burden of disease” indicator, from the consumption of treated drinking water. The regime is to be based on a comprehensive risk assessment of the water supply source and its catchment, and implementation of water treatment processes that reduce the assessed risk to the required “burden of disease” target.

The NHMRC proposes to include the regime into the ADWG and require the target to be 10^{-6} Disability Adjusted Life Years per person per year. LWUs in regional NSW would be subject to the regime by way of the requirement of the *Public Health Act (NSW) 2010* to have in place drinking water quality management systems in accordance with the ADWG.

Lack of cost-benefit analysis and funding plan

While LWUs principally support a risk and outcomes based approach to drinking water quality management, LGNSW is concerned that impacts/costs of the proposed microbial health based targets regime have not yet been taken into account and compared to any potential health benefits.

The Productivity Commission’s issues paper correctly points out that public health regulations play a large role in determining the nature and cost of urban water services and that, for significant imposts, the process by which these regulations are determined should demonstrate that the benefits of regulation exceed their costs.¹⁴

The proposed regime would have significant operational, technical, regulatory and associated financial impacts on LWUs in regional NSW. It would require the implementation of complex and costly processes to monitor and carry out regular sanitary surveys of raw water catchments to identify the sources of microbial risk and complete vulnerability assessments and risk profiles of catchments based on these surveys. The implementation of water treatment processes needed to address the assessed risk and meet the proposed health based targets is likely to increase operational costs and require significant capital expenditure to upgrade treatment infrastructure. NSW Government agencies estimate that the capital investment alone required in regional NSW could be up to \$1 to \$2 billion.

The consultation material provided by the NHMRC does not specify the value of expected health benefits, nor does it consider the potentially significant implementation costs or other related costs, such as costs associated with detrimental health outcomes related to the resultant lack of funding for the expansion of services to communities currently without a reticulated water supply or the abandonment of smaller potable supply systems due to their inability to meet the requirements of the new regime.

In its submission to the NHMRC, LGNSW requested that a comprehensive cost-benefit analysis be undertaken before the proposal is considered any further. Such an analysis is necessary to ascertain whether the proposed regime ultimately provides net benefits to society in general, and regional NSW in particular, and compares favourably with other potential beneficial action, health

¹⁴ Issues paper, page 24.

related or otherwise (e.g. providing better quality of, and access to, health services in regional NSW).

Furthermore, the proposal does not consider how any expenditure required as a result of the introduction of the proposed regime would be funded. Communities in regional NSW are unlikely to be able to afford or be willing to pay for the enormous infrastructure investment that would be required to achieve vague health benefits.

Inadequate catchment categories

Proposed catchment risk categories do not consider adequately the characteristics and associated risk profiles of many drinking water supply systems in regional and rural areas of NSW. They appear to focus on supply systems with reservoirs and are difficult to interpret for supply systems that rely on large run-off river catchments.

A number of LWUs in regional NSW source raw water from large catchments where the microbial risk activities are at a considerable distance from the water supply system off-take but where there is no specific inner catchment protection. Most of these systems would fall into the less risky categories requiring less onerous treatment, but the lack of inner catchment protection would move them into the more risky categories requiring significant infrastructure upgrades. Apart from the distinction between inner and outer catchment, which is specific to reservoir systems, little recognition is given to the proximity of the microbial risk activity relative to the source water off-take and pathogen inactivation as a result of hydraulic residence of pathogens in environmental land and water. Also, there is little evidence for the risk categorisation of unprotected catchments with low density land use, from which many LWUs source their water.

A much stronger evidence base is needed for catchment risk categorisation in regional NSW to justify the potentially significant and costly level of investment in treatment processes and infrastructure.

Water security and climate change

An important challenge for LWUs has been and continues to be to ensure the security and quality of urban water supplies in the context of reduced water availability as a result of climate change as well as water recovery for the environment. LWUs have been concerned about how environmental water management affects urban water supplies and LWUs' ability to plan and provide for the potable water needs of their communities.

It is critical for water resource management policies and practices to ensure the long term security and quality of urban water supply. Urban water use by households, manufacturing and other industries that are supplied by LWUs needs to be given priority in water resource planning instruments, such as the Murray-Darling Basin Plan. Considering that urban water use makes up only a small proportion (about 4%) of total water use in the Murray-Darling basin, this can be done without affecting essential environmental flows.

State water resource plans need to provide long term planning certainty for all water availability scenarios, which is particularly relevant for utilities which do not have their own major storage facilities and are dependent on water allocation from regulated or unregulated rivers.

This requires close consultation with councils and their LWUs to take account of:

- Water needs identified by LWUs in their urban water supply and demand analysis and integrated water cycle management plans;

- Actual and anticipated growth patterns (population and industrial development) experienced and planned for in communities in regional NSW; and
- Potential impact of climate change on water availability and water quality.

The natural, social and economic systems of rural and regional NSW will all be affected by climate change and any reductions of water availability as a result of it. According to modelling of rainfall response to global warming in NSW undertaken for the *NSW Database of Future Climate Projections*, the median or best estimate indicates that future mean annual runoff in the region in about 2030 relative to 1990 will be lower by 0% to 20% in the southern parts of NSW, not change or slightly reduce in the eastern parts of NSW, and be higher by 0% to 20% in the northwest corner of the state. Averaged across the entire region, the median or best estimate is a 5% decrease in mean annual runoff.¹⁵

Many LWUs in regional NSW already take account of climate change in their integrated water cycle management strategy. With the assistance of the DPI Water, utilities have been looking specifically at the impact of climate change on their supply sources, in particular on the secure yield of their water storages under various climate change scenarios.

A pilot study to determine the potential impact of variable climatic patterns on 11 local water utility water supply systems in regional NSW was undertaken by DPI Water during 2009 to 2011. It found that variable climatic patterns do pose a potential threat to LWUs' security of supply and that future secure yield of supply systems is reduced by up to 9% for participating coastal utilities and by approximately 30% for inland water utilities in mid and southern NSW.

Effects of climate change, such as increased occurrence of extreme weather events, higher temperatures, or sea level rise, will also put pressure on local infrastructure, reducing the life of assets, increasing the whole-of-lifecycle cost, or requiring new infrastructure solutions.

Case study - Centroc Water Security Study

Responding to a decade of drought and calls from communities across Central NSW, in 2008 Centroc undertook a comprehensive water security study looking at the sustainable assurance of water security across the region of 16 member councils over the next 50 years.

The study included sophisticated modelling to forecast urban demand from the dozens of towns within our remit, for a 50-year horizon through to 2059. These forecasts took into account projected population growth tempered by the necessity that communities become more efficient in their urban water usage. The study modelled surface and groundwater resources and considered the impact of both the current climate sequence and a climate change scenario.

The study also addressed approaches to the management of water resources by all water users in the region, including the irrigation and mining sector, and the provision for environmental flows, and best practice in water conservation and management and the role of water savings and demand management.

Importantly, the study provided advice on infrastructure augmentation in Central NSW to improve water security for the communities served by member councils. It recommended large scale

¹⁵ NSW Government, Future climate and runoff projections (~2030) for New South Wales and Australian Capital Territory, (2008).

infrastructure solutions, including dam augmentations and a core regional supply and distribution network. The study also recommended a region-wide water conservation and demand management strategy, including the implementation of permanent low level water restrictions on outdoor water use, continuation of water loss management programs, and expansion of water conservation education programs.

More work is required to assess and effectively manage the potential effects of climate change on water supply yields and water supply infrastructure.

To inform planning for climate change and enable LWUs to include climate change impacts into their strategic business planning and asset and risk management, mapping and modelling of hydrological scenarios and climate hazards and data on projected socio-economic trends are critically needed. This information is best produced at multiple levels - i.e. state, regional and local - in order to be comprehensive and meaningful. A well-resourced national research institution, such as the now abolished National Water Commission, could make a significant contribution to addressing this need.

Furthermore, a key element of national water reform should be to promote a regulatory environment that is capable of assessing the suitability, with respect to both quantity and quality, of all supply augmentation and demand management options, including alternative and climate independent water sources such as:

- Harvesting urban stormwater;
- Managed aquifer recharge;
- Water recycling including indirect or direct potable reuse;
- Further utilisation of ground water resources; and
- Desalination.

Case study - Orange City Council's Blackmans Swamp Stormwater Harvesting Scheme

Orange City Council's Blackmans Swamp Stormwater Harvesting Scheme represents the first large scale, indirect-to-potable stormwater harvesting project in NSW, if not Australia. The scheme is capable of providing between 1,300-2,100ML of additional water into Orange's raw water supply each year from the city's stormwater system, meeting up to 40 per cent of the city's total water needs. The scheme is also a successful example of effective public communication and education, with the community willingly accepting reused stormwater for their drinking supply.

Concerns over private sector involvement and competition

LGNSW and the Water Directorate do not object in principle to the introduction of competition and market mechanisms in the urban water sector. However, any proposals to introduce competition must clearly demonstrate that the benefits of competition in a given market will outweigh the costs; i.e. that competition is in the net public benefit.

While the private sector plays a role in the urban water market (e.g. as contractor or consultant), it needs to be noted that competition (in the market) in the provision of urban water supply and sewerage services has been untried in Australia and internationally and the ramifications of the introduction of market mechanisms are as yet unknown. Caution should be exercised when implementing market mechanisms and an ongoing and robust process needs to be put in place to review the introduction of any new market elements.

LGNSW and the Water Directorate reject any form of privatisation of LWUs in NSW, either as privatised, vertically integrated monopoly providers or as privatised entities within a disaggregated sector, because of the direct conflict between whole-of-community objectives of service provision, demand management and water conservation, and profitability requirements of the private sector.

Water Industry Competition Act (NSW) 2006

Councils have raised a number of concerns about the licensing and access regime that commenced in NSW under the *Water Industry Competition Act (NSW) 2006*. The regime facilitates private sector entry into the provision of water supply (potable or non-potable) or sewerage services by means of any water industry infrastructure (competition for the market).

An important concern is how the risk of financial or operational failure of a private service provider or physical failure of a private supply source will be addressed. It is likely that public water utilities, including LWUs, will be declared supplier of last resort; i.e. being responsible for stepping in if the private operator/source fails. This raises a number of issues for LWUs including how to share the cost associated with contingency planning and making contingency provisions as well as the cost associated with having in place the technical capacity to step in. LWUs will require planning certainty and need to be protected against the risks and costs associated with failures of such schemes (e.g. failing infrastructure). In addition, private schemes need to be required to provide comprehensive information to customers on the risks, including health risks, as well as costs of failure of the scheme.

Another concern relates to the coordination of the new regime with the land use planning and development control system. Clarification is required as to how the new regime will ensure that the licensed activity is consistent with councils' land use planning policy and instruments and LWUs' integrated water cycle management plans.

4. Water resource planning

4.1. Identifying and addressing socio-economic impacts of environmental water recovery

A key area of water resource planning and management that requires further progress is the identification of socio-economic impacts of environmental water recovery on regional communities and associated structural adjustment needs. LGNSW and the Water Directorate urge the Productivity Commission to recommend a more systematic and holistic approach to identifying and addressing these impacts and needs.

LGNSW and the Water Directorate recognise the need for, and support the implementation of, sustainable levels of water diversions to protect the environmental health, resilience, and productive base of river systems in NSW and beyond. However, we are concerned about the impacts this might have on the social and economic fabric of regional communities.

Water recovery for the environment and the associated reductions in water availability for agriculture and other water dependent, productive industries is likely to have significant socio-economic impacts on affected regional economies. This includes direct economic impacts on the irrigation and agricultural sector but also wider economic and social impacts on communities (e.g. impacts on related industries and associated employment; impacts on public services such as schools, medical services, and local government services; impacts on young people and their opportunities in regional areas and impacts on Aboriginal people).

It is critical that the process of identifying and addressing socio-economic impacts is strengthened. Importantly, this needs to include the comprehensive analysis of localised impacts, identification of options for affected communities to make the transition to a future with less water, and provision of structural adjustment assistance where required. To ensure communities understand the need for change and the challenges involved, this process needs to be built on genuine engagement with affected communities.

Identifying and addressing these impacts is particularly important in more vulnerable regions that are highly dependent on (irrigated) agriculture and subject to significant water recovery and where underlying social and economic conditions are quite challenging, such as in and around Warren, Collarenebri or Deniliquin-Wakool.

Critically, addressing socio-economic impacts is a whole-of-government task that cannot solely be performed by bodies such as the Murray-Darling Basin Authority. A key area of improvement for a renewed *National Water Initiative* is the implementation of holistic and comprehensive mechanisms for addressing these impacts.

To mitigate socio-economic impacts, enhanced focus should be given to acquiring water for the environment by way of investment in water use efficiency and water saving infrastructure. Such investment, as distinct from uncoordinated water entitlement purchases from willing sellers, would ensure that government spending remains in the regions and supports their productive capacity, is available for economic adjustment and helps affected communities with the transition to a future with less water. Water recovery through infrastructure investment, which essentially recovers water by reducing losses, can lead to direct benefits to the farmers and to their respective communities. Those benefits may include increased activity for non-farm businesses associated with installing the new infrastructure.

4.2. General concerns over water sharing plans

Councils have raised more fundamental concerns over water sharing planning processes and outcomes. In their view, water sharing plans (WSPs), while legislated in the *Water Management Act (NSW) 2000* as an instrument to balance social, economic and environmental interests, often present an impediment to finding and implementing solutions that provide balanced outcomes from an environmental, social and economic perspective for the local community.

The following issues were considered as hindering WSPs from achieving their potential for delivering sound outcomes:

- The development of WSPs appears to be based on a limited understanding of the social, economic or environmental context of the area for which the plans are being developed.
- Configuration and operational constraints of water supplies are often not adequately addressed resulting in rules that are difficult to implement by water supply operators, and that can unnecessarily impact on the yield of the system.
- While environmental issues appear to be given pre-eminence in decision making, there appears to be reliance on limited environmental data in the development of the plans.
- In the absence of scientific data for the preparation of WSPs, the LWUs are often required to undertake considerable scientific work at their cost to provide a better basis for water planning.
- The recent approach of “minimal change” when remaking plans appears to be driven by administrative expedience rather than to optimise outcomes.
- Consultation processes with stakeholders need to be improved in order to produce a robust plan. Those regulated by the plan need to be involved in the development of the plan in a constructive environment in order to develop balanced and practical solutions.

- The plans are convoluted regulatory instruments often with limited supporting documentation to assist those who implement them. This can result in implementation outcomes that are contrary to intended outcomes at the time of preparation.
- Some plans include triggers for review and amendment based on various scenarios. Once gazetted there appears to be little interest to amend the plans as intended, particularly if the amendment is required to improve the outcome for a water user; e.g. a local water utility.

Councils suggest the following improvements to water sharing planning processes:

- WSPs should be developed and reviewed by a professional team with experience in environmental, social and economic issues, a culture of collaboration with relevant stakeholders, and a focus on developing and achieving balanced practical solutions.
- Engagement with stakeholders should commence at an early stage in the planning and review process and appropriate time should be allocated to enable proper investigation and consultation processes.
- Comprehensive background and supporting documentation for the plans should be provided to enable and promote appropriate levels of investigation, data analysis and balanced solution development.

5. Conclusion

LGNSW and the Water Directorate hope that their comments are of assistance and look forward to continuing to contribute to a national reform blueprint that improves the efficiency and sustainability of water management in Australia.

For further information on this submission, please contact, Sascha Moege, LGNSW Senior Policy Officer on 9242 4045 or sascha.moege@lgnsw.org.au.

Appendix 1 – The regional water alliance model

This appendix outlines the separation of functions between member councils and the alliance in the alliance model.

Functions of the alliance

In the alliance model proposed by LGNSW, the main function of the alliance is to facilitate resource sharing and skills pooling among member councils and provide skills and knowledge to assist member councils in undertaking strategic business planning and satisfying regulatory requirements. The alliance would also coordinate and guide strategic business planning by member councils, particularly where there are benefits in regional solutions (e.g. regional supply solutions). To enable the alliance to perform this function, it should develop a regional integrated water cycle management strategy, outcomes of which would inform the member councils' planning. However, the alliance has no power to direct member councils' strategic business planning process, including pricing decisions.

The alliance could also be responsible for auditing strategic business planning by member councils (including pricing determinations) and compliance with regulations and reporting to the regulator (see below). This audit process would facilitate peer pressure among member council to achieve required service standards.

It needs to be noted that this model does not preclude the alliance, over time and by mutual agreement of member councils, from taking on functions previously performed by member councils and /or being granted the authority to make binding decision for member councils (e.g. management of beneficial regional infrastructure).

Function of member councils

In the alliance model proposed by LGNSW, member councils continue to be responsible for the strategic business planning for their utility's area of operation. This includes:

- Determination of service levels for water supply and sewerage services. This determination should:
 - Be based on what service level the community wants and is willing and able to pay for;
 - Be based on local conditions, including hydrological and technical (system) conditions; and
 - Meet mandatory regulatory requirements and best practice as a baseline or minimum standard; i.e. regulatory requirements to ensure appropriate health, water quality, safety, environmental and social outcomes; and
- Determination of operational, recurrent and future capital (infrastructure) requirements to deliver the determined level of service; and determination of charges (pricing) to fund operational and capital requirements based on economic regulations (e.g. full cost recovery, provision for return of, and on, capital).

The strategic business planning process should be subject to an external audit ensuring that assumption and processes are fit for purpose and regulations are complied with. The audit could be undertaken by an external auditor or by the alliance and would form the basis for regulatory oversight by the government.