Water Directorate Incorporated
ABN: 96 588 594 694
PO Box 200, Forster NSW, 2428
Tel: 0498 765 055
Email: info@waterdirectorate.asn.au
Web: www.waterdirectorate.asn.au

Our ref: 21082020

National Water Reform inquiry
Productivity Commission

Submitted via:
https://www.pc.gov.au/inquiries/current/water-reform-2020/make-submission#lodge

21 August 2020

Initial submission in response to National Water Reform issues paper – May 2020

Thank you for the opportunity to provide an initial submission responding to the Productivity Commission's May 2020 issues paper. We are pleased to see that the provision of reliable water services to regional, rural and remote communities has been specifically included in the scope of the inquiry.

The NSW Water Directorate is the peak industry body for 89 out of 90 eligible local government owned water utilities (LWU's) in regional NSW. Further information about us can be found at: https://www.waterdirectorate.asn.au/AboutUs.aspx.

Local Water Infrastructure in regional NSW 'at a glance'

Local water utilities in NSW have the following attributes 'at a glance':

Table 1 - Features of the regional NSW urban water industry

• 92 Local Water Utilities (LWU's)	• 1.85 million population served in 890,000 homes and businesses
• 782,000 square kilometres in aggregate catchment area	
• 350 water supply schemes	• 300 sewerage schemes
• 49 recycled water schemes	
• 312 GL per annum of water supplied	• 160 GL of sewage treated
• $28 Billion total replacement cost of assets	• $1.5 Billion in annual revenue
• 2000 water operators*	• 500 engineers, technicians and managers*

** Estimate extrapolated from 2016 operator survey*

The data indicates extensive critical infrastructure operated over an expansive catchment area by a relatively small cohort of dedicated water industry staff.

In the last few years, regional NSW has experienced unprecedented impacts on water security and water quality arising from drought, bushfire, water quality challenges and the COVID-19 pandemic.

The Water Directorate is calling on all water related agencies to collaborate and invest in water utility resilience for regional water providers through capacity building, improved water utility risk management and non-asset solutions such as digital technology. While capital projects have an important part to play, these are invariably long-term solutions. Short term non-asset solutions are required to monitor, predict, and mitigate risk.

We respond to the information requests in the issues paper as follows:

Assessing jurisdictional progress

INFORMATION REQUEST 1

The Commission welcomes feedback on:

- *whether the signatories to the NWI are achieving the agreed objectives and outcomes of the agreement*
- *which elements of the NWI have seen slow progress*
- *whether there are cases where jurisdictions have moved away from the actions, outcomes and objectives of the NWI*
- *any other data and information sources that might be useful for assessing progress.*

We believe good progress has been made overall in achieving the objectives and outcomes of the NWI. There are challenges currently in NSW with embedding the lessons learned from the Millennium drought and the current drought (2017-) into water resource plans and strategies. We look forward to the finalisation of NSW's remaining Regional Water Strategies[1] in 2020 and 2021 to bring together the most up to date information and evidence to integrate policy, planning, regulatory and infrastructure solutions. In particular:

> *Regional water strategies will set out a long-term 'roadmap' of actions to deliver five objectives. Options selected for inclusion in the final strategy for each region will need to address at least one of these objectives, which are listed below:*
>
> - *Deliver and manage water for local communities*
> - *Enable economic prosperity*
> - *Recognise and protect Aboriginal cultural values and rights*
> - *Protect and enhance the environment*
> - *Affordability - Identify least cost policy and infrastructure options*

NSW has also completed a Water Reform Action Plan[2] in response to concerns with water resources management and increase transparency.

[1] Accessed at NSW DPIE: https://www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies

[2] Available at : https://www.industry.nsw.gov.au/__data/assets/pdf_file/0015/312144/nsw-government-water-reform-action-plan.pdf

Assessing the adequacy of the NWI to meet current and emerging challenges

INFORMATION REQUEST 2

Is the NWI adequate to help Governments address the identified challenges?

Are there any other current or emerging water management challenges where the NWI could be strengthened?

In a submission to the Productivity Commission in 2017[3] Local Government NSW and NSW Water Directorate jointly expressed support for a renewed NWI. Future challenges and opportunities listed in our submission included:

- Modernising the regulatory framework for urban water in NSW by moving away from the current dated, prescriptive framework towards more outcome focussed and risk based regulation that recognises the maturity of local water utilities in regional NSW
- Implementation of microbial health based targets for drinking water supplies and addressing associated capital funding and capacity building needs
- Addressing water security and climate change impacts
- 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 guidance, independent evidence based resources and promoting rigorous cost-benefit analysis of regulatory changes.

Promoting water utility resilience

Since 2017, NSW has experienced one of the worst droughts in the instrumental record, coinciding with one of the longest and worst bushfire seasons in 2019-2020. This was followed by significant water quality challenges presented by drought/bushfire affected catchments and unfortunately followed by business continuity challenges with the COVID pandemic. This sequence of extreme events has required a renewed focus on the resilience of local water utilities in regional NSW.

The NSW Government's total drought support and water security commitments in regional NSW in response to the current drought are close to $4 billion[4]. Significant capital funding has been committed by the NSW government for water infrastructure to address water security challenges in regional NSW. In particular, $15 million[5] was committed in the package for carting water into a number of small regional communities that had experienced town water supply failure.

Water Directorate believes that this significant capital investment by the state and Commonwealth governments into regional NSW needs to be complemented with non-asset solutions. These include:

[3] Sub072, May 2017, available at: https://www.pc.gov.au/__data/assets/pdf_file/0009/217359/sub072-water-reform.pdf

[4] Source: NSW DPIE: https://www.dpi.nsw.gov.au/climate-and-emergencies/droughthub/2020-drought-package

[5] Source: https://infrastructuremagazine.com.au/2019/12/03/urgent-water-infrastructure-funding-for-nsw/

- ***Sophisticated strategic planning*** – diversification of water supplies to reduce reliance on climate dependent surface water systems. All water security options need to be available with regulatory frameworks able to adapt to contemporary water security solutions that include water recycling and stormwater harvesting. Regional water strategies are crucial to support business cases for interconnection of water supplies between catchments and regional centres. Water security modelling needs to have regard for the latest drought data and the latest climate change modelling.
- ***Invest in capacity building of water utilities*** – develop a minimum standard for water operator training and collaborate with trainers and Registered Training Organisations in training delivery.
- ***Invest in and support water utility business excellence*** – water utility risk awareness and management to reduce future water security, water quality or public health incidents. Business continuity planning and asset management systems
- ***Invest in innovative digital technology*** – improved data and real-time modelling and operation will achieve improved levels of service from existing water infrastructure. This would include technologies such as 'smart' water meters, online water quality, flow and pressure monitoring connected via the 'Internet of Things', digital twins for infrastructure modelling and harnessing virtual or augmented reality tools.

Financial sustainability of regional water utilities will be enhanced by strong governance and financial transparency, fit-for-purpose investment and regional scale planning for infrastructure solutions. An increased focus is required on water security, safe drinking water, environmental stewardship, business continuity and reliability with clearly identified levels of service.

Water is a critical enabler for regional economic development. Water is an essential service underpinning community and ecological health. Investment in water has a strong economic multiplier effect. Resilient water services are required to withstand future challenges of drought, bushfire, floods, and pandemic.

Increased investigation in groundwater

It follows from the discussion above on resilience that inland towns should have a 'Plan B' available when surface water is in short supply. There is an opportunity to apply more research to local groundwater investigations using the best available science from CSIRO in collaboration with state agencies to assist regional and remote communities.

Promoting regional collaboration

While there are some challenges with the scale and capacity of some local water utilities, this doesn't necessarily mean that structural reform to regionally aggregate small, remote and regional water utilities will address these challenges. Regional aggregation has previously been recommended in Productivity Commission and Infrastructure Australia for regional NSW and Queensland. Local Government Association of Queensland and the Queensland Water Directorate (*Qldwater*) have been collaborating on alternative institutional models for urban water in regional Queensland, the Queensland Water Regional Alliance Program.

A research report[6] authored by Rob Fearon of Qldwater in 2015, also referencing Productivity Commission's Inquiry Report 2011[7], concluded that a complex range of external drivers are critical to sustainable water and sewerage services in regional areas. This includes the number of discreet schemes being managed, size of the area being managed, distance between networks, climate and rainfall variability, geography and topography (as a determinant of pumping costs) and asset life cycles for long lived water and sewerage assets.

Regional Queensland and NSW both exhibit vast catchments and highly dispersed communities. Economies of scale would only be achieved at the expense of economies of density and economies of scope. While size and ownership are important factors, they are not the sole determining factors for delivering water and sewerage services. Regionalisation therefore needs to be considered carefully. One model will not fit all circumstances.

NSW has recognised, successful, collaborative regional models such as water utility alliances for geographically spread water and sewerage schemes (such as Central NSW Joint Organisation and Orana Water Utilities Alliance), and county councils for integrated regional water supply schemes. Council owned corporations were also proposed as a viable model in NSW by Armstrong and Gellatly in 2008[8], but do not have enabling legislation in place. Water Directorate supports the implementation of collaborative models, and incentive based approaches that include transparent and explicit Community Service Obligation (CSO) payments, which was Recommendation 6.7[9] in the Productivity Commissions 2017 report.

Water Directorate agrees with the premise that local and State Government could collaborate on joint programs that offer level of service benefits and efficiency gains, including the provision of in-kind assistance by the state as a form of CSO targeted to remote and high cost communities.

Promoting community water literacy

Water is a complex subject. A concerted national effort is required to increase transparency and improve community understanding of urban, rural and other water matters. Subjects would include but are not limited to:

- Elements for managing drinking water safely
- Water resource management – policy, planning and implementation, Murray Darling Basin, cross-state water management issues. Principles of water sharing, water markets and environmental water
- Long term water infrastructure planning, delivery and community engagement
- Financial factors and affordability of urban water services in metropolitan, regional and remote areas.

---

[6] Rob Fearon, Qldwater (2015), available at: https://www.qldwater.com.au/__media_downloads%5CReview%20of%20Sustainable%20Water%20and%20Sewerage%20Service%20Models.pdf?downloadable=1

[7] Productivity Commission (2011), available at: https://www.pc.gov.au/inquiries/completed/urban-water/report/urban-water-volume2.pdf

[8] I.Armstrong and C.Gellatly (2008), available at: http://www.water.nsw.gov.au/__data/assets/pdf_file/0007/557278/utilities_local_sustainable_urban_water_and_sewerage_for_non_metropolitan_nsw_report.pdf

[9] https://www.pc.gov.au/__data/assets/pdf_file/0007/228175/water-reform.pdf, at page 235

- Integrated water cycle management – all water security and water quality options
- Factors involved with protecting our aquatic environment

Investing in research and innovation

An objective of the National Water Initiative has been to encourage innovation in water supply sourcing, treatment, storage and discharge. NSW Water Directorate understands that the Cooperative Research Centre (CRC) for Water Sensitive Cities has reached its conclusion after 10 years.

This national research needs to be continued and adapted to regional Australia beyond the lessons learned from metropolitan areas. NSW Councils and the Water Directorate have made commitments to the proposed new Water Security CRC to progress adaptation. There are lessons to be learned and opportunities to be harnessed in integrated water management, state and local collaboration, and fit for purpose use of water in regional Australia.

Future reform directions

INFORMATION REQUEST 3

The Commission welcomes feedback on the matters that should be considered for inclusion in a renewed NWI.

Ensuring water quality is satisfactory

In addition to the matters discussed above, the Commission should consider an increased focus on ensuring satisfactory water quality – drinking water and environmental protection – on a whole of water cycle basis. The objective for ensuring satisfactory water quality should extend beyond publicly managed infrastructure to private and community water supplies, particularly in regional, remote and indigenous communities, as well as safe recreational use of water and aquatic ecosystem health. Managing stormwater quality and quantity is a critical success factor in this regard, as is the management of decentralised sewerage systems.

While water resources policy tries to address the competing pressures on water availability, water quality also needs to be taken into account. Often, the lack of water, such as through a drought, will also impact on the quality of the available water. This can be critical when planning for emergency situations.

A further important aspect of water policy is safeguarding drinking water catchments to maintain drinking water supplies. A lack of consideration of the appropriate management of multi-use catchments can lead to poorer water quality, for example, due to recreational access, and such incompatible uses should be included in planning controls and consistently implemented across Australia to help ensure the continuous supply of safe drinking water.

Increased online water quality monitoring is required in regional NSW catchments is important to ensure that surface water management accounts for risks to drinking water supplies to rural and regional communities.

A renewed NWI should recognise the importance of integrated catchment management and facilitate efforts to prevent potential sources of water quality contamination. This is particularly important for drinking water catchments and safeguarding these supplies, as an alternative to additional treatment processes that may be required to address future water quality issues. Australia's drinking water supplies are increasingly being challenged by events such as bushfires and algal blooms, and existing treatment processes are sometimes unable to manage water quality issues such as these, resulting in 'do not drink' or 'boil water' advisories being issued. National water reform should include a focus on strategies for the improved management of water quality during and following extreme events.

Benchmarking water utility resilience

A national benchmarking system should be developed for assessing urban water supply systems for resilience in the face of emergencies, such as bushfires, so that those supplies and systems which are the most vulnerable, or are not meeting a satisfactory level of resilience, can be identified. The term 'resilience' in this case refers to the ability of a water supply system (as a whole) to reliably maintain the continuous supply of safe drinking water, and water for other essential purposes, during challenging circumstances, such as bushfires or floods. All Australian urban water supply systems should be assessed in accordance with a water supply resilience benchmark and those not meeting minimum acceptable levels could be identified and the underlying issues addressed. If water quality management is incorporated into a renewed NWI, then this task could be given national focus.

Specific national guidance could be developed for all water supplies to follow and comply with to ensure that they are appropriately prepared for major extreme event-related incidents. Demonstrated compliance with these guidance documents could become a requirement of relevant State and Territory Government regulation and guidance for catchment managers and drinking water service providers.

Water entitlements and planning

INFORMATION REQUEST 4

How effective are water plans at managing extreme events such as severe drought?

Are NWI principles being applied at these times?

What steps have been undertaken — or should be undertaken — to plan for long term changes in climate?

What lessons have recent extreme events (bushfires and COVID-19) provided for planning?

The current experience is that water sharing plans in some parts of regional NSW are not as effective as they could be for protecting town water supplies, notwithstanding some significant investment in water security infrastructure. For example, Tamworth in the Namoi-Peel valley has been on Level 5 restrictions for 11 months since 23 September 2019. Tamworth's Level 5 restrictions require residents to limit their water usage to less than 150 litres per person per day and asks businesses to reduce their consumption by at least 25%. We do not think it is sustainable for cities the size of Tamworth to be on Level 5 restrictions for such a long length of time.

The water sharing plan in the Peel valley that is currently under review does not appear to take into account the 'drought of record', which is the current drought (since 2017). It is the Water Directorate's position that water sharing plans should include the 'drought of record'. It is imperative that inland cities like Tamworth, Dubbo, Bathurst and Orange do not see a repeat of the circumstances that they have recently experienced.

To date, the NSW government has been reluctant to release modelling of the drought of record[10]. The Water Directorate believes that modelling should be available for reference by local water utilities for transparent water management and responsible risk management of town water supplies. We also support the consideration of paleoclimate data in water security models. Research to date on paleoclimate modelling appears to indicate that droughts such as the Millennium Drought or the Federation Drought are not unusual on a one- to two- thousand year timescale.

The lessons to be learned from both drought and bushfire is that it would be highly valuable for every town water supply to have a contingency option – a Plan B in place for their water supply. That could involve connecting regional centres with pipelines (as is currently happening between Cowra via Central Tablelands Water to Orange, Armidale to Guyra, amongst others), exploration for sustainable volumes of groundwater, and increasing use of stormwater and recycled water to offset the demand for drinking water. Diversification is the key to managing risk. All options should be available to consider. 'Policy bans' on particular options should be avoided.

Water accounting and compliance

INFORMATION REQUEST 5

How could the NWI be amended to support best practice monitoring and compliance across jurisdictions?

We acknowledge that the Urban National Performance Report Framework is presently under review, due for completion in 2021[11]. The Framework is highly regarded but has been acknowledged as needing significant review. Recommendation 8.1 of the review report[12] indicated that coverage of the Framework should be extended to include water service providers with less than 10,000 connected properties. As NSW local water utilities all currently report to a state framework [13], Water Directorate supports this recommendation.

In the answer to *Information Request 3* above, we made suggestions on *Benchmarking Water Utility Resilience*. We also rely on that information in response to this *Information Request 5*.

[10] NSW Parliament Legislative Council Portfolio Committee No.4 – Industry, Report No.44, available at: https://www.parliament.nsw.gov.au/lcdocs/inquiries/2599/Portfolio%20Committee%20No.%204%20-%20Report%20No.%2044.pdf, Page vii

[11] http://www.bom.gov.au/water/npr/framework-review/index.shtml

[12] http://www.bom.gov.au/water/npr/framework-review/Urban_National_Performance_Report_Framework_Review_cover_letter_and_report.pdf

[13] https://www.industry.nsw.gov.au/water/water-utilities/lwu-performance-monitoring-data

NSW has recently implemented a Water Reform Action Plan [14] that will improve transparency and governance in water management.

Water quality monitoring

Water quality monitoring is a key component of water quality management, to ensure safe drinking water, as well as recreational water quality and environmental water quality. Poor water quality in recreational water bodies may limit their use for such purposes, thus presenting indirect impacts to health and well-being. By including recommendations for water quality monitoring in a renewed NWI, coordination and information sharing between jurisdictions would be improved.

While the importance of water sensitive cities is recognised in the Issues Paper, stormwater from rural towns also needs attention due to the cumulative impacts this can have on rivers and streams.

Environmental water management

INFORMATION REQUEST 6

Are environmental outcomes specified clearly enough in water plans to guide management actions, monitoring and accountability?

Are institutional and administrative settings effective in supporting these outcomes? Do environmental water managers have the necessary authority, resources and tools to achieve agreed outcomes?

Is environmental water management (including planning for use of held water, delivery of held water, use of markets and compliance with planned environmental water) sufficiently integrated with complementary natural resource planning and management frameworks?

Can environmental outcomes be more cost-effectively achieved with greater and more innovative use of water markets and market-like mechanisms?

Is the monitoring and assessment of environmental outcomes sufficient?

How effective has adaptive management and planning decision-making been during the recent drought?

Do environmental water managers maximise opportunities to achieve social or cultural outcomes alongside environmental watering? How could this be improved?

The draft report of the *Independent Panel Assessment of the Northern Basin First Flush Event*[15], an event which occurred in the northern NSW portion of the Murray-Darling Basin in February to March this year, made a number of recommendations for managing critical human and environmental needs. One aspect relating to town water supplies was that access to first flush water should not be granted unless critical needs for town water supplies were first addressed, measured by the number of years of supply available.

[14] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0015/312144/nsw-government-water-reform-action-plan.pdf

[15] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0020/314543/draft-report-iap.pdf

Water quality and environmental outcomes are intrinsically related. There have been occasions were releases of environmental water down drought affected river reaches have led to significant impact on the water quality available for town water supplies in on-stream storages (behind weirs), forcing them to turn to alternative groundwater supplies.

Water quality objectives and requirements should feature as an important and prominent consideration in all water plans, and the impacts of various approaches to water use should be assessed in terms of their water quality consequences.

Indigenous water use

INFORMATION REQUEST 7

What progress are States and Territories making on including Indigenous cultural values in water plans, and how are they reporting progress?

How could a refreshed NWI help Indigenous Australians realise their aspirations for access to water, including cultural and economic uses?

It is well recognised that the NSW *Aboriginal Communities Water and Sewerage Program*[16] has been operating since 2008, increasing monitoring of health and ensuring safe drinking water. There are still recognised issues – Brewarrina, Bourke and Walgett – where towns have been forced to rely on emergency bore water when their usual river supplies run low. Although testing has proved the water complies with the Australian Drinking Water Guidelines, the tests have indicated the groundwater has higher sodium content, requiring investment in desalination for aesthetic purposes. These issues are progressively being addressed with NSW Government assistance as a part of its drought support package.

A sustainable ownership/operating model is also required for Aboriginal community owned water and sewerage systems so that safe drinking water is available for all communities while protecting the aquatic environment from pollution and ensuring the water and sewerage services are affordable.

There is more work to do. The above comments primarily relate to water for critical human needs. We believe significant consultation is underway in NSW this year to seek input on cultural values and water rights as draft Regional Water Strategies[17] are prepared across NSW.

[16] More info on the ACWSP available at: https://www.industry.nsw.gov.au/water/plans-programs/infrastructure-programs/aboriginal-communities

[17] https://www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies/development

Metropolitan water services

INFORMATION REQUEST 8

Are the institutional arrangements for metropolitan water service providers fit-for-purpose? Is there evidence of inefficient pricing or investment decisions?

As a peak industry body focussing on local water utilities in regional areas, NSW Water Directorate is not in a position to comment on institutional arrangements for metropolitan water service providers.

Best practice pricing

INFORMATION REQUEST 9

How can small regional providers best balance affordability with longer-term service quality? Are there barriers to effective local planning?

Is there scope for greater collaboration between small providers? When might government support be warranted, and how should it be provided?

We refer to our answer to Information Request 2, under the subheadings:

- *Promoting water utility resilience*
- *Promoting regional collaboration*
- *Promoting community water literacy*

When referring however to the balance between affordability with longer term service quality, the principal factors are:

- The extent to which a utility must service the fixed costs of borrowings – principal repayments and interest. Local water utilities commonly need to take out loans to obtain matching funds under state and Commonwealth grant programs.
- How depreciation is calculated and incorporated into utility prices. In particular, the *National Water Initiative Pricing Principles* [18] suggest two depreciation methods – the simple 'straight-line' method, and the 'renewals annuity' method. Only the 'straight-line' method is permitted by NSW Audit Office and NSW Treasury. The 'renewals annuity' approach recognises the compound effect of funds accumulation for asset renewals and would reduce the pressure on smaller water utilities to put aside funds for depreciation that aren't required.
- The volatility of other inputs against the above fixed costs, such as electricity costs, reduction in revenue during water restrictions, and chemical costs.

Government support could be provided to address any or all of these principal factors.

[18] https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/water/national-water-initiative-pricing-principles.pdf

Why a Community Service Obligation?

Whilst utility collaboration should be encouraged, having larger utilities provide support to smaller utilities in the form of regional alliances can present a financial and resource burden to a larger utility without external financial support in the form of a CSO.

Capital grants for water infrastructure when used as the sole source of CSO continue to present a 'moral hazard', where a utility will wait for approval of a capital grant, instead of targeting funds to 'non-build' solutions, which would optimise the use of existing infrastructure. A broader CSO would provide incentive to manage water utility risk and improve levels of service using existing infrastructure.

We agree with the premise stated in Productivity Commissions 2017 Inquiry Report that CSO payments be targeted to remote communities or communities facing acute urban water risks. We believe the NSW Government has made some progress towards this with their risk assessment framework under the Safe and Secure Water Program Guidelines[19], although more communication and collaboration is required with local water utilities in identifying and quantifying utility risk. Local knowledge is a critical component of good risk assessment.

How could Community Service Obligations be delivered?

CSO's don't necessarily need to be provided as cash grants, although cash grants should be tied to specific outcomes through program management with monitoring, evaluation and review. Some potential 'in-kind' opportunities would include:

- Capability development – subsidised training and professional development, funding of best practice asset management systems
- Investment in digital technology and remote support – LoRaWAN/IoT communications networks, and remote support while systems are maintained at the local utility or community level. An example is Gillen Bore in Northern Territory[20]
- Regional planning, project and program management
- Regional procurement of supplies and services
- Knowledge sharing through in-kind support from larger utilities.

Safe and reliable water supply

INFORMATION REQUEST 10

Do water service providers supply high-quality water services in regional and remote areas? Are there examples of poor water quality, service interruptions, or other issues? Have regional water service providers adequately planned for extreme events?

Are there sources of data that could be used to benchmark smaller providers' water service levels (with fewer than 10 000 connections)?

[19] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0003/205860/sswp-program-guidelines-2019.pdf

[20] https://www.ampcontrolgroup.com/water-solution-provides-clean-drinking-water-to-remote-communities/

Under normal circumstances, local water utilities perform very well in providing safe, secure and affordable water services in regional NSW. The last three years have seen a series of extreme events that have tested the resilience of regional water services. Regional water service providers need to work harder to provide the same level of service due to these challenges than metropolitan areas. There is also a question over whether the strength of these extreme events is becoming the 'new normal'.

Some emerging lessons and research opportunities resulting from these extreme events include:

- For smaller regional water supplies – a greater distinction between shorter more intense droughts as against long term extended drought. This was particularly apparent with the current drought, with its intensity causing significant concern in coastal catchments in NSW as well as inland in the Murray-Darling Basin during the summer of 2019-20.
- Updating water security modelling with new 'drought of record' data and understanding what this means for critical human needs in large water storages. Longer term horizons are needed.
- A more integrated approach involving alternative sources of water such as off-river storage and groundwater access to enable more robust water management. All options should be on the table including purifying recycled water to replenish drinking water supplies.
- These alternative water supplies would also improve resilience against water quality events such as the combination of drought and bushfires followed by storm events and/or blackwater events.
- COVID-19 has required utilities to take a fresh look at their business continuity planning. A national approach has been taken to review some common areas of supply, such as water treatment chemicals as well as reinforcing mutual aid arrangements between utilities to preserve critical operations.
- Response activity has been disjointed between government agencies with a stake in regulating water. A multi-agency, collaborative approach is required between agencies and water utilities.

The NSW guidelines for local water utilities, *Assuring future water security*[21] have not been sufficiently robust to address the current drought, which has been acknowledged to have been the worst drought in the instrumental record of more than 120 years in regional NSW. In January 2020, more than 50 town water supply schemes in regional NSW were at high risk of failure. Many smaller supplies had failed and required water delivery by tanker truck.

Drinking water quality has also suffered. Increased investment in online monitoring of water quality at critical control points and improved water treatment technology are required for many regional towns due to the risk from uncontrolled water catchments.

NSW State Infrastructure Strategy

The NSW Government is progressing a risk based approach to address water security for regional NSW cities and towns in accordance with the NSW State Infrastructure Strategy 2018-2028[22]. The strategy document acknowledges that metropolitan and

[21] NSW Office of Water, 2013, http://www.water.nsw.gov.au/__data/assets/pdf_file/0005/665609/assuring-future-urban-water-security-draft.pdf

[22] Infrastructure NSW https://insw-sis.visualise.today/documents/INSW_2018SIS_BuildingMomentum.pdf p156 to p167

regional centres face different challenges. In the snapshot on water found in the strategy, two points are worth repeating:

> - *The water sector in NSW is heavily regulated and asset intensive. Improved operational performance, more efficient asset utilisation and better management and conservation practices will be critical to addressing current and future water challenges.*
> - *A long-term view needs to be taken about the management of water resources and how best to ensure water security and quality. In regional NSW, major capital investment focus on high priority catchments, assets, towns and projects.*

Further on, regarding the capacity of local water utilities, the strategy says:

> *The capability, training and certification of staff are critical: access to trained operators can be an issue for some regional towns. Voluntary collaboration between regional local water utilities could provide opportunities for more efficient service provision*

On asset utilisation, the strategy also suggests that *innovative O&M solutions* such as 'smart water' devices have a part to play in customer metering and distribution networks for more effective asset utilisation.

In addition, many local government owned water utilities in regional NSW rely upon the state to manage their water security through WaterNSW, which operates NSW's rivers and many of the state's bulk water storages in accordance with regulatory rules set out by the NSW government. The interface between water sharing plans, operating plans and reserving water for critical human needs is complex and has resulted in water security challenges for regional NSW towns as evidenced by the most recent drought of record.

State water authorities have a key role in water planning and modelling for extreme events and need to collaborate with local water utilities to ensure critical human needs are met. This support should be extended to both surface water modelling and groundwater modelling. Local water utilities rarely have the finance or the expertise to undertake sophisticated water resource modelling or the scope of responsibility across an entire region or water catchment which means this modelling should be a state government responsibility.

River managers and bulk water suppliers also have an important role to play in increasing water quality monitoring to assist towns downstream to predict and proactively address challenges to their drinking water quality.

Benchmarking of smaller urban water providers

Local water utilities in regional NSW provide performance data annually to the NSW Department of Planning, Industry and Environment, with the data shared on a website[23] available to the public. LWU's larger than 10,000 connections in turn have their data

[23] NSW DPIE performance monitoring website: https://www.industry.nsw.gov.au/water/water-utilities/lwu-performance-monitoring-data

provided to the Bureau of Meteorology by NSW DPIE for the National Performance Report.

Urban water supply planning and integrated water cycle management

INFORMATION REQUEST 11

What steps have been undertaken to address the priority areas for urban water reform identified in 2017?

Is further guidance on implementing an integrated water cycle management approach for delivering water supply, wastewater and stormwater management services required?

How does jurisdictional urban water service planning interface with urban land-use planning at different scales? Are the roles and responsibilities clearly set out?

Is the role of water in delivering amenity and liveability outcomes clear? How are the trade-offs with other NWI outcomes considered? Is it clear how the level and type of amenity delivered by urban water services will be funded?

The NSW government's regulation of IWCM in regional NSW has moved away from its original core principles. IWCM has now become a gateway process for sizing capital projects and identifying asset management issues rather than whole of catchment integration of natural resource management. Non-asset solutions such as leakage management and customer education are encouraged indirectly through benchmarking and performance measurement but are not subsidised by the government as an alternative to capital projects.

Stakeholder comments from local water utilities and consultants are that regulation of IWCM is too prescriptive and asks for too much operational detail rather than staying at a higher, strategic level. The level of detail is difficult for engagement with community and regulators and duplicates other operational functions such as asset management plans.

IWCM guidelines for regional NSW need to be streamlined to move away from prescriptive requirements towards an outcome focussed, risk based, whole-of-government approach. The guidelines are not fit-for purpose for small utilities. IWCM could rather be better managed on a catchment or regional basis (such as a county council or water utility alliance), rather than through 92 individual water utilities in regional NSW. Presently the NSW government has not been willing to consider one regional IWCM that might have chapters for individual water utilities.

Productivity Commission should recognise the 'economies of scope' in IWCM that regional towns in NSW have in being responsible for the whole urban water cycle including water supply, sewerage and stormwater quality/quantity, integrated with community engagement and strategic land use planning. Separation of water and sewerage functions would reduce the capacity to implement Integrated Water Cycle Management.

Investment in new water infrastructure

INFORMATION REQUEST 12

Are there examples of projects that have not met the NWI criteria for new water infrastructure investment?

What principles should inform government funding or financing of new water infrastructure?

The NSW and Commonwealth governments have approved funding, and design has commenced for the Wyangala Dam upgrade and a new Dungowan Dam before a business case has been finalised[24]. The costs and benefits are unknown, especially how the benefits will be shared between urban water and rural water users. Water security benefits need to be quantified for critical human needs for town water supplies downstream of these projects.

Other issues

INFORMATION REQUEST 13

Are there any areas for future reform of the NWI that have not been raised in this issues paper that should be investigated for inclusion?

- Ensuring satisfactory water quality is critical for human and aquatic environmental health.
- Knowledge and capacity building, including:
    - Establishing a minimum standard for water operators and engineers, and a program to assist smaller utilities to meet the standard
    - Harnessing digital technology for use in urban and rural water management.
    - Water literacy for our community on complex water sharing rules, and current state at any point in time of our water storages, flows and extractions. Education should also extend to common urban and rural water issues.
- NSW regulatory reform is overdue. An outcome focussed, multi-agency, collaborative approach is required.
- The nexus in sustainability between water and energy needs to be recognised and explicitly addressed in water strategies.

[24] Sydney Morning Herald, 10/8/2020, https://www.smh.com.au/national/nsw/500-million-on-bugger-all-mayor-queries-dam-benefit-20200728-p55g8e.html

Thank you again for considering our initial submission. For further information on this submission please contact Executive Officer Brendan Guiney

Yours sincerely,

Brendan Guiney
Executive Officer
Water Directorate