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By email: [nsw.groundwaterstrategy@dpie.nsw.gov.au](mailto:nsw.groundwaterstrategy@dpie.nsw.gov.au)

**Re: Draft NSW Groundwater Strategy – August 2022**

We thank the Department for the opportunity to comment on the draft NSW Groundwater Strategy.

**About the Water Directorate**

Regional NSW has vast catchments and highly dispersed communities. Small, remote/regional LWU’s have to overcome challenges associated with both scale and capacity. The complex range of drivers for water utility performance includes the number of discreet schemes being managed, size of the area being managed, distance between towns, population density, climate variability, geography and topography, and asset life cycles for long lived water and sewerage assets.

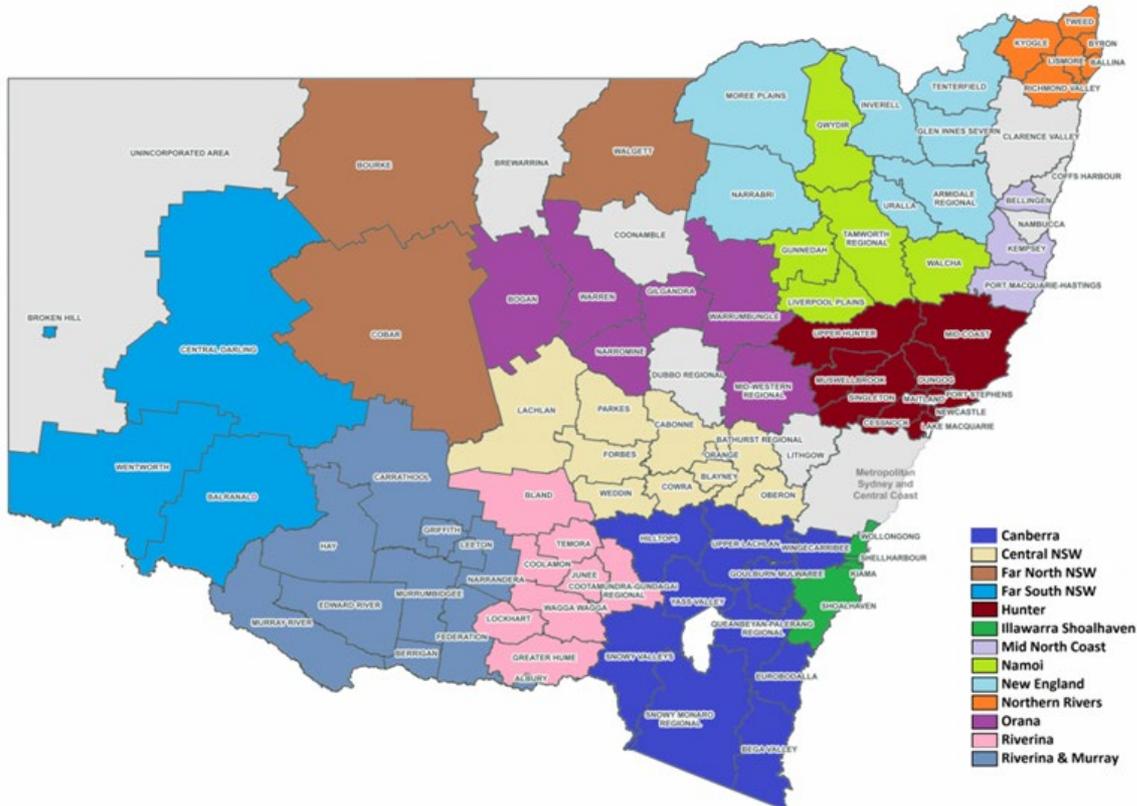


Figure 1 - NSW Map of local government and joint organisations

Local Water Utilities in NSW has the following attributes ‘at a glance’:

*Table 1 - Features of Local Water Utilities*

<ul style="list-style-type: none"> <li>• 92 Local Water Utilities (LWU's)</li> </ul>	<ul style="list-style-type: none"> <li>• 1.9 million population served in 890,000 homes and businesses</li> </ul>
<ul style="list-style-type: none"> <li>• 350 water supply schemes</li> </ul>	<ul style="list-style-type: none"> <li>• 300 sewerage schemes</li> </ul>
<ul style="list-style-type: none"> <li>• 49 recycled water schemes</li> </ul>	
<ul style="list-style-type: none"> <li>• 257 GL per annum of water supplied</li> </ul>	<ul style="list-style-type: none"> <li>• 168 GL of sewage treated</li> </ul>
<ul style="list-style-type: none"> <li>• \$30 Billion total replacement cost of assets</li> </ul>	<ul style="list-style-type: none"> <li>• \$1.6 Billion in annual revenue</li> </ul>
<ul style="list-style-type: none"> <li>• 2300 water operators</li> </ul>	<ul style="list-style-type: none"> <li>• 500 engineers, technicians and managers</li> </ul>

The NSW Water Directorate is the peak industry body representing 87 out of 90 of local government owned water utilities (LWU's) in regional NSW. Our mission is to provide independent technical advice to LWU's to ensure they deliver high quality water supply and sewerage services to regional communities in NSW. Further information about us can be found at: [REDACTED]

### Opening comments on the draft Groundwater Strategy

The Water Directorate supports the need for a strategy setting out a long-term vision and direction for groundwater management in NSW, including the three strategic priorities in the draft strategy. We agree with the statement at Page 16: *To achieve sustainability, we need to understand and model groundwater as an interconnected social and ecological system that is better integrated with our surface water and land management frameworks.*

At Page 19, the Strategy references 250 regional towns with a population close to 300,000 that depend on groundwater fully or partially, and that the demand for groundwater by towns is expected to increase by close to 300% over the next 20 years. It is probable that this projected increase is based on a level of generalisation and averaging across the state that might not occur in practice. However, it is agreed that there was a significant increase in demand since the unprecedented drought in 2017-2019 where many towns experienced significant shortfalls or complete failure to their normal surface water supply. The past extreme event may not be a robust indication of future use.

The consequences of failure of water and sewerage services can be extremely high for our regional communities with direct experience across regional NSW in the last 3 years. We are pleased that the Department has acknowledged this risk in the draft Strategy and intends to respond with more support for Local Water Utilities to mitigate the risk to public health, environment and local economies and increase resilience and community wellbeing in our regional towns.

The most important lesson we can learn from drought, fire and flood is that every town must have a 'Plan B'. Often where a town is dependent on surface water, that may mean that exploration for groundwater for critical human needs be included in water security planning.

## Introduction and overview of groundwater resources and management in NSW

Groundwater is increasing in importance to all Local Water Utilities and the communities they serve. Town water supplies are a small but critically important component of water use. The Department noted in the Strategy at p27:

*There is no definitive way to determine specific use for generic ‘aquifer access licences’, as this licence category is not restricted by purpose. Recent analysis however indicates that agriculture and grazing are the sectors that use most groundwater, accounting for 75% of all licensed groundwater used across NSW.<sup>3</sup> The mining sector and other industrial uses account for another 10 to 15% of use. The remaining water is mostly extracted by water supply authorities for town water supply.*

The complexity in categorising aquifer use can be compounded with Local Water Utilities which often hold groundwater and surface water access licences. Interaction and optimisation between surface water access licence and groundwater access licence is often performed by an LWU but is not recognised in water regulation. Adaptive management between surface water and groundwater extraction can minimise environmental harm and maximise social outcomes. Blanket restrictions or suspension of Water Sharing Plans can have adverse consequences on Local Water Utilities, whilst they work to sustain essential water supplies for critical human needs.

### Strategic Priority 1 – Protect groundwater sources and the ecosystems that depend on them

Small communities and local water utilities are particularly susceptible to extreme events. The Department has acknowledged the difficulty in implementing emergency groundwater supplies in short time frames: *From a water supply perspective, groundwater is often seen as a last resort when surface water sources fail, and is forgotten in times of surface water abundance. This was observed over the 2018–2020 drought when groundwater requests increased threefold, and towns, villages and agricultural and other industries were scrambling to find emergency groundwater supplies. A more robust, planned and integrated approach to groundwater and surface water supply is urgently needed*

While the introduction of Section 39A exemptions<sup>1</sup> for emergency town water supply works was necessary and very welcome, unfortunately water access was temporary in nature. Many Local Water Utilities invested hundreds of thousands of dollars in these emergency works without a guarantee of long term access to groundwater. Emergency relief funding provided by the Department during the drought above and beyond the Safe and Secure Water Program was extensive, in the order of \$284 million, including \$30 million on trucking water to small towns.

Many towns source groundwater from alluvial aquifers heavily reliant on surface water recharge. When surface water ceased to flow, there was effectively unknown territory with significant uncertainty about how much longer aquifer access could be relied upon with these highly connected aquifers.

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<sup>1</sup> More info, NRAR Fact Sheet, available at:

[https://www.nrar.nsw.gov.au/\\_data/assets/pdf\\_file/0005/386177/drought-works-exemptions.pdf](https://www.nrar.nsw.gov.au/_data/assets/pdf_file/0005/386177/drought-works-exemptions.pdf)

*Action 1.1 - Refresh and expand our approach to sustainable groundwater management by reviewing and updating our groundwater policy and planning framework.*

We support this action, and hope that the action can be enhanced by:

- More explicit recognition of the *NSW Groundwater Protection Policy*<sup>2</sup>, a Component Policy of the NSW State Groundwater Policy. The use of Wellhead Protection Zones (Appendix C) is particularly important to protect against the effects of human activity on water supply bores. This policy no longer appears on the Department's website and is only available by searching archives. Protecting source water quality is a principle that is strongly promoted through Drinking Water Quality Management Plans mandated by NSW Health<sup>3</sup>.
- Including action to mitigate water quality impacts to aquifers from aging, poorly constructed or abandoned monitoring or extraction bores. They pose the risk of cross-contaminating aquifers and a risk to drinking water supplies particularly from surface water ingress containing pathogens such as cryptosporidium, which can travel from animal to person via contaminated water. We recommend that a bore integrity and compliance program be established to address cross contamination risk, including periodic visual inspection of bores.
- Explicit consideration of the impacts of neighbouring bore drawdown on groundwater supplies for Local Water Utilities for critical human needs. There is evidence that deeper bores needed to be drilled during the last drought in an emergency to avoid a complete town water supply failure. Town water supplies are a small but critically important portion of groundwater use. The socio-economic consequences of complete failure of town water supplies are extremely high.
- Many Local Water Utilities are connected by regional pipelines traversing local government areas, aquifers and even between catchments. Some Local Water Utilities provide a bulk water supply for industrial and mining customers. Water access and sharing arrangements need to account for this complexity.

*Action 1.2 - Better integrate groundwater management with other land and water management processes.*

We support this action, and hope that this action can be enhanced by:

- Having regard for consequences where some Local Water Utilities imposed water restrictions in towns due to declining groundwater levels, but neighbouring agricultural users were not subject to restriction. As the town was a minor user of the aquifer, the effectiveness of the restrictions for critical human needs was diminished, notwithstanding that the water security situation for the town was dire, and millions of dollars in emergency funds were expended on deeper emergency bores and temporary water treatment systems to access poorer quality groundwater.

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<sup>2</sup> Available at:

[https://webarchive.nla.gov.au/awa/20090423043840/http://pandora.nla.gov.au/pan/98564/20090423-1423/www.dwe.nsw.gov.au/water/pdf/quality\\_groundwater\\_nsw\\_state\\_groundwater\\_quality\\_policy.pdf](https://webarchive.nla.gov.au/awa/20090423043840/http://pandora.nla.gov.au/pan/98564/20090423-1423/www.dwe.nsw.gov.au/water/pdf/quality_groundwater_nsw_state_groundwater_quality_policy.pdf)

<sup>3</sup> NSW Health, 2013, *NSW Guidelines for Drinking Water Management Systems*, available at:

<https://www.health.nsw.gov.au/environment/water/Publications/NSW-guidelines-for-drinking-water-management-systems.pdf>

- Integrating groundwater management with socio-economic and cultural considerations. Although groundwater can be deemed ‘fit for drinking’, there is a need to address ‘aesthetic’ issues as well such as taste, smell, colour and mineral content, otherwise communities will not trust the water. This was apparent in Aboriginal communities in Walgett and Bourke<sup>4</sup>, as well as a number of other towns during the 2017-19 drought.

*Action 1.3 - Improve management and protection of groundwater dependent ecosystems and baseflows to streams.*

We agree and fully support this action.

*Action 1.4 - Review and update approaches to sustainable groundwater extraction.*

With reference to Action 1.4.2, we strongly support an approach that specifies extraction restriction triggers, with the example we gave above at Action 1.1 on town water restrictions being less effective for conserving water for critical human needs if neighbouring extractors are not restricted.

*Action 1.5 - Protect groundwater quality within natural limits. Review groundwater source extraction limits using new knowledge*

With reference to Action 1.5.1, and our comments above at Action 1.1 we support an approach that reviews and updates the previous NSW Groundwater Protection Policy, and clarifies the responsibilities and governance arrangements.

**Strategic Priority 2 – Build community and industry resilience through sustainable groundwater use**

*Action 2.1 - Support towns and cities using groundwater to improve their urban planning*

We very much welcome the explicit inclusion of the groundwater needs for towns and cities. The Water Directorate is keen to partner with the Department to progress this action. We have some concerns that the Eligible Risks and Issues List (ERIL) that drives priorities under the Safe and Secure Water Program has had insufficient input from the risk owners, the Local Water Utilities. We welcome the opportunity to provide further input when the opportunity arises.

*Action 2.2 - Support economic growth using groundwater.*

There has not been sufficient consideration of water availability while the government encourages regional economic and population growth, referencing DPE’s:

- Guidance on *Local Strategic Planning Statements*<sup>5</sup>

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<sup>4</sup> SBS/NITV news story, 2019, *Drought towns feeling the impact from their backup water supply*, available at: <https://www.sbs.com.au/nitv/article/2019/07/30/drought-towns-feeling-impact-their-backup-water-supply>

<sup>5</sup> More info on LSPS’s available at: <https://www.planning.nsw.gov.au/policy-and-legislation/environmental-planning-and-assessment-act-updated/guide-to-the-updated-environmental-planning-and-assessment-act-1979/part-3-strategic-planning>

- Progressing *Special Activation Precincts*<sup>6</sup>

At Box 5 (p64), regarding economic value obtained from water, there is insufficient consideration of the socio-economic consequences of complete failure of a water supply for a regional city or town, which can be much larger than the \$160 million per year in economic value stated for the closure of a regional city. If a town or city water supply fails, its entire economy – its businesses, supply chain and support services fail.

In Action 2.2.3 we acknowledge the opportunities that water banking might provide through Managed Aquifer Recharge. We also acknowledge the constraints with confined aquifers, and accounting for 'banked water'. We must ensure that the water security for existing systems is preserved. We suspect MAR may be easier to pilot in small localised settings with a lower number of groundwater users.

#### *Action 2.3 - Support Aboriginal rights, values and uses of groundwater.*

We very much support this action. The Water Directorate is proud to participate in the Aboriginal Communities Water and Sewerage Program as an observer and technical advisor.

### **Strategic Priority 3 – Improve groundwater management decisions with better information**

#### *Action 3.1 - Develop a groundwater knowledge plan to improve how we use groundwater information to make decisions.*

Local Water Utilities are often requested to undertake groundwater modelling under Integrated Water Cycle Management planning for town water and sewerage services when aquifers are shared with other groundwater users. The models should be held and managed by the Department, with the results shared with all users.

#### *Action 3.2 - Better share and integrate groundwater information*

Local Water Utilities are also required to collect and report on a significant set of water-related performance indicators. We encourage the Department to eliminate duplicated requests across its various functions. Where Local Water Utilities share an aquifer with other groundwater users, we believe monitoring should be the Department's responsibility rather than solely with an LWU with the data shared with all users.

#### *Action 3.3 - Improve our understanding of groundwater resources.*

We support this action and look forward to discussing socio-economic opportunities, impacts and constraints with a particular focus on water security, drinking water quality and environmental protection.

#### *Action 3.4 - Expand our groundwater data collection.*

We support this action. In particular, the introduction of digital technology, such as the Internet of Things (IoT) is intended to be a lower cost technology that will be superior to

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<sup>6</sup> More info on SAP's available at: <https://www.planning.nsw.gov.au/Plans-for-your-area/Special-Activation-Precincts>

using data loggers for measuring groundwater level and quality where the appropriate communications coverage is available.

### Concluding comments

We welcome the preparation of the draft NSW Groundwater Strategy and thank the Department for the opportunity to comment. While any strategy must remain high level, we believe it will also be important not to generalise or aggregate data or assumptions to avoid drawing incorrect conclusions. One size does not fit all. Context is as important as data for local and catchment focussed actions and solutions.

The NSW Water Directorate welcomes the opportunity partner with the Department during further development and implementation of the Strategy.

We consent to this submission being published on the Department's website and to being identified as the author of this submission.

Please do not hesitate to contact [REDACTED]  
[REDACTED] if any further information is required on this submission.

Yours sincerely,

[REDACTED]  
[REDACTED]