

# Regional Water Strategies Public Exhibition 1

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## Submission Questionnaire



### Murrumbidgee Regional Water Strategy

The NSW Government is taking action to improve long-term water security, reliability, quality, and resilience of the state's water resources. The Murrumbidgee Regional Water Strategy will help deliver healthy and resilient water resources for a liveable and prosperous regional NSW.

This draft Murrumbidgee Regional Water Strategy is being developed by the Department of Planning and Environment and provides an opportunity to re-shape what we are doing in regional water management and chart a path forward.

We have been working with local water utilities, councils, communities, Aboriginal people and other stakeholders to ensure local and traditional knowledge informs the draft Murrumbidgee Regional Water Strategy and that it serves the regional community, including First Nations, the environment and industry.

### Your voice is important

We have prepared this draft strategy to continue our discussions with you. We would like to hear your views on the draft strategy, including the process we used to develop the strategy and the evidence that supports it. We are also seeking your feedback on the options presented in the draft strategy and whether you have any further information that could help us assess the benefits and disadvantages of any of the options.

Please provide your feedback in the submission questionnaire below and either;

- email your completed submission to [regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au) or
- post to Regional Water Strategies, Department of Planning and Environment, Locked Bag 5022, Parramatta NSW 2124 by Sunday 22 May 2022, 11.59pm.

The submission questionnaire includes general questions about the draft Murrumbidgee Regional Water Strategy including objectives, challenges, opportunities and options. It also includes questions regarding the draft options along with personal information questions.

The questionnaire will take approximately 15 minutes to complete, and your response can remain anonymous if you wish (see questions 1 and 2).

Questions marked with an asterisk (\*) require an answer.

If you have any questions about the questionnaire, please email:  
[regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au)

## Making your submission public

We collect information about you, which may include personal information, to assess submissions in response to the department's dealings and activities, and perform other functions required to complete the project. The information collected will be shared with the stated third-party contractors for the purpose for which it has been collected. This information must be supplied. If you choose not to provide the requested information, we may not be able to assess your submission.

To promote transparency and open government, we intend to make all submissions publicly available on our website, or in reports. Your name or your organisation's name may appear in these reports with your feedback attributed.

If you would like your submission and/or feedback to be kept confidential, please let us know when making your submission. You will be asked for your confidentiality preference at question 1.

If you request that your submission is to be kept confidential, it will not be published on our website or included in any relevant reports; however, it will still be subject to the *Government Information Public Access Act 2009*.

Your submission will be stored securely, consistent with the department's Records Management Policy and you have the right to request access to, and correction of, your personal information held by the department.

[Further details can be found in our privacy statement available on our website.](#)

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### 1. Information on confidentiality and privacy \*

I give my permission for my submission to be publicly available on the NSW Department of Planning and Environment website.

Yes  No

I would like my personal details to be kept confidential.

Yes  No

### 2. Your details

\* Email address:

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\* Name:

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\* Address:

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\* Contact phone number:

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\* **Do you identify as an Aboriginal person?** (select one)

Yes  No  Choose not to answer

\* **Are you making this submission as an individual or as a representative of an organisation?** (select one)

Individual  Organisation

### 3. Organisation or business details

**If making this submission as a representative of an organisation, who do you represent?** (select one)

**Government** (select one)

- Commonwealth     New South Wales     State other     Local

- Local Water Utility

**Peak representative organisation** (select one)

- Environment     Industry     Business group or business chamber     Community

- Other** (select and provide details) \_\_\_\_\_

- N/A

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### 4. Draft regional water strategy objectives and vision

The draft Murrumbidgee Regional Water Strategy is one of 14 strategies (12 regional water strategies and two metropolitan water strategies) being developed by the department. All regional water strategies are being developed in line with the following objectives:



**Deliver and manage water for local communities**

Improve water security, water quality and flood management for regional towns and communities.



**Enable economic prosperity**

Improve water access reliability for regional industries.



**Recognise and protect Aboriginal water rights, interests and access to water**

Including Aboriginal heritage assets.



**Protect and enhance the environment**

Improve the health and integrity of environmental systems and assets, including by improving water quality.



**Affordability**

Identify least cost policy and infrastructure options.

All draft regional water strategy options need to address at least one of the above objectives.

Our vision for this strategy is to support the delivery of healthy and resilient water resources for a liveable and prosperous Murrumbidgee region. To achieve this, we need to position the region so there is the right amount of water of the right quality delivered in the right way for people, Aboriginal communities, towns, industries and the environment.

**To what extent do you feel the draft strategy and long list of options establishes the foundation for working towards the objectives and vision?**

Strongly agree     Agree     Neutral     Disagree     Strongly disagree

**Why?**

Long answer text

## 5. Information used to develop the Murrumbidgee Regional Water Strategy

The draft Murrumbidgee Regional Water Strategy brings together the most up to date information and evidence with all the tools we have – policy, planning, behavioural, regulatory, technology and infrastructure solutions – to plan and manage the water needs in the NSW Murrumbidgee region over the next 20 to 40 years.

We have used the following information to develop the draft Murrumbidgee Regional Water Strategy:

- New climate data
  - Observed historical climate data - recorded rainfall, temperature and evaporation data from the past 130 years.
  - Climate drivers – key drivers of wet and dry periods.
  - Climate change projections.
- Review of existing studies
  - To identify drivers and risks to water resources.
- Community engagement
  - Local councils and joint council organisations.
  - Aboriginal people and Aboriginal community groups.
  - Review of previous consultation processes.

Alongside the development of the draft Murrumbidgee Regional Water Strategy, we have been working on a new approach to climate modelling. The NSW Government has invested in new climate datasets and improved modelling to gain a more sophisticated understanding of the region's natural climate variability and risks of climate change over the next 40+ years.

In addition to the recorded data, the new method has been informed by:

- Climate drivers
- Paleoclimate data
- Climate change projections

The new climate datasets that we have generated through this process will be used in our hydrological models. This hydrological modelling work is still in progress and results from the hydrological modelling will be incorporated into the final Murrumbidgee Regional Water Strategy.

**Do you have any questions or comments about the new climate datasets and our modelling used to develop this draft strategy?**

Long answer text

**Is there any additional information that you believe should be used in preparing the draft strategy?**

Long answer text

## 6. Key challenges and opportunities for water management in the Murrumbidgee region

The draft Murrumbidgee Regional Water Strategy includes a list of key challenges and opportunities that we are seeking your feedback on:

### Challenges

- Inadequate water management framework to meet the needs and aspiration of Aboriginal people, which also prevents Aboriginal people from fulfilling their rights and obligations to care for Country under their law and customs.
- Current water sharing arrangements based on only 125 years of recorded data, which limits our understanding of how vulnerable the region could be to future extreme events.
- Insufficiently integrated land and water planning and management, which can lead to population and industry growth occurring in areas that have pre-existing water availability constraints.
- Vulnerability of town water supplies and amenity, which are key factors in fostering liveable and vibrant regional towns and maintaining the wellbeing of communities.
- Degradation of riverine and floodplain ecosystems, which has led to a loss of native vegetation and wetlands and a decline in the conditions of fish communities and waterbird habitat.
- Limits to water availability in times of a changing climate, which increases competition for water and could hinder growth and prosperity of the region’s industries.

### Opportunities

- New climate datasets and updated integrated modelling – to test the appropriateness of existing rules, regulations and policies, including the existing water allocation and accounting framework and additional opportunities to support existing reviews already underway.
- Improve resilience – potential options to improve water security/reliability, quality and delivery efficiency; increasing participation of Aboriginal people in water-related economic and cultural opportunities; better integration of land and water management and improvements for environmental management.
- Improve our understanding of trends in water use in the regions – draft option being developed to investigate regulatory, policy, operational and infrastructure solutions to enhance water security for regional communities and support the productive capacity of the regions’ industries.
- Improve the understanding of groundwater in the region – draft options being developed to improve the understanding of groundwater processes, groundwater usage and risks to existing groundwater sources.

### To what extent do you feel we have captured the key water related challenges in the region?

Strongly agree     Agree     Neutral     Disagree     Strongly disagree

### To what extent do you feel we have captured the key water related opportunities in the region?

Strongly agree     Agree     Neutral     Disagree     Strongly disagree

**Do you have any comments on the key water related challenges and opportunities identified?**

Long answer text

**Are there any additional key water related challenges and opportunities that we should consider and what options could address these?**

Long answer text



## 7. Draft Murrumbidgee Regional Water Strategy options

We have developed a long list of options that could be included in the Murrumbidgee Regional Water Strategy. The options consider the opportunities and challenges facing the region and meet at least one regional water strategy objective.

The 53 options are grouped into the following categories:

- Inadequate water management framework to meet the needs and aspirations of Aboriginal people
- Current water sharing arrangements based on 120 years of data
- Insufficiently integrated land and water planning and management
- Vulnerability of town water supplies and amenity
- Degradation of riverine and floodplain ecosystems
- Limits to water availability in times of a changing climate
- Limitations of existing water infrastructure, delivery and operations

### Long List of options

Option number	Option title	Description
<p><b>Inadequate water management framework to meet the needs and aspiration of Aboriginal people</b></p> <p>Opportunities to protect and strengthen cultural landscapes, practices, knowledge and traditions. Supporting empowerment, self-determination and economic advancement of Aboriginal people, as well as strengthening community wellbeing.</p>		
1	Improve access to culturally significant areas and waterways for Aboriginal people	This option would investigate the benefits and constraints of developing formal access arrangements between Aboriginal people and landholders in the Murrumbidgee region.
2	Review Aboriginal Cultural Water Access Licence framework	This option would undertake a review of water access licences for Aboriginal cultural uses to determine their effectiveness and identify opportunities for improvement
3	Assess access arrangements for Murrumbidgee Cultural Water Access Licence	This option would consider opportunities to expand the use of the Murrumbidgee Cultural Water Access licence.
4	Fund water entitlements for Aboriginal communities	This option would provide funding to support Aboriginal people to purchase water entitlements and water infrastructure – such as pumps – that can be used to improve economic and cultural outcomes across the southern connected basin.
5	Secure flows for water-dependent cultural sites	This option would investigate opportunities to improve the timing, rate and consistency of flows to places of cultural significance. The places would be identified by Aboriginal community members.
6	Shared benefit project (environment and cultural outcomes)	This option would investigate opportunities to work more closely with environmental water holders for shared benefits from using water for the environment that would also achieve cultural environmental outcomes, recognising it does not replace the provision of cultural flows.

Option number	Option title	Description
7	Support long-term participation of local Aboriginal people in water-related matters	This option would provide support for local Aboriginal groups to be actively involved in consultation and decision-making processes around water management in the Murrumbidgee.
8	Incorporate Aboriginal history of water and culture in the Southern Basin into water data	This option would aim to document and integrate Aboriginal science and culture into government processes to help better manage the river systems.

**Current water sharing arrangements based on 120 years of data**

Opportunities to consider the adequacies of existing water sharing and management arrangements in the region under a more variable and changing climate.

9	Review drought rules for the Murrumbidgee region	This option would review the adequacy and effectiveness of the Incident Response Guides applicable to the Murrumbidgee region by testing them against the new climate data and updated modelling being developed for the Murrumbidgee Regional Water Strategy.
10	Review the allocation and accounting framework in the Murrumbidgee (surface water)	This option would review several settings of the current water accounting and allocation process in the Murrumbidgee regulated river system and consider whether and how the new climate data should be used when making allocation decisions.
11	Review groundwater extraction limits	This option would review the existing groundwater extraction limits to incorporate up-to-date information, including scientific studies that incorporate new climate change datasets to give an improved understanding of groundwater processes.
12	Provide increased clarity about sustainable groundwater management	This option would review, revise and develop policies to give water users greater clarity and certainty in how groundwater is managed in NSW.
13	Investigate Water Access Licence conversion	This option would test the potential risks and benefits of allowing voluntary conversion from general security to high security and high security to town water supply water access licences in the Murrumbidgee Regulated River Water Source.

**Insufficiently integrated land and water planning and management**

Opportunities to better integrate water resource management into other processes, including assessing current land uses and land-use trends in the Murrumbidgee to better understand spatial changes in the region’s water uses and emerging pollution and flooding risks.

14	Investigate land use change and population growth impacts on water resources	This option would investigate opportunities to better integrate the NSW land use planning and water resource management frameworks.
15	Strengthen inter-jurisdictional water management	This option would investigate improvements to the inter-jurisdictional water management arrangements in the upper Murrumbidgee region in consultation with the Australian Capital Territory Government and the Australian Government.

Option number	Option title	Description
16	Develop climate risk evidence base to inform the next Snowy Water Licence Review	This option would seek to gather information and evidence to inform the next Snowy Water Licence Review in 2027.
17	Enhance southern inland floodplain management plans	This option would develop valley-wide, connected floodplain management plans using the northern NSW Murray–Darling Basin floodplain management plan (NSW Healthy Floodplains Project) template.

**Vulnerability of town water supplies and amenity**

Opportunities to improve policy and planning around water re-use and recycling, and strengthen water security for local communities and important water related amenity in the region.

18	Review impediments to water recycling projects	This option would review impediments (such as cost, pricing, regulatory or engineering constraints, or community acceptance) to water recycling projects in the Murrumbidgee region.
19	Assess potable re-use for towns	This option would assess the benefits and costs of potable re-use in the Murrumbidgee region and investigate potential locations for new and expanded re-use schemes from sewage treatment plants.
20	Managed aquifer recharge investigations and policy	This option would investigate opportunities to undertake managed aquifer recharge in the Murrumbidgee region, including investigating the recharge capacity of sites for temporary storage of stormwater, river flow or purified recycled water in aquifers
21	Secure and reliable access to groundwater for towns	This option would undertake a strategic review of groundwater use by towns across the region to improve understanding of the regional need, challenges and opportunities for towns to access groundwater.
22	Maintain water-related amenity in the Murrumbidgee during droughts	This option would investigate opportunities to maintain water related amenity, including town water lakes, local parks and recreational areas, in and around towns in the Murrumbidgee region during droughts or extended dry periods.
23	Improve protection of groundwater dependent ecosystems	This option would advance our knowledge and management of groundwater dependent ecosystems in the Murrumbidgee region, such as the mid-Murrumbidgee wetlands, Lowbidgee wetlands, and Great Cumbung Swamp.

**Degradation of riverine and floodplain ecosystems**

Opportunities to address the risk to the environment, the ecology and groundwater dependent ecosystems and improve the health of the region’s rivers and groundwater sources.

24	Address cold water pollution	This option would build on and address gaps within the 2004 NSW Cold Water Pollution Strategy and associated updates (2011 and 2012).
25	Improve flows to important ecological sites	This option would consist of several projects that aim to restore important ecological flows and connectivity between the river and floodplains in the mid-Murrumbidgee region and Lowbidgee.

Option number	Option title	Description
26	Develop a river and catchment recovery program for the Murrumbidgee region	This option would consist of a program aimed at better managing catchment hydrology, addressing erosion issues and restoring riparian and river habitats at priority locations within the catchment. This program would also include a component that undertakes long-term analysis of the impact of climate variability and climate change on future water availability for the catchment with focus on floodplains and river environments.
27	Investigate water quality improvement measures	This option would involve conducting a gap analysis of water quality information to identify opportunities to support surface and groundwater water quality management in the Murrumbidgee region.
28	Manage groundwater salinity	This option would conduct a range of reviews, investigations and collaborations to address groundwater salinity challenges in the Murrumbidgee region.
29	Assess pollution from disused mines and mineral occurrences	This option would investigate the need to understand and mitigate pollution from disused mines and quarries in addition to the work undertaken by the Legacy Mines Program.
30	Review environmental water arrangements	This option would use the new climate datasets and updated hydrological models (once completed) to review the effectiveness of existing NSW water sharing plan rules to meet the environmental watering requirements as outlined in the Murrumbidgee Long-Term Water Plan under long-term climate change projections.
31	Re-establish threatened fish species through habitat restoration and conservation re-stocking	This option would aim to improve the condition, connectivity, and resilience of native fish by restoring habitat through protection and rehabilitation of priority areas using best practice management, while building the skills and sharing the knowledge of local landholders, community groups, and Aboriginal people.
32	Monitor sediment compaction over the long term	This option would develop a long-term monitoring program for the Murrumbidgee region to ensure sediment compaction does not occur in the future, reducing risks to groundwater storage and long-term bore yields.

**Limitations of existing water infrastructure, delivery and operations**

Opportunities to improve system efficiencies (infrastructure and delivery) and enhance river operations.

33	Investigate alternatives for increased storage capacity	This option would investigate alternative infrastructure projects to increase the storage capacity in the Murrumbidgee region downstream of Blowering and Burrinjuck Dams.
34	Investigate new storage at Lake Mejum-Coolah	This option would review previous investigations into additional storage capacity in the mid-Murrumbidgee to address deliverability issues and to improve the system efficiency.

Option number	Option title	Description
35	Install gravity pipeline along Tumut River	This option would investigate the feasibility of installing a gravity pipeline along the Tumut River to address the channel capacity constraint by enabling release of higher flows downstream of Blowering Dam.
36	Raise Blowering Dam	This option would investigate the feasibility of increasing the active storage of Blowering Dam. Alternatives to be considered include raising the dam by 4 m to increase active storage in the Murrumbidgee region by 200 GL, with a corresponding increase in the dam capacity of 12%, and additional downstream or adjacent off-stream storage.
37	Enlarge Burrinjuck Storage Reservoir	This option would investigate the feasibility of increasing the storage capacity of Burrinjuck Dam, increasing the region's active storage.
38	Expand Bundidgerry off-river storage and a new transfer canal	This option would investigate augmenting the existing Bundidgerry storage in the mid-Murrumbidgee region to address deliverability issues in the summer months, such as supply shortfalls, and to improve efficiency.
39	Augment Tombullen Storage and modify operational changes	This option would investigate the feasibility of two options to improve the efficiency of Tombullen storage, including augmenting the storage capacity to increase the re-regulating storage in the mid-Murrumbidgee region and investigating potential operational changes for Tombullen Storage to mitigate water quality issues.
40	Investigate inter-regional connections	This option would investigate the construction of inter-regional town water supply pipeline connections between the Murrumbidgee region and neighbouring regions.
41	Change environmental releases from Murrumbidgee storages	This option would investigate changes to operations related to the release of discretionary environmental water. The suggested change would be to release more from Blowering Dam and less from Burrinjuck Dam during winter.
42	Review flood management and airspace operation	This option would review existing operations and rules governing flood operation of Blowering and Burrinjuck dams and the interaction with airspace rules and relevant Snowy Water Licence rules. It would also investigate potential operational or rule changes to improve the storages flood mitigation function.
43	Investigate groundwater desalination for industry and towns	This option would investigate the opportunities associated with desalination of groundwater to make it suitable for industrial and town uses.

**Limits to water availability in times of a changing climate**

Opportunities to better understand water use behaviour, identify the information needs of water users, and improve resilience within the region

44	Better understand water use with data collection and analytics	This option would undertake a research project to better understand water use and water user behaviour in the Murrumbidgee region.
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Option number	Option title	Description
45	Improve the understanding of groundwater sources and processes, risks and impacts	This option will combine desktop studies, field studies and numerical models—delivered in collaboration with consultancies and research centres—to give water users and towns access to data and information about groundwater resources.
46	Undertake a water-dependent industry resilience study	This option would include a comprehensive long-term study on the impacts of climate variability and climate change on future water availability to determine the impacts on water dependent industries in the Murrumbidgee region including those reliant on town water supply systems.
47	Develop targeted education and capacity building programs	This option would develop targeted education and capacity building programs to build community confidence in water management, with a focus on the Murrumbidgee region, and help communities, industries and the environment to better manage their water needs and water-related risks.
48	Investigate water availability in the Murrumbidgee region	This option would consider whether there is systemic reduction in available water in the Murrumbidgee region and investigate possible causes and potential responses.
49	Investigate non-residential water efficiency (towns and industries)	This option would investigate opportunities to improve the efficiency of non-residential water use of both raw and town water supplies such as by agriculture, schools, hospitals, industrial uses (e.g. food processing) and recreational and amenity uses (water parks, sports ovals, town water lakes).
50	Investigate expansion of cloud seeding in key water supply catchments	This option would investigate potential additional benefits from expanding current cloud seeding activities in the mountainous areas surrounding Snowy Hydro Limited catchment area.
51	Undertake joint exploration for groundwater with the NSW Geological Survey	This option would use regional and locally targeted geophysics to identify potential resources (fractured and porous rock systems like the Lachlan Fold Belt and Western Murray Porous Rock) followed by drilling, testing and water quality analysis to assess the resource's suitability for supply.
52	Review water markets and trade	This option would progress the implementation of water market reforms, based on the recommendations of the Australian Competition and Consumer Commission's Murray Darling Basin NSW water markets inquiry.
53	Consider hydrological processes in bushfire management	This option would investigate how bushfire management could be strengthened in priority watersheds by including protection of rainfall-run-off processes as a key bushfire management priority in national parks and reserves.

**What are your thoughts on the following groups of options?**

**Options 1 to 7 relating to “inadequate water management framework to meet the needs and aspirations of Aboriginal people?”**(Please provide reasoning for your response)

Long text answer

**Option 8 to 13 relating to “current water sharing arrangements based on 120 years of data?”** (Please provide reasoning for your response)

Long text answer

**Option 14 to 19 relating to “insufficiently integrated land and water planning and management?”** (Please provide reasoning for your response)

Long text answer

**Options 20 to 25 relating to “vulnerability of town water supplies and amenity?”**  
(Please provide reasoning for your response)

Long text answer

**Options 26 to 34 relating to “degradation of riverine and floodplain ecosystems?”**  
(Please provide reasoning for your response)

Long text answer

**Options 35 to 43 relating to “limits to water availability in times of a changing climate?”** (Please provide reasoning for your response)

Long text answer



**Options 44 to 53 relating to “limitations of existing water infrastructure delivery and operations, which hinder efficient water delivery”**

(Please provide reasoning for your response)

Long text answer

**Does the long list of options address the water challenges in the region?**

Strongly agree     Agree     Neutral     Disagree     Strongly disagree

**When considering the long list of 53 options, what five (5) options do you think are the *most* important in order to address the challenges?**

Option Number \_\_\_\_\_

Option Number \_\_\_\_\_

Option Number \_\_\_\_\_

Option Number \_\_\_\_\_

Option Number \_\_\_\_\_

**Please comment on why you think these options are most important?**

Long answer text

**Are there any additional options that we should consider?**

Long text

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**8. Other comments**

**Does the draft Murrumbidgee Regional Water Strategy address your concerns for water resources in the region?**

Long answer text

**If the objectives of the draft Murrumbidgee Regional Water Strategy were met, what would be the outcome for you?**

Long answer text

**Do you have any other comments about the draft Murrumbidgee Regional Water Strategy?**

Long answer text

## 9. How did you hear about the Public Exhibition of this strategy?

We are interested to know how you heard about the opportunity to make a submission. Please indicate the communication methods below:

- Newspaper
- Radio
- Department of Planning and Environment website
- Direct email
- Social media
- Have your say NSW Government website
- Communication from peak body
- Word of mouth
- Other (select and provide details) \_\_\_\_\_

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## 10. Additional Information

If you would like to provide any supporting documents to help us understand your feedback, please email these from the same email you provided in this form or attach supporting documents to this form if you are returning your submission by mail.

All submissions on the draft Murrumbidgee Regional Water Strategy will be reviewed following the public exhibition period.

**Please email your completed submission and any supporting documents to:**

[regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au)

**Or post to:**

Regional Water Strategies  
Department of Planning, Industry and Environment  
Locked Bag 5022  
Parramatta NSW 2124

**Submissions close Sunday 22 May 2022, 11.59pm**

Further details on all regional water strategies can be found on our website  
[www.dpie.nsw.gov.au/regional-water-strategies](http://www.dpie.nsw.gov.au/regional-water-strategies)



Thank you for your submission.