

# NSW Groundwater Strategy - Stakeholder survey

Thank you for taking the time to provide your feedback on the draft NSW Groundwater Strategy.

Groundwater is water found underground in rock formations called aquifers and is an important resource for NSW. For more information about groundwater, [visit the department's website](#).

The draft strategy sets a long-term vision and direction for groundwater management in NSW.

This survey aims to gather your opinion about the draft strategy. Your comments will help us identify community views and key areas of interest and help us to develop the final strategy.

This survey will close on **Sunday 14 August 2022 at 11.59pm (AEST)**.

The survey is structured according to the draft strategy's main chapters:

- Introduction and general overview of groundwater resources and management in NSW.
- Strategic Priority 1 – Protect groundwater resources and the ecosystems that depend on them in the strategy.
- Strategic Priority 2 – Build community and industry resilience through sustainable groundwater use (this part of the survey also includes an opportunity for Aboriginal people to provide cultural-specific feedback).
- Strategic Priority 3 – Improve groundwater management decisions with better information.

## Confidentiality preferences - Publishing your submission

Please indicate if you give permission for your submission to be published on the department's website, and whether you give permission to be identified as the author of the submission or wish to remain anonymous.

I give permission for the department to publish my name with my submission on the department's website.

I do not give permission for the department to publish my name with my submission on the department's website. In selecting this option, I understand that my submission will be published anonymously.

I do not give permission to publish my submission at all.

## Sharing your submission within the department

Please indicate if you give permission for your name and email to be included when sharing survey response data internally within the department.

- I give permission for my name and email to be shared within the department.
- I do not give permission for my name and email to be shared within the department. In selecting this option, I understand that my submission will be shared anonymously.

## Your submission

If you would like to provide additional feedback in an attached document, please add it to this submission when you return the survey.

Please note, if you wish to remain anonymous, please do not include personal information in your attachment.

If you would prefer to email your feedback or if you have any enquiries, please email the department at [nsw.groundwaterstrategy@dpie.nsw.gov.au](mailto:nsw.groundwaterstrategy@dpie.nsw.gov.au).

## Data privacy

The Department of Planning and Environment is subject to the *Privacy and Personal Information Protection Act 1998* in managing your personal information. In the interests of transparency, the department's website intends to publish all feedback received on its website. You can choose to have your feedback published anonymously or not published at all. Please review our [privacy statement](#) for further information.

---

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

Groundwater is water found below the ground in rock formations called aquifers. Groundwater is also used for a multitude of purposes in NSW such as agriculture, town water supply, and also to sustain important ecosystems.

**Thinking about your relationship to groundwater, which of the following user groups or parts of the community best describes you? (please select only one)**

- General public
- Local Council / Local water utility
- NSW Government department
- Australian Government department
- Domestic and stock
- Agriculture
- Industry
- Manufacturing
- Research / academia
- Environmental group
- Other (please specify) \_\_\_\_\_

*In NSW, there are almost 80 groundwater sources west of the Great Dividing Range and over 450 sources on the coast.*

**Based on the 13 NSW regions outlined in the map below, in which region are you located?**



Choose your region

- Border Rivers
- Far North Coast
- Greater Hunter
- Greater Sydney
- Gwydir
- Lachlan
- Macquarie-Castlereagh
- Murray
- Murrumbidgee
- Namoi
- North Coast
- South Coast
- Western

*Groundwater is an important resource for NSW. It is used for town water supply, agriculture in the Namoi for example, or industry in the Hunter Valley.*

**How important is it for you to access groundwater as a resource?**

- Not at all important
- Of minor importance
- Neutral
- Important
- Very important

**To what extent do you agree with the following statements? (please select one response per row)**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Groundwater is important for basic human needs (drinking, cooking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Groundwater is important for stock watering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Groundwater is important for Aboriginal communities and Country	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Groundwater is important for agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Groundwater is important for the environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Groundwater is important for industrial businesses (including mining)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Groundwater is important for manufacturing (water bottling, food processing and others)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

*Groundwater in NSW currently provides close to 10% of water used for town supply, and over 70% for agriculture, as well as supporting a range of ecosystems. In the context of a growing population and climate change, please answer the following questions.*

**Please indicate what you think NSW's groundwater needs will look like over the next 20-40 years.**

- The same
- Less than current needs
- More than current needs
- Not sure

**Which part/s of the community do you think will have the greatest change in their groundwater needs in the future?**

**Select all that apply.**

- Households
- Agriculture
- Industry
- Manufacturing
- Towns and cities
- Aboriginal communities and Country
- Ecosystems dependent on groundwater
- Not sure
- I don't believe there will be any change

**Do you think you should change the way you will use groundwater in the future?**

- Yes, I've already begun to change my groundwater usage habits
- Yes, I've started doing research and am in the process of making changes
- I've thought about it, but have done nothing more
- No, it hasn't even crossed my mind
- I don't use groundwater

**How well do you know the NSW groundwater management framework, rules and legislation?**

- Not at all
- Not well at all
- Unsure
- Well
- Very well

*The Draft NSW Groundwater Strategy identifies 4 key issues affecting change in groundwater management in NSW.*

**Please rank these issues from most important to least important, where 1 = Most important and 4 = Least important.**

- 1\_\_\_\_\_ Our climate is changing, and groundwater recharge and demands will be affected by this
- 2\_\_\_\_\_ The risks to groundwater from development and land use change are increasing
- 3\_\_\_\_\_ Community notions of sustainability and fair access to groundwater have evolved over time
- 4\_\_\_\_\_ Our understanding of groundwater, its behaviour and use is improving

See attachment

**Please tell us of any other challenges that are affecting groundwater management in NSW.**

In the following sections of this survey, you will be asked questions based on each of the draft NSW Groundwater Strategy priorities. [You can read the draft strategy on our website.](#)

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

Strategic Priority 1 aims to sustain our groundwater resources for current and future uses and protect our important ecosystems that depend on groundwater.

In priority 1 of the draft strategy, 4 key challenges affecting groundwater resources and the ecosystems that depend on them are identified.

**Please rank these challenges in order of importance, where 1 = Most important and 4 = Least important.**

- 1 \_\_\_\_\_ Our policy framework for sustainable groundwater management needs to be updated to be more responsive to emerging challenges such as climate change
- 2 \_\_\_\_\_ Ecosystems that depend on groundwater face increased threats such as intensive groundwater extraction and pollution
- 3 \_\_\_\_\_ There is a lack of integration between groundwater, surface water and land management
- 4 \_\_\_\_\_ Threats to groundwater quality are growing and need to be addressed

**Please tell us any other challenges you think will affect the protection of groundwater resources and the ecosystems that depend on them.**

See attachment

**How important for you is the protection of groundwater resources and the ecosystems that depend on them?**

- Not at all important
- Of minor importance
- Neutral
- Important
- Very important

The department has put forward a range of draft actions to increase the protection of groundwater resources and the ecosystems that depend on them. The following questions will review each of the draft actions and their sub-actions.

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

**To what extent do you agree with this draft action?**

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

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

**To what extent do you agree with this draft action?**

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 1.2?

	Not at all important	Of minor importance	Neutral	Important	Very important
Refresh and expand our approach to sustainable groundwater management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Manage groundwater and surface water together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Integrate groundwater considerations into land use planning decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Improve management of large developments impacting groundwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Strengthen cross-border groundwater management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 1.3?

	Not at all important	Of minor importance	Neutral	Important	Very important
Review and update our approach to protecting groundwater dependent ecosystems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Deliver a program to improve our understanding of groundwater dependent ecosystems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 1.4?

	Not at all important	Of minor importance	Neutral	Important	Very important
Review groundwater source extraction limits using new knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Better manage impacts of extraction at a local level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Improve clarity around management of groundwater sources with a low long-term entitlement share value	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Action 1.5 - Protect groundwater quality within natural limits.**

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 1.5?

	Not at all important	Of minor importance	Neutral	Important	Very important
Review and update our approach to managing groundwater quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Deliver a program to better understand groundwater quality and risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please tell us any other suggested actions you think we should consider in Strategic Priority 1.

See attachment

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

Strategic Priority 2 aims to improve water security through the sustainable use of groundwater by urban populations, water dependent cultural, spiritual and economic aspirations of Aboriginal people, and support opportunities for other groundwater dependent development.

The strategy identifies 3 key challenges affecting the resilience of communities and industries using groundwater.

**Please rank these challenges in order of importance, where 1 = Most important and 3 = Least important.**

- 1\_\_\_\_\_ Increasing demand for groundwater undermines town water supply
- 3\_\_\_\_\_ New and expanding industries need to consider groundwater opportunities and constraints
- 2\_\_\_\_\_ Aboriginal rights to and uses of groundwater are not adequately recognised

**Please tell us any other challenge you think will affect community and industry resilience in using groundwater.**

See attachment

**How important is it for you that communities and industries using groundwater resources have a reliable and secure supply?**

- Not at all important
- Of minor importance
- Neutral
- Important
- Very important

The department has put forward a range of draft actions to increase the resilience of communities and industries using groundwater. The following questions will review each of the draft actions and their sub-actions.

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

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

## Action 2.2 - Support economic growth using groundwater.

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 2.2?

	Not at all important	Of minor importance	Neutral	Important	Very important
Provide better information on groundwater opportunities and constraints to communities and industries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enable the increase of sustainable groundwater use in targeted areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Foster innovative groundwater solutions, including Managed Aquifer Recharge (also called 'water banking', to support communities and industries)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 2.3?

	Not at all important	Of minor importance	Neutral	Important	Very important
Increase access to groundwater for Aboriginal people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Protect groundwater-dependent places of significance to Aboriginal communities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Better integrate Aboriginal knowledge into groundwater management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The following questions focus on groundwater challenges and opportunities for Aboriginal people in NSW.

Please only answer questions 43 to 51 if you identify as Aboriginal or Torres Strait Islander. If you do not identify as Aboriginal or Torres Strait Islander, please go to question 52.

A key objective of the NSW Government is to improve groundwater management outcomes for Aboriginal people across the state. We want to ensure that Aboriginal people and their wisdom and knowledge have a greater influence in groundwater planning and management.

You have indicated that you are of Aboriginal or Torres Strait Islander descent. To help us to better plan for and manage groundwater to support Aboriginal rights, interests and access, please answer these additional questions.

**Do you identify as Aboriginal and/or Torres Strait Islander?**

- Aboriginal
- Torres Strait Islander
- Both Aboriginal and Torres Strait Islander
- Neither
- Prefer not to say

**Please tell us what groundwater health and secure groundwater supply means for you, your family, your clan, your Nation.**

**Please tell us about the changes you have seen in groundwater management in your cultural landscape.**

**Please indicate which of these cultural opportunities you have seen in action in the way groundwater is managed in NSW.**

Select all that apply.

- Cultural wellbeing and healing
- Cultural significance of higher flows to waterways
- Protection and restoration of cultural sites of significance
- Restoring healthy Country
- Cultural ecotourism
- Other (please specify) \_\_\_\_\_

**Please provide any other comments about cultural opportunities or challenges in groundwater management in NSW.**

The strategy strives to provide more cultural and economic opportunities for Aboriginal people in relation to groundwater.

**What are the most important opportunities for you?**

Select all that apply.

- Fairer access to traditional land and resources
- Better contemporary economic opportunities in culture and recreation
- Increased access to employment and commercial opportunities on projects
- Improving awareness of Aboriginal people’s knowledge and contribution to how groundwater is managed in NSW in the next 20-40 years
- Other (please specify) \_\_\_\_\_

**Please provide any other comments about benefits of cultural and economic opportunities and how we realise those benefits in groundwater management and planning in NSW.**

This concludes the questions specific to your cultural heritage. If you would like to provide additional material to support your position, please email them along with this document.

**Please tell us any other suggested actions you think we should consider in Strategic Priority 2.**

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

Strategic Priority 3 aims to support better groundwater management and investment decisions with improved innovation and knowledge.

The strategy identifies 3 key challenges affecting the use of information to manage groundwater resources sustainably.

**Please rank these challenges in order of importance, where 1 = Most important and 3 = Least important.**

2\_\_\_\_\_ Being underground and difficult to investigate, information about groundwater is lacking

1\_\_\_\_\_ There are gaps in our scientific knowledge and research capabilities

3\_\_\_\_\_ Our groundwater monitoring network is ageing and has limited coverage

**Please tell us any other challenge you think is affecting the use of information and data to manage groundwater resources.**

See attachment

**How important is it for you to have access to more information and data about groundwater management and use?**

- Not at all important
- Of minor importance
- Neutral
- Important
- Very important

**How interested are you in finding out more about how groundwater is managed and used?**

- Not at all interested
- Of minor interest
- Neutral
- Interested
- Very interested

**What ways could the department use to communicate with you and others in your community about groundwater management?**

**Please tell us what type of information and data about groundwater resources you would like available on our departmental website?**

The department has put forward a range of draft actions to improve the use of data and information to make groundwater management decisions. The following questions will review each of the draft actions and their sub-actions.

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

**To what extent do you agree with this draft action?**

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

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

**To what extent do you agree with this draft action?**

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 3.2?

	Not at all important	Of minor importance	Neutral	Important	Very important
Expand the range of knowledge and insights products including information systems, platforms and interfaces for storing, managing, accessing and interrogating groundwater data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Improve and diversify how we communicate information on groundwater resources and their management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Support strategic planning and decision-making by councils and groundwater users with improved access to information on groundwater and its management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Develop a unified framework to consolidate and analyse all groundwater data across all relevant agencies and groundwater users and impacting activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Support data and database integration across agencies to address data gaps and improve customer service delivery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 3.3?

	Not at all important	Of minor importance	Neutral	Important	Very important
Expand our multi-disciplinary understanding of groundwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Improve our groundwater models where required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Increase our capacity and capability to apply leading groundwater science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

To what extent do you agree with this draft action?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

How important to you are each of the following sub-actions required under Action 3.4?

	Not at all important	Of minor importance	Neutral	Important	Very important
Improve our groundwater monitoring infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Improve our groundwater monitoring programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please tell us any other suggested actions you think we should consider in Strategic Priority 3.

See attachment

If you have any further feedback, please provide any final comments or upload additional material here.

See attachment

## About you

We appreciate your time in responding to this survey. Before you submit your survey response, we would appreciate your feedback to help us more broadly understand our audience. This enables us to communicate more clearly and to customise messages to the community. Please choose 'Prefer not to say', if you would rather not answer a question.

The information you provide will only be used for the purposes of this survey, to assist us in preparing the final NSW Groundwater Strategy and in the development of new groundwater policies and plans for NSW.

### Personal information

Please note, your personal information will only be shared if you granted permission for this to occur.

- Name [REDACTED]-----
- Email [REDACTED]-----
- Your business name (if you are responding on behalf of an organisation)  
MidCoast Council  
-----

**How did you hear about this survey?** Select all that apply.

- Community group
- Department's website
- Email or e-newsletter from the department
- Newspaper
- NSW Government announcement
- Radio
- Social media - Facebook
- Social media - Instagram
- Social media - LinkedIn
- Television
- Word of mouth
- Work in the Water industry
- Other (please specify) -----
- Prefer not to say

**What age bracket do you fit into?**

- Under 18 years
- 18 - 24 years
- 25 - 34 years
- 35 - 44 years
- 45 - 54 years
- 55 - 64 years
- 65 - 74 years
- 75 + years
- Prefer not to say

**How do you describe your gender?**

- Female
- Male
- Non-binary
- Other
- Prefer not to say

**Do you speak a language other than English at home?**

- Yes (please specify) \_\_\_\_\_
- No
- Prefer not to say

**Do you identify as a person with a disability?**

- Yes
- No
- Prefer not to say

Enter your postcode:

Thank you for completing this survey. Please email to [nsw.groundwaterstrategy@dpie.nsw.gov.au](mailto:nsw.groundwaterstrategy@dpie.nsw.gov.au)

12 August 2022

Department of Planning and Environment  
[nsw.groundwaterstrategy@dpie.nsw.gov.au](mailto:nsw.groundwaterstrategy@dpie.nsw.gov.au)

Ref: 15944615  
Enquiries: [REDACTED]

## **Re: Draft NSW Groundwater Strategy**

To whom it may concern,

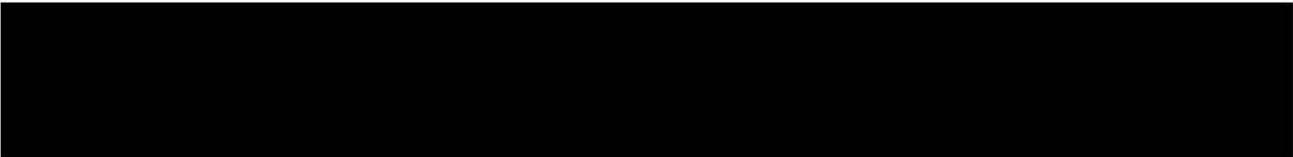
MidCoast Council (Council) is pleased to be able to provide feedback on the Draft NSW Groundwater Strategy. This submission has been prepared by MidCoast Council first and foremost as a local water utility. Council also plays a role as custodian of the local natural environment and is responsible for strategic land use planning.

Council supports the general concept of an adaptive and evidence-based approach to managing groundwater. We support the identified strategic priorities and actions and offer the following comments.

### **Priority 1 - Protect groundwater resources and the ecosystems that depend on them**

- The deficit of data is a barrier to managing and protecting GDEs.
- Some systems (particularly coastal sands aquifers) appear to be very dynamic with large natural variations between higher and lower recharge conditions. The existing data set does not appear to capture this variation.
- Ideally GDE metrics would be developed to allow evidence based management decisions.
- Councils would benefit from assistance in how to consider groundwater as part of the land use and planning processes. Further education on groundwater systems and dynamics would be welcomed, including guides on how best to manage the GDEs and the dynamics between groundwater and surface water.

### **Priority 2 - Build community and industry resilience through sustainable groundwater use**

- Council is looking to groundwater resources as a means of providing water security for large schemes, and, as a sole source for smaller schemes. In each case sustainable extraction is already embedded in management and operational plans.
  - We support the better understanding and managing of groundwater, particularly for those communities completely reliant on groundwater.
  - We also support the development of new innovation and technologies so we can 'do more with less'.
  - Council supports directly engaging with local Aboriginal communities to ensure they are connected and consulted regarding the draft Strategy.
- 

### Priority 3 - Improve groundwater management decisions with better information

- It appears that many water utilities have invested effort in understanding groundwater systems. It would be an advantage for council if DPE would facilitate sharing of this knowledge.
- While knowledge of groundwater systems is improving, council does not have clear metrics that may inform management decisions around groundwater extraction aside from those simplistic requirements prescribed in licences.
- The impacts of a changing climate will increase the need to improve management decisions with science/evidence based approaches.
- We encourage the provision of guidance to Councils on how to consider groundwater when making decisions regarding land use activities based on the most up-to-date science.

### General comments

- Council supports the consideration of emerging technologies such as desalination and managed aquifer recharge. However, these techniques must be considered against quadruple bottom line criteria. They may also be limited in application due to economies of scale.
- Council notes the prevailing reference to the Water Management Act 2000 through the NSW Groundwater Strategy review materials. Council is mindful that a number of current council groundwater licences are issued under the Water Act 1912. It would be beneficial if these existing licences could be issued under the Water Management Act 2000 to ensure consistency with other water licensing.
- We support pursuing water efficiency particularly considering that the extraction of groundwater is expected to increase over the next few decades.
- Noting that agriculture is the largest user of groundwater, we support opportunities for the NSW Government to both reduce usage wherever possible and minimise the amount of water evaporated following extraction.
- We support consideration of sustainable growth and how growth can be accommodated all while protecting water resources.

### Targeted comments

- Approach to groundwater management (in Summary): We support planning with climate change and encourage more recognition of this in NSW Government documents, and incorporation of the approach into the NSW Planning System.
- Challenges (in Summary): We support using the drivers as a basis when reviewing the NSW Planning System and identifying ways to minimise the risks to groundwater from development and land use change.
- We strongly support:
  - Action 1.3.2.: “*Deliver a program to improve our understanding of groundwater dependent ecosystems*”,
  - Action 1.2.4 related to strengthening cross-border groundwater management, and
  - Action 1.2.2 related to integrating groundwater considerations into land use planning decisions, though the action could be expanded to cover industry education.
- Noting that the current access rights for inland alluvial groundwater sources are at the extraction limit (Figure 5), we support actions to reduce these levels down to a more

sustainable level. Action 1.4 could be strengthened to give a commitment to reducing the extraction levels in areas where there is over extraction or where it is close to this threshold. This could then be supported by programs or actions that can be implemented to achieve this.

- *“The risks to groundwater from development and land use change are increasing”*: There is an opportunity for Water NSW to work with DPI to minimise the risk of potentially contaminating industries and activities on rural land.
- Challenges – *“Our groundwater management framework needs to be better integrated with surface water and land management”*: We suggest that short courses to help build the knowledge of groundwater management for land use planners could be developed by WaterNSW, DPE and the Planning Institute of Australia. This will ensure that adequate consideration is given during the rezoning process and sustainable growth is pursued.
- Challenges – *“Threats to groundwater quality are growing and need to be addressed”*: We support the provision of land use planning guidance on where landfills could be established and the related controls. There is also an opportunity to pursue an initiative similar to the Legacy Mine Program but for Legacy Dumps/Landfills.
- Action 2.1. Support towns and cities using groundwater to improve their urban water planning: We would support a consistent framework across NSW for the identification of strategic groundwater reserves and critical catchments in land use planning documents.
- We are supportive of Action 3.4 to expand the groundwater monitoring network, particularly in areas where urban growth pressure will put pressure on groundwater sources.

## Questions for consideration

### Have we missed anything?

- We support considering the cumulative impact of private bores for household use in conjunction with the non-urban water metering framework, which is a practical step to ensure the state’s water is effectively managed. It is important that unlicensed or unregulated extraction is monitored and strengthening of regulations or penalties may be warranted.

### What are the main issues related to groundwater affecting your community?

- In the MidCoast area, we have a variety of land uses including extractive industries, agriculture (both extensive and intensive), tourism, aquaculture, etc. There is also a high demand for residential development within the coastal locations. Our natural assets include a series of rivers, lakes and estuaries that feed into each other and support the local seafood industry, primarily oysters. These waterways also underpin the visitor economy. Better information and guidance on how best to evaluate the impact of land use on groundwater sources through education programs and access to current research and data and ways to manage or avoid these negative impacts would mean they could be better considered at the planning stage.
- Within the MidCoast we also have multiple priority drinking water catchments and two significant aquifers and their associated catchments. Within the Environmental Planning & Assessment Act and related instruments, there are clear assessment triggers for certain development within the priority drinking water catchments, but no comparable assessment triggers for development within aquifer catchments.
- Within the last 5 years, land in private ownership within one of the aquifer catchments undertook work associated with agricultural activities on the property that may have

penetrated and/or contaminated the aquifer. These and other non-mining activities are not captured by the Aquifer Interference Policy and there is, as stated within the document, very limited identification, protection or management of land uses within aquifer catchments.

- MidCoast Council's Water Resilience Team, in collaboration with State agencies and our Land Use Planning team, are proposing a range of zone, land use, mapping and assessment clause provisions within the new MidCoast Local Environmental Plan (to be commenced in 2022) to provide an appropriate assessment framework. However, such initiatives would be better supported through stronger recognition within a State Environmental Planning Policy.

### What is most important to you regarding groundwater in NSW?

- Groundwater is an important resource in its own right and it should not be considered as a free resource for unregulated private use. Due to the connectivity of groundwater with other water sources, it stretches over multiple boundaries (private and public) and therefore requires a high-level approach to develop an effective management plan. This then needs to be disseminated to the authorities managing the land, like local councils.
- Improving the knowledge of planning authorities, decision makers and land users will promote a better understanding of groundwater processes and should be accompanied by guidelines on how best to manage the negative impacts of land use. In addition, groundwater should be formally incorporated into the land use planning system to be considered in the same way that surface water is when making planning decisions.
- Recognising that local Aboriginal communities have a role in the decision making and management of groundwater including access rights, is supported and direct engagement with the State is encouraged.

Thank you for the opportunity to provide feedback on the Draft NSW Groundwater Strategy. Should you have any queries regarding this submission, please contact [redacted] on [redacted] or [redacted].

Yours sincerely,

[redacted]  
[redacted]  
[redacted] MidCoast Council

