Regional Water Strategies Public Exhibition Submission Questionnaire

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

This draft strategy is being developed by the Department of Planning, Industry 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 Far North Coast 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 as a whole 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 to assess the benefits and disadvantages of any of the options.

Please provide your feedback in the submission form below and email your completed submission to regionalwater.strategies@dpie.nsw.gov.au or post to Regional Water Strategies, Department of Planning, Industry and Environment, Locked Bag 5022, Parramatta NSW 2124 by **13 December, 2020.**

The questionnaire includes general questions about the regional water strategy including objectives, vision, modelling, opportunities and challenges. 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 question 3).

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

If you have any questions about the questionnaire, please email:
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. 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 your submission 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.
https://www.industry.nsw.gov.au/privacy

Information from this form is collected for the purpose of receiving your feedback on the draft regional water strategy. The supply of this information is voluntary. Your details will be stored in NSW Department of Planning, Industry and Environment records. Information will be stored and managed in accordance with provisions under the Privacy and Personal Information Protection Act 1998. It will not be used for any other purpose and will not be given to any other third party except where required by law. To access or correct your personal information, contact us using the information at dpie.nsw.gov.au/contact

1. Information on confidentiality and privacy *

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

(●) Yes ( ) No

I would like my personal details to be kept confidential.

(●) Yes ( ) No

2. Your details

Email address *

[redacted]

Name *

[redacted]

Address *

[redacted]

Contact phone number *

[redacted]

Do you identify as an Aboriginal person?

◯ Yes ◉ No

Are you an individual or representing an organisation?

◉ Individual ◯ Organisation

3. Organisation or business details

Who do you represent?

◯ **Government:**
◯ Commonwealth ◯ New South Wales ◯ State other ◯ Local

◯ **Local Water Utility**

◯ **Peak representative organisation:**
◯ Environment ◯ Industry ◯ Business group or business chamber ◯ Community organisation

◯ **Other**

4. Draft regional water strategy objectives and vision

The draft Far North Coast Regional Water Strategy is one of 13 strategies (12 regional water strategies and a Greater Sydney Water Strategy) 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 have healthy and resilient water resources (that withstand extreme events and adapt to these changes) for a liveable and prosperous Far North Coast 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 to meet the future needs of Aboriginal people, towns, communities, industries and the environment

Do you support this vision for the Far North Coast Regional Water Strategy?

○ Yes ◉ No

If no, please outline your vision for the long term management of water resources in this region?

My vision for the long term management of water resources in the Far North Coast of NSW is to strictly manage demand by establishing an agreed limit to human population levels in the Far North Coast. The premise here is that the best possible option for future additional water sources is not possible without first resolving a limit to human-use demand.

5. Information and modelling used to develop the Far North Coast Regional Water Strategy

The draft Far North Coast Regional Water Strategy packages the most up to date information and evidence with all the tools we have – policy, planning, behavioural, regulatory, technology and infrastructure solutions.

We have used the following information to develop the draft Far North Coast Regional Water Strategy:

- **New climate data**
  - Observed historical climate data - recorded rainfall, temperature and evaporation data from the past 130 years.
  - Paleoclimate data - scientific reconstructed data using sources such as tree rings.
  - Climate drivers – key drivers of wet and dry periods.
  - Climate change scenarios.
- **Review of existing studies**
  - to identify drivers and risks for water resource management.
- **Community engagement**
  - Local councils and joint council organisations.
  - Aboriginal peak bodies and Aboriginal community groups.
  - Review of previous water management consultations.

A) Do you have any comments about the information used to develop this strategy?

Relatively thorough, though what's laking is data on population growth rates and related information, case studies, and community consultation pertaining to the plateauing of those rates.

B) Please provide details if there is additional information you think we should consider?

This graph shows alternate projections of Australia's population varying between a continued growth rate and a plateauing population: https://population.un.org/wpp/Graphs/Probabilistic/POP/TOT/36

This range of possibilities mirrors the range predicted for Low Income Countries:

6. Stochastic modelling method

We used a stochastic modelling method (based on the statistical characteristics of the new climate data) in order to get a dataset covering up to 10,000 years. This enables us to quantify the natural variability and extremes in the region with greater certainty.

A) Do you have any comments about the modelling method used to develop this strategy?

None

B) Is there any additional information that you believe could help us assess the benefits and disadvantages of draft options?

None

7. Opportunities and challenges for water management in the Far North Coast region

During the Far North Coast Regional Water Strategy drafting stage, the following opportunities, risks and challenges were identified.

- **Changing climate conditions will increase the pressure on water resources and water management challenges facing the region**
  - Droughts may be more severe in the future and the region is also likely to see seasonal shifts in rainfall patterns.
  - Flooding is a major issue and can adversely affect towns, business and communities.
  - Sea levels are predicted to rise in the region by between 0.31 and 0.88 metres by 2090.
  - Water extraction from waterways to meet community and industry demands is likely to increase due to decreases in rainfall and greater evaporative losses.
- **Towns, communities and industries in the region are susceptible to climate variability and change**
  - Population growth, increased water demand and climate variability will place increasing challenges on town water supplies and industry sectors.
  - The region is not used to managing the extreme dry periods and there is relatively little water storage available.
  - Saline intrusion due to sea level rise will make some supplies unfit for use and affect sewerage treatment plant operations.
  - Sea level rise effects may be magnified as freshwater inflows reduce.
- **Protecting water-dependent environmental assets and native species is challenging**
  - Water for the environment is not actively managed and largely dependent on stream flows.
  - Reductions in river flows and estuary inflows are forecast.
  - Water quality problems are present and projected lower flows, higher temperatures and sea level rise may further reduce water quality.

- **Better management of groundwater**
  - Groundwater is found in fractured rocks, coastal sands and smaller alluvial aquifers.
  - Urbanisation in coastal areas is impacting groundwater recharge patterns and increasing pollution risks.
  - Greater knowledge and information on groundwater is needed to ensure its sustainability across the region.
- **Opportunities to improve how we manage and use water in the region**
  - Link population growth with new investment to ensure water security into the future.
  - New climate information offers opportunities to review and update water sharing and access rules.
  - Diversify town water and industry supplies using new sources such as recycled water and desalination.
  - Involve Aboriginal communities more directly in water decision-making and incorporate traditional knowledge into water management.
  - Options to support the regions farmers to mitigate water security risks and accommodate shifting market trends.
  - Investigate options to improve Toonumbar Dam's low rate of use, reduce its financial burden and maximise its value to the community.

A) Do you have any comments on the opportunities, risks and challenges identified?

Linking "population growth with new investment" is not an opportunity for those who are not making the investment; nor is it an adequate means of addressing the population growth issue.

B) Are there any additional opportunities, risks and challenges that we should consider and what options could address these?

Rather, the real opportunity here is the chance for our community to comprehend, and conscientiously manage our population levels for the long term; which represents an opportunity to adequately address multiple issues caused by or associated with, unmanaged population levels.

8. Draft Far North Coast Regional Water Strategy options

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

The 39 options are grouped in different categories, being:

- Maintaining and diversifying water supplies.
- Protecting and enhancing natural ecosystems.
- Supporting water use efficiency and conservation.
- Strengthening community preparedness for climate extremes.

In addition the final long list of options will also include a focus on:

- Improving recognition of Aboriginal people's water rights, interests and access to water.

Only feasible options will be progressed to the final strategy stage – following a rigorous assessment process.

We are seeking your feedback to inform the options assessment process. Further details on each option is outlined in the strategy documents and a summary included below.

Maintaining and diversifying water supplies

1. Interconnection of independent water supplies in the region to the Rous County Council network
2. Interconnection of Rous County Council and Tweed Shire Council bulk water supplies
3. Use Toonumbar Dam to augment town water supplies
4. Connect the regional water system to the South East Queensland water grid
5. Vulnerability of surface water supplies to sea level rise
6. Remove impediments of water use reuse projects
7. Indirect potable reuse of purified recycled water
8. Direct potable reuse of purified recycle water
9. Manage aquifer recharge investigations and policy
10. Decentralise desalination
11. Regional desalination
12. Raise Clarrie Hall Dam level
13. New Dam on Byrrill Creek
14. New Dunoon Dam on Rocky Creek
15. Increased harvestable rights
16. Provide purified recycled wastewater for industry and rural users
17. Increased on-farm water storage
18. A grid of off-stream water storages in the Far North Coast Region
19. Raise Toonumbar Dam level

Protecting and enhancing natural ecosystems

20. Establish sustainable extraction limits for Far North Coast surface water and groundwater sources
21. Establish and/or increase environmental water releases from major storages in the Far North Coast
22. Convert low flow water access licences to high flow water access licences
23. Improve stormwater management
24. Bringing back riverine and estuarine habitat and threatened species
25. Fish-friendly water extraction
26. Improve fish passage in the Far North Coast region
27. Addressing cold water pollution
28. Characterising coastal groundwater resources
29. Protecting ecosystems that depend on coastal groundwater resources
30. Northern Rivers Watershed Initiative
31. River Recovery Program for the Far North Coast: a region-wide program on instream works, riparian vegetation and sediment control

Supporting water use efficiency and conservation

32. Improved data collection and information sharing
33. Active and effective water markets
34. Regional Demand Management Program
35. Regional network efficiency audit

Strengthening community preparedness for climate extremes

36. Apply the NSW Extreme Events Policy to the Far North Coast region
37. Protecting coastal groundwater resources for town water supplies and rural water users
38. Planning for climate change impacts on coastal groundwater resources
39. Planning for land use pressures on coastal groundwater resources

A) Which five (5) options do you think are *most* important?

Please list the option numbers in order of importance with the first option being most important

Option Number 10
Option Number 11
Option Number 31
Option Number 33
Option Number 36

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

Desalination offers you the most CONTROL over bulk water supply. As has already been identified by Rous County Council, one of the best locations for a decentralized desalination plant is in the industrial precinct of Byron Bay, alongside the existing sewage treatment plant. Desalination technology is proven throughout the world as an on-demand solution to ever changing water consumption patterns.

C) Which five (5) options do you think are *least* important (if any)?

Please list the option numbers in order of least importance with the first option being least important

Option Number 14
Option Number 13
Option Number 12
Option Number 19
Option Number 22

D) Please comment on why you think these options are least important?

New dams (and the raising of dam walls) only increases our dependence on rain dependent storage. This is the opposite of what we want.

● In 2010 Terrestrial Ecology, Aquatic Ecology, and Cultural Heritage reports all found serious impacts from a

E) Do you have any comments on the draft options?

Dams are last-century's technology. We need to focus on the many other options available. Moreover, we already have an "underutilized" dam at Toonumbar (option 3).

Following by ecologist, Nan Nicholson:

9. Option combinations

The option list provided in the draft strategy also identifies potential combinations of options. These combinations recognise that most options require associated works, further assessments and/or legislative, policy and planning changes to ensure they address the risks and challenges identified in the Far North Coast region and do not have unintended impacts.

A) Do you have any thoughts on how the options could be combined with other options?

Toonumbar Dam should be fully utilized (option 3). Desalination should be prioritized (options 10 & 11). Connection between Rous and Tweed networks and other interconnections should be undertaken (option 1,2 & 4).

B) Are there additional options that we should consider?

RCC has ignored system-wide water efficiency which is cheap and recommended:

● Water efficiency is cheap and effective (All Options on the Table p3). It is also recommended by the 2020NSW Productivity Commission Green Paper. (NSW Treasury, Productivity Commission Green Paper:

10. Other comments

Do you have any other comments about the Far North Coast Regional Water Strategy?

Here's a cautionary example of what could happen:

Let's say you've built the Dunoon Dam, and it's the year 2040. As predicted, another 20 years of increasing temperatures have also increased the growth of vegetation in the Dunoon Dam catchment, while also the

11. 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, Industry and Environment website
- ☑ Direct email
- ◯ Social media
- ◯ Have your say NSW Government website
- ◯ Communication from peak body
- ☑ Other

Community environment centre

12. Additional Information and submission process

If you would like to provide any supporting documents to help us understand your view, please either, 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 Far North Coast Regional Water Strategy will be reviewed following the public exhibition period. Further targeted engagement will be undertaken along with the final phase of stakeholder engagement later in the year to review the final documents.

Please email your completed submission and supporting documents to regionalwater.strategies@dpie.nsw.gov.au

or post to Regional Water Strategies, Department of Planning, Industry and Environment, Locked Bag 5022, Parramatta NSW 2124 by 13 December, 2020.

Further details on all regional water strategies can be found on our website https://www.dpie.nsw.gov.au/regional-water-strategies

Thank you for your submission.

Extracted answers from fillable form above:

Question 5A.
Relatively thorough, though what's laking is data on population growth rates and related information, case studies, and community consultation pertaining to the plateauing of those rates.

In addition:

● Rous and Lismore Council failed to provide the Department of Primary Industries and Environment with an accurate appraisal of Dunoon Dam. The dam is highly controversial, and resisted. There is widespread concern about the destructiveness of Dunoon Dam and also the failure of RCC to plan for water resilience using modern technologies.
● 91% of 1290 written and on-line submissions to RCC opposed the dam option. Over 300 of the written submissions are identified as individual and not pro-forma submissions, demonstrating a high level of engagement. Exhibition ran for 2 months "with strong promotion" (VAXA, FWP2060 Outcomes from Public Exhibition - 2020, 2020) .
● Social rejection demonstrates the dam option fails the "triple bottom line" test[economic/environmental/social]. A broad suite of other effective options were preferred by respondents.

Question 5B.
This graph shows alternate projections of Australia's population varying between a continued growth rate and a plateauing population: https://population.un.org/wpp/Graphs/Probabilistic/POP/TOT/36

This range of possibilities mirrors the range predicted for Low Income Countries: https://population.un.org/wpp/Graphs/Probabilistic/POP/TOT/1500

However, by actually organizing ourselves for a plateauing population in the Far North Coast of NSW, we would then be implementing strategies in-line with the population predictions of High Income Countries: https://population.un.org/wpp/Graphs/Probabilistic/POP/TOT/1503

Question 8D.
New dams (and the raising of dam walls) only increases our dependence on rain dependent storage. This is the opposite of what we want.

● In 2010 Terrestrial Ecology, Aquatic Ecology, and Cultural Heritage reports all found serious impacts from a dam in this location on Rocky Creek. Members of a Public Reference Group voiced their concerns and opposition. (SMEC, Dunoon Dam Terrestrial Ecology Impact Assessment, 2011)
● In 2013 a Technical Report noted that the dam was constrained by significant environmental and social impacts, high capital cost, and the fact that it was 'highly climate influenced" (p52).
● An Integrated Water Planning report in 2014 noted that although the dam was 'technically viable', it had 'significant environmental and social constraints associated with threatened and endangered terrestrial ecology and culturally significant Aboriginal heritage".

The destruction of Aboriginal Heritage by Dunoon Dam is unacceptable:

● The 2011 Cultural Heritage Impact Assessment states "Aboriginal stakeholders are of the opinion that the sites should remain undisturbed and that no level of disturbance is considered acceptable to them".This heritage would be destroyed by any dam.
● In 2013, Rous County Council commissioned another Cultural Heritage Impact Assessment (CHIA 2013) to supersede the 2011 CHIA). It seems that very few Wijabul Wia-bal stakeholders have seen the 2011or the 2013 CHIAs, or have been aware of their existence. Rous are now asking the Wijabal Wia-bal to repeat the CHIA process yet again, apparently until they get the result they want.
● When RCC promotes the dam as the 'cheapest option' it must be noted that destruction of the JuukanRock Shelters was also thought the 'cheapest option' by Rio Tinto, at the time.

Question 8E.
Dams are last-century's technology. We need to focus on the many other options available. Moreover, we already have an "underutilized" dam at Toonumbar (option 3).

Following by ecologist, Nan Nicholson:

The 2011 Dunoon Dam Terrestrial Ecology Impact Assessment (TEIA) was prepared for Rous County Council to help establish the ecological value of the site. Unfortunately the report is very substandard, with a heavy reliance on desktop analysis and insufficient onground investigation, as well as numerous inconsistencies, errors and absurdities.

For instance, I made a 2-hour random meander around the dam wall location in 2011 and found 53 plant species that were not mentioned in the assessment, including some very common species. It is likely that additional fauna species, including threatened species, would be present also.

Nevertheless, the assessment does manage to establish that there would be impacts that cannot be mitigated:

Loss of Lowland Rainforest Endangered Ecological Community
Loss of threatened flora species
Loss of threatened fauna habitats
Severance of local wildlife corridors

Question 9B.
RCC has ignored system-wide water efficiency which is cheap and recommended:

● Water efficiency is cheap and effective (All Options on the Table p3). It is also recommended by the 2020NSW Productivity Commission Green Paper. (NSW Treasury, Productivity Commission Green Paper: continuing the productivity conversation, 2020. Accessed at http://productivity.nsw.gov.au/green-paper/water-energy

● Rous County Council omitted water efficiency from its 2020 Integrated Water Cycle Management Development options for increasing supply and undertook no specialist studies on it. https://rous.nsw.gov.au/page.asp?f=RES-HOV-71-65-36

● Professor Stuart White identified significant potential increase in Rous supply through efficiency measures neglected by Rous.https://waternorthernrivers.org/wp-content/uploads/2020/11/Prof-Stuart-White-Brief-Review-Rous-Water-augmentation-20200904-1.pdf

● The lack of attention to water efficiency is evident from the fact that during the past 2 years there was a significant amount of time in which RCC did not employ a Demand Management officer. The position is now filled part-time, reflecting the low priority that RCC still attaches to water efficiency.

Question 10.
Here's a cautionary example of what could happen:

Let's say you've built the Dunoon Dam, and it's the year 2040. As predicted, another 20 years of increasing temperatures have also increased the growth of vegetation in the Dunoon Dam catchment, while also the frequency and severity of hot wild-fires. Let's presume the predicted conditions have come to pass, allowing a particularly severe wide-spread hot fire to incinerate the biomass of your Dunoon Dam catchment. The result, is a steady flow of toxic runoff directly into what's proposed as our community's primary source of drinking water. The influx of nutrients may cause blue-green algae events and with elevated mercury, iron, and manganese, these serious cyanotoxins significantly slow down the treatment process; resulting in unexpected expenses, for delivering what you thought was the most cost-effective solution.

This is just an example, for sure, but my point is that the context within which last century's dams were built, has changed.

Dams are one cheap option, but they no longer offer the control over water quality, that they once did. Environmental, climatic, and social expectations have changed. Furthermore, I have deliberately not mentioned the vulnerability of dams to the threat of terrorist activity.

Having all your eggs in one basket (or most your water in one dam), might appear affordable, but it's not wise.