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 Macquarie-Castlereagh 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 Macquarie-Castlereagh 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 November, 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

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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, 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**

Note that OCC is both a Local Government and a Water Utility

4. Draft regional water strategy objectives and vision

The draft Macquarie-Castlereagh 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 Macquarie-Castlereagh 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 Macquarie-Castlereagh Regional Water Strategy?

(●) Yes ( ) No

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

5. Information and modelling used to develop the Macquarie-Castlereagh Regional Water Strategy

The draft Macquarie-Castlereagh 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 Macquarie-Castlereagh Regional Water Strategy.

- **New climate data:**
  - Observed historical climate data - recorded rainfall, temperature and evaporation data.
  - Paleoclimate data - scientific reconstructed data using sources such as tree rings.
  - Climate drivers – key drivers of wet and dry periods.
- **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?

1. It is quite apparent that not all water utility IWCM plans have been read and used in the input to this Strategy!
2. It is quite obvious that not all comments during community engagement with Local Government have been considered. Particularly for the unregulated section of the Macquarie River.
3. The new climate data modeling should be shared with Local Government to inform and update their IWCM plans

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

Orange City Council's IWCM Plan

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?

The new climate data modeling should be shared with Local Government to inform and update their IWCM plans.

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

Representation from Local Government Water Utilities in the unregulated section of the Macquarie River on the assessment panel. As the draft strategy is currently heavily focused on the regulated section of the river supporting LGA's with a population of 75,000 with little for the unregulated section supporting LGA's with a population of over 100,000!

7. Opportunities and challenges for water management in the Macquarie-Castlereagh region

During the Macquarie-Castlereagh Regional Water Strategy drafting stage, the following opportunities, risks and challenges were identified.

- **Climate conditions combined with current operation assumptions are placing the region's water resources under stress**
  - Region has a naturally variable climate that needs to be planned for.
  - Decreased inflows to dams in the region.
  - Increased potential for droughts.
  - Challenges in delivering water to the end of the system.
- **Need to rethink how we manage water in the region**
  - Improved understanding of extreme events needs to be included in water allocations.
  - Greater transparency about water security risks.
  - New water infrastructure needs to support population growth centres.
  - New measures to reduce demand and improve water efficiency is needed.
  - Rethink the types of industries in the region to reduce water demand and use water more efficiently.
- **Water is essential for Aboriginal people's health, wellbeing and connection to Country:**
  - The health of the waterways impacts wellbeing.
  - Current cultural water entitlements do not meet the needs of Aboriginal people.
  - Opportunities to include Aboriginal people's involvement in water management.

- **Critical environmental assets need to be protected**
  - Healthy water sources support the region's environment.
  - River ecosystems are under stress.
  - Future actions should support environmental outcomes across the whole system including the Macquarie Marshes.
- **Better management of groundwater**
  - Groundwater sources are critical and need to be used more efficiently.
  - More knowledge is needed about groundwater recharge rates.

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

We disagree with "rethink the types of industries in the region" to reduce water demand and use water more efficiently. Rather more work should be done to invest in infrastructure and implement policies that supports the economic growth of the region. As well as working with existing industries to use water more efficiently, reducing demand.

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

More work should be done to invest in infrastructure and implement policies that supports the economic growth of the region. As well as working with existing industries to use water more efficiently, reducing demand.

8. Draft Macquarie-Castlereagh Regional Water Strategy options

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

The 49 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.
- 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.

Draft options for the Macquarie-Castlereagh Regional Water Strategy are outlined below.

Maintaining and diversifying water supplies

1. A new mid system re-regulating weir on the Macquarie River
2. Access water from Burrendong Dam's deep storage
3. Managed aquifer recharge investigations and policy
4. Improving town water security in the upper Macquarie unregulated river system
5. Drought protocols for Bathurst and Oberon town water supply
6. Inter-regional connections project investigation
7. Reuse, recycling and stormwater projects
8. Burrendong Dam to Nyngan pipeline
9. Pipeline from the proposed new mid-system weir near Gin Gin to Nyngan
10. Gunningbar Creek pipeline
11. Increase Burrendong Dam's Full Supply Level
12. Increase outlet valve capacity at Burrendong Dam
13. Reliable access to groundwater by towns

Protecting and enhancing natural ecosystems

14. Address channel constraints to delivering environmental flows to the Macquarie Marshes
15. NSW Fish Passage Strategy
16. Introduce flow variability in the distributary (effluent) creeks
17. Determine the feasibility of delivering water to the Talga Wetland/ Overflow of the lower Crooked Creek
18. Undertake channel works to reinstate natural channel profiles in selected streams in the southern Macquarie Marshes
19. Formalise channel sharing arrangements
20. Implement a native fish restoration project
21. Diversion screens to prevent fish extraction at pump offtakes
22. Cold water pollution mitigation measures
23. Modification and/or removal of existing floodwork structures causing adverse impacts
24. Relieve flow constraints on the Cudgegong River at Rocky Waterhole Bridge
25. Improved understanding of groundwater processes
26. Sustainable access to groundwater
27. Improved clarity in managing groundwater resources sustainably
28. Investigation of water quality mitigation measures
29. River Ranger program
30. Secure flows for Beemunnel Aboriginal Place
31. Connectivity with downstream systems

Supporting water use and delivery efficiency

32. End of system efficient stock and domestic water delivery options
33. Enterprise water use efficiency programs
34. Market measures to support Dubbo's town water supply

Strengthening community preparedness for climate extremes

35. Investigation of licence conversions
36. New drought operational rules (Macquarie River)
37. Review of regulated river water accounting and allocation process
38. Improved data collection and information sharing
39. Capacity building program:
    - new climate data/modelling
    - managing groundwater resources sustainably
40. Investigation to maintain amenity for regional towns during drought
41. Land use change impact on water resources

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

42. Culturally appropriate water knowledge program
43. Water-dependent cultural practices and site identification
44. Shared benefit project (environment and cultural outcomes)
45. Regional Aboriginal Water Advisory Committee
46. Water portfolio project for Aboriginal communities
47. Aboriginal cultural water access licences review
48. Co-management investigation of Travelling Stock Reserves
49. Regional Cultural Water Officer employment program

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 39
Option Number 4
Option Number 35
Option Number 7
Option Number Ulmai

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

1. Option 39 as without shared modeling there is little chance of defining any shortfall and prioritising other options for water security. Also as it may be used to delay funding specific projects.
2. Option 4 Improving Town Water Security informed by defining the shortfall from Option 39. This should also see permanent changes to operating licenses and approvals as we are stepping into High Level Water

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 34
Option Number 5
Option Number 6
Option Number
Option Number

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

1. Option 34 subsidising Dubbo to buy up groundwater licenses when there are other options like securing some of the Burrendong Dam's flood and dead water storage for High Security Town Water Supply which can be done with the stroke of a pen appears ridiculous in a regional water strategy. If anything this is an emergency measure because Burrendong has not in the past reserved an amount for Town Water Supply.

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

5. For a future stepped increase in Water Security for the unregulated Macquarie catchment the construction of Ulmarrah Dam should be considered further and not drop off the long list …. This has been listed as an option not progressed and the reasons given are to support a vocal minority in the regulated section of the Macquarie River, with little to no regard for the unregulated section of the Macquarie River. Any Water Source in the

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 Macquarie-Castlereagh region and do not have unintended impacts.

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

B) Are there additional options that we should consider?

For a future stepped increase in Water Security for the unregulated Macquarie catchment the construction of Ulmarrah Dam should be considered further and not drop off the long list …. This has been listed as an option not progressed and the reasons given are to support a vocal minority in the regulated section of the Macquarie River, with little to no regard for the unregulated section of the Macquarie River. Any Water Source in the

10. Other comments

Do you have any other comments about the Macquarie-Castlereagh Regional Water Strategy?

It is very important that the unregulated LGA's are represented on the panel to consider long list options. Consideration should be given to separating the unregulated and regulated sections of the Macquarie and having separate Regional Water Strategies. This is justified on population alone. By combining the Strategy and focusing on downstream solutions the draft has neatly marginalised the majority of the population serviced.

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

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 Macquarie-Castlereagh 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 November, 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.
1. It is quite apparent that not all water utility IWCM plans have been read and used in the input to this Strategy!
2. It is quite obvious that not all comments during community engagement with Local Government have been considered. Particularly for the unregulated section of the Macquarie River.
3. The new climate data modeling should be shared with Local Government to inform and update their IWCM plans.

Question 8B.
1. Option 39 as without shared modeling there is little chance of defining any shortfall and prioritising other options for water security. Also as it may be used to delay funding specific projects.
2. Option 4 Improving Town Water Security informed by defining the shortfall from Option 39. This should also see permanent changes to operating licenses and approvals as we are stepping into High Level Water Restrictions rather than waiting till levels are near critical. Option 5 drought protocols for Bathurst and Oberon should also be expanded to Orange.
3. Option 35 but expanded to include a revision of regulatory rules for Town Water Supplies to temporarily transfer High Security Water Allocations to its diversified water sources (Example: Orange has a High Security Allocation from Summer Hill Creek but in times of low or no flow should be able to transfer temporarily the water allocation to other sources such as Bores, Stormwater Harvesting or Macquarie River offtake. Then in Business As Usual (BAU) times transfer the High Security Water Allocation back to the Summer Hill Creek. This would allow Orange to secure Water without having to buy up production licenses and not lose the High Security Water Allocation for BAU in the top of its catchment.
4. Option 7 It would be handy if the authors of this had read Orange's IWCM …. It appears the only IWCM was Dubbo's. Recycling is a shortlisted project for Orange under the IWCM for post 2030 due to the current Section 60 approved effluent reuse scheme taking the first 10ML/day. However with partnering with Cadia we have already negotiated temporary sharing of that water for other uses during the peak of the most recent drought. As such this could become a viable alternative water supply in the short to medium term. However, cannot even be justified without the shared modelling in Option 39.
5. For a future stepped increase in Water Security for the unregulated Macquarie catchment the construction of Ulmarrah Dam should be considered further and not drop off the long list …. This has been listed as an option not progressed and the reasons given are to support a vocal minority in the regulated section of the Macquarie River, with little to no regard for the unregulated section of the Macquarie River. Any Water Source in the upper Macquarie Valley whether it be Recycling / Stormwater Harvesting / Ground Bores etc. all have an impact on the water balance for Burrendong Dam. Ulmarrah Dam should be considered

Question 8D.

1. Option 34 subsidising Dubbo to buy up groundwater licenses when there are other options like securing some of the Burrendong Dam's flood and dead water storage for High Security Town Water Supply which can be done with the stroke of a pen appears ridiculous in a regional water strategy. If anything this is an emergency measure because Burrendong has not in the past reserved an amount for Town Water Supply.
2. Option 5 drought protocols for Bathurst and Oberon should also be expanded to Orange and any other Water Utility that manages a Dam. To include permanent changes to operating licenses and approvals as we are stepping into High Level Water Restrictions rather than waiting till levels are near critical.
3. Option 6 Expansion of this to include raising Lake Roland's with a downstream Wall to 29GL to allow CTW to be a bulk water supplier to Bathurst and Orange in the future.

Question 8E.

5. For a future stepped increase in Water Security for the unregulated Macquarie catchment the construction of Ulmarrah Dam should be considered further and not drop off the long list …. This has been listed as an option not progressed and the reasons given are to support a vocal minority in the regulated section of the Macquarie River, with little to no regard for the unregulated section of the Macquarie River. Any Water Source in the upper Macquarie Valley whether it be Recycling / Stormwater Harvesting / Ground Bores etc…. all have an impact on the water balance for Burrendong Dam. Ulmarrah Dam should be considered as complimentary to Burrendong as Windamere Dam is. Given there is existing piped infrastructure to Orange at elevation 900m+ and through to Carcoar in CTW also 900m+, with addition of a pipeline to Bathurst (elevation 650m) and the existing connection to Molong (elevation 565m) Ulmarrah Dam could underpin the future economic growth of the upper Macquarie Region. The population of the unregulated section of the Macquarie including Oberon, Bathurst, Orange and Cabonne is over 100,000 yet the population of the regulated section of the Macquarie including Bogan, Warren, Coonamble, Narromine, Gilgandra and Dubbo is less than 76,000. It is also thought that Ulmarrah Dam has the potential to benefit Mudgee in times of drought. See also separate letter attached.

Question 9B.

For a future stepped increase in Water Security for the unregulated Macquarie catchment the construction of Ulmarrah Dam should be considered further and not drop off the long list …. This has been listed as an option not progressed and the reasons given are to support a vocal minority in the regulated section of the Macquarie River, with little to no regard for the unregulated section of the Macquarie River. Any Water Source in the upper Macquarie Valley whether it be Recycling / Stormwater Harvesting / Ground Bores etc…. all have an impact on the water balance for Burrendong Dam. Ulmarrah Dam should be considered as complimentary to Burrendong as Windamere Dam is. Given there is existing piped infrastructure to Orange at elevation 900m+ and through to Carcoar in CTW also 900m+, with addition of a pipeline to Bathurst (elevation 650m) and the existing connection to Molong (elevation 565m) Ulmarrah Dam could underpin the future economic growth of the upper Macquarie Region. The population of the unregulated section of the Macquarie including Oberon, Bathurst, Orange and Cabonne is over 100,000 yet the population of the regulated section of the Macquarie including Bogan, Warren, Coonamble, Narromine, Gilgandra and Dubbo is less than 76,000. It is also thought that Ulmarrah Dam has the potential to benefit Mudgee in times of drought.

Submission Regional Water Strategies

General

The following feedback and comments on the Macquarie-Castlereagh Regional Water Strategy (RWS) is provided specifically in relation to the Urban Water Supply in the Upper Macquarie Catchment.

It is very important that the unregulated LGA's are represented on the panel to consider long list options.

Consideration should be given to separating the unregulated and regulated sections of the Macquarie and having separate Regional Water Strategies. This is justified on population alone. The population of the unregulated section of the Macquarie including Oberon, Bathurst, Orange and Cabonne is over 100,000 yet the population of the regulated section of the Macquarie including Bogan, Warren, Coonamble, Narromine, Gilgandra and Dubbo is less than 76,000.

Engagement and collaboration

The Macquarie-Castlereagh draft Regional Water Strategy (RWS) requires more focus on Upper Macquarie Infrastructure Solutions for urban water. Due to unique water resource issues in the Upper Macquarie (when compared to the Lower Macquarie), it requires its own standalone implementation, monitoring and review process

Due to pipeline connectivity, it is suggested that Oberon Council, Bathurst Regional Council, Orange City Council, Cabonne Council, Central Tablelands Water (CTW) and Blayney Shire Council (CTW customer) form an Upper Macquarie Town Water Steering Committee in order to monitor and review the implementation of the town water component of the RWS. All relevant State Agencies (in particular DPIE (State and Regional Water Strategies and Urban Water Sections), NSW Health and the Environment Protection Authority) would also be members of this Committee.

It is imperative that ongoing collaboration continues between Councils and those State agencies with responsibility in the water space. Ideally, this would be enabled by developing and implementing governance arrangements that offer all levels of government confidence when making investment and other decisions.

Identifying and assessing the options

The RWS outlines that the decision-making process has four broad stages:

1. Filter the options
2. Understand risks and challenges and shortlist options
3. Create portfolios of options
4. Recommend a final portfolio of options

The objectives, challenges, opportunities and options identified in the draft RWS will be tested, evaluated and refined based on these inputs.

The final strategy for each region will include:

- a final portfolio of actions approved by the NSW Government

- a plan for implementing the strategy within clear timeframes that includes existing commitments
- clearly defined roles, responsibilities and governance arrangements for delivering each action or combination of actions
- well-defined opportunities for local and regional partnerships to deliver actions
- a schedule and plan for monitoring and reviewing each strategy. Critically, the monitoring and review program will identify if any key underlying assumptions in the strategy are no longer valid, and when a revision is required. This process will require regular reevaluation of the strategy outcomes against any updates in the available climate data.

Orange City Council is keen to work with DPIE to test the methodology and Options Assessment with the RWS (in particular as it applies to the Macquarie River unregulated catchment) using the lived experiences from the most recent drought. This would provide a level of confidence for all levels of Government and the Minister in the application of this methodology across the state.

Water resource management – Integrating IWCM, Regional Town Water Strategies and Regional Water Strategies

The below feedback addresses the following issues:

- Town Water Security
- Integrated Water Cycle Management (IWCM)
- Climate Change Modelling/Hydrological Modelling/Secure Yield Modelling
- Other Water Supply issues
- Regional Town Water Strategies

Clearly the water security situation in regional NSW is dire, with the worst drought in northern NSW in 120 years of rainfall data and many town water supplies having been at risk of failure.

The Urban Water Section of DPIE requires LWU's to use Guidelines developed in December 2013 which are still in "draft" ("Assuring future urban water security, assessment and adaptation guidelines for NSW local water utilities"):

- The guidelines require the consideration of 15 global climate models and are expensive to meet. There is only one consultant in NSW who can be used to deliver secure yield projections. The CSIRO and BOM are well equipped to assist with alternative approaches including the potential use of paleo records to inform secure yield analysis
- Secure yield analysis as a requirement for 92 LWU's doesn't make sense when state government agencies operate and regulate the states major dams and rivers. Either the natural resource manager (DPIE) or the operator (WaterNSW) should conduct and provide secure yield analyses rather than requiring 92 LWU's to prepare them
- Use of leading edge science such as paleo records to properly evaluate climate variability and inform planning for secure water supplies. There has been work done by CSIRO, SEQ Water, as well as Newcastle University amongst others.

These secure yield requirements are expensive to meet and are so prescriptive that only one particular consultant in NSW can prepare a secure yield study. LWU's are forced to spend significant amounts on IWCM plans to avoid the government refusing subsidy applications.

Regional water strategies will be underpinned by new climate data and modelling that improves our understanding of past climate conditions and plausible climate futures, and provides a more accurate picture of the frequency, duration and magnitude of extreme climate events such as extended droughts (RWS Guide Figure 12 page 28)

This improved climate data will be used in river system models to gain a better understanding of the water security and reliability risks faced by water users and the environment within each region, and to investigate the potential benefits and impacts of options identified through the regional water strategy process.

The inter-relationship between the RWS and an individual utilities' IWCM means that there should be consistency of modelling approaches used.

While there does not appear to be any reference to shared modelling for councils IWCM's in the Guide – it is referenced in the Long List of Options in both the Macquarie-Castlereagh RWS (Option 39). Advocacy is suggested to recast this from "Training and information sharing programs on new modelling" to a more collaborative approach.

There is a case to consider developing IWCM strategies on a regional basis instead of generating 92 IWCM's, one for each LWU.

Regional approaches to water planning will improve engagement with state agencies on regional planning issues – infrastructure solutions, catchment management strategies and regional program funding.

The RWS should recognise and enhance the economies of scope that regional towns in NSW have in being responsible for the whole urban water cycle including water supply, sewerage and stormwater quality/quantity, integrated with community engagement and strategic land use planning.

All options should be on the table for alternative supplies such as recycled water and stormwater harvesting with policy bans on options to be avoided. The best value solutions should be prioritised on a triple bottom line basis, after robust community engagement.

Other Water Supply Issues

- We need to plan for a variable climate. There is an urgent need to develop robust contingency/emergency response plans for town water supply failure, particularly for towns larger than the practical limit for transporting water by truck. LWU's need to improve resilience against service failure. The potential to develop climate independent water supplies needs to be explicitly considered in future planning.
- Whilst NSW Health have issued robust guidelines for Drinking Water Management Systems in NSW, there is no parallel NSW guidance for management of recycled water which would inform approvals for recycled water projects, or stormwater harvesting as alternative water sources. Further work is required in this space from a Policy and Regulatory perspective for future town water supply infrastructure projects so that "all options" can genuinely be considered by LWU's (e.g. Purified Water for Drinking, Recycling, Stormwater Harvesting and Managed Aquifer Recharge)

Regional Town Water Strategies

The NSW Government is supporting the development of Regional Town Water Strategies in association with RWS. They are intended to assess and plan for regional solutions to town water

supply and treatment across multiple local water utility boundaries and inform strategic urban water service planning in individual LWU IWCM's. DPIE Water needs to collaborate with the regions on the development of Regional Town Water Strategies, including potential funding opportunities.

As mentioned earlier, there is a real opportunity to align modelling with RWS and individual LWUs IWCMs where there is substantial resourcing requirements. This supports the concept of regional IWCM and Regional Town Water Strategies using RWS modelling.

Water Sharing Plans

Water sharing plans generally need greater recognition of town water supply needs. There is not enough attention given to town water supplies in the management and operational decisions of WaterNSW. In order to improve LWU water supply resilience, a partnership approach would involve transferring water to off-stream LWU storages and/or recharging local aquifers when drought commences to avoid conveyance losses and water quality problems.

Regional cities, like Orange are particularly exposed on unregulated rivers, with little or no advice or intelligence shared with LWU's during the drought.

Macquarie-Castlereagh Regional Water Strategy

Draft Long List of options

As mentioned earlier, town water supply issues for Councils on the unregulated Macquarie River don't appear to be adequately addressed particularly given the population and significance of Orange to the region

Council-owned water supply dams don't appear to be incorporated into the RWS (and need to be)

Maintaining and diversifying water supplies

Option 3: Managed Aquifer Recharge Investigations and Policy

Orange City Council has undertaken a substantial body of work in this space, with MAR being included in the current IWCM. The shortlisted option in the IWCM was to undertake a pilot MAR for Orange. Given this work, Council would like to see this infrastructure option included in the RWS.

Option 4: Improving town water security in the Upper Macquarie unregulated river system

Orange City Council agrees that such a Feasibility study to identify options to improve water security for towns that rely on water from the upper unregulated Macquarie is a necessity

Under the Safe and Secure Water Program (SSWP), DPIE Water's Risk Prioritisation Advice for Orange is summarized below:

Water Security (risk Score 4)

"The water security deficiency index is equal to or greater than 6% and less than 11%, indicating that the consumptive need is significantly greater than the headwork capacity on a secure yield basis. These systems are expected to have more frequent and severe levels of restrictions during dry periods than the planned moderate restriction levels and with significant risk of water access failure in dry periods. This impacts a population of greater than 1,000.

The secure yield of the system is significantly less than the future unrestricted annual consumptive needs circa 2040 system"

[redacted]

In Section 2.3.2 People and towns of the RWS, Table 4 (page 86) states that Orange's Water Security risk is high – while Bathurst, Cabonne and Oberon are very high. Council strongly disagrees with this assessment given the vulnerability of Council's water supplies and having experienced the recent drought first hand (with the implementation of Level 5 Water Restrictions and the real possibility of needing to implement Level 6)

Twenty (20) Year Infrastructure Options Study Rural Valleys (WaterNSW) June 2018

Referring to Section 3.5 Macquarie- Cudgegong (pages 28-30) of the above Options Study:

“Potential long-term infrastructure options considered for further investigation to improve water supply security and reliability include:

- Change Burrendong Dam Full Supply Level by improving Flood Mitigation Zone management (preferred option)
- Burrendong Dam raising by about 6m ($450m)
- New 308 GL dam on the Bell River ($155m); and
- New 700 GL Ulmarrah Dam on the Macquarie River ($267m)”

OCC would like to the opportunity to review the detailed Water NSW analysis undertaken which outlines reasons for not progressing the following three options in the RWS:

- Burrendong Dam raising by about 6m
- New 308 GL dam on the Bell River; and
- New 700 GL Ulmarrah Dam on the Macquarie River

Option 5: Drought Protocols

Orange needs to be included in Option 5 – Drought Protocols for town water supply

Emergency Drought Options from the Macquarie Valley Drought Strategy (Water NSW)

- Groundwater (ORA-EMD-03)

- Macquarie River to Orange Pipeline (ORA-LTS-06) – Orange City Council received temporary authorisation to modify the Conditions of Approval for this Project under the Water Supply (Critical Needs) Act, 2019 (Attachment 2). This temporary approval (granted in January 2020) entitled Council to pump from the Macquarie River at a reduced river flowrate of 38 ML/day (from the permanent approved 108 ML/day). This temporary approval expired when the combined storage of Suma Park and Spring Creek Dams reached 50%. We reached 50% in August 2020. I believe the provisions of the Water Supply (Critical Needs) Act will expire 2 years after it was gazetted in 2019 (i.e. around November 2021). Therefore, Council will not be able to use the provisions of this Act going forward.

  Rather than a one-off, Council wishes for this temporary authorisation be considered as a future, permanent drought protocol.

  Council will also be making an application to DPIE (Planning) to modify the Conditions of Approval for this Project permanently so that the pump trigger commences at a reduced river flowrate of 38 ML/day (from the permanent approved 108 ML/day) (ORA-LTS-06)

During the recent drought, the Natural Resource Access Regulator’s environmental flow requirements from Suma Park Dam were modified according to the letter from NRAR [redacted]

Rather than a one-off, Council wishes for this licence requirement to be considered as a future, permanent drought protocol.

Option 6: Inter-regional connections project investigation

You would be aware of the recent draft report "Long Term Options from the Macquarie Valley Drought Strategy" being undertaken by Water NSW. Orange City Council substantially contributed to this report.

The report recommends the following pipeline connections from the CTW network to the town water supply

- 300mm diameter two-way pipeline between Molong Creek Dam and Molong (15 ML/day). Size of existing pipeline between Orange and Molong Creek Dam 200mm diameter, so not sure if we will be able to get 15 ML/day?
- 300mm diameter pipeline between Manildra and Molong (10 ML/day)
- Upgrade existing pipeline between Cowra and Woodstock to 300mm diameter (15 ML/day into CTW network) Key risks – also need to include Cowra in negotiations

The above pipeline connections were shortlisted as priority long-term options in the Macquarie Valley Drought Strategy (Water NSW) for the Upper Macquarie Valley.

It is imperative that associated Water User Agreements and Governance models between LWU's need to be addressed in the RWS when regional pipeline connection projects are being considered.

Option 7: Reuse, recycle and stormwater projects

Little attention or support is considered for innovation and opportunities in technology due to regulation of water planning being very process driven. A regulatory review for innovative Urban Water infrastructure projects needs to be undertaken (e.g. purified recycled water, stormwater harvesting and Managed Aquifer Recharge Schemes)

The IWCM and Section 60 Approvals required for such projects problematic and the process needs a complete review so that innovative, fit-for purpose infrastructure projects can genuinely be considered by LWU's in the future.

Option 13: Reliable access to groundwater by towns

We strongly support Option 13 as a supplementary source of water for industry and town water. It should be expanded to consider regulation/demand management of stock and domestic licenses within a Water Utility service area. Something that is outside the control of the Water Utility but is managed by NRAR with little to no controls. There is a parity issue where the water utility has restricted garden water use under high level water restrictions, the water table is dropping yet unregulated bore users within the CBD can draw as much water as they are able and utilise on maintain lawns and gardens in the peak of the midday sun.

There should also be consideration of amending regulatory rules for Town Water Supplies to temporarily transfer High Security Water Allocations to its diversified water sources (Example: Orange has a High Security Allocation from Summer Hill Creek but in times of low or no flow should be able to transfer temporarily the water allocation to other sources such as Bores, Stormwater Harvesting or Macquarie River offtake. Then in Business As Usual (BAU) times transfer the High Security Water Allocation back to the Summer Hill Creek. This would allow Orange to secure water

without having to buy up production licenses and not lose the High Security Water Allocation for BAU in the top of its catchment.

Supporting water use efficiency and conservation

Option 33: Enterprise water use efficiency programs

The RWS (and the upcoming State Water Strategy) both need to consider the development of standard statewide water restriction protocols. Two comments:

- The powers and duties of a Local Water Utility to enforce or prosecute water theft or water restrictions needs improvement.
- Communications and engagement on water restrictions for 92 local water utilities is problematic. While different LWU's may need different water consumption goals based on their local climatic and community circumstances, the framework and language should be harmonised for the easier understanding of community and media.

Non-asset solutions such as smart metering, water loss programs, community water efficiency programs will defer augmentation of large, expensive long-term assets

Robust leakage detection and better management of urban water systems is essential to reduce cost and increase sustainability before engaging our customers on their water usage.

Such strategies need to be included in the RWS

Also, if you could incorporate Option 24: Water efficiency projects (towns and industries) from the Lachlan RWS into this option

Option 35: Investigation of licence conversions

Expand to include a revision of regulatory rules for Town Water Supplies to temporarily transfer High Security Water Allocations to its diversified water sources (Example: Orange has a High Security Allocation from Summer Hill Creek but in times of low or no flow should be able to transfer temporarily the water allocation to other sources such as Bores, Stormwater Harvesting or Macquarie River offtake. Then in Business As Usual (BAU) times transfer the High Security Water Allocation back to the Summer Hill Creek. This would allow Orange to secure Water without having to buy up production licenses and not lose the High Security Water Allocation for BAU in the top of its catchment.

Option 36: New Drought operational rules (Macquarie River)

The RWS needs to differentiate between Upper (unregulated) and Lower (regulated) Macquarie catchments

See also comments in Option 5 (above)

Option 37: Review of regulated river water accounting and allocation process

Again, the RWS needs to differentiate between Upper (unregulated) and Lower (regulated) Macquarie catchments.

Option 38: Improved data collection and storage

Again, the RWS needs to differentiate between Upper (unregulated) and Lower (regulated) Macquarie catchments.

Option 39: Training and information sharing programs:

- New climate data/modelling
- Managing groundwater resources sustainably

Comments earlier in the submission.

The region has made some great inroads in the integration of town water into the strategic framework and very pleased to see acknowledgment of the need for shared data and modelling and the implication of this for Councils' IWCM plans. Council suggests a collaborative discussion on the modelling aspects of the RWS.

The RWS needs to include surface water and associated secure yield modelling for the Upper (unregulated) Macquarie catchment (i.e. the latest hydrological modelling used by RWS)

Draft Macquarie- Castlereagh Regional Water Strategy

Snapshot

Page 33

Drought risks emerging for water users in the upper catchment (above Burrendong Dam) where record low inflows have highlighted the vulnerability of Orange. See earlier comments.

Page 34

Orange does not have adequate water security and is at significant risk of water shortages during increasingly severe droughts. See earlier comments.

Section 2.2.1 Water resources in the region

Page 59

Unregulated rivers and streams

The main unregulated river systems in the Macquarie-Castlereagh region are:

- unregulated Macquarie and Cudgegong rivers upstream of Burrendong Dam and Windamere Dam.

Water is supplied to the growing regional centres of Bathurst and Orange. Orange City Council manages the town's water supply storages (Suma Park and Spring Creek Dams)

Both of these dams need to be recognised in the RWS (Spring Creek Dam is not identified on the map on page 49)

Page 60

Growth in town water use in the upper unregulated systems may impact inflows into Burrendong Dam, with implications for reliability of supply to downstream regulated water users. Similarly, proposals to capture more tributary and unregulated flows in the upper and mid-catchment may have implications for unregulated users, end of system connectivity and flow-dependent environmental assets and values downstream.

Securing water for users of unregulated rivers will become increasingly difficult in a future with even greater climate variability.

Council is assuming Option 4 of the long-list will identify such issues.

Section 2.2.3 Managing water in the Macquarie Castlereagh region

Page 76

Setting priorities for water sharing The Water Management Act 2000 sets out how we prioritise water sharing during normal operations, with the highest priority being for the environment, followed by basic landholder rights.

During extreme events, such as prolonged droughts, the priority changes. Basic landholder rights and essential town water services (authorised by an access licence) become the highest priority, followed by the environment.

This change in priorities is triggered when a water sharing plan (or part of a plan) is suspended. The aim is to operate within the plan rules for as long as possible because the plan provides certainty for all users of these water sources. The RWS process provides an opportunity to consider whether the trigger needs to be reviewed (Table 3 page 76).

See comments Option 5 (Drought Protocols) and Option 36 (New Operational Rules (Macquarie River)). This issue needs to be addressed for the unregulated Macquarie catchment.

Page 77

The Macquarie-Castlereagh region has several unregulated watercourses where streamflow gauges are not installed and water extraction is not measured. This means there is limited data on water extraction and flow patterns from these rivers and streams, making it difficult to manage equitable sharing during dry conditions. This lack of data will be addressed through the implementation of the new nonurban metering framework announced by the NSW Government as part of its 2017 Water Reform Action Plan.

Agree, this data needs to be improved

Section 2.3.3 Jobs and Industry

In general, there needs to be greater acknowledgment of the value of town water in the RWS.

Page 92 – 93

Mining, Resources and Energy and Mining Water Use

The RWS needs to include Cadia Valley Operations (CVO) gold mine. Orange City Council currently supplies CVO with up to 3,650 ML/year of treated effluent from the Orange Sewage Treatment Plant (STP)

Lachlan Regional Water Strategy

Draft Long List of Options

Generally, the long-list in the Lachlan RWS is positive in particular, OCC supports:

- Government Commitment 1- Water transfer pipeline between Laker Rowlands and Carcoar Dam
- Government Commitment 2- Wyangala Dam raising project
- Government Commitment 3- Lake Rowlands augmentation