Nature Conservation Council
The voice for nature in NSW

[redacted]

Department of Planning Industry and Environment
Locked bag 5022
Parramatta NSW 2124

Via email: [redacted]

Dear [redacted]

Draft Lachlan, Macquarie-Castlereagh and Gwydir Regional Water Strategies

The Nature Conservation Council of New South Wales (NCC) is the state's peak environment organisation. We represent over 160 environment groups across NSW. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

NCC, together with the NCC Water Working Group, welcomes the opportunity to participate in developing the Regional Water Strategies (the Strategies) for the Lachlan, Macquarie-Castlereagh and Gwydir catchments. Comments on the three strategies are combined in this submission.

Water is a scarce resource in Australia. Climate modelling indicates that water resources will diminish further in the future. Management of our water resources is therefore a critical responsibility of the NSW and federal governments.

This submission will concentrate on the following issues:

- Specific concerns about river health and objections to proposed infrastructure
- Options to improve environmental health
- Proposed instream infrastructure
- Options to reduce water demand
- Options to support First Nations' cultural interests
- Proposed options that will cause environmental harm
- Missing options

NCC and our Water Working Group welcome further discussion on these draft Strategies. Your key contact point for correspondence is [redacted]

[redacted]

Nature Conservation Council
The voice for nature in NSW

1. Introduction

1.1 Environmental health as a priority: Regional Water Strategies must all reflect the objectives of the *NSW Water Management Act* 2000. The Act prioritises environmental health of water sources and the principles of ecologically sustainable development. Repairing the ecological health of NSW rivers should therefore be of first-order importance. Five factors hamper the ability of Regional Water Strategies to achieve the goals of the Act:

1. The absence of a framework that should be provided by a State Water Strategy.
2. The failure to address declining reliability of water supply to existing water licences. The over-allocation of water in the context of declining inflows must be addressed so long-term water security can be better managed.
3. Inclusion of several infrastructure project options in the Lachlan and Macquarie-Castlereagh Regions that are existing NSW Government commitments.
4. The potential for the proposed Strategies to increase water dependency rather than encourage sustainable water use.
5. The risk of damaging the integrity of aquifer systems by allowing extraction of groundwater to reach 120 per cent of Sustainable Diversion Limits during dry times.

1.2 A strategic response to climate change predictions: The work undertaken by the Water Division of the Department of Planning, Industry and Environment (DPIE-Water) to improve predictive modelling for water availability in regional NSW is important for a strategic response to the impacts of a warming climate. Access to the Chief Scientist's independent review of the modelling would further support informed planning.

All regions addressed in these Strategies have over-allocated water under current climate conditions. Projections indicate that over-allocation will exacerbate already difficult circumstances. These Strategies should work to actively reduce water dependency and use.

1.3 Basic information: The Strategies all require some basic information about the resilience of water resources as a foundation for decision making. If plans flag any increased water use or dependence on groundwater for town water supply and industry during drought, they must also address the relationship between surface water and groundwater sources. The overlap between High Ecological Value Aquatic Ecosystems (HEVAE) and Groundwater Dependent Ecosystems (GDEs) is an essential consideration.

1.4 Specific concerns about river health: The NCC Water Working Group also identifies the following issues specific to each Strategy:

1.4.1 Lachlan catchment

The draft Lachlan Regional Water Strategy states that 'existing infrastructure and regulation affects the ability to meet environmental outcomes and cause the overall ecological health of the Lachlan River to be poor' (p 58). This statement provides a clear warning that a primary focus of the Strategy must be on restoring the ecological health of the Lachlan River.

- The Lachlan has many areas of HEVAE that also overlap with GDEs. Groundwater maps indicate a very concerning permanent drawdown of water levels in the major productive aquifer systems (up to 24m in the Upper Lachlan Alluvium).
- The draft Strategy states that 'governments and communities will need to continue to manage localised groundwater drawdown, particularly downstream of Hillston and in two areas above Lake Cargelligo where levels are declining' (p 55). Strategic actions available to communities to remedy such declining levels of the aquifer should be identified in the Strategy.
- The Lachlan catchment overlays a small portion of the Murrumbidgee shallow and deep aquifer systems. The Strategy must take account of connectivity to this important water source, possibly by cross-strategy consideration.
- It is feared that additional infrastructure, regulation and increased use of water sources will cause irreversible harm to the health of the Lachlan river system and associated groundwater sources.

1.4.2 Macquarie-Castlereagh catchment

The ecological condition and extent of the Ramsar-listed Macquarie Marshes is declining. This is not addressed in the draft Strategy. The degradation of the ecological integrity and functioning of the marshes is due to river regulation, past water management practices and an ongoing failure to regulate floodplain harvesting in its catchment.

- The draft Macquarie-Castlereagh Strategy identifies that the fish population in the region is in poor health (p 69) and that there are numerous constraints affecting achievement of environmental watering objectives (p 70).
- The Macquarie-Castlereagh has areas of HEVAE that also overlap in many places as GDEs. The groundwater maps indicate a permanent drawdown of water levels in parts of the major productive aquifer systems, greater than 1.5m in the Upper Macquarie Alluvium and greater than 3m in the Lower Macquarie deep alluvium.
- An important consideration for the Macquarie-Castlereagh is maintaining its connectivity with the Barwon-Darling water source. 'On average, 21% of the flows in the Barwon-Darling come from the Macquarie-Castlereagh catchment over the long term' (p 58).
- Additional infrastructure, regulation and increased use of Macquarie-Castlereagh water sources is highly likely to compound these problems and cause ongoing irreparable harm to

the health of the Macquarie-Castlereagh river system and associated groundwater sources while reducing connectivity to the Barwon-Darling.

1.4.3 Gwydir catchment

The draft Gwydir Regional Water Strategy identifies that there has been a 'deterioration of river health and native fish populations in the Gwydir valley' (p 55). The Strategy fails to address this important management obligation.

- The Gwydir has areas of HEVAE that overlap in many places as GDEs. Groundwater maps indicate a permanent drawdown of water levels in the major productive aquifer systems.
- The draft Strategy identifies that 'the extensive use of groundwater has led to a decline in levels in some areas (up to 15 km wide) of the Lower Gwydir source—particularly between Moree and Ashley' (p 52).
- Connectivity with the Barwon-Darling water source is an important consideration for the Gwydir, as it is for the Macquarie-Castlereagh catchment.
- Additional infrastructure, regulation and increased use of Gwydir water sources is highly likely to compound these problems and cause ongoing irreparable harm to the health of the Gwydir catchment and river system and associated groundwater sources while reducing connectivity to the Barwon-Darling.

1.5 Proposed instream infrastructure

1.5.1 Lachlan Region - Raising Wyangala Dam

NCC opposes the raising of the Wyangala Dam wall. The proposal will damage Lachlan River health, and the health of important wetlands which provide migratory bird habitat. The proposal would reduce recharge opportunities for groundwater sources.

- This project has not been compared with other available options to improve water security while maintaining or improving the condition of HEVAE and GDEs, native fish habitat and resilience of groundwater sources.
- Climate change predictions for the Lachlan catchment indicate that this project may become a stranded asset with reduced rainfall runoff.
- A better route to water security can be found in effective management of available water determinations through allocation of stored water and using the latest drought-of-record inflows for predictive modelling will provide a better route to water security.

1.5.2 Lachlan Region - Lake Rowlands Augmentation

NCC opposes the augmentation of Lake Rowlands or the construction of a new dam downstream. There are other, better options for securing town water supply in the Central Tablelands, which should be explored in the options paper.

- The climate change predictions for the Lachlan catchment indicate that this project may become a stranded asset due to the loss of rainfall runoff.

1.5.3 Macquarie-Castlereagh Region - Macquarie River reregulating weir

NCC opposes the proposal to construct a new re-regulating structure downstream of the existing weir at Gin Gin on the Macquarie River.

- The proposed infrastructure would capture planned environmental water from tributary inflows that currently support the ecosystems of the Macquarie Marshes and connect with the Barwon-Darling.
- Repair of the existing weir to its current height should occur along with urgent construction of the mandatory fishway approved in 2011 to offset the augmentation of Burrendong Dam. There is no information provided on the reason for the failure to comply with this condition. This option should have been included.

1.5.3 Gwydir Region - Enlargement of Tareelaroi reregulating weir

NCC opposes the proposal to enlarge the Tareelaroi reregulating weir in the mid-Gwydir. The proposed infrastructure would capture planned environmental water from tributary inflows that should report to the Gwydir Wetlands and connect with the Barwon-Darling.

1.5.4 Lower Gravesend Dam

NCC opposes the proposed new dam midway on the Gwydir River at Gravesend.

- The dam would capture natural tributary inflows from Warialdra Creek, Horton River, Myall Creek and Halls Creek. These provide extensive environmental benefits to the Lower Gwydir and wetlands system.
- This option will not meet commitments under the NSW Water Management Act 2000 or the Murray-Darling Basin Plan.
- Options for solving evaporation from on-farm storages are not thoroughly explored.

2. Options to improve environmental health

NCC supports actions in the Strategies that will improve the river system health. Improving aquatic and fish habitat, providing better migration pathways, and removing threats to native fish populations are appropriate and deserve focussed and funded implementation. Further options include:

- Urgent construction of the 11 or more fishways that are outstanding commitments of WaterNSW as offset provisions. Additional fishways will improve native fish migration passage to and from breeding and feeding grounds.

- Improving connectivity between rivers and floodplains as a key function for river system health. High priority must be given to:
    - removal of structures from floodplains that hinder flood flows
    - downstream connectivity
    - groundwater recharge
    - the transfer of nutrients and fish breeding opportunities

- Improving the condition of the main productive aquifers in these catchments, which are showing stress and degradation.
- Improving our knowledge of groundwater sources. This should be a funded, primary requirement in these Strategies that precedes further reliance and groundwater for water security.

NCC supports the following specific options to improve environmental health:

2.1 Lachlan Region

- Option 11: fixing cold water pollution from Wyangala Dam
- Option 14: more fishways
- Option 15: active management to protect environmental water
- Option 16: restore water quality
- Option 17: managing structures on floodplains
- Option 18: screening of pumps to protect fish from being sucked out of the river
- Option 21, 22, 23: research into groundwater health and sustainable access

2.2 Macquarie-Castlereagh Region

- Option 12: Increasing outlet valve capacity in Burrendong Dam
- Option 14. Address channel constraints to delivering environmental flows to the Macquarie Marshes
- Option 15: more fishways
- Option 16, 17: more variable flows to effluent creeks
- Option 18: address constraints in the Southern Marsh
- Option 19: channel sharing
- Option 20: native fish strategy
- Option 21: screening pumps to protect fish from being sucked out of the river
- Option 22: cold water pollution
- Option 23: managing structures on floodplains
- Option 24: constraints on the Cudgegong River

- Option 25, 26 & 27: research into groundwater health and sustainable access
- Option 28: restore water quality
- Option 31: connectivity with downstream systems

2.2.1 Gwydir Region

- Option 9: removal of constraints to delivery of environmental water. This is a project identified under the Basin Plan Constraints Measures and the Northern Basin toolkit measures. This project should be identified as a commitment in the Regional Strategy.
- Option 10: improved fish passage structures
- Option 11: existing commitment – directing supplementary environmental flows
- Option 12: fixing cold water pollution
- Option 13: screening of pumps to protect fish from being sucked out of the river
- Option 14, 15, 16: research into groundwater health and sustainable access
- Option 17: active management to protect environmental water (an existing commitment)
- Option 18: managing structures on floodplains
- Option 20: restore water quality
- Option 24: connectivity with downstream systems

3. Options to reduce water demand

High priority must be given to options that reduce water demand. Climate change predictions indicate lower rainfall and less water in the system. Demand reduction will be critical. These Strategies have failed to recognise that current levels of water allocation are not sustainable.

NCC supports the following options to improve water use efficiency:

3.1 Lachlan region

- Option 9: reuse, recycling and stormwater harvesting
- Option 24: water efficiency opportunities
- Option 34: review drought of record and allocation process in water sharing plan
- Option 40: assess the impacts of land-use change and advise the relevant government agencies of these impacts on water resources

3.2 Macquarie-Castlereagh region

- Option 7: reuse, recycle and storm water projects
- Option 33: enterprise water-use efficiency

- Option 34: market measures to support Dubbo's town water supply
- Option 37: review of accounting & allocation
- Option 41: assess the impacts of land use changes and advise the relevant government agencies of these impacts on water resources

3.3 Gwydir region

- Option 3: reuse, recycle and stormwater harvesting
- Option 22: water efficiency opportunities including managing high evaporation rates from on-farm storage
- Option 28: review drought of record and allocation process in water sharing plan
- Option 32: assess the impacts of land-use changes and advise the relevant government agencies of these impacts on water resources

4. Options to support First Nations' cultural interests

NCC supports the Strategy options that recognise cultural knowledge, water rights and interests. Establishing an Aboriginal River Ranger program and securing flows for cultural sites are important first steps.

5. Options that will cause environmental harm

NCC opposes the following options:

5.1 Lachlan region

- Option 27: changes to Lake Cargellico
- Option 31: removing a natural lake above Lake Cargellico
- Option 33: drought operation rules that result in cutting the river off, an unsustainable option likely to have long-term adverse impacts
- Option 39: more weirs in Lower Lachlan

5.2 Macquarie-Castlereagh region

- Govt commitment 2: access to dead storage from Burrendong Dam. This option was not progressed in the Gwydir region because of environmental harm
- Option 36: new drought operational rules. Cutting the river off is not an ecologically sustainable option and is likely to have long-term adverse impacts

5.3 Gwydir Region

- Option 26: addressing transmission losses (these are planned environmental water under the NSW *Water Management Act* 2000)

- Option 27: new drought operational rules. Cutting the river off is not an ecologically sustainable good option and is likely to have long-term adverse impacts

6. Missing options

The Strategies fail to identify important options that will improve environmental health and water use efficiency.

6.1 Removal of weirs

Identifying and removing weirs that do not provide essential services, are in poor repair, or cannot support functional fishways will benefit the environment.

6.2 Floor in major storages

A base water level in storages provides long-term water security for critical human and industry needs. Protocols used for managing Windamere Dam are a good example of providing a buffer for climate change impacts.

6.3 Floodplain harvesting

Floodplain harvesting makes up 13 per cent of water use in the Macquarie-Castlereagh region and 30 per cent of water use in the Gwydir region.[i]

Floodplain harvesting regulation in the NSW Northern Basin is failing to assess the cumulative impact of this extraction on downstream river health, groundwater recharge and water security of downstream communities. Improving the regulation of floodplain harvesting is a critical and urgent piece of work.

[i] https://www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies/public-exhibition/macquarie-castlereagh and https://www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies/public-exhibition/gwydir