



I N L A N D  
R I V E R S  
N E T W O R K

---

PO Box 528, PYRMONT NSW 2009  
ph 0428 817 282  
email [inlandriversnetwork@gmail.com](mailto:inlandriversnetwork@gmail.com)  
web [inlandriversnetwork.org](http://inlandriversnetwork.org)  
ABN 34 373 750 383

Department of Planning, Industry and Environment – Water  
Locked Bag 5022,  
Parramatta NSW 2124  
[regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au)

Friday 14 May 2021

## **Submission**

### **Draft Namoi Regional Water Strategy**

#### **Introduction**

The Inland Rivers Network (“IRN”) is a coalition of environment groups and individuals that has been advocating for healthy rivers, wetlands and groundwater in the Murray-Darling Basin since 1991.

IRN welcomes the opportunity to engage in the process of developing a Regional Water Strategy for the Namoi catchment.

The management of NSW water resources is the most important responsibility of the NSW and Federal Governments. Water is a scarce resource in Australia, more than any other inhabited continent on earth.

We consider that the most appropriate approach to improving water management in NSW is to develop a State Water Strategy first, to provide the principles and guidelines for Regional Water Strategies. We note that a draft State Water Strategy has been developed for public comment and was on exhibition at the same time as this draft regional strategy. IRN submitted detailed comments on the NSW Government over-arching approach.

IRN is concerned that the process at both the state and regional level fails to acknowledge that water resources are already under significant stress through over use. This is particularly evident in the Namoi with a high dependence on groundwater extraction.

IRN strongly objects to the Dungowan Dam and Pipeline project being identified as a prior commitment in the list of options on exhibition for the Namoi Region. This creates a bias in the decision-making process and influences the investment outcomes. The opportunity to package a suite of sustainable options is diminished by this approach.

The objectives of the Regional Water Strategy process appear to be weighted towards fostering growth in water dependency rather than focussing on the sustainable use of limited available water resources.

The new climate modelling indicates that available water resources will diminish significantly into the future. The Chief Scientist review of the new climate modelling must be released.

The process appears to counter the objectives of the NSW *Water Management Act 2000* that prioritise environmental health of water sources.

We note that the draft Regional Water Strategy identifies that the overall ecological health of the Namoi River is poor and native fish population health is very poor.

IRN acknowledges the improved consultation with First Nations groups in this process.

### **Key Issues:**

This submission will concentrate on the following issues:

1. Proposed Dungowan Dam and Pipeline Project
2. Commitments under the Murray-Darling Basin Plan
3. Floodplain Harvesting
4. End of system flows
5. Options to improve environmental health
6. Options to reduce water demand
7. Options to support First Nations cultural interests
8. Options causing environmental harm
9. Missing options

## **Background**

### **1. Climate change predictions**

IRN commends the Water Division of the Department of Planning, Industry and Environment (DPIE-Water) for the work undertaken to improve climate change predictive modelling for water availability in regional NSW.

We would prefer that the Chief Scientist independent review of the new modelling process was available with the release of the predictions for each region.

While the draft Regional Water Strategy claims that the climate projections provided are ‘worst case dry scenario’, other sources of climate modelling prediction could indicate that these scenarios are closer to future reality.

Whatever the case, it is imprudent for the NSW Government to be fostering growth in water use and dependency under these scenarios.

A primary issue that must be addressed is that the Namoi region remains over-allocated under current climate conditions. Future climate predictions will place the system under more stress.

The acknowledged lower rainfall, more years of extended drought and higher probability of short, sharp droughts as experienced in 2018/19 indicates the need to change direction from

relying on surface water impoundment. The predictions for less reliability of current storages should cause a rethink in regard to investing a large amount of public funding into a new dam.

The current high dependency and over-use of groundwater sources in the Namoi will also be impacted by the predicted change in rainfall patterns and possible lower levels of recharge.

## **2. Current Water Source Condition**

The Status and Issues Paper released by DPIE-Water in 2017 for the development of the Namoi Water Resource Plan under the Murray-Darling Basin Plan produced useful information in regard to the status of the water source. Maps included High Ecological Value Aquatic Ecosystems (HEVAE) and changes in water levels in the major aquifers.

IRN considers that this information would have been useful as background to the draft Regional Water Strategy process. An understanding of current condition will assist in making decisions about the resilience of the water sources.

There is an obvious relationship between surface water and groundwater sources and an overlap between HEVAE and Groundwater Dependent Ecosystems (GDEs).

We note that the GDE map was included under Section 2.2.3 Water and the regional environment.<sup>1</sup> However, the HEVAE maps and groundwater level maps are not included.

The protection of the condition of high ecological values and groundwater levels must be taken into account when considering options for increasing water use and water security in the region. This is particularly important when considering increased dependence on groundwater for town water supply and industry during drought.

### **2.1 Current surface water sources condition**

The overall ecological health of the Namoi region, including the Peel River, is poor and native fish population health is very poor. There is no discussion on the condition of the important lagoons and wetland areas that provide critical native fish habitat in the Namoi. Water Sharing Plan rules do not adequately protect water levels in these wetlands or connecting flows, particularly in low to medium flood events.

### **2.2 Current condition of groundwater sources**

It is noted that the Namoi Region is one the most groundwater dependent regions in the Murray Darling Basin. There are very concerning declines in groundwater levels in some parts of the region identified from 2006 to 2016:

- up to 2 m across the Upper Namoi and eastern part of the Lower Namoi groundwater source
- up to 6 m in the Kelvin area (Upper Namoi Zone 12) and south of Breeza (Upper Namoi Zone 8)
- around 8 m in the area north of Wee Waa in the Lower Namoi

This decline was further exacerbated in the 2018/19 drought when groundwater levels in some parts of the Lower Namoi were the lowest on record.

Upper Namoi Zones 3 and 5 have breached the Water Sharing Plan Limit through over-extraction of licenced entitlements. Management of groundwater extraction needs to be

---

<sup>1</sup> DPIE-Water, March 2021. Draft Namoi Regional Water Strategy Fig 23 p 83

greatly improved. It is irresponsible to be considering greater reliance on groundwater for future water security and growth in water use.

It is also noted that in the north and north-eastern part of the Upper Namoi Zone 3 Mooki Valley (Breeza to Gunnedah), the long-term trend of increasing salinity has resulted in a reduction in beneficial use. This is caused when pumping changes direction of flow, causing saline groundwater to contaminate fresh aquifers.

IRN strongly opposed the proposal to allow extraction of groundwater to reach 120% of Sustainable Diversion Limits during dry times during the development of Water Resource Plans. This would further impact on the integrity of aquifer systems over time and cause greater loss of freshwater through saline incursions. We are following the accreditation process for Namoi Water Resource Plans very closely.

Groundwater sources are not well managed in the Namoi Region. Any consideration of increased access for industry or town water supply is likely to cause more long-term decline and permanent, irretrievable damage to aquifer integrity and water quality.

## **Key Issues**

### **1. Proposed Dungowan Dam & Pipeline Project**

IRN strongly objects to the proposal to construct a larger water storage on Dungowan Creek capturing important natural inflows to the Peel River. This will cause further decline in Namoi River health including threatened fish species and a loss of recharge opportunities for groundwater sources.

We note that the Government commitment in the draft Namoi options paper refers only to a detailed business case for this project. It is imperative that the business case takes into account all the environmental, cultural, social and economic impacts of the proposal, particularly on river health and downstream water users.

We note the long list of considerations outlined in the draft strategy includes costs-benefits, environmental impacts and commitments under various State and Federal legislation.

It is imperative that the business case is released as a public document prior to any further investment decisions. This will meet the first priority of the State Water Strategy to *'build community confidence and capacity through engagement, transparency and accountability.'*

This project must be considered in the context of other better options to improve water security while maintaining or improving the condition of HEVAE and GDEs, native fish habitat and resilience of groundwater sources.

The climate change predictions for the Namoi catchment indicate that this project may become a stranded asset due to the loss of rainfall runoff and more severe drought.

Better management of available water determinations through use of the latest drought of record inflows in predictive modelling will provide better water security for critical human needs.

### **2. Commitments under the Murray-Darling Basin Plan**

The draft strategy states that NSW is implementing the Murray-Darling Basin Plan along with other states. The aim is to rebalance water sharing between the environment and other water users.

IRN has found the NSW Government approach to delivering the Basin Plan to be non-cooperative with major delays in delivering Water Resource Plans and other elements of the agreement.

Current water management in the Namoi region and the proposal to construct the new Dungowan Dam fail to meet the objects of the Basin Plan and the *Water Act 2007* (Cwth).

The commitment to return water to the environment in the Namoi is still to be met. The Murray-Darling Basin Authority's Northern Basin Review recommended the local recovery target in the Namoi as 20 GL. There is currently a shortfall of 5.1 GL in required water. This water recovery for environmental benefit is urgently needed in the Namoi to improve river health and the status of native fish populations.

### **3. Floodplain Harvesting**

It is estimated that more than 25% of surface water use in the Upper and Lower Namoi comes from floodplain harvesting.

The current process for assessing and modelling water extraction from floodplains to arrive at new licence entitlements is not rigorous or transparent. The proposed rules to manage this form of take will not improve connectivity and will allow continued, unsustainable use of critical small to medium flood flows in the catchment.

The importance of the Namoi in providing a quarter of inflows to the Barwon-Darling is highly significant. It is critical that management rules protect downstream connectivity flows.

It is also critical that connectivity flows to lagoons and wetland areas in the Namoi are improved to support native fish breeding to help rebuild threatened species populations.

Groundwater recharge is an important function of flood flows. This is critical in the Namoi with current high dependence on groundwater use.

We note that eleven floodplain hotspots were identified in the Upper Namoi and 28 in the Lower Namoi Valley. The option to remove unauthorised floodwork structures that are causing adverse impacts, with the aim of protecting vital ecological assets and improving water security must be given a high priority in the final Namoi Regional Water Strategy.

### **4. End of System Flow Targets**

The current end of system flow targets in the Upper and Lower Namoi Regulated Water Sharing Plan must be reviewed to ensure that critical flows to the Barwon-Darling are protected.

Unlike the Macquarie and Gwydir Rivers, the Namoi discharges directly into the Barwon River without the slowing influence of major wetlands. Together with the Border Rivers, the Namoi can recharge the Barwon-Darling relatively quickly after major rainfall.

It is critical that end of system targets are met before access to floodplain harvesting is announced once regulation is in place.

As noted in the draft Strategy, the Namoi is a significant contributor of 24% of Barwon-Darling flows. These flows must occur at critical times and not just during large uncontrolled flood events.

All Regional Water Strategies in the Murray Darling Basin system should include end of system flow targets. This is critical for connectivity of tributaries with the Barwon-Darling River, in turn with the Murray River, and significantly, connectivity between tributaries of the Barwon-Darling.

## **5. Options to improve environmental health**

IRN strongly supports the options proposed to improve the environmental health of river systems. The options to improve habitat, provide better migration opportunities and remove some of the threats to native fish populations are highly recommended.

We note that there are at least 11 fishways across NSW that are outstanding commitments of WaterNSW as offset provisions for previously approved infrastructure augmentation. These projects must be constructed as a matter of urgency, some of them being 10 years overdue.

Additional fishways will improve native fish passage to and from breeding and feeding grounds.

The removal of structures from floodplains that hinder flood flows, downstream connectivity, groundwater recharge, the transfer of nutrients and fish breeding opportunities must be given a high priority. Connectivity between rivers and floodplains is a key function for river system health.

Options to improve knowledge of groundwater sources is critical for future water management and must be adequately funded prior to any further dependence on groundwater for water security purposes. This work is long overdue and should have been a focus for investment many years ago. Current condition of the main productive aquifers in the Namoi is deteriorating and must be better managed as a high priority.

It is critical that options to improve environmental health are given a high priority in the final Namoi Regional Water Strategy to mitigate current impacts and provide resilience to withstand climate change.

IRN strongly supports the following options to improve environmental health:

- Option 22: Improved connectivity with Barwon-Darling
- Options 15, 17, 18 & 19: Implement the Native Fish Passage Strategy, address cold water pollution, encourage riparian restoration, screen pumps
- Option 20: Remove floodplain structures that cause adverse impacts
- Options 23,24,25: Improved management of water for environmental outcomes
- Options 26 – 29 & 43, 44: Research into groundwater health and sustainable access
- Option 21: Restore water quality
- Option 16: incentives to landholders to protect & restore water dependent ecology

- Option 30: More transparency on impacts of major development on water sources
- **Missing Option:** improved connectivity & management of billabongs and lagoons
- **Missing Option:** rules in Water Sharing Plans to protect connectivity flows during flood events and manage access to floodplain harvesting.
- **Missing Option:** reassessment of Namoi end of system flow target

## 6. Options to reduce water demand

IRN recommends that high priority be given to options that reduce water demand. The climate change scenarios for the next 40 years predict lower rainfall. This means less water in the system than currently available.

The draft Regional Water Strategy has failed to recognise that current levels of water allocation cannot be supplied with any reliability under existing water management rules.

Any increase in population or water dependent industries in the region must rely on less water supply. This is the key challenge in a system with degraded water sources.

The draft Strategy identifies that 80% of people surveyed in the region would use treated recycled water if provided. This option must have top priority for securing urban water supply. Investing in purified recycled water treatment works for all large populations in the Namoi region would be a much better investment of public funds than building the proposed Dungowan Dam.

We note that a number of options to improve water use efficiency have been missed in the options paper. These are outlined under Issue 8.

IRN strongly supports the following options to improve water use efficiency:

- Option 5: Advance water treatment technologies for towns
- Option 6: Reuse, recycle and storm water projects
- Option 10: Dual water systems for towns
- Option 14: Water security for small communities
- Option 31: Water efficiency projects (towns and industries)
- Option 35: Implement Great Artesian Basin Strategic Management Plan
- Option 36: New drought operational rules (Namoi and Peel rivers)
- **Missing option:** Adopt more efficient irrigation technology
- **Missing option:** Manage on farm storage evaporation

## 7. Options to support First Nations cultural interests

IRN congratulates DPIE-Water for improving consultation with First Nations people. We fully support the options included in the draft Namoi Strategy that recognise cultural knowledge, water rights and interests. These include the option of establishing an Aboriginal River Ranger program and securing flows for cultural sites:

- All options from 46 to 56

## **8. Options that will cause environmental harm**

Besides the commitment to build a larger Dungowan Dam, IRN considers that a number of other options will cause environmental harm in river systems.

IRN strongly objects to the following options that will cause environmental harm:

- Option 2: Inter- regional pipelines including from Macleay or Barnard Rivers
- Option 4: Suspension of environmental water provisions in Peel River
- Option 7: Connect Peel River to Quipolly Dam
- Option 12: Desalination of groundwater for industry
- Option 13: Joint exploration for minerals and groundwater

## **9. Missing options**

The draft Regional Water Strategies have failed to identify a number of important options that will improve environmental health and water use efficiency.

### **9.1 Improved connectivity**

Better rules in water sharing plans are needed to improve connectivity between the Namoi River and its important billabong and lagoon wetland areas. This is particularly critical for new rules to manage floodplain harvesting.

It is also important that water levels in lagoons are not reduced by extraction, particularly in times of prolonged drought.

End of system flow targets are critical rules in water sharing plans to manage access to floodplain harvesting and ensure connectivity to the Barwon-Darling is improved. The Namoi is an important source of downstream flow.

IRN strongly opposes the proposal to change access to supplementary flows in the Namoi.

### **9.2 Review of end of system flow targets**

The current end of system flow targets in the Upper and Lower Namoi Regulated Water Sharing Plan must be reassessed to ensure that critical flows to the Barwon-Darling are protected.

### **9.3 Removal of weirs**

The identification and removal of weirs that do not provide essential services, are in poor repair or cannot support functional fishways.

### **9.4 Drinking water for remote communities**

Investment in SOURCE Hydropanels<sup>2</sup> would provide stand-alone drinking water supplies for remote communities, especially those on unregulated river systems. This option could also replace the many pipeline projects proposed across the region.

---

<sup>2</sup> <https://www.source.co/>



Combined with water tanks this option would provide better water security with less disturbance while creating local jobs.

#### 9.5 On farm storage evaporation

Control of evaporation rates from on farm storages is a key action needed to improve water use efficiency and decrease demand. The application of a number of technology innovations would help to solve this problem. Modular floating covers are one technology being developed to prevent evaporation at a best cost/efficiency ratio <sup>3</sup>

Another innovative solution to control on farm storage evaporation is a floating solar farm that provides the double benefit of a renewable energy source.

#### 9.6 Flood irrigation

Moving to more efficient water delivery options, such as subsurface irrigation or drip irrigation will decrease water demand across intensive cotton production areas.

Water saving opportunities must be included in the assessment of floodplain harvesting entitlements and regulation of access to important flood flows.

For more information on this submission contact:

[inlandriversnetwork@gmail.com](mailto:inlandriversnetwork@gmail.com)

0428 817 282

---

<sup>3</sup> <https://stopevaporation.com/> , <https://www.awtti.com/>