



13th July 2022

# **SUBMISSION**

**Western Regional Water Strategy**

**and**

**Submission in relation to the:**

**North-West Flow Plan Discussion Paper, and  
the Discussion Paper on critical dry condition triggers to  
reduce risk to environmental and human water needs**

**July 2022**

**Submission to:**

Department of Planning and Environment – Water  
[regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au).

**Submission from:**

Barwon-Darling Water Inc



## **Barwon-Darling Water**

Barwon-Darling Water Inc (BDW) is the peak body representing water users on the unregulated Barwon-Darling River.

BDW is an independent, apolitical body, funded by its members.

It was set up to provide advice on the Barwon-Darling River to members and decision-makers, to assist with policy development, and to advocate on behalf of its members.

BDW membership is made up of local water user groups – including local government, irrigators, and basic right users. We represent all licence holders and water users on the Barwon-Darling – from Mungindi on the Queensland border to the Menindee Lakes.

BDW members have been involved in the water reform process, especially in relation to the unregulated Barwon-Darling River, for many years. This work has included:

- Co-operating with other stakeholders to create a set of environmental flow rules for the Barwon-Darling (through the first Barwon-Darling River Management Committee).
- Assisting in development of the Barwon-Darling Cap Management Strategy of 2007.
- Representations on the development of the Barwon-Darling Water Sharing Plan 2012.
- Representation on the Barwon-Darling Customer Advisory Group of WaterNSW.
- Working with DPIE Water on development of the Floodplain Harvesting Strategy; and
- Working as part of the Stakeholder Advisory Panel on development of the Barwon-Darling Water sharing Plan and Barwon-Darling Water Resource Plan 2020.

We have also been involved in discussions regarding water reform in the northern basin and specifically on the Barwon-Darling River since the mid 1990's.

Barwon-Darling Water is a member of NSW Irrigators Council and the National Irrigators Council and has strong connections with other valley and industry groups including the Northern Irrigators Group and Cotton Australia.

Our members welcome the opportunity to comment on the draft “Western Regional Water Strategy (WRWS).”

## **Irrigation Farming**

Early irrigation systems in Africa and the Middle East greatly improved crop production, which gave agricultural civilisations a boost in food supply and wealth, and the ability to support growing populations.

By allowing farmers to grow crops on a consistent schedule, irrigation also created more reliable food supplies. Ancient civilisations in many parts of the world practiced irrigation. In fact, civilization would not be possible without intensive irrigated agriculture.

In Australia, irrigated agriculture provides more than 90% of fruit, nuts, and grapes; over 76% of vegetables; 100% of our rice and more than 50% of our dairy and sugar (2018-19).

Irrigation farmers in Australia are recognised as world leaders in water efficiency. According to the Australian Department of Agriculture, Water, and the Environment:

*“Australian cotton growers are now recognised as the most water-use efficient in the world and three times more efficient than the global average”.*

Water management legislation in Australia prioritises all other users before agriculture (critical human needs, stock and domestic, and the environment), meaning irrigators only have water access when all other needs are satisfied. Barwon-Darling Water members support and respect this legislative hierarchy of water access.

Common crops like cotton and grains can be grown in the western region of NSW in wet years, and rested during dry periods, in harmony with Australia’s variable climate.

Irrigation farming in New South Wales is also subject to strict regulations to ensure sustainable and responsible water use. This includes all extractions being capped at a sustainable level, a hierarchy of water access priorities, and strict measurement requirements.

## **Summary of issues**

- The WRWS must recognise that irrigated agriculture is a vital part of the NSW and national economy, a backbone for many communities in western NSW, and a critical food and fibre supplier, and seek to protect water security for irrigated agriculture.
- Barwon-Darling Water has major concerns with the climate scenario modelling used in the WRWS, including the potential for alarmism and overreach when using the worst possible scenarios.
- Specifically, BDW has significant concerns about the usefulness of, and reliance on, RPC8.5 – a scenario generally agreed as ‘unlikely’ – as the foundation for consultation on appropriate climate response options in the WRWS. RCP8.5 assumes no global response to reducing emissions, 6.5 times the level of coal usage, and continuing population growth at the current rate – assumptions that are doubtful.
- BDW requests that DPE officers finalising the WRWS appropriately consider a range of climate scenarios, including explanation of their likelihood, to be practical and fit-for-purpose.
- BDW believes that the WRWS should clearly articulate how water sharing arrangements already respond to climate variability, to prevent misunderstandings, ensure informed consultation, and contribute to improved understanding of recent and past water reforms.

- BDW is concerned about the contradiction between maintaining SDLs for licensees on western rivers, and parts of the WRWS that talk about reviewing and/or changing access conditions in this region. We recommend that, in line with Basin Plan principles, the WRWS adopt a strategy of maximising productive water use under sustainable diversion limits, rather than seeking to reduce the productive pool.
- BDW also believes the WRWS should strongly recommend free trade of water within water sources to enhance the possibility of water access licence holders reaching their sustainable diversion limits.
- BDW recommends that the WRWS investigate the trend towards reduced water licence reliability and develop options to protect and restore this reliability.
- BDW recommends that DPE include discussion in the WRWS of the issues that prevent Barwon-Darling water users from reaching their SDLs, and immediately address the following issues on the Barwon-Darling to the satisfaction of water users:
  - i. Calibration of the meters on the Barwon Darling
  - ii. Calibration of the hydrologic model for the Barwon-Darling
  - iii. Redistribution of IDECs according to pump capacity at 2012, not licence volume
  - iv. A return to the interim trading rules of the 2012 BD water sharing plan.
- BDW also supports the idea that the WRWS include costing of all options, including how much of these costings are expected to be passed onto water users. Consideration should be given, especially in the WRWS, to cost-sharing approaches that consider the broader community as a primary impactor through climate change.

## **Background**

The NSW Department of Planning and Environment (DPE) is preparing 12 Regional Water Strategies to assist water management over the next 20-40 years by pursuing five objectives:

1. Deliver and manage water for local communities
2. Enable economic prosperity
3. Recognise and protect Aboriginal water rights, interests and access to water
4. Protect and enhance the environment
5. Maintain affordability

While these Regional Water Strategies (RWS) are non-statutory, they are likely to inform policy and planning instruments, potentially initiating review, and amendment to existing Water Sharing Plans (WSPs).

Barwon-Darling Water recognises the significant impacts climate change can have on water availability, and the fact that irrigators are the first water users to miss out when availability is limited.

## **The Western RWS must value and support irrigated agriculture.**

The irrigation industry is an economic mainstay for irrigation-dependent communities in western NSW, and is a vital part of the state, and national economies.

A recent report published by the Natural Resources Access Regulator (NRAR) estimated irrigated agricultural production in NSW to be worth between \$3.1 – 4.4 billion per annum. The sector also provides vital economic benefits for regional economies worth a further \$1.75 billion annually. The NRAR report found that *“using a flow-on multiplier of 1.5 suggests that ...the total direct and flow-on impact from irrigated agricultural production alone would be \$5.25 billion”*.

BDW believes that the WRWS must do and say more to recognise the importance of irrigation to the communities of western NSW.

The WRWS must also include imaginative options to ensure the long-term viability and productivity of irrigated agriculture in western NSW.

While the emphasis on town water supplies is strongly supported by BDW and is recognised as a critical issue for attention in western NSW, there appears to be no consideration in the WRWS to look at water security options for the industries upon which our western NSW communities depend.

BDW would like to see more emphasis on options to maintain water security for agriculture. The NSW government should be working to maintain and improve irrigation water security within agreed limits on water diversions (SDLs). This issue should receive attention beyond just the irrigation sector – given the significance to local irrigation-dependent communities, and to the broader economy.

**BDW recommends** that the NSW government develop a long-term vision for irrigated agriculture in western NSW and statewide. That vision should be incorporated in the WRWS and all other Regional Water Strategies.

## **Climate scenario modelling**

BDW has concerns with the climate scenario modelling used in the WRWS, including the relevant planning horizon and how this may be used.

BDW has significant concerns regarding the usefulness of, and reliance on, RPC8.5 – a scenario generally agreed as ‘unlikely’ - as the foundation for consultation on appropriate climate response options in the WRWS.

Water management is based on analysis of temperature, rainfall, and climate data from the last 130 years. In addition to these historical records, development of the WRWS also considers paleoclimatic data, along with current climate change projections.

In principle BDW supports a multi-faceted approach to WRWS development, recognising the value of understanding past and present data, alongside the best predictions for the future.

The WRWS appears to say that DPE has developed regional climate predictions through NSW and Australian Regional Climate Modelling (NARClIM). NARClIM projections are developed by ‘downscaling’ Global Climate Models (GCMs) to provide more detailed climate projections than GCMs provide alone.

The Representative Concentration Pathways (RCP) emission scenarios describe four different pathways of greenhouse gas (GHG) emissions and atmospheric concentrations, air pollutant emissions and land use, and projects the consequences of each pathway:

- RCP2.6 represents a best-case stringent mitigation scenario, characterised by immediate and collective global action toward climate change. RCP 2.6 predicts that by 2100 the global mean surface temperature could increase to 1.7 degrees Celsius.
- RCP4.5 and RCP6.0 represent intermediate emissions scenarios – following two probable courses of global climate mitigation. These predict that by 2100 global mean surface temperature could increase as much as 2.6 and 3.1 degrees Celsius respectively.
- RCP8.5 represents a very high, worst-case GHG emissions scenario assuming that no global response to climate change is taken. This model predicts that by 2100 global mean surface temperature could increase by as much as 4.8 degrees Celsius.

BDW believes that the WRWS is being developed based on the RCP8.5 model alone. We recommend against a sole reliance on the RCP8.5 scenario in developing the WRWS as:

1. The RCP8.5 scenario was not considered a likely scenario at the time of its development and is even less likely now. Reliance on this RCP8.5 alone is not best practice.
2. While preparing for a worst-case scenario is reasonable, for the purposes of the WRWS, a range of scenarios would be better practice. Basing the WRWS on one unlikely scenario will not serve the purpose of the WRWS and will show unnecessarily alarmist impacts.
3. The appropriate climate change scenarios to be used in the WRWS are those within the planning horizon of the WRWS. BDW has significant concerns about the usefulness of RCP8.5 as the foundation for consultation on appropriate climate response options in the WRWS, which has a planning horizon of 20-40 years, not 40-70 years.

Accepted climate science indicates that while worst-case scenarios should be considered, they should not be considered in isolation, and should not be deemed as being likely.

RCP8.5 assumes no global response to reducing emissions, 6.5 times the level of coal usage, and population growth continuing at the current rate.

Contrary to those assumptions, in 2015, 195 nations signed the Paris climate agreement, requiring every country to submit plans on reducing emissions, the EU has further reduced industrial emissions, China and India have increased reliance on renewable energy, and since 2016, the rate of deforestation in Indonesia has more than halved.

While climate scientists may say this is not enough, the worldwide response to emissions reduction has surpassed the assumptions underpinning the RCP8.5 scenario. Also, it is generally agreed that global coal use will not increase 6.5 times. In 2017, the World Energy Outlook (WEO) reported that global coal consumption had peaked in 2013 before beginning

to decline, mainly due to anti-pollution policies. Latest data shows that worldwide population growth has also slowed. In 2014 world population was increasing by 1.14% each year; the current rate sits at 1%, repudiating assumptions underpinning RCP8.5.

BDW agrees with developing a WRWS using historical and paleoclimatic data and recognised climate change projections, but reliance on this data, must consider its likelihood. BDW is concerned that reliance on the RCP8.5 scenario could be used to inform changes to water management practices based on an absolute worst-case scenario deemed as relatively unlikely. This scenario could unreasonably impact irrigated agriculture.

We at BDW recommend that:

- a. The WRWS considers a range of climate scenarios, including explanations of the likelihood of each scenario. For context and easy comparison, the WRWS should include the low (RPC2.6), moderate (RPC4.5) and high (RCP8.5) scenarios, plus any policy response suggestions.
- b. The WRWS must clearly explain that the global climate model relied upon in its development represents a worst-case and unlikely scenario, and this unlikelihood must be recognised whenever the WRWS is used.
- c. Clarification is needed in the WRWS whether the climate scenarios are based on RPC8.5 in 2050 or at 2100. The appropriate climate change scenarios to be using in the WRWS are those within the planning timetable of the RWS.

### **The WRWS must explain how climate change is already factored into current water sharing arrangements**

There is a common public misconception that climate change is not already factored into water sharing. This presents a serious risk of unnecessary public concern, as well as a risk of additional measures which would exacerbate the impacts of climate change on water users beyond existing impacts.

BDW believes that the WRWS has a role to communicate how water sharing arrangements respond to climate variability and change. The volume of water that water entitlement holders can access is determined through an Available Water Determination (AWD).

Given water availability is variable, water allocations vary each year, based on the rules set out in the relevant water sharing plan and based on the water available, and forecast to be available, in the water source. A water licence does not guarantee a fixed volume of water. Rather, the licence provides a share of whatever water becomes available for a licence category up to the volume specified by the licence. While a farmer may have a 10ML water licence, a 30% allocation in any given year means s/he can effectively only take 3ML. In the unregulated Barwon-Darling, when the river does not flow, a licence holder cannot take any water and that licence is effectively ‘switched off’ for that season.

AWDs in the western region of NSW are generally based on factors like the (wet or dry) condition of the catchment and river systems, forecast inflows; estimates volumes required to run the river, and transmission and evaporation losses.

AWDs are also based on a hierarchy, or order of priority, of water users, outlined in the Water Management Act 2000. Under normal circumstances, this means that environmental flow is the highest priority, followed by basic landholder rights, town water supply and stock & domestic licences, and then high security water licences (typically for permanent plantings such as orchards or vineyards). Last in line are lower security licences (typically used for annual crops).

During extreme dry events, critical human water needs like town drinking water becomes the highest priority, but irrigation licences like A, B and C class licences on the Barwon-Darling remain last in line, which means they rarely get used in extreme events. This ensures that high priority needs are met first, before any leftover water (if any) gets allocated for 'lower priority' needs such as annual crops. BDW has always respected this hierarchy of priority.

BDW also understands that the bulk access regime in the WSP takes account of the climatic record available to DPE, including in determining the limits to the availability of water and the long-term average annual extraction limit (LTAAEL), and the priorities according to which allocations must be adjusted if extraction limits are exceeded.

BDW understands that this is based on modelling of inflows, flows and extraction over the full climatic record held by DPE up to the date of finalisation of the BD hydrologic model, and that as further climate information becomes available during the term of the plan, the LTAAEL model (and LTAAEL) is updated.

These detailed climatic adjustments are not well understood, and it would be helpful if the WRWS included more detailed explanations of these processes, and data on how this is already playing out, including in long-term declines in water entitlement reliability.

BDW is also concerned that many officers within DPE, and people generally, do not understand the history of water reform on the Barwon Darling, which included a massive 67% cut to all water licences under the BD cap management strategy in 2006/07, the raising of pumping thresholds over the last 20 years, the introduction of IDECs, the suppression of trading through unfair trading rules and the introduction of active management and resumption of flow rules in recent years.

**BDW recommends** that the WRWS clearly communicates provisions in existing water sharing arrangements to manage water resources in relation to climate change, and that the WRWS includes analysis of how existing water sharing arrangements are already restricting water security for entitlement holders.

**BDW also recommends** that the WRWS clearly communicates the history of water reform on the Barwon-Darling, and the hits that water users and local communities have had over the last 20 years. – leading to loss of business, jobs, population, services and economic prosperity in communities like Mungindi, Collarenebri, Walgett, Brewarrina, Bourke and Wilcannia.

## **Protecting reliability and ensuring usage to SDLs**

Due to imperfect water availability and imperfect trading, together with recent restrictive changes to trading rules in the Barwon-Darling WSP, there is declining water usage on the Barwon-Darling unregulated water source, well below current SDLs.

This trend on the Barwon-Darling is exacerbated by the DPE's 15-year delay in calibration of the meters on the Barwon-Darling and consequent 15-year delay in proper calibration of the hydrologic model that reflects flows and extractions on the Barwon-Darling.

Ironically, this tardiness in calibrating the meters and the model, which was promised in writing by the NSW Water Minister and the highest executives of DPE in 2006/07, has led to a situation in 2022 whereby users on the Barwon-Darling appear to be exceeding their SDLs.

Although this exceedance is a mathematical mirage, the tardiness in calibration, together with the new non-urban metering program, has led to less water being available to entitlement holders on the Barwon-Darling – in effect robbing entitlement holders of access to their full entitlement.

These reductions in actual water volumes, forced by the government's inability to stand on its promises on these matters, is further exacerbated by the clumsy redistribution of IDECs in the 2020 changes to the Barwon Darling WSP which has given some water users far too much IDEC and others far too little.

Recent restrictive changes to trading rules have not helped at all and have prevented free trade of water entitlements within the Barwon-Darling Water sources as originally intended by NSW and Basin plan policies. These changes have prevented some users with small licence entitlements and larger accounts from trading in any meaningful way.

This inability to deliver on written agreements and rule changes which cumulatively erode reliability and established water use are a problem and should be addressed clearly in the WRWS.

We at BDW understand that there are procedures underway withing the DPE to address some of these issues, but we also see that these procedures are taking far too long and are going on in the background with little transparency for water users.

**BDW recommends** that DPE include discussion in the WRWS of these issues that prevent Barwon-Darling water users from reaching their SDLs, and immediately address the following issues on the Barwon-Darling to the satisfaction of water users:

1. Calibration of the meters on the Barwon Darling
2. Calibration of the hydrologic model for the Barwon-Darling
3. Redistribution of IDECs according to pump capacity at 2012, rather than licence volume
4. A return to the interim trading rules allowed for in the 2012 BD water sharing plan.

**BDW further recommends that** the WRWS should investigate and articulate the trend of reduced water licence reliability on the Barwon-Darling and other streams in the western region, and the WRWS should include serious options to protect and restore the reliability of water licences in the western region of NSW.

BDW is concerned about continuing underusage in the Barwon-Darling, against SDLs.

**BDW recommends** that, through the WRWS, DPE investigate this underuse volume to identify the key reasons for underusage, which is a critical step to addressing the issue. BDW believes that the WRWS should consider options to ensure water users can reach their SDLs. This may include optimising water usage in wet years.

## **WRWS with a broader policy context**

The NSW RWSs are being developed within the context of a complexity of other water planning and policy instruments within NSW and the Basin.

BDW believes that to avoid duplications and contradictions, the WRWS (and all other RWSs) must be consistent with these other instruments. RWSs should explore the range of instruments already available to deal with climatic extremes that DPE seeks to address. We are concerned that the RWSs go beyond their original intention when they consider options to ‘rebalance’ water shares.

It is not good policy for the strategic planning instruments of one basin state to contradict agreed basin-wide processes. The complex, multi-billion-dollar Basin Plan was designed to achieve SDLs and includes a formal review in 2026. That is the formal process agreed by Basin-states and written into legislation. NSW should remove any options from the RWS that undercut that process by seeking rebalancing between water users.

**BDW recommends** that the WRWS seek compatibility with other regulatory instruments, such as the Basin Plan, that the WRWS identify existing instruments to deal with climatic extremes, and that the WRWS recognise the existence of SDLs within the Basin Plan.

**BDW also recommends** any ‘re-balancing’ discussion to be left to the proper basin-wide processes, including the Basin Plan Review in 2026.

## **Cost assessment of options**

BDW asks that WRWS include cost assessments of options, including how much extra money would be expected from water users.

This is of concern to BDW members due to current IPART cost-share ratios falling heavily on water users under the ‘impactor-pays principle’.

The most recent IPART pricing determination included significant price increases to water users in western NSW. This is not a sustainable trend for a regional industry facing repeated reductions in water availability.

Our members support the position that consideration needs to be given to ‘climate change’ being considered a major ‘impactor’ along with extractive water users. This initiative would more equitably distribute the higher costs of water management associated with shifting patterns of water availability.

At a public hearing in March 2021, IPART acknowledged climate change as a long-term impactor, but that we have not yet hit a ‘tipping point’ requiring climate change to be included. In this long-term strategic planning document, the WRWS, which outlines some expensive options, the inclusion of climate change as a major impactor becomes entirely relevant when looking at total costs and cost-sharing arrangements.

**BDW recommends** that the WRWS include costing of all options, including how much of these costings are expected to be passed onto water users. Consideration should be given, especially in the WRWS, to cost-sharing approaches that consider the broader community as a primary impactor through climate change.

### **Submission in relation to the:**

## **North-West Flow Plan Discussion Paper, and the Discussion Paper on critical dry condition triggers to reduce risk to environmental and human water needs Discussion Paper**

### **Summary of main points:**

- In principle, BDW supports the hierarchy of water use outlined in legislation, and measures designed to ensure fairness in allocation of priorities.
- BDW submits that there are already resumption of flow rules and protection of environmental flows (HEW and PEW) enshrined in the Barwon-Darling Water Sharing Plan, that these are sufficient to manage the dry periods on the Barwon-Darling, and these are more fit for purpose than further rules based around section 324.
- All measures must be practical and supported by appropriate gauging and forecasting capabilities. Failure to do this risks the effectiveness of the rules and poses the risk of further perverse outcomes for water users in the western region.
- The NSW government should ensure the water management framework, including all water sharing plans, can operate effectively in all circumstances, rather than always falling back on the old habit of suspending plans in favour of section 324s. Droughts that cause critical water shortages in the western region are foreseeable, and their management is, and should be, incorporated into normal water management.
- Connectivity measures must respect the ephemeral nature of river systems, including recognition of the ecological importance of the dry times.
- DPE must show conclusively that any new measures will have practical benefit in addressing critical needs. BDW is concerned about the significant impact of new measures on water users, where these measures cannot show material improvements to critical needs.
- BDW believes that more use should be made of Held Environmental Water (HEW) to achieve outcomes, including along the Barwon-Darling. BDW is concerned that current release strategies do not consider the need to retain HEW supplies to ensure sufficient

water is available at times of water scarcity. BDW believes that HEW reserves in northern dams should be used more often, where possible, to relieve critical water supply issues along the Barwon-Darling.

- BDW has concerns regarding the fairness and practicality of a target at Menindee Lakes, given that the volume of water held in Menindee Lakes is subject to decision-making by multiple agencies. This uncertainty over future operations at Menindee Lakes could expose BD water users to unnecessary risk if a Menindee target is adopted. The Discussion Paper states that, “*Cease-to-flow periods greater than 120 days at Wilcannia also correlate with the periods when the Menindee Lakes start to drop below 195 GL*”.
- Therefore, BDW recommends continued use of the final river gauge of the northern basin at Wilcannia. This achieves the same objectives, without setting targets that are subject to future Menindee Lakes management and infrastructure decisions. We also believe there needs to be significant improvements in the transparency and accountability of release strategies from the Menindee Lakes.
- BDW recommends that any new targets be accompanied by new measures to improve critical needs, such as upgraded or new town water supplies and fishways. BDW notes that the *Discussion Paper on the North-West Unregulated Flow Plan* and the *Discussion Paper on critical dry condition triggers to reduce risk to environmental and human water needs* says that although there could be benefits in implementing targets at certain times, overall, they will not solve all connectivity issues.

## **BDW in-principle support for measures to provide for critical needs**

Water users in the western region of NSW respect the prioritisation of water, as outlined in legislation, even though this places irrigated agriculture at the bottom of priorities.

In principle, we support evidence-based measures reasonably designed to ensure that established priorities are respected at times of water scarcity.

Irrigators in the western region do not wish to access water when there is insufficient water for critical needs in the western rivers. However, once sufficient water becomes available following a drought, irrigators require certainty and predictability of rules to provide water access promptly and fairly. Prompt and fair access following a dry period ensures drought recovery in our western regional communities, which are often irrigation-dependent communities.

BDW members believe that critical needs measures must be:

- Practical – in other words, must be able to be operated in practice
- Supported by the appropriate gauging, modelling, and forecasting capabilities
- Predictable to stakeholders by being incorporated into the regulatory framework. To remove surprises and political discretion, DPE must not rely on S324s

- Transparent in intent; they must be demonstrably capable of making a meaningful contribution to critical needs
- Strengthened by other measures to improve critical water needs (improved town water supplies, fishways in weirs, restoration of natural rock weirs and other measures outlined in the Better Baaka initiative), and not exclusively rely on a regulatory approach.

### **Preference for a rules-based approach (not section 324s)**

The NSW government must ensure the various water sharing plans can operate effectively in all circumstances, rather than on relying on suspension of the plans through s324s.

Clear rules in water sharing plans provide confidence to downstream communities on flows and priority of access and enable upstream water users to understand and operate under rules with certainty, predictability, and transparency. Certainty, predictability, and transparency are the three elements needed to operate irrigation businesses when a drought breaks.

Rules-based approaches remove decisions from ministerial and executive politicking, which is a positive as ministerial discretion in the past has caused contention, uncertainty, and anxiety – fuelling concerns over water management at times of water scarcity.

Rules-based management ensures the integrity of the water sharing plans and promotes confidence in the water management framework. S324s should only be used as a last resort, as they were never meant to be a regular feature of water management in NSW.

As such, BDW does not support that “*these triggers will initiate temporary water restrictions under section 324 of the Water Management Act 2000*”. The rules-based approach written into the water sharing plan – especially the Barwon Darling Water Sharing Plan – have been designed to deal with low flows under a rules-based approach, rather than relying on s324s.

NSW should develop a regulation that codifies the application of s324s to ensure a clear and transparent framework to guide government on finding a balance between addressing emergency situations and protecting the integrity of the water sharing plans. For restrictive measures of this kind, to address the inevitable circumstance of drought, the water sharing plans must be designed to operate effectively, and not rely on external suspensions.

BDW is interested in the following section of the Discussion Paper: “*We need to look at ways to adjust the timing of access to take water so that less access at one time is offset by more access at another time*”.

This could be achieved simply by incorporating rules into water sharing plans and would mean greater access can be permitted in times of greater water availability, because of less access at times of water scarcity.

It would also mean that these new rules would be properly assessed and modelled before incorporation into the WSPs.

## **Connectivity measures must respect ephemeral systems**

BDW supports river connectivity, defined as: flows to meet critical human, environmental and cultural needs, within the physical limits of rainfall and flows.

River planning and water management in the western region must respect the ephemeral nature of these river systems.

BDW commends the following recommendation from the *Independent Assessment of the Management of the 2020 Northern Basin First Flush Event*:

*“Connectivity must be a primary objective of first flush management in the Northern Basin if insufficient water is available to meet tributary and downstream critical water needs. However, the arrangements to meet downstream critical water needs, of necessity, also have to be reflective of and responsive to the ephemeral and intermittent flow nature of the rivers in the Northern Basin.”*

DPE–Water is also quoted as saying:

*“It’s normal for the river to stop flowing sometimes. A constantly flowing river is not normal for the Barwon-Darling region. The river stopped flowing for extended periods even before there were large dams and significant agricultural water use upstream. There is a relationship between the river drying and dry climatic periods.”*

The Barwon-Darling River, and its tributaries have a ‘boom and bust’ hydrology; with flat, hot, dry landscapes making slow moving rivers; and headwaters that are dependent on rainfall and are thus ephemeral or intermittent in nature. Understanding these facts is important for managing these rivers.

In science (see Gawne, Briggs, Kingsford, Gehrke, Thoms and Walker) and anecdotally, the drying of these rivers is understood to be as ecologically important as the wet periods.

It is important to have a shared understanding of the natural state of these systems, and the need to respect the natural variability, and the ecosystems which have developed based on cycles of boom and bust. The environmental impacts of making the ephemeral rivers of western NSW flow constantly must be recognised. Management for ecological outcomes is more complex than adopting the approach of ‘more water, more often, is better’.

The dilemma of connectivity centres on the human desire for constantly flowing rivers to provide critical human water supplies – being sometimes opposed to the natural state of an ephemeral river system.

Whilst BDW supports connectivity (as defined above), any government attempts to promote connectivity must be managed with reference to the ephemeral nature of our western rivers.

## **Measures must be practical**

BDW believes that any new measures must be able to be operated in practice and we are extremely concerned about the practicality of these DPE proposals.

We know from recent bitter experience that a lack of practical implementation can lead to negative, loss-making outcomes for water users. Public confidence in water management can also be undermined when proposals cannot be operationalised effectively.

As a general principle, measures should only be implemented if they can be operationalised. BDW agrees with the relevant statement in the Discussion Paper:

*“If the draft targets are to be introduced, then improvements will first need to be made to the operational flow forecasting capability which will require a significant amount of investment over a long time period. Without upgrading forecasting capability, implementing the draft connectivity targets will either result in unnecessary impacts on outcomes or missed opportunities to improve connectivity at important times.”*

BDW requests full implementation of the recommendations from the *Independent Assessment into the management of the First Flush Event*, to improve flow forecasting ability. Experience of that event can inform future events and this experience should not be ignored.

BDW requests similar evaluations after each event, to ensure an iterative approach to real time water management and improvements to the management of these events. This is especially important as high staff turn-over rates within government water agencies, often leads to corporate knowledge being lost between events.

## **Critical needs measures must have demonstrable benefit**

These measures must be transparent in intent and must be demonstrably capable of making a meaningful contribution to critical needs.

From the material presented BDW believes there is a lack of clarity on what DPE is trying to achieve and whether the proposed measures will have a measurable benefit.

In the western region of NSW, with its ephemeral rivers and limited public infrastructure to regulate flows, there are times of severe drought when no degree of regulation can address water scarcity problems. This is because, in the western region, we are often dealing with a water supply and water distribution issue – not a water sharing issue. During these times, no one has water to share – the water is simply not there! Without significant new infrastructure, there is little that can be achieved through more rules and regulations. It is impossible to manage water when there’s no water to manage.

Water users in the western region understand that the NSW water sharing plans are designed to respond to water variability, with irrigators at the bottom of the hierarchy. Hence, the irrigation industry has developed based on that ‘feast and famine’ hydrology - farming in wet years, and little to no farming in dry years. Given little to no irrigation in dry years – there is little opportunity to address connectivity by restricting water access at these times. However, there can be significant impact on farmers and farming communities, given it can be this small amount of water that begins drought recovery, or is needed to finish crops.

This point is recognised in the DPE Discussion Paper:

*“During drought years when there is no water available, or in very wet years the targeted restrictions are not required because there is either plenty of water or no water.”*

BDW is concerned by the possibility of further significant loss of access to water for agriculture, for little discernible improvement. As the Discussion Paper says:

*“Figure 2 indicates that if the restrictions were imposed only when the Menindee Lakes were below 195 GL, this would increase the time the lakes were above the target by 3%. In other words, the restrictions keep storage volumes above 195 GL over 97% of the time, compared to around 94% of the time with the current conditions.”*

We agree with the DPE Discussion Paper when it says:

*“We need to be confident that the benefits of implementing the triggers outweigh the impacts and that the triggers can be effectively implemented and operated. Even with perfect forecasting, this initial analysis suggests there could be benefits in implementing these targets at certain times, but overall, they will not solve all connectivity issues. The benefits are likely to be marginal and they come with impacts on water users.”*

We note that on page 6, the Discussion Paper explains that, in the context of connectivity measures already in place, that *“these changes mean the current riparian targets are now satisfied most of the time”*.

BDW recognises the priority of critical human and environmental needs, but we need to be certain that any further restrictions will have a material effect on those needs – and not just serve an ill-informed perception, while doing nothing to fix the problem.

BDW does not support restrictions that provide little additional benefit at large detriment to water users.

## **Restrictions alone won't resolve issues**

Current restrictions will only work if they are complimented by other measures to improve critical water needs.

These measures should include improved town water supplies, fishways in weirs, restoration of natural rock weirs, water quality improvements and other measures outlined in the Better Baaka initiative). BDW believes that DPE cannot exclusively rely on more regulation.

New rules must be supported by complementary measures to address some of the critical water supply challenges in western NSW. In unregulated systems, like the Barwon-Darling, with limited public water storages, there is little that can be achieved with a regulatory approach alone. This is acknowledged in the Discussion Paper, which says:

*“Even with perfect forecasting, this initial analysis suggests there could be benefits in implementing these targets at certain times, but overall, they will not solve all connectivity issues.”*

For example, the Discussion Paper notes the importance of the Better Baaka Program, which includes better infrastructure and installations fishways on weirs.

BDW supports significant investment in town water supply for western NSW towns, such raising weir crest heights for town weirs (such as at Walgett, Bourke and Wilcannia), off-

river storages and augmentation through groundwater solutions – such as the artesian bore and piping scheme in Bourke Shire.

As members of our local communities, we oppose the idea of removing non town weirs which are critical to stock and domestic users along the Barwon-Darling, preferring the solution of fishways for all weirs along the Baron-Darling system.

## **Concerns over ability to reach SDL**

BDW agrees with the principle in the Discussion Paper of:

*“not reducing the overall amount of water being taken out of rivers, consistent with the sustainable diversion limits set by the Basin Plan without compensatory or offsetting actions”.*

These proposed measures cannot be put into place without reducing the overall amount of water available to irrigators, and on the ability of water users to reach the SDL. Cuts to access always reduce amounts of water available.

If DPE is seeking to change the amount of water available to water users by restricting access, BDW believes DPE must follow the proper process as agreed by Basin states – and include these proposals in the 2026 Basin Plan review. It is unfair to be further cutting water users access outside of the framework of the Basin Plan and established SDLs.

It is dishonest to say that the SDL won't change when access is further eroded making it more impossible for entitlement holders on the Barwon-Darling and other western streams to achieve their SDLs. Any reductions in access must be recognised and compensated. BDW is concerned about the forecast impacts - an average of 2.5% - which conveniently falls below the compensatory thresholds. We are concerned that previous non-compensated reforms will be exacerbated by further reforms that allegedly have small impacts, but cumulatively result in a significant, but uncompensated, impact.

We note with concern DPE's statement that: *In reality, the impacts to licence holders are likely to be larger, as the 2.5% average impact assumes there is perfect forecasting knowledge, which is not possible, and there will be times when upstream water entitlements may be restricted but downstream flow targets are not met”.*

There must be clarity, honesty, and recognition of the likely impacts. Given the Discussion Paper acknowledges that perfect forecasting is impossible, we need to see the likely impacts based on *current* forecasting ability.

BDW requests DPE clarification of whether this is the long-term average impact, and what the extent of the impact would be on a particular dry (or first flush) year.

## Economic Impact Assessment

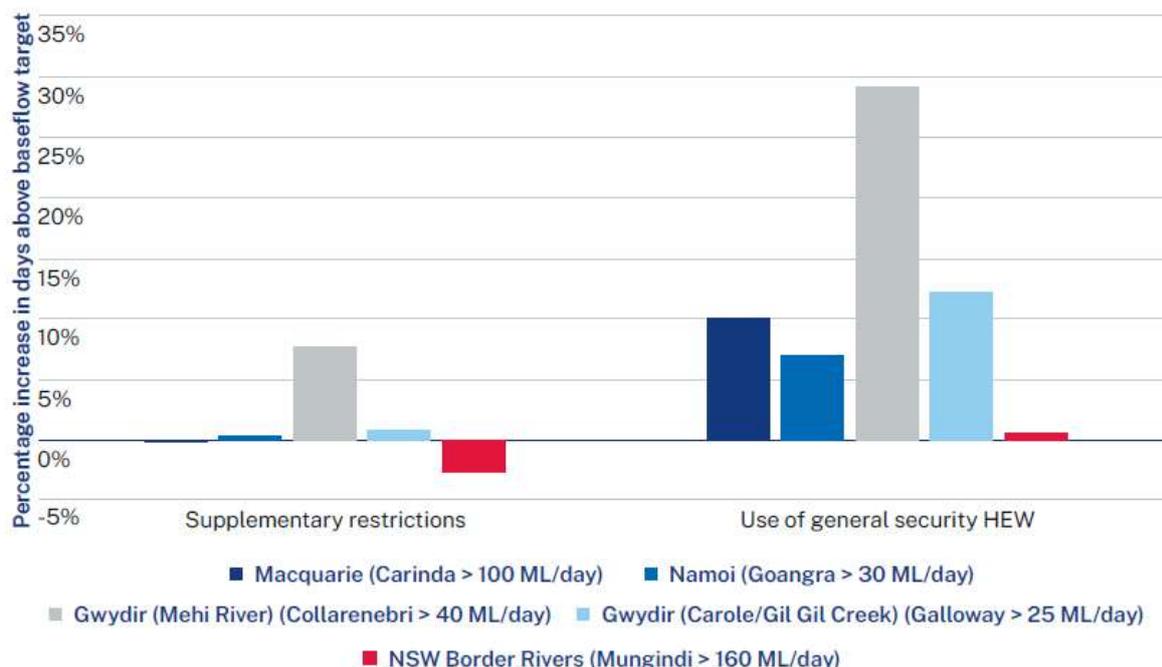
BDW understand that the Discussion Papers provide an indication of the percentage impacts on water users. However, we believe that further economic impact assessment is required, to consider that this water during dry times is highly valued – either as a fillip for drought recovery, or to finish established crops.

Any economic assessment needs to look beyond farm production, to restoring economic activity in communities, and the flow-on benefits from increased employment and economic activity – such as improved health and wellbeing, lower crime rates, and less drug/alcohol and domestic violence problems.

## Role of environmental water holders

The 2019 *Stocktake of Northern Basin Connectivity Rules – Analysis of Implementation and Effectiveness report* concluded that, given the challenges associated with implementing the North-West Flow Plan connectivity rules, initiatives to improve connectivity in the Barwon–Darling River should focus on the use of regulated Held Environmental Water (HEW) releases. Research in the Discussion Paper, compares the use of HEW to restrictions on water licences.

**Figure 7. Increase in the proportion of days that flows are above low flow targets at the end of each northern tributary valley based on completely restricting supplementary licences or using all of the general security held environmental portfolio**



BDW believes that, to achieve demonstrably better outcomes in critically dry times, HEW should be used in preference to access restrictions on productive licences holders.

Communities on the Barwon-Darling, including shire councils and other water users, require greater clarity and accountability regarding release strategies for held environmental water. HEW can ensure that sufficient water is available at some times of water scarcity, but if it is released too early, there will be insufficient supplies for those critical periods.

## **Interaction with other rules**

It is important that any new rules are implemented with consideration of existing rules.

Given there is already many rules in water sharing plans and other instruments across the northern basin that contribute to connectivity, DPE should demonstrate how any new rules will apply and interact, ensuring that all rules work together consistently and coherently, and not result in duplication or confusion.

This principle must apply before consideration of implementing any new measures at all.

## **Harmony with the Basin Plan**

If NSW DPE progresses these measures, it should seek recognition by the Commonwealth as a climate change adaptation or response measure.

BDW is concerned that there has been significant focus on further water reforms in response to climate change - as suggested in the recent Productivity Commission Review of National Water Reform, and Basin Plan Evaluation.

We are concerned that during consideration of Basin Plan 2.0 – additional measures will be required of Basin States, without considering what NSW has already achieved – leading to a doubling of negative measures for water users in western NSW.

We recommend that NSW include consideration of any of these measures within the 2026 Basin Plan review.

## **Conclusion**

BDW is available to further expand on the issues and recommendations raised in this submission, and in our verbal submissions at the community meetings in Walgett and Bourke.

Barwon-Darling Water thanks DPE for the opportunity to provide a submission through this public exhibition.

Yours sincerely



On behalf of  **Barwon-Darling Water Inc**