**PUBLIC SUBMISSION – [redacted]**

## Water Resource Plan for the Lower Murray Groundwater Source 2019

## Water Sharing Plans for the Murray Alluvial Groundwater Sources 20XX

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The Commonwealth Water Act 2007 specifies a number of conditions that the Murray Darling Basin Authority (MDBA) now specifies must be met in the Murray Darling Basin Plan.

The overarching planning framework – Water Resource Plans, will demonstrate how NSW is meeting the requirements of the Basin Plan achieved within individual Water Sharing Plans.

NSW Government established surface water Stakeholder Advisory Panels (SAPs) in individual Basin valleys to enable some high-level initial discussions on specific aspects of the proposed reviews of Water Sharing Plan.

NSW Groundwater Plans however did not have multiple SAP groups, instead one stakeholder discussion group, consisting of eight members across the State, was selected to enable interim discussions on all groundwater sharing plans within NSW Basin Valleys.

**Comment**: *As a member of the NSW Groundwater SAP, it is important to state on public record that discussions at SAP meetings were confined to discussing high level principles and requirements necessary for all NSW Basin Groundwater Plans to be compliant with the Murray Darling Basin Plan.*

*SAP members did not make decisions, and members role was to understand what the Basin Plan required and to provide some discussions/feedback with Groundwater planners.*

*It would have been preferable to have multiple Groundwater SAP's consistent with individual valley representation as was permitted with Surface SAPs.*

Consistent with the National Water Initiative and the Commonwealth Water Act 2007, the MDBA has also required the principles of 'free trade of water' also to be built into the Groundwater Sharing Plans.

## Historical context: 2004 NSW Murray Groundwater Sharing Plan:

**Comment:** *The NSW Murray Lower Murray Groundwater Water Sharing Plan (016) was first developed in 2004. It was only after this plan was established, NSW Murray Lower Groundwater entitlement holders then obtained a compensable property right consistent with the National Water Initiative.*

*The 2004 Goundwater Plan established water sharing and extraction rules to meet the 2004 NSW revised Estimated Yield Extraction Limit (ESY).*

*Separate to the actual development of the Groundwater sharing plan (2004), the NSW Government then engaged the Murray Catchment Management Authority to oversee the reduction of Lower Murray Groundwater entitlements to match the Estimated Sustainable Yield figure established in 2003/4.*

*Given the scale of business impacts that occurred with the substantial reduction of entitlements in the (016) region during that period, there is a high level of public/stakeholder concerns that the Water Act 2007 and the MDBA's Basin Plan requirements to maximise free trade of entitlements will lead to a repeat of 'over extraction' and subsequent reductions to existing users.*

## 2019 – NSW Murray Groundwater Sharing Plan – Public Consultation

- On 1st July 2019, the 2004 NSW Murray Groundwater Plan was automatically rolled over as it had expired.
- Currently still on the NSW website, the Plan listed and referred to as …..1st July 2019 …is now subject to further review in order to be consistent with new NSW Water Resources Plans which require all surface and groundwater Sharing Plans to be consistent with conditions imposed by the Murray Darling Basin Plan. This means that a new public exhibited draft plan, being exhibited in July 19 has created some confusion both within the NSW Departments/and members of the public
- An explanatory note on the NSW Government website would have been appropriate to avoid confusion by members of the public trying to access the original 2004 (016) Water Sharing Plan for comparison reason. (eg an explanatory note advising the 2004 Plan expired and was rolled over to 1st July 2019),
- An explanatory note at July Public meetings and on the relevant information brochures/sheets, with clear distinction between the 'rolled over' plan on the website (July 19) and the proposed Draft Plan being exhibited in July 2019 should also have occurred to avoid public confusion
- **Note:** as a member of the SAP, I also experienced confusion in accessing the original 2004 Plan, the rolled over Plan (1st July 2019) and the draft plan on exhibition (in July 19). There was/is evidence that this confusion was also experienced within the NSW Department itself.

## Broad Principles: Recommendations:

- ACCC and Basin Plan proposals to enable the concept of 'free trade' and/or interstate trading between Victoria Katunga region and NSW Lower Murray should not be permitted
- This submission opposes the issuing of new licenses at the scale that is currently occurring that are deemed necessary, to meet the 'free trade' requirements imposed by the Water Act 2007 and Basin Plan.
- This submission further endorses a tightening up of trade conditions to reduce the likelihood of local area impacts (hot spots)
- This submission seeks an extension of time by the NSW Government to enable further consultation and public submissions based on the fact that many members of the public may be unaware of proposed changes to Water Sharing Plans imposed by the Basin Plan
    - Eg to address lack of public knowledge and website confusion relating to accessing the correct 2019 Draft Plans on exhibition
- The limitations of the NSW Groundwater SAP and timeframes imposed by the Basin Plan on NSW Government, did not allow sufficient high- level discussion /input at an individual WSP region (valley level)

- This submission notes the considerable efforts of the NSW Departmental personnel to assist the NSW Groundwater SAP members where possible in discussing issues and/or responding to questions, particularly in light of limited timeframes and mandatory conditions imposed by the Murray Darling Basin Authority's Basin Plan

## Application of the Plan:

(a) the Billabong Creek Alluvial Groundwater Source,
(b) the Lower Murray Groundwater Source,
(c) the Lower Murray Shallow Groundwater Source,
(d) the Upper Murray Groundwater Source.

The merging of four draft Murray Groundwater Sharing plan regions into one plan raises specific risks and confusion in how specific conditions being applied to separate regions in the Draft Plan will actually be implemented. It is not clear how specific clauses may/may not have associated risks to the property rights of existing entitlement holders.

### Recommendation:

- Ensure clearer wording to separate between conditions being imposed on shallow aquifers and those relating to deep aquifers (eg 016 Shepparton shallow, to Renmark/Calival aquifer – deep)
- Ensure separation of applied conditions in the four plans listed (a, b, c, d)
    - Eg , relevance and application of mapped groundwater dependent ecosystems and cultural water entitlements (shallow Versus deep)

## Chapter 4, Environmental Water, Cultural Flows and sustainable management

**11 Aboriginal cultural objectives**
The targeted Aboriginal cultural objectives of this Plan are as follows:
(a) to provide access to groundwater in the exercise of native title rights,
(b) to provide access to groundwater for Aboriginal cultural use,
(c) to protect groundwater-dependent culturally significant areas,
(d) to contribute to the maintenance of groundwater salinity (total dissolved solids) within existing ranges that support groundwater-dependent Aboriginal cultural values and uses.

### Cultural objectives recommendation:

- The Draft Plan will need to identify how and under what circumstances cultural connections /conditions are to be applied to shallow surface water Plans
- Draft Plan needs to explain how Aboriginal cultural objectives will be incorporated into Deep Bore 016 Plan and/or how they would impact existing entitlements share/property rights established in 2004
- The NSW Governments should provide further explanation on conditions identified Section 11, conditions a, b, c, d and describe what/if any implications/changes they pose compared to existing plans

## Environmental objectives: recommendations

**Appendix 2 Overview of the High Priority Groundwater-Dependent Ecosystem Map** (clauses 9 and 41)
**Overview of the High Priority Groundwater-Dependent Ecosystem Map (GDE019_Version 1), Water Sharing Plan for the Murray Alluvial Groundwater Sources 20XX**

**41 Rules for water supply works located near high priority groundwater-dependent ecosystems**

(b) 200 metres of any other high priority groundwater-dependent ecosystem shown on the High Priority Groundwater-Dependent Ecosystem map.

(3) The location restrictions in this clause do not apply in respect of high priority groundwater-dependent ecosystems shown on the High Priority Groundwater-Dependent Ecosystem Map unless a high probability of groundwater dependence has been confirmed by the Department

## 43 Protection of groundwater dependent ecosystems.

While interpretation is made through various clause, it is still not clear whether /or if these clauses could affect a number of plan regions (eg surface/deep):

> (1) While there are no ecosystems dependent on this Groundwater Source there may be ecosystems dependent on the overlying aquifer and the provisions of subclauses (2), (3), (4) and (5) apply to protect any such groundwater-dependant ecosystems.
> (2) Extraction of groundwater from a new or replacement water supply work (bore) is not permitted pursuant to the following:
> (a) within 200 metres of high priority groundwater-dependent ecosystems except where the bore is used to manage that ecosystem for ecological benefit, or
> (b) within 40 metres of any river or creek, or
> (c) within 200 metres of a significant wetland except where the bore is used to manage that wetland for ecological benefit.

The draft Plan describes Protection of Groundwater Dependent Ecosystems as determined on the basis of GDE maps. During the SAP discussions, scientific expertise identified that GDE's in the Murray 016 and other areas, are more closely aligned with shallow aquifer zones. Although the above clauses noted (2), (3), (4) and (5) applying to protect GDE's, the clauses do not sufficiently describe the GDE's maps being applicable to shallow aquifers but not deep bore management

The draft Plan does not sufficiently differentiate between shallow and deep aquifers

In relation to the 2004 Deep bore (016) Plan, the science used to determine the ESY, plan boundaries and take, may in future be amended. Unless clarified (ie up or down) by limiting the environment share to existing shares ratios described by the current ESY and extraction entitlements, the share of the environment could increase

The proposed description in Draft Plan on Public exhibition reserves all water for the environment in excess of the limits to the availability of water. **Note.** Part 4 reserves all water

remaining above the long-term average annual extraction limits and Basin Plan long-term average sustainable diversion limits for the environment

This means in the future, if new science determines more water availability in the aquifers, or Australia's Southern Basin moved to a long- term wetter climate cycle, no additional water can be made available for consumptive use but the environment's share effectively could be increased.

### Recommendation:

- Revise Draft Plan wording to differentiate more clearly how the application of GDE's protection would apply differently between surface and groundwater plans in line with scientific recommendations described during the SAP process
- Revise wording to enable the environment's share to be adjusted on the same percentage basis as determined by the determinations associated with the current Estimated Sustainable Yield figure and current extraction entitlements
- This condition, in the event of prolonged wet cycles would enable some flexibility in increasing entitlement extractions and the environment would maintain its current percentage as outlined in the draft plan by current wording description of the ESY figures and extraction entitlements

## Chapter 5: Take for consumptive use

Management of consumptive take perhaps should be further explained to the public. This may help to further avoid confusion and assist with public responses eg:

1) NSW rules within Water Sharing Plan rules covering consumptive take
2) NSW Reporting methodologies to the Murray Darling Basin Authority (MDBA) to identify how the Water Sharing Plan is compliant with the Sustainable Diversion Limit imposed on the Plan

During departmental conversations with the SAP, it was indicated that options for managing compliance with extraction rules/take may occur via further public consultation. Given there may be some challenges around public understanding, further time might be needed to discuss risks and options including additional options perhaps not considered.

**High level principles should however still apply:**

1) Property rights of existing entitlement holders should be protected and/or not diminished (refer existing WSP rules)
2) Government decisions to increase trade options for new license applicants, should not negatively impact existing entitlement holders, especially when know risks are already evident
3) MDBA requirements being imposed under the Basin Plan may contribute to increased usage through new imposed trade requirements. Freeing up of trade now being imposed by the Basin Plan on the Murray Groundwater regions, is highly likely to activate more usage, non- compliance with SDL limits and lead to a reduction in protection of existing property rights

4) Carryover in individual accounts should not be jeopardised by increased expansion of trade imposed by the Basin Plan and Water Act 2007
5) Financial institutions recognise the level of security provided by the existing Water Sharing Plan rules (016) and this is recognised in individual business equity as assessed by the same institutions
    a. Any move to an annual allocation would undermine existing equity and further damage the financial stability of the Murray region
    b. Such a move would effectively amend the higher security nature of existing groundwater entitlements by moving towards an annual allocation status
    c. There is no scientific evidence that supports 016 deep aquifer management through annual determinations of water availability

NSW Government's response to the MDBA's compliance and reporting regime is too limited and an additional option(s) should be considered.

NSW Reasonable Excuse provisions does have merit but may have precluded a proactive options to prevent usage exceeding ESY (or SDL limit)

In acknowledging that the option for designating a single rainfall station (eg Deniliquin) is to provide a reference point for the purposes of compliance when assessing averages conditions, other management tools, eg additional trade restriction options, have not been included.

## Recommendations:

- Only two options are currently being considered to manage compliance to the ESY. These are:
    - options A and B but further options should be considered eg
- Enable Option C – <u>to restrict or delay for 10 years the granting of new licenses</u> in line with existing evidence that ESY is already close to being exceeded and non-compliance is already likely to be triggered within one year
- Proactive preventative options are required, in preference to reactive methodologies that may have occurred because of insufficient knowledge on risk by the MDBA
- This submission does not support a reduction in annual allocation as a method, instead there is support for managing take through managing carryover

### <u>Note: Why Option C should be considered?</u>

- In the Southern Basin Option C should be applied to the 016 Deep Bore zone.
    - the volumes of surface water remaining available in the Southern Basin have been severely reduced due to the Basin Plan (83% of water recovered has occurred in the Southern basin, mainly in NSW Murray and Vic)
- This is likely to put more pressure on groundwater extractions leading to a strong likelihood of future non compliance (or exceedance of the SDL figures)
- To prevent further damage to existing businesses reliant on groundwater, preventative trade restriction action is required in light of existing evidence of future non compliance

**Managing Compliance:**

- The long-term average annual extraction limit for the Lower Murray Groundwater Source is 90,223 ML/year.
- The long-term average annual extraction limit for the Lower Murray Shallow Groundwater Source is 81,926 ML/year.
- There is non-compliance with a long-term average annual extraction limit if the average of the annual extractions for a groundwater source in the preceding five water years exceeds the long-term average annual extraction limit for that groundwater source by the following:
    - (a) 10% or more for the Billabong Creek Alluvial Groundwater Source,
    - (b) 5% or more for the Lower Murray Groundwater Source,
    - (c) 10% or more for the Lower Murray Shallow Groundwater Source,
    - (e) 10% or more for the Upper Murray Groundwater Source.

This submission understands while managing compliance will be assessed on a five-year basis, there will be annual reporting to the MDBA by the NSW Government as a mechanism to identify trends and take preventing actions to maintain overall compliance should this be required.

### Recommendation:

- Include additional options to restrict the granting of new licenses that would facilitate over usage (as described above) to prevent exceedance triggers being reached

## 24 Share components of salinity and water table management access licences

On the commencement of this Plan, it is estimated that the share components of salinity and water table management access licences total 21,510 ML/year, distributed as follows:
(a) 1,500 ML/year in the Billabong Creek Alluvial Groundwater Source,
(b) 0 ML/year in the Lower Murray Groundwater Source,
(c) 20,010 ML/year in the Lower Murray Shallow Groundwater Source,
(d) 0 ML/year in the Upper Murray Groundwater Source.

### Recommendation:

- This submission notes the salinity and water table management access licenses in the four individual plan areas

## 37 Water level management

The Plan states:
(1) Local access rules may be applied once contoured recovery depths exceed 9.5 metres piezometric decline in any key Department observation bore.
**Note.** A local impact area is to be identified from a map of the piezometric surface change, showing seasonal, annual or longer patterns of drawdown or recovery in an aquifer.

(2) Not withstanding subclause (1) local access rules may be applied once unacceptable impact from drawdown or recovery are observed in a single year or if the average piezometric decline across the water source of greater than 1.65 metres is likely to occur over the period of the Plan.

## 38 Water quality management

- (1) An aquifer salinity baseline and Sodium Adsorption Ratio, hereafter (***SAR***) baseline for each production bore, against which groundwater quality changes and use parameters are to be measured may be established.
- (2) Local access rules may be applied if the aquifer baseline salinity exceeds 650 EC and there is an increase in salinity over a three year period of either 20% or more, or 500 EC or more.
- (3) Local access rules may be applied if the SAR exceeds the baseline established in subclause (1).

## 39 Rules to minimise interference between water supply works AND 59 Water quality condition

Rules for water quality management are being imposed through the Plan, but the MDBA /ACCC requirement on 'free trade' considerations is putting at risk water quality. The cost of risks and cost of continued monitoring is to be borne by the entitlement holder.

The proposed distance rules for deep bores (016) region are insufficient to ensure protection of water quality and minimise interference between supply works

Increase the minimum distance of 1000 m to a minimum of 2000 m with further trade restriction conditions based on risks to water quality and risks of future 'hot spot' management as potential preventative actions.

The granting of new licenses and permission of additional trade, will result in increased usage even if within the existing entitlement limits described in the SDL limit (or ESY)

This is likely to lead to poorer water quality and ultimately increased restrictions on usage to existing entitlement holders.

The Draft Plan states:

- 1 An approval holder is responsible for monitoring water quality from the water supply work to ensure it is suitable for its intended purpose for the duration of the approval.
- 2 Inherent water quality and land use activities may make the water in some areas unsuitable for use. Water from the groundwater sources should not be used without first being tested and, if necessary, appropriately treated to ensure it is fit for purpose. Such testing and treatment are the responsibility of the water user.

### Recommendations for clause 37, 38,39,59:

In addition to the need for increased trade restrictions, not an increase as a proposed requirement under the Water Act 2007 and Basin Plan, two things should occur in the light of existing knowledge:

1) The granting of new licenses should be put on hold until a further determination of the sustainability of the aquifer (ie 10 yrs)

2) The set back conditions /distances between production bores should be increased from 1000m to a new minimum distance of 2000m + to manage future risks of 'hot spots' and a decline in water quality

- Note: if Trade zones restrictions of plan license limits are not enacted between production bores, there is a strong potential to maintain water quality and prevent salinity issues emerging, maximum extraction limits will be reached within one year

- Entitlement holders are being required to undertake salinity testing/monitoring but have no capacity to prevent risks being enacted through MDBA's and NSW Government strict adherence to freeing up trade rules necessary to be compliant to the Basin Plan

- NSW Government should not permit the 'free trade' principles being enacted in the groundwater plans when there is already identified risks for a reduction in water quality and breaching the SDL limits

## 52/54/57 Record keeping conditions

**Division 1 General 52 General**
((2) In this Part a ***metered water supply work with a data logger*** means a water supply work with:
(a) an operational meter that complies with Australian Standard *AS 4747, Meters for non-urban water supply*, as updated or replaced from time to time, and
(b) an operational data logger.

**Notes.**
1 ***Mandatory metering equipment condition*** is defined in clause 228 of the *Water Management (General) Regulation 2018.*
2 Clause 230 of the *Water Management (General) Regulation 2018* provides that the mandatory metering equipment condition applies to existing and new works required to have a meter from 1 April 2019, and to other approvals in these groundwater sources from 1 December 2021.

**Note: The Draft Plan: current wording states:**

(1) Each access licence must have mandatory conditions to give effect to the following:
(a) the licence holder must record the following information in a logbook each time that water is taken using a water supply work that does not have both an operational meter (as referred to in clause 52 (2) (a)) and an operational data logger:

<u>But this clause is superseded by the following:</u>

- This clause ceases to have effect on the commencement of clause 250 of the *Water Management (General) Regulation 2018*.

- **Note.** Clause 250 of the *Water Management (General) Regulation 2018* commences on 1 December 2019 and imposes a mandatory condition requiring record-keeping on access licences and approvals.

This means while conditions in the Draft Plan suggest data loggers and five- year records are only for meters without functioning meters, after 1st December 2016, the requirements become mandatory for all entitlement holders

The draft Groundwater Water Sharing Plans make redundant the compliance of those meters installed by the NSW Government as part of the Southern Basin Pilot Metering Project.

The NSW Murray region (016) and surface water extraction points, were required to have their existing compliant meters replaced under the Southern Basin Metering Project. Approximately 2000 meters were installed.

Governments gave no option for the existing meter owners/license holders to determined the location of the meters, types of meters etc. The NSW Government metering project also decided that all meters had to be placed underground with resulting issues now arising for malfunction accessibility and/or meter replacement and or the new proposed verification requirements under AS4747 standards.

- Existing meters owners had no choice but had mandatory meters and associated conditions imposed
- Concerns about access for compliance/repair purposes were rejected at the time
- There was no option to have independent 'in-field verification' as NSW Government stated any meters could be verified in a laboratory (ie major urban centre)
- NSW Government returned water obtained by higher usage readings to the commonwealth Government as a preliminary SDL project. Affected license holders were not compensated, nor could they effectively challenge the readings as no 'in-situ' verification was permitted
- NSW Government is now seeking to return these same meters to private ownership with current poor installation conditions and costs associated with meeting 5- year verification standards for meters that the NSW Government placed underground in position that are not accessible
- NSW Government did not ensure 5- year data loggers were part of new compliant meters being mandatorily imposed through the Southern Basin Meter Pilot Project, nor have they applied the same conditions in other parts of the Basin

## Recommendation:

- NSW Murray Groundwater Draft Water Sharing Plan/Water Resource Plans do not mandate the requirement for data loggers on meters installed under the Southern Basin Metering project
- The draft plan appears to impose a reporting condition on groundwater entitlements holders over and above what's required by existing Plan provisions. The onus of proof and regular cost for assessment is on the landholders and this is above what the entitlement holders are already paying to the NSW Government through monitoring of Government bore sites.

## 61 Amendments relating to Part 1

Part 1 may be amended to do any of the following:
(a) apply this Plan to new or additional groundwater sources or water management areas (including part thereof), or modify (including to amend the boundaries) or remove an existing groundwater source or water management area (including part thereof) from this Plan,
(b) add, remove or modify a management zone, including the groundwater sources to which a management zone applies and the boundaries of such a zone,
(c) amend the Plan Map,
(d) amend the High Priority Groundwater-Dependent Ecosystem Map.

### Recommendation:

- This section has not been explained to the SAP
- There is insufficient or no information in NSW Government information sheets to explain what this section actually means and any risks to existing entitlements holders could be

## 62 Amendments relating to limits to the availability of water

This Plan may be amended to give effect to adjustments proposed under Part 4 of Chapter 7 of the Basin Plan, including adjustment to the limits in Part 6 of this Plan, and the planned environmental water in Part 4 of this Plan..
**Note.** Part 4 of Chapter 7 of the Basin Plan allow SDLs for groundwater SDL resource units to be adjusted by up to 5% to reflect new or improved information about the groundwater resources, including about recharge rates, connectivity with surface water, usage patterns, or State policy and planning settings.

### Recommendation:

- This section has not been explained to the SAP
- There is insufficient or no information in NSW Government information sheets to explain what this section actually means and any risks to existing entitlements holders could be

## 65 Amendments relating to access licence dealing rules

Part 10 may be amended to allow interstate trade between NSW and Victoria including the establishment of trading zones if required, subject to there being in place an inter-state agreement and appropriate administrative systems and processes.

### Recommendation:

- This submission strongly rejects this clause and appears to be in line with ‘free trade option’ with no acknowledgement of exceedance risks due to additional licenses being either being established, or existing licenses being maximised through the expansion of Almond Plantations in Northern Victoria.
- This section has not been explained to the SAP
- There is insufficient or no information in NSW Government information sheets to explain what this section actually means and any risks to existing entitlements holders could be

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NSWIC
NEW SOUTH WALES IRRIGATORS' COUNCIL

[redacted]

# SUBMISSION

# Draft Murray Alluvium Water Resource Plan

July 2019

## Introduction

The NSW Irrigators' Council (NSWIC) is the peak body representing irrigation farmers and the irrigation industry in NSW. Our Members include valley water user associations, food and fibre groups, irrigation corporations and commodity groups from the rice, cotton, dairy and horticultural industries. Through our members, NSWIC represents 12,000 water access licence holders in NSW who access regulated, unregulated and groundwater systems.

NSWIC engages in advocacy and policy development on behalf of the irrigation sector. As an apolitical entity, the Council provides advice to all stakeholders and decision makers.

Irrigation farmers are stewards of tremendous local, operational and practical knowledge in water management. With over 12,000 irrigation farmers in NSW, there is a wealth of knowledge available. To best utilise this knowledge requires participatory decision making and extensive consultation to ensure this knowledge can be incorporated into evidence-based policy. NSWIC and our Members are a valuable way for Governments and agencies to access this knowledge.

NSWIC welcomes this public exhibition as an opportunity to work with the Department of Industry – Water (DPIE) to incorporate local, practical and operational knowledge and expertise in water management. NSWIC offers the expertise from our network of irrigation farmers and organisations on an ongoing basis to ensure water management is practical, community-minded and follows participatory process.

This submission represents the views of the Members of NSWIC with respect to the draft Murray Alluvium Water Resource Plan. However, each member reserves the right to independent policy on issues that directly relate to their areas of operation, expertise or any other issues that they deem relevant.

## Overview

NSWIC welcomes the Draft Murray Alluvium Water Resource Plan (WRP). Water resource plans (WRPs) are a key mechanism for implementing the *Basin Plan 2012* (the Basin Plan). NSWIC acknowledges that the development of WRPs is a key commitment of the NSW Government under the Basin Plan.

WRPs must comply with Chapter 10 requirements for it to be accredited under Part 2 Division 2 of the *Water Act 2007 (Cth)*. This includes compliance with the Sustainable Diversion Limit (SDL), water trade rules, planning for environmental watering, water quality objectives, measuring and monitoring, and arrangements for extreme weather events.

Whilst Water Sharing Plans remain as the key regulatory instrument, WRPs are of critical importance to irrigation farmers and the irrigation farming industry. WRPs underlie irrigation farming operations and practices, and potentially have large economic and social impacts. Thus, it is crucial that WRPs are evidence-based, developed without rush, and that consultation is extensive.

NSWIC has several general positions and core considerations for the development of alluvium WRPs across the state. At the core of these positions are key principles that WRPs must be tailored to the

specific requirements of the area, be developed with the utmost participatory process, draw on the expertise of local groundwater authorities wherever possible, be clearly accessible and comprehensible in the manner and format of presentation, have no measures that result in negative third party impacts, be based on evidence and extensive research and allow for reviews.

This submission explains these general positions, and includes specific comments relating to the Murray WRP area. These general positions have also been outlined in earlier NSWIC submissions:

Summary of NSWIC positions on WRPs:

- Whilst consistency between areas in the template/form, methodologies and definitions of the WRP is neat, consistency does not outweigh the need to be flexible and context specific.
- The Risk Assessment Methodology must give a reflective, accurate and site-specific indication of risk.
- Further studies into Groundwater Dependent Ecosystems are needed.
- The methodology for determining Annual Permitted Take must be developed based on the local knowledge of groundwater source authorities and communities to be context-specific and consider underlying crop type, soil, and usage patterns.
- Water users must be consulted if there are any impacts from ongoing consultation with Indigenous nations on the ability of entitlement holders to utilise their entitlements.
- Basic Landholder Rights require clarification.
- Compliance with WSP and Basin Plan use limits should be managed to ensure there are no more than minimal impact, and the method should be guided by local groundwater authorities.
- Greater community participation is required, particularly in relation to Extreme Events Policy.

## Submission

### General Positions of NSWIC for WRPs

**Whilst consistency between areas in the template/form, methodologies and definitions of the WRP is neat, consistency does not outweigh the need to be flexible and context specific.**

NSWIC requests to meet with DPIE to discuss changes which are needed to the template being adopted to WRPs across the state, and state-wide issues.

NSWIC acknowledges the need for consistency in approach across the state. However, the methods, processes, standards and thresholds of one WRP should not be replicated inflexibly between valleys, as the issues, and requirements of each valley are context-specific. Whilst there is neatness in applying a consistent methodology or format, extreme care must be taken to ensure that the methods are the most effective and beneficial, particularly in relation to water users. NSWIC strongly encourages DPIE-Water to undertake an increased level of public participation in decision-making at a local level and consult with local groundwater licence holders across the state to develop the most suitable methodologies and practices for each area, and/or ensure that previously used methodologies and practices are appropriate in that instance. This approach acknowledges that each aquifer and groundwater source (and usage of that resource) is unique, and values the local, practical and operation knowledge held by people within these areas.

**WRPs must be developed based on principles of accessibility, readability and clear comprehension.**

WRPs should be communicated in a manner where it is able to be effectively, easily and clearly understood by water users. In principle, WRPs should be accessible and comprehensible to the broadest range of stakeholders. Complexity and need for extensive cross-referencing will make it difficult for stakeholders to be cognisant of all requirements in the WRP and may result in issues of clarity and a perceived lack of transparency.

Whilst a primary purpose of the WRPs is for accreditation by the Murray-Darling Basin Authority (and this does require technical detail), the audience for WRPs is broad and includes stakeholders who do not have professional policy or legislative training. Simplification and streamlining are necessary to prevent water users from feeling removed from the process, overwhelmed or misunderstanding the content of the Plans. NSWIC appreciates that the intention of the Fact Sheets and FAQs has been to address this issue of readability but encourages evaluation of the WRP template itself to distinguish between information for accreditation by the MDBA and explanatory material (possibly by separating these into separate documents). NSWIC appreciates the colour coding system adopted with this intention.

> ***Recommendation:*** *Wherever possible reduce the complexity of the WRP and provide additional explanatory materials for stakeholders. The format of the WRP requires evaluation and NSWIC seeks to meet with DPIE to discuss this. Explanatory materials should be in plain English to ensure clarity, comprehension and simplicity while key principles of accessibility are logically prioritised.*

## The Risk Assessment Methodology must give a reflective, accurate and site-specific indication of risk.

A cautionary approach is needed when calculating risk to ensure that the methodology captures a fair, reflective and accurate indication of risk.

Risk assessment methodologies which categorise consequence based on percentiles will automatically result in some groundwater sources being categorised in each of the low, medium and high categories, irrespective of the absolute risk level. This will likely lead to an overestimated calculation of risk. If a percentile-based methodology is adopted, this must be adjusted to the absolute risk (not just relative) when applied.

The consequence rating should be specific to a groundwater area, rather than being calculated state-wide. Each groundwater system has unique characteristics, functions, processes and uses. It is not appropriate to amplify or reduce the scale of risk assessment as results will be skewed since risks in some groundwater systems are not reflective across all groundwater systems, and the nuances of each groundwater system will not be captured.

Using metrics such as numbers of water users and the volume of extraction to calculate risk may lead to an overestimation of risk. A large groundwater source with a large number of users would automatically receive a high consequence rating category. This may create an inaccurate indication of risk, which would have unnecessary impacts on water users. We acknowledge that in some WSPs, the risk treatment pathway outlined in the Consolidated Risk does take into account the management rules applied in the Water Sharing Plan to ameliorate the risk and that in the cases where the risk outcome is classified as High, the residual risk is identified as High – tolerable. Additional metrics, adjustments or measures are necessary to ensure that risk assessment methodologies capture accurate, appropriate, context-specific representations of risk.

> ***Recommendation:*** *DPIE-Water is to ensure the risk assessment methodology reflects threats to the aquifer itself, using absolute rather than relative measures which are context-specific. Risk assessment methodology should also be based on local recommendations.*

## Further studies into Groundwater Dependent Ecosystems are needed.

NSWIC motes the reduction in the landholder rights that setback the GDE distance has reduced from 200m to 100m while also increasing the groundwater dependent ecosystems (GDEs). It is important that this policy decision be subjected to further evidence-based process, with evidence being appropriately reviewed, ground-truthed, and knowledge gaps filled.

**High priority GDEs need defining and consistenc** – NSWIC requests clarification with regard to application of the High Ecological Value Aquatic Ecosystems (HEVAE) framework in the creation of the various classes of GDE assets. GDEs are defined and mapped, the inclusion of this terminology implies that there are some GDEs that of low significance and perhaps deserves limited attention. If this is <u>not</u> the case, the term 'high priority' needs to be removed from all documents and only reference GDEs as defined in the dictionary and as identified in the attached map schedule.

**Methodology to identify GDEs requires increased certainty** – Greater certainty in the methodology underpinning identification of GDEs is required before this method can be used to assess risks of groundwater extraction to GDE that are not managed according to the existing WSP rules.

**Need for further research** – Historically, provisions for further studies and reviews of recharge have been included in WSPs but have not been completed. This has resulted in policy creep where the status quo has been maintained without justification. Consequently, any water greater than the extraction limit has become Planned Environmental Water by default. The risk for water users is that if the Department does not undertake reviews (as have been committed to in the past) insufficient information is known about GDEs to be able to determine how GDE management should interact with water users. Specifically, the degree of reliance of GDEs and which specific aquifer system that GDE depend upon, are crucial pieces of information in order to best manage both the GDE and water usage.

Although the plan stated there is no connectivity to a non-Basin water resource in the valley such that there is no take from non-Basin water resources that affect, or potentially affect, the SDL resource units of the Murray Alluvium WRPA. There is a strong connectivity between the groundwater and surface water resources in the valley that requires further study rather than reliance on modelling.

**The result of delaying reviews is that a precautionary approach is taken which does not apply equal caution to the potential social or economic impacts of the rules of groundwater extraction.** NSWIC recommends that the WRP should facilitate further reviews to:

- Identify and close knowledge gaps
- Validate existing data
- Quantify the degree of reliance

**Unless the evidence relied upon is validated, water users should not be impacted, and GDE identification should be removed.** NSWIC is mindful of water extraction having proven significant impacts on groundwater that would require water extraction rules being amended. However, the onus to prove whether groundwater extraction poses any risk to a GDE should be on government agencies. Decisions made primarily based on vegetation mapping which are not ground-truthed are insufficient. Precaution should be exercised in the interim whilst further information is being captured to underpin development of a robust methodology to inform long-term rules and avoid adverse social and economic impacts. Further reviews are urgently needed to better understand the nature and magnitude of the linkages between groundwater extraction and GDEs.

> ***Recommendation:*** *DPIE-Water should undertake an investigation into GDEs to improve the certainty of the evidence-base (improve knowledge gaps, validate existing data and quantify the degree of reliance GDEs have on groundwater) within the timeframe of the WSP to be implemented in 2019, and amend GDE provisions in the WRP accordingly.*

**The methodology for determining Annual Permitted Take must be developed based on the local knowledge of communities to be context-specific that consider cropping systems, soil and land characteristics and water usage patterns.**

The method for determining APT must be valley-specific and determined based on consultation with local stakeholders. Since usage pattern is unique to each valley, the method to determine SDL

compliance must be based on the specific needs of each valley. Consistency of methodology is not as important as ensuring accuracy and appropriateness of the approach used in each individual circumstance.

When new and relatively untested methodologies are used, there are numerous critical issues to consider. For example, the rainfall relation model may be suitable in some valleys (e.g. where people use surface and groundwater conjunctively) but not in others (e.g. where there is a rapidly changing irrigation sector and fluctuating water demand).

Key considerations when selecting the methodology to determine APT include:

*Underlying crop type*

The irrigation sector is constantly evolving. Some areas are experiencing changes to the underlying crop type, which directly influences the demand (volume and seasonality/timing) for water. For example, a shift away from seasonal cropping towards permanent plantings (such as almonds), results in less significant fluctuations in the demand for water, and requirements for greater continuity in water extraction. Thus, in these circumstances, it is expected that water demand will become increasingly decoupled from rainfall. The relationship between rainfall and water demand must be a key consideration, particularly if rainfall-relation models are being considered.

*Distribution of rainfall*

The areas covered under WRPs are large, and rainfall may vary considerably within one WRP. Consideration must be given to rainfall variability and distribution within the WRP area; where rainfall is measured; how many measuring points are required; the timing and seasonality of rainfall; the ability (physical and regulatory) to capture rainfall; and long-term rainfall trends. This can be managed by having several rainfall points to account for spatial variability.

*Caution is needed in the use of historical data for future projections*

Care must be taken when using rainfall historical data as an indicator of future trends. This is because of changes in the agricultural enterprise, rainfall characteristics and in pattern of water; all these have to considered.

*A process to explain compliance triggers is needed*

Water license holders need the certainty of knowing from the beginning what happens if there is a compliance breach. For example, under a rainfall relation model, the use of groundwater when rainfall conditions are low may push a user over a compliance trigger unknowingly. NSWIC requests that compliance triggers and processes be outlined.

*A provision for a review period is needed*

A provision is required for a review of all relatively new and untested methodologies within a predetermined timeframe. DPIE-Water should reserve the right to amend a method if it is

found to be inappropriate when implemented. Flexibility must be retained to discontinue a methodology beyond 2029 if circumstances require.

NSWIC and Members strongly requests that stakeholders are provided with all available information at the earliest possible opportunity to best be involved in decision making, and to be able to share the local and operational knowledge of how polices will function on ground.

> ***Recommendation:*** *DPIE-Water should consult with local stakeholders in each groundwater source on the appropriateness of the APT methodology in that area to ensure local circumstances are considered (e.g. crop type, underlying soil type, rainfall variability, etc). Also, rainfall data should be collected from several locations to account for spatial variability in the valley. This process should be subject to review at the conclusion of the WSP. NSWIC suggests that when a new untested methodology is being implemented, that a tested complimentary methodology is simultaneously applied to provide control for validation of the new technique.*

## Water users must be consulted if there are any impacts from ongoing consultation with Indigenous nations on the ability of entitlement holders to utilise their entitlements.

NSWIC welcomes and respects the consultation with Indigenous people and organisations as part of the development of WRPs. NSWIC understands that consultation with Indigenous stakeholders is ongoing and respects cultural connections to groundwater. If this consultation results in the development of any new proposals which may impact the rights or ability of water access entitlement holders to utilise their entitlements, then there must be further consultation with license holders before any new provisions are developed.

> ***Recommendation:*** *License holders should be advised of the outcomes of consultations with indigenous communities and of any potential implications for the rights or ability of water access entitlement holders to utilise their entitlements.*

## Basic Landholder Rights require clarification

NSWIC members seek clarification on whether the definition of basic landholder rights has been changed. Clarification is needed as to whether stock and domestic rights are recognised under basic landholder rights. Clarification is also needed for the definition of “reasonable use”. DPIE-Water has advised that as long as a property overlays the groundwater source, the property owner is entitled to utilise groundwater as a basic landholder right even if the bore isn’t located on the property. NSWIC requests clarification of this.

> ***Recommendation:*** *Clarification is needed on basic landholder rights on the rights to the groundwater and any limits to take.*

### Compliance with WSP and Basin Plan use limits should have only minimal impacts on the rights of licence holder and should be guided by local groundwater authorities.

There are two main options for addressing non-compliance with either the WSP long term average annual extraction limit, or the Basin Plan SDL:

1. Allocate water to all licenses and then reduce the allowable water account debit to limit usage. While this would benefit the more active users, it should enable all licence holders the capacity to use or trade a known volume of their entitlement.
2. Reduce the available water determination (allocation) to all licences to ensure compliance with the use limit. This is likely to disadvantage more active users, particularly in groundwater areas where there is significant over-allocation. It will however allow carryover and presumably making all allocation tradeable.

The position of NSWIC is that steps be taken to ensure that implementation of WSP will have minimal impact on the rights of license holder to participate in the water market. Furthermore, the approach should be guided by the recommendation of each groundwater source authority. This will ensure that addressing any issues of overallocation will be valley specific and reliant on local expertise. NSWIC offers to assist in identifying the local expertise to provide confidence and viability of the scheme.

> ***Recommendation****: The water market must foster confidence from all water users by being transparent, simple to use, based on well-informed price data and sound reporting.*

### Monitoring water quality

NSWIC understands the role of the approval holder for ongoing monitoring of the water quality. The guideline is not clear on the specific variables/parameters to monitor to avoid situations that will trigger ministerial intervention. Requirements for monitoring should not be too burdensome on our members.

NSWIC understands the importance of MER programs for ensuring accountability and transparency and how they inform adaptive management approaches based on continuous learning, review and improvement. NSWIC believes that reports from these schemes are made available in an easy-to-understand format to guide and incentivise continued improvement in management practices.

> ***Recommendation:*** *The DPIE-Water provides guidelines on water quality monitoring appropriate for the locality*

### Greater community participation is required, particularly in relation to Extreme Events Policy

NSWIC firmly believes that the continual reduction in stakeholder involvement is becoming a critical issue, which risks the loss of valuable practical and operational knowledge that is integral to sustainable management of water resources.

> ***Recommendation:*** *Greater stakeholder participation in decision making, such as by requirements for representation on advisory panels to ensure practical and local knowledge resources are utilised. The WRP should include a clear process for how Critical Water Panels*

*should be established, how they should operate, what transparency requirements are needed, and what communications and reporting are required.*

## Conclusion

NSWIC welcomes the Draft Murray Alluvium Water Resource Plan. NSWIC requests that DPIE-Water respond to the aforementioned issues. It is crucial that flexibility is maintained between valleys, and that local expertise is utilised in decision-making. NSWIC is happy to work with DPIE-Water on any of the above issues.

Kind regards,

NSW Irrigators' Council.

[redacted]

19 July 2019

[redacted]

Dear [redacted],

**Submission in response to Draft Murray Alluvium Water Resource Plan**

WaterNSW is responsible for supplying the State's bulk water needs, operating the State's river systems and the bulk water supply system for Greater Sydney. We service approximately 46,000 customers on matters including licences and approvals, water allocation trades, water licence trades and water resource information.

As with all new alluvium water sharing plans (**WSP**), it is a positive step forward that the draft Murray Alluvium WSP combines in one WSP the previously separate groundwater sources of the Lower Murray, Lower Murray Shallow, Billabong Creek Alluvial, and the Upper Murray.

We note that the draft Murray Alluvial WSP updates estimated water requirements for basic landholder rights, yet there are no reasonable use guidelines for this category of water take under the *Water Management Act 2000*. It is to the benefit of the resource, users, licensors and regulators that the reasonable use guidelines are treated as a priority and finalised, using the momentum in this area from the 2018 water reform roadshow.

The standardisation of distance rules for new bores used solely for basic landholder rights is a further positive outcome of the draft Murray Alluvial WSP, as is the minimum distance requirements for the construction of new water supply works not used solely for basic landholder rights. The prohibition on granting new or amended waters supply works approvals within specified distances of a contaminated source or plume is similarly beneficial to ensuring a consistent licensing and approvals outcome, as well as limiting access to possible contamination sources. WaterNSW will continue to work with Departmental hydrogeologists to understand what constitutes a "sufficient distance" so that water supply work approvals can be granted without risking aquifer contamination.

It remains important that the roles and responsibilities of relevant water agencies are accurately identified in the water resource plans. WaterNSW's role with respect to metering in this valley is that it bills water use according to the metered data, and the Natural Resources Access Regulator undertakes compliance and enforcement monitoring. We **recommend** the language in this section is amended to accurately describe WaterNSW's functions in this water resource (section 7 at page 67).

WaterNSW continues to support outcomes-based water resource plans that show functional separation of the market participants and reduce market complexity to facilitate a modern, efficient, effective and responsive water market that is understood by all participants.

Yours sincerely

INLAND RIVERS NETWORK

[redacted]

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Sydney NSW 2001

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Friday 19 July 2019

**Comments on Draft Murray Alluvium Water Resource Plan**

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 provide comments on the Draft Murray Alluvium Water Resource Plan (draft WRP).

**Background**

IRN submitted substantial comments to the Status and Issues Paper on the Murray Alluvium Water Resource Plan released in 2017.

We noted with concern the major problems with rising salinity levels in the groundwater sources of the Murray.

We also that recovered groundwater levels have declined from the pre-development levels and that rules for reducing extraction in the Lower Murray Deep Alluvium were possibly not being met.

The decision that '*groundwater levels can stabilise at a lower level under a new pumping equilibrium*'[1] has not been discussed in the draft WRP.

We also highlighted the fact that the long-term average annual extraction limits (LTAAEL) for the Upper Murray Alluvium was raised from 11,976 ML to 14,109 ML during the making of the WSP. The annual average recharge of the alluvium is estimated at 15,300 ML.

[1] Murray Alluvium Status and Issues Paper p 21

This issue has not been addressed in the draft WRP although raised as an issue of significance in the management of this water source.

The draft WRP is based primarily on the attempt to match water sharing plan rules with the requirements of the Basin Plan without recognising the level of historic impacts such as the permanent declined from the pre-development levels of groundwater in some places and high salinity in rising water tables.

IRN considers that the proposed introduction of a 'variable' rule for annual permitted take in the Upper Murray and Lower Murray groundwater sources will cause the continued decline in recovery of groundwater levels and water quality in these aquifer systems. This is not sustainable water management.

The draft WRP states that the LTAAEL specified in the Murray Alluvium Water Sharing Plan (WSP) *represents a fraction of this water in these groundwater sources'*.[2]

However, this does not explain why there has been a permanent drawdown of the water levels in the Murray Alluvium caused by over-extraction.

The fact that the Sustainable Diversion Limit (SDL) in the Basin Plan for the Murray Alluvium is equal to the LTAAEL in the WSP requires a strong set of management rules to prevent further permanent drawdown of the groundwater sources and loss of planned environmental water (PEW).

As noted above the close relationship between the annual average recharge of the Upper Murray Alluvium and the LTAAEL/SDL does not reflect a sustainable limit and has caused a reduction in available environmental water from previous water sharing arrangements. This is a high risk approach to groundwater management.

We note that the all groundwater sources in the Murray Alluvium have a volume of held environmental water (HEW). The presence of HEW in this WRP area also requires clear rules for its protection.

IRN does not support the conclusion in the draft WRP that there will be no 'net' reduction in PEW.[3]

**Groundwater Dependent Ecosystems (GDEs)**

The Murray Alluvium has been assessed to support high and very high value GDEs.

The very high values are due to the extent of internationally significant Ramsar wetlands and wetlands listed under the Directory of Important Wetlands in Australia (DIWA) that support habitat for a large number of threatened species.

The Murray alluvium is dominated by the groundwater dependent communities of river red gum woodland wetlands, lignum wetlands, freshwater wetlands, black box-lignum, black box and yellow box woodlands. These communities are generally characterised by having a high number of threatened species, endangered ecological communities, an extensive connected riparian corridors and basin target vegetation species (MDBA 2014) of black box, lignum and river red gums. The riparian

[2] Murray Alluvium Water Resource Plan p 35
[3] Ibid p 36

communities are expected to provide vital habitat to nesting species and contributes to ecosystem function of instream ecosystems.

IRN does not support the direction being taken with proposed rule changes in the WSP. These will not protect the level of groundwater in the aquifer system identified as environmental water or prevent drawdown near high priority GDEs.

The 'variable' rule will impact on PEW near GDEs during dry times. This may have long term impacts on the health and resilience of these significant ecosystems.

**Connectivity**

The Murray Alluvium water sources are highly connected to surface water and to each other.

'*Recharge to the Lower Murray Shallow Alluvium occurs through rainfall, leakage from irrigation, and the Murray River. Groundwater inflow to the underlying Lower Murray Deep Alluvium is primarily through downward leakage from overlying shallow alluvium. Recharge to Upper Murray and Billabong Creek Alluvium occurs from rainfall and leakage from the Murray River and Billabong Creek respectively*.'[4]

It is understood that there is a lag time for groundwater pumping impacts on connected surface water sources. Therefore, the groundwater sources are managed separately from the river. The LTAAEL is considered to manage these impacts.

IRN has major concerns that the proposed 'variable' rule for increased groundwater take during dry times will not adequately manage the impacts of delayed and/or subdued impacts on surface water sources.

The groundwater resources along the border region of Victoria and NSW are variously contained within shared or common aquifers. It is very concerning that despite common hydrological characteristics of much of the border region, there is no policy or statutory imperative for addressing the impacts of groundwater extraction in one state, on other uses across the border.

The impact of the 'variable' permitted annual take in the NSW draft WRP needs to be considered in regard to impacts on Victorian water users and the significant GDEs supported by the Murray Alluvium.

This proposed new groundwater management rule also needs to be considered in the context of delayed impacts on surface water PEW and the use of HEW to achieve improved environmental outcomes

IRN is concerned that this proposed rule change will not protect groundwater PEW and HEW, connected surface water PEW or the use of HEW though hydraulically connected systems.

[4] Murray Alluvium Status and Issues Paper p12

**Risk Assessment**

The risk assessment outcomes for potential risks to GDEs associated with groundwater extraction causing drawdown were medium and high in the Murray Alluvium.

Other high risks include groundwater extraction inducing connection with poor quality aquifers in the Lower Murray Shallow and Lower Murray, risk of local drawdown reducing access by consumptive users in the Upper Murray, Lower Murray Shallow and Lower Murray, growth in basic rights and reduced recharge in Upper Murray.

The high risk of reduced recharge in the Upper Murray is significant in regard to the issues raised about the volume of LTAAEL/SDL raised earlier.

Medium risk to structural integrity of the aquifers in the Upper and Lower Murray Alluvium is also a key concern.

IRN does not support the risk assessment that climate change will have a low impact on reducing recharge and groundwater availability to GDEs and instream ecological values.

The draft WRP states that the LTAAEL has been determined with consideration of historic extraction and groundwater levels, rainfall and groundwater connectivity to streams.[5]

It states that '*Compliance with these limits should ensure that, under similar conditions, sufficient water will remain in the aquifer to maintain groundwater dependent environmental assets, the structural integrity of the aquifer and connectivity to surface water*.'[6]

Climate change will cause different conditions than historic rainfall levels. NSW is now experiencing worse drought conditions than the 1902 drought, considered to be the worst drought on record in Australia.

The proposed 'variable' rule does not reserve all water above the LTAAEL for the environment as PEW.

IRN does not consider these risks to be tolerable because the proposed mitigation measures and proposed rules in the WSP are not consistent with the objects of the Basin Plan.

The impacts of over-extraction of the Murray Alluvium must be recognised and mitigated in the WRP.

**Water Quality**

The high levels of salinity in the Murray Alluvium is a significant issue that has not been adequately addressed in the draft WRP.

[5] Murray Alluvium Water Resource Plan p 35

[6] Ibid

Salinity levels of up to 60,000 uS/cm in the Lower Deep Alluvium and a median of 25,000 uS/cm in the Lower Shallow Alluvium is a high risk to high ecological value GDEs and cultural values.

We note access licences with a combined volume of 21,501 ML/year to manage salinity and rising water tables. However, we do not consider the salt interception schemes to be an adequate response to the ongoing risk of high salinity levels in the Murray system.

The Water Quality assessment identifies that the Lower Murray Shallow and Lower Murray Deep Alluvium are at high risk of extraction causing a change in the beneficial use category, while the Billabong Creek and Upper Murray are at medium risk.

The measure for mitigating this risk is to limit seasonal drawdown in high risk areas.

A water management action and mechanism is to reserve all water above the LTAAEL for the environment as PEW.

The proposed 'variable' rule will achieve neither of these measures.

Many of the salinity mitigation measures are referred off to other land use practice processes rather that recognising that the irrigation industry has been a key source of rising water tables over time.

We note there is a knowledge gap for management of nutrient mobilisation, pesticides and other contaminants including pathogens entering the groundwater source. There are no measures identified in the WRP to improve knowledge of these key water quality issues.

**Water Sharing Plan Objectives**

IRN supports the broad environmental objective of the Murray Alluvial Groundwater Sources WSP to protect the condition of the groundwater sources and their groundwater-dependent ecosystems over the term of the plan.

This support includes the targeted objective to protect the extent and condition of high priority groundwater-dependent ecosystems that rely on the groundwater sources. Also to maintain salinity levels and protect the structural integrity of the aquifers.

The performance measures need to include the maintenance of the structural integrity.

A targeted objective to contribute to the maintenance of the structural integrity of the aquifer should also be included in the economic, social and cultural objectives.

**Proposed Rule Changes**

1. Variable rule

The Fact Sheet on proposed changes to the Murray Alluvium WSP indicates that:

'In the Upper Murray and Lower Murray groundwater sources the annual permitted take will be the sustainable diversion limit (again equal to the long-term average annual extraction limit) modified each year, based on rainfall at Albury and Denilquin. The amount of actual rainfall is compared to average annual rainfall at each of those locations and used to vary the annual permitted take by up to 20% of the sustainable diversion limit. In general, extraction exceeds the sustainable diversion limit in dry years and is below it in wet ones, and the variation aims to manage this effect.'

IRN understands that this rule change will allow for 115% of SDL to be extracted in dry years and 80% of SDL to be extracted in wet years.[7]

However, this proposed new rule does not appear to be included in the draft Murray Alluvium WSP on public exhibition for comment.

This proposed rule change occurred in Part 6 under the clause titled 'Assessment of compliance with Basin Plan long-term annual diversion limit', in the draft Murrumbidgee Alluvium WSP, draft Lachlan Alluvium WSP, draft Gwydir Alluvium WSP and the draft Macquarie-Castlereagh Alluvium WSP.

IRN has objected to this complex arrangement of climate adjusted annual permitted take because we consider it is not in keeping with the concept of LTAAEL and SDL and the protection of PEW.

The proposed rule change that does not seem to appear in the draft Murray Alluvium WSP, allows for a greater level of extraction during dry times, an action that paves the way for further permanent drawdown in the water source.

The draft WRP claims that rules in the water sharing plan will manage high and medium risks in the Alluvium[8]. However, permanent drawdown of the water source is a direct reduction in PEW.

This risk will not be managed through the implementation of the 'variable' rule in the Murray Alluvium.

This proposed rule change has major implications on the availability of PEW to support GDEs during dry times.

This proposed rule also has implications on the protection of HEW in this water source. An increase in take by 115% of SDL is either reducing PEW or reducing HEW, or both. This impact has not been recognised in the draft WRP.

As noted above, the Murray Alluvium has a significant number of high risks and medium risks including structural integrity, induced connection with poor quality aquifers and local drawdown impacted on consumptive users, GDEs and instream ecological values.

The measure for mitigating the risk of a change in the beneficial use category is to limit seasonal drawdown in high risk areas. The proposal to increase extraction beyond the SDL during dry times is counter to this mitigating measure.

[7] Ibid Table 5-4 p 52
[8] Murray Alluvium Water Resource Plan Table 3-2 p 33

The ‘variable’ rule will also not manage the risk of climate change. If there are an increasing number of dry years, the extraction of SDL plus increased take will become more the norm than the exception.

This rule relates entirely to irrigator behaviour between wet and dry years and has no role in managing risk or protecting planned environmental water in the Murray Alluvium. The water is generally not needed in wet years but must be shared carefully in dry years.

The application of the variable rule in the Murray Alluvium is likely to increase a range of identified high risks, as outlined above and cause a ‘net’ reduction in PEW.

IRN strongly objects to this proposed climate-adjusted annual permitted take because it will not meet objectives to protect environmental water or the integrity of the aquifers.

The annual permitted take for the entire Murray Alluvium water source must remain at the SDL.

The variable rule is insupportable.

2. Removal of protection of recharge

IRN does not support the proposed rule change for the protection of planned environmental water. The protection of recharge inflows to alluvial aquifers was a subject of great importance when the first water sharing plans were being developed.

The fact that parts of the Murray Alluvium has been impacted by a permanent drop in water levels heightens the importance of protecting recharge. The actual volume of PEW has already decreased in these groundwater systems.

The protection of recharge in the Upper Murray is of particular importance.

The timing of the availability of PEW is critical during dry periods and the protection of a percentage of recharge is an important factor in protecting the integrity and water levels in alluvial aquifer systems. It is also critical for supporting high priority GDEs.

3. Increase in time period for LTAAEL compliance

IRN does not support the proposal to increase the time period over which compliance to the LTAAEL is assessed, to provide consistency across water sources. It is proposed to increase the compliance period from three years to five years

The Murray Alluvium has a high level of risk across a number of criteria and needs to be monitored for compliance to rules more regularly, not less.

This proposal is particularly concerning in light of the proposed ‘variable’ rule.

IRN considers that consistency of compliance to LTAAEL should be a three year rolling average across all water sources.

This will give much greater assurance that planned environmental water is protected.

We do not support the Department of Industry proposal that LTAAEL compliance be standardised to a five-year rolling average period in all Murray–Darling Basin water sharing plans.[9]

This should be standardised to a three-year rolling average period.

4. Compliance triggers

IRN does not support the current triggers for requiring action to ensure compliance with the LTAAEL:

10% or more for the Billabong Creek Alluvial Groundwater Source,
5% or more for the Lower Murray Groundwater Source,
10% or more for the Lower Murray Shallow Groundwater Source,
10% or more for the Upper Murray Groundwater Source.

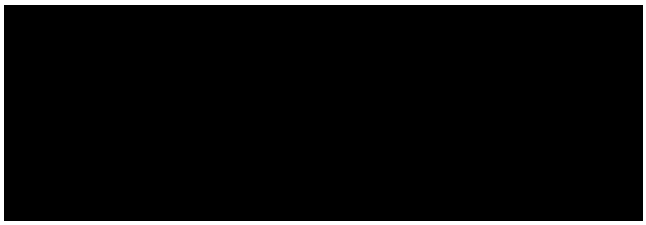
The trigger should be 5% in all water sources to ensure compliance with the SDL.

**Conclusion**

IRN does not consider that the draft Murray Alluvium WRP will meet the requirements of the Basin Plan.

The proposed changes to WSP rules will not protect planned environmental water, achieve management of risk, or improve water quality.

For more information please contact:



[9] Frequently Asked Questions Fact Sheet p 2