

to: macquarie-castlereagh.gw.wrp@dpi.nsw.gov.au
date: Dec 14, 2018, 5:00 PM
subject: Comments on Draft Macquarie Castlereagh Alluvium Water Resource Plan

Dear Department of Industry – Water staff,

Please consider the following comments on Draft Macquarie Castlereagh Alluvium Water Resource Plan. I find it more convenient to put comments in this form than to use your internet submission system.

A. Sustainability of diversion limit and variable rule

There is substantial evidence of unsustainable over extraction from some sections of this water source. Water levels have not rebounded in wetter years. There has been a serious loss of River Red Gums which are a keystone component of many groundwater dependent ecosystems, notably during and following the ‘millenium drought’. Such droughts are likely to occur much more often due to climate change. The volumes extracted and the levels to which groundwater falls should be managed to ensure that ecosystems and opportunities for future groundwater use do recover fully between droughts. This means that the diversion limits should be lowered so that they are actually sustainable in the long term. The unsustainable level of extraction, and the economic and social benefits associated with it, cannot be sustained. Users have been allowed to take too much at the expense of people and ecosystems in the future.

The risks of serious consequences from extraction have been assessed. For several aquifers these are high risks. The measures listed as possibly ways to reduce these risks or limit the consequences if monitoring and evaluation indicate a problem will be ineffective where some of those consequences are already occurring or if the response to evaluation is too slow.

The diversion limits should be reduced now from all aquifers where risks associated with potentially excessive extraction are high. This includes any of the categories of risk shown in the risk section of the WRP.

The idea of allowing access to 20% more water than the current SDL in dry years while limiting use to 80 % in wet years is unacceptable. I appreciate the financial and social benefits of enabling groundwater to be used in dry years when there is less rain and less surface water but the ecosystems that are partly supplied by those sources as well as groundwater are not able to take an extra 20% when the groundwater level has dropped away. When the big river redgums die the loss of many other values follows and replacement can take a hundred or more years.

Until the full impacts of the climate changes already set in train have been experienced for decades and new aquifer recharge patterns established, and until full recharge is proven to occur in wet periods, allowing 20% overuse in dry years is unacceptable. Unfortunately usage does need to be reduced now. Those individuals and communities who have benefitted from over-extraction need to accept the cost of this and change to enable sustainability.

B Groundwater Dependent Ecosystems

I am pleased to see the great progress that has been made in the last 20 years in identifying GDEs. I congratulate all who have been involved in either identifying them or proposing policies and procedures to protect them. I support the recognition of a wide range of ecosystems as being wholly or more often partly dependent on groundwater. Dependence is dependence. I support the environmental objectives proposed in relation to GDEs. It would have been nice if they could apply to all GDEs not just high value ones so but actually succeeding in protecting these is most important. It should be recognized that this is a compromise and many have already been put at risk.

Many GDEs are partly dependent on surface waters and may also be at some risk from changes to surface flows. Both this WRP and the surface water WRP should say how they will be implemented in ways that take this dual dependence into account.

C Triggers for risk management

The table of risks and responses ends with a column about monitoring and evaluation. Results and to be published after 5 years. There is nothing to say what will trigger a response although there are a limited range of actions listed as potential responses. I have the impression that serious problems could be monitored for 5 years then more years taken to consider responding by which time it may be too late. Triggers for action should be proposed in the WRP and procedures for timely action provided. Timely action has been taken when town water supplies are threatened.

Please show how timely action will be taken when GDEs or aquifer collapse are a possibility.

D. Planned environmental water – these provisions are proposed to be changed in a way that puts the environment at more risk. Please ensure that recharge is required to protect the environment.

Yours faithfully,

Kate Boyd

You may publish my comments and name but please do not publicise my address(below) or email

Email address	[REDACTED]
Name of respondent	[REDACTED]
Address	[REDACTED]
Contact phone number	[REDACTED]
Are you an individual or representing an organisation?	Organisation
Organisation or Business Details	
Name of Organisation	Water Resources Drilling
Who are you representing?	Water related industry
Draft Macquarie-Castlereagh Alluvium WRP	
<p>The Macquarie Groundwater Water Resource Plan Comments on Site Sewage system Rule</p> <p>I have a number of comments about the Department of Industry Water Consultation and the proposed implementation of the rule of bores drilled within 250 metres of a on site sewage system</p> <p>The issues go to</p> <ul style="list-style-type: none"> - transparency in how the 250 metre rule will be implemented, - treating some basic right landholders unfairly and differently to others ie those who source bores vs river water or dams for basic landholder rights. - Co-ordination between Department of Industry and Water NSW on this rule. <p>.The issues in more detail are”</p> <p>1) There are a number of problems with the documentation firstly and I quote from the fact sheet about what is changed for the Macquarie alluvial water sharing plan.</p> <p>“Also, we propose an additional rule for all groundwater sources to reduce risks to public health and safety from contaminated groundwater resulting from on-site sewage disposal systems:</p> <ul style="list-style-type: none"> • A water supply work approval located within 250 metres of an on-site sewage disposal system may only be granted or amended if the water supply work is: <ul style="list-style-type: none"> o constructed with cement grout between the bore casing and the borehole annulus to a minimum depth of 20 metres from the ground surface o located at sufficient distance from the on-site sewage disposal system to prevent septic contamination of the aquifer.” <p>At the Dubbo Meeting for consultation of the Upper Macquarie Plan I asked what is meant by the third point located at a sufficient distance from the on-site sewage to prevent septic</p>	

contamination of the aquifer.

The answer was that if the new bore is grouted then the bore does not need to be sent away for assessment by a Department of Industry Hydrogeologist, hence suggesting you can put the bore anywhere near a on site sewage system if you grout the annulus to a depth of 20 metres.

I checked this with WaterNSW Water regulation staff and for the Upper Macquarie and or all alluvial systems they send these away to Water Industry NSW which are meant to take 4 weeks to review but I have seen it take up to 7 weeks to be assessed. In a time of drought that is totally unacceptable for a bore owner as it can take them months after that to then source a driller once they have their bore licence.

In summary my question was not answered how far is a suitable distance for a bore to be from a Septic tank. It is quite clear that Department of Industry does not have the answer at this stage as there is no transparency to why this 250 metre rule has been introduced and what public health issues on site sewage treatment systems is occurring in the Macquaire alluvials.

2) WaterNSW need to be involved in the development of the Water Resource Plan as they have the job of implementing the rules being developed by Department of Industry Water who appear to be removed from the coal face and what is happening with the community and bores particularly stock and Domestic Bores.

It is quite obvious that having one Department make the rule Department of Industry Water and the other Department Water NSW implement the rules is not working in this case as they 'do not sing from the same 'songsheet'

3) Looking at the minimum bore construction standards for water bores it says in section 5

5.2 All water supply bores should be positioned away from the influence of possible sources of contamination.

5.3 In bores where the target aquifer is deeper than the source of the contamination, the bore may be constructed providing the contaminated formation is adequately cased and cement sealed.

This makes sense and any professional licenced water driller would do this.

My question is why does the Department spend more of its time educating water drillers and bore owners about the best location to avoid contamination from On site sewage system rather than just have blank and white rules which it does not have the resources to assess in a timely or transparent fashion.

The Department has not provided any data to prove that contamination for stock and domestic bores is occurring in the Macquarie Alluvial aquifer system

4) The approach of the Department on this issue is all wrong and poorly thought out. It is unfairly denying some people a basic landholder right to access groundwater for a range of requirements which will have no impact on human health or

After reading the Water Resource Plan Body, please indicate any general suggestions to improve the WRP Body:

pollution of aquifer in many instances if a common sense approach is taken.

IF the Department is so concerned about Human Health issues from water raises the following questions

- Why are bore owners with groundwater licences being discouraged from using groundwater but the Department has not introduced any rules about landholders using water from rivers creeks and even dams were E Coli pollution from stock native animals is potentially higher then from groundwater and a well designed septic systems.

- What does a landholder do who wants to access shallow groundwater less then 20 metres from surface just for stock water or spray water for their weed spraying being denied access.

- The 20 metre grout rule should be changed to say bores need to be deeper then 20 metres and the driller is to isolate any shallow water or surface water from the productive aquifer. This still does not address the landholder who wants to access shallow water 20 metres as there is no deeper water he can access.

- If the issue is a health issue why is the Department allowing existing users (many thousands of them) to use groundwater from licenced bores simply because they were granted a bore licence before September 2017 when this 250 metre rule was implemented.

The Department has provided little or no data to justify the introduction of the 250 metre rule for a bore from an on-site sewage system.

- It is urged the Department does not introduce the 250 metre rule for bore from on site sewage systems for Macquarie Water Sharing plan but rather request bore owners to monitor the water quality of the bore if it is going to be used for domestic purposes.

Greg Brereton
Managing Director
Water Resources drilling

Response to chapter 7: Measuring and monitoring

Do you have any comments on the measuring and monitoring of water resources?

Yes only Department has not presented any information on the waterquality impacts from on site sewage systems in groundwater such as nitrate level E Coli coliforms and bacteria.

Do you have any comments on the monitoring of water resources?

Yes little or nor monitoring of water quality appears to occur on any regular basis

How did you hear about the Public Exhibition of this plan?

Please let us know how you heard about the

opportunity to make a submission?	Newspaper
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Additional Information

I give permission for my submission to be publicly available on the Department of Industry website	Yes
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This PDF is generated by the trial version of [Google Forms Email](#) add-on.

Email address	[REDACTED]
Name of respondent	[REDACTED]
Address	[REDACTED]
Contact phone number	[REDACTED]
Are you an individual or representing an organisation?	Individual
Response per WRP chapter	
Do you have any comments on how DoI Water can improve the consultation process undertaken?	Environmental advocates would have better faith in the processes undertaken had reference been made to strategies gained from objective scientific sources such as UNSW who have researched wetlands for the previous 4 decades, other university Environmental faculties involved throughout the Basin, The Climate Council, Conservation Organisations such as Inland Rivers Network and Lifeblood Alliance, etc. Better faith would also have been evident had Aboriginal representation been considered.
Response to chapter 2: Water resource plan area and other matters	
Do you have any comments on this chapter?	<p>The creeks, rivers and much of the vegetation in the Murray-Darling Basin is supported by the availability of groundwater, either as water replenishment into rivers or through direct uptake through plant roots.</p> <p>Historical practices of over extraction of ground water in the Murray-Darling Basin have created the serious threat of depleted groundwater sources. All life in our Basin – environmental, cultural, social and economic, depends on reliable ground water sources.</p> <p>On average, rates of groundwater extraction have increased by about 100% between the early 1980s and the early 2000s. Between 2001 and 2007 the average annual loss of surface water and groundwater was 150% of the total water usage in a normal year. Despite rainfall rebounding in 2007 and 2008, the Gravity Recovery and Climate Experiment (GRACE) data showed a continued decline in groundwater storage.</p> <p>http://www.groundwater.com.au/news_items/op-ed-declining-groundwater-is-a-big-problem-for-australia</p>
Response to Chapter 3: Risks to water resources	
	<p>The Risk Assessment for the Macquarie Castlereagh Alluvium Water Resource Plan Area Schedule D identifies many high not tolerable and medium not tolerable risks to the alluvium:</p> <ul style="list-style-type: none"> • Risks to structural integrity of the groundwater system in Lower Macquarie Zone 1 and the Upper Macquarie are considered High not tolerable. Risks in Lower Macquarie Zone 2 and the

Do you have any comments on the strategies to manage the risks identified?

Cudgegong are medium not tolerable.

- Risk of local drawdown reducing groundwater access by consumptive users in Lower Macquarie Zone 1, Lower Macquarie Zone 2, Lower Macquarie Zone 3 and Upper Macquarie Alluvium are currently High not tolerable. In Lower Macquarie Zone 4, Lower Macquarie Zone 6, Coolaburragundy-Talbragar and Cudgegong are medium not tolerable.
 - Risk of climate change reducing recharge and groundwater availability in the Bell Valley and Cudgegong is considered high not tolerable. In Lower Macquarie Zone 1, Upper Macquarie and Coolaburragundy-Talbragar risks are considered medium not tolerable.
 - Risks of growth in basic landholder rights reducing groundwater availability is in tolerable range in only 3 of the 11 areas covered by this draft WRP, 6 of these 11 areas being considered high risk not tolerable. Healthy Rivers Dubbo is very alarmed at these existing elevated risks.
 - Risk of growth in local water utilities reducing groundwater availability in the Bell Valley, Coolaburragundy-Talbragar and Cudgegong is considered High not tolerable, and in the Lower Macquarie zone 1 and Upper Macquarie considered medium not tolerable.
 - The risk of irrigation efficiency and improved water delivery reducing recharge is not tolerable in the Lower Macquarie Zone 1, the Upper Macquarie, Bell Valley, Coolaburragundy-Talbragar and Cudgegong. Healthy Rivers Dubbo is very concerned that further pipelines on our river would cause severe reductions in the availability of recharge water.
 - Risks of groundwater extraction causing local drawdown impacting Groundwater Dependent Ecosystems is intolerably high in the Lower Macquarie Zone 1, Lower Macquarie Zone 3, Lower Macquarie zone 4, Lower Macquarie zone 6, Upper Macquarie and Coolaburragundy-Talbragar.
 - The risk of groundwater extraction causing local drawdown impacting instream ecological values is medium not tolerable in 4 of the 6 Lower Macquarie zones.
 - The risk of climate change reducing recharge and groundwater availability impacting groundwater Dependent Ecosystems is considered high not tolerable in the Bell Valley.
 - Risk of climate change reducing recharge and groundwater availability impacting instream ecological values is considered medium not tolerable in the Bell Valley and Cudgegong.
- The number of risks to groundwater in the Macquarie Castlereagh area covered by this draft WRP that are currently considered intolerable by the NSW Government is alarming. Not only will the rule changes proposed not address these risks, it is quite likely that they will be dangerously reinforced.

Response to chapter 4: Environmental water, cultural flows and sustainable management

The development of Water Resource Plans (WRPs) were intended to be guidelines for the Murray-Darling Basin Plan to protect the environment. It is fundamental that each water resource plan not compromise ground water dependent assets, nor the connectivity between

Do you have any comments on the protection of environmental water?

groundwater and surface water (as per Basin Plan 10.19 – 10.21 including “A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that, for groundwater that has a significant hydrological connection to surface water, the operation of the plan does not compromise the meeting of environmental watering requirements (for example, base flows).”) Instead, the proposed changes to the water sharing rules for the ground water sources of the Macquarie and Castlereagh will increase take, reduce the monitoring of take, lower the aquifers, reduce connectivity between ground water and surface water, reduce water quality and dangerously erode the current levels of protection of environmental water. I strongly disagree with the premise that the draft WRP will meet the requirements of the Basin Plan.

Do you have any comments on cultural connections to surface water and the protection of Indigenous values and uses?

I am a descendent of British settlers to North West and Central NSW in the late 19th and early 20th Centuries. I acknowledge the traditional custodians of that land, the Wiradjuri people, who managed and nurtured the land and its resources for thousands of years before my ancestors arrived and displaced them. In Central, West and Northern NSW towns we are currently witnessing what appears to be the sacrifice of communities, the majority of whom are Indigenous, as their rivers run dry and their water supplies are rendered too salty and toxic to drink. The ability of our First Nations People to fish, something which is a life -source to them, has been withdrawn. One wonders why it is not enough for European settlers to take Aboriginal land; we must also take their last clutch of dignity - their water.

Response to chapter 5: Take for consumptive use

Do you have any comments on sustainable diversion limit compliance?

I object to the proposed variable rule for the Macquarie Castlereagh Alluvium systems that locks in the 20% limit of change to the Sustainable Diversion Limit (SDL) as a right. This rule change allows irrigators to access up to 20% over the SDL as a right in dry years, while reducing the take to 80% of SDL in wet years. This rule relates entirely to irrigator behaviour between wet and dry years and would play no role in managing risk or protecting planned environmental water in the Macquarie Castlereagh Alluvium. If this were allowed to happen, the increased extraction from ground water sources in dry times, will cause the aquifers to lower, becoming more hydraulically disconnected from surface water – particularly in the over allocated Lower Macquarie. This proposed rule change would significantly reduce the availability of planned environmental water to support Groundwater Dependent Ecosystems during dry times. This proposed rule will not manage the risks associated with climate change. As the years become dryer, the extraction of SDL plus 20% take will become more the norm than the exception.

Response to chapter 7: Measuring and monitoring

I do not support the proposed rule change for the protection of

<p>Do you have any comments on the measuring and monitoring of water resources?</p>	<p>planned environmental water by removing the reference to recharge. The actual volume of planned environmental water has already decreased in these groundwater systems. The timing of the availability of planned environmental water 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. Why it is necessary to change the definition of recharge, if not to erode protection of environmental water?</p>
<p>Further responses to Schedules and Appendices</p>	
<p>Do you have any other comments on Schedule H - Monitoring, Reporting and Evaluation Plan</p>	<p>I do not support the proposal to increase the time period over which compliance to the LTAAEL in the Lower Macquarie Alluvium system is assessed from three years to five years to provide consistency across water sources. Given the expectation of drier years to come, it seems incredibly negligent to allow more extraction in dry times and observe the outcomes less often. Consistency of compliance to LTAAEL should be a three-year rolling average across all water sources. This would give much greater assurance that planned environmental water is protected.</p>
<p>How did you hear about the Public Exhibition of this plan?</p>	
<p>Please let us know how you heard about the opportunity to make a submission?</p>	<p>Communication from peak body</p>
<p>Additional Information</p>	
<p>I give permission for my submission to be publicly available on the Department of Industry website</p>	<p>Yes</p>



Department of Industry – Water
[REDACTED]
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Friday 14 December 2018

Comments on Draft Draft Macquarie-Castlereagh 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 Macquarie-Castlereagh Alluvium Water Resource Plan (draft WRP).

Background

IRN submitted substantial comments to the Status and Issues Paper on the Macquarie-Castlereagh Alluvium released in 2017.

One of the key concerns we outlined was the permanent drawdown of the Macquarie-Castlereagh Alluvium over the 10 years of extraction under the current water sharing plan rules.

A permanent drop of greater than 3 metres in some parts of the Lower Macquarie Alluvium and greater than 1.5m in the Upper Macquarie Alluvium is a significant issue that has not been addressed in the development of the WRP. This permanent loss of water in the aquifer is a reduction of planned environmental water that has not been addressed.

The decision that ‘*groundwater levels can stabilise at a lower level under a new pumping equilibrium*’¹ has not been explained in the draft WRP.

¹ DPI Water February 2017 Macquarie-Castlereagh Alluvium Water Resource Plan *Status and Issues Paper* p 18

The draft WRP is based primarily on the attempt to match water sharing plan rules with the requirements of the Basin Plan without recognising that groundwater levels have declined already from the pre-development levels.

The draft WRP states that ‘*The long-term average annual extraction limits specified in the 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 aquifers caused by over-extraction.

The fact that the Sustainable Diversion Limit (SDL) in the Basin Plan for the Macquarie-Castlereagh Alluvium is equal to the Long-term Annual Average Extraction Limit (LTAAEL) in the water sharing plan requires a strong set of management rules to prevent further permanent drawdown of the groundwater sources and loss of planned environmental water.

Groundwater Dependent Ecosystems (GDEs)

The Macquarie-Castlereagh Alluvium underlays a significant area of very high value GDEs including wetlands, endangered ecological communities (EECs), threatened species, vegetation, and base flow ecosystems.

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

Connectivity

Varying degrees of connectivity throughout the Macquarie-Castlereagh Alluvium are identified in the draft WRP at Section 2.2 *Regard to other water sources*

Sections of the Upper Macquarie Alluvium are considered to be highly connected to unregulated tributaries of the Macquarie River and the Cudgegong Alluvium is highly connected to the regulated river. The Lower Macquarie Alluvium is losing-connected upstream from Narromine and considered to be a largely hydraulically disconnected through the rest of the system.

The permanent drawdown of groundwater levels in the Macquarie-Castlereagh Alluvium is a critical issue in regard to protection of environmental water and health of GDEs. Improved management of groundwater extraction is needed to prevent further decline.

Risk Assessment

We note there is a significant number of high risks identified in the Macquarie-Castlereagh Alluvium. These include high risk to the integrity of the aquifer system in the Lower and Upper Alluvium, high risk of groundwater extraction inducing connection with poor water quality, high risk of localised drawdown in bores, high risk of climate change reducing recharge in the Bell and Cudgegong Alluvium, high risk of basic landholder rights reducing groundwater availability in most systems, high risk of local water utilities reducing groundwater availability and a high risk of improved efficiencies and delivery reducing recharge in the Upper Macquarie and Cudgegong Alluvium.

IRN does not support the assessment result that all these high risks of water use will not cause high risk to GDEs and ecological values of the water source. We also do not support the

² Macquarie-Castlereagh Alluvium Draft Water Resource Plan p33

conclusion that only the Bell Alluvium has a high risk of climate change reducing recharge and groundwater availability.

The Macquarie River system is now in the third drought of record since the commencement of rainfall records, the last two record droughts occurring within the last 10 years. We consider that climate change is a high risk for all water sources in this WRP and must be taken into account.

IRN considers that the proposed rules in the water sharing plan will not reduce these high risks. In fact, some proposed rule changes will increase the risk. Therefore, we do not support the rationale behind the tolerable high risk ranking because the strategies and additional critical mechanisms described in the risk assessment report will not manage the impacts of the rule changes.

Water Quality

The Macquarie-Castlereagh Alluvium Water Quality Management Plan (WQMP) notes groundwater quality varies in the WRP area.

The Upper Macquarie Alluvium has salinity levels up to 1,500 $\mu\text{S}/\text{cm}$, the Lower Macquarie salinity levels are up to 2,000 $\mu\text{S}/\text{cm}$ and the deep alluvium can be brackish with levels over 4,000 $\mu\text{S}/\text{cm}$.

The Upper Macquarie Alluvium has been assessed to have a high risk of change to the beneficial use category. The measure to manage this risk is to limit seasonal drawdown.

We note that the seasonal drawdown in the Upper Macquarie Alluvium has been over 1.5m in some years.³ This Alluvium has already had a permanent drawdown in some areas.

The proposed objectives in the WQMP will not be met if the proposed ‘variable’ rule change to water sharing plan rules is adopted.

Water Sharing Plan Objectives

The broad environmental objective of the draft Macquarie-Castlereagh Alluvial Groundwater Sources water sharing plan is to protect the condition of the groundwater sources and their groundwater-dependent ecosystems over the term of the plan.

This 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.

The proposed ‘variable’ rule will not support the environmental objectives.

³ Status and Issues Paper p 17

Proposed Rule Changes

1. Variable rule

IRN objects to the proposed variable rule for the Macquarie-Castlereagh Alluvium. This locks in the 20% limit of change to the SDL as a right.

It also paves the way for further permanent drawdown of the Upper and Lower Alluvium and increases the risk to all GDEs in the Macquarie-Castlereagh Alluvium.

The draft WRP claims that rules in the water sharing plan will manage high and medium risks in the Alluvium⁴. However, permanent drawdown of the water source is a direct reduction in planned environmental water.

This risk will not be managed through the implementation of the ‘variable’ rule in the Macquarie-Castlereagh Alluvium. This rule change has major implications on the availability of planned environmental water to support GDEs during dry times.

This proposed rule will not manage the risk of climate change. If there are an increasing number of dry years, the extraction of SDL plus 20% take will become more the norm than the exception.

It has been stated that parts of the Lower Macquarie Alluvium is disconnected from surface water.

Therefore, the variation of pumping levels between wet years and dry years will have no direct relationship to the impact of regular over-extraction in parts of the Alluvium. The sections of the Alluvium with permanent decline in water levels are not likely to be well recharged during wet years if it is disconnected from surface flows.

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 Macquarie-Castlereagh Alluvium.

The application of the variable rule is also likely to increase the risk of poor water quality.

The accompanying fact sheet on the relationship between water resource plan and water sharing plan states that for the Macquarie-Castlereagh Alluvium ‘*The annual permitted take volume will not be more than 120% or less than 80% of the sustainable diversion limit.*’⁵

The fact sheet also states that: ‘*Non-compliance with the long-term average annual extraction limit occurs when this calculated average annual extraction exceeds the long-term average annual extraction limit by (either) 5% the Castlereagh alluvium and Lower Macquarie groundwater sources, or 10% in the Bell alluvial, Cudgegong alluvial, Talbragar alluvial and Upper Macquarie groundwater sources.*’⁶

There is no apparent discussion in the draft WRP about the relationship between the SDL non-compliance and the LTAAEL non-compliance or how this may relate to the variable rule.

⁴ Macquarie-Castlereagh Alluvium Water Resource Plan Table 3-2 p 23

⁵ Macquarie-Castlereagh Alluvium Water Resource Plan Fact Sheet. *Relationship between the water resource plan and water sharing plan* p 3

⁶ Ibid

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 the Macquarie-Castlereagh Alluvium has been impacted by a permanent drop in water levels heightens the importance of protecting recharge.

The actual volume of planned environmental water has already decreased in this groundwater system that supports high value GDEs. The timing of the availability of planned environmental water 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.

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 from three years to five years in the Lower Macquarie Alluvium to provide consistency across water sources.

This 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.⁷

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

Conclusion

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

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

For more information please contact:

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Sunday 8th December 2018

To Whom It May Concern,

Lower Macquarie Groundwater Irrigators Association Submission to the Draft Macquarie-Castlereagh Alluvium Water Resource Plan.

The Lower Macquarie Groundwater Irrigators Association (LMGIA) welcomes the opportunity to comment on the *Draft Macquarie-Castlereagh Alluvium Water Resource Plan* (Draft WRP), and wishes to thank the Department of Primary Industries (DPI) for their Wednesday 21st November presentation in Narromine.

As outlined in Draft WRP, the primary tools ensuring compliance are specified in the *Draft Water Sharing Plan for the Macquarie-Castlereagh Groundwater Sources 2019* (Draft WSP). With respect to the Draft WSP, the LMGIA commends the proposal to extend the percentage variance rolling average rule from three years to five when determining if remedial action is required. However, there exists an anomaly whereby the percentage variance for the Lower Macquarie is 5%, compared to 10% for other areas. The LMGIA sees no justification for this, and believes this to be outside the 'spirit' of the Water Resource Planning process more generally, in that they demonstrate consistent approaches between Plans. As such the LMGIA recommends:

- **increasing the percentage variance rolling average from its current 5% to 10%, consistent with other Water Resource Plans.**

Secondly, Clause 30 of the Draft WSP outlines mechanisms available to the Minister to return average annual extractions to the long-term average annual extraction limit for a groundwater source. Of particular relevance to the LMGIA are mechanisms that reduce the total water account debit (subclause 'a'), or, reduce available water determinations (subclause 'b'). It is likely that the choice of mechanism adopted will have different impacts between licence holders, however, there is no information as to how the Minister may choose between these mechanisms. As such the LMGIA recommends that:

- **clarity be provided as to how the Minister will determine the choice of mechanisms used; and,**
- **that affected parties be consulted on the choice of mechanism they may be subject too.**

Finally, the LMGIA seeks address issues surrounding the identification and management of Groundwater Dependent Ecosystems (GDEs) identified within the Draft WRP. As explained by DPI representatives at their presentation of the Draft WRP, there is no sound scientific basis underpinning the identification of those few GDEs within the Lower Macquarie. Furthermore, the LMGIA understands that the water set aside for these areas exceeds that of similar groundwater areas such as the Lower Lachlan. As outlined previously this is neither equitable, nor does it demonstrate a consistent approach between Plans. As such the LMGIA recommends:

- **sound scientific justification for any GDE's included within the Draft WRP; and,**
- **a reduction in the water set aside for GDE's within Lower Macquarie consistent with other Water Resource Plans.**

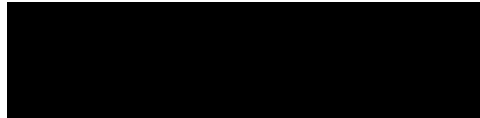
On behalf of the LMGIA I thank you once again for the opportunity to comment on the Draft WRP. If you require further clarification on the issues we have raised I can be contacted on 0459344622.

Yours sincerely,

A large black rectangular redaction box covering the signature and name of the sender.



Healthy Rivers Dubbo



Department of Industry – Water



macquarie-castlereagh.gw.wrp@dpi.nsw.gov.au

Friday 14th December 2018

Comments on Draft Macquarie Castlereagh Alluvium Water Resource Plan

Healthy Rivers Dubbo is a grass roots community group, concerned about the declining health and resilience of the Macquarie River and Marshes, and the Murray-Darling Basin as a whole.

Healthy Rivers Dubbo welcomes the opportunity to provide comments on the Draft Macquarie Castlereagh Alluvium Water Resource Plan (draft WRP).

Background

The creeks, rivers and much of the vegetation in the Murray-Darling Basin is supported by the availability of groundwater, either as water replenishment into rivers or through direct uptake through plant roots. Healthy Rivers Dubbo is concerned that the major loss of River Red Gum forests during the millennium drought was caused by the depletion of groundwater systems.

Historical practices of over extraction of ground water in the Murray-Darling Basin have created the serious threat of depleted groundwater sources. All life in our Basin – environmental, cultural, social and economic, depends on reliable ground water sources.

On average, rates of groundwater extraction have increased by about 100% between the early 1980s and the early 2000s. Between 2001 and 2007 the average annual loss of surface water and groundwater was 150% of the total water usage in a normal year. Despite rainfall rebounding in 2007 and 2008, the Gravity Recovery and Climate Experiment (GRACE) data showed a continued decline in groundwater storage.¹

¹ http://www.groundwater.com.au/news_items/op-ed-declining-groundwater-is-a-big-problem-for-australia

Healthy Rivers Dubbo believes the Lower Macquarie is an over-allocated groundwater system that had experienced over extraction. Connectivity of the Lower Macquarie groundwater system with the Great Artesian Basin and surface flows of the Macquarie and Bogan Rivers is a significant issue that needs more assessment.

Proposed Rule Changes

1. Variable Rule

Healthy Rivers Dubbo objects to the proposed variable rule for the Macquarie Castlereagh Alluvium systems that locks in the 20% limit of change to the Sustainable Diversion Limit (SDL) as a right.

We interpret this rule change as allowing irrigators to access up to 20% over the SDL as a right in dry years, while reducing the take to 80% of SDL in wet years. We wonder how this change could, in any light, be seen to advantage the environment. This rule relates entirely to irrigator behaviour between wet and dry years and would play no role in managing risk or protecting planned environmental water in the Macquarie Castlereagh Alluvium.

If this were allowed to happen, the increased extraction from ground water sources in dry times (and we can expect even more dry years in our changing future), will cause the aquifers to lower, becoming more hydraulically disconnected from surface water – particularly in the over allocated Lower Macquarie.

This proposed rule change would significantly reduce the availability of planned environmental water to support Groundwater Dependent Ecosystems during dry times.

This proposed rule will not manage the risks associated with climate change. As the years become dryer, the extraction of SDL plus 20% take will become more the norm than the exception.

We believe this proposed rule change paves the way for further permanent drawdown of aquifers. The permanent drawdown of the water source is a direct reduction in planned environmental water. This would be a perverse outcome for a WRP.

2. Removal of protection of recharge

Healthy River Dubbo does not support the proposed rule change for the protection of planned environmental water by removing the reference to recharge.

The actual volume of planned environmental water has already decreased in these groundwater systems. The timing of the availability of planned environmental water 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.

While this change has been presented as merely a change of definition, not effecting the volume of environmental water, we question this assumption and ask why it is necessary to change the definition of recharge, if not to erode protection of environmental water.

3. Increase in time period for LTAAEL compliance

Healthy Rivers Dubbo does not support the proposal to increase the time period over which compliance to the LTAAEL in the Lower Macquarie Alluvium system is assessed from three years to five years to provide consistency across water sources.

The social licence of the irrigation industry has been adversely effected in the last year and a half, as allegation of serious levels of water theft have come to light, and several court cases have been instigated. The community needs to be reassured that water is not being stolen, the only way to do that is with more regular compliance checks.

Healthy Rivers Dubbo 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.

Risk Assessment

The Risk Assessment for the Macquarie Castlereagh Alluvium Water Resource Plan Area Schedule D identifies many high not tolerable and medium not tolerable risks to the alluvium:

- Risks to structural integrity of the groundwater system in Lower Macquarie Zone 1 and the Upper Macquarie are considered High not tolerable. Risks in Lower Macquarie Zone 2 and the Cudgegong are medium not tolerable.
- Risk of local drawdown reducing groundwater access by consumptive users in Lower Macquarie Zone 1, Lower Macquarie Zone 2, Lower Macquarie Zone 3 and Upper Macquarie Alluvium are currently High not tolerable. In Lower Macquarie Zone 4, Lower Macquarie Zone 6, Coolaburragundy-Talbragar and Cudgegong are medium not tolerable.
- Risk of climate change reducing recharge and groundwater availability in the Bell Valley and Cudgegong is considered high not tolerable. In Lower Macquarie Zone 1, Upper Macquarie and Coolaburragundy-Talbragar risks are considered medium not tolerable.
- Risks of growth in basic landholder rights reducing groundwater availability is in tolerable range in only 3 of the 11 areas covered by this draft WRP, 6 of these 11 areas being considered high risk not tolerable. Healthy Rivers Dubbo is very alarmed at these existing elevated risks.
- Risk of growth in local water utilities reducing groundwater availability in the Bell Valley, Coolaburragundy-Talbragar and Cudgegong is considered High not tolerable, and in the Lower Macquarie zone 1 and Upper Macquarie considered medium not tolerable.
- The risk of irrigation efficiency and improved water delivery reducing recharge is not tolerable in the Lower Macquarie Zone 1, the Upper Macquarie, Bell Valley, Coolaburragundy-Talbragar and Cudgegong. Healthy Rivers Dubbo is very concerned that further pipelines on our river would cause severe reductions in the availability of recharge water.

- Risks of groundwater extraction causing local drawdown impacting Groundwater Dependent Ecosystems is intolerably high in the Lower Macquarie Zone 1, Lower Macquarie Zone 3, Lower Macquarie zone 4, Lower Macquarie zone 6, Upper Macquarie and Coolaburragundy-Talbragar.
- The risk of groundwater extraction causing local drawdown impacting instream ecological values is medium not tolerable in 4 of the 6 Lower Macquarie zones.
- The risk of climate change reducing recharge and groundwater availability impacting groundwater Dependent Ecosystems is considered high not tolerable in the Bell Valley.
- Risk of climate change reducing recharge and groundwater availability impacting instream ecological values is considered medium not tolerable in the Bell Valley and Cudgegong.

Healthy Rivers Dubbo is alarmed at the number of risks to groundwater in the Macquarie Castlereagh area covered by this draft WRP that are currently considered intolerable by the NSW Government.

We believe the rule changes proposed in this draft plan will not address this risks, but that they will in actual fact exacerbate many of them.

Risk Assessment Pathway

The 'Risk Treatment Pathway' is inadequate to address the high number of currently intolerably high risks.

The strategies for managing intolerably high risks amount to little more than to limit total water extraction and manage the local rate of groundwater extraction. This strategy is not explained, nor is it supported by the variable rule change that will increase the level of take in dry years.

In the Risk Assessment and the NSW Groundwater Environmental Monitoring, Evaluation and Reporting Plan there is no clear reference to triggers that would elicit strategies to address risk. Not only are the strategies to address risk vague and broad, the pathway to their activation is not clearly expressed.

This plan needs a strong mechanism where feedback from monitoring and evaluation triggers a change in management that will reduce risks. We suggest another column be added to the risk assessment that informs when to respond where monitoring and evaluation shows activities are exacerbating risks, and how quickly action should be taken to reverse direction away from risk.

Given the shocking prevalence of high and medium risks in the Macquarie Castlereagh Alluvium that currently exist, Healthy Rivers Dubbo believes the strategies to address risk (listed below) in all 'not tolerable' areas be applied immediately:

1. Limit total water extraction (basic rights and groundwater take) within each groundwater source/SDL resource unit to predetermined sustainable levels.
2. Manage the location and rate of groundwater extraction at a local scale within water sources and SDL management units to prevent or manage localised drawdown related impacts.

Climate Change

Climate Change is not adequately addressed in this risk assessment. A mere 'wait and see what happens, then update the SDL in 10 years' approach falls well short of responsible government response in our opinion. The impacts of climate change are here, droughts will be more severe, as we are seeing currently.

As detailed in the NASA report referenced in this article² on the groundwater.com.au website, we know that even after the rains return after drought, groundwater reserves continue to fall in successive years. A lot more research is needed into the behaviour of groundwater sources to replenish themselves. A significant amount of caution is required with setting SDLs for groundwater, and we believe the risk assessment does not adequately reflect the risks.

Reporting

We are alarmed at:

- The high number of risks classified as intolerable in our groundwater area
- The inadequacy of the risk assessment to take climate change seriously
- The lack of description of the strategies to address risk
- The lack of triggers to enforce the strategies to address risk
- The variable rule that will allow 20% increase of SDL in dry years to become a right

Given the points above, we would consider a need to bring all the reporting requirements down from 5 years to 3 years, in line with our recommendation above that compliance to the LTAAEL be assessed on a 3 year basis, not 5 years.

Healthy River Dubbo believes it is essential that reporting include what actions have been taken each year to reduce the risks to our aquifers that currently exist, may develop, or may worsen.

Conclusion

The development of Water Resource Plans (WRPs) is not intended to be merely an extra layer of bureaucracy overlaying the indoctrination of historical over extraction. Rather, the WRPs are to be the tool that the Murray-Darling Basin Plan uses to change behaviour and actually protect the environment.

It is fundamental that each water resource plan not compromise ground water dependent assets, nor the connectivity between groundwater and surface water (as per Basin Plan 10.19 – 10.21 including "A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that, for groundwater that has a significant hydrological connection to surface water, the operation of the plan does not compromise the meeting of environmental watering requirements (for example, base flows).")

We interpret the proposed changes to the water sharing rules for the ground water sources of the Macquarie and Castlereagh will increase take, reduce the monitoring of take, lower the

² http://www.groundwater.com.au/news_items/op-ed-declining-groundwater-is-a-big-problem-for-australia

aquifers, reduce connectivity between ground water and surface water, reduce water quality and erode the current levels of protection of environmental water.

Healthy Rivers Dubbo does not consider that the draft WRP will meet the requirements of the Basin Plan.

For more information please contact:

Melissa Gray

Member

Healthy Rivers Dubbo

[REDACTED]

[REDACTED]



Department of Industry,
macquarie-castlereagh.gw.wrp@dpi.nsw.gov.au

14 December 2018

Re: draft Macquarie–Castlereagh Alluvium Water Resource Plan

Dear Sir/Madam,

We write to express our serious concerns regards the draft Macquarie-Castlereagh Alluvium Water Resource Plan (WRP), in particular its limited capacity to properly protect environmental water in ground water and groundwater dependent ecosystems. The protection of environmental water within all of the Water Resource Plans is vital in meeting the intent of the Murray Darling Basin Plan (MDBP) to ensure sustainable use of water within the Murray Darling River basin and restore ecological health to Australia's largest and most important river system.

The chronic and poor ecological health of the Murray Darling River has been a major concern of many Australians regardless of whether they are direct users of its water or merely observe the regular environmental calamities in the media. Our members and the broader community have supported the adoption of the MDBP and its strategic attempt to improve the health of the highly valued river system.

As the largest water user in the basin, NSW must demonstrate leadership and commitment to the MDBP especially given the history of water theft and mismanagement of water allocation that has occurred in NSW. Our members were appalled when water was stolen from the river system and the apparent delay in action by the NSW government to prevent future water theft.

It is our understanding that the purpose of the draft WRP includes consistency with the Murray Darling Basin Plan (MDBP), protection of environmental water and provision of strategies to manage risks.

Overall, we feel that the WRP does not prioritise the protection of environmental water. It demonstrates an "administrative" bias to a water resource plan which should be underpinned by good science especially in risk management. It reflects an absolute abrogation of NSW's responsibilities in developing plans and policies that contribute to sustainable water use within the Murray Darling Basin.

Inadequate protection of Environmental Water in the WRP:

The protection of environmental water in ground water is vital to the survival of our much loved river red gums and ensuring adequate flows into the surface waterways which are enjoyed by many for all sorts of reasons. It is fundamental to the intent of the MDBP that environmental water is protected throughout every stage of its passage along the river system both via surface and groundwater flows.

The MDBP Act identifies principles which should apply in the management of environmental water but which are not clearly stated in the NSW Water Act. The WRP should provide the mechanism to strengthen the protections over environmental water in the Macquarie-Castlereagh alluvium waters and achieve compliance and consistency with the MDBP. However, the WRP appears to entrench the unsustainable over extraction of ground water that has occurred prior and since the implementation of the Water Sharing Plans.

It is unclear how waterbirds and RAMSAR wetlands will be adequately and properly protected in the WRP as no targets are specified to support the stated environmental objectives and performance indicators.

We do not feel that the WRP meets requirements for a water resource plan to “identify the planned environmental water in the water resource plan area and associated rules and arrangements relating to that water”.

Further, the importance of recharge is neglected within the short-term expediency of the WRP in its use of groundwater that has accumulated over thousands of years.¹ We do not consider rule changes to remove “recharge” as merely definitional changes and consider this change will have a significant adverse impact on the already poor protection of environmental water across all of the Murray Darling River system.

Lack of rigor in the science underpinning risk assessment:

We are alarmed that, despite the many and varied risks to groundwater identified in the WRP, some considered both “very high” and “intolerable” that these appear to be dismissed in later parts of the WRP. This is poor practice if this correct.

For example fourteen risks are identified and assessed in the Consolidated Risk Table. Three of these risks are considered non applicable for the WRP and for eight no new strategies are considered to be required or “possible to be included” in the WRP.

For the remaining three, the risk management of “groundwater extraction inducing connection with poor quality aquifers” relies solely on the Schedule F Water Quality Management Plan. Whilst the WQMP may provide water quality

¹ Macquarie-Castlereagh Alluvium Water Resource Plan page 26.

standards that would alert communities and agencies to a “connection to poor quality aquifers” it is unclear how the WQMP will manage this risk in any ongoing meaningfully sustainable way. Superficial changes to “carry over” water allocation and bore locations rules etc will not achieve sustainable management of the dwindling ground water resource of the Macquarie-Castlereagh as per the requirements of the MDBP.

The second risk “of increases in irrigation efficiency and improved water delivery reducing recharge” seems to be managed based on data stated as conservative since “there is an absence of more detailed data.” From the Consolidated Risk Plan it appears no monitoring or evaluation is planned. We find this disturbing since illegal water use has been a very significant concern for many people in NSW.

For the last of the three risks identified to be addressed, “groundwater extraction causing local drawdown impacting GDEs” the action response is the “Implementation of dormant WSP or WMA rules”. Whilst “dormant” is not qualified, hopefully it is not related to our comments in the previous paragraph.

We could find no clear statements in the WRP and supporting documents as to what constitutes an “impact” and what triggers action to remediate an impact. The stated rationale that improved mapping in the WRP will manage the risks to GDEs is meaningless and circular. Does the public continue to object to red gums dying and aquifers collapsing to thus constitute an “impact” that requires ministerial action? We do not consider this approach satisfactory. Nor do we feel it will prevent future damaging impacts on GDE from local drawdown of groundwater.

Overall, we do not feel that the WRP and its supporting documents have provided an adequate strategic approach to the management, mitigation and prevention of the risks identified in the WRP. We question its adequacy to meet the accreditation standards of the MDBP. Scientific rigour must underpin all WRPs in NSW and the “business as usual approach” of over allocation, possible theft and inadequate monitoring of water use in NSW must cease.

Other matters of concern:

1. Chronic rates of groundwater over extraction not recognised in the WRP:

While the WRP proposes many rule changes it fails to address the core problems of over extraction of ground water in the Lower Macquarie.

The WSP states that “(T)he six SDL resource units of the Macquarie Alluvium WRPA have varying degrees of connectivity to their associated surface water systems.” and “.....the Macquarie River and its tributaries are largely hydraulically disconnected from the groundwater for much of their reaches.”

Could this incomplete hydrological disconnection and varying connectivity be due to over allocation and over extraction of water?

Zones 3, 4 and 5 of the Lower Macquarie SDL are excluded from this accreditation process, dismissed as really being part of the Great Artesian Basin. Conveniently the impact of reduced water flows to the “dying” Macquarie Marshes, where many of our members have visited, is thus avoided in this WRP. Loss of groundwater may be contributing in unknown varying degrees to this reduced water but this is not acknowledged anywhere in the WRP. **Have we sunk that “low” in ground water extraction and irrigation activities prior and during the time of Water Sharing Plan to cause this exclusion from the WRP?**

We feel statements such as “The adoption of the alternative salinity target value listed for the Macquarie- Castlereagh Alluvium WRPA will have no adverse impact on the End-of-Valley surface water targets for salinity as it is a groundwater resource and the Macquarie-Castlereagh River is a losing system.” need to be validated and justified if the public is to be assured that it not simply a “losing” river because of over extraction by irrigators over many decades.

2. Generic Monitoring, Evaluation and Reporting Plan:

The Monitoring, Evaluation and Reporting Plan is provided in Schedule H of the WRP. This is a mostly generic document and presumably most of the text will be included in future draft Water Resource Plans. It is descriptive but provides little substance as to what exactly is being monitored, what level/standard is aimed for and what level/standard would trigger changed management to mitigate potential risks. We suspect the public would be cynical about ministerial intervention as a risk management strategy given the NSW government’s poor performance in managing water theft and over extraction in the past.

3. Changes to the Variable Rule:

We are appalled that the WRP proposes to legally entrench a 20% limit of change to the Sustainable Diversion Limit as a water access right. This opens serious debate as to why there are rules in the first place, whether on the road, in our homes etc if 20% non-compliance is accepted as satisfactory. The MDBP is a long term plan meant to restore sustainable use of the Murray Darling River. The public does not feel it was meant to facilitate opportunistic “cherry picking” during drier times, of which we predict many ahead as Australia confronts the impacts of a changing climate.

4. Increased time period for LTAAEL compliance:

The Long-Term Annual Average Extraction Limit in the lower Macquarie Alluvium is proposed to be extended from three to five years. The justification for this is unclear except to standardise the period of time for assessment of compliance across all Macquarie-Castlereagh SDLs. Surely it could be argued that all users abide by a three year rolling period and thus achieve standardised reporting periods but without increased risks associated with longer time periods.

5. Failure to fully consider climate change risks:

The WRP is being developed to comply with the requirements of the MDBP which aims to achieve sustainable water use within the whole river system. However, throughout the draft document there is scant attention to the impact of climate change on the natural resources of the Macquarie-Castlereagh, especially its fragile groundwater and GDEs. There is need for the sensible application of the precautionary principle in many of the proposed strategies and actions of the WRP and its supporting documents. A changing climate will make sustainable water use in the Murray Darling River system challenging. The need for a rigorous risk management approach to climate change is not evident in the WRP and especially important given the high and wide ranging risks it identifies.

Conclusion:

The MDBP accreditation process of the NSW Water Sharing Plans into Water Resource Plans was not intended to entrench the past unsustainable water use practices occurring in NSW.

We feel that the Murray Darling Basin Authority and Commonwealth Government should direct the Department of Industry - Water to fully take account of its responsibility as a contributing partner in the MDBP. This draft WRP should be rejected as inconsistent with the intent of the MDBP and not be accredited under the MDBP until it is amended to properly reflect the intent of the MDBP to achieve sustainable use of water in the Murray Darling River system.

Thank you for an opportunity to comment.

Yours sincerely,

Cathy Merchant,
Vice President.

Cc MDBA

Commonwealth Minister for Water

14 December 2018

Dear Rachel,

Submission in response to Draft Macquarie-Castlereagh 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 as a one-stop shop for matters including licences and approvals, water allocation trades, water licence trades and water resource information.

The Draft Macquarie-Castlereagh Alluvium Water Resource Plan has been developed further to the requirements of the Basin Plan 2012 for accreditation under the *Water Act 2007*. We note the recent commencement of the NSW non-urban water metering framework (including new regulation and policy). This development is relevant to the water resource planning process, particularly including replacement water sharing plans. Its existence, and particularly the insertion of mandatory (metering) requirements into the regulation rather than individual water sharing plans, is envisaged in Part 11 of the draft Macquarie-Castlereagh Groundwater Sources plan.

WaterNSW also notes the body of work that will be required both to:

1. amend Statement of Approvals, Statement of Conditions, and Certificates of Title where the water sharing plan and relevant water sources and zones have been amended; and
2. notify customers of each of the above changes, to the extent that they arise.

In previous submissions WaterNSW has noted the prudence of accurately identifying the roles and responsibilities of water agencies. We make the same comments with respect to the draft Macquarie-Castlereagh planning package. WaterNSW does not meter or verify metered water take. Rather, where use is metered, WaterNSW bills water use according to the metered data, and the Natural Resources Access Regulator undertakes compliance and enforcement monitoring. We

recommend amending the relevant language to accurately describe WaterNSW's functions in this water resource.

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

A handwritten signature in blue ink, consisting of several overlapping loops and a long horizontal stroke extending to the left.

Andrew George

Executive Manager, Water Solutions and Market Strategy

WaterNSW



SUBMISSION

Draft Macquarie-Castlereagh Alluvium Water Resource Plan

December 2018

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 (DoI) 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 Macquarie-Castlereagh 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 Macquarie-Castlereagh 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 a number of 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 Macquarie-Castlereagh WRP area. These general positions have also been outlined in earlier NSWIC submissions, such as the Lachlan Alluvium WRP.

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, rainfall, 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 DoI 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 DoI-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: Where ever 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 DoI to discuss this. Explanatory materials should be plain English, and prioritise key principles of accessibility, clarity, comprehension and simplicity.

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: Ensure the risk assessment methodology reflects risk in the aquifer itself, using absolute rather than relative measures which are context-specific. Develop the most appropriate risk assessment methodology based on local recommendations.

Further studies into Groundwater Dependent Ecosystems are needed

NSWIC requests that all policy decisions regarding Groundwater Dependent Ecosystems (GDE) must be made through an evidence-based process, with evidence being appropriately reviewed, ground-truthed, and knowledge gaps filled.

High priority GDEs need defining and consistency - NSWIC requests clarification with regard to ‘*high priority*’ GDEs¹ compared to GDEs and requests consistency of this terminology between WSPs and WRPs. GDEs are defined and mapped, but there is no definition of ‘high priority’ GDEs. The inclusion of this terminology implies that there are some GDEs that are more important than others and get treated with a higher priority than others. If this is not 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.

¹ Example - DRAFT Water Sharing Plan for the Lachlan Alluvial Groundwater Sources 2019, S9(2)(a)

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 predict whether groundwater extraction poses any risk to a GDE which is not managed by 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. **The result of delaying reviews is that a precautionary approach is taken which does not pay 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:

- Improve knowledge gaps
- Validate existing data
- Quantify the degree of reliance

Unless the evidence-base is ground-truthed, water users should not be impacted, and GDE identification should be removed. NSWIC is respectful that if water extraction is proven to have a significant impact on groundwater, then water extraction rules will need to be amended. However, the onus to prove whether groundwater extraction poses any risk to a GDE should be on government agencies. Precautionary action should only be an interim measure whilst sufficient information can be captured. The longevity of this issue creates concern that precautionary principles may lead to policy creep where policies lack a robust methodology, and consequently have unreasoned social and economic impacts. Decisions made primarily based on vegetation mapping which are not ground-truthed are insufficient. Further reviews are urgently needed to better understand the nature and magnitude of the linkages between groundwater extraction and GDEs.

Recommendation: DoI-Water 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 and consider underlying crop type, rainfall, and 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 method in each individual circumstance.

Where new and relatively untested methodologies are used, there are numerous considerations which are necessary. 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.

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

Care must be taken when using historical data as an indicator of future trends to ensure that changes to the underlying crop type, changes to rainfall patterns and changes to water usage have been 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 at a predetermined point in time. DoI-Water should reserve the right to amend a method if it is found to be ineffective 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: DoI-Water should consult with local stakeholders in each groundwater source on the appropriateness of the APT methodology in that area to ensure it captures local circumstances (e.g. underlying crop type and rainfall variability). This method should be subject to review at the conclusion of the WSP. NSWIC suggests that when a new untested methodology is implemented, that a complimentary tested methodology is simultaneously implemented to provide a control measure to evaluate the accuracy of a new methodology.

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. 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 consulted with if there is to be any further changes to 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”. DoI-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.

Compliance with WSP and Basin Plan use limits should be managed to ensure there are no more than minimal impacts, and the method 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
 - This would benefit the more active users, but also allows 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
 - This would disadvantage more active users, particularly in groundwater areas where there is significant over-allocation, such as the Upper Lachlan where entitlement is approximately 2x the use limit, because it would need to allow for carryover, and would assume that all allocation would be tradeable. In these circumstances the AWD would need to be significantly reduced to ensure compliance with the use limit.

The position of NSWIC is that there should be no more than minimal impact, and the method should be guided by the recommendation of each groundwater source authority. The method to address

overallocation must be valley specific and formed on the basis of local expertise. NSWIC offers to assist in seeking local expertise.

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 Macquarie-Castlereagh Alluvium Water Resource Plan. NSWIC requests that DoI-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 DoI-Water on any of the above issues.

Email address	[REDACTED]
Name of respondent	Tracy Sorensen
Address	[REDACTED]
Contact phone number	[REDACTED]
Are you an individual or representing an organisation?	Organisation
Organisation or Business Details	
Name of Organisation	Bathurst Community Climate Action Network Inc.
Who are you representing?	Other
Response to chapter 4: Environmental water, cultural flows and sustainable management	
Do you have any comments on the protection of environmental water?	Environmental water must be protected. It is not an afterthought or an add-on. It is crucial for the protection of biodiversity as climate change bites.
Do you have any comments on cultural connections to surface water and the protection of Indigenous values and uses?	BCCAN supports cultural connections to surface water. Our waterways are not just channels for getting water from Point A to Point B; they are places of profound personal, social and historical significance. Their significance goes back in time many thousands of years.
Do you have any other comments on this chapter?	Climate Change must be front and centre in any discussion of future management of the Macquarie River from Bathurst to the marshes out past Warren. We need to keep the water flowing. We need healthy rivers.
How did you hear about the Public Exhibition of this plan?	
Please let us know how you heard about the opportunity to make a submission?	Through Central West Environment Council.
Additional Information	
I give permission for my submission to be publicly available on	Yes

**the Department of
Industry website**

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