

Email address	[REDACTED]
Name of respondent	[REDACTED]
Contact phone number	[REDACTED]
Are you an individual or representing an organisation?	Individual
<b>Draft Gwydir Alluvial WRP</b>	
<p><b>After reading the Water Resource Plan Body, please indicate any general suggestions to improve the WRP Body:</b></p>	<p>The Water Sharing Plan for the Lower Gwydir Groundwater Source 2003 and the Water Sharing Plan for the Gwydir Unregulated and Alluvial Water Sources 2012 are being replaced. It is proposed to incorporate both the Lower Gwydir alluvial and Upper Gwydir alluvial groundwater sources from these plans into a single replacement water resource plan. It is stated the proposed plan makes a stronger logical connection between objectives, strategies and performance indicators, more clearly distinguish between the environmental, economic, social and Aboriginal cultural objectives of the water sharing plan. Associated with the objectives is a water quality management plan and an overall monitoring and evaluation plan. The Gwydir Alluvium water quality management plan (WQMP) applies to all groundwater within the Gwydir Alluvium water resource plan area. Additionally, the Water Resource Plan is said to have 'regard' to the objectives identified in section 1.2 of the 2017 Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin.</p> <p>However section 1.8 (covering review and amendment):</p> <ul style="list-style-type: none"> <li>• makes no statement in reference to the overall objectives and outcomes stated earlier. It would be logical for the reasons why a review is triggered to include the plan not meeting its objectives or outcomes. It is also stated the new draft plan has "stronger logical connection between objectives, strategies and performance indicators"- but how so?;</li> <li>• given the limited information available on the aquifers it would also seem sensible to include some trigger about new information or science being available; and finally:</li> <li>• Interception activities (see section 5.6) are also not included as a trigger</li> </ul>
<b>Response per WRP chapter</b>	
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**Do you have any other comments on this chapter?**

and Aboriginal cultural objectives of the water sharing plan. Associated with the objectives is a water quality management plan and an overall monitoring and evaluation plan. The Gwydir Alluvium water quality management plan (WQMP) applies to all groundwater within the Gwydir Alluvium water resource plan area. Additionally, the Water Resource Plan is said to have 'regard' to the objectives identified in section 1.2 of the 2017 Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin.

However section 1.8 (covering review and amendment):

- makes no statement in reference to the overall objectives and outcomes stated earlier. It would be logical for the reasons why a review is triggered to include the plan not meeting its objectives or outcomes. It is also stated the new draft plan has "stronger logical connection between objectives, strategies and performance indicators"- but how so?;
- given the limited information available on the aquifers it would also seem sensible to include some trigger about new information or science being available; and finally:
- Interception activities (see section 5.6) are also not included as a trigger

## **Response to chapter 2: Water resource plan area and other matters**

The WRP identifies only a: i) lower and ii) upper alluvial system. However the document that describes the groundwater resource description outlines three units:

1. The Upper Gwydir Alluvium: considered to be highly connected to the regulated Gwydir River. The narrow and shallow nature of the Upper Gwydir Alluvium means it is likely to change between losing and gaining conditions along its length depending on geology, topography, and local conditions. Thus giving good reason for separate consideration- which the plan has done.

The plan also states "This high level of hydraulic connection is recognised in the Water Sharing Plan rules for the Upper Gwydir Alluvium resource unit." But it is not clear how. This needs to be made clear.

2. The Lower Gwydir system containing a shallow 30m, mainly unconfined aquifer informally referred to as the 'Narrabri formation'. This aquifer has low water quality – becoming brackish to the west.

3. There is also a deeper 90m confined/semi confined aquifer informally referred to as the 'Gunnedah formation'.

Because within each system there may be more than one aquifer which varies in thickness and in lateral and longitudinal extent, it would make sense to clearly identify and manage the three aquifers rather than clump the shallow and deep lower groundwater together.

The connection between the three systems is only broadly outlined. There is no consideration of how to manage water quality issues across these units. Nor is it later mentioned as a risk.

- This approach will limit the ability to manage the resource. This is particularly true, as the monitoring system in place (appendix H) does not seem to be placed around areas with large

**Do you have any comments on this chapter?**

extraction occurring, or dug to a depth to monitor the deep lower groundwater resource

- In some areas upstream of Moree, the lower Alluvium alluvial sediments are in direct hydraulic connection with the rivers allowing direct recharge from the river into the aquifer system. The Upper Gwydir Alluvium is also considered to be highly connected to the regulated Gwydir River. The risks associated to water quality associated with this relationship need more thought.

- In the main irrigation areas associated with the lower alluvium groundwater resource, groundwater from the shallow system is suitable for drinking water supply (based on EC) but in the western and marginal areas of the Lower Gwydir Alluvium groundwater is unsuitable for drinking water supply (EC > 1,5resource00  $\mu\text{S}/\text{cm}$ ). The risks associated to water quality associated with this relationship need more thought.

### Response to Chapter 3: Risks to water resources

**Do you have any comments on the risks identified in this chapter?**

Specific risks to the condition and availability of Basin water resources that were considered include: (a) risks to consumptive water users; and (b) risks to Aquifer Access Licence holders; and (c) risks to water available for the environment; and other values.

- Out of the four points above, the only indirect measure is point (c) a more direct statement focused on GDEs would be better and have connections with other elements of the plan. It should be something like: “ensuring ecosystems that require access to groundwater to meet all or some of their water requirements so as to maintain their communities of plants and animals, ecological processes and ecosystem services in a healthy and resilient manner” (Kuginis et al. 2016) or a repeat of outcome three in box 1.1

There is no mention of a change in water quality being a risk, yet there are biophysical connections between water resources which suggest possible larger scale issues: ‘the Upper Gwydir Alluvium is in hydraulic connection with the Gwydir River along its length’. The water quality plan identifies drawdown in an aquifer being connected to a saline resource as being at risk. However nutrients could also have an impact, but these are only managed through local area rules identified in part 9. Finally some ecosystems require seasonal variation, but this seems to not be identified or have any mechanism for management, other than through a private interest having HEW.

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

**Do you have any other comments on this chapter?**

Priority setting in this section been based on “mapping work includes GDEs based on vegetation types with a high probability of groundwater dependency”. However there seem to be no or little consideration of the life histories of the species in the habitats. It maybe the birdlife move large distances between habitats or need certain seasonal settings to trigger breeding. Similar things may affect vegetation or aquatic species such as

fish and frogs. Thus a 'likelihood- impact' framework would be better and allow more precise management of the habitats within the plan area.

#### **Response to chapter 5: Take for consumptive use**

**Do you have any other comments on this chapter?**

Annual permitted take is calculated retrospectively at the end of a water year, after assessing the volume of water that was allowed to be extracted in that water year given the rainfall. Yet the lower Gwydir Alluvium is considered to have two different units. The permeability of these underlying fractured rocks is many orders of magnitude lower than that of the alluvium and groundwater exchange is expected to be insignificant. So your monitoring and evaluation needs to consider this

#### **Response to chapter 6: Water Quality Management**

**Do you have any comments on the strategies to mitigate risks to water quality?**

It is intended to manage a lot of water quality management through the WRP, however some of the assumptions or simplifications (eg managing two water units rather than three) may be wrong and not possible through managing local issues (Pt 9)

#### **Response to chapter 7: Measuring and monitoring**

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

Many of the large metered extractions (Appendix H) are just 'upstream' of key priority environmental assets (such as the RAMSAR wetlands or to the west where water quality may be lower. Monitoring bore locations do not seem to correspond to these areas or nor are they in proximity to where key ecological systems are located. This needs to be fixed so the risk and the asset are better monitored.

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

Many of the large metered extractions (Appendix H) are just 'upstream' of key priority environmental assets (such as the RAMSAR wetlands or to the west where water quality may be lower. Monitoring bore locations do not seem to correspond to these areas or nor are they in proximity to where key ecological systems are located. This needs to be fixed so the risk and the asset are better monitored.

#### **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?**

Communication from peak body

#### **Additional Information**

**I give permission for my submission to be publicly available on the Department of Industry website**

Yes

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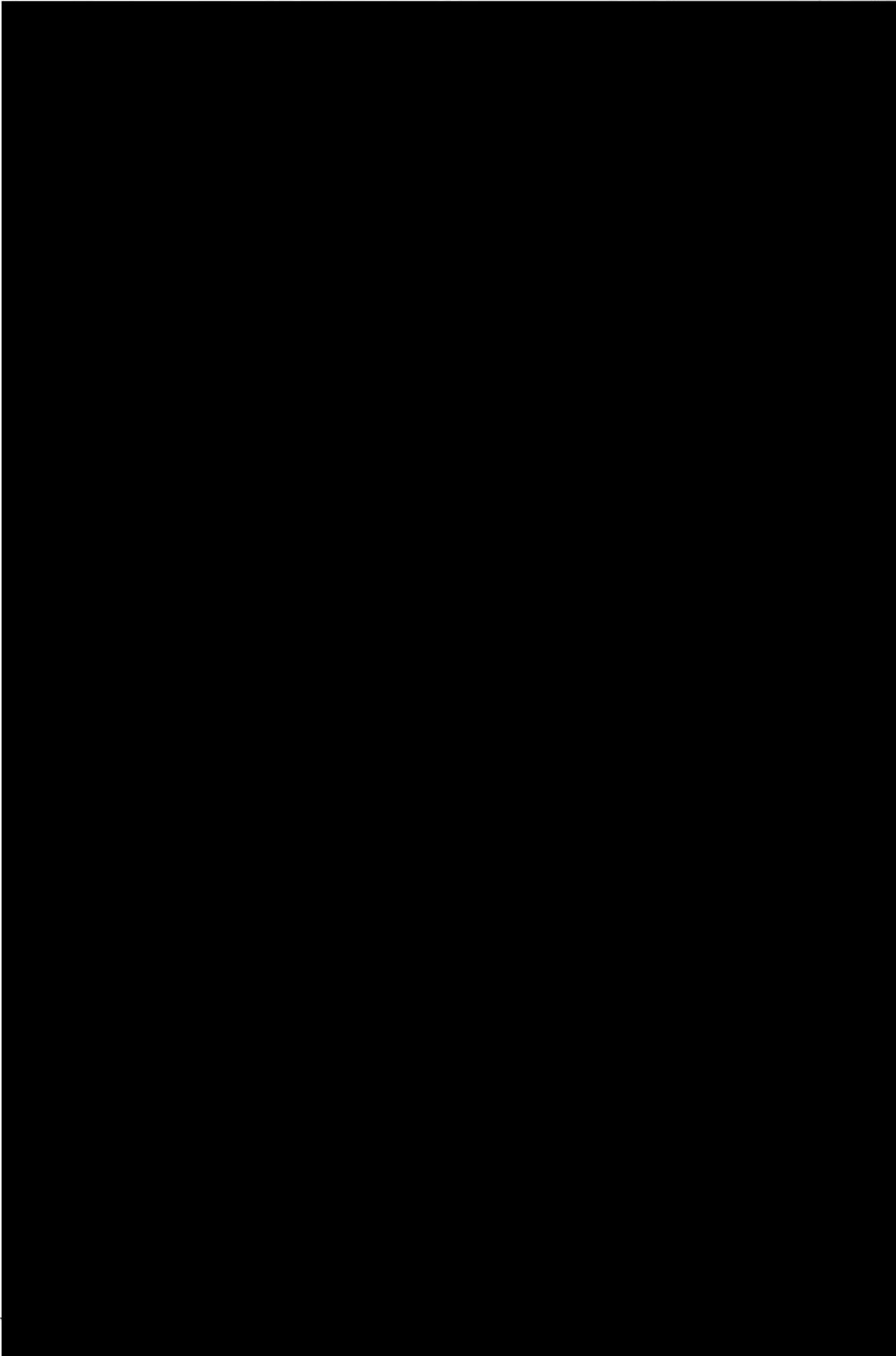


Department of Industry

Gwydir GW WRP <gwydir.gw.wrp@dpi.nsw.gov.au>

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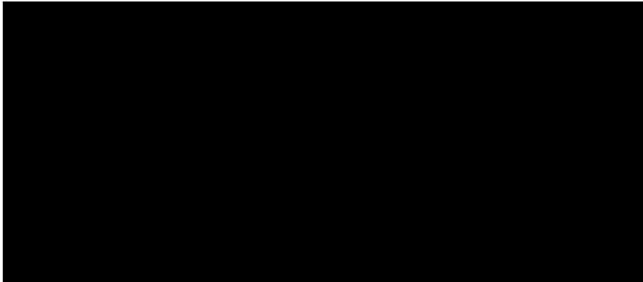
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 **WaterNSW Response - Draft Gwydir Alluvium WRP 14.12.8.pdf**  
421K

14 December 2018



### **Submission in response to Draft Gwydir 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 Gwydir 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 significance of the draft Gwydir Alluvial Groundwater Sources Plan incorporating the previously separate plans of the *Lower Gwydir Groundwater Source 2003* and the upper Gwydir alluvial groundwater sources (from the *Gwydir Unregulated and Alluvial Water Sources 2012*). One regulatory framework for the whole Gwydir alluvial is sensible and will facilitate efficient resource management.

We also 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 Gwydir Alluvial 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.

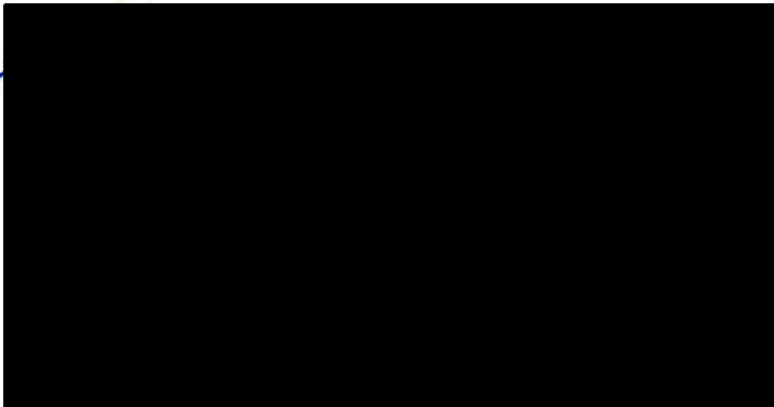
In previous submissions WaterNSW has noted the prudence of accurately identifying the roles and responsibilities of water agencies. We make the same comments with respect to the draft Gwydir



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



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<b>Name of respondent</b>	[REDACTED]
<b>Address</b>	[REDACTED]
<b>Contact phone number</b>	[REDACTED]
<b>Are you an individual or representing an organisation?</b>	Organisation
<b>Organisation or Business Details</b>	
<b>Name of Organisation</b>	Water Resources Drilling
<b>Who are you representing?</b>	Water related industry
<b>Draft Gwydir Alluvial WRP</b>	

The Gwydir Alluvium Groundwater Water Resource Plan Comments on Proposed Site Sewage System 250 metre Rule 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 The issues go to

- 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.

The issues in more detail are:

1) There are a number of problems with the documentation firstly and I quote from the fact sheet about what is changed for the Gwydir Alluvium water sharing plan.

“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:

- 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:
  - 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.”

The Department needs to be more clear and transparent as to what the sufficient distance from an on site sewage system. The Department has provided no information to advise how they

will undertake these assessments which is in contrast to its volumetric analysis where it is very transparent in its analysis.

This is an area Department needs to address and be more transparent how it is assessing bore distances from on site disposal systems.

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 Gwydir Alluvium 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 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.

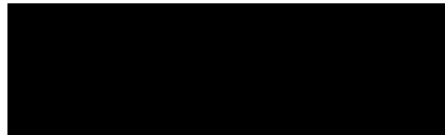
**After reading the Water Resource Plan Body, please indicate any general suggestions to improve the WRP Body:**

- The 20 metre grout rule should be changed to say bores need to be deeper than 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 Gwydir Alluvium 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.



## Response to chapter 6: Water Quality Management

**Do you have any comments on the identified risks to water quality?**

The suggestion that all septic tank systems is an over exaggeration by the Department does not consider hydraulic loading, soil retention depth to water table and soil type plus other issues

**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  
Department of Industry website

**Additional Information**

**I give permission for my submission to be publicly available on the Department of Industry website**

Yes



Department of Industry – Water  
GPO Box 5477  
Sydney NSW 2001

[gwydir.gw.wrp@dpi.nsw.gov.au](mailto:gwydir.gw.wrp@dpi.nsw.gov.au)

Friday 21 December 2018

### **Comments on Draft Gwydir 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 Gwydir Alluvium Water Resource Plan (draft WRP).

#### **Background**

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

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

A permanent drop of up to 6 metres in the Lower Gwydir 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*’<sup>1</sup> has not been explained in the draft WRP.

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<sup>1</sup> DPI Water February 2017 Gwydir Alluvium Water Resource Plan *Status and Issues Paper* p 16

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*’.<sup>2</sup> 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 Gwydir 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 Gwydir Alluvium underlays a significant area of very high value GDEs including Ramsar wetlands listed on the Directory of Important Wetlands of Australia, endangered ecological communities (EECs), threatened species, vegetation, extensive connected riparian corridors 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 Gwydir Alluvium are identified in the draft WRP at Section 2.2 *Regard to other water sources*

The Upper Gwydir Alluvium is considered to be highly connected to the regulated Gwydir River. Lower Gwydir Alluvium varies from losing/gaining system east of Moree to a disconnected system in the west. The Gwydir and Mehi Rivers are considered to be hydraulically connected with the Lower Gwydir Alluvium east of Moree.

The draft WRP identifies that a ‘*basement high*’<sup>3</sup> exists between the Upper and Lower Alluvium that restricts groundwater flow from one groundwater source to the next.

The Status and issues paper describes that the Lower Gwydir Alluvium is made up of a shallow aquifer system up to about 30m deep and deep aquifer system up to about 90 m deep. There is no distinct boundary between the two.<sup>4</sup>

There is no clear description of the recharge source for the disconnected Lower Gwydir Alluvium in the west.

The permanent drawdown of groundwater levels in the Lower Gwydir 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.

We do not consider that the draft WRP and proposed changes to water sharing rules will provide the necessary improvements. There is likely to be further permanent drawdown.

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<sup>2</sup> Gwydir Alluvium Water Resource Plan p30

<sup>3</sup> Ibid p 15

<sup>4</sup> Gwydir Groundwater Status and Issues paper p 12

## **Risk Assessment**

We note a number of high risks identified in the Lower Gwydir Alluvium including high risk of localised drawdown in bores, high risk of basic landholder rights reducing groundwater availability and a high risk of local water utilities reducing groundwater availability.

The risk of groundwater use causing local drawdown for GDEs and ecological values is considered to be medium to high in both the Upper and Lower Gwydir Alluvium.

This ranking should be high in all instances because of the proposed rule changes in the water sharing plan. The introduction of a variable rule will increase the risk to GDEs, especially during prolonged dry periods.

The risk to the structural integrity of the Lower Alluvium is ranked as medium. This risk will also increase if the proposed variable rule is adopted in the Gwydir WRP.

IRN does not support the outcome of the risk assessment that the risk of climate change reducing recharge for GDEs and instream values in the Lower Alluvium is low and in the Upper Alluvium is low/medium.

IRN does not support the tolerable ratings given to the medium and high risks in the Gwydir Alluvium risk assessment because the strategies and additional critical mechanisms described in the risk assessment report will not manage the impacts of the proposed rule changes.

## **Water Quality**

The Lower Alluvium is ranked as having a medium risk of groundwater extraction inducing connection with poor quality aquifers.

We note that the Lower Alluvium has salinity levels of 1,500  $\mu\text{S}/\text{cm}$  in the western shallow part of the aquifer. Any further drawdown of groundwater levels is likely to increase the risk of poor water quality.

This issue is not adequately addressed in the WRP.

## **Water Sharing Plan Objectives**

The broad environmental objective of the Gwydir 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 draft water sharing plan will not meet its objectives because of the proposed changes to rules that will increase the risk to environmental assets, water quality and aquifer integrity.

The current rules have already resulted in permanent drawdown in the Gwydir Alluvium. The proposed new rules will increase this risk.

## Proposed Rule Changes

### 1. Variable rule

IRN objects to the proposed variable rule for the Lower Lachlan. 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 aquifer.

The draft WRP claims that rules in the water sharing plan will manage high and medium risks in the Alluvium<sup>5</sup>. 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 Lower Lachlan 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 there is low connectivity between the Lower Lachlan and surface water.

*‘The greater depth to the regional water table in the Lower Lachlan Alluvium results in the Lachlan River and its tributaries being largely hydraulically disconnected from the groundwater for much of their reaches.’<sup>6</sup>*

Therefore, the variation of pumping levels between wet years and dry years has no direct relationship to the impact of regular over-extraction of the Alluvium. The Alluvium is not likely to be well recharged during wet years because of its depth and hydraulic disconnect 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 Lower Lachlan Alluvium.

We note that the Water Quality Management Plan has an objective to limit seasonal drawdown in high risk areas.<sup>7</sup> We do not support the risk assessment result that the Upper and Lower Lachlan Alluvium have a medium risk of poor water quality.

The application of the variable rule in the Lower Lachlan is likely to increase that risk.

The accompanying fact sheet on the relationship between water resource plan and water sharing plan states that for the Lower Lachlan *‘The annual permitted take volume will not be more than 120% or less than 80% of the sustainable diversion limit.’<sup>8</sup>*

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<sup>5</sup> Ibid p 28 Table 3-2

<sup>6</sup> Ibid p 22

<sup>7</sup> Ibid Table 6-1 p 53

<sup>8</sup> Lachlan Alluvium Water Resource Plan Fact Sheet. *Relationship between the water resource plan and water sharing plan* p 2



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% in the Lower Lachlan groundwater source.’*<sup>9</sup>

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.

This proposed rule means that the volume of planned environmental water will also be variable. This does not meet the requirements of the Basin Plan.

## 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 Lower and Upper Lachlan Alluvium have both 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 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.

## 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 Lachlan 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.<sup>10</sup>

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

## 4. Rules for supply works located near GDEs

IRN does not support the proposed rule change for basic rights bores to be within 100m of high priority GDEs.

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<sup>9</sup> Ibid

<sup>10</sup> Frequently Asked Questions Fact Sheet p 2

The identified high risk of basic rights bores causing a reduction in groundwater availability in the Upper Gwydir Alluvium is of great concern.

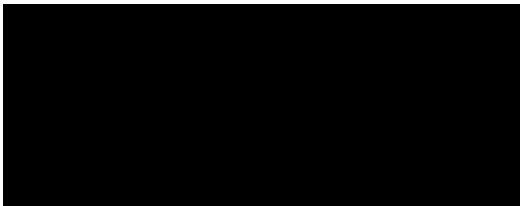
The current rule is 200m distance from GDEs for all bores. This must be retained if the high risk to GDEs is to be managed in the WRP.

**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:



## Comments on Gwydir Alluvium Water Resource Plan

2 messages

Fri, Dec 21, 2018 at 8:24 AM

Dear Department of Industry – Water staff,

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

### Groundwater-dependent ecosystems

I am pleased to see the great progress that has been made in the last 20 years in identifying GDEs. The significance of what little remains of the Gwydir Wetlands has been recognized for over 25 years but the groundwater needs of all the other GDEs have been ignored. It is fortunate that cropping in highly floodprone areas is expensive and risky because this is the main reason why these strips of native vegetation remain within the Gwydir floodplain landscape. They have intrinsic value and many values for people as well. I congratulate all who have been involved in either identifying the Gwydir GDEs 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 disagree with those Gwydir irrigators who suggested only looking after a limited type of GDE. 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.

I support the introduction of stringent setback rules for bores and other new supply works. The proposed set backs seem to 'balance' the desire of proponents to access as much groundwater as they can against the intention of protecting GDEs. Unfortunately the scale has already been tipped down steeply by use of existing supply works. For GDEs it would probably be better to ban new works all together or at least for a substantially greater distance since works further way than 200m could still have serious adverse effects. Why are new works to be allowed when then has been excessive extraction from the Gwydir system as well as from the MDB as a whole? The GDE fact sheet does not explain the circumstances when they will/ will not be allowed so it seems these have no relationship to the health of or risk to the GDEs.

The default setbacks should be minimums with a discretionary zone around these. A clear basis is needed for determining what may or may not be approvable, particularly in relation to the proposed Ministerial discretion. The GDE Fact sheet goes some way toward indicating this but is not adequate.

The cumulative short- and long-term impacts on GDEs of all existing groundwater extraction and the proposed work should specifically be required to be considered.

Replacement works, other than for basic landholder rights, within the default setback should be required to seek approval. Criteria for approval should be clear and should favour protecting any GDEs that are at risk from existing extraction levels/patterns e.g. in droughts. Replacement works outside the setback zone should be encouraged.

**Sustainable diversion limit**

The limit should be reduced and managed so that it really is ecologically sustainable.

**Planned environmental water**

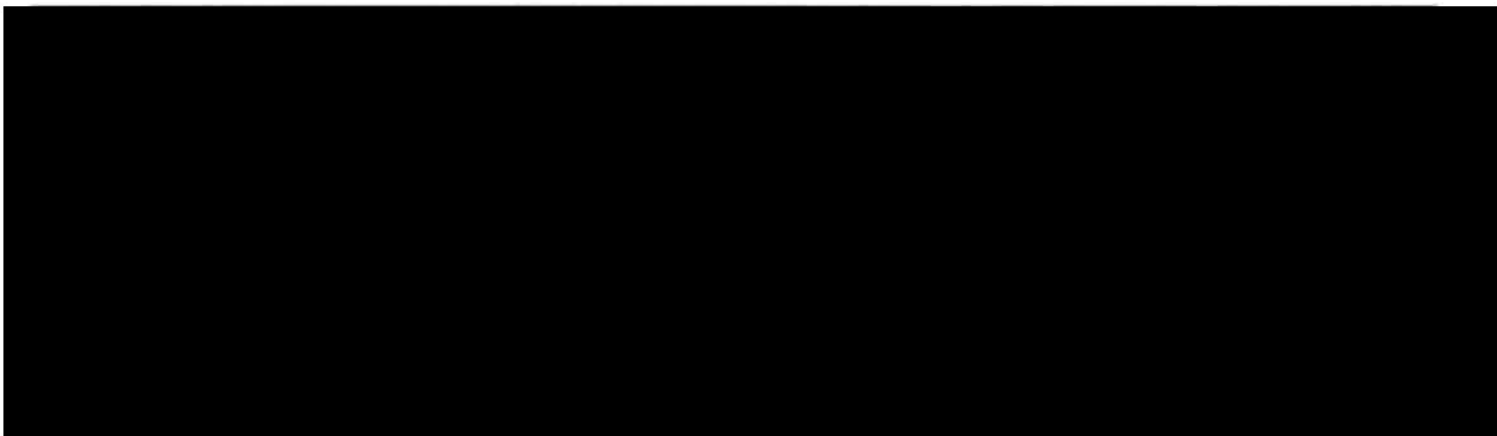
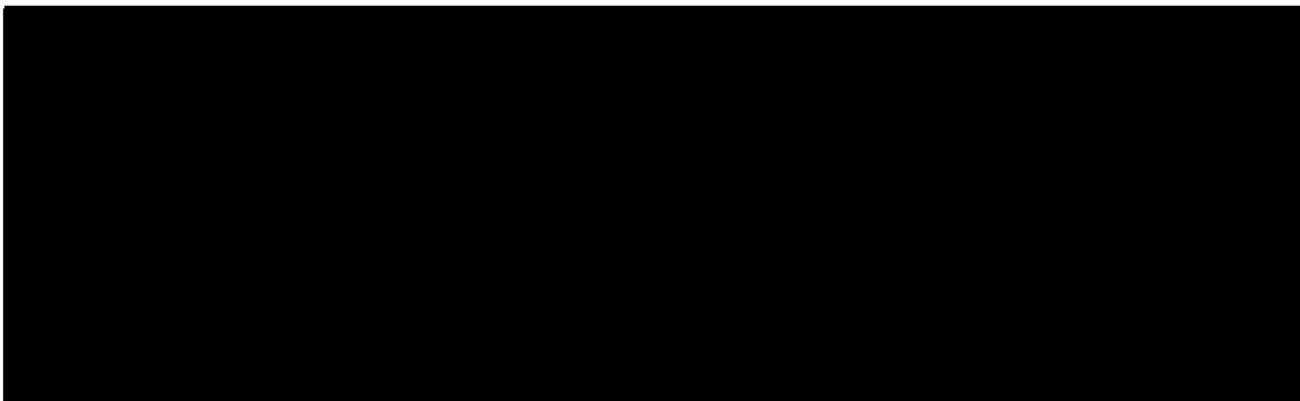
I support the concept of stating what groundwater is planned to be left for the environment. However I am concerned that the proposed changes may put the environment at more risk. Please ensure that recharge is required to protect the environment and is sufficient to achieve this, rather than just enabling extraction.

**Triggers for risk management**

The table of risks and responses includes monitoring and evaluation but not how this will lead to effective timely response. Publishing results is not enough. 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 GDE health appears to be declining or aquifer collapse is a possibility.

Yours faithfully,





*Submission to NSW Government on:*

*Gwydir Alluvium Water Resource Plan Area  
(GW15)*

*By:*

*Gwydir Valley Irrigators Association Inc*

*December 2018*



*making every drop count*

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## 1 Summary and Purpose

This document has been developed by the Gwydir Valley Irrigators Association (GVIA) on behalf of its members as a formal submission for consideration by the NSW Government during their consultation on the Gwydir Alluvium Water Resource Plan (SW15 Gwydir Alluvium Water Resource Plan Area).

This document aims to represent the concerns, views and experiences of our members, not as individuals but as a local industry. Each member reserves the right to express their own opinion and is entitled to make their own submission.

Every member of the GVIA is also a member of the NSW Irrigators Council and as such we endorse their submission unless clearly outlined otherwise.

## 2 Introduction

The Gwydir Valley Irrigators Association (GVIA) as the representative body for irrigation entitlement holders in the Gwydir Valley is acutely aware of the requirements for NSW to deliver Water Resource Plans in NSW by 1 July 2019 that are compliant with the *Basin Plan 2012 (Cth)*. We welcome the opportunity to provide this submission to the Department of Industry – Water (DOI-W) as part of their public consultation.

We congratulate the Department for delivering this Water Resource Plan for public consultation as we are aware there has been a significant amount of work by the groundwater teams to bring the Plan to this point.

The Basin Plan requirements have clearly provided an added level of complexity and regulatory burden on NSW and stakeholders. The requirements are rigorous and in some instances the benefits questionable, when they create barriers to genuine efficiency gains and good planning outcomes. The result is an overwhelming volume of material that in parts, is very difficult to read and cannot be easily followed without simultaneously reading multiple pieces of legislation or policies. Further consideration on ways to streamline information and present a complete picture of requirements is required.

As part of our review, the GVIA has focused our resources on the WSP component of the WRP package. As such, we have provided several recommendations to change administrative areas within the WSP and ensure consistency of wording. We also recommend a consistency of approach between groundwater and surface water planning framework and noted several differences in the drafting and presentation of information between the surface water and alluvial plans.

Some of our recommendations are for further work and seeking clarification from DOI-W. We anticipate further consultation opportunities, prior to accreditation to address these issues.

It is important to highlight that there have been significant improvements in the development of WSPs. The clarity between objectives, strategies and measures are welcomed and the mapping of these to rules is very important to provide a line of sight for stakeholders. Improvements in the readability of many provisions will help to enable a shared understanding of the various rights and priorities of different users under a range of water availability scenarios.

We welcome further discussions with the GVIA to work through many of the complex issues identified within this submission. We have provided a list of our 30 recommendations at the end of this submission and separated these into general comments and those relevant to the WSP.

## 3 About the GVIA

### 3.1 Our region

The Gwydir Valley Irrigators Association (GVIA) represents more than 450 water entitlement holders in the Gwydir Valley, centred around the town of Moree in North-West New South Wales. Our mission is to build a secure future for its members, the environment and the Gwydir Valley community through irrigated agriculture.

The Moree Plains Shire region alone is highly dependent on agriculture and irrigated agriculture for economic activity contributing over 72% of the value of gross domestic product (cotton is around 60%), employing 20-30% of the population and accounting for almost 90% of exports from the Shire<sup>1</sup>.

The 2011 agricultural census estimates that the total value of agricultural commodities for the Moree Plains Shire region was \$911,951,079 up from \$527,744,851 in the 2005-06 census. This is an estimated 7.83% of NSW's total agricultural production from a 1,040,021Ha principally used for agricultural crops<sup>2</sup>.

The Gwydir is characterised as having low water reliability with most water held as general security water with a reliability of 36% (that means irrigators could expect in the long-term just over a third of their entitlement can be accessed). Supplementary water entitlement is somewhat more reliable with 55% but accounts for less than a quarter of the total volume. Groundwater reliability is considered 100% but there is less than 30,000ML available.

The total volume of water available to be accessed by irrigators has been reduced significantly over time due to reforms as outlined below in Table 1: Summary of Water Reform. Entitlements owned for environmental purposes totals more than 186,000ML, which includes an Environmental Contingency Allowance (ECA) of 45,000ML. The NSW and Commonwealth environmental water managers are now responsible for 28.5% of high security entitlement, 29% of general security entitlement and 13% of supplementary entitlement for environmental use. Despite environmental water being held in the Gwydir prior to the first water Sharing Plan. Environmental water is primarily used to contribute waterbird and fish breeding events and to maintain the condition and extent of the internationally recognised Gwydir Wetlands but as the portfolio has grown, so has the application and use of environmental water.

As a result, only approximately 19% of the total river flows are available for diversion for productive use<sup>3</sup>. This equates irrigators holding 575,000ML from regulated entitlement (high

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<sup>1</sup> Cotton Catchment Communities CRC Communities and People Series 2009

<sup>2</sup> 2010 2011 Agricultural Census Report – agdata cubes, 71210D0005-201011 Agricultural Commodities, Australia

<sup>3</sup> Based on IQQM long-term modelling and the volume of water purchased for the environment



security, general security and supplementary water) and 28,000ML available from groundwater aquifers.

**Table 1: Summary of Water Reform**

Year	Program	Volume of entitlement
1970	Creation of replenishment flow	5,000ML
1995	Murray-Darling Basin 1993/94 Interim Cap established to limit future growth in access	
1996	Voluntarily reduced their general security reliability by 5%, by establishing the original Gwydir Valley Environmental Contingency Allowance (ECA) of general security equivalent water.	25,000ML General Security
2004	Gwydir Regulated River Water Sharing Plan further reduced reliability by 4%, primarily through increasing the ECA and enhancing its use and storage provision. Rules created for the WSP also reduced access, particularly to supplementary flow previously known as high flow.	20,000ML General Security
2006	Lower Gwydir Groundwater Source Water Sharing Plan reduced groundwater entitlements from 68,000 megalitres to 28,700 megalitres.	39,300ML Groundwater
2008 +	NSW State Government has purchased general security entitlement as well as supplementary for wetlands recovery programme.	17,092ML General Security 3,141ML Supplementary
	NSW Government infrastructure works	1,249ML High Security
	Commonwealth buy-back program.	88,133ML General Security 20,451ML Supplementary
2016	Commonwealth infrastructure programs.	4,508ML High Security 1,392ML General Security
<b>TOTALS</b>		5,757 High Security 156,617ML General Security (including ECA) 23,592 ML Supplementary

The main broad acre irrigated crop is cotton with irrigated wheat, barley and Lucerne also occurring depending on commodity prices. The total broad acre irrigated area is approximately 90,000 ha (although recent analysis indicate that maximum planting area is now 70,000ha) but is rarely cropped in one year. In 2010-11 census data indicated the total production value of irrigated cotton was \$623M and is estimated to be worth three times that

to the local community using the Cotton Catchment Communities Research Corporation economic multiplier for cotton regions<sup>4</sup>.

Currently there are also pecans, walnuts, oranges and olives being grown within the region covering approximately 1,500 hectares and generating an estimated \$31M with considerable benefits to the local community as a high intensity, permanent crop. There is significant potential for expansion into horticulture and improvement in water utilisation but the area of expansion is limited by the availability of high security water.

Changes in water availability either through climate or government policy has a direct impact on the productivity of the region as well as on the local economy. Analysis by the Murray Darling Basin Authority highlighted this relationship during the northern review and revealed that for both Moree and Collarenebri social and economic indicators declined through 2001 to 2011 including education, economic resources and disadvantage, resulting in an estimated 200 jobs lost due to the implementation of the Basin Plan in the region.

### 3.2 What we do

The GVIA's mission is to build a secure future for our members, the environment and the broader Gwydir Valley community through irrigated agriculture, we can do this together by making every drop count in the river or the aquifer, on-farm, for the environment, or for our community<sup>5</sup>.

GVIA members hold entitlements within the Gwydir regulated and un-regulated surface water areas, in addition to groundwater resources. All of which are managed through water sharing plans, which have been progressively developed since early 2000.

The GVIA organisation is voluntary, funded by a nominal levy, cents/megalitre on regulated, unregulated and groundwater irrigation entitlement. In 2016-17 the levy was paid and supported by more than 84% of the eligible entitlement (excludes entitlement held by the NSW and Commonwealth governments).

Much of the activity of the association revolves around negotiating with government at a Federal, State and Local level to ensure the rights of irrigators are maintained and respected. While the core activities of the Association are funded entirely through the voluntary levy, the Association does also undertake programs to maintain and improve the sustainability of members on-farm activities and from time to time, undertakes special projects, which can be funded by government or research corporations.

The Association is managed by a committee of a minimum 11 irrigators and employs a full-time executive officer and a part-time administrative assistant, as well as hosting a Project Officer funded through the Cotton Research and Development Corporation, the Gwydir Valley Cotton Growers Association and the GVIA.

The GVIA and its members, are members of both the National Irrigators Council and the NSW Irrigators Council.

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<sup>4</sup> Social and Economic Analysis of the Moree Community, 2009. Cotton Catchment Communities CRC

<sup>5</sup> For more information, see our corporate video on <https://vimeo.com/177148006>

### 3.3 Contacts

[REDACTED]

[REDACTED]

[REDACTED]

## 4 General Comments

### 4.1 Water resource plan development

The requirement under the *Basin Plan 2012 (Cth)* to prepare a Water Resource Plan (WRP) has provided an added level of complexity and regulatory burden on the NSW Government and stakeholders that cannot be overlooked and must be acknowledged. The requirements are rigorous and in some instances the benefits questionable, when they create barriers to genuine efficiency gains and good planning outcomes.

The fact that the Gwydir Alluvium Water Plan includes a total of 537 pages of information across nine schedules and two appendices, that is regulatory over-kill. It is unrealistic to expect that industry representatives, individual water entitlement holders or community members without background in hydrology, environmental science or law could possibly provide input into this process.

Now, following the completion of several WRPs for NSW, the requirements should be revised to ensure that they are relevant and practical and provide the appropriate flexibility to Basin States to manage their water resources to achieve overarching objectives. We would be open to providing input into this process, considering we have participated in surface and alluvial WRP development processes.

For example, the requirement (or interpretation) to implement a two-stage compliance regime for NSW and Basin Plan monitoring of water extractions presents unnecessary regulatory burden on governments and additional risk on water users and communities. Not to mention the difficulties in understanding what are the compliance requirements, where an individual must have knowledge of, or copies of each of the following documents to read the appropriate part of the WRP or WSP, including:

- a) *Basin Plan 2012 (Cth)*;
- b) *Water Act 2007 (Cth)*;
- c) *Water Management Act 2000 (NSW)*;

- d) Relevant WSP;
- e) MDBA's Reporting and Compliance Framework<sup>6</sup>; and
- f) Relevant resource description reports or current water usage information from the register.

The fact that to read either the WRP or the WSP, you need to have at least documents a) – e) available undermines the overall readability of the documents and the ability for individuals to understand the rules.

**We recommend an evaluation of the Basin Plan requirements for Water Resource Plans be undertaken, following the completion of the first tranche of plans to assess their relevancy, practicalities and effectiveness in enabling positive water sharing outcomes.**

#### 4.2 *Water sharing plan reviews*

The development, review and implementation of Water Sharing Plan (WSP) are core aspect of the GVIA's role in representing irrigation entitlement holders in the region. We as a result have participated throughout the review and development phases. Whilst the protracted development process has been frustrating, we have fully participated on the belief that all stakeholders would have a genuine opportunity to evaluate the effectiveness of the previous plans, review and amend these plans where necessary.

Unfortunately, the reality for us and many others within the Murray Darling Basin regions, is government delays, poor resourcing and an inability to make decisions at multiple levels of government has resulted in minimal changes to our plan and the unlikely opportunity for others. This is the least desirable outcome for industry and our communities. As WSP have in some instances, 'locked in' inefficient and/or unnecessary rules for another 10-years.

As such, to rebuild this missed opportunity we recommend that a genuine response is made to amend plans where material and administrative changes can be identified that do not undermine the rights of others or outcomes.

Further to this, we also recommend that for issues that cannot be addressed without further assessment, a statutory mid-plan review is included in all water sharing plans in NSW and that all outstanding issues from this current process are included as an appendix to the water sharing plan so that a formal record of the issues to be considered are maintained on the public record.

**We recommend that a mid-term review of water sharing plans is included in each plan and that outstanding issues are recorded as an appendix.**

We also recommend that the NSW Government provide a commitment to NSW communities to appropriately fund monitoring and evaluation of NSW water sharing plans to genuinely collect the information available to inform both the mid-term review and the 10-year review.

**We recommend that the NSW Government adequately resource the monitoring and evaluation of water resource plan (and water sharing plans) to enable a thorough and genuine mid-term and final review.**

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<sup>6</sup> 2018, Sustainable Diversion Limit Reporting and Compliance Framework, MDBA <https://www.mdba.gov.au/sites/default/files/pubs/SDL-Reporting-Compliance-Framework-Nov-18.PDF>

### 4.3 The water resource plan package

We acknowledge that the Gwydir Alluvium WRP is a document for the Murray Darling Basin Authority and not for water access entitlement holders. However, NSW has provided simple techniques to help address the MDBA requirements but also ensure readability of the WRP. We've made recommendations earlier about further streamlining this.

#### 4.3.1 Water sharing plan

The core document and focus of the GVIA's resources has been on the WSP and not the WRP. We have made specific recommendation to each of the WSP in the following sections.

We note that general template changes to the WSPs within the WRP package have improved ability to understand the relevant provisions and provide linkages between objectives, strategies and measures which is welcomed. But as outlined earlier, the requirement to need multiple documents, acts to reduce this improved readability of the plan. The density and lack of consolidation may act to limit the ability of users to comprehend the rules, and result in a lack of clarity. We are concerned that this complexity may also broaden the scope of interpretation.

**We recommend continuing to utilise notes to comprehensively expand on relevant provisions that require linkages to other key legislation, to provide greater clarity and reduce interpretation.**

Furthermore, with the Gwydir Surface and Alluvium WRP's being on public exhibition simultaneously, the GVIA had the opportunity to review both WRP's. In doing so, we noticed inconsistencies between these plans in terms of language (around compliance) and drafting. Particularly around the use of notes and the level of detail provided within the plans for key provisions.

**We recommend that consistency between approaches is maintained where possible.**

We note that throughout the WSP on occasion the listing of the water sources being the upper Gwydir Alluvium, or the Lower Gwydir is inconsistent.

**We recommend that consistency in ordering of the water sources is maintained throughout the documents.**

#### 4.3.2 Risk assessment

The risk assessment methodology used identifies risk using state-wide consequences rather than at the local level, resulting in the large developed alluvial systems like the Lower Gwydir, being categorised regularly as high-risk aquifers. These systems are often the best monitored and reported and have had substantial reductions in extraction through the Achieving Sustainable Groundwater Entitlement program to enable sustainable management. The outcome of this to become evident as the aquifer establishes its new equilibrium. We've raised our concern through the Stakeholder Advisory Panel process that this has resulted in an overstatement of risk, regardless to the actual risk to the local aquifer itself due to the current management strategies in place.

**We recommend that the risk assessment process reconsider the state-wide approach and focus on local impacts to aquifers and the residual risk once current management strategies are taken into consideration.**

### 4.3.3 Incident response guide

We request that stakeholder consultation be engrained within the incident response guide and that appropriate lead time is provided at each criticality level, to ensure that stakeholders are aware of the issues and strategies at the time of implementation.

### 4.3.4 Groundwater Dependiant Ecosystems

We note that a large proportion of the GDE identified follow riparian corridors because of an assumption around shallow groundwater access, which is highly influenced by surface water availability. The current assumptions may stem from the GDE definition being “ecosystems that require access to groundwater to meet all or some of their water requirements to maintain their communities of plants and animals, ecological processes and ecosystem services”.

With a regulated river source being the primary driver for water in many of the GDE identified, we question these outputs based on the low dependency of some. We believe that the methodology should consider those ecosystems only, where the degree of dependency is high and there is no other major water source. The current results appear to overstate GDE and thus we have the large areas depicted within both the upper and lower Gwydir regions that we would assume are more dependent on surface water.

We're also concerned that while significant work has been undertaken, there remains a knowledge gap which may restrict future development opportunities and revisions to Plan Limit if further validation of GDEs is not undertaken. Hence, we would recommend further work to assess the dependency of these high probability GDEs on groundwater and ground-truth this information through field visits.

**We recommend that DOI-W undertake further investigation of the presence and dependency of high probability GDEs and the map be subsequently updated.**

## 5 Water Sharing Plan for the Gwydir Alluvial River Water Source

### 5.1 Part I: Introduction

No comments.

### 5.2 Part 2: Vision, objectives, performance indicators and strategies

We note that the NSW Government has included a forward note to provide acknowledgement to traditional owners as a new addition to the Plan as part of NSW led changes to the WSP template.

We note that in this process, that there has been a change in language from the use of 'sharing' to 'efficient use' as part of the drafting of the vision and objectives. It is our opinion that the core purpose of the plan is to efficiently share water resources between users and that it is then up to those users, how they utilise their rights.

**We recommend that the Plan vision and state-wide template for Section 7 Vision Statement be amended to:**

**To provide for the sustainable and efficient sharing of water to provide for the:**

- (a) Protection of the condition of the groundwater sources;**

- (b) The continuing productive extraction of groundwater for economic benefit;**
- (c) The social and cultural benefits to urban and rural communities that results from groundwater extractions; the**
- (d) The spiritual, social, customary and economic benefits to Aboriginal peoples that result from groundwater extraction.**

Thus, reinforcing the core role of a Water Sharing Plan, while maintaining the secondary goals for communities, the environment and the economy.

The GVIA note that the expanded objectives separate each of the key beneficiaries of the water sharing as separate themed objectives being environmental, economic, social and Aboriginal. This process offers significant improvement to the identification of objectives but also the alignment of these with strategies and key performance indicators.

However, the GVIA notes the consistent ordering of these as environmental, economic, social and Aboriginal in some way suggests prioritisation of these beneficiaries. As such we recommend providing a note to indicate that this is not the case.

**Recommend providing a note that the ordering of beneficiaries of water sharing does not suggest a priority of order or hierarchy. Priorities for water sharing are provided for in later sections.**

The GVIA note the objective in Section 8 (3) (a) will reserve all water in excess of the long-term average annual extraction limit is a new clause that identified all other water as planned environmental water and is consistent with surface water sharing plans. In the case of groundwater systems, it's important to clarify what the long-term average annual extraction limit means in terms of the allocated proportion of the:

- a) The estimated sustainable yield of an aquifer; and
- b) The estimated total storage capacity of the aquifer.

**We recommend providing a note to explain in relative terms what the long-term annual average extraction compared with the sustainable yield and the total storage capacity of the aquifer in either Section 8 (3) or later in Part 6 Division 1 Section 24.**

A key outcome for all WSP (as outlined earlier) is that a consistent framework is implemented to allow water users and others to understand their right to access and use water and management their businesses accordingly. We, therefore, consider it important that an economic strategy is included that addresses this outcome. This would be consistent with surface water.

**We recommend that an additional economic objective in Section 9 (3) is added to read "provide a stable and predictable framework for sharing and allocation of water".**

Further, we note that the Plan focuses on water trade as measures of success. We recommend expansions of measures to be crop output and value, as to clearly articulate the economic benefits of the Plan.

**We recommend Section 9 (4) be expanded to measures other than water trade, including but not limited to crop output and value.**

### 5.3 Part 3: Bulk access regime

As outlined earlier, references to the total aquifer volume and context around what portion is available for extraction has been removed from the WSP, as with opportunities to seek new information to review these estimates. For example, the current Plan reads:

*Section 16 (1) The overall basis for water sharing in this Plan is the average annual recharge to this groundwater source, estimated to be 38,000 megalitres per year (hereafter ML/yr.) plus the requirements for basic landholder rights at the commencement of this plan.*

*(2) The Minister may under section 45 (1) (b) of the Act amend subclause (1) after 30 June 2010 to vary the average annual recharge value following further recharge studies undertaken by the Minister.*

*Note.*

*The extent to which this change may impact on access licence holders is limited by clause 28.*

**We recommend that information around what the long-term average annual extraction limit is and what it represents in terms of a percentage of the sustainable yield and total storage of the aquifer is provided.**

**We recommend that opportunities to review these estimates of recharge, the sustainable yield and total storage of the aquifer and hence, the long the long-term average annual extraction limit is provided as per legislative allowances when new information becomes available.**

#### 5.4 Part 4: Planned environmental water provisions

We note the amendments to Section 16 to allow for the establishment and maintenance of planned environmental water. However, we note the removal of the current Plan's section that refers to the percentage of long-term annual recharge not extracted, being 5,700ML/year being:

*Section 18 (1) (b) subject to Part 10 Division 2 of this Plan, 15% of an amount that is equal to the long-term average annual recharge to this groundwater source minus basic landholder rights requirements at the commencement of this plan, being 5,700 ML/yr., is reserved for the environment.*

**We recommend that this section is reinstated as with a calculation of total planned environmental water as deemed as all water that it held in storage above the long-term annual average extraction limit.**

#### 5.5 Part 5: Requirements for water

We note that this Part has been streamlined from the previous version, noting the conversion to aquifer access licences that was required under the previous Plan and the replacement of the bulk access regime requirements.

In Division 2 Section 18 we note that domestic and stock access licences have reduced between Plan versions to 200ML/year a reduction of 500ML/year.



We note that there is no allocation for special purpose aquifer access licences but seek clarification as to why Division 3 does not outline this as there is the potential for these to be part of the water requirements into the future.

Furthermore, the GVIA seek clarity around the process and accountability of issuing Native Title Rights under *the Native Title Act 1993 (Cth)* and how estimates for water requirements and usage will be incorporated and managed, when and if any such claims arise.

**We recommend that a note be added to this section outlining the NSW Government's intention to develop reasonable use guidelines for Basic Landholder Rights and whether this should include Native Title Rights.**

In addition, there remains uncertainty around the two forms of cultural water currently within the Plan.

**We recommend information be provided to clearly delineate the two forms of cultural water within the Plan; Native Title Rights and the granting of a Specific Purpose access licence for Aboriginal Cultural purposes.**

#### 5.6 Part 6: Limits to the availability of water

As outlined earlier we recommend that there is clarity around what the long-term average annual extraction limit means in terms of the allocated proportion of the:

- a) The estimated sustainable yield of an aquifer; and
- b) The estimated total storage capacity of the aquifer.

We also note the change in wording from the current plan that states:

*Section 28 Variation of extraction limits*

*(1) The Minister may under section 45 (1) (b) of the Act amend clause 27 after 30 June 2010 to vary the extraction limit in accordance with:*

- (a) any change to the average annual recharge arising from subclause 16 (2), and*
- (b) any change to the planned environmental water arising from subclause 18 (2).*

*(2) If there is any change to the extraction limit arising from subclause (1) then:*

- (a) the extraction limit will not be greater than 38,760 ML/yr., plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan and,*
- (b) the extraction limit will not be less than 25,840 ML/yr., plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan.*

We recognise that there are legislative limits to changing the Plan Limit although note that the Part 4 Section 7 (24) of the *Basin Plan 2012 (Cth)* provides scope to make changes to Sustainable Diversion Limits with new or improved information and that Section 7 (26) provides a limit of 5% change to all groundwater SDLs. We, therefore, consider it appropriate that review and revision clauses are reinstated to allow for changes within reason to be made following new or improved information.

**We recommend that a review mechanism for the estimation of extraction limit is reinstated and to be consistent with the current plan provisions and the *Basin Plan 2012 (Cth)*.**

We note that the Section 27 (2) provides for a five-year rolling average to be calculated for compliance with the long-term annual average extraction limit which we support as it provides a better alignment of usage with seasonal weather conditions and recharge opportunities. However, for consistency we recommend that a 10% variation is provided for comparison, which would be within model uncertainty and provide consistency between water sources within the plan and consistency across the state.

**We recommend that Section 27(2)(a) reads “10% or more for the Lower Gwydir Groundwater Source”.**

Clarity around whether the two forms of compliance should be within the Plan should be provided (this request was asked of the NSW Government as part of the surface WRP as well). We would argue that water management still constitutionally resides with State governments and as the Plan is an NSW instrument, we are unclear if it is required to refer to long-term annual diversion limit for the *Basin Plan 2012 (Cth)*. A schedule to the Water Resource Plan could be developed to provide the method for calculation and assessment, reasonable excuse provisions and compliance steps, relevant for Commonwealth legislation be prepared separately. This would avoid confusion by clearly separating the two forms of compliance that NSW water users will now be assessed against.

**We recommend that long-term annual diversion limit compliance requirements are removed from the Plan and provided in separate schedule that includes full disclosure of Basin Plan requirements including methodologies, assessment processes and reasonable excuse provisions. We recommend that if this cannot occur, at a minimum the specific Basin Plan requirements are included within the Plan, including notes regarding reasonable excuses for non-compliance.**

However, if Commonwealth requirements must be included within the Plan, we recommend that the long-term annual diversion limit method and assessment process, reasonable excuses and compliance steps are included within the Plan rather than referring to the Basin Plan and its various schedules. We also recommend that there is consistency in language between plans.

We note that Section 28 (3)- (5) Assessment of compliance with the Basin Plan long-term annual diversion limit provides an alternate approach to calculating the permitted take for the water sources. While the GVIA supports this method as a better match to seasonal usage patterns, we note that there is minor risk that usage behaviour may change and that a review of this method and correlation maybe required into the future if such changes occur.

**We recommend that opportunity to revise Section 28 (3), (4) and (5) is provided if usage and rainfall patterns significant affect the current correlation.**

Section 29 outlines actions following non-compliance which the Minister may need to take. Prior to determining a compliance action, we recommend that the Minister should take into consideration the antecedent conditions and seasonal forecast of water availability and usage, as part of the assessment of risk of continued non-compliance. We request that the Minister consult where necessary on these aspects to further understand the risk of non-compliance and impacts to groundwater dependant industries and communities.

**Recommendation that a new clause in Section 29 be added to include information relating to the continued risk of non-compliance including antecedent conditions and seasonal forecast of water availability and usage and consultation.**

We note that Division 2 provides rules for making available water determinations (AWD) although we note that the general conditions in Section 30 (2) and aquifer access licence conditions Section 33 (1) do not allow for AWD of greater than 100% or 1ML/unit share. Whilst we support that with current estimates of Plan Limit this rule maybe appropriate, but it effectively limits future options to managing allocation if additional water becomes available. We, therefore, recommend a revision to allow for flexibility to provide additional AWD.

**Recommend that AWD can be made if additional water becomes available following a change in the Plan Limit.**

#### 5.7 Part 7: Rules for granting access licences

As outlined under our comments in Part 5, there needs to be clarity around how the issuing of new Special Purpose licences will be made without having third party impacts on other entitlements and potentially triggering compensation.

The GVIA would have also expected to see provisions for the granting of new local utility licences within this section of the Plan.

**We recommend that a provision for these is included to future proof our region, as per Section 66 of the *Water Management Act 2000 (NSW)*.**

#### 5.8 Part 8: Rules for operating water accounts

We note that Section 36 (2) reads that domestic and stock licences can have water assigned into them. We clarify whether domestic and stock licences are available for trade.

We note that local impact rules have been moved to a different section of the plan.

#### 5.9 Part 9: Rules for water supply works approvals

We note that there has been changes to the distance rules for new water supply works approvals but that this does not impact existing or replacement bores. However, in standardising these rules the opportunity for the Minister to consider alternatives has been removed as outlined in the current Plan:

*Section 36 (3) The Minister may, upon request of the applicant for the water supply work approval, vary the distance restrictions specified in subclause (1) if the Minister is satisfied that:*

*(a) a hydrogeological study undertaken by the applicant, and assessed as adequate by the Minister, demonstrates that the location of the new or replacement water supply work will have no more than minimal potential for adverse impact on existing authorised extraction, and*

*(b) all potentially affected access licence and water supply work approval holders and adjacent landholders have been notified by the proponent, and*

*Note.*

*Potentially affected access licence holders are typically neighbouring access licence holders and/or those in the near vicinity.*

*(c) there is a process for remediation if any adverse impact occurs in the future, specified as conditions on the water supply work approval.*

**We recommend the Minister may upon request, vary the distance requirements in the current Plan, Section 36(3) be reinstated.**

Section 41 establishes rules for water supply works near groundwater dependant ecosystems (GDEs), while the distance rules haven't changed the number and location of GDEs has significantly. This is a function of the investigations by DOI-W to determine high probability GDE through remote sensing data and vegetation mapping. There is little information available on how the high probability GDEs have been verified on-ground and what level of dependency that these ecosystems may have on groundwater to survive. Therefore, the regional map maybe overestimates the prevalence of GDEs and their location.

We're concerned that while significant work has been undertaken, there remains a knowledge gap which may restrict future development opportunities and revisions to Plan Limit if further validation of GDEs is not undertaken. Hence, we support further investigation into GDEs and that the mapping is ground-truthed and the level of dependency of high value vegetation is determined.

**We recommend that DOI-W undertake further investigation of the presence and dependency of high probability GDEs and the map be subsequently updated.**

Until such time we recommend that Ministerial discretion be allowed to vary distance rules where ground-truthing has not identified additional impacts to GDEs, as suggested earlier.

**We recommend that the Minister may upon request, vary the distance requirements as outlined in the current Plan in Section 36(3) be reinstated and expanded for the ground-truthing of GDEs.**

We note that initial conversations and identification of cultural values has been undertaken in the Gwydir region, but that identification of culturally sensitive sites has not yet occurred. We consider it appropriate that Ministerial discretion is also available where a works approval maybe considered near a culturally sensitives site and that local consultation with the relevant cultural body is also undertaken, whether this is a local nation organiser, a senior Traditional Owners or local Department of Industry Aboriginal staff.

**We recommend that the Minister may upon request, vary the distance requirements as outlined in the current Plan in Section 36(3) be reinstated and expanded for the ground-truthing of culturally sensitive sites.**

#### 5.10 Part 10: Access dealing rules

We note that the Plan maintains the current Lower Gwydir Watercourse Plan of Management as a restriction to trade within the water source. This barrier was established to protect the groundwater ecosystems and recharge process associated with the internationally recognised Gwydir Wetlands. However, since the establishment of the Plan in 2003, there has been several changes that would suggest that this barrier is redundant and other rules within the WSP could be used to manage local impacts or risks to environmental condition. The new information and rules include:

- The identification of high probability GDEs within this area;

- Expanded local impact rules;
- Expanded rules for new water supply works approvals (noting there are no existing water supply works approvals in this region); and
- Objectives within the *Basin Plan 2012 (Cth)* to limit the barriers to trade.

We note that there are no dealing rules outlined for the Upper Gwydir Alluvium.

## 5.11 Part II: Mandatory Conditions

The GVIA notes that mandatory conditions within this Plan would need to be updated to match the recently released Water Management (General) Regulation 2018 for non-urban water metering.

### 5.12 Schedules and appendices

We note that Schedule 3 has been removed from public consultation. We request that targeted consultation occur to seek a solution to these special purpose licences.

**We recommend targeted consultation occur to seek a solution to the Schedule 3 special purposes licences.**

## 6 Recommendations

### 6.1 General Comments

1. We recommend an evaluation of the Basin Plan requirements for Water Resource Plans be undertaken, following the completion of the first tranche of plans to assess their relevancy, practicalities and effectiveness in enabling positive water sharing outcomes.
2. We recommend that a mid-term review of water sharing plans is included in each plan and that outstanding issues are recorded as an appendix.
3. We recommend that the NSW Government adequately resource the monitoring and evaluation of water resource plan (and water sharing plans) to enable a thorough and genuine mid-term and final review.
4. We recommend continuing to utilise notes to comprehensively expand on relevant provisions that require linkages to other key legislation, to provide greater clarity and reduce interpretation.
5. We recommend that consistency between approaches is maintained where possible.
6. We recommend that consistency in ordering of the water sources is maintained throughout the documents.
7. We recommend that the risk assessment process reconsider the state-wide approach and focus on local impacts to aquifers and the residual risk once current management strategies are taken into consideration.
8. We recommend that DOI-W undertake further investigation of the presence and dependency of high probability GDEs and the map be subsequently updated.

### 6.2 Water Sharing Plan for the Gwydir Alluvial River Water Source

9. We recommend that the Plan vision and state-wide template for Section 7 Vision Statement be amended to:  
To provide for the sustainable and efficient sharing of water to provide for the:

- (a) Protection of the condition of the groundwater sources;
  - (b) The continuing productive extraction of groundwater for economic benefit;
  - (c) The social and cultural benefits to urban and rural communities that results from groundwater extractions; the
  - (d) The spiritual, social, customary and economic benefits to Aboriginal peoples that result from groundwater extraction.
10. Recommend providing a note that the ordering of beneficiaries of water sharing does not suggest a priority of order or hierarchy. Priorities for water sharing are provided for in later sections.
  11. We recommend providing a note to explain in relative terms what the long-term annual average extraction compared with the sustainable yield and the total storage capacity of the aquifer in either Section 8 (3) or later in Part 6 Division 1 Section 24.
  12. We recommend that an additional economic objective in Section 9 (3) is added to read “provide a stable and predictable framework for sharing and allocation of water”.
  13. We recommend Section 9 (4) be expanded to measures other than water trade, including but not limited to crop output and value.
  14. We recommend that information around what the long-term average annual extraction limit is and what it represents in terms of a percentage of the sustainable yield and total storage of the aquifer is provided.
  15. We recommend that opportunities to review these estimates of recharge, the sustainable yield and total storage of the aquifer and hence, the long the long-term average annual extraction limit is provided as per legislative allowances when new information becomes available.
  16. We recommend that this section is reinstated as with a calculation of total planned environmental water as deemed as all water that it held in storage above the long-term annual average extraction limit.
  17. We recommend that a note be added to this section outlining the NSW Government’s intention to develop reasonable use guidelines for Basic Landholder Rights and whether this should include Native Title Rights.
  18. We recommend information be provided to clearly delineate the two forms of cultural water within the Plan; Native Title Rights and the granting of a Specific Purpose access licence for Aboriginal Cultural purposes.
  19. We recommend that a review mechanism for the estimation of extraction limit is reinstated and to be consistent with the current plan provisions and the Basin Plan 2012 (Cth).
  20. We recommend that Section 27(2)(a) reads “10% or more for the Lower Gwydir Groundwater Source”.
  21. We recommend that long-term annual diversion limit compliance requirements are removed from the Plan and provided in separate schedule that includes full disclosure of Basin Plan requirements including methodologies, assessment processes and reasonable excuse provisions. We recommend that if this cannot occur, at a minimum the specific Basin Plan requirements are included within the Plan, including notes regarding reasonable excuses for non-compliance.
  22. We recommend that opportunity to revise Section 28 (3), (4) and (5) is provided if usage and rainfall patterns significant affect the current correlation.

23. Recommendation that a new clause in Section 29 be added to include information relating to the continued risk of non-compliance including antecedent conditions and seasonal forecast of water availability and usage and consultation.
24. Recommend that AWD can be made if additional water becomes available following a change in the Plan Limit.
25. We recommend that a provision for these is included to future proof our region, as per Section 66 of the of the *Water Management Act 2000 (NSW)*.
26. We recommend the Minister may upon request, vary the distance requirements in the current Plan, Section 36(3) be reinstated.
27. We recommend that DOI-W undertake further investigation of the presence and dependency of high probability GDEs and the map be subsequently updated.
28. We recommend that the Minister may upon request, vary the distance requirements as outlined in the current Plan in Section 36(3) be reinstated and expanded for the ground-truthing of GDEs.
29. We recommend that the Minister may upon request, vary the distance requirements as outlined in the current Plan in Section 36(3) be reinstated and expanded for the ground-truthing of culturally sensitive sites.
30. We recommend targeted consultation occur to seek a solution to the Schedule 3 special purposes licences.



## **SUBMISSION**

# **Draft Gwydir 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 Gwydir 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 Gwydir 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 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. These general positions have also been outlined in earlier NSWIC submissions, such as the Lachlan and Macquarie-Castlereagh Alluvium WRPs.

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 in each case, 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 possible reduce the complexity of the WRP and provide additional explanatory materials for stakeholders. The format of the WRP requires evaluation and NSWIC has plans 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 number 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*’ GDEs<sup>1</sup> 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.

**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.

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

**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 Gwydir 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.