



AUDIT OF IMPLEMENTATION

Inland alluvial aquifer water sharing plan audit report card

Prepared for the period between 1 July 2010 and
30 June 2014

Covering

- Lower Gwydir Groundwater Source
- Lower Macquarie Groundwater Sources
- Lower Murray Groundwater Source
- Lower Murrumbidgee Groundwater Sources
- Upper and Lower Namoi Groundwater Sources

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More information

www.water.nsw.gov.au

Acknowledgments

Water NSW

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Acronyms and abbreviations

AEW	Adaptive environmental water
AWD	Available water determination
BLR	Basic landholder rights
D&S	Domestic and stock
GDE	Groundwater dependent ecosystem
LTAEL	Long-term average annual extraction limit
LWU	Local water utility
MDBA	Murray-Darling Basin Authority
the Act	<i>Water Management Act 2000</i>
the Minister	NSW Minister for Natural Resources, Lands and Water
TWS	Town water supply

Glossary

Water sharing plan term review refers to the Minister's decision to extend the existing plan or replace it with a new one at the end of its first 10 year term in line with s.43A provisions of the *Water Management Act 2000* (the Act).

Amend water sharing plan refers to changes made to the plan during its 10 year term. These changes may be provided for in the original plan provisions or made by the Minister under s.45(1)(a) of the Act

Introduction

This report card covers the five inland alluvial aquifer water sharing plans listed in Table 1 that commenced in 2006. It is one of 6 report cards (covering regulated rivers, unregulated rivers and groundwater) prepared in 2014 by the NSW Office of Water and refined by the Audit Panel appointed by the Minister for Natural Resources, Lands and Water under section 44 of the *Water Management Act 2000*.

The report cards were used by the Audit Panel in its review of whether the water sharing plan provisions of the ten plans covered by the 2014 audit are being given effect to. This is the first audit for five of these plans covering the period 2009-2014 and the second audit for the remaining five groundwater plans covering the period 2010-2014.

The report cards form an attachment to the Audit Panel's final report to the Minister. The report includes details on the audit process and Panel membership, together with the findings and additional measures identified by the Audit Panel that are required to give effect to the current plans, and lessons for future water sharing.

Table 1: Inland alluvial aquifer water sharing plans

Abbreviation	Water sharing plan
Murrumbidgee	Lower Murrumbidgee Groundwater Sources
Gwydir	Lower Gwydir Groundwater Source
Macquarie	Lower Macquarie Groundwater Sources
Murray	Lower Murray Groundwater Source
Upper and Lower Namoi	Upper and Lower Namoi Groundwater Sources

Report cards are aligned with the sections in the water sharing plans. There are no report cards for plan sections that provide context or those that contain only enabling provisions linking the plans to the Act (see Table 2).

Table 2: Water sharing plan sections that do not require report cards

Plan Section	Title
Part 1	Introduction
Part 2	Vision, objectives, strategies & performance indicators
Part 6	Bulk access regime
Part 13	Monitoring and reporting

Reflecting the requirements of the Act and the Audit Panel's terms of reference, the report cards focus on the implementation of the provisions in the plans. They do not attempt to assess the outcomes or effectiveness of the plan in achieving its objectives.

Assessment of implementation is classified as follows:

- **Always implemented:** Always implemented when required, or not required to be implemented as triggers for action have not been reached, but everything is in place should action be required.
- **Sometimes implemented:** Required to be implemented and sometimes implemented.
- **Not implemented:** Required to be implemented but never implemented.
- **Not required:** Activities not yet scheduled to commence or Minister has not exercised their discretion to act.

The preparation of the report cards has required an examination of each individual clause in each audited plan. Consequently, the level of detail, wording and implementation activities reflects the variations across each plan. Wherever possible, activities that have the same implementation requirements and classification across plans have been grouped together.

The focus on implementation of water sharing plan provisions also means that the report cards do not summarise all of the water management activities that the NSW government is involved in. Activities that complement the implementation of the plans or are undertaken to fulfil NSW requirements under the National Water Initiative, State Plan or other drivers are not reported on.

The considerable NSW Government effort and investment in the establishment, monitoring and review of performance indicators of water source condition changes are also not covered by the report cards. These performance indicators will be used to determine the performance of a plan against its objectives at the end of the 10 year term and so would be classified in the report cards as "Not required" (activities not yet scheduled to commence). Information on ecological and social and economic performance monitoring is available in the progress reports for the relevant water sources and elsewhere on the Office of Water website at www.water.nsw.gov.au.

Part 3 – Basis for water sharing

Table 3: Recharge

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans (except Lower Murray)	Not required	No changes to average annual recharge estimates have been required in any of these plans.	<ul style="list-style-type: none"> • In the Murrumbidgee a model review has not been undertaken to date to change recharge estimates • In the Gwydir the groundwater model is currently being reviewed. A report on the review is anticipated by end 2015 • The groundwater model of the Upper Namoi has been extended to incorporate all 12 groundwater sources including zone 1. The model report is expected to be available by late 2015. The Lower Namoi is currently being reviewed. A report on the review is anticipated by end 2015. • In late 2014 water users in Zone 1 of the Upper Namoi requested a recharge study be undertaken. This is being dealt with through the Ministerial process • <i>Note: In the Macquarie the first groundwater model review recommended no changes as reported in the 5 year audit.</i> • <i>Note: The Lower Murray does not allow amendments to recharge provisions within the plan's term however in the Lower Murray a new groundwater model is under development.</i> 	Office of Water to consider results of any new or updated groundwater models as part of any amendment to the plans or upon remake of the plans to ensure that recharge estimates are based on best available information.
Lower Macquarie	Always implemented	Second review of the average annual recharge has been undertaken by the specified date of 30 June 2014	<p>Several internal reviews have been undertaken and the model has been reviewed by MDBA in relation to the Basin Plan and extraction limits.</p> <p>The reviews recommended Zone 5 remain undefined.</p> <p><i>Note: Any amendments to the plan resulting from this study cannot be made until after 30th</i></p>	

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
			June 2015	

Part 4 – Environmental water provisions

Table 4: Planned environmental water

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	Planned environmental water provisions are implemented via limits to extraction. Limits have been complied with in all plans.	All licences (issued under the Act) contain conditions which limit use to the required levels. Water use information is reviewed annually by Office of Water to ensure compliance with these conditions. See Part 9 (limits to availability of water) for details of action taken to ensure compliance with extraction limits in the Lower Murrumbidgee Deep water source.	
All water sharing plans (except Lower Murray)	Not required	No changes to planned environmental water volumes have been required.	In the Lower Murray a new groundwater model is under development. <i>Note the Lower Murray does not allow amendments to recharge provisions within the plan's term</i>	Office of Water to consider results of any new or updated groundwater models or GDE studies as part of any amendment to the plans or upon remake of the plans to ensure that planned environmental water volumes and other provisions are based on best available information.
Lower Macquarie	Always implemented	Second review of the proportion of average annual recharge reserved as planned environmental water has been undertaken by the specified date of 30 June 2014	Several internal reviews have been undertaken and the model has been reviewed externally as required by MDBA in relation to the Basin Plan and extraction limits. <i>Note: Any amendments to the plan resulting from this study cannot be made until after 30th June 2015</i>	

Table 5: Adaptive environmental water (AEW)

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	No licences have been committed as AEW in any groundwater system in NSW.	Although there are no access licences with AEW conditions, necessary systems are in place to apply and manage conditions should they be requested.	

Part 5 – Basic landholder rights

Table 6: Basic landholder rights (BLR)

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	Some management strategies have been required in the Lower Gwydir. <i>No change to year 5 audit assessment for remaining plan areas</i>	One case of interference was identified in the Lower Gwydir and resolved by permitting a replacement bore.	
All water sharing plans	Not required	Reasonable use guidelines (made under s.52 of the Act and provided for in the plans) have not been made by the Minister.	The Office of Water is developing guidelines for the take and use of water for domestic consumption and stock watering. These will set limits on extraction of water for D&S purposes.	Office of Water to ensure that domestic and stock use is limited in line with the State-wide reasonable use guidelines once they are finalised and approved.

Table 7: Domestic and stock

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Not an auditable provision, only provided for information	A revised method for the calculation of BLR has been developed and is being used in the development of new water sharing plans.	The new method for estimating BLR incorporates factors such as the area of land, land use (e.g. rural and urban) and the reliance on groundwater.	Office of Water update BLR figures when plans are remade to reflect estimates made using the revised methodology.

Table 8: Native title rights

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Not required	Native title rights remain at 0 ML/year in all water sources. No implementation activities have been required to date.		

Note: No report cards have been prepared for Part 6 of the plans as it does not contain any provisions requiring action by the government.

Part 7 – Requirements for water for extraction under access licences

Table 9: Share components of aquifer access licences

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	All licences were established with share components calculated in line with plan specifications		

Table 10: Changes to share components

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	The date to cancel supplementary licences has not been reached, however, AWDs for this licence category have been reduced gradually in line with the water sharing plans as part of the staged phasing out of this licence category and the ultimate cancellation of licences by the deadlines set out in the plans.	All plans specify the reduction of supplementary water access licence share components to 0 will occur on 1st July 2015 All plans specify the cancellation of supplementary water access licences will occur after 1st July 2015	Office of Water to implement supplementary water access licence share component reduction to 0 by 1st July 2015 and licence cancellation after this date.

Part 8 – Rules for granting access licences

Table 11: Rules for granting access licences

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	The Water Management (General) Regulations 2004 and 2011 set out the specific purpose access licences for which applications can be accepted in line with the plan	All plans except the Lower Gwydir have not yet been updated to reference the newer 2011 regulations	Office of Water to update references to the new Water Management (General) Regulation 2011.
All water sharing plans except Murrumbidgee	Always implemented	All licences granted were in line with the plan provisions. The Water Management (General) Regulations 2004 and 2011 set out the specific purpose access licences for which applications can be accepted in line with the plan	In the Lower Macquarie there is an outstanding licence conversion issue concerning the Warren TWS. In the Lower Gwydir plan amendments were made to allow new D&S licences to be approved up to a total of 200ML/year for water delivered via the Gingham Pipeline. This is a water saving and efficiency scheme funded through the NSW Wetlands Recovery Program. A licence application was received in 2012 and is progressing through the determination process.	Office of Water to resolve outstanding licence conversion issues in the Lower Macquarie plan area
Murrumbidgee	Sometimes implemented	All licences were converted from the <i>Water Act 1912</i> at plan commencement except for one licence held by Murrumbidgee Irrigation Ltd for the water table lowering.	This licence uses tube wells for groundwater control and these were not licensed when the water sharing plan began and still remain this way. The tube wells cannot be included in the Murrumbidgee Irrigation licence under schedules 10 and 11 of the Act. A new category of specific purpose licence has been created for salinity and water table management via an amendment to the Act regulations. A new access licences and related work approvals are in the process of being issued	Office of Water to finalise issuing a specific purpose access licence and work approvals to Murrumbidgee Irrigation Ltd

Table 12: Rules for granting or amending water supply works approvals

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
Lower Murray	See Part 10 Table 18 for details. The Lower Murray is the only plan to deal with water supply works in this plan Part.			

Part 9 – Limits to the availability of water

Table 13: Extraction limits

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
Lower Murray, Lower Murrumbidgee, Lower Macquarie	Always implemented	The Long term average annual extraction limit (LTAAEL) is implemented via limits to extraction. Limits have been complied with in all plans.	See report card Part 4 (environmental water provisions) for details.	
Upper and Lower Namoi and Lower Gwydir	Always implemented	The LTAAEL is implemented via annual limits to extraction. Some water sources in the Upper and Lower Namoi and Lower Gwydir have exceeded annual extraction limits but not the LTAAEL.	Annual extraction limits In the Upper and Lower Namoi were exceeded in: <ul style="list-style-type: none"> • 2012/13 Upper Namoi Zone 5 (approx. 15%) • 2013/14 Lower Namoi (approx. 10%) • 2013/14 Upper Namoi zones 2,3,5,8 (approx. 30%, 18%, 22%, 20% respectively) In the Lower Gwydir annual extraction limits were exceeded in 2013/14 Current and future usage in these water sources will be closely monitored to determine if an adjustment to the AWD is required in order to meet the LTAAEL	For the Upper and Lower Namoi and Lower Gwydir: Monitor current and future usage in relevant water sources to determine if adjustments to AWDs are required in order to meet the LTAAEL.

Table 14: Variation of extraction limits

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans except Lower Murray	Not required	No changes to the LTAAEL in any water source have been required.	See report card Part 3 (basis for water sharing) and Part 4 (environmental water provisions) for details of reviews of recharge estimates, planned environmental water and GDEs. <i>Note: No changes are provided for in the Lower Murray</i>	

Table 15: Compliance with long term average annual extraction limits (LTAAEL)

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	Compliance with plan limits has been monitored and strategies to manage growth in use within this limit implemented as required (via reduced available water determinations (AWDs)).	The LTAAEL has not been exceeded in any plan area however some water sources in the Upper and Lower Namoi and Lower Gwydir have exceeded annual extraction limits. Extraction is being closely monitored to determine if future AWD adjustments are required.	For the Upper and Lower Namoi and Lower Gwydir: Monitor current and future usage in relevant water sources to determine if adjustments to AWDs are required in order to meet the LTAAEL.

Table 16: Available water determinations

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	All AWDs were expressed in the correct units, were the correct determinations in the first year of the plan, were calculated as specified and had the correct reductions for supplementary access licences as set out in the plans		
<i>All years</i> Murrumbidgee, Gwydir, Macquarie, Upper and Lower Namoi Murray <i>2010 - 2011</i>	Always implemented	All AWDs were announced when required.		
All water sharing plans	Always implemented	AWDs for supplementary licences were gradually reduced, in line with the water sharing plans as part of the staged phasing out of this licence category and the ultimate cancellation of licences by the deadlines set out in the plans	See report card Part 7 (requirements for water) for details of AWDs for supplementary licences.	

Part 10 – Rules for managing access licences

Table 17: Water allocation and account management

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
Water allocation accounts				
All water sharing plans	Always implemented	All licence holders were established with a water allocation account.		
Accrual of water allocations				
All water sharing plans	Always implemented	All accounts were credited following AWD determinations		
Annual accounting for water extraction				
All water sharing plans	Always implemented	All accounts were debited and credited in line with plan provisions		
Upper and Lower Namoi	Always implemented	The rules relating to annual accounting for water extraction were implemented in line with the water sharing plan at all times.	Carryover and take limits for the Upper Namoi Zone 1 were amended in 2013 to facilitate implementation of a water use efficiency project under the Achieving Sustainable Groundwater Entitlements Program.	
All water sharing plans (except Upper and Lower Namoi)	Sometimes implemented	The rules relating to annual accounting for water extraction were not implemented in line with the water sharing plan at all times.	In all plans the majority of accounts were managed in line with plan provisions. However, in all years over all plan areas a small number of accounts for aquifer access licences fell below zero, carried over more than was permitted and held more than was permitted. The main reason for this non-compliance with the water sharing plan was over extraction by the licence holder. If this was the case, State Water reports all over extraction cases to the Office of Water Compliance branch for action.	Office of Water to continue to review Water NSW account management practices to ensure that all functions are undertaken in line with the water sharing plan water account provisions.

Table 18: Management of local impacts

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
Local impact areas				
All plans	Not required	No local impact areas were required to be established in any plan area. <i>Note: Local impact areas may be established in all water sharing plans but are done so for specific management issues such as water quality, water level and aquifer integrity (see below)</i>		Office of Water to continue to monitor extraction and changes in water levels to assess the need for local impact areas and interference management strategies.
Rules for granting or amending water supply works approvals				
Murray	Always implemented	All new bores constructed have been in line with the distance provisions of the water sharing plan. This includes distances from existing bores, irrigation channels and GDEs. <i>Note: The Lower Murray is the only plan to deal with water supply works in Part 8 Rules for Granting Access Licences</i>		
Extraction interference between neighbouring bores				
All water sharing plans	Always implemented	Licences for new and replacement bores have been issued in line with the rules for minimum distance between neighbouring bores <i>Note: There is no specific section in the Lower Murrumbidgee plan relating to extraction interference between neighbouring bores. The Lower Murray deals with extraction interference between water supply works in Part 8 Rules for Granting Access Licences</i>	Distance requirements are included as a condition on new and replacement bore works approvals. Licence holders and licensed drillers are required to comply with these conditions. In some cases new or replacement works were within specified distances, however, in each case an Office of Water hydrogeologist assessed the impacts and found that they would be minimal. In the Murrumbidgee all approvals for new bores (except BLR) include annual extraction limits to minimise interference between neighbouring bores. Similarly extraction limits are also introduced following permanent trades.	

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
Exceptions to distance conditions for managing interference between bores				
Upper and Lower Namoi Gwydir	Sometimes implemented	In order for a new bore to be permitted within a specified distance restriction, the plan required that: <ul style="list-style-type: none"> ○ Applicants undertake a hydrogeological assessment ○ a condition be placed on its licence specifying a process for remediation if impacts did occur, and, and ○ written consent from neighbours be sought No new applications were received during the second audit period The plans were amended in 2013 to exempt BLR bores from these distance restrictions. The first year audit found these requirements were not always met.	No new applications were received during the second audit period however previous required actions (see below) have not been finalised. While assessments for applications for bores within the restricted areas were undertaken, this work was done by Office of Water, rather than the applicant. There were 170 licences found to be located within 200 m of a property boundary during the 2010 audit. Whilst they have consent from neighbours; conditions for remediation were not included on any licences. It is important to note that the large numbers of licences within the distance restrictions are mainly in areas where BLR works are built on residential blocks. In high density residential areas there is not the space to allow for 200 m between each work approval location. Extractions for BLR are generally smaller therefore there would be less impact from extractions compared to production bores. As a result of this, the plans were amended in 2013 to exempt BLR bores from these distance restrictions.	Office of Water to continue to amend work approvals to include a condition requiring remediation if interference between bores does occur by plan remake. <i>Note: This will involve review of individual work approval conditions and will need to be done progressively within limited staff resources.</i>
Water level management				
Murrumbidgee	Always implemented	Two local impact management areas to manage groundwater levels were established in August 2007 within this plan area. Local impact management restrictions in line with plan provisions remain in force.	Declaration of local impact management areas was made by Office of Water in response to concerns of increasing seasonal drawdown, and the potential that extraction rights may migrate over time via dealings from outlying areas of poorer groundwater availability, leading to increased drawdown impacts on neighbouring bores. Monitoring bores in the area continue to show declining trends and have shown a seasonal drawdown of up to 25 m in the deeper aquifer. This seasonal fluctuation, however, has not	Office of Water to continue to monitor groundwater level fluctuations and assess the need for ongoing and/or further management strategies to manage impacts on groundwater levels associated with extraction. Office of Water to consider amending the plan on remake to include the local impact rules as permanent trading rules in the water sharing plan, due to their long standing implementation and effective management in maintaining groundwater levels. Following on from this Office of Water should

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
			<p>worsened, indicating that the local impact rules have provided the desirable mitigation impact in managing drawdown. The rules aimed at no net increase in entitlement and volume of groundwater extraction through temporary trading and were placed in areas where full development of entitlement has occurred. There is no plan to remove restrictions at the current time.</p>	<p>ensure the current trade review covers the implications of such an amendment.</p>
<p>All water sharing plans except Murrumbidgee</p>	<p>Not required</p>	<p>Local impact areas for managing groundwater levels have not been required in other plans.</p> <p>However, other measures than those identified in the plans have been implemented to manage groundwater levels.</p>	<p>Office of Water has monitored groundwater level fluctuations since the commencement of plans in all areas.</p> <p>In the Murray, monitoring has indicated that local impact areas or other management strategies have not been required.</p> <p>In other areas, management strategies which did not require declaration of a local impact area by the Minister were put in place.</p> <p>The following restrictions identified in the 5 year audit are still current, and no additional management strategies have been implemented</p> <ul style="list-style-type: none"> • In the Lower Namoi trading was restricted in areas where drawdown reached 40%-50% of saturated thickness and showed recovery decline, following community meetings about groundwater status conducted in 2006-2008. These restrictions took effect from 10 November 2008 and were implemented to limit further impacts from additional water being traded into these areas of greater impact. • In the Gwydir, a review of the water source in the first half of 2008 identified an area between Moree and Ashley as having significant drawdown and recovery decline. These drawdowns are over and above those impacts anticipated under the water 	<p>Office of Water continues to monitor and where necessary manage groundwater level impacts of extraction in the Lower Namoi and Gwydir.</p> <p>This action recognises that work is currently being undertaken to establish trigger levels for water level management in the Namoi.</p> <p><i>Note options for management include continuing trading restrictions on dealing applications; amending the Dealing Principles under 71Z of the Act and formally creating a dealing zone to limit net trades of allocation and account water into this area; or declaring a local impact area under the water sharing plan.</i></p>

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
			sharing plan. As a result dealing restrictions were introduced and dealings are subject to specific assessment criteria. <ul style="list-style-type: none"> In the Macquarie, licence holders agreed to slow or halt extraction in zone 4 when thresholds, based on Office of Water groundwater level monitoring, are reached. The agreement to link extraction to groundwater level triggers has now been converted to a licence condition for bore owners within this groundwater source 	
Water quality management				
All water sharing plans	Not required	No local impact areas for water quality management has been required or declared by the Minister	Water quality monitoring are being undertaken across plan areas to inform Office of Water's assessment of the need for water quality local impact areas,	Office of Water continue monitoring and studies of groundwater quality and consider the need for management actions aimed at mitigating impacts of extraction on groundwater quality as required.
Murray	Not required	A aquifer salinity baseline or sodium absorption ratio for production bores to use in water quality management strategies has not been established <i>Note: The plan provision that this should be done at the commencement of the plan is not binding on the Minister.</i>	A salinity baseline was established in 2003 for the entire water source. The plan specifies a baseline be established for each production bore; however, this was not done due to the resource intensive nature of this task, lack of cooperation from licence holders in providing salinity information from production bores and concerns by Office of Water hydrogeologists that such monitoring will have limited use in informing responsive management strategies. Since 2003 Office of Water has been using a baseline established to monitor groundwater quality over the entire water source (not for each production bore). This involves conducting targeted salinity monitoring in areas where salinity impacts are considered to be more likely. Analysis of this monitoring has not indicated that water quality management strategies are not required in this area at this	Office of Water to continue field and laboratory monitoring of salinity levels within the aquifer. Office of Water to consider changes to the triggers for water quality management strategies upon the remake of the Murray plan to ensure that water quality management strategies are appropriate and cost effective

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
			time. It has also improved understanding of processes associated with groundwater mixing and may support approaches to the prediction of groundwater quality change. The plan provides local impact management rules linked to the relationship between the salinity baseline and sodium absorption ratio. Office of Water monitoring indicates that such rules have not been necessary	
Macquarie	Not implemented	The plan states an electrical conductivity baseline will be set in year 6 of the plan, against which changes in water quality will be measured.	Some groundwater quality monitoring was undertaken by Office of Water; however, it was not sufficient to establish the baseline across the entire 6 groundwater sources. A more comprehensive monitoring program commenced in 2011 but is not yet complete.	Office of Water to continue monitoring of electrical conductivity and establish a baseline for future management when sufficient data has been gathered. Office of Water to assess monitoring results against the baseline once it is established and regularly consider the need for quality management actions.
Protection of groundwater dependent ecosystems (including rivers and creeks)				
All water sharing plans	Not required	No additional GDEs have been identified for inclusion in the plans.	Office of Water is conducting a State-wide study into the identification of GDEs, which is currently focussing on the northern Murray Darling Basin.	Office of Water to include any additional GDEs identified in plans as an amendment, or on remake as required.
Macquarie, Lower Murray, Lower Murrumbidgee and Upper and Lower Namoi	Always implemented	No new bores have been permitted during the second audit period within the setback distances established in the GDE protection clauses of the plans. <i>Note: Setbacks in this section of the plans also refer to rivers and creeks.</i>	Setback rules are applied during the licence assessment process.	
Lower Gwydir	Sometimes implemented	Setback distances in some instances may not have been applied to the works approval		

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
Protection of aquifer integrity				
All water sharing plans	Not required	No local impact areas for aquifer integrity management have been required.	This assessment is based on results of groundwater level monitoring (including the stabilisation and/or recovery of groundwater levels), absence of reports of land subsidence (aquifer compaction) or reduction in bore yields.	
Extraction restrictions				
All water sharing plans	Not required	Restrictions by the Minister on pumping rates and times have largely not been required to manage local impacts of extraction however alternate management strategies have been implemented.	In some plan areas, alternative management strategies have been employed to mitigate the impact of extraction on groundwater levels, as detailed below: <ul style="list-style-type: none"> • In the Gwydir and Lower Namoi, net trade in allocations and entitlement have been put in place (see report cards Part 10 (water level management) for details); • In the Macquarie, conditions have been included on works approvals for bores in Zone 4 which restrict extraction when triggers in the Office of Water monitoring bores are reached. (see report cards Part 10 (water level management) for details) • In the Murrumbidgee all new bores constructed after the commencement of the water sharing plan, have restrictions on annual pumping rates to limit the impacts on neighbours. 	
Group registration				
All water sharing plans	Not required	Although there have been some extraction restrictions placed in some plans, there have been no group registrations (to manage the restricted access)		
Infrastructure failure				
All water sharing plans	Not required	There have been no failures of monitoring bores that are relied		

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
		upon to manage local impact restrictions.		

Part 11 – Access licence dealing rules

Table 19: Access licence dealing rules

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	All dealings have been in line with the Minister's dealing principles, the Act and the water sharing plan.	All dealings that have taken place have been within water sources. See report card Part 10 (managing access licences) for details of dealing restrictions aimed at managing impacts of extraction on groundwater level fluctuations.	
Upper and Lower Namoi	Always implemented	No dealings have been permitted within the water source if the dealing would result in the total access licence share components or credited water allocations authorised to be extracted through nominated works at a location exceeding 600 ML/year per square kilometre.	Licensing uses the property area for this assessment. This is the only plan with this provision. Accounting rules were amended in 2013 to prevent unintentional forfeit of water during a dealing	Office of Water to maintain the current use of trading criteria to assess applications for trades within the Upper and Lower Namoi groundwater source. This recognises that the current trading criteria take into account impacts on the aquifer and existing bores.

Part 12 – Mandatory conditions

Table 20: Access licence conditions

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Sometimes implemented	The majority of mandatory conditions for access licences have been placed on licences.	<p>The audit process reviewed a small number of licences of each category within each plan area.</p> <p>During the review process two licences were identified as not having all mandatory conditions applied under the plans.</p> <p>A LWU licence in the Lower Murrumbidgee was identified as not having 2 mandatory conditions applied, both relating to local impact areas.</p> <p>An aquifer access licence in the Gwydir was identified as not having mandatory conditions relating to Schedule 4.</p>	Further review of mandatory conditions on licences may be required to ensure they have all been applied correctly.

Table 21: Water supply works approvals

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Sometimes implemented	Whilst the majority of mandatory conditions on works approvals have been applied to bores, there have been two specific conditions that have not been applied to any work approvals in the required water sharing plans.	<p>A condition which has not been applied at all times, for all plans includes:</p> <ul style="list-style-type: none"> Assessment responsibility for any local impact rules. The exclusion of this provision was an oversight by Office of Water. In the past when local impact rules have been developed users have been notified if they are affected, of the restrictions, even without this condition. <p>A condition which has not been applied at all times in the Macquarie water sharing plan include:</p> <ul style="list-style-type: none"> Referral of all new applications to the NSW Aboriginal Land Council for an assessment of impacts in the Macquarie. This provision relates to licensing process and was 	<p>Upon plan remake, Office of Water to assess the appropriateness of the mandatory condition within the plans that details assessment responsibility for any local impact rules, upon work approvals.</p> <p>Office of Water to amend the Macquarie water sharing plan to remove the mandatory condition stating that new works approvals are to be sent to the NSW Aboriginal Land Council and insert a note stating that as part of the determination process all new licence applications will be sent to the NSW Aboriginal Land Council for comment upon plan amendment or on the remake of the Macquarie plan.</p>

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
			included in error during the plan drafting as a mandatory condition	

Note: No report cards have been prepared for Part 13 of the plans as they do not contain any provisions requiring action by the government.

Part 14 – Plan amendments

Table 22: Amendment to recharge figures

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Not required	There have been no amendments to the average annual recharge figures in any of the water sharing plans during the second audit period.		

Table 23: Long term annual average extraction limits (LTAAEL)

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Not required	There have been no amendments to the LTAAELs in these plans during the second audit period.		

Table 24: High priority GDEs and Aboriginal cultural values

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Not required	There have been no amendments to the Schedule listing high priority GDEs in any of the water sharing plans or additional measures included to		

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
		manage impacts of extraction on Aboriginal cultural values during the second audit period.		

Table 25: Other plan amendments

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Always implemented	Where amendments have been provided for in the plans, there has not been a requirement to use them.	<p>Subsequent to the making of the plans some drafting errors were identified and have been corrected by amendment.</p> <p>Amendments to the Lower Gwydir and Upper and Lower Namoi plans have been made resulting from water efficiency projects, see Table 11: Rules for granting access licences and Table 17: Water allocation and account management for details.</p> <p>Additional amendments to these two plans relate to distance rules and are included in Table 18: Management of local impacts</p> <p>These amendments have been made under s.45 (a) of the Act.</p>	

Table 26: Amendment of planned environmental water

Subject of assessment	Assessment	Explanation of assessment	Comment	Required Action
All water sharing plans	Not required	There have been no amendments to planned environmental water during the second audit period.		