

Final report

**Audit of the implementation of the
Lachlan, Murrumbidgee and NSW
Murray and Lower Darling regulated
rivers water sharing plans**

May 2023



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Acknowledgement of Country

The Natural Resources Commission acknowledges and pays respect to Traditional Owners and Aboriginal peoples. The Commission recognises and acknowledges that Traditional Owners have a deep cultural, social, environmental, spiritual and economic connection to their lands and waters. We value and respect their knowledge in natural resource management and the contributions of many generations, including Elders, to this understanding and connection.

In relation to the Lachlan, Murrumbidgee, Murray and Lower Darling regulated rivers, the Commission pays its respects to the Barkandji, Barapa Barapa, Maljangapa, Maraura, Muthi Muthi, Nari Nari, Ngarigu, Ngiyampaa, Ngunnawal/Ngunawal, Nyeri Nyeri, Tati Tati, Wadi Wadi, Wolgalu, Wemba Wemba, Weki Weki, Wiradjuri, Yita Yita and Yorta Yorta traditional owners past, present and future, as well as other Aboriginal peoples for whom these waterways are significant.

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Cover image: Lachlan River at Hillston.

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Acronyms and abbreviations

Act	<i>Water Management Act 2000 No 92 (NSW)</i>
AWD	Available Water Determination
ASAE	Australian Standard on Assurance Engagements
Commission	the Natural Resources Commission
DPE-EHG	Department of Planning and Environment – Environment and Heritage Group
DPE-Water	Department of Planning and Environment – Water
DPIE-EES	(former) Department of Planning, Industry and Environment – Environment, Energy and Science
DPIE-Water	(former) Department of Planning, Industry and Environment – Water
EWA	Environmental Water Allowance
F	Finding
GL	gigalitre
iWAS	online Water Accounting System
Lachlan plan	<i>Water Sharing Plan for the Lachlan Regulated River Water Source 2016 (version effective from 27 June 2017)</i>
Lachlan 2003 plan	<i>Water Sharing Plan for the Lachlan Regulated River Water Source 2003</i>
LTADEL	Long-term average annual extraction limit
MDBA	Murray Darling Basin Authority
Murray plan	<i>Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016 (version effective from 21 June 2019)</i>
Murray 2003 plan	<i>Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2003</i>
Murrumbidgee plan	<i>Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2016 (version effective from 06 July 2018)</i>
Murrumbidgee 2003 plan	<i>Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2003</i>
ML	megalitre
NRAR	Natural Resources Access Regulator
R	Recommendation
Regulation	<i>Water Management (General) Regulation 2018 (NSW)</i>
WAL	Water access licence
WAS	Water Accounting System
WLS	Water Licensing System

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1 Executive summary

The Natural Resources Commission (the Commission) has audited three water sharing plans in the southern Murray Darling Basin in NSW (referred to in this report as ‘the plans’) to ascertain whether the provisions of the plans are being given effect to, as required under Section 44 of the *Water Management Act 2000 No 92* (the Act).¹

The audited plans are the:

- *Water Sharing Plan for the Lachlan Regulated River Water Source 2016* (Lachlan plan) – version effective from 27 June 2017
- *Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2016* (Murrumbidgee plan) – version effective from 06 July 2018
- *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016* (Murray plan) – version effective from 21 June 2019.

The Commission notes that amendments were made to these three plans in late December 2022 after the end of the audit period and following the submission of the draft report to audited NSW Government agencies in October 2022. The Commission has audited the versions of the plans that were in effect prior to these amendments being made in December 2022 and which were in force in October 2022. The Commission has retained clause references appropriate to the versions of the plans that were audited. The historical versions that were audited are described above and are available on the NSW Government website.

1.1 Audit conclusion

While many of the provisions of the plans are being implemented, the Commission considers that on balance the provisions of the plans have not been given full effect.

The audit conclusion is based on the procedures performed and the evidence obtained. The Commission is of the view that the information presented fairly reflects the implementation of the plans.

1.2 Audit findings and recommendations

The Commission found that across most of the criteria assessed in this audit, the relevant NSW Government bodies generally have systems, processes and procedures in place that align with legislative requirements and support implementation of the plans.

Key aspects of the plans were being implemented as outlined below:

- airspace and flooding provisions were implemented during the audit period
- Available Water Determination (AWD) provisions were largely given effect
- systems, processes and procedures were in place to support the implementation of provisions relating to the granting of access licences, management of access licences and approvals of water supply works
- access licence dealing provisions were implemented during the audit period

¹ Note that in this report, ‘the Act’ is used to refer only to the *Water Management Act 2000* and ‘the Regulations’ refers only to the *Water Management (General) Regulations 2018*.

- mandatory conditions on water access licences captured the majority of required provisions
- non-mandatory amendments appear to have been managed appropriately
- LTAAEL assessment and compliance processes commenced for the 2020-21 water year for the Lachlan and Murrumbidgee plans.

Table 1 outlines the audit findings and recommendations against the ten audit criteria. Key issues that were identified include:

- a lack of monitoring and evaluation against performance indicators and plan objectives (see Finding **F1.1**)
- environmental flow targets, environmental water allowances and water quality allowances were not always met, credited or maintained in line with provisions of the plans (see Findings **F2.1 - F2.6**)
- some system operation procedures were not established, including a method for priority of extraction when supply capability is insufficient to satisfy all water requirements and procedures for rates of change of releases from water storages (see Finding **F2.10** and **F2.11**)
- compliance with long-term average annual extraction limits was not carried out every year during the audit period for the plans (see Finding **F3.1**)
- cases were identified of mandatory conditions missing on water access licences, water supply works and WaterNSW statements of approval (see Findings **F9.1 – F9.3**).

The Commission has raised recommendations (R) only for material findings (F) relating to gaps in the implementation of requirements that result in the plans not being given full effect. The Commission focussed on the fundamental elements of plan implementation and did not explore the quality of implementation in detail in this audit.

Recommendations have been made with consideration of current implementation practices as well as evidence from the full audit period, which is defined as the five-year period from commencement of the plans on 1 July 2016 to 30 June 2021.

The Commission undertook detailed limited assurance sample testing and examined roles and responsibilities, systems, processes, and procedures relevant to the audit criteria. Implementation was found to comply with legislative requirements except where the report identifies gaps. In the interests of brevity, neither the discussion nor the tables of findings list all positive findings, only identified gaps are presented to enable response actions to be taken by the audited agencies.

The Commission has not prioritised the recommendations or assigned specific time frames for implementation. However, given they address gaps to legislative requirements, the Commission considers that all recommendations should be implemented as soon as practicable within a maximum timeframe of 12 months.

While this report discusses specific consequences for each criterion, the overarching consequence of not giving full effect to provisions of the plans is that the objectives of the plans are unlikely to be achieved in full. These objectives are intended to support environmental, social and economic outcomes. In addition, the water management principles set out in Section 5 of the Act are not likely being given full effect.

Table 1: Audit findings and recommendations

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
Criterion 1 Finding: The relevant responsible parties have not implemented plan provisions relating to vision, objectives, strategies and performance indicators				
F1.1 Provisions related to vision, objectives, strategies, and performance indicators under Part 2 of the Plan were not implemented in the audit period.	R1.1 DPE-Water to lead the monitoring and evaluation of performance indicators to measure the success of the strategies to reach the objectives set out in Part 2 of the plans.	X	X	X
Criterion 2 Finding: The relevant responsible parties have partially implemented the system operation rules as set out in the plans				
F2.1 Environmental flow targets were not always met in full during the audit period for: <ul style="list-style-type: none"> Blowering Dam transparent flows in the Murrumbidgee (Clause 31) Burrinjuck transparent flows in the Murrumbidgee (Clause 32) Burrinjuck translucent flows in the Murrumbidgee (Clause 32) 	R2.1 WaterNSW to implement operational procedures to release transparent and translucent flows for the volumes required under Clauses 31 and 32 of the Murrumbidgee plan. Procedures should include a management action to keep an account of and subsequently release any volume under-target in cases where the full volume was not released in accordance with the target.		X	
F2.2 No water was credited to the Lake Brewster Environmental Water Allowance under the Lachlan plan in 2018-2019 when the 50% general security trigger threshold was met as required under Clause 27(2).	R2.2 DPE-Water to credit Lake Brewster EWA when triggers are met, even if water is not available in the Lake at the time.	X		
F2.3 Water has been forfeited from Environmental Water Allowance 1 in the Murrumbidgee in 2018-2019 which may have been carried over under Clause 38(1) of the Murrumbidgee plan.	Nil. No recommendation, addressed during the audit period.		X	

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
<p>F2.4 There is no evidence to indicate that a Barmah-Millewa Overdraw Environmental Water Allowance has been maintained during the audit period as required under Clause 26(1)(b) of the Murray plan.</p>	<p>R2.4 DPE-Water to maintain a Barmah-Millewa Overdraw Environmental Allowance in documentation and account tracking systems for the Murray.</p>			X
<p>F2.5 The Commission sighted data during the audit that may indicate that a much greater volume of water has been taken than was ordered in the Murray. WaterNSW indicated that water accounts are reconciled quarterly and some licence holders have different ordering processes and that some of these orders may not be included in the online Water Accounting System (iWAS) figures. Further investigation of the data is required to determine the cause of the variation. If significantly more water has been taken than ordered, then this may present a risk to the implementation of plan clauses to protect environmental water for environmental purposes in the Murray (Clauses 27(7) and (8), Clause 28(2), and Clause 29(3) and (4)).</p>	<p>R2.5.1 WaterNSW to analyse its ordering data and processes to determine the reasons for the variation observed in the Murray between orders and take.</p> <p>R2.5.2 WaterNSW to work with NRAR and DPE-Water to address any issues identified by the data analysis conducted under R2.5.1.</p>			X
<p>F2.6 The Water Quality Allowance for the Lachlan has been credited with 20GL with the assumption that this will cover a two year period, whereas 20GL is required each year under Clause 28(2) of the Lachlan plan which may be used. Implementation of this clause in accordance with DPE-Water's planning horizon for essential supplies would require planning for 40GL over two years to support a 20GL allocation to the WQA each year, which has not been the practice.</p>	<p>R2.6 DPE-Water to credit 20GL per year to the Lachlan Water Quality Allowance, and therefore provide 40GL for two years in the resource assessment.</p>	X		
<p>Maintenance of supply provisions in the Lachlan, under Clause 29 have not been given full effect during the audit period for the following reasons:</p> <ul style="list-style-type: none"> <p>F2.7.1 Sufficient water has not been budgeted for the Lachlan Water Quality Allowance. In the event that this allowance is required in full in one year, a resource deficit would need to be made up to provide the</p> 	<p><i>R2.6 applies</i></p>			X

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
<p>following year's Water Quality Allowance allocation, which may impact other allocations.</p> <ul style="list-style-type: none"> F2.7.2 Water for Local Water Utility access licences in the Lachlan has been re-allocated during the audit period on the assumption that usage will follow historical patterns, this practice may impact Local Water Utility supply. 	Nil. No recommendation, addressed following the audit period.			
F2.8 Replenishment flows and continuous flow at Booberoi Creek in the Lachlan plan (clause 30) were restricted in 2019-2020 due to drought mitigation measures which is not in accordance with the provisions of the plan.	R2.8 DPE-Water to ensure replenishment flows and continuous flow at Booberoi Creek are provided during drought to supply for town water supply and stock and domestic rights, except in cases where Clause 30 of the Lachlan plan is not in effect due to a water sharing plan suspension.	X		
<p>Channel capacity constraints have not always been met in the Murrumbidgee and Murray during the audit period:</p> <ul style="list-style-type: none"> F2.9.1 operation of the Hydro Electric Power Scheme in the Murrumbidgee in 2016 caused a channel capacity exceedance at Oddy's Bridge for three consecutive days. F2.9.2 a total of 66 days of exceedances occurred in the Murray across the audit period due to regulated releases to meet user demand; at Edward River Offtake in 2016-2017 and 2017-2018, and at Gulpa Creek Offtake in 2017-2018. 	<p>Nil. No recommendation, addressed during the audit period.</p> <p>R2.9.2 WaterNSW to review the reasons for channel capacity exceedances at Edward River Offtake and Gulpa Creek Offtake and put in place measures to promote compliance with the channel capacity constraints of Clause 33 of the Murray plan.</p>		X	X
F2.10 There is no method approved by the Minister to guide priority of extraction when supply capability is insufficient to satisfy all water requirements as required under Clause 33 of the Lachlan plan, Clause 44 of the Murrumbidgee plan and Clause 36 of the Murray plan.	R2.10 DPE-Water to develop a method for priority of extraction when supply capability is insufficient to satisfy all water requirements in any section of the water source, incorporating water user advice.	X	X	X

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
F2.11 There are no rules in place to guide rates of change for releases from water storages for the Lachlan and Murrumbidgee plans (Clauses 35 and 46 respectively).	<p>R2.11.1 DPE-Water to establish procedures in relation to the rates of change for releases from water storages for the Lachlan and Murrumbidgee. Procedures should consider environmental considerations, damage to river banks and public safety.</p> <p>R2.11.2 Upon completion of R2.11.1, WaterNSW to develop an operating protocol for rates of change to storage releases to give effect to Clause 35 of the Lachlan plan and Clause 46 of the Murrumbidgee plan.</p>	X	X	
Criterion 3 Finding: The relevant responsible parties have partially implemented plan provisions relating to limits to the availability of water, specifically long-term average annual extraction limits (LTAAEL)				
F3.1 LTAAEL compliance assessments were not implemented within the audit period every year as required by Part 7 Division 1 of the plans.	R3.1 DPE-Water to manage LTAAEL and assess LTAAEL compliance in accordance with Part 7 Division 1 of each plan.	X	X	X
Criterion 4 Finding: The relevant responsible parties have partially implemented plan provisions relating to limits to the availability of water, specifically available water determinations				
F3.1 applies as it relates to the application of AWDs for supplementary and general security access licences should LTAAEL be exceeded, as required under Clauses 62(4) and (5), 65(2) and 66(2) of the Murrumbidgee plan, and Clauses 48(5) and (6) and 49(3) of the Murray plan.	R3.1 applies		X	X
F4.1 No water was allocated to Lake Brewster Environmental Water Allowance under the Lachlan plan at the commencement of 2018-2019 when this should have been triggered (see F2.2). Therefore, sufficient planned environmental water was not set aside before making the high security AWD at the commencement of the 2018-2019 water year as required under Clause 46(4)(a).	R2.2 applies	X		

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
Criterion 5 Finding: The relevant responsible parties have implemented plan provisions relating to granting access licences				
F5.1 Water access licence holders did not receive written notice of the mandatory conditions for each WAL under the 2016 plans until January 2018 (Lachlan and Murrumbidgee plans) and April 2018 (Murray plan) (19 and 22 months respectively after plan commencement), giving delayed effect to Sections 67(3) and 67(4) and 66(1a) of the Act.	Nil. No recommendation, addressed during the audit period.	X	X	X
Criterion 6 Finding: The relevant responsible parties have partially implemented plan provisions relating to managing access licences				
F3.1 applies as it relates to the implementation of a take limit under Clause 54(1)(a) of the Lachlan plan, should LTAAEL be exceeded.	R3.1 applies	X		
F6.1 Flow spreadsheets for supplementary events in the Murrumbidgee do not clearly assess water available for supplementary take accounting for all the requirements under Clause 69(4-5) of the plan.	R6.1 WaterNSW to develop an explicit assessment template for supplementary water that demonstrates compliance with all relevant provisions of the Murrumbidgee plan (Clause 69(4-5)).		X	
Criterion 7 Finding: The relevant responsible parties have partially implemented plan provisions relating to rules for water supply work approvals				
F7.1 Approval holders of existing water supply work approvals granted under the previous plans did not receive written notice of the mandatory conditions under the 2016 plans until January 2018 (Lachlan and Murrumbidgee plans) and April 2018 (Murray plan) (19 and 22 months respectively after plan commencement), giving delayed effect to Sections 102(4) and 102(5) and 100(1a) of the Act.	Nil. No recommendation, addressed during the audit period.	X	X	X
F7.2 WaterNSW was not notified of all relevant mandatory conditions under its Statements of Approval (70WA604607 for	R9.3 applies	X	X	X

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
the Lachlan, 40WA405734 for the Murrumbidgee, 50WA511767 for the Murray) to give full effect to Part 11 of the Plans.				
F7.3 For the Lachlan, Murrumbidgee and Murray plans, the capacity of the works was not consistently stated in advertisements as required under Section 26(8)(d) of the Regulation.	Nil. No recommendation, addressed during the audit period.	X	X	X
Criterion 8 Finding: The relevant responsible parties have partially implemented plan provisions relating to access licence dealing rules				
F8.1 The assessment summary sheet checklists used to grant or refuse applications for 71W dealings does not include the requirements triggered by Clause 20(3)(c) of the Access Licence Dealing Principles Order 2004, regarding the nomination of water supply and extraction points for specific purposes access licences.	Nil. No recommendation, addressed during the audit period.	X	X	X
Criterion 9 Finding: The relevant responsible parties have partially implemented plan provisions relating to mandatory conditions				
F5.1, F7.1 and F7.2 apply in relation to notification of mandatory conditions to access licence and approval holders.	R9.3 applies	X	X	X
F9.1 Mandatory conditions on WALs were missing to give effect to: <ul style="list-style-type: none"> <u>Lachlan plan</u>: Part 9 rules for managing access licences, including provisions such as debiting rules, maximum volume taken or held under a general security access licence and carryover rules, as required by clause 65(1)(a). <u>Murrumbidgee plan</u>: Division 1 Part 9 (clause 68) rules for water allocation account management, including 	R9.1 DPE-Water to address gaps in mandatory conditions on WALs in the Lachlan, Murrumbidgee and Murray to ensure all relevant mandatory conditions to the plans are adequately addressed and instruct WaterNSW to notify WAL holders. This includes: <ul style="list-style-type: none"> Relevant Part 9 rules in the Lachlan plan, Part 9 Division 1 and 2 rules in the Murrumbidgee plan and Part 9 Division 1 rules in the Murray plan for managing access licences, 	X	X	X

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
<p>provisions such as debiting rules, maximum volumes for general security and conveyance licences and carryover rules, as required by clauses 80(1)(a) and 80(5), and Division 2 Part 9 (clauses 69-71) rules for access to supplementary water and taking of water without debit, as required under clauses 80(1)(b) and clause 80(5) (which applies to clause 71 only).</p> <ul style="list-style-type: none"> ▪ <u>Murray plan</u>: Division 1 Part 9 rules for water allocation account management, including provisions relating to the maximum amount that can be credited to general security licences, debiting rules and carryover rules, as required under clause 65(1)(a) ▪ all plans: Logbook provisions for the purpose of water take under clause 65(2)(b)(iv) of the Lachlan plan, clause 80(2)(b)(iv) of the Murrumbidgee plan, and clause 65(2)(b)(iv) of the Murray plan. 	<p>which relate to WAL holder entitlements, such as debiting and carryover provisions</p> <ul style="list-style-type: none"> ▪ Logbook provisions for the purpose of water take (Clause 65(2)(b)(iv) of the Lachlan plan, Clause 80(2)(b)(iv) of the Murrumbidgee plan and Clause 65(2)(b)(iv) of the Murray plan). 			
<p>F9.2 Mandatory conditions on water supply works were missing to give effect to:</p> <ul style="list-style-type: none"> ▪ <u>Lachlan plan</u>: A water supply work used to take water under an access licence must comply with the Part 9 rules for that licence, as required under Clause 66(1)(a). ▪ <u>Murrumbidgee plan</u>: Logbook provisions under Clause 81(2)(b). ▪ <u>Murray plan</u>: Nil 	<p>R9.2 DPE-Water to address gaps in mandatory conditions on water supply work approvals in the Lachlan and Murrumbidgee to ensure all relevant mandatory conditions to the plans are adequately addressed and instruct WaterNSW to notify approval holders. This includes:</p> <ul style="list-style-type: none"> ▪ Provisions for approvals in the Lachlan for a water supply work to take water under an access licence in accordance with the Part 9 rules for that licence (Clause 66(1)(a)) ▪ Provisions for approvals in the Murrumbidgee for logbook use in accordance with the plan (Clause 82(2)(b)). 	X	X	
<p>F9.3 Mandatory conditions on WaterNSW Statements of Approval were missing to give effect to:</p>	<p>R9.3 DPE-Water to address gaps in mandatory conditions on the WaterNSW Statements of Approval for the Lachlan, Murrumbidgee and Murray to give effect to all relevant</p>	X	X	X

Findings	Recommendations	Applicable plan		
		Lachlan	Murrumbidgee	Murray
<ul style="list-style-type: none"> Lachlan Statement of Approval (70WA604607): No condition giving effect to priority of extractions provisions under Clause 33 of the Lachlan plan. Murrumbidgee Statement of Approval (40WA405734): No condition giving effect to priority of extractions provisions under Clause 44 of the Murrumbidgee plan. Murray Statement of Approval (50WA511767): no condition giving effect to priority of extractions provisions under Clause 36 of the Murray plan, and insufficient detail on accounting for the spilling of environmental water to give effect to Clause 30 of the Murray plan. 	<p>requirements of Part 6 system operation provisions of the plans and notify WaterNSW. This includes:</p> <ul style="list-style-type: none"> Provisions for priority of extraction (Clause 33 in the Lachlan plan, Clause 44 in the Murrumbidgee plan and Clause 36 in the Murray plan) Provisions for the spilling of environmental water for the Murray (Clause 30 in the Murray plan). 			
<p>Criterion 10 Finding: The relevant responsible parties have implemented plan provisions relating to amendments (where these are not optional) and there is evidence that identified amendments (which may include optional amendments) have been given due consideration</p>				
Meets criteria, no findings identified.	Meets criteria, no recommendations identified.	X	X	X

2 The Commission's role and audit approach

2.1 The Commission's role in auditing management plans

The Commission is an independent body with broad investigating and reporting functions that aim to establish a sound evidence base to inform natural resource management in the social, economic and environmental interests of NSW.

The Commission has a role under Section 44 of the *Water Management Act 2000* (the Act) to audit water management plans within the first five years of each plan to ascertain whether their provisions are being given effect to. This role began on 1 December 2018 under changes to the Act.

Water management plans include:

- **water sharing plans** – statutory documents that establish the rules for sharing water between the environment and other water users
- **floodplain management plans** – frameworks to coordinate flood work development to minimise future changes to flooding behaviour, and to increase awareness of risk to life and property from flooding.

More detail on the purpose of plans is provided in **Chapter 3.1**.

2.2 Audit objective

The objective of this audit was to determine, in accordance with Section 44 of the Act, whether the provisions of the following three water sharing plans are being given effect to:

- *Water Sharing Plan for the Lachlan Regulated River Water Source 2016* (Lachlan plan) – version effective from 27 June 2017
- *Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2016* (Murrumbidgee plan) – version effective from 06 July 2018
- *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016* (Murray plan) – version effective from 21 June 2019.

2.3 Audit standards

This audit was executed as a limited assurance engagement in accordance with the following standards:

- *Standards on Assurance Engagements (ISAE) 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information*
- *ISAE 3100 Compliance Engagements*
- *Auditing Standard ASQC 1 Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements.*

In accordance with these standards, the Commission has:

- complied with applicable ethical requirements
- planned and performed procedures to obtain independent assurance about whether the relevant responsible parties have implemented the plans, in all material respects, as evaluated against the audit criteria.

2.4 Audit criteria

Audit criteria were developed based on common parts of water sharing plans that the Commission considered warranted examination to ascertain whether provisions are being given effect to. The audit criteria were:

- **Criterion 1:** The relevant responsible parties have implemented plan provisions relating to vision, objectives, strategies and performance
- **Criterion 2:** The relevant responsible parties have implemented the system operation rules as set out in the plan, incorporating planned environmental water provisions
- **Criterion 3:** The relevant responsible parties have implemented plan provisions relating to limits to the availability of water, specifically long-term average annual extraction limits
- **Criterion 4:** The relevant responsible parties have implemented plan provisions relating to limits to the availability of water, specifically available water determinations
- **Criterion 5:** The relevant responsible parties have implemented plan provisions relating to granting access licences
- **Criterion 6:** The relevant responsible parties have implemented plan provisions relating to managing access licences
- **Criterion 7:** The relevant responsible parties have implemented plan provisions relating to rules for water supply work approvals
- **Criterion 8:** The relevant responsible parties have implemented plan provisions relating to access licence dealing rules
- **Criterion 9:** The relevant responsible parties have implemented plan provisions relating to mandatory conditions
- **Criterion 10:** The relevant responsible parties have implemented plan provisions relating to amendments (where these are not optional) and there is evidence that identified amendments (which may include optional amendments) have been given due consideration.

2.5 Audit procedures

Audit procedures included:

- document review, including overarching frameworks, procedures, guidelines, manuals, policies and reports
- walk throughs of material activities, including key systems and processes with system implementors, owners and users
- sampling of data
- interviews with process owners, implementors and users including:
 - auditee organisations that contribute to giving effect to plan provisions – Department of Planning and Environment-Water (DPE-Water) (formerly the Department of Planning, Industry and Environment-Water (DPIE-Water) until early-2022), Department of Planning and Environment-Environment and Heritage Group (DPE-EHG) (formerly the Department of Planning, Industry and Environment – Environment, Energy and Science (EES) until early-2022), the Natural Resources Access Regulator (NRAR) and WaterNSW
 - other organisations which are not auditees under the scope of this audit - Murray Darling Basin Authority (MDBA) and Land Registry Services.

These procedures were carried out on a test basis to provide sufficient, appropriate evidence to provide a limited assurance conclusion.

For this audit, DPE-Water is assumed to be responsible, except where other agencies have been identified as being responsible, for example through the Water NSW Operating Licence and the *Natural Resources Access Regulator Act 2017*. In June 2021, DPE-Water (then DPIE-Water), NRAR and WaterNSW signed an agreement which clarifies roles and responsibilities including those relating to water sharing plans and water supply work approvals.²

Severe flooding has occurred in NSW in 2022-23 that has impacted communities and businesses including in areas that are part of this audit. The Commission has delayed finalising this audit report to allow WaterNSW personnel involved in flood operations to contribute feedback to this audit.

2.6 Limitations

This audit was a limited assurance engagement. The procedures performed in a limited assurance engagement vary in nature and timing and are of lesser extent than for a reasonable assurance engagement. As such, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained through a reasonable assurance engagement.

Further, the audit cannot be relied on to comprehensively identify all weaknesses, improvements or areas of non-compliance. Inherent limitations mean that there is an unavoidable risk that some material matters may not be detected, despite the audit being properly planned and executed in accordance with the standards outlined in **Chapter 2.3**.

2.7 Exclusions

The audit has not provided an assessment against all provisions or parts in the Plan and does not assess the:

- introduction (Part 1)
- bulk access regime (typically Part 4)
- requirements for water (typically Part 5).

The audit has not examined or provided an opinion regarding:

- compliance or non-compliance of individuals
- whether the plans are being implemented efficiently
- whether stated objectives in the plans are being achieved
- whether the plans are effective, appropriate or in line with the Act
- compliance with any legislation unrelated to the Act
- the role of the Murray Darling Basin Authority, Snowy Hydro and water agencies of other states.

² [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#). Executed 30 June 2021.

3 Audit context

The first water sharing plans for the Lachlan, Murrumbidgee and NSW Murray and Lower Darling regulated river water sources under the Act (referred to collectively as the '2003 plans'), were:

- *Water Sharing Plan for the Lachlan Regulated River Water Source 2003* (referred to as the 'Lachlan 2003 plan')
- *Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2003* (referred to as the 'Murrumbidgee 2003 plan')
- *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2003* (referred to as the 'Murray 2003 plan').

The current plans that are the subject of this audit (Lachlan, Murrumbidgee and Murray plans) replaced the 2003 plans and commenced 1 July 2016.

3.1 Purpose of water sharing plans under the Act

Water sharing plans, like all water management plans, are subject to the objects, water management principles, requirements and general provisions in the Act.³

The following specific principles related to water sharing are stated in Section 5(3) of the Act and are part of a broader set of water management principles.⁴ The Act specifies that:

- a) sharing of water from a water source must protect the water source and its dependent ecosystems, and*
- b) sharing of water from a water source must protect basic landholder rights, and*
- c) sharing or extraction of water under any other right must not prejudice the principles set out in paragraphs (a) and (b).*

Core provisions for water sharing plans are stated in Section 20 of the Act, which specifies matters that the provisions in water sharing plans must address.

3.2 Context for implementation

3.2.1 NSW water reforms and compliance have focussed on a range of priorities

Responsible parties with a role in water management implementation are currently undertaking policy reforms including the non-urban metering policy and reforms, prioritising the implementation of the Murray-Darling Basin Plan, and progression of water resource plans and long-term environmental watering plans. There has also been a focus on developing NSW floodplain harvesting and measurement policies to establish the process for bringing floodplain harvesting into the water licensing framework.

In relation to compliance and enforcement, the *Natural Resources Access Regulator Act 2017* specifically provides that NRAR's priorities are to be set independently. These regulatory

³ Objects, water management principles, requirements and general provisions for all water management plans are stated in Section 3, Section 5, Section 16 and Section 17 of the Act, respectively.

⁴ *Water Management Act 2000*, Section 5.

priorities are reviewed on a regular basis and published.⁵ Interviews with NRAR indicated that the northern Murray-Darling Basin has been a regulatory priority based on NRAR's risk assessments and therefore has been the focus of proactive compliance activities.^{6,7,8} NRAR also monitors and inspects reactively in response to reports of alleged breaches of water laws, incidents or other intelligence received. NRAR receives reports of suspicious water activities from members of the public and other bodies such as councils. The Commission is not seeking to comment on the appropriateness of decisions regarding NRAR's compliance priorities.

3.2.2 Roles and responsibilities have changed over time

There has been a complex history of changes in government agencies in water management and regulation, and their roles and governance.

An investigation by the NSW Ombudsman into water compliance and enforcement reported that the high level of restructuring and moving of water administration functions and regulation between different government agencies has resulted in significant impacts on staff, loss of expertise and corporate knowledge, and disruptions to systems, strategy and continuity of service delivery.^{9,10}

Roles and responsibilities for various criteria have changed both during and after the audit period.¹¹

3.2.3 Drought

Some of the years during the audit period have been times of significant drought in NSW, particularly during the 2018-19 and 2019-20 water years, with record low inflows and impacts to communities and water users.¹² Under DPE-Water's NSW Extreme Events Policy classification, the Murrumbidgee and Murray valleys experienced Stage 2 Emerging Drought during 2019-2020, while the Lachlan was under Stage 3 Severe Drought for the majority of that year.¹³ The Commission has not examined plan criteria where clauses were formally suspended by Order in the NSW Government Gazette.

DPE-Water has produced incident response guides for surface and groundwaters in the Murray Darling Basin which identify possible actions to be taken during drought.¹⁴ The Commission has not examined these under the scope of this audit.

⁵ NRAR (2022) [Natural Resource Access Regulator Regulatory Priorities 2022-23](#)

⁶ NRAR (2019) [Natural Resource Access Regulator Regulatory Priorities 2019 – 2021](#).

⁷ NRAR (n.d.) [Routine monitoring campaign map](#).

⁸ NRAR's routine monitoring program is focussed on the inland water sharing plan areas.

⁹ NSW Ombudsman (2017) [Investigation into water compliance and enforcement 2007-17](#).

¹⁰ Prior to 2015 there were numerous agencies responsible for implementing various aspects of the water sharing plans. These included the Department of Primary Industries, NSW Office of Water, Department of Environment, Climate Change and Water, Department of Environment, Climate Change, Department of Natural Resources as well as the Office of Environment and Heritage.

¹¹ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#). Executed 30 June 2021.

¹² DPIE (n.d.) [Drought stages and measures implemented during the 2017-20 drought](#).

¹³ DPIE (n.d.) [Drought stages and measures implemented during the 2017-20 drought](#).

¹⁴ DPE (n.d.) [Extreme events](#).

4 Plan areas

This chapter provides an overview of the plan areas subject to this audit. A map of the three regulated plan areas and their water sources is shown at **Figure 1**. WaterNSW produced schematics of the regulated river systems in its *20 Year Infrastructure Options Study Rural Valleys Summary Report* which are shown for the Lachlan, Murrumbidgee and Murray plans in **Appendix 2 (Figure A2.1, Figure A2.3 and Figure A2.4 respectively)**.¹⁵

In the southern basin, approximately 28 percent of surface water in the Lachlan plan and 53 percent in the Murrumbidgee plan¹⁶ is diverted annually by water users.¹⁷ The Murray and Lower Darling catchment uses around 36 percent of all surface water diverted for irrigation in the Murray-Darling Basin, noting this figure includes diversions from South Australia and parts of Victoria.¹⁸ Water is diverted for irrigated agriculture, urban water supply, stock and domestic purposes, hydro-electricity generation, and mining.¹⁹

The plan areas support ecologically important wetland habitats, including the Ramsar-listed Fivebough and Tuckerbill swamps in the Murrumbidgee plan and large stands of river red gum forest including Ramsar-listed forests in the Murray region.²⁰ Rivers in the plan areas support key threatened and endangered fish species and populations, including eel-tailed catfish, Murray cod, trout cod and silver perch.²¹

Urban water supply, provided under water access licences issued across the plans, is critical for local populations. For example, 70 percent of Murrumbidgee region's population live in urban centres reliant on water from local water utilities.²² The plan areas also hold significant cultural values for many Aboriginal nations (see **Table 2**). These include not only physical assets but flow of water in the rivers, which is important to spirituality, culture and wellbeing.

Agriculture is the key industry across the plan areas, with the Murray region making the largest regional contribution to agricultural production in NSW.²³ Irrigated agriculture is a significant contributor to local economies, with the Murrumbidgee being one of the larger irrigation areas in the Murray-Darling Basin, with 22 percent of surface water diversions used for this purpose.²⁴ Waterways in the regions also provide amenity and recreation values, as well as underpinning tourism industries.²⁵

¹⁵ WaterNSW (2018) [20 Year Infrastructure Options Study Rural Valleys Summary Report](#).

¹⁶ Includes transfers from the Snowy Mountains Hydro-electric Scheme.

¹⁷ MDBA (2022) [Lachlan – catchment](#); MDBA (2022) [Murrumbidgee – catchment](#).

¹⁸ DPI Water (2017) [NSW Murray and Lower Darling Water Resource Plan: Surface water resource description](#).

¹⁹ MDBA (2022) [Lachlan – catchment](#); MDBA (2022) [Murrumbidgee – catchment](#); MDBA (2022); [Lower Darling – catchment](#); MDBA (2022) [Central Murray – catchment](#); MDBA (2022) [Upper Murray – catchment](#).

²⁰ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#); DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#); DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#).

²¹ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#); DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#); DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#).

²² DPE (2022) [Draft Regional Water Strategy - Murrumbidgee](#).

²³ DPE (2022) [Draft Regional Water Strategy - Murray](#).

²⁴ DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#).

²⁵ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#); DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#); DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#).

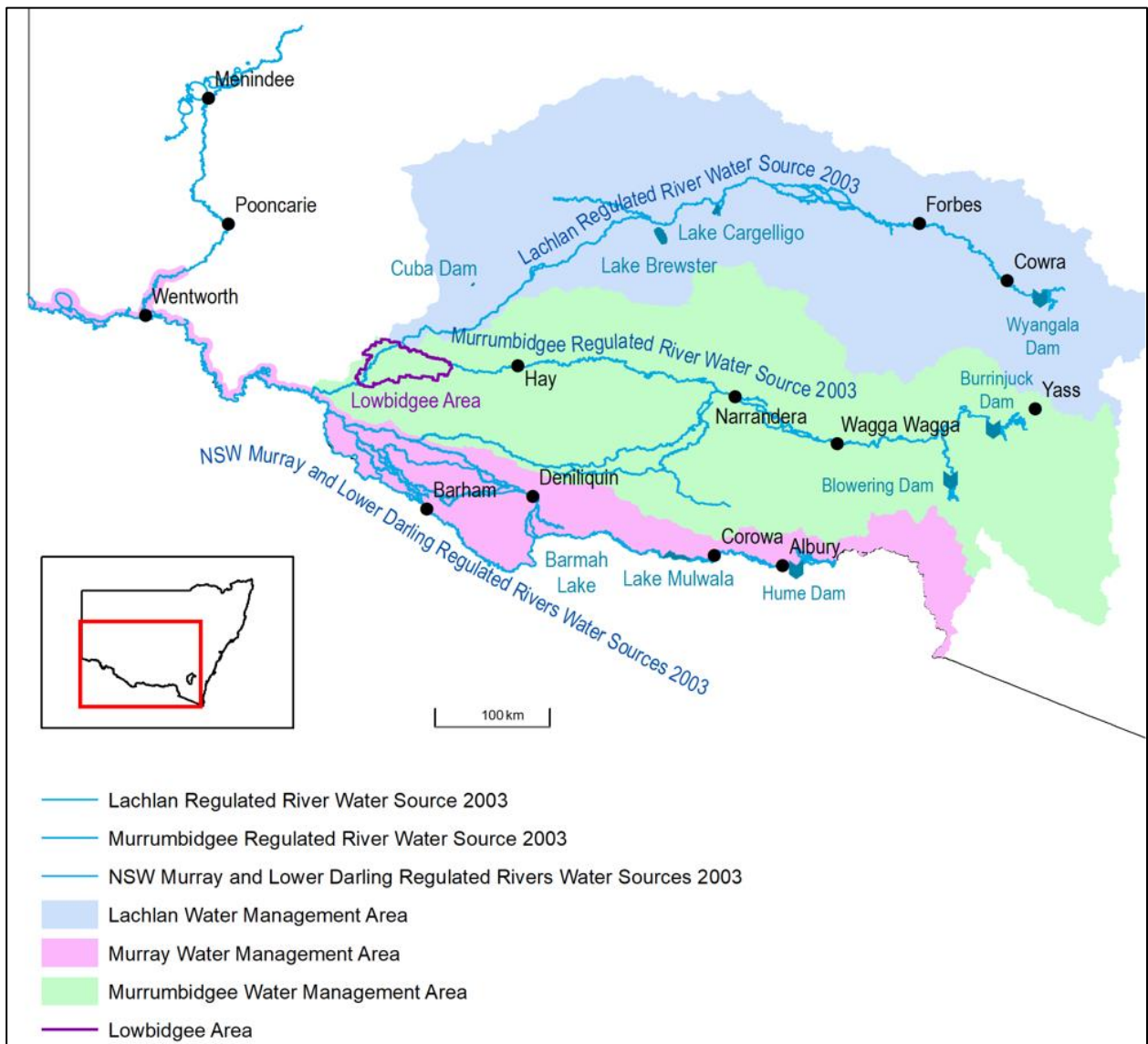


Figure 1: Map of the Lachlan, Murrumbidgee and Murray and Lower Darling regulated water sources

Table 2: Summary of plan areas for the plans subject to this audit

Plan	Location/ area	Regional centres and towns	Environmental values	Cultural values	Socioeconomic values
Lachlan plan	The Lachlan plan area is defined as all water between the banks of the Lachlan River and some of its anabranches, from Wyangala Dam storage downstream to the Great Cumbung Swamp. ²⁶	Booligal, Boorowa, Condobolin, Cowra, Crookwell, Forbes, Grenfell, Gunning, Hillston, Ivanhoe, Parkes, West Wyalong, Willandra, Young. ²⁷	<p>Most of the regulated river has high to very high instream values due to high biodiversity, large tracts of riparian vegetation, relatively undisturbed river reaches and the presence of threatened species, including eel-tailed catfish and Murray cod.²⁸</p> <p>Extensive floodplain wetlands, providing important waterbird breeding habitat, including the Booligal Wetlands, Lachlan Swamp and the Great Cumbung Swamp.²⁹</p>	<p>The traditional owners of the Lachlan plan area include the Nari Nari, Barkandji, Ngiyampaa, Wiradjuri and Yita Yita Nations.³⁰</p> <p>The waterways and wetlands in the Lachlan region are central to the spirituality, culture and wellbeing of these nations, who maintain longstanding and ongoing connection to Country, waterways and the values they support.³¹</p>	<p>Agriculture is the dominant land use – just under 70% of the catchment is used for livestock grazing, and just under 20% is used for dryland cropping.³²</p> <p>Irrigated crops only cover 1% of the catchment but are economically important. Around two-thirds of irrigation water comes from surface water diversions. Irrigated crops include fruit, nuts, vegetables, wine grapes, fodder crops, pasture, cereals, and oilseeds.³³</p> <p>Tourism is a growing industry, underpinned by the region's wetlands, lakes and local food and wine production.³⁴</p>

²⁶ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#), p 3.

²⁷ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#), p 2; [Water Sharing Plan for the Lachlan Regulated River Water Source 2016, Appendix 2 – Namoi water management area](#).

²⁸ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#).

²⁹ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#).

³⁰ DPIE (2020) [Draft Regional Water Strategy - Lachlan](#).

³¹ DPIE (2020) [Lachlan long term water plan. Part A: Lachlan catchment](#); NSW Government (2020) [Draft Regional Water Strategy - Lachlan](#).

³² DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#).

³³ DPIE (2018) [Lachlan surface water resource plan area description: Appendix A](#).

³⁴ DPIE (2020) [Draft Regional Water Strategy - Lachlan](#).

Plan	Location/ area	Regional centres and towns	Environmental values	Cultural values	Socioeconomic values
					Major dams include Wyangala, Lake Brewster and Lake Cargelligo.
Murrumbidgee plan	The Murrumbidgee plan area is defined as the area between the banks of the Murrumbidgee River, from Burrinjuck Dam and Blowering Dam downstream to the confluence of the Murray River, as well as the Yanco Creek system. ³⁵	Balranald, Coleambally, Cooma, Darlington Point, Griffith, Gundagai, Harden, Hay, Jerilderie, Jugiong, Junee, Leeton, Moulamein, Narrandera, Queanbeyan, Talbingo, Tumut, Wagga Wagga, Yass. ³⁶	<p>Medium to high fish diversity and threatened species found throughout the regulated river, including trout cod and Murray cod. Fish biodiversity is highest between Narrandera and Wagga Wagga.³⁷</p> <p>Extensive wetlands are found throughout the plan area, including Ramsar-listed Fivebough and Tuckerbill swamps, and 16 nationally listed wetlands. The Mid-Murrumbidgee wetlands rarely dry out and provide important drought refuge. The Lowbidgee floodplain supports waterbird breeding and the second-largest red gum forest in Australia.³⁸</p>	<p>The traditional owners of the plan area are the Wiradjuri, Nari Nari, Barapa Barapa, Wemba Wemba, Yita Yita, Mutthi Mutthi, Wadi Wadi, Nyeri Nyeri, Ngunnawal/Ngunawal, Wolgalu and Ngarigu nations.³⁹</p> <p>The plan area includes water-dependent sites of deep significance to Aboriginal peoples, including Coolamatong (Lambie Gorge), Wiradjuri Reserve and Gobba Beach, Koonadan, Diplo ceremonial ground, the Toogimbie Indigenous Protected Area and Gayini Nimmie-Caira.⁴⁰</p> <p>The waterways and wetlands in the region are central to the spirituality, culture and wellbeing of these nations, who maintain longstanding and ongoing connection to</p>	<p>Agriculture is the dominant industry in the plan area, primarily grazing, as well as dryland cropping and horticulture.⁴²</p> <p>The Plan area is one of the larger irrigation areas in the Murray-Darling Basin. Irrigated crops include rice, soybeans, corn, wheat, oats, barley, pasture, citrus, stone fruit and wine grapes.⁴³</p> <p>The economic profile of the region is changing, including growing horticulture, tourism, value-added agriculture and renewables.⁴⁴</p> <p>Major dams include Burrinjuck Dam and Blowering Dam, which receives inflows from the catchment and from the Snowy Mountains Scheme.</p>

³⁵ DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#), p 2.

³⁶ [Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2016, Appendix 2](#).

³⁷ DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#), p 26.

³⁸ DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#), p 24.

³⁹ DPE (2022) [Draft Regional Water Strategy - Murrumbidgee](#).

⁴⁰ DPIE (2020) [Murrumbidgee Long-Term Water Plan](#).

⁴² DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#), p 10.

⁴³ DPIE (2018) [Murrumbidgee surface water resource plan area description: Appendix A](#).

⁴⁴ DPE (2022) [Draft Regional Water Strategy - Murrumbidgee](#).

Plan	Location/ area	Regional centres and towns	Environmental values	Cultural values	Socioeconomic values
				Country, waterways and the values they support. ⁴¹	
Murray plan (NSW Murray Regulated River Water Source)	Includes all water between the banks of all rivers, from the upper limit of Hume Dam, and from the Darling River at Wentworth downstream to the South Australian border. ⁴⁵	Albury, Corowa, Deniliquin, Moama, Finley, Swan Hill, Wakool, Tocumwal, Yarrawonga ⁴⁶	<p>The regulated Murray largely has medium ecological values, with high to very high values in the central regulated system due to its very high distinctiveness, vital habitat, and diversity. It supports threatened species, including Murray cod, silver perch and trout cod,⁴⁷ but fish populations are declining.⁴⁸</p> <p>The Murray has extensive wetlands, including the Ramsar-listed river red gum forests. Many wetlands receive altered flows (too much or too little water) due to development.⁴⁹</p>	<p>The traditional owners of the Murray River area are the Barkandji, Barapa Barapa, Maljangapa, Maraura, Muthi Muthi, Ngiyampaa, Tati Tati, Wadi Wadi, Weki Weki, Wemba Wemba, Wiradjuri, and Yorta Yorta Nations.⁵⁰</p> <p>Waterways and floodplains in the region support significant Aboriginal cultural values, including river red gum forests, and are central to the spirituality, culture and wellbeing of traditional owners, who maintain longstanding and ongoing connection to Country, waterways and the values they support.⁵¹</p>	<p>One of the key agricultural areas in NSW.⁵² Agriculture covers 90% of land use downstream of Hume Dam, with a mix of grazing, dryland cropping and extensive irrigation.⁵³</p> <p>Rice is a major industry in the Murray region – supplying 50% of Australia’s crop. Other irrigated industries include dairying around Finley and citrus around Barham.⁵⁴</p> <p>In the Upper Murray, grazing is the largest form of agriculture (30% of the catchment above Hume Dam).⁵⁵</p> <p>The economic profile of the region is changing, including growing horticulture, tourism and value-</p>

⁴¹ DPIE (2020) [Murrumbidgee Long-Term Water Plan](#).

⁴⁵ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 3.

⁴⁶ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 2.

⁴⁷ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 29.

⁴⁸ MDBA (2022) [Central Murray – catchment](#).

⁴⁹ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 29.

⁵⁰ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#).

⁵¹ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 27; DPIE (2020) [Murray-Lower Darling Long-Term Water Plan](#).

⁵² DPE (2022) [Draft Regional Water Strategy - Murray](#).

⁵³ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 12.

⁵⁴ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 12.

⁵⁵ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 12.

Plan	Location/ area	Regional centres and towns	Environmental values	Cultural values	Socioeconomic values
					added agriculture, and work on the Snowy 2.0 project. ⁵⁶
Murray plan (Lower Darling Regulated River Water Source)	<p>The Lower Darling comprises the portion of the Darling River regulated by releases from the Menindee Lakes Scheme.</p> <p>The Lower Darling Regulated River Water Source includes all water between the banks of all rivers, from the upper limit of the Lake Wetherell water storage downstream to the upstream limit of the Wentworth Weir Pool water storage.⁵⁷</p>	Broken Hill, Menindee, Pooncarie, Wentworth, Wilcannia ⁵⁸	The regulated Lower Darling has mostly medium ecological value. There are wetland sites with nationally-significant ecological values, including Menindee Lakes and the Great Darling Anabranch Lakes, which provide valuable drought refuge for the region. ⁵⁹	<p>The Barkindji people are the traditional owners of the lands along the lower Baaka/Darling River.⁶⁰</p> <p>Mungo National Park contains evidence of over 40,000 years of occupation by Aboriginal peoples. Waterways in the region are significant cultural sites, including burial sites, middens, campsites and artefacts.⁶¹</p> <p>Waterways and floodplains in the region are central to the spirituality, culture and wellbeing of traditional owners, who maintain longstanding and ongoing connection to Country, waterways and the values they support.⁶²</p>	<p>In the Lower Darling, sheep grazing for wool is the major industry, as well as beef cattle and goat enterprises. Small, irrigated areas are found at Menindee and Wentworth for horticulture, orchards and vineyards.</p> <p>Tourism is also a key industry, including Kinchega and Mungo national parks.⁶³</p>

⁵⁶ DPE (2022) [Draft Regional Water Strategy - Murray](#).

⁵⁷ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 3.

⁵⁸ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 3.

⁵⁹ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 30.

⁶⁰ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#).

⁶¹ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 27.

⁶² DPIE (2020) [Murray-Lower Darling Long-Term Water Plan](#).

⁶³ DPIE (2019) [NSW Murray and Lower Darling surface water resource plan area description: Appendix A](#), p 12.

5 Roles and responsibilities

The roles and responsibilities are set out in **Table 3** for the audit criteria.

Table 3: Summary of roles and responsibilities for implementing water sharing plans

Agency	Roles and responsibilities
DPE-Water	<ul style="list-style-type: none"> ▪ monitor performance indicators (Criterion 1) ▪ implement resource allocations process underpinning AWDs⁶⁴ (Criterion 2, 4, 5, 6) ▪ determine water allocations through available water determinations (AWDs), which inform licensed water users how much water they can extract⁶⁵ – these are made in writing (by statutory water order), on 1 July of each water year and periodically throughout the year in accordance with Section 59(1)9(a) of the Act⁶⁶ (Criterion 2, 4, 5, 6) ▪ prepare and publish water allocation statements and AWD orders in accordance with Clause 7 of the Regulation (Criterion 2, 4, 5, 6) ▪ For the operation of water storages and regulated structures (Appendix A) (Criterion 2): <ul style="list-style-type: none"> - place conditions on statements of approval for the operation of dams and regulated structures⁶⁷ - establish procedures for channel capacity constraints, rules for rates of change to water storage releases and a method for priority when supply capability is insufficient - review annual compliance reports⁶⁸ ▪ develop procedures to implement LTAAEL provisions, assess compliance of take in accordance with plan provisions and provide associated modelling services, and set standards and outputs (including policies) for the measurement of water take (Criterion 3 and 6) ▪ develop mandatory conditions for access licences to give effect to water allocation account management rules⁶⁹ (Criterion 6); create, enter and code mandatory conditions into the WLS (since September 2019⁷⁰) (Criterion 9); place mandatory conditions on licences and approvals,⁷¹ including identifying the licences and water sources rules apply to and assessing if a condition is required to give effect to the rules (Criterion 9) ▪ approve supplementary flow announcements as the Minister's delegated authority⁷² (Criterion 6)

⁶⁴ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁶⁵ DPE-Water (n.d.) [Available Water Determinations](#).

⁶⁶ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁶⁷ Statement of Approval 70WA604607 (Lachlan plan); Statement of Approval 40WA405734 (Murrumbidgee plan); Statement of Approval 50WA511767 (Murray plan).

⁶⁸ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁶⁹ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁷⁰ Prior to this, the function was at various times carried out by NRAR and DPE-Water predecessor organisations. NRAR still can provide the function of assisting DPIE-Water with creating mandatory conditions for its customers.

⁷¹ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁷² [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

Agency	Roles and responsibilities
	<ul style="list-style-type: none"> ▪ code rules for granting or amending water supply works approvals into WLS, including the rules established in individual plans, the system used to assess, grant or amend approvals (Criterion 7) ▪ assess and grant water supply work approvals for: other NSW Government agencies, local councils, the Australian Government, state-owned corporations, major water utilities, water supply authorities, local water utilities, licensed network operators under the <i>Water Industry Competition Act 2006</i>, mining companies, irrigation corporations, Aboriginal communities and businesses, floodplain harvesting, major developments (State significant developments and State significant infrastructure), schools and hospitals (previously NRAR's role⁷³) (Criterion 7) ▪ provide hydrogeological advice as required to implement access licence dealing rules⁷⁴ (Criterion 8) ▪ implement amendment provisions and update plans as required under Section 42 of the Act⁷⁵ (Criterion 10)
WaterNSW	<ul style="list-style-type: none"> ▪ For the operation of water storages and regulated structures (Appendix A) (Criterion 2): <ul style="list-style-type: none"> - run river operations⁷⁶ - operate dams and regulated structures in accordance with Statement of Approval - report on compliance with its Statement of Approval for each plan area - deliver planned environmental water per plan provisions and track environmental water allowances - provide input to the resource allocations process - facilitate River Operations Stakeholder Consultation Committees (ROSCCo) and Customer Advisory Committees (CAG)⁷⁷ ▪ granting WALs for rural landholders, rural industries and developments and infrastructure that is not State significant (Criterion 5) ▪ under the <i>WaterNSW Operating Licence 2017-2022</i>, manage water accounts for water access licenses (WAL),⁷⁸ including determining the volume of water extracted by, or supplied to, each of its customers for account management, billing and reporting⁷⁹ (Criterion 3, 4, 5, 6) ▪ credit licensed water users' accounts with available water specified in statutory water order⁸⁰ (Criterion 4)

⁷³ Responsibility for the management and approval of water licences moved from NRAR to DPE-Water in May 2022 (DPE-Water (2022) [Water news – May 2022 – Issue 35](#)).

⁷⁴ Prior to 2016, this role was undertaken by predecessor agencies, including the NSW Office of Water and DPI.

⁷⁵ The Minister for the Environment must concur with proposed amendments as required under Section 45(3) of the Act.

⁷⁶ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁷⁷ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

⁷⁸ State of NSW (n.d.) *Water NSW Operating Licence 2017-2022*. Clause 6.2.1, p 15. Available at: https://www.waternsw.com.au/__data/assets/pdf_file/0004/126607/July-2020-WaterNSW-Operating-Licence.pdf.

⁷⁹ State of NSW (n.d.) [Water NSW Operating Licence 2017-2022](#), Clause 6.3.1, p 16.

⁸⁰ DPE-Water (n.d.) [Available Water Determinations](#).

Agency	Roles and responsibilities
	<ul style="list-style-type: none"> ▪ collect and provide information to DPE-Water monthly to inform water resource assessments, including AWDs⁸¹ (Criterion 5) ▪ configure relevant account management rules in the Water Accounting System (WAS) (Criterion 6) ▪ establish accounts, including implementation of the WAL account management rules for each plan (Criterion 6) ▪ facilitate the water ordering process for WAL holders and environmental water releases (Criterion 6) ▪ manage access to daily flows other than supplementary water (Criterion 6) ▪ assess and grant water supply work approvals for landholders, industries and developments that are not State significant development or State significant infrastructure⁸² (Criterion 7) ▪ notify all holders of former entitlements under the <i>Water Act 1912</i> upon the commencement of a new water sharing plan under the Act (Criterion 7) ▪ controls and manage WLS that is used to assess and grant or amend approvals (Criterion 7) ▪ since July 2016, administer dealings in accordance with the WaterNSW Operating Licence – specifically, processing dealings under sections 71O, 71P, 71Q, 71QA, 71R, 71S, 71U, 71T and 71V and 71W of the Act⁸³ (Criterion 8) ▪ impose mandatory conditions on WALs and approval holders in accordance with sections 66(1)⁸⁴ and 100⁸⁵ of the Act for its customers⁸⁶ (Criterion 9) ▪ notify licence and approval holders upon the commencement of a new plan under the Act, conversions of rights under Schedule 10(2) or changes to or remakes of water sharing plans under the Act⁸⁷ (Criterion 9)
MDBA	<ul style="list-style-type: none"> ▪ running river operations for the River Murray system⁸⁸ ▪ assessment of uncontrolled flows available for supplementary take in the Murray ▪ flood and airspace operations in the Murray ▪ tracking the Barmah-Millewa Allowance in the Murray ▪ accounting for spills in the Murray, including the impact on environmental allowances
NRAR	<ul style="list-style-type: none"> ▪ For the operation of water storages (see Table 2) and regulated structures (Appendix A), manage compliance with Statement of Approval and review annual compliance reports against Statement of Approval conditions⁸⁹ (Criterion 2 and 7)

⁸¹ *Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW*. Executed 30 June 2021. Available at: <https://www.industry.nsw.gov.au/water/what-we-do/roles-responsibilities-agreement>.

⁸² State of NSW (n.d.) [WaterNSW Operating Licence 2017-2022](#), pp 50-51, *NRAR Act 2017* Clause 11 Functions of the Regulator and Schedule 2 Additional functions of the Regulator.

⁸³ State of NSW (n.d.) [Water NSW Operating Licence 2017-2020](#), p 4.

⁸⁴ State of NSW (n.d.) [Water NSW Operating Licence 2017-2020](#), p 41.

⁸⁵ State of NSW (n.d.) [Water NSW Operating Licence 2017-2020](#), p 53.

⁸⁶ NRAR (n.d.) [Licensing and approvals](#).

⁸⁷ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021; previously, the responsibility sat with DPE-Water predecessors or NRAR.

⁸⁸ Murray-Darling Basin Authority (n.d.) [MDBA's river operations](#).

⁸⁹ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#), executed 30 June 2021.

Agency	Roles and responsibilities
	<ul style="list-style-type: none">enforce WALs and water supply work approvals that give effect to plan provisions through their mandatory conditions⁹⁰ (Criterion 9)
DPE-EHG	<ul style="list-style-type: none">manage environmental water (environmental water account if applicable and any environmental water held by the state or Commonwealth governments) (Criterion 2)plan for the use of environmental water accounts in consultation with the environmental water advisory group (Criterion 2)provide needs and options information for environmental water to WaterNSW and other stakeholders
Land Registry Services	<ul style="list-style-type: none">maintain the WAL Register on behalf of the Minister administering the Act, including registering new WALs on the WAL register and performing any required updates in accordance with advice provided by WaterNSW or DPE-Water^{91, 92, 93} (Criterion 8, 9)register general WAL dealings on the WAL Register⁹⁴ (Criterion 8)print and issue WAL certificates⁹⁵ (Criterion 8)process Section 71M and Section 71N dealings (Criterion 8)

⁹⁰ NRAR took over these responsibilities in April 2018, prior to this, DPI-Water and WaterNSW were responsible.

⁹¹ Land Registry Services (n.d.) [Water Access Licence Register](#).

⁹² In July 2004, the Department of Infrastructure, Planning and Natural Resources delegated the function to maintain the WAL register to Department of Lands – Lands and Property Information Division. (Department of Lands – Lands and Property Information Division (2004) [Circular - Commencement of Water Access Licence Register](#)).

⁹³ Division 3A of the Act states what must be recorded in the WAL Register, including dealings and other matters.

⁹⁴ WaterNSW (n.d.) [Dealings and Trade](#).

⁹⁵ Land Registry Services (n.d.) [Water Access Licence Register](#).

6 Systems, processes and procedures

Table 4 outlines the main systems used by agencies to implement water sharing plans. **Table 5** outlines the main processes and procedures to implement water sharing plans.

Table 4: Systems to implement water sharing plans

System	Agency	Description	Relevant criterion
Water Licencing System (WLS)	WaterNSW and DPE-Water	<ul style="list-style-type: none"> ▪ Used by WaterNSW to process applications and dealings, and record applications, assessments, communication with stakeholders, and decisions ▪ Used by WaterNSW and DPE-Water to apply mandatory conditions to WALs and water supply work approvals ▪ Generates the statement of approval, statement of conditions, the notice of decision and the cover letter that are sent to WAL holders ▪ Contains the Approvals Transaction Module, an automated workflow and storage system capturing all applications, including water supply work approvals – used by assessment officers to assess applications in line with the requirements ▪ Has varied levels of access and functionality for officers – review processes are in place for WAL dealings by the water regulation officer and the determining officer before the dealing is sent to Land Registry Services for processing ▪ The Commission understands that the WLS system will be migrated to an updated system in the future 	Criterion 5, 7, 8, 9
Water Accounting System (WAS)	WaterNSW	<ul style="list-style-type: none"> ▪ Used for water account management – keeps account information for each WAL holder, applies water allocation account management rules to WAL accounts, including adjusting accounts per AWD orders ▪ Water accounts are generally reconciled quarterly via direct reporting from telemetered meters, customer voluntary reporting or meter readings by WaterNSW customer field officers ▪ Water orders are entered into WAS to assist in determination of the daily release volume from dams ▪ Used to process dealings (temporary allocation assignments) under sections 71T and 71V of the Act⁹⁶ – it is coded with specific plan rules, 	Criterion 3, 5, 6, 8

⁹⁶ WaterNSW (n.d) [Water Accounting System](#).

System	Agency	Description	Relevant criterion
		<p>water source and category of licence, which are automatically assigned to a WAL, and can be coded to prohibit dealings under plan rules</p> <ul style="list-style-type: none"> Access and functionality to process allocation assignments in the WAS is restricted to authorised officers (customer service officer levels 1 and 2) 	
Internet WAS (iWAS)	WaterNSW	<ul style="list-style-type: none"> An online customer portal, making WAS account data available to registered WaterNSW regulated river customers Allows users to order water, record usage data,⁹⁷ and access water account statements and the allocation assignment register⁹⁸ 	Criterion 6
NSW Water Register	WaterNSW	<ul style="list-style-type: none"> Public platform showing information regarding WALs and work approvals, including water allocations, AWDs, some dealings information, mandatory conditions and all applications and approvals granted, extended, amended, transferred, surrendered, suspended or cancelled⁹⁹ 	Criterion 5, 7, 8, 9
WAL Register	Land Registry Services	<ul style="list-style-type: none"> Provides an online record of every WAL in NSW under Section 71 of the Act¹⁰⁰ and registers all dealings where required¹⁰¹ 	Criterion 5, 8, 9
Resource assessment spreadsheet	DPE-Water and WaterNSW	<ul style="list-style-type: none"> Used by DPE-Water to support the water allocations process and make AWD orders¹⁰² System information provided by WaterNSW Covers licence categories, replenishment flows, evaporation, dam storages, minimum flows, committed water, available water, water take and operational loss DPE-Water has published a Water Allocation Methodology for each of the plans¹⁰³ 	Criterion 2, 5, 6
Hydstra and HydroTel	WaterNSW	<ul style="list-style-type: none"> Systems to manage water quality and quantity monitoring (data are not currently used to implement Criterion 1, but are available to DPE-Water) Hydstra is the main database for river gauges, hydrometric instruments and data collection, 	Criterion 1, 5

⁹⁷ Customers may determine usage data based on meter reads (manual or telemetered) or conversion of power usage to a volume in ML.

⁹⁸ WaterNSW (n.d.) [Internet Water Accounting System \(iWAS\)](#).

⁹⁹ WaterNSW (n.d.) [NSW Water Register](#).

¹⁰⁰ Land Registry Services (n.d.) [Water Access Licence Register](#).

¹⁰¹ Land Registry Services (n.d.) [Water Access Licence Register](#).

¹⁰² DPE-Water (n.d.) [Resource assessment process](#).

¹⁰³ DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#); DPE-Water (2022) [Water Allocation Methodology Murrumbidgee Regulated River Water Source](#); DPE-Water (2021) [Water Allocation Methodology NSW Murray Regulated River Water Source](#).

System	Agency	Description	Relevant criterion
		accessed by DPE-Water to populate the resource assessment spreadsheet	
Computer-aided River Management (CARMLite) / Computer-aided improvements to river operations (CAIRO)	WaterNSW	<ul style="list-style-type: none"> Computer systems used to deliver water that is ordered CARMLite transitioned from CAIRO and is a river operations tool. It can calculate available flows at points along a stream using water orders, water taken, actual unaccounted differences and climatic data 	Criterion 2, 5
Realtime data website	WaterNSW	<ul style="list-style-type: none"> Public platform with data such as release volumes from dams, flow gauge data, and dam levels¹⁰⁴ 	Criterion 2
Compliance Investigation Reporting and Management System (CIRAM)	NRAR	<ul style="list-style-type: none"> Contains compliance assessment templates to guide assessment of each Annual Compliance Report submitted by WaterNSW and other entities as required 	Criterion 6, 9
ArcGIS	WaterNSW	<ul style="list-style-type: none"> Used by assessment officers to map key environmental and infrastructure assets, conduct environmental assessments, and check licences and landholder details 	Criterion 7

Table 5: Processes and procedures to implement water sharing plans

Process/procedure	Agency	Description	Relevant criterion
Licensing Procedure Manual	WaterNSW, and DPE-Water	<ul style="list-style-type: none"> Operations section sets out requirements for receiving, assessing and determining an application for a WAL; requirements for operationalising the Act and Regulation requirements for the water supply works approval process; and outlines how the applications of dealing used by WaterNSW are processed Conditions section provides information in relation to translating provisions into mandatory conditions in WLS for use by approval officers in WaterNSW and DPE-Water 	Criterion 5, 7, 8, 9

¹⁰⁴ WaterNSW (n.d.) [Realtime data](#).

Process/ procedure	Agency	Description	Relevant criterion
		<ul style="list-style-type: none"> Other sections relate to processing, assessing an application for a water supply work, and issuing approvals 	
Water allocation methodologies	DPE-Water	<ul style="list-style-type: none"> Used to allocate water to users¹⁰⁵ Methodologies recently published for the Lachlan, Murrumbidgee and Murray plans¹⁰⁶ 	Criterion 2, 5, 6
Determining Water Take procedure	WaterNSW	<ul style="list-style-type: none"> Outlines critical steps and processes used by WaterNSW customer field officers when determining a customer's water take¹⁰⁷ 	Criterion 3, 6
Water Accounting Rules for Water Sharing Plans procedure	WaterNSW, and DPE-Water	<ul style="list-style-type: none"> Describes the water accounting rules for managing water ordering, water usage and licence dealings Records and validates business rules that apply to water management accounting 	Criterion 6
Assessment summary sheets	WaterNSW and DPE-Water	<ul style="list-style-type: none"> Set out the assessment process for determining whether to grant or decline an application 	Criterion 5
Approval application documentation	WaterNSW and DPE-Water	<ul style="list-style-type: none"> Application forms and templates to assess and grant approvals – there is a single application for each type of approval and forms type of water use, for example domestic and stock, environmental considerations, maps and plans, and declaration of applicants 	Criterion 7
Assessment summary report	WaterNSW and DPE-Water	<ul style="list-style-type: none"> Provides a framework for officers to document their application assessment and decision, designed to ensure the relevant administrative and environmental checks stated in the Act and Regulation are undertaken by the assessing officer and includes space to capture the relevant signatures 	Criterion 7
Approval assessment checklist	WaterNSW and DPE-Water	<ul style="list-style-type: none"> Checklist for use by the approvals officer to ensure they have undertaken the required processes under the Licensing Procedure Manual, the Act and the Regulation 	Criterion 7, 8
Water accounting rules for the Water	WaterNSW	<ul style="list-style-type: none"> Sets out the detailed process and the rules for the accounting requirement of the plans and how the accounting rules are applied in the WAS 	Criterion 8

¹⁰⁵ DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#); DPE-Water (2022) [Water Allocation Methodology Murrumbidgee Regulated River Water Source](#); DPE-Water (2021) [Water Allocation Methodology NSW Murray Regulated River Water Source](#).

¹⁰⁶ DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#); DPE-Water (2022) [Water Allocation Methodology Murrumbidgee Regulated River Water Source](#); DPE-Water (2021) [Water Allocation Methodology NSW Murray Regulated River Water Source](#).

¹⁰⁷ WaterNSW (n.d.) [Determining Water Take Procedure](#), ARK Ref: 2019/80.

Process/ procedure	Agency	Description	Relevant criterion
Management Act 2000		<ul style="list-style-type: none"> Used to manage the water ordering, water usage and licence dealings under the Act Individual plan provisions are coded into the WAS by WaterNSW 	
Registrar General's Guidelines – Water dealings	Land Registry Services	<ul style="list-style-type: none"> Used by Land Registry Services and outlines when section 71M and 71N transfers can take place, and sets out the requirements for applicants lodging dealings¹⁰⁸ Documents high-level procedures for staff in processing dealings, including for correspondence and delivery, evidence, lost documents, minute papers, production of documents, rejection of WAL dealings and requisitions Outlines the process for processing, entering and recording transfers on the WAL Register 	Criterion 8

¹⁰⁸ NSW Registrar General Guidelines (n.d.) [NSW Land Registry Services – Water Dealings s.71M](#); NSW Registrar General Guidelines (n.d.) [NSW Land Registry Services – Water Dealings s. 71N](#); NSW Registrar General Guidelines (n.d.) [NSW Land Registry Services – Water Dealings](#).

7 Criterion 1 – Vision, objectives, strategies and performance indicators

7.1 Criterion overview

Part 2 of the plans was made in accordance with Section 35(1) of the Act. This section requires water sharing plans to include a vision statement, objectives consistent with the vision statement, strategies for reaching objectives, and performance indicators to measure the success of strategies.

Part 2 of the plans was examined for this audit. Clauses 9(3), 10(3) and 11(3) of the plans state that the environmental, economic and social performance indicators are the extent to which the rules and strategies in the plans have contributed to meeting stated objectives in clauses 9(1), 10(1) and 11(1) of the plans.

Clauses 9(4), 10(4) and 11(4) describe how the performance indicators will be assessed. The clauses require that the performance indicators be assessed by comparing the ecological condition, the economic benefits and the social and cultural use of water at plan commencement and plan expiration.

While the clauses specify assessment should occur at plan expiration, the Commission would expect to see a proposal for what data will be collected, how they will be collected for the purpose of undertaking this assessment and some progress towards implementing the data collection proposal. In addition, the comparison between condition at plan expiration and plan commencement would require some data to be held at plan commencement to establish a baseline for comparison near plan expiration.

7.2 Performance monitoring provisions have not been given effect

There were no systems, processes or procedures to manage Part 2 provisions

The Commission considers that there were no processes, procedures or specific systems to manage the implementation of plan provisions relating to monitoring performance to measure the success of the strategies in meeting plan objectives during the audit period.

DPE-Water has not monitored or assessed performance indicators

The plans include provisions to satisfy this requirement of the Act but these have not been implemented during the audit period.¹⁰⁹

The plans require performance indicators to be assessed by comparing the condition at the plan commencement to plan expiration. The Commission would expect that some data would be collected at plan commencement to facilitate this comparison, which has not occurred during the first five years of the plans. In the absence of data being collected at plan commencement, the Commission would expect that existing datasets would be identified to provide confidence that there are sufficient existing sources of data available at the time of plan commencement to allow assessment at plan expiry.

¹⁰⁹ Note: there is no auditable provision in the plans that relates to achieving the vision. The vision is accepted as a statement in the plans, and it is assumed that the intent of the plan performance indicators clause is to achieve the vision through meeting the objectives.

DPE-Water indicated that performance indicators were not used to measure the success of strategies to reach the objectives of the plans. While there are some ongoing monitoring activities conducted by multiple agencies in the plan areas – for example, DPE – EHG undertake some monitoring of environmental water – these are not specific to the plans and were not used to inform plan performance during the audit period.

There are also monitoring activities driven by the environmental and water quality objectives summarised in the draft MER plans developed for the next regulated river water sharing plans intended to replace the three plans subject to this audit. These datasets could potentially be used to assess plan performance.

DPE-EHG manages environmental water allowances and environmental water holdings.¹¹⁰ It also delivers environmental water for its partners including the Commonwealth Environmental Water Office and non-government organisations.¹¹¹ DPE-EHG tracks delivery of environmental water through its E-Flo¹¹² and Power BI¹¹³ platforms that record volumes of water delivered against environmental water access licences, delivery points, and objectives and outcomes of environmental watering events. DPE-EHG monitors ecological objectives against the *Basin-wide environmental watering strategy* that includes monitoring of vegetation, waterbirds, fish and ecosystem processes.¹¹⁴ It also monitors ecological outcomes and catchment specific objectives identified in the *Long-Term Water Plans* not identified in the Basin-wide environmental watering strategy, such as frogs.¹¹⁵ Outcomes of environmental flows are reported on annually and act as an interim approach to reporting against *Long-Term Water Plans*^{116,117,118}

The lack of implementation of these provisions is likely due in part to the lack of a robust MER framework for the plans during the audit period. Without this:

- the linkages between performance indicators and objectives are unclear
- the performance indicators are not specific, measurable, achievable, relevant and time-bound (SMART), and no metrics and targets have been set to better define these performance indicators.

The lack of MER is a significant and recurring issue across NSW that has been repeatedly highlighted by stakeholders, in previous Commission reviews and audits,^{119,120} and in Section 44 implementation audits undertaken in 2019 for other water sharing plans.¹²¹

¹¹⁰ Department of Planning and Environment (2019) [What is water for the environment?](#)

¹¹¹ Department of Planning and Environment (2019) [What is water for the environment?](#)

¹¹² EFlo is an internal DPIE-EHG administrative software tool designed to track environmental water use including management of the portfolio of environmental water licences for both NSW, the Commonwealth and non-government organisations; orders and approvals of environmental water use by DPIE-EHG and agreements with Commonwealth agencies where required.

¹¹³ Power BI is an internal DPIE-EHG software tool that collates environmental water information for reporting purposes providing a summary of environmental water ordered, delivered and available across catchments.

¹¹⁴ MDBA (2020) [Basin-wide environmental watering strategy](#), second edition, 22 November 2019, revised February 2020.

¹¹⁵ Thomas, R.F., Spencer, J., Heath, J., Walcott, A., Amos, C., Honeysett, J., Mason, T., Kuo, W. and Henderson, M. (2020) [Monitoring outcomes of environmental water in NSW, summary report for 2018-2019](#).

¹¹⁶ DPIE-EES (2020) [Lachlan Long-Term Water Plan: Part A and B](#).

¹¹⁷ DPIE-EES (2020) [Murrumbidgee Long-Term Water Plan: Part A and B](#).

¹¹⁸ DPIE-EES (2020) [Murray-Lower Darling Long-Term Water Plan: Part A and B](#).

¹¹⁹ Natural Resources Commission (n.d.) [Water sharing plan reviews](#).

¹²⁰ Natural Resources Commission (n.d.) [Water management plan audits](#).

¹²¹ DPIE-Water. (n.d.) [Audits of water sharing plans under Section 44 of the Water Management Act 2000](#).

7.3 Potential impacts

Performance indicators are key to measuring the success of plan strategies in meeting plan objectives.

Potential impacts of not using performance indicators include having reduced ability to:

- determine and demonstrate if plan implementation aligns with the objects and principles of the Act (including to inform Section 43A plan reviews)
- benchmark or identify good practices that could be adopted in other water sharing plan areas
- transparently report on the achievement of plan outcomes
- make evidence-based decisions, apply adaptive management, or continually improve implementation
- measure the consequence of the partial or non-implementation of Plan provisions.

7.4 DPE-Water is making efforts to improve MER

DPE-Water indicated that it has established and is expanding a team responsible for implementation of water sharing plans. It also advised it is commissioning work to develop monitoring and evaluation frameworks for water sharing plans, which will inform plan assessment and monitoring. DPE-Water should continue to build on state-wide efforts to improve MER across NSW.

7.5 Recommendations

The Commission makes one recommendation in relation to the implementation of performance indicators of the plans.

R1.1	DPE-Water to lead the monitoring and evaluation of performance indicators to measure the success of the strategies to reach the objectives set out in Part 2 of the plans.
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8 Criterion 2 – System operation rules

8.1 Criterion overview

Part 6 of the plans set out system operations rules. Provisions examined in this part were:

- Environmental flow rules – Clause 26 in the Lachlan plan and Clauses 30 to 32 in the Murrumbidgee plan
- Environmental water allowances – Clause 27 in the Lachlan plan, Clauses 33 to 41 in the Murrumbidgee plan and Clauses 26 to 31 of the Murray plan
- Water quality allowance rules – Clause 28 in the Lachlan plan
- Maintenance of water supply – Clause 29 in the Lachlan plan, Clause 42 in the Murrumbidgee plan and Clause 32 of the Murray plan
- Replenishment flows – Clause 30 in the Lachlan plan
- Minimum flow rule – Clause 31 in the Lachlan plan and Clause 30 in the Murrumbidgee plan
- Water delivery and channel capacity constraints – Clause 32 in the Lachlan plan, Clause 43 in the Murrumbidgee plan and Clause 33 of the Murray plan
- Priority of extractions for access licences – Clause 33 in the Lachlan plan, Clause 44 in the Murrumbidgee plan and Clause 36 of the Murray plan
- Numerical specification of extraction components – Clause 34 in the Lachlan plan, Clause 45 in the Murrumbidgee plan and Clause 37 of the Murray plan
- Rates of change of releases from water storages – Clause 35 in the Lachlan plan, Clause 46 in the Murrumbidgee plan
- Dam operation during floods and spills – Clause 36 in the Lachlan plan, Clause 47 in the Murrumbidgee plan and Clause 34 of the Murray plan
- Airspace operation rules – Clause 37 in the Lachlan plan, Clause 48 in the Murrumbidgee plan and Clause 35 of the Murray plan

In the instance where a clause was not triggered in the audit period, it was unable to be tested and therefore findings or recommendations have not been made. In some of these cases, the Commission examined processes and procedures in place to manage the system should the clause be triggered.

The Commission found that the minimum flow rule in the Lachlan and flood operations and airspace operations under all three plans were given effect during the audit period in all material respects. The provisions for numerical specification of extraction components are optional and were not implemented during the audit period for the Lachlan, Murrumbidgee or Murray plans.

For environmental water provisions, the Commission tested a sample of two years comprising a wet year of 2016-2017 and a dry year of 2018-2019 to determine whether provisions were given effect under different climatic conditions.

8.2 System operation provisions have partially been given effect

8.2.1 Environmental flow rules have partially been given effect

Clause 26 in the Lachlan plan and Clauses 31 to 32 in the Murrumbidgee plan provide for transparent and translucent flows. Transparent flow rules require the whole inflow volume to the

dam to be released (under particular circumstances), while translucent flow rules require a proportion of the inflow volume to be released.¹²²

Environmental flow targets in the Murrumbidgee were not always met during the audit period

The Commission examined the implementation of environmental water provisions in 2016-2017 and 2018-2019 and found there were multiple days where transparent and translucent flows were under-target for the Murrumbidgee plan. There were:

- 22 days under-target for Blowering transparent flows across the two years, required under Clause 31 of the Murrumbidgee plan
- 66 days under-target for Burrinjuck transparent flows across the two years, required under Clause 32 of the Murrumbidgee plan
- 22 days under-target for Burrinjuck translucent flows across the two years, required under Clause 32 of the Murrumbidgee plan.

WaterNSW staff indicated that flow rates are not varied if flows are within 10 percent of the target, due to wear and tear of dam equipment that would occur from making very regular minor adjustments to flow rates.

In these cases, the Commission considers that the volume of water under-target should be made up as soon as reasonably practicable so that the targets are still met in total over a reasonable period of time. However, the Commission also notes that flows for 36 days were more than 10 percent below target. This represents just over a third of under-target releases across the three environmental flows in the two years sampled, on average.

The Commission has seen evidence that may indicate that under-target volumes were made up subsequently for Burrinjuck releases in 2018-2019 and volumes more than 10 percent under-target were also made up for Blowering transparent releases. The Commission notes that Clauses 31 and 32 of the Murrumbidgee plan currently do not indicate that flows may be within a 10 percent margin under the requirements.

R2.1	WaterNSW to implement operational procedures to release transparent and translucent flows for the volumes required under Clauses 31 and 32 of the Murrumbidgee plan. Procedures should include a management action to keep an account of and subsequently release any volume under-target in cases where the full volume was not released in accordance with the target.
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8.2.2 Environmental water allowance rules have partially been given effect

The Lachlan, Murrumbidgee and Murray plans contain numerous provisions in relation to environmental water allowances (EWAs). These provisions are detailed in Clause 27 in the Lachlan plan, Clauses 33 to 41 in the Murrumbidgee plan and Clauses 26 to 31 of the Murray plan. They cover the accounting rules such as crediting, debiting, carryover, spills and the release of the following environmental allowances:

- Lachlan – Wyangala EWA and Lake Brewster EWA
- Murrumbidgee – EWA1, EWA1, EWA3, Provisional Storage Volume 1 (PSV1) and Provisional Storage Volume 1 (PSV2)

¹²² Department of Planning and Environment (n.d.) [Transparent and translucent flows](#).

- Murray – Barmah-Millewa Environmental Water Allowance (Barmah-Millewa Allowance), Barmah-Millewa Overdraw Environmental Water Allowance (Barmah-Millewa Overdraw), NSW Murray Regulated River Water Source Additional Environmental Water Allowance (the Murray Additional Allowance), Lower Darling Environmental Water Allowance (the Lower Darling Allowance)

The Commission found that there were typically sufficient systems and processes in place to give effect to the implementation of environmental water allowance provisions, with some exceptions described in the following sections.

Water was not credited to Lake Brewster during drought when the crediting trigger was met

The Commission found that water was not credited to the Lake Brewster Environmental Water Allowance in 2018-2019 when the 50 percent general security trigger threshold was met due to the carryover account balance,¹²³ which is required under Clause 27(2) of the Lachlan plan.

The Commission understands that Lake Brewster was effectively empty on 1 July 2018 which may explain why no water was credited to the Lake Brewster EWA. However, the provisions for crediting water are based on general security allocation triggers which were met at the time under Clause 27(2). The availability of water to release is contingent on water being available in the dam under Clause 27(4) but this does not alter the requirement to credit the Lake Brewster EWA account if the crediting trigger is met.

Crediting provisions should be managed separately to the assessment of water available to be released so that if Lake Brewster fills, the water already credited can become available for release later in the year. This also means that planned environmental water provisions can be appropriately included in assessment for Available Water Determinations under Clause 46 and 47 of the Lachlan plan.

R2.2	DPE-Water to credit Lake Brewster EWA when triggers are met, even if water is not available in the Lake at the time.
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Water was forfeited from the Murrumbidgee EWA1 incorrectly in one year

The Commission found that 482ML of water was forfeited from EWA1 in the Murrumbidgee at the end of 2018-2019 which may have been carried over under Clause 38(1) of the Murrumbidgee plan.

The outstanding balance of EWA1 in the Murrumbidgee was forfeited at the end of June 2019 as it had been carried over from the previous year. Unlike the carryover rule for EWA2 (Clause 29(2)) which explicitly prevents carrying water over to a second year, the Commission considers that the wording for the EWA1 provisions would allow water to continue to be carried over (contingent on spill reductions under 38(2)).

The Commission has sighted evidence that this error was identified by WaterNSW in January 2020 and the volume that had been forfeited was corrected and re-applied to the EWA1 balance in January 2020. The Commission therefore makes no recommendation as this finding has been identified and corrected by WaterNSW during the audit period.

¹²³ NSW Department of Industry (2018) [Water Allocation Statement – Water allocations for the Lachlan Valley](#), 1 Jul 2018.

A Barmah-Millewa Overdraw has not been maintained during the audit period

There is no evidence to indicate that a Barmah-Millewa Overdraw Environmental Water Allowance has been maintained during the audit period as required under Clause 26(1)(b) of the Murray plan.

The Commission considers it acceptable not to credit the Barmah-Millewa Overdraw allowance each year given the wording of “up to 50,000ML” under Clause 28(1). However, the Commission would expect systems to be established to demonstrate that this account is being maintained and could be used in the future. The Barmah-Millewa Overdraw allowance is not mentioned in the Water Allocation Methodology for the Murray, nor is it present as a line item in the resource assessment for the Murray.¹²⁴

The Commission notes that WaterNSW does not manage an account for the Barmah-Millewa Overdraw allowance, however this is reasonable given there were no credits, debits or releases for this allowance in any year of the audit period. Once a Barmah-Millewa Overdraw allowance is maintained by DPE-Water, in the event that this allowance is used in future years, WaterNSW would also need to create a separate account to track usage in accordance with Clause 26(2).

DPE-Water should update its systems and documentation to maintain the Barmah-Millewa Overdraw allowance as required under the Murray plan. This would also increase the transparency of EWA management in the Murray.

R2.4	DPE-Water to maintain a Barmah-Millewa Overdraw Environmental Allowance in documentation and account tracking systems for the Murray.
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The Commission observed that the Lower Darling Environmental Water Allowance was similarly absent from the Water Allocation Methodology for the Murray and the resource assessment for the Murray.¹²⁵ However, this account was tracked by WaterNSW and the account balance presented in its annual compliance reports for the two years sampled.

The Commission therefore makes no recommendation as the Lower Darling Environmental Water Allowance appears to have been maintained throughout the audit period in all material respects in accordance with Clause 31(1) of the Murray plan. However, the Commission notes that there are further opportunities to improve the documentation and processes surrounding the Lower Darling Allowance.

Potential variation between the volume of water ordered and extracted may present a risk to environmental provisions in the Murray

The Commission sighted data during the audit that may indicate that a much greater volume of water has been taken than was ordered in the Murray. If significantly more water has been taken than ordered, then this may present a risk to the implementation of plan clauses to protect water for environmental purposes in the Murray (Clauses 27(7) and (8), Clause 28(2), and Clause 29(3) and (4)).

WaterNSW annual compliance reports and other analysis sighted during the audit indicates that some water users (particularly high security) may have ordered a lower volume of water than was extracted over the audit period in the Murray. The data reviewed indicated the total volume

¹²⁴ DPE-Water (2021) [Water Allocation Methodology NSW Murray Regulated River Water Source](#).

¹²⁵ DPE-Water (2021) [Water Allocation Methodology NSW Murray Regulated River Water Source](#).

of water ordered in the Murray across the whole audit period was nearly 475GL lower than the volume extracted over that time (five water years). Based on these data, Regulated River (High security) users ordered 267GL less than they extracted over the audit period.

The Commission understands that accounts are reconciled at least quarterly and actual extractions should have been debited from accounts by WaterNSW and therefore any extraction above the volume ordered should have been accounted for. In addition, WaterNSW advised that some licence holders have different ordering processes and that some of these orders may not be included in the online Water Accounting System (iWAS) in the Murray, which may account for a proportion of the difference between orders and extraction. Further investigation of the data is required to determine the cause of the variation.

If significantly more water has been taken than ordered, then when WaterNSW has released water to meet orders, the amount taken on the day (or the relevant period of time following an order) may have been greater than the volume ordered. This may potentially impact the work that WaterNSW does to provide environmental water and to provide for other users on top of the amount for the environment, including under Clauses 27(7) and (8), 28(2) and 29(3) and (4) of the Murray plan.

The Commission's audits do not provide an opinion regarding compliance of holders of water access licences.¹²⁶ NRAR is an independent water regulator which oversees the enforcement of water management laws in NSW. NRAR commenced operations in April 2018, approximately two years after the commencement of the audit period. NRAR indicated to the Commission that it became aware in its first two years of operations of practices of overdrawing water accounts and recrediting at a later date. NRAR undertakes reconciliations of water accounts as part of its compliance monitoring processes. It may take enforcement action in cases where a greater volume of water is extracted than is ordered, and has targeted this behaviour through its Overdrawn Accounts campaign in 2021.¹²⁷ WaterNSW has also advised that NRAR has direct access to the Water Accounting System to develop its own analytics relating to water take.¹²⁸ The Commission has made NRAR aware of the observed discrepancy between ordering and take in the Murray in the audit period. NRAR has advised that it will conduct analysis of the potential variation between orders and extraction raised in this audit report.

The Commission has raised two recommendations to investigate and resolve any potential issues raised by the ordering data for the Murray in addition to the independent work that NRAR may undertake.

R2.5.1	WaterNSW to analyse its ordering data and processes to determine the reasons for the variation observed in the Murray between orders and take.
R2.5.2	WaterNSW to work with NRAR and DPE-Water to address any issues identified by the data analysis conducted under R2.5.1 .

¹²⁶ NRC (2022) [Audit framework for water management plan audits under Section 44 of the Water Management Act 2000](#), p 10.

¹²⁷ NRAR (2021) [NRAR quarterly compliance report. Jan - Mar 2021](#), p 11.

¹²⁸ WaterNSW (2022) [Response to audit of the implementation of the Namoi, Gwydir and Macquarie regulated Water Sharing Plans](#), p 4.

8.2.3 Water quality allowance rules in the Lachlan have partially been given effect

Clause 28 in the Lachlan plan prescribes the rules for the Lachlan Water Quality Allowance (WQA).

The Lachlan WQA was credited with 20GL in 2016-2017 and in 2018-2019 which is in accordance with the Clause 28(2). However, the Water Allocation Methodology for the Lachlan Regulated River indicates that the 20GL credited to the WQA was assumed to last two years,¹²⁹ whereas 20GL is required each year under Clause 28(2) of the Lachlan plan. Implementation of this clause in accordance with DPE-Water's planning horizon for essential supplies would therefore require planning for 40GL over two years to support a 20GL allocation to the WQA each year. DPE-Water confirmed in interview that the practice has been to assume that 20GL will be sufficient for two years' use of the WQA under the resource assessment process.

The Commission notes that over 15GL of the WQA was delivered in 2016-2017 which appears inconsistent with the assumption that less than 10GL will be used each year. This also indicates that the assumption that only 10GL would be used for the WQA each year was either not present in 2016-2017 or did not limit the use of the WQA. The Water Allocation Methodology for the Lachlan Regulated Water Source which describes this assumption was published in 2022.¹³⁰

To allow credit of 20GL for the WQA each year and allow up to that amount to be taken in any year, 40GL would need to be set aside for this purpose in the resource assessment.

R2.6	DPE-Water to credit 20GL per year to the Lachlan Water Quality Allowance, and therefore provide 40GL for two years in the resource assessment.
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8.2.4 Published methodologies are in place to describe how maintenance of supply provisions are given effect, although some details are limited

Clause 29, 42 and 32 of the Lachlan, Murrumbidgee and Murray plans require that AWDs of 100 percent can be maintained for domestic and stock rights, native title rights, domestic and stock access licences, and local water utilities access licences through a repeat of the worst period of low inflows into these water sources prior to 2003. These clauses also provide for regulated river (high security) access licences through a repeat of the worst period of low inflows to maintain an allocation of:

- 1ML per unit of share component in the Lachlan
- 0.95ML per unit of share component in the Murrumbidgee
- 0.97ML per unit of share component in the Murray.

DPE-Water has published water allocation methodologies for the Lachlan, Murrumbidgee and Murray.¹³¹ These methodologies describe how the resource assessments underpinning the allocation of water are undertaken for each plan. The worst period of low inflows into these water sources, as represented in flow information held by the Department when the first water

¹²⁹ DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#).

¹³⁰ DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#).

¹³¹ DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#); DPE-Water (2022) [Water Allocation Methodology Murrumbidgee Regulated River Water Source](#); DPE-Water (2021) [Water Allocation Methodology NSW Murray Regulated River Water Source](#).

sharing plan for these water sources made under the Act came into force is typically termed the 'minimum inflow sequence'.

The water allocation methodologies demonstrate that DPE-Water has a process in place to allocate water after assessing available resources, commitments and system overheads, and consideration of securing higher priority supplies through a repeat of worst period of low inflows on record at the commencement of the first water sharing plans

The Commission supports the publication of the water allocation methodologies as it increases the transparency for stakeholders, as well as the consistency and robustness of the resource assessment process.

Based on consideration of the available evidence, the Commission has not seen sufficient information to determine that the maintenance of supply provisions have not been given effect in all material respects in the Murrumbidgee and Murray.

For the Lachlan, the required level of security of supply from the allocation approach may have been impacted by:

- sufficient water not being budgeted for the Lachlan Water Quality Allowance
- water for local water utility access licences being re-allocated during the audit period on the assumption that usage would follow historical patterns and be less than entitlement.

The resource assessment did not allocate the full volume of water for planned environmental and local water utility purposes in the Lachlan during the audit period

During the audit period, the Lachlan resource assessment did not allow sufficient water for the Water Quality Allowance (WQA) or Local Water Utility access licences. This meant that when allocations were made using the resource assessment, the commitments for these two water purposes appear to have been under-estimated. Therefore, water that should have been reserved for the WQA and Local Water Utility use may have been allocated to other purposes. This had the potential to lead to over-allocation which may impact the maintenance of supply provisions under Clause 29 of the Lachlan plan.

The Lachlan resource assessment does not account for two years of use of the WQA, which had 20GL budgeted for two years' use.¹³² This is not in accordance with Clause 28 of the Lachlan plan and could lead to a resource deficit if this allowance is required in full in one year as the full amount must be allocated again for the following year. The Commission considers that Recommendation 2.6 would resolve this finding, and therefore does not make an additional recommendation.

DPE-Water indicated that during the audit period, historical Local Water Utility access licence use data had been used to reallocate water that typically had not been used (around 20 percent). This effectively meant that this volume was double-allocated, which Local Water Utility access licences had the right to take. DPE-Water identified that this practice allocated higher priority water to lower priority users and that it has ceased this practice since the audit period. Therefore, the Commission makes no recommendation regarding this finding.

The method of applying minimum inflow sequences in the allocation process has potential risks for maintenance of supply

¹³² DPE-Water (2022) [Allocation Methodology Summary – Lachlan Regulated River](#), p 2.

The Commission considers that the interpretation of the plans' maintenance of supply provisions and the method of using the minimum inflow sequences could be applied in different ways which could have different risks and benefits.

The Lachlan, Murrumbidgee and Murray use their own loss assumptions and minimum inflow sequences of the worst period of low inflows on record prior to the commencement of the first of these plans. The minimum inflow sequences for the Lachlan, Murrumbidgee and Murray incorporate different droughts of record and provide different step changes of minimum inflows that generally become more pronounced as the time horizon shortens. This has the potential to allow allocation decisions to be made based on inflow assumptions that can have significantly lower volumes one month later.

The water allocation statements published during the audit period provide limited information to interrogate the basis for shortfalls. The Commission observed that the Lachlan regulated system had a shortfall from September 2017 to September 2020. It is unclear if these shortfalls were solely the result of inflows lower than the minimum inflow sequence or if there were other contributing factors.

Similarly, the 30-month to 19-month planning horizon for the Lachlan allows for a larger inflow and allocations than would a shorter time horizon. The published allocation methodology provides limited details to assess the extent to which using this time period may impact the risk of maintaining supply to higher security users on an annual basis, or whether the methodology provides protection for droughts longer than 30 months or shorter than 19 months once a drought has commenced.

The Commission has also observed that the allocation process is based on forward-planning and does not appear to reconcile actual volumes of water received with those anticipated. This can lead to allocations whenever inflows arrive that are greater than minimum inflow sequence. It may be possible for the total volume of minimum inflows to be received over a year or a season, but if inflows occurred in an earlier monthly distribution than expected based on the minimal inflow sequence, they could be allocated and which may lead to a shortfall.

DPE-Water indicated that although artificial shortfalls may occur as part of the current minimum inflow sequence and allocation process, general security water balances may be restricted during a drought to prioritise water for essential requirements. In a different audit, the Commission found that general security users of the Namoi drew down their accounts in full over a 12-month period and there was insufficient water for essential requirements. However, DPE-Water has indicated that provided the identification of a shortfall leads to a pause in allocations until the minimum inflow sequence is restored, that the provisions for maintenance of supply are being given effect.

The Commission has observed that there are potential risks inherent to the way that minimum inflows have been applied in the water allocation process during the audit period that are discussed above. The Commission did not find that these risks were sufficient to conclude that the provisions have not been given effect in all material respects, noting that there may be different ways to interpret and apply maintenance of supply clauses.

8.2.5 Replenishment flows and continuous flow rules in the Lachlan were partially given effect

Clause 30 in the Lachlan plan gives provisions for replenishment flows to multiple creek systems in the Lachlan and a continuous flow to Booberoi Creek. The Lachlan plan states in a Note to Clause 30(1) that replenishment flows to Willandra Creek provide water for the townships of Ivanhoe and Morrison's Lake which are in the Lachlan Unregulated system. The Lachlan plan also states that the Booberoi Creek continuous supply provides for town and

domestic supply and stock watering and also provides a visible flow at Ginniguldrie Road Bridge.

WaterNSW uses its discretion to determine the volumes and timing of replenishment flows required, as the plans provide this flexibility. No formal documentation exists to inform decision-making in relation to replenishment flow volumes that are required, although WaterNSW staff indicated that consultation with landholders informs decision-making for the delivery of replenishment flows.

The Commission found that for most of the audit period, replenishment flows to multiple creeks and continuous flow to Booberoi Creek were provided in accordance with the provisions of the Lachlan plan. However, both the replenishment flows and continuous flow were restricted in 2019-2020 and into the first few months of 2020-2021 as drought mitigation measures. The Commission notes this is not in accordance with the provisions of the plan or the priority of these flows as providing for town water supply and Basic Landholder Rights.¹³³

The Commission understands that the Critical Water Advisory Panel was involved in the decision to restrict replenishment flows in 2019-2020 and close the Booberoi Offtake for five months during 2020 as a drought contingency measure (April to September 2020). WaterNSW communicated this decision with the public and undertook some desilting works of Booberoi Creek during August and early September 2020. The Commission notes that no formal mechanism, such as a formal directive or suspension of the plans under Section 49B of the Act, was in place at the time. Therefore, plan requirements under Clause 30 to deliver replenishment flows and continuous flow to Booberoi Creek should have still applied. These provisions provide town water supply and domestic and stock water supply which are higher priority needs and so should not be restricted to provide water for access licences. Although lower priority uses were also restricted at the time, 50 percent of general security carryover was still available to general security users.¹³⁴

DPE-Water indicated that a water carting rebate was put in place to mitigate the impacts of ceasing replenishment flows and flows to Booberoi Creek.¹³⁵ However, the provisions to provide flows to these creeks were not implemented to give effect to Clause 30 of the Lachlan plan during this time.

The Commission makes one recommendation in relation to replenishment flows and continuous flow rules for the Lachlan.

R2.8	DPE-Water to ensure replenishment flows and continuous flow at Booberoi Creek are provided during drought to supply for town water supply and stock and domestic rights, except in cases where Clause 30 of the Lachlan plan is not in effect due to a water sharing plan suspension.
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8.2.6 Channel capacity constraints have been partially given effect in the Murrumbidgee and Murray

Water delivery and channel capacity constraints are governed by Clause 32 in the Lachlan plan, Clause 43 in the Murrumbidgee plan and Clause 33 of the Murray plan.

These clauses require that any system constraints should be specified in accordance with procedures set by the Minister (where necessary). Channel capacity constraint provisions have

¹³³ DPIE (2021) [Lachlan Valley snapshot 2017 2020 Drought](#), p 2.

¹³⁴ DPIE (2021) [Lachlan Valley snapshot 2017 2020 Drought](#), p 3.

¹³⁵ ServiceNSW (2019) [\\$2000 rebate to help landholders access domestic water supplies](#).

been determined by DPE-Water and formalised through mandatory conditions on the WaterNSW Statement of Approvals (70WA604607 for the Lachlan, 40WA405734 for the Murrumbidgee and 50WA511767 for the Murray).

The Lachlan Statement of Approval requires specification of channel capacity constraints in line with Clause 32 of the Lachlan plan. Whereas the Statements of Approval and plan provisions for the Murrumbidgee and Murray prescribe channel capacity constraints that must not be exceeded by the management of regulated daily rates.

The Commission found that channel capacity constraints were determined and specified by WaterNSW for the Lachlan which gives effect to Clause 32 of the Lachlan plan.

The Commission found that channel capacity constraints were exceeded during the audit period due to regulated release rates in the Murrumbidgee and Murray when:

- operation of the Hydro Electric Power Scheme in the Murrumbidgee in 2016 caused a channel capacity exceedance at Oddy's Bridge
- exceedances occurred at Edward River Offtake in 2016-2017 and 2017-2018, and at Gulpa Creek Offtake in 2017-2018 due to regulated releases to meet user demand in the Murray.

Channel capacity constraints were exceeded by regulated release rates in 2016 in the Murrumbidgee at Oddy's Bridge by 60ML per day for three consecutive days due to operational issues at the Hydro Electric Power Station (HEPS) downstream of Blowering Dam. WaterNSW indicated in interview that since this occurred, a review of lessons learned took place with the HEPS operator and communications with Snowy Hydro have increased to at least weekly, which assists in managing channel capacity exceedances. The Commission notes that the succeeding years of the audit period did not have any similar channel capacity exceedances. The Commission therefore considers that this cause for channel capacity exceedance has been addressed by WaterNSW during the audit period and makes no recommendation regarding channel capacity constraints in the Murrumbidgee.

Channel capacity constraints were exceeded in the Murray as follows, as a result of regulated releases to meet user demand:

- 36 days Edward Creek Offtake in 2016-2017
- 14 days at Edward Creek Offtake in 2017-2018
- 16 days at Gulpa Creek Offtake in 2017-2018.

WaterNSW indicated that channel exceedances are a reality of the limitations of existing infrastructure and operating systems when attempting to meet high consumptive demand. In addition, agreements in place with irrigators means that the channel capacity exceedances are likely now reduced in comparison to the audit period.

Effective management of channel capacity constraints is important to mitigate potential negative impacts such as inundation, transmission losses and damage to infrastructure.

The Commission makes one recommendation.

R2.9.2	WaterNSW to review the reasons for channel capacity exceedances at Edward River Offtake and Gulpa Creek Offtake and put in place measures to promote compliance with the channel capacity constraints of Clause 33 of the Murray plan.
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8.2.7 A method and operating procedures for priority of extraction provisions have not been developed

Clause 33 in the Lachlan plan, Clause 44 in the Murrumbidgee plan and Clause 36 of the Murray plan prescribe an order of priority for the fulfilment of water orders in the event that supply capability is insufficient to satisfy all orders in a section of the water source. The supply capability is to be shared between users in accordance with a method approved by the Minister, incorporating advice from water user representatives.

The Commission has not seen any evidence of a method that has been approved by DPE-Water or any explicit systems in place for WaterNSW to implement these clauses for priority of extraction. WaterNSW indicated that during standard business operation WaterNSW would consider the order of priority identified in the plans. The Commission notes that these clauses for priority of extraction were also found to have not been given effect as mandatory conditions on WaterNSW's Statements of Approval for these regulated systems (refer to Chapter 15). The recommendation to include this provision as a mandatory condition is given under the findings and recommendations for Criterion 9 – Mandatory conditions. The Commission therefore makes no recommendation to WaterNSW in relation to the implementation of these priority of extraction clauses.

In addition to introducing a mandatory condition for WaterNSW to implement, DPE-Water should approve a method to guide priority of extraction when supply capability is insufficient to satisfy all water requirements as required under Clause 33 of the Lachlan plan, Clause 44 of the Murrumbidgee plan and Clause 36 of the Murray plan.

R2.10	DPE-Water to develop a method for priority of extraction when supply capability is insufficient to satisfy all water requirements in any section of the water source, incorporating water user advice.
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8.2.8 Procedures and rules for rates of change of releases from water storages have not been established

Rules regarding rates of change in releases from water storages are required to be established to govern release rates, taking into account environmental needs, damage to river banks and public safety under Clause 35 of the Lachlan plan and Clause 46 of the Murrumbidgee plan. There is no equivalent clause in the Murray plan.

The Commission has not seen any evidence that rules for release rates for the water storages in the Lachlan and Murrumbidgee plans have been given effect during the audit period. The WaterNSW Statements of Approval for the Lachlan and the Murrumbidgee (70WA604607 and 40WA405734 respectively) both contain mandatory conditions for WaterNSW to develop an operating protocol for rates of change of releases but these have not been developed.

Under the Lachlan and Murrumbidgee plans, provisions require that these rules for release rates for the water storages should be made in accordance with procedures established by the Minister. However, procedures have also not been established by DPE-Water during the audit period.

Thus, there is no implementation guidance that sets out release rate parameters for WaterNSW to follow or use to develop operating protocols for:

- Wyangala Dam (Lachlan plan)
- Burrinjuck and Blowering dams (Murrumbidgee plan)

There is an *Operating Protocol – Rate of Change of Releases from Wyangala Dam* that was developed by WaterNSW that provides a historical assessment of rates of change and a maximum and minimum release rate. However, it does not provide operational rules to guide current and future decisions that consider the requirements of Clause 35 including the environment, river banks and public safety.

WaterNSW implemented a trial operational rate of range of release constraint of 500 ML per day per hour for Blowering Dam throughout the period. This does not meet the requirements described under Clause 46 of the Murrumbidgee plan.

In the absence of rules to govern release rates, WaterNSW staff may adjust the rate of storage releases based on their professional experience, knowledge and the situation at hand.

The implementation of rules to govern rates of change of storage releases is important as releases have the potential to adversely impact the environment, river banks and public safety.¹³⁶

The Commission makes two recommendations.

R2.11.1	DPE-Water to establish procedures in relation to the rates of change for releases from water storages for the Lachlan and Murrumbidgee. Procedures should consider environmental considerations, damage to river banks and public safety.
R2.11.2	Upon completion of R2.11.1 , WaterNSW to develop an operating protocol for rates of change to storage releases to give effect to Clause 35 of the Lachlan plan and Clause 46 of the Murrumbidgee plan.

¹³⁶ As stated in Clause 35 of the Lachlan plan and Clause 46 of the Murrumbidgee plan.

9 Criterion 3 – Long-term average annual extraction limits

9.1 Criterion overview

Part 7 of the plans establishes long term average annual extraction limit (LTAAEL) volumes by water source in accordance with the Act and requires:¹³⁷

- assessment of average annual extraction against the LTAAEL for each water year using the hydrologic computer model approved by the Department¹³⁸
- that long-term average annual extraction from a water source may not exceed the LTAAEL¹³⁹
- compliance with the long-term extraction limits to be assessed annually, whereby if extraction exceeds LTAAEL by three percent or more, the maximum available water determination for supplementary WALs will be reduced in the Murrumbidgee and Murray plans, or a reduction in water that may be taken from regulated river (general security) access licences will be applied under the Lachlan plan, followed by subsequent reduction actions as specified in the provisions¹⁴⁰
- a customer service committee will be used to consult with representatives as needed for any necessary reductions to bring long-term average annual extractions back to the LTAAEL.¹⁴¹

Long term average annual extraction assessments rely on a model and a process that has numerous assumptions, calibration requirements and verification details that are not published. In this audit, the Commission has not reviewed the adequacy of the models used to undertake LTAAEL compliance and assessment.

9.2 Long term average annual extraction limit provisions have partially been given effect

The Commission found that DPE-Water has partially implemented plan provisions relating to limits to the availability of water, specifically LTAAEL, during the audit period. An LTAAEL compliance assessment was completed for the Lachlan and the Murrumbidgee for the 2020-21 water year. Therefore, these assessments were undertaken one out of five years of the audit period for these two plans. The results of these assessments demonstrated that the long-term average annual extractions in the Lachlan, Murrumbidgee and Lowbidgee were compliant for the 2020-21 water year. This represents progress towards systems being established to assess LTAAEL compliance each year for these plans.

¹³⁷ Relevant sections of the Act relating to long-term extraction limits include: Section 8F, which requires the auditing of compliance with the long-term extraction limit under a plan; Section 20(2)(a), which requires the bulk access regime established by a plan to recognise and be consistent with any limits to the availability of water that are set (whether by the relevant management plan or otherwise) in relation to the water sources to which the regime relates; and Section 8(1A)(b), which requires a plan to commit water as planned environmental water in at least two ways, including by reference to the long-term average annual commitment of water as planned environmental water.

¹³⁸ Clause 41 Lachlan plan, clauses 54 and 55 of the Murrumbidgee plan, clauses 41 and 42 of the Murray plan.

¹³⁹ Clause 42(1) in the Lachlan and Murray plans, Clause 56(1) of the Murrumbidgee plan.

¹⁴⁰ Clause 42 in the Lachlan and the Murray plans, and Clause 56 in the Murrumbidgee plan.

¹⁴¹ Clause 42(6) in the Lachlan plan, Clause 57(4) in the Murrumbidgee plan, Clause 42(10) in the Murray plan.

9.3 Potential impacts

By not implementing LTAAEL provisions, DPE-Water is not monitoring annual extraction in relation to LTAAEL and is unable to determine whether extraction adjustments are required as part of the resource assessment process. These adjustments are necessary to reduce the likelihood of:¹⁴²

- adverse environmental impacts to ecosystems^{143,144}
- adverse impacts to downstream users.

9.4 DPE-Water is making efforts to improve LTAAEL assessments

DPE-Water completed LTAAEL assessments of compliance for the Lachlan and Murrumbidgee for 2020-21. The Murray LTAAEL assessment and compliance relies on the Murray Darling Basin Authority and DPE-Water has indicated a LTAAEL report will be published from March 2023.

DPE-Water also advised that it is developing an implementation program for LTAAEL provisions, which will document its roles and responsibilities, focussing on inland and northern basin regulated systems. It also intends to produce a methodology document for LTAAEL assessment procedures.

9.5 Recommendations

The Commission makes one recommendation in relation to LTAAEL assessment and compliance.

R3.1	DPE-Water to manage LTAAEL and assess LTAAEL compliance in accordance with Part 7 Division 1 of each plan.
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¹⁴² DPE-Water (2021) [An overview of legal limits](#).

¹⁴³ Note 3 under Clause 39 in the Lachlan plan states: “By limiting long term average annual extractions to an estimated 305,000 ML/year this Plan ensures that approximately 75% of the long-term average annual flow in this water source (estimated to be 1,212,000 ML/year) will be preserved and will contribute to the maintenance of basic ecosystem health.”

¹⁴⁴ Note 3 under Clause 50 in the Murrumbidgee plan states: “By limiting long-term average annual extractions to an estimated 1,925,000 ML/year, this Plan ensures that approximately 50% of the long-term average annual flow in this water source (estimated to be 4,360,000 ML/year) will be preserved and will contribute to the maintenance of basic ecosystem health.”

10 Criterion 4 – Available water determinations

10.1 Criterion overview

The discussion, findings and recommendations in **Chapter 8** relating to the maintenance of supply of access licences is relevant to Available Water Determinations (AWDs) (clauses 29, 42 and 32 in the Lachlan, Murrumbidgee and Murray plans, respectively). These clauses are included in these plans as system operation clauses which give assurance that the system will be managed to support the maximum AWD allocations through the worst period of low inflows¹⁴⁵ to domestic and stock rights, domestic and stock and local water utility access licences, and regulated river (high security) licences.

This Chapter focuses only on the Part 7, Division 2 requirements of the plans which detail the rules for AWDs as required under sections 20(2)(b), 59 and 60 of the Act and Clause 7 of the Water Management Regulation (Regulation). These are clauses 43 to 48 of the Lachlan plan, clauses 58 to 66 of the Murrumbidgee plan and clauses 43 to 49 of the Murray plan.

Generally, AWDs in these plans are limited to 100 percent of the share component for domestic and stock and local water utility access licences, and 1 ML per unit share component for high security access licenses. Regulated river (general security), regulated river (conveyance) and supplementary water access licenses are generally limited to 1 ML per unit share component.¹⁴⁶ However, the Lachlan AWD limit for regulated river (general security) is 2 ML per unit share component which is split between a 'Take' subaccount and a 'Hold' subaccount. There are no supplementary access licences under the Lachlan plan.

10.2 Provisions relating to AWDs have been materially implemented

There were adequate systems and processes in place to support AWDs

The Commission considers there were adequate systems, processes, procedures in place to support implementation of plan provisions relating to AWDs in the audit period.

The finding of **Chapter 9** is relevant to AWDs processes, as LTAAEL compliance assessments need to take place to allow reductions on supplementary access licence AWDs, followed by general security AWD reductions in the Murrumbidgee and Murray, if required. A compliance assessment was undertaken for the Murrumbidgee for 2020-2021 which found that the LTAAEL was compliant. Therefore, no action was required to be taken in this year to reduce supplementary access licence AWDs. However, during the first four years of the audit period and during all five years for the Murray, it is possible that reductions to LTAAEL may have been required but were not identified because LTAAEL compliance assessments were not completed. The recommendation of **Chapter 9** therefore applies to allow AWD provisions for supplementary access licences to be implemented as required under Clauses 62(4) and (5), 65(2) and 66(2) of the Murrumbidgee plan and Clause 48(5) and (6) and 49(3) of the Murray plan.

¹⁴⁵ as represented in flow information held by the Department when the first water sharing plan for these water sources made under the Act came into force.

¹⁴⁶ The AWD limit for regulated river (general security) in the Murray Water Source under the Murray plan is 1.1 ML/unit share.

There were some instances of AWD provisions not being given effect

During the audit period, DPE-Water typically made and published AWD orders in accordance with plan requirements in all material respects and AWDs were applied by WaterNSW to accounts in accordance with AWD orders.

As described in Chapter 8.2.2, the Lake Brewster EWA was not credited with 10GL in 2018-2019 when the crediting trigger was met. This meant that AWD provisions under Clause 46(4) of the Lachlan plan were not given effect in 2018-2019, as planned environmental water is required to be sufficiently provided for prior to making an AWD to high security users. This was the only example the Commission found during the audit period of planned environmental provisions not being sufficiently provided for prior to making an AWD. Therefore, the Commission has not made a further recommendation in relation to this finding.

Under Clause 48(2) of the Lachlan plan, an AWD for regulated river (conveyance) access licences should be made whenever an available water determination is made for regulated river (general security) access licences, subject to the requirements of this clause. The Commission found that in May 2021, no AWD was made to the conveyance access licence category when an AWD was made for general security licences. A conveyance access licence AWD was made in June alongside another increase to general security allocations, which took the conveyance access licence category to the full allocation of 17,911ML. The Commission therefore considers the absence of an AWD in May to be immaterial.

The Commission found that during the audit period, AWD Orders were made, published and contained the relevant information, as required by the Regulation in all material respects. The AWD Orders were typically applied correctly to water accounts.

10.3 Recommendations

The Commission makes no new recommendations. Two previously reported recommendations apply to allow the implementation of AWD provisions in the future (see R3.1 and R2.2).

11 Criterion 5 – Granting access licences

11.1 Criterion overview

Part 8 of the plans set out rules for granting WALs in accordance with the provisions of the Act and Clause 10 of the Regulation in relation to:

- granting a zero-share WAL applied for under Section 61(1)(b) of the Act¹⁴⁷
- specific purpose access licences applied for under Section 61(1)(a) of the Act¹⁴⁸
- granting of access licences applied for and granted under Section 61(1)(c) of the Act in relation to a controlled allocation order.¹⁴⁹

This audit has focussed on the following in relation to WALs applied for and granted in the audit period:

- Section 61 of the Act (application for granting of WALs), except Section 61(3)¹⁵⁰
- Section 63 of the Act (determination of applications)
- Section 64 of the Act (notice of decision)
- Section 65 of the Act (controlled allocation of WALs)
- Section 66 of the Act (mandatory conditions included in the terms of the licence)
- Section 71B of the Act (giving effect to WALs through recording on WAL Register)
- Clause 10 of the Regulation (specific purpose access licences)
- Schedule 3 of the Regulation (categories and subcategories of licences).

The following sections were also examined in relation to access licences which were granted under the 2003 plans, which were subject to amended conditions when the plans commenced:

- Section 67(4) and (5) of the Act (notification of revised mandatory conditions for WALs granted under the 2003 plans)
- Section 71B of the Act (when matters required to be recorded in General Division of Access Register have effect).

Section 62 of the Act (objections to granting of WALs not within the water sharing plan area) was outside the scope of this audit.

¹⁴⁷ The plans are silent in relation to zero-share licences, which are processed and granted under the provisions of the Act.

¹⁴⁸ Clause 49 of the Lachlan plan, Clause 67 of the Murrumbidgee plan, Clause 50 of the Murray plan.

¹⁴⁹ The plans are silent in relation to controlled allocation licences, which, where applied, would be processed and granted under the provisions of the Act.

¹⁵⁰ Section 61(3) of the Act was not examined as it relates to applications outside of water sharing plan areas.

11.2 Rules for granting access licences were implemented

Adequate systems, processes and procedures to implement provisions

There were adequate systems, processes and procedures in place to support the implementation of provisions relating to granting access licences within the audit period.

Legislative provisions relating to granting WALs were given effect, with one exception relating to notification of mandatory conditions granted under the 2003 plans

To assess if plan provisions were given effect, the Commission assessed a sample of WALs processed during the audit period, as well as a sample of notifications for former entitlements converted to WALs under the Act during the audit period.

The sampled access licences were generally compliant with the legislative requirements set out above, with the key exception that revised mandatory conditions for WALs granted under the 2003 plans had delayed implementation after the commencement of the plans.

WALs granted under the 2003 plans and *Water Act 1912*¹⁵¹ were recorded in the WAL Register, giving effect to these WALs under Section 71B of the Act.¹⁵² However, when the current plans commenced, WAL holders did not receive written notice of the revised mandatory conditions until January 2018 (19 months after plan commencement) for the Lachlan and Murrumbidgee plans and April 2018 (22 months after plan commencement) for the Murray plan. Only when the landholder receives the mandatory written notice does the condition take effect as per Section 67(4) and (5) of the Act. The risks associated with delayed notification of mandatory conditions is reduced for the majority of access licence holders as the 2003 plan provisions did not significantly change when updating to the 2016 plans.

11.3 Recommendations

To assess risks around timeliness of notification under plan remakes going forward, the Commission sampled a bulk notification for a more recently made plan (the Namoi Alluvial Groundwater Sources 2020). Based on this sample testing, the broader process going forward for timely notifications appears reasonable. The Commission therefore makes no recommendations in relation to notification of access licence conditions.

¹⁵¹ Former entitlements are addressed under Schedule 10 of the Act.

¹⁵² Section 71B of the Act states that matters required to be recorded in the Access Register take effect on being recorded.

12 Criterion 6 – Managing access licences

12.1 Criterion overview

Water extraction is managed through water access licences (WALs), which makes the management of WALs a critical component of the operation of the plans. Part 9 of the plans establishes rules for managing access licences in line with the Act¹⁵³ and Regulation.¹⁵⁴

The Commission examined the following provisions:

- water account rules – Clause 50 (Lachlan plan)
- crediting of water accounts – Clause 51 (Lachlan and Murray plan) and Clause 68 (7 and 8) (Murrumbidgee plan)
- accounting of water trades – Clause 52 (Lachlan plan)
- debiting of water accounts – Clause 53 (Lachlan plan), Clause 68 (1-4) (Murrumbidgee plan), Clause 52 (Murray plan)
- carryover rules – Clause 55 (Lachlan plan), Clause 68 (6-9) (Murrumbidgee plan), Clause 53 (Murray plan)
- maximum account volumes for regulated river (general security) access licences – Clause 54 (Lachlan plan)
- withdrawals of water from accounts – Clause 56 (Lachlan plan)
- rules for supplementary access licences – Clause 68(5) and 69 (Murrumbidgee plan) and Clause 54 (Murray plan)
- rules for take of uncontrolled flows – Clause 55 (Murray plan)
- rules for regulated river (general security) access licences to take water without debit Clause 71 (Murrumbidgee plan).

Clause 70 in the Murrumbidgee plan was not tested as development of distribution rules for the Lowbidgee was not undertaken by DPE-Water over the audit period. This clause states that rules ‘may’ be established and is therefore not definitively required to be implemented.

12.2 Managing access licence rules have partially been given effect

Adequate systems, processes and procedures to implement provisions

The Commission considers there were broadly adequate systems, processes and procedures in place to support implementation of plan provisions relating to the management of access licences within the audit period. There is potential to improve transparency and traceability of available supplementary water assessments in the Murrumbidgee which is described in the section below.

The Commission notes that there is no documented method to equitably share supplementary water among Murray users (which is the responsibility of DPE-Water as the Minister’s representative) as described in Clause 54(3) of the Murray plan. Therefore, consultation for this method in Clause 54(4) has also not been given effect. However, the plan provides detailed rules regarding supplementary access licence rules and the MDBA has the primary

¹⁵³ Section 85 of the Act requires water allocation accounts to be kept for each access licence.

¹⁵⁴ Section 17 of the Regulation sets out requirements in relation to debiting water allocations for WALs and carryover of water allocations to the next water year.

responsibility to determine when and how much water is available for supplementary access. Therefore, the Commission does not consider the lack of a documented method to be a material risk to the equitable sharing of supplementary water. The MDBA, DPE-Water and WaterNSW follow consistent processes for supplementary assessment and approval in the Murray and WaterNSW advertises access in multiple targeted places for water users to be made aware of their ability to access supplementary flows.

There is also no established process for DPE-Water to notify WaterNSW of a take limit to Lachlan general security water in the event that LTAAEL compliance actions are required under Clause 42(2) and confer a take limit under Clause 54(1)(a). However, the Commission found that LTAAEL compliance assessments in the Lachlan were not performed for four years of the audit period, and LTAAEL was compliant for 2020-2021 so a general security take limit was not required (see **Chapter 9**). The Commission was therefore unable to test whether any take limit less than 1ML multiplied by the number of unit shares was applied as it was either not required or not known to be required. The Commission suggests that annual communication processes should be set up if LTAAEL compliance needs to be implemented as a take limit in WaterNSW's account management system.

Provisions for managing access licences under Part 9 of the plans were largely given effect, except for one element of supplementary water access management in the Murrumbidgee

The Commission reviewed two supplementary announcements during the audit period for each plan, including assessment of available supplementary water, request and approval documentation, and the systems in place to facilitate management of the events.

Rules for taking of water provisions in the Murray (Clause 54) were materially given effect during the audit period, with one gap in procedures in relation to equitable sharing which is described in the previous section, which appears not to have material effect.

Rules for taking of water under supplementary water access licences in the Murrumbidgee (Clause 69) were largely given effect, with one exception.

WaterNSW provided flow spreadsheets for both events that demonstrate the orders and flows along the system at various gauges. These spreadsheets do not clearly assess water available for supplementary take, accounting for all the requirements under Clause 69(4-5) of the plan.

The Commission found that when WaterNSW sought approval for proposed Murrumbidgee supplementary announcements from DPE-Water, WaterNSW provided the proposed announcement only. WaterNSW provided records of the request and the subsequent approval from DPE-Water for both events that the Commission sampled in the Murrumbidgee. The documents approved by DPE-Water do not explicitly show for example, that environmental flows, domestic and stock rights, other licence requirements and the Murray Regulated River requirements have been calculated in the process of determining the volume of supplementary water available. This represents a gap in the assessment and approval process which could allow volumes to be approved without sufficiently ensuring that the requirements of the Murrumbidgee plan have been met.

The Commission did not sample any supplementary access announcements in the Lowbidgee and therefore requirements for supplementary water (Lowbidgee) access licences in Clause 69 have not been tested.

12.3 Potential impacts

There is greater potential for elements of the Murrumbidgee plan not to be considered by DPE-Water when approving a supplementary announcement without a standardised template that explicitly shows all the requirements of the plan under Clause 69(4-5), encompassing environmental water, domestic and stock rights and native title requirements, other access licence categories and the requirements of the NSW Murray Regulated River Water Source.

12.4 Recommendations

Recommendation 3.1 applies to the management of a general security take limit in the Lachlan under Clause 54.

The Commission makes one additional recommendation. The Commission also suggests that any improvements in the supplementary water assessment should also be applied to processes for the Lowbidgee described in Clause 69(6-7).

R6.1	WaterNSW to develop an explicit assessment template for supplementary water that demonstrates compliance with all relevant provisions of the Murrumbidgee plan (Clause 69(4-5)).
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13 Criterion 7 – Rules for water supply work approvals

13.1 Criterion overview

Provisions in the Act establish rules for water supply work approvals:

- Section 92 - applications for approvals
- Section 93 - objections to applications
- Section 95 - determinations of applications
- Section 96 and 97 - matters for consideration in relation to granting approvals
- Section 98 - notification of approval holders
- Section 100 - imposing mandatory and discretionary conditions on approvals
- Section 102 - imposition or change of conditions after approval is granted

The relevant clauses of the Regulation include:

- Clause 25(1)(a) - requires the application to be in approved form
- Clause 25(1)(b) - requires an application to include or to be accompanied by an assessment of the likely impact of the water use, water or activity concerned (if required by the Minister)
- Clause 26(7) - requires the application for approval to be published
- Clause 28(6)(d) - requires the capacity of the work to be listed on the advertisement.

13.2 Rules for water supply work approvals were partially implemented

To assess if plan provisions were given effect in relation to approvals applied for and granted in the audit period, the Commission assessed WaterNSW's five most recent work approvals processed under each plan. NRAR provided five approvals granted in the Murrumbidgee and Murray plan area during the audit period and three approvals granted in the Lachlan plan.

The Commission found that the sampled water supply work approvals were compliant with the legislative requirements set out above, with the exceptions outlined below.

Adequate systems, processes and procedures to implement provisions

The Commission considers there were adequate systems, processes and procedures in place to support implementation of Plan provisions relating to water supply work approvals within the audit period.

On 30 June 2021, the Roles and Responsibilities Agreement was executed by DPE-Water, NRAR, Water Administration Ministerial Corporation and WaterNSW, articulating the roles and responsibilities of each party in the discharge of their respective functions under the NSW Water Legislation and the WaterNSW Operating Licence.¹⁵⁵ The agreement outlines the roles and responsibilities of each of the parties in relation to water supply work approvals. Audit interviews indicated that roles related to granting or amending water supply work approvals were well

¹⁵⁵ [Roles and Responsibilities Agreement: DPIE, NRAR and WaterNSW](#). Executed 30 June 2021.

understood by the responsible organisations across the audit period with any gaps in documentation or understanding considered by the Commission to be immaterial.

The Commission notes that in May 2022 responsibility for the management and approval of water licences and supply works moved from NRAR to DPE-Water.¹⁵⁶ NRAR will continue its role in relation to monitoring and auditing of compliance of approvals. Given this shift in responsibilities for approvals functions, any recommendations made in relation to approvals for large water users will be assigned to DPE-Water to action.

Existing approval holders were notified of relevant mandatory conditions 18-19 months after the plans were remade in 2016

The Commission found that approval holders of existing water supply work approvals granted under the 2003 plans did not receive written notice of the mandatory conditions for each water supply work approval until January 2018 (Lachlan and Murrumbidgee plans) and April 2018 (Murray plan) (19 and 22 months respectively after plan commencement), giving delayed effect to Section 102(4) and 102(5) and 100(1A) of the Act. The risks associated with delayed notification of mandatory conditions is not material for these plans for the majority of approval holders as the plan provisions are not significantly different from the 2003 plans.

As raised in **Chapter 11**, the Commission has confidence in the broader process going forward for timely notification of mandatory conditions and therefore makes no recommendation.

For the statements of approval for WaterNSW, which covers its authorised water supply works, mandatory conditions were not amended to give effect to all relevant mandatory condition provisions

The Commission found that WaterNSW was not notified of mandatory conditions referred to in Part 11 of the plans (Clause 66(5) in the Lachlan plan and Murray plans and Clause 81(5) in the Murrumbidgee plan) as required by sections 102(4), 102(5) and 100(1A) of the Act. These mandatory conditions call up other parts of the plan relevant to WaterNSW role in plan implementation – namely Part 6 System operation rules.

For the WaterNSW statements of approval (70WA604607 for the Lachlan, 40WA405734 for the Murrumbidgee, 50WA511767 for the Murray), there are some mandatory conditions that were not included in the statements of approval granted in 2007 for the plans. These statements of approval were not amended at any time during the audit period to give full effect to Part 11 of the plans. Consideration of gaps in mandatory conditions on the WaterNSW work approval is presented in **Chapter 15**.

Advertisements for new water supply work approvals did not consistently include capacity information in accordance with Section 28(6)(d) of the Regulation

Clause 26(8)(d) of the Regulation requires that the advertisement notice for a supply work approval must contain the capacity of the work and the water source and stream from which the work is proposed to take water.

From the sample tested, either capacity or size of works approved was stated in the issued advertisement with the exception of one approval in both the Lachlan and Murray plans where neither the size nor the capacity of the work applied was indicated. The Commission notes that in the case of the Lachlan plan, the approval related to a pump, which would impact on

¹⁵⁶ DPE Water (2022). [Water news](#) – May 2022 – Issue 35.

diversion of water from the river. In the case of the Murray plan, the approval related to storage works and a lack of capacity may have limited the ability of individuals viewing the advertisement to assess the potential materiality of any impacts and whether to make an objection.

The Commission notes that six of the 21 samples included the size of the work but not the capacity (two in the Lachlan plan, one in the Murrumbidgee plan and three in the Murray plan). Whilst this is technically not in accordance with 28(6)(d) of the Regulation, size may provide some indication of capacity in the advertisement to inform decision making by potentially affected parties and whether objections are warranted. However, WaterNSW provided feedback that size is not always an indicator of extraction rate of a water supply work, and that it is much more important in an advertisement to show authorised capacity rather than size of works. WaterNSW has indicated that the transition to the new database system from WLS may provide the capability to capture capacity on approvals rather than size of works.

Following the audit period, WaterNSW also updated its advertising template for new water supply works and the guidance material in the Assessments and Approvals Manual to capture the requirements related to placing advertisements for new approvals so that capacity is consistently stated.

13.3 Potential Impacts

When water supply work approval holders operate without conditions, they are not obligated to comply with the plans. The plans are primarily implemented through water users complying with mandatory conditions. Without notification of relevant mandatory conditions, the plans cannot be given full effect. WaterNSW is a key party to implementing plan provisions for environmental water releases, and system operations. In addition, without mandatory conditions on water supply work approvals, NRAR cannot undertake enforcement activities should there be instances of non-compliance.

Incomplete information in the advertisements means that users may be restricted in making informed objections on approvals being granted or amended. This is due to information not being provided that enables downstream users to assess potential impacts on their operations. A lack of full transparency of supply works approval information, including capacity information, impacts upon the operations of regulators as there is not an accurate dataset to assess compliance risks and focus enforcement effort.

13.4 Recommendations

Recommendations in relation to the gaps in mandatory conditions on the WaterNSW statements of approval and other water supply work approvals are provided in **Chapter 15**.

The Commission makes no recommendation in relation to the inclusion of the capacity of works in advertised notices as this was resolved by WaterNSW following the audit period.

14 Criterion 8 – Access licence dealing rules

14.1 Criterion overview

The rules and requirements applicable to WAL dealings are set out in:

- the Act, primarily Division 4, sub-sections 71L-71Z
- Parts 2 and 3 of the *Access Licence Dealing Principles Order 2004*¹⁵⁷
- Clauses 12 and 22 of the Regulation
- Part 10 of the plans.

The Act sets out the types of dealings that may occur, including:

- Section 71M - transfer of WALs. *These dealings are out of the scope of the audit.*
- Section 71N - term transfers of entitlements under WALs. *No dealings of this type have occurred under these plans during the audit period, so this dealing type was not tested.*
- Section 71O - conversion of access licence to new category. *No dealings of this type have occurred under these plans during the audit period, so this dealing type was not tested.*
- Section 71P - subdivision and consolidation of WALs
- Section 71Q - assignment of rights under WALs
- Section 71QA - assignment of individual daily extraction component. *No dealings of this type have occurred under these plans during the audit period, so this dealing type was not tested.*
- Section 71R - amendment of share component of WAL.
- Section 71S - amendment of extraction component of WAL.
- Section 71T - assignment of water allocations between WALs.
- Section 71U - interstate transfer of WALs. *No dealings of this type have occurred under these plans during the audit period as they are dependent on conversion factors, which have not yet been developed.*
- Section 71V - interstate assignment of water allocations, permitted in the Murrumbidgee and Murray plans.
- Section 71W - WAL may nominate water supply and extraction points.

Appropriate systems and processes were largely in place to manage WAL dealings

The Commission considers that systems and processes in place to support implementation of Plan provisions, requirements of the Act and the *Access Licence Dealing Principles Order 2004* relating to dealings were largely adequate across the audit period.

One gap identified during the audit was the exclusion of the requirements of Clause 20(3)(c) of the *Access Licence Dealing Principles Order 2004* in the assessment summary sheet checklist for the assessment of 71W dealings for specific purpose access licences.

Clause 20(3) of the *Access Licence Dealing Principles Order 2004* relates to restrictions for 71W dealings for specific purpose access licences.

¹⁵⁷ NSW Government (2004) [Access Licence Dealing Principles Order 2004](#).

The Commission noted that the WaterNSW assessment summary sheet checklists for the granting or refusal of 71W trades considered rules triggered by Clauses 20(3)(a) and 20(3)(b) for local water utility licences or town water supply licences. However, the requirements triggered by Clause 20(3)(c), which prohibits 71W dealings for specific purposes access licences unless the works or extraction points nominated by the licence supply the same property or contiguous properties owned or occupied by the same landholder, were not included in the assessment summary sheet checklists used by WaterNSW to grant or refuse application of 71W trades during the audit period. However, WaterNSW has updated the assessment summary sheet checklist following the audit period to address this gap.

14.2 Rules for access licence dealing rules were implemented

The relevant responsible parties implemented plan provisions relating to access licence dealing rules set out in Part 10 of the Plans within the audit period

To assess if plan dealing rules were given effect, the Commission assessed a sample of dealings that occurred under the plans during the audit period. These included dealings under sections 71Q, 71R, 71U, 71W, 71S, 71P, 71T and 71V of the Act.

Overall, the Commission found that the sampled trades were appropriately given effect.

Trades may occur which take account balances below zero once the transaction is processed

The Commission found that the assignment of 71T and 71V trades occurred in accordance with Part 10 of the plans.¹⁵⁸ However, the Commission also found that these transactions occur based on the assumption that account balances reflect actual extraction, but they only accurately reflect orders up until such a time as an account reconciliation is performed. This is due to a lack of metering infrastructure (telemetry) and reporting requirements during the audit period, as well as the limited practicality of field officers going into the field to read meters. Given the complexities of metering reform, it may take some time for more accurate metering information.

In general, extraction data is reconciled against orders in WAL holder accounts every three months. This means that when a trade occurs, there is the potential for WAL holders to trade water that would not have been held in their account should the extraction have been reconciled against orders. This may result in negative account balances for some WAL holders. It is noted, however, that the application form for 71T and 71V trades require the applicant to confirm that there is sufficient water available in the relevant licence's water allocation account to proceed with the application.¹⁵⁹ The application form also warns that penalties apply for false declarations.

The Commission considers the intent of the Act¹⁶⁰ is that WAL holders do not take water that is otherwise not allocated to them and imperfect information available to support account

¹⁵⁸ The Commission notes that 71V trades are only permitted across the southern regulated plans in the Murray plan and Murrumbidgee plan.

¹⁵⁹ WaterNSW (n.d.) [Application to assign surface water allocation](#).

¹⁶⁰ Section 71T(3) in the Act requires only that 'Such an application may only be made with respect to water allocations currently credited to the water allocation account for the access licence from which water allocations are to be assigned'. While this does not specify that a user should not go into a negative account

management should not be used by WAL holders to inadvertently or deliberately draw account balances below zero (if all transactions were processed in real time). WAL holders should be accountable for their own take.

14.3 Recommendations

The Commission makes no recommendations in relation to the implementation of access licence dealing rules.

balance, the Commission considers that the intent of the Act is that accounts are managed as closely as possible to reality, though practically we know that we do not have perfect information to support account management. Section 60C of the Act supports this stating that user are committing a Tier 1 penalty offense if they are *'Taking water for which there is no, or insufficient, water allocation:*

(1) Offences involving allocations under a single access licence A person who takes water from a water source to which this Part applies otherwise than in accordance with the water allocation for the access licence by which the taking of water from that water source is authorised and—

(a) who intentionally or negligently fails to ascertain whether the taking of water is in accordance with the water allocation, or

(b) who knows or has reasonable cause to believe that the taking of the water is not in accordance with the water allocation'.

15 Criterion 9 – Mandatory conditions

15.1 Criterion overview

Part 11 of the plans sets out provisions describing the mandatory conditions that WALs and water supply work approvals must include mandatory conditions for:

- access licences that generally relate to water allocation and access rules, including access to supplementary and uncontrolled flows (if applicable), taking of water, notification of breaches, and keeping of logbooks and other conditions on licence holders (Clause 65 in the Lachlan and Murray plans and Clause 80 in the Murrumbidgee plan)
- water supply work approvals that generally relate to rules for appropriate installation of metering equipment, decommissioning a work, notification of breaches of conditions and logbook requirements (Clause 66 in the Lachlan and Murray plans and Clause 81 in the Murrumbidgee plan)
- WaterNSW water supply work approvals (Statements of Approval) to give effect to system operation rules as set out in Part 6 of the plans (Clause 66(5) in the Lachlan plan and Murray plans and Clause 81(5) in the Murrumbidgee plan).

Granting WALs and approvals of supply works, and the subsequent notification of mandatory conditions was considered a critical component of previously assessed criteria and issues around these provisions are discussed in **Chapter 11** (Criterion 5, in relation to granting access licences) and **Chapter 13** (Criterion 6, in relation to water supply work approvals). In particular, the assessment of Criterion 5 and Criterion 7 found that notification of mandatory conditions had been delayed in the plan areas, meaning relevant provisions were given delayed effect.

This chapter focusses on whether the mandatory conditions on WALs or water supply work approvals accurately reflect the plan provisions relating to mandatory conditions. It was out of scope for this audit to comment on the adequacy of the mandatory conditions provisions prescribed in the plans. The Commission has not audited the work of agencies responsible for enforcement of mandatory conditions or compliance of WAL holders or water supply work approval holders.

15.2 Rules for mandatory conditions have been partially implemented

Adequate systems, processes and procedures to implement provisions are in place

The Commission considers there were adequate systems, processes and procedures in place to support implementation of plan provisions relating to mandatory conditions of WALs and water supply work approvals within the audit period.

The Commission notes that WaterNSW is updating the WLS and some major licencing and approvals functions have recently been transferred from NRAR to DPE-Water.

Mandatory conditions on WALs captured the majority of required plan provisions, with some exceptions

To assess if plan provisions were given effect, the Commission sampled a range of WALs for each plan. The sample included six WALs for the Lachlan, 10 WALs for the Murrumbidgee and 16 WALs for the Murray (11 for the Murray River water source and five for the Lower Darling water source).

Plan provisions were largely applied accurately as mandatory conditions on WALs, however the following gaps were observed:

- Lachlan plan:
 - Part 9 rules for managing access licences were absent from the sample, many of which would be relevant to the WAL and therefore must be applied as mandatory conditions, including provisions such as debiting rules, maximum volume taken or held under a general security access licence and carryover rules, as required by clause 65(1)(a).
 - Logbook provisions for the purpose of water take under clause 65(2)(b)(iv).
- Murrumbidgee plan:
 - Division 1 Part 9 (clause 68) rules for water allocation account management were absent from the sample, including provisions such as debiting rules, maximum volumes for general security and conveyance licences and carryover rules, as required by clauses 80(1)(a) and 80(5).
 - Division 2 Part 9 (clauses 69-71) rules for access to supplementary water and taking of water without debit were missing from two out of four applicable WALs sampled, as required under clauses 80(1)(b) and clause 80(5) (which applies to clause 71 only).
 - Logbook provisions for the purpose of water take under clause 80(2)(b)(iv).
- Murray plan:
 - Division 1 Part 9 rules for water allocation account management including provisions such as the maximum amount that can be credited to general security licences, debiting rules and carryover rules were missing from the 16 WALs sampled, as required under clause 65(1)(a).
 - Logbook provisions for the purpose of water take under clause 65(2)(b)(iv) were missing from five WALs.¹⁶¹

DPE-Water indicated in interview that provisions in relation to Part 9 rules are given effect through the account management systems and processes that WaterNSW implements. These provide numerous controls that restrict water users to only be able to order water that is available in their accounts. Management through the ordering process would encourage users to take within their allocations, however the plans require that applicable Part 9 rules are given effect on WALs as mandatory conditions. This would provide greater transparency and certainty for licence holders as to the management of their accounts. Mandatory conditions for Part 9 rules (for the Lachlan) and Part 9 Division 1 rules (for the Murray and Murrumbidgee) need to be developed by DPE-Water and imposed to give effect to these provisions.

The Commission observed instances of mandatory conditions to give effect to Division 2 Part 9 provisions in the Murrumbidgee and Murray for taking of uncontrolled flows for general security licences, with some applicable WALs missing these conditions in the Murrumbidgee.¹⁶² This indicates it is not a systemic issue but an oversight in the placing of mandatory conditions on some WALs.

The Commission observed the application of a mandatory condition covering logbook requirements that was missing the requirement to record the purpose of water take. DPE-Water identified in interview that this mandatory condition for logbook requirements has been redrafted

¹⁶¹ A further 11 WALs were also missing this provision as a mandatory condition, but had a different mandatory condition which restricted the licence to a particular water use.

¹⁶² There are no equivalent provisions for the Lachlan plan which does not allow take of uncontrolled flows.

to include the purpose of water take provision in the plans and the revised condition will be applied to WALs going forward.

Mandatory conditions on water supply work approvals captured the majority of required plan provisions, with some exceptions

To determine if mandatory condition provisions were given effect, the Commission sampled a range of water supply work approvals (approvals) across the plans. The sample included three approvals for the Lachlan, five approvals for the Murrumbidgee and 11 approvals for the Murray (not including the WaterNSW Statement of Approval for each plan).

Plan provisions were largely applied accurately as mandatory conditions on approvals to give effect to requirements. However, the following gaps were observed:

- Lachlan plan:
 - A water supply work used to take water under an access licence must comply with the Part 9 rules for that licence, as required under Clause 66(1)(a), which was missing from two out of three applicable approvals sampled.
- Murrumbidgee plan:
 - Logbook provisions under Clause 81(2)(b) were missing from one out of five applicable approvals sampled.
- Murray plan:
 - No gaps were identified.

The sample of approvals did not highlight any systemic gaps, as all plan provisions required as mandatory conditions on approvals were given effect in some cases where they were required. The conditions that were missing from two Lachlan approvals are particularly significant as they restrict a water supply work to not take water under an access licence unless in compliance with the relevant access rules as specified in Part 9 of the plan.

The WaterNSW Statements of Approval captured the majority of plan conditions, with some exceptions

The plans require that the WaterNSW Statements of Approval (70WA604607 for the Lachlan, 40WA405734 for the Murrumbidgee and 50WA511767 for the Murray) have conditions that give effect to the Part 6 system operation clauses of the plans. We note not all system operation provisions would need to be directly translated to mandatory conditions such as:

- elements of the plans that are the responsibility of DPE-Water to implement (such as clauses for the numerical specification of extraction entitlements)¹⁶³
- provisions relating to broader systems which cannot be captured as a single mandatory condition, but may have conditions that contribute to implementation of provisions. For example, mandatory conditions to provide information for the resource assessment that assists DPE-Water to make appropriate AWDs to meet maintenance of water supply clauses.¹⁶⁴

The Commission found that system operation provisions of the plans are typically present on WaterNSW Statements of Approval as mandatory conditions, giving effect to the plan provisions.

¹⁶³ Clause 34 of the Lachlan plan, Clause 45 of the Murrumbidgee plan and Clause 37 of the Murray plan.

¹⁶⁴ Clause 29 of the Lachlan plan, Clause 42 of the Murrumbidgee plan and Clause 32 of the Murray plan.

However, a number of gaps were identified:

- On the Lachlan Statement of Approval (70WA604607):
 - There is no condition giving effect to priority of extractions provisions under Clause 33 of the Lachlan plan
- On the Murrumbidgee Statement of Approval (40WA405734):
 - There is no condition giving effect to priority of extractions provisions under Clause 44 of the Murrumbidgee plan
- On the Murray Statement of Approval (50WA511767):
 - There is no condition giving effect to priority of extractions provisions under Clause 36 of the Murray plan
 - There is insufficient detail on accounting for the spilling of environmental water to give effect to Clause 30 of the Murray plan.

The Lachlan 2003 plan was less specific about the provisions that must be included as mandatory conditions on a 'State Water' (WaterNSW) approval.¹⁶⁵ Priority of extraction clauses were previously under Part 9 (rules for managing access licences) under the Lachlan 2003 plan.¹⁶⁶ This is also the case for the Murrumbidgee 2003 plan and the Murray 2003 plan.^{167,168} The Statements of Approval for WaterNSW have been in place since before the current plans commenced in 2016 and have not been updated since 2016, so do not reflect these provisions. Since these clauses are under Part 6 system operation under the current Lachlan, Murrumbidgee and Murray plans and are relevant to WaterNSW in its operation of the systems and scheduling of orders, they must be given effect through mandatory conditions.

15.3 Potential impacts

Without mandatory conditions in place, WAL and water supply work approval holders are not obligated to comply with the corresponding provisions of the plans and the plans cannot be given full effect. Not including all of the mandatory conditions that the plans prescribe for WALs and water supply work approvals risks take of water not in accordance with the plans, and potential installation and use of works that may impact directly on other water users and the environment. Compliance regimes may also be compromised if mandatory conditions are not correctly applied.

The WaterNSW Statements of Approval provide the mandatory conditions for how WaterNSW operates dams and other water supply works in the plans, including the activities it is required to undertake and targets it is required to achieve. Mandatory conditions require these provisions to be implemented, but also support reporting requirements and underpin compliance monitoring.

¹⁶⁵ *Water Sharing Plan for the Lachlan Regulated River Water Source 2003* [repealed], Clause 58. Available at: <https://legacy.legislation.nsw.gov.au/~pdf/view/regulation/2003/180/whole>.

¹⁶⁶ *Water Sharing Plan for the Lachlan Regulated River Water Source 2003* [repealed], Clause 48. Available at: <https://legacy.legislation.nsw.gov.au/~pdf/view/regulation/2003/180/whole>.

¹⁶⁷ *Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2003* [repealed], Clause 49. Available at: <https://legacy.legislation.nsw.gov.au/~pdf/view/regulation/2002/1038/whole>.

¹⁶⁸ *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2003* [repealed], Clause 47. Available at: [NSW legislation - Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2003](https://www.legislation.nsw.gov.au/legislation/2003/180/whole).

15.4 Recommendations

The Commission makes four recommendations in relation to the mandatory conditions for WALs, approvals and the WaterNSW Statements of Approval (70WA604607 for the Lachlan, 40WA405734 for the Murrumbidgee and 50WA511767 for the Murray).

The Commission notes that findings and the response have already been raised in **Chapter 13** in relation to notifying users of mandatory conditions.

<p>R9.1</p>	<p>DPE-Water to address gaps in mandatory conditions on WALs in the Lachlan, Murrumbidgee and Murray to ensure all relevant mandatory conditions to the plans are adequately addressed and instruct WaterNSW to notify WAL holders. This includes:</p> <ul style="list-style-type: none"> ▪ Relevant Part 9 rules in the Lachlan plan, Part 9 Division 1 and 2 rules in the Murrumbidgee plan and Part 9 Division 1 rules in the Murray plan for managing access licences, which relate to WAL holder entitlements, such as debiting and carryover provisions ▪ Logbook provisions for the purpose of water take (Clause 65(2)(b)(iv) of the Lachlan plan, Clause 80(2)(b)(iv) of the Murrumbidgee plan and Clause 65(2)(b)(iv) of the Murray plan).
<p>R9.2</p>	<p>DPE-Water to address gaps in mandatory conditions on water supply work approvals in the Lachlan and Murrumbidgee to ensure all relevant mandatory conditions to the plans are adequately addressed and instruct WaterNSW to notify approval holders. This includes:</p> <ul style="list-style-type: none"> ▪ Provisions for approvals in the Lachlan for a water supply work to take water under an access licence in accordance with the Part 9 rules for that licence (Clause 66(1)(a)) ▪ Provisions for approvals in the Murrumbidgee for logbook use in accordance with the plan (Clause 82(2)(b)).
<p>R9.3</p>	<p>DPE-Water to address gaps in mandatory conditions on the WaterNSW Statements of Approval for the Lachlan, Murrumbidgee and Murray to give effect to all relevant requirements of Part 6 system operation provisions of the plans and notify WaterNSW. This includes:</p> <ul style="list-style-type: none"> ▪ Provisions for priority of extraction (Clause 33 in the Lachlan plan, Clause 44 in the Murrumbidgee plan and Clause 36 in the Murray plan) ▪ Provisions for the spilling of environmental water for the Murray (Clause 30 in the Murray plan).

16 Criterion 10 – Amendments

16.1 Criterion overview

Section 45(1) of the Act allows for water sharing plans to be amended under specific conditions. Part 12 of the plans includes amendment provisions. While none of the plans contain mandatory amendment provisions, they all contain provisions that allow the plans to be amended for specified reasons (non-mandatory amendments). As such, the Commission has focused on non-mandatory amendment provisions and assessed if they have been given due consideration.

16.2 Non-mandatory amendment provisions were given due consideration

There are currently no procedures, systems or process used to track decision making and progress against amendments identified in water sharing plans. There is no trigger identified for documenting decisions made, studies undertaken or required actions for implementation.

The Commission considers there are not adequate systems, processes or procedures in place to support implementation of amendment provisions within the audit period.

The Commission reviewed the non-mandatory amendment provisions and evidence of non-mandatory amendments that occurred during the audit period. Some non-mandatory amendments were made for these plans however they were largely administrative. Others were not triggered.

The Commission did not identify any instances where non-mandatory amendments should have been made but were not implemented. Therefore, the Commission concludes that although adequate systems and processes were not in place, this did not have a material impact during the audit period.

16.3 Recommendations

Previous Commission audits have found instances where potentially relevant amendments were not implemented due to a lack of clear systems, processes and procedures to trigger and track non-mandatory conditions.¹⁶⁹

DPE-Water has indicated that it is progressing work on a database that will incorporate plan amendment documentation (current registers and spreadsheets) inclusive of regulated river plans. DPE-Water is also progressing an implementation manual, which includes an amendment theme. This will set out processes and responsibilities and may ultimately replace internal process documents. The Commission does not see the need to repeat the recommendations made in previous audits here and therefore makes no recommendations in relation to amendment provisions of the plans.

¹⁶⁹ Natural Resources Commission (2022) [Water management plan audits](#).

Appendix 1 – Water supply works in the Lachlan, Murrumbidgee and Murray plans

Table A1.1: Authorised water supply works for the Lachlan, Murrumbidgee and Murray plans as listed and subject to the conditions outline in the Statement of Approval

Plan	Authorised water supply works
Lachlan	Lake Brewster & Associated structures including structures built under Lake Brewster Water Efficiency Project Lake Cargelligo & Associated lakes, channels, weir & structures Booberoi Weir and Offtake Regulator Booligal Weir Box Creek Regulator Bumbergan Creek Weir & Fishway Condoblin Weir Cottons Weir Gonowlia Weir Hillston Weir Island Creek Weir & Fishway Jemalong Weir & Regulator Kiacatoo Weir Merrowie Creek Offtake Regulator Micabil Weir Torriganny Weir Willandra Weir & Willandra Creek Regulator
Murrumbidgee	Balranald Weir Beaver's Creek Weir Berembed Offtake Regulator Berembed Weir and Associated Works Forest Creek Regulator and Associated Works Glen Dee Regulator Gogeldrie Weir Hartwood Weir Hay Weir Juanbung Regulator Maude Weir Nimmie Creek Offtake Regulator North Caira Bridge Regulator Redbank Weir South Caira Bridge Regulator Spillers Regulator Tarabah Weir Tombullen Creek Drop Tombullen Inlet Regulator Tombullen Outlet Regulator and Bridge Tombullen Storage and Associated Works

Plan	Authorised water supply works
	Tombullen Western Spillway Wanganella Swamp Regulator Warriston Weir Waugorah Regulator Yanco New Weir Yanco Old Weir Yanga Regulator
Murray	Menindee Lakes and Associated Structures Weir 32 and Fishway Edward River Offtake Regulator and Fishway Gulpa Creek Offtake Regulator, Fishway and Cutting Little Murray Rock Weir Niemur River Floodrunner Weir Reed Bed Creek Weir Ryans Creek Weir Wentworth Weir, Lock (Lock 10) and Fishways Euston Weir, Lock (Lock 15) and Fishways Stevens Weir, Fishway and Associated Structures Tumudgery Creek Weir Wakool River Offtake Regulator Yallakool Creek Offtake Regulator Packers Crossing Regulator Colligen Creek Weir, Cuttings and Block Dams 1, 2 and 3 Bunnydigger Weir House Weir Maddens Weir Mary Ada Weir Nine Panel Regulator O'Shannasy's Regulator Pinchgut Weir Porters Weir Swifts Weir Walthours Regulator Moirra Regulator Moirra Block Bank Thistle Creek Weir Nestron's Creek Weir Fisherman's Creek Weir Potts Creek Weir Little Edwards Offtake Regulator West Bank No. 11

Appendix 2 – Regulated water sharing plan diagrams



Figure A2.1: Schematic diagram of Lachlan regulated valley¹⁷⁰

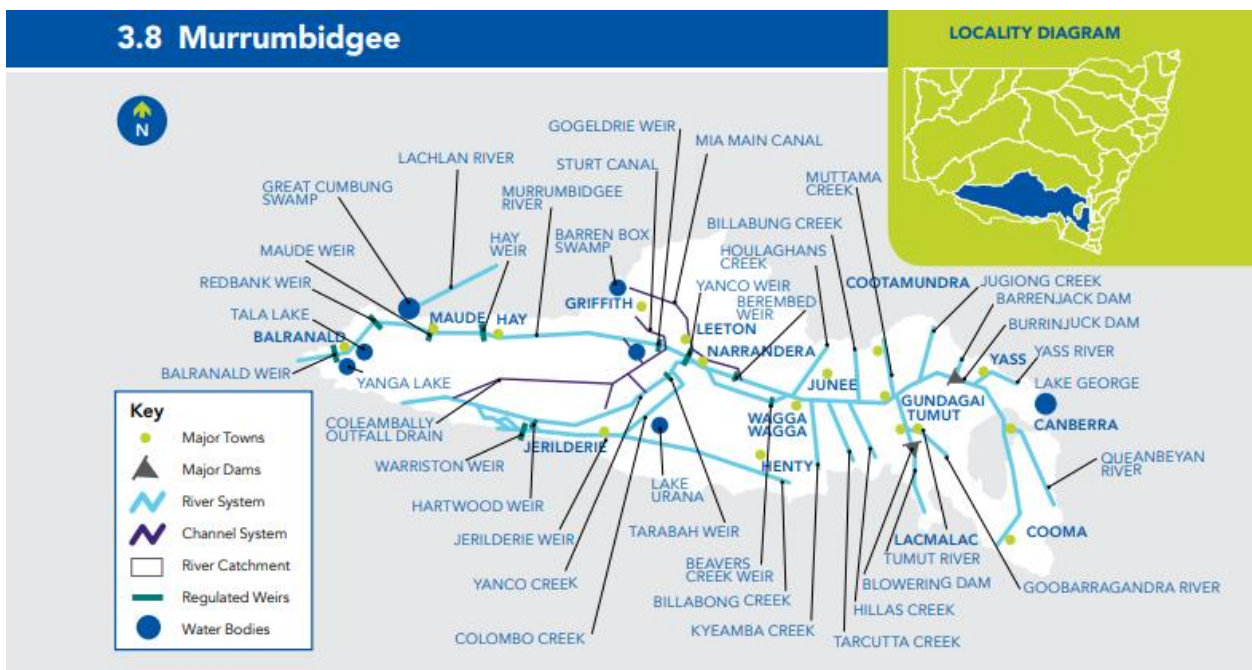


Figure A2.3: Schematic diagram of the Murrumbidgee regulated valley¹⁷¹

¹⁷⁰ WaterNSW (2018) *20 Year Infrastructure Options Study Rural Valleys Summary Report*, p 36.

¹⁷¹ WaterNSW (2018) *20 Year Infrastructure Options Study Rural Valleys Summary Report*, p 40.

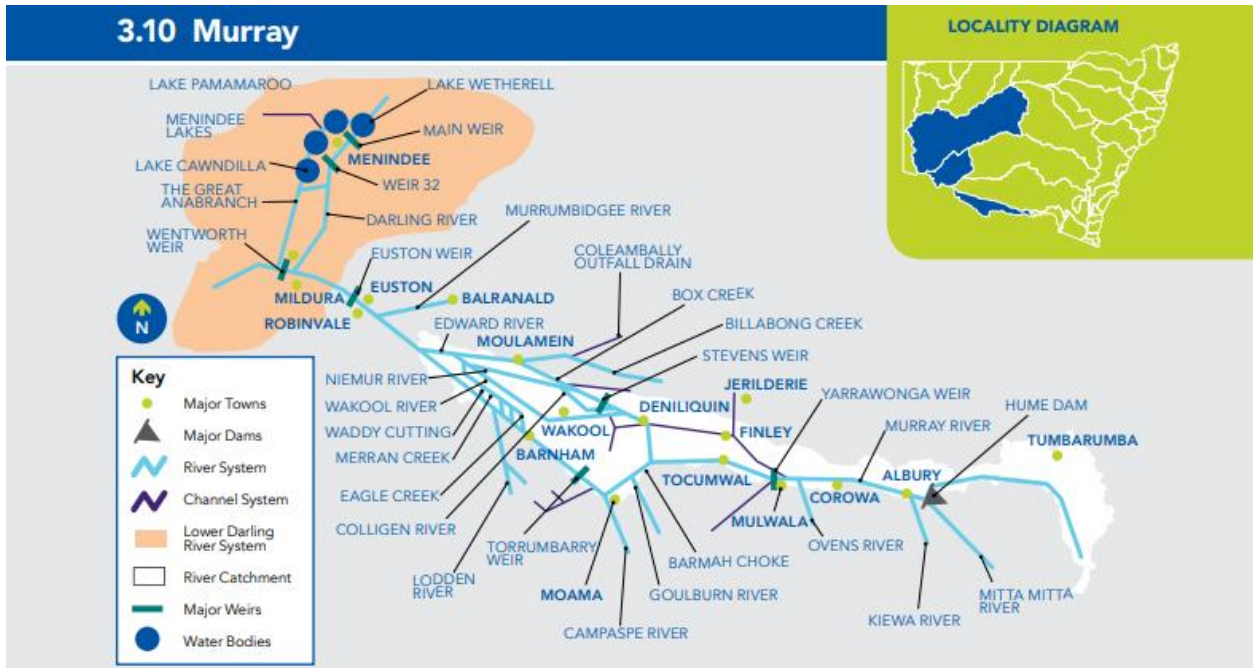


Figure A2.4: Schematic diagram of the Murray regulated valley¹⁷²

¹⁷² WaterNSW (2018) [20 Year Infrastructure Options Study Rural Valleys Summary Report](#), p 45.