Department of Climate Change, Energy, the Environment and Water

Water Sharing Plan for the Murray Unregulated River Water Sources 2024

Background, consultation and changes

June 2026



NSW GOVERNMENT

Acknowledgement of Country



Department of Climate Change, Energy, the Environment and Water acknowledges the traditional custodians of the land and pays respect to Elders past, present and future.

We recognise Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.

Artist and designer Nikita Ridgeway from Aboriginal design agency – Boss Lady Creative Designs, created the People and Community symbol.

Water Sharing Plan for the Murray Unregulated River Water Sources 2024

Published by NSW Department of Climate Change, Energy, the Environment and Water

dcceew.nsw.gov.au

First published: June 2026

Department or Agency reference number: PUB23/1165

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Glossary and abbreviations

Term	Definition
AWD	Available water determination
BLR	Basic landholder right
CtP	Cease to pump
Murray 2011 plan	Water Sharing Plan for the Murray Unregulated River Water Sources 2011
Murray 2024 plan	Water Sharing Plan for the Murray Unregulated River Water Sources 2024
DCCEEW	Department of Climate Change, Energy, the Environment and Water
LTAAEL	Long-term average annual extraction limit. The long-term average annual volume of water in an extraction management unit or water sharing plan area available to be lawfully extracted or otherwise taken under access licences and basic landholder rights.
MER	Monitoring, evaluation and reporting
NRC	(NSW) Natural Resources Commission
NSW	New South Wales
PEW	Planned environmental water
Share component	An entitlement to a given number of shares of the available water in a specified water source. The share component on an access licence certificate is expressed as a unit share. The share component of a specific purpose access licence (for example, local water utility, major water utility and domestic and stock) is expressed in megalitres/year.
TDEL	Total daily extraction limit
Third or higher order stream	'Stream order' is used to describe the hierarchy of streams from the top to the bottom of a catchment. Learn more about determining stream order with the Strahler system in An introduction to Strahler stream order | NSW Government Water
TWS	Town Water Supply
WM Act	*Water Management Act 2000*
Plan	Water sharing plan.

Term	Definition
	A generalised term used for any water sharing plan and not specific to a particular plan.

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1 Introduction

Water sharing plans (plans) were developed for rivers and groundwater systems across New South Wales (NSW) following the introduction of the *Water Management Act 2000* (WM Act). These plans protect the health of our rivers and groundwater while giving water users perpetual access licences, sustainable resource management, equitable water sharing arrangements, and increased opportunities to trade water.

NSW water sharing plans are valid for 10 years from their start date. The NSW Department of Climate Change, Energy, the Environment and Water (the department) amends water sharing plans throughout their life to ensure they comply with changing legislation and to help carry them out. Near the end of a plan's 10-year term, the Natural Resources Commission (NRC) formally reviews it to identify any changes that are necessary to deliver better outcomes for all water users, including the environment.

Water in the Murray area has previously been managed through the Water Sharing Plan for the Murray Unregulated River Water Sources 2011 (Murray 2011 plan).

This plan expired in June 2024 and was replaced by the Water Sharing Plan for the Murray Unregulated River Water Sources 2024.

This document gives high-level background information on the planning process as well as details of changes to management arrangements arising in the new plan, which we will refer to from now on as the Murray 2024 plan.

The Murray 2024 plan covers 15 water sources. These are:

- Albury Water Source
- Dora Dora Water Source
- Hume Water Source
- Indi Water Source
- Jingellic Water Source
- Lower Wangamong Water Source
- Majors Water Source
- Mannus Water Source
- Maragle Water Source
- Murray Below Mulwala Water Source
- Ournie Welaregang Water Source
- Swampy Plain Water Source
- Tooma Water Source
- Tumbarumba Water Source
- Upper Murray River Water Source.

You can find links to the plan, maps and rule summary sheets on the Murray 2024 plan page on the department's website.

The resources listed in 'Appendix A – References and supporting documents' give more details of the plan area, its water resources and resource management.

2 Purpose of water sharing plans

Expansion of water extraction across NSW since the beginning of the 20th century has seen increasing competition between water users (towns, farmers, and industries) for access to water. This has placed pressure on the health and biological diversity of our rivers and aquifers.

In December 2000, the Parliament of NSW passed the WM Act, which has the overall objective to

> 'provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations'

Water sharing plans play a major role in achieving this objective by providing a legal basis for sharing water between the environment and consumptive water users.

Water sharing plans are the primary means of carrying out the WM Act. They protect the basic rights of landholders to extract water and seek to balance the sustainable use of water for both economic and environmental outcomes.

3 Legislation, policy and planning framework

3.1 Water Management Act 2000

The *Water Management Act 2000* (WM Act) is the guiding legislation for water management in NSW. The Act allows for the sustainable and integrated management of water sources. It considers ecologically sustainable development, the protection and enhancement of the environment, and social and economic benefits.

The WM Act sets a maximum initial lifespan of 10 years for water sharing plans, at which point they need to be reviewed and replaced or extended. When deciding whether to extend or replace a water sharing plan, the responsible minister must consider:

- the most recent audit of the water sharing plan conducted under section 44 of the WM Act
- a report from the NSW Natural Resources Commission (NRC) that reviews (within the previous 5 years) if the water sharing provisions have significantly helped to achieve, or have failed to achieve, environmental, social and economic outcomes, and if those provisions should change.

Under the WM Act, a water sharing plan may be extended for up to 2 years past the expiry date to allow the department to prepare a replacement plan.

You can review the NSW *Water Management Act 2000* on the NSW Legislation website.

3.2 Water sharing plans

A water sharing plan sets out locally appropriate rules and management arrangements for specific water sources that align with the principles of the WM Act.

Key elements of water sharing plans include:

- providing water for the environment by protecting a proportion of the water available for fundamental ecosystem health
- protecting the water required to meet basic landholder rights
- setting annual limits on water extractions that ensures security for water users and the environment
- giving water users a clear picture of when and how water will be available for extraction
- giving licence holders flexibility in the way they can manage their water accounts
- specifying the rules for water trading/dealings
- setting the mandatory conditions that apply to licence holders.

You can review the Water Sharing Plan for the Murray Unregulated River Water Sources 2024 on the water sharing plan pages of the department's website.

3.3 NSW and Commonwealth water policy

We are continuously evolving and improving water-related policy and decision-making processes that carry out the legislative framework to ensure effective delivery of our water resource management objectives. We develop plans in line with the principles of the WM Act and the National Water Initiative.

You can find more information on the National Water Initiative on the Australian Department of Climate Change, Energy, the Environment and Water website.

The department has also developed a position to provide for better protection for significant wetlands in unregulated water sources. This has been included in the replacement plan, with a number of wetlands identified for protection.

4 Water sharing plan review and replacement process

Under the WM Act, water sharing plans have a 10-year duration.

During the life of the plan, it will undergo an independent review at least twice, as follows:

- the **implementation of the plan** will be audited in the first 5 years of the plan under section 44 of the WM Act
- the **performance of the plan** will be reviewed in the last 5 years of the plan under section 43A of the WM Act.

The NRC is the independent body that audits and reviews water sharing plans. Section 44 audits aim to identify where improvements are necessary to apply the plan rules. The Section 43A review is to determine if the plan is achieving the intended environmental, social and economic outcomes.

The NRC reports the findings of the audits and reviews to the NSW Minister responsible for water, who decides whether to extend a plan for another 10 years or to replace it. If the NRC recommends replacing it, the department considers the commission's recommendations when developing the replacement plan.

More information and links to the reviews of the Murray 2011 plan are in section 5 of this document.

The then Minister for Water, Property and Housing adopted the NRC's recommendation to replace the Murray 2011 plan. To allow time to review and replace the plan, it was extended by 2 years.

You can find more information on the water sharing plan review and replacement process in the Replacement Water Sharing Plan Guide (PDF 2.2 MB).

5 The Murray 2024 plan

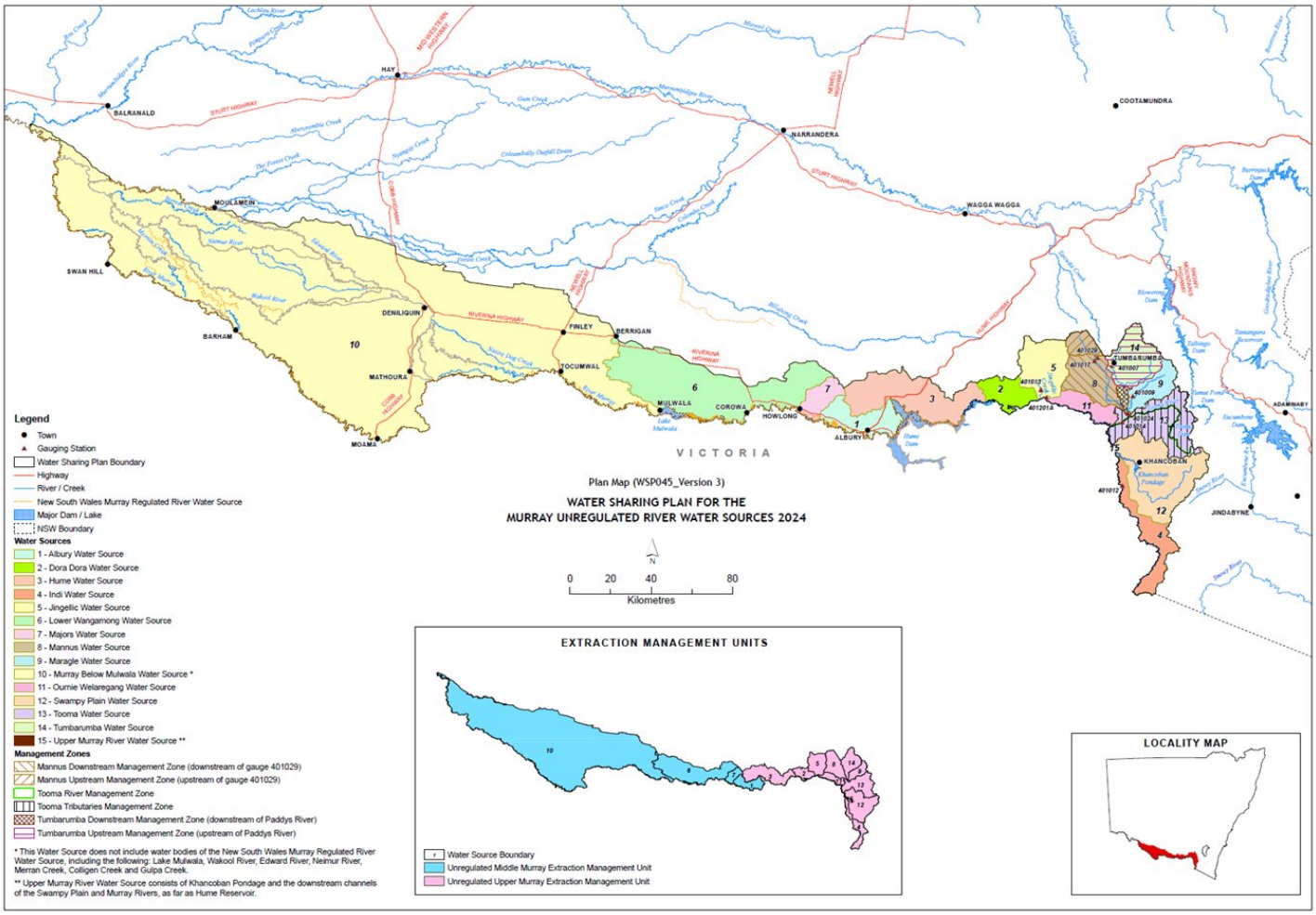
5.1 Overview

The Murray River, known legally as the River Murray, begins in the mountains of the Southern Alps of NSW and Victoria, and flows in a westerly direction for over 2,500 km to its outlet on the South Australian coast near Goolwa. The river forms the border between NSW and Victoria for 1,880 km. Upstream of Hume Reservoir, near Albury, the River Murray is part of the Murray 2024 plan whereas downstream it is part of the Murray Regulated River System.

The Murray 2024 plan area (see Figure 1) has the River Murray as its southern border. It extends close to 500 km from east to west and is generally narrow from the River Murray to the top of the catchment north and east, typically around 50 km.

The eastern most part of the plan area is characterised by mountains, strongly undulating slopes and higher rainfall. Downstream, these graduate to the gentle hills of the South West Slopes and, further west and below Corowa, the drier floodplains of the Riverina Region.

Figure 1. Plan area for the Water Sharing Plan for the Murray Unregulated River Water Sources 2024



The Murray 2024 plan has 15 water sources, just over 300 water access licences and overall entitlement of 42.4 gigalitres (GL). There are two Extraction Management Units (EMUs). The Unregulated Upper Murray EMU is upstream of Hume Reservoir and comprises 11 water sources and 14.1 GL of entitlement. The Unregulated Middle Murray EMU covers the area between Hume Dam and the River Murray's confluence with the Murrumbidgee River. This EMU comprises four water sources and there is 28.3 GL of entitlement.

Murray Below Mulwala Water Source consists of the floodplain below Lake Mulwala. It constitutes around two-thirds of the entire plan area and two-thirds of all licensed entitlement. Around half of the entitlement in this water source is held environmental water.

Urban centres include Albury, Berrigan, Corowa, Deniliquin, Finley, Holbrook, Tocumwal and Tumbarumba. In general, these centres rely on water from the Murray Regulated River System and groundwater is the second most important source of town water.

Grazing is the most common agricultural land use in the Upper Murray, occupying around 30 per cent of the catchment above Hume Dam. It typically occurs on lower slopes and valley floors. The mostly rugged nature of the landscape means that less than one percent is used for cropping or irrigation. Conservation and forestry account for the remaining 70 per cent of land use in the upper Murray catchment. Extensive areas of National Park in the east conserve the alpine environments where the headwaters of the Murray River begin. There are also large areas of State Forest in the Tumbarumba region.

Agriculture including grazing, dryland cropping, and irrigation, is the dominant land use downstream of Hume Dam, which accounts for three-quarters of the plan's area. Crops produced include winter and summer cereals, vegetables, and pastures for hay. Extensive irrigation occurs in the mid-lower reaches of the Murray River, however almost all of this water is sourced from the Murray Regulated River System. Above Hume Dam, Upper Murray River and Mannus water sources are classed as having a high economic dependence on irrigation.

Table 1 and Table 2 give details of the potential levels of extraction for Basic Landholder Rights (BLR) and licensed extraction within the Murray 2024 plan area. BLR also includes harvestable rights, which allow landholders to capture and store a proportion of the rainfall runoff from their landholding in harvestable rights dams without a water access licence, water supply work approval or water use approval. To learn more about harvestable rights visit the department's website.

Table 1. Estimated requirements for water in the Murray 2024 plan – Basic landholder rights

Extraction type	Potential extraction (ML/year)
Domestic and stock	1,560
Native title	The amount of water that may be taken in the exercise of native title rights in accordance with the *Native Title Act 1993* of the Commonwealth.
Harvestable rights	On the commencement of the Murray 2024 plan, the amount of water required to satisfy harvestable rights had not been estimated.

Table 2. Estimated requirements for water in the Murray 2024 plan – Licensed extraction

Licensed extraction subcategory	Potential extraction (ML/year)
Domestic and stock	627
Local water utility	639
Unregulated river	41,178
Unregulated river (high flow)	0

5.2 Previous plans

The Murray 2011 plan commenced on 30 January 2012. The plan included rules for both surface water and alluvial groundwater. To meet requirements under the Basin Plan 2012, alluvial groundwater sources were separated from the Murray 2011 plan in 2020 and incorporated into the Murray Alluvium water sharing plan.

For more information on this plan, refer to the Murray 2011 plan background document

The Murray 2011 plan was developed using the macro-planning approach and included extensive stakeholder and interagency consultation. Details of the macro-planning approach can be found in the following documents:

- Macro water sharing plans – approach for unregulated rivers (PDF 829 KB)
- Macro water sharing plans – access and trading rules for pools (PDF 627 KB)
- Macro water sharing plans – the approach for groundwater (PDF 3.11 MB).

As of 1 July 2024, the unregulated water sources of the Murray area are now managed under the Water Sharing Plan for the Murray Unregulated River Water Sources 2024.

When access rules in a water sharing plan change, licence holders are required to comply with the existing licence conditions until they are notified of updated licence conditions by receipt of a new Statement of Conditions. For further information see the factsheet – Complying with new or changed access rules.

5.3 Developing the 2024 water sharing plan

The processes that the department has used in developing the replacement plan are an update on the previous macro–planning approach.

The development of replacement plans now follows the processes described in the Replacement Water Sharing Plan Guide (PDF 2.2 MB).

We continue to use some methods described in the macro-planning approach. This background document will describe the most recent and specific methods used to prepare the Murray 2024 plan.

The department is responsible for implementing the WM Act, including developing water sharing plans for NSW water resources. When drafting the Murray 2024 plan, we considered:

- the section 44 audit of the Water Sharing Plan for the Murray Unregulated River Water Sources 2011
- recommendations from the NRC Review of the Murray unregulated water sharing plan 2011
- updated data, information and science
- the deliberations across government agencies including the Water group and Conservation Programs, Heritage and Regulation Group (CPHR) within the Department of Climate Change, Energy, the Environment and Water(DCCEEW), Department of Primary Industries' Agriculture and Fisheries branches, Water NSW and the Natural Resources Access Regulator (NRAR)
- consultation with local water utilities, local government and water user representatives.

You can find the Water Sharing Plan for the Murray Unregulated River Water Sources 2024 on the department's website.

Details of the changes from the Murray 2011 plan are in Section 6 of this document.

You can find information on the public exhibition of this plan in Section 5.4 of this document.

5.4 Public exhibition and finalising the 2024 plan

The department exhibited the draft replacement Murray 2024 plan from 9 October to 17 November 2023.

We held an online public webinar and offered one-on-one video calls with a water planner. Only one stakeholder requested a video call. A copy of the presentation and a recording of the webinar were published on the department's website following the webinar.

We discussed the plan and proposed changes with stakeholders at face-to-face meetings in Deniliquin (9 attendees), Albury (7 attendees) and Tumbarumba (10 attendees).

Additionally, we contacted more than one hundred licensees, who collectively hold more than 80% of entitlement and represent at least half of all entities with a water access licence or water supply works approval in the plan area. We made contact via around 110 emails, which were tailored to water sources, and/or around 50 phone conversations.

We received 16 written submissions about the draft plan. The public exhibition process and stakeholder submissions provided us with valuable feedback that helped to inform the final recommendations for the replacement plan. Issues raised in submissions are summarised in the What we heard document.

In finalising the replacement plan, the department considered submissions as well as further deliberation and input from government agencies including the Water Group and CPHR Group from DCCEEW, the Department of Primary Industries' Agriculture and Fisheries divisions, Water NSW and the NRAR.

Section 6 of this document details changes from the previous plan to the current plan.

6 Changes from the 2011 plan to the 2024 plan

6.1 Overview

Key drivers for the changes in the Murray 2024 plan were:

- the NRC's review recommendations
- contemporary water resource policy – some changes to the plan align it with current policy to help improve efficiency and consistency in achieving water resource management objectives across the state
- updated data and knowledge improvements
- consultation on the draft plan, feedback and submissions.

Changes to the plan reflect improved understanding and updated data. They aim to modernise and simplify the water sharing plan to make it easier to read while ensuring provisions are practical to implement and legally accurate.

Changes were made to:

- the general layout of the plan
- identification of planned environmental water provisions
- the vision, objectives, strategies, and performance indicators
- basic land holder right estimates and access licence share components
- access rules (one water source)
- prohibit in-river dams in some water sources, with an exemption for Town Water Supply (TWS)
- protection of significant wetlands
- inclusion of a new map to identify significant wetland locations in the plan area
- allow limited trading between many water sources and management zones
- adaptive management and amendment provisions.

For a summary of issues raised in submissions, regardless of whether they led to a change, please refer to the Outcomes of public exhibition section of the department's website and the What we heard document (PDF 508 KB).

Rules Summary Sheets for each water source are available on the department's website. These detail the rules that apply to each water source under the Murray 2024 plan.

6.2 General layout changes

There are several structural layout changes in the Murray 2024 plan. We have moved or reworded sections (formerly called clauses), but their intent is the same. Such changes reflect current template styles and provide a more standard and consistent layout across the state's water sharing plans, as well as making the water sharing plan easier to understand.

For example, we have removed unnecessary notes, as well as moving and consolidating amendment provisions to the amendment part of the plan.

6.3 Identification of planned environmental water provisions

Planned Environmental Water (PEW) is a key component of water sharing plans. The Murray 2011 plan had discrete sections on PEW that pointed to other parts of the plan to identify where water is reserved for the environment. This included access rules.

Instead of having a separate section on PEW, the Murray 2024 plan includes rules associated with PEW in the relevant divisions. Wherever a section of the plan relates to PEW, a note is included, pointing to the relevant section of the WM Act.

6.4 Vision, objectives, strategies and performance indicators

Part 2 of the Murray 2024 plan describes the vision and objectives. The plan's vision encompasses the overall aim of the plan. The vision of the plan is to provide for the:

- health and enhancement of the water sources and their water-dependent ecosystems
- continuing productive extraction of water for economic benefit
- spiritual, social, customary and economic benefits of water to Aboriginal communities
- social and cultural benefits to urban and rural communities resulting from water.

The objectives are arranged into 4 categories: environmental, economic, Aboriginal culture and social and cultural. They are to:

- protect and, where possible, enhance and restore the condition of the water sources and their water-dependent ecosystems,
- maintain and, where possible, improve access to water to optimise economic benefits for agriculture, water-dependent industries and local economies,
- maintain and, where possible, improve the spiritual, social, customary and economic values and uses of water by Aboriginal people,
- provide access to water to support water-dependent social and cultural values,
- to maintain and where possible improve water quality within target ranges for the water sources to support water-dependent ecosystems and social, cultural and economic values.

We will include more detailed and SMART (Specific Measurable, Achievable, Realistic and Timely) objectives in the Monitoring, Evaluation and Reporting (MER) plan for the Murray 2024 plan. These will clearly link objectives, strategies and performance indicators. This addresses the NRC's recommendation to strengthen MER of the plan's outcomes.

We added a requirement for the minister to prepare a MER plan. The MER plan is to be published by 30 June 2025.

In each year the minister is to publicly report on the implementation of the water sharing plan, including progress against the MER plan. Additionally, evaluation reporting is to be undertaken by year nine of the water sharing plan.

The annual reporting will provide transparency on the implementation of the MER activities, while the reporting in year 9 of the plan will provide transparency on how the plan's vision, objectives, strategies and performance indicators are being met.

6.5 Updated basic landholder rights estimates and licence share components

We have updated the estimate of extraction of water under BLR contained in Part 3 of the plan.

Since the development of the first water sharing plans, which began before 2003, numerous methods have been followed to estimate water requirements for domestic and stock BLR. These methods were superseded in 2010 by a standard NSW approach to support the development of surface and groundwater macro-water sharing plans.

We adopted the same method used in the development of macro-water sharing plans for estimating the water requirements of domestic and stock BLR. This method is in Appendix 5 of the Replacement Water Sharing Plan Guide (PDF 2.2 MB).

The revised estimates may differ from those in the Murray 2011 plan because of changes in land use, population density and the availability of more accurate spatial data.

The updated water access licence share components (water entitlements for each water source) are listed in Part 3 of the Murray 2024 plan.

6.6 Changes to access rules

Based on a review of access rules, there have been several changes in the Mannus Upstream Management Zone (refer to Table 3). The access rules are in Part 6 and Schedule 1 of the Murray 2024 plan.

Table 3. Access rule changes: Mannus Upstream Management Zone - upstream of Mannus Creek at Glenroy No.2 gauge (401029)

Water source	Previous access rule	Current access rule	Reasons for decision
Cease to take (A class)	Take is not permitted when flows are less than or equal to 0.2 metres at Mannus Creek at Glenroy No.2 gauge (401029)	Take of water is not permitted when flows are in the Very Low Flow Class, which is when flows at Mannus Creek at Glenroy No.2 gauge (401029) are less than or equal to 1 ML/day.	Addresses the NRC's recommendations to improve management of Mannus Water Source.
Cease to take (B Class)	Take is not permitted when flows are less than or equal to 0.2 metres at Mannus Creek at Glenroy No.2 gauge (401029) and when flows are less than or equal to 61 ML/day at Mannus Creek at Yarramundi gauge (401017)	Take of water is not permitted when flows are less than or equal to 1 ML/day at Mannus Creek at Glenroy No.2 gauge (401029) or when flows are less than or equal to 61 ML/day at Mannus Creek at Yarramundi gauge (401017).	Addresses the NRC's recommendations to improve management of Mannus Water Source.
Flow reference points	Mannus Creek at Glenroy gauge (40110008) and, after amendment in 2020, Mannus Creek at Glenroy No.2 gauge (401029).	Mannus Creek at Glenroy No.2 gauge (401029) and Mannus Creek at Yarramundi gauge (401017).	There is a new reference gauge. Former reference gauge 40110008 has been removed and new reference gauge 401029 is in place.

Water source	Previous access rule	Current access rule	Reasons for decision
Take from in-river pools	Take is not permitted when flows are less than or equal to 0.2 metres at Mannus Creek at Glenroy No.2 gauge (401029)	Take is not permitted when flows are in the Very Low Flow Class at Mannus Creek at Glenroy No.2 gauge (401029) or if the pool is below full capacity.	Addresses the NRC's recommendations to improve management of Mannus Water Source.

Mannus Water Source – Upstream Management Zone

The current access rule for Mannus Upstream Management Zone is a height based on the original Mannus Creek at Glenroy gauge (40110008) and, since amendment of the Murray 2011 plan in 2020, applied to Mannus Creek at Glenroy No.2 gauge (401029). The replacement gauge is located a short distance downstream of the site of former gauge 40110008.

The plan changes the height-based rule to a flow-based rule, using Mannus Creek at Glenroy No.2 gauge as the reference point. The access rule is:

- take is not permitted when flows are less than or equal to 1 ML/day.

A cease to pump rule set at 1 ML/day will ensure continuation of water users' access, improve enforcement and compliance and meet basic environmental needs.

The rule addresses the NRC's recommendations to improve management of Mannus Water Source.

Other Water Sources

For the remaining water sources, flow-based access rules are unchanged.

For natural in-river and off-river pools in all water sources and management zones, the definition of full is changed from "full containment volume" to "full capacity" (see dictionary). The Murray 2011 plan did not require natural in-river pools to be full before extraction as long as any established flow class was met at the relevant gauge. In the Murray 2024 plan, take of water from natural in-river pools is not permitted unless both any established flow class rule is met, and the pool is at or above full capacity.

6.7 Prohibit in-river dams with an exemption for town water supply

Water sharing plans contain specific rules relating to the construction and operation of in-river dams, including those built for TWS.

Current policy prohibits the construction of new in-river dams in third or higher order streams in water sources identified as having high instream value or where such a prohibition is already in place in the current water sharing plan. Interagency discussions as part of plan replacements questioned the appropriateness of the current policy on in-river dams. The policy restricts opportunities to improve TWS security.

The department has committed to work with agencies to refine the policy to better manage where in-river dams can be applied for and develop guidelines for how those applications are to be assessed. For the Murray 2024 plan, in-river dams in third or higher order streams are prohibited in the Murray Below Mulwala water source and Dora Dora water source.

The prohibition of in-river dams for water sources identified as having high environmental value remains, however, applications for new in-river dams built only for TWS purposes (supply to communities for domestic consumption and commercial activities) are exempt from this prohibition. Permitting applications for in-river dams for TWS does not mean new dams are approved to proceed. An application for works approval is still required. Each application is assessed on its merit and may or may not be approved on this basis.

6.8 Protection of significant wetlands

In their review of the inland unregulated water sharing plans, the NRC recommended that the protection for significant wetlands be improved when plans are replaced. Significant wetlands may include internationally (Ramsar), nationally and regionally significant wetlands within the plan area. For some plans, this recommendation has been broadened to include culturally significant wetlands. The department considered options to improve the protection of significant wetlands during the plan replacement process.

The installation of pumps and impounding structures, as well as the volume of entitlement that can be taken from wetlands, pose risks to maintaining the ecological character of significant wetlands. Rules are included to manage the impacts of these activities for those wetlands identified in the plan.

Part 7 of the Murray 2024 plan prohibits new or amended surface water supply works being constructed in significant wetlands unless it can be demonstrated that they will cause no more than minimal harm. For Ramsar-listed wetlands, no new or amended works can be constructed within 3 km upstream of, or within, that wetland. These rules do not apply to replacement water supply work approvals. Significant wetlands in the Murray 2024 plan are identified by a significant wetlands map produced by the department (Figure 2), which is also available on the department's website.

Part 8 of the Murray 2024 plan includes restrictions to trades into and between these significant wetlands to minimise the impacts of new extraction on these significant areas. Trade within these wetlands between existing licences/works is permitted, subject to assessment. This is consistent with current rules in other unregulated valleys.

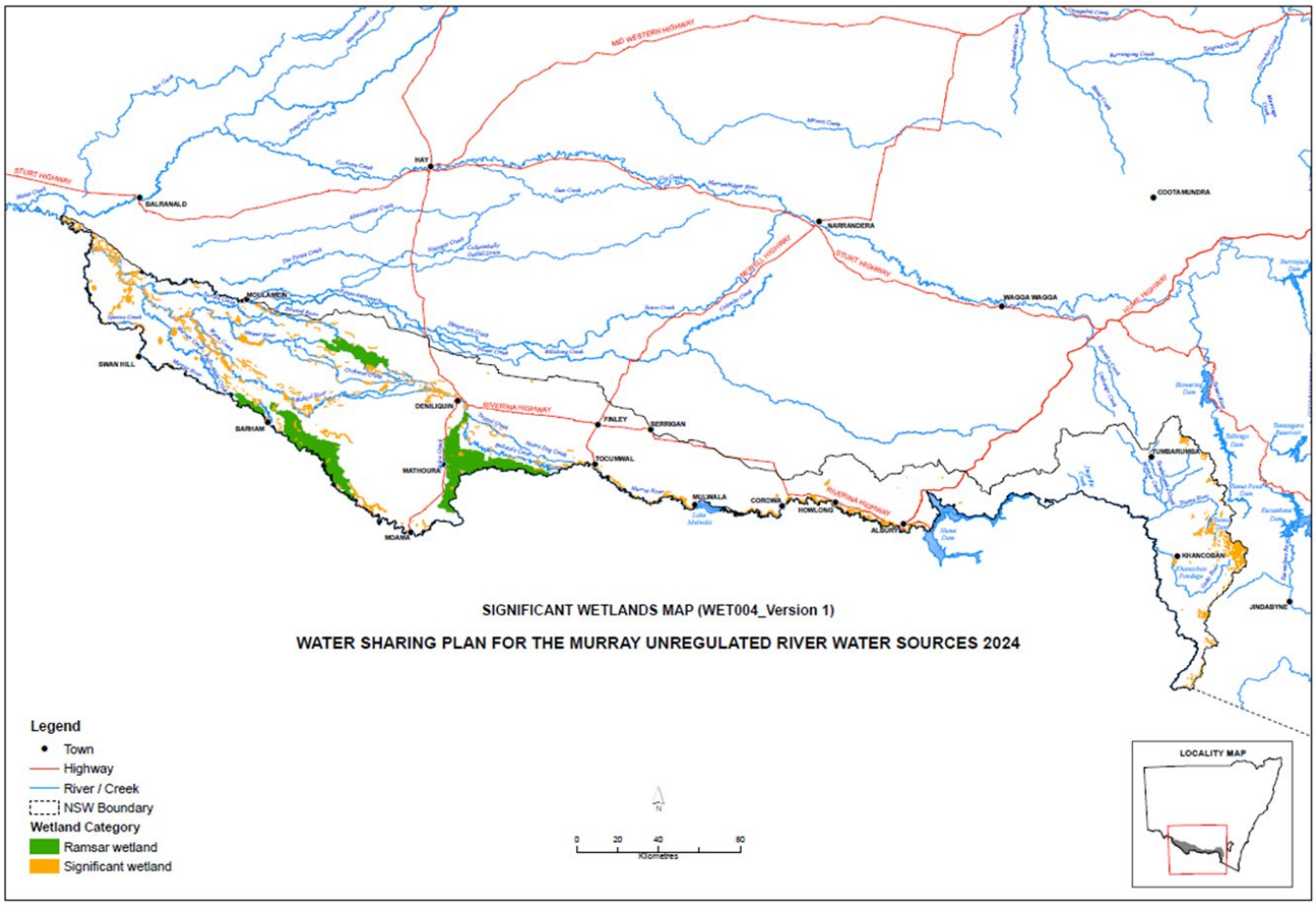
6.9 Trade

Trade is an important tool for making both environmental and economic improvements. If trading rules are too restrictive it limits the ability to move take of water out of high environmental value areas to lower environmental value areas, provides no flexibility for water users and hinders the establishment of a water market. Where water sources have medium to low environmental value and are not flow stressed trade should be permitted.

The Murray 2011 plan prohibited trade into nine of the plan's 15 water sources. Trade was permitted into five management zones and a further two water sources, though only if entitlement was first converted to high flow access licence. No conversions to high flow licence occurred during the life of the Murray 2011 plan. The trading rules for high flow entitlement are retained in the Murray 2024 plan.

The Murray 2024 plan allows limited trade of non-high flow access licences into most management zones and water sources. This relaxation recognises new, lower risk ratings than those made at the time of developing the 2011 plan. However, there is no change for the two largest water sources that constitute around 80% of all entitlement, namely Murray Below Mulwala water source and Upper Murray River water source. See the rules summary sheets for each water source for more details on local trade rules.

Figure 2. Significant wetlands map for the Murray 2024 plan



6.10 Adaptive management and amendment provisions

Adaptive management means changing things in response to new information. During the life of a water sharing plan, this information may come from data collection and monitoring or from some other improvement in understanding. Such information could include socio-economic studies, hydrological modelling, ecological studies and information about Aboriginal cultural sites.

Adaptive management is a requirement of both the WM Act and the National Water Initiative. The WM Act allows for changes to a water sharing plan during its life if it is in the public interest. The plan also allows for amendments during its life as described in Part 10 of the plan.

Examples of adaptive environmental water provisions in the new plan include the ability to amend:

- LTAAELs to base them on a proportion of flow if more information becomes available
- the plan if we find climate change is affecting water quantity or quality.

An amendment provision has been added to the Murray 2024 plan for Mannus Water Source to provide for Macquarie perch, a rare self-sustaining population found in the lower reaches of Mannus Creek. Access rules in the Mannus Upstream Management Zone may be revised to help re-population efforts further upstream. The department will review the water requirements for Macquarie perch in the Mannus Water Source and the social and economic impacts of amended flow class thresholds within 3 years of commencement of the Murray 2024 plan.

7 Monitoring, evaluation and reporting

Monitoring, evaluation and reporting (MER) are key components to adaptive management. They ensure that water sharing plans are effective in meeting their objectives.

Comprehensive MER programs are resource-intensive and long term. We must prioritise areas where there is a high risk of water extraction affecting environmental assets or where the demand for water is relatively high compared to the volume of water available.

The department is working on a project to prioritise water sources for MER activities, based on risk in areas that have high levels of extraction, ecological value or stakeholder needs.

The MER plan is a framework specifically designed for the water sharing plan and will follow established guidelines. The MER plan will be published by 31 December 2026. Under new provisions in the plan, in each year the minister will publicly report on the implementation of the water sharing plan, including progress against the MER plan. The department will also conduct evaluation reporting by year nine of the water sharing plan's term.

8 Areas for further work

8.1 Metering and record keeping

The NSW Government's non-urban water metering framework, initiated in December 2018, aims to ensure the fair and equitable sharing of water among users, enhancing transparency and efficiency in water management across the state. The framework's implementation was staged to allow water users, suppliers, and installers sufficient time to achieve compliance. The NSW Government has recently completed a review of the non-urban metering rules and has updated the *Water Management (General) Regulation 2018* to make compliance quicker, easier and more cost effective.

The new metering rules require water users to assess their compliance requirements using their total entitlement and work size. Large water users must comply with the highest metering standards whilst smaller water users now have less prescriptive metering requirements. There are also measurement/metering obligations for water users that take overland flow that are aligned with the floodplain harvesting measurement requirements.

Water users are encouraged to consult the department's non-urban metering website for detailed information and updates. To verify individual access licence details, please refer to the WaterNSW Water Register.

Water use information obtained through the water metering program may provide a useful indicator of actual water usage. Water sharing plans have to date been largely developed using licensed entitlement since estimates of actual water usage have until now been unreliable. Future water

sharing plans will be able to incorporate actual water usage when assessing risks and developing rules.

8.2 Long term average annual extraction limit

In NSW all water sharing plans include Long-Term Average Annual Extraction Limits (LTAAELs). These limits are designed to protect water resources, dependent ecosystems, and communities from the impacts of over-extraction in the longer term.

Assessment of LTAAEL compliance for inland unregulated water sources will use metering data once 3-5 years of metering data is available. Prior to this, the department will use remote sensing to undertake a risk assessment to determine if there is a risk of extraction being exceeded in unregulated water sources. When the non-urban metering requirements are fully implemented, metering data will cover up to 90% of water take across NSW. The department will develop a method to fill the remaining gaps in metering data for LTAAEL compliance purposes.

Additionally, we have added a requirement for the minister to review the numeric LTAAEL, including seeking the advice of the NRC. The review requirements will help ensure that the LTAAEL reflects a sustainable level of take.

We also added a requirement for the minister to consider the “minimum inflow” review and have enabled amendments to be made to the plan based on that review.

8.3 Cultural flows and improving the involvement of First Nations People in water management

The department will work toward the priorities in the NSW Water Strategy. Priority 2 of the NSW Water Strategy is to Recognise First Nations/Aboriginal People’s rights and values and increase access to and ownership of water for cultural and economic purposes.

The NSW Government recognises First Nations/Aboriginal People’s rights to water and our aim is to secure a future where water for First Nations/Aboriginal People is embedded within the water planning and management regime in NSW, delivering cultural, spiritual, social, environmental and economic benefit to communities.

Actions under the NSW Water Strategy include:

- strengthening the role of First Nations/Aboriginal People in water planning and management
- developing a state-wide Aboriginal water strategy
- providing for Aboriginal ownership of and access to water for cultural and economic purposes
- working with First Nations/Aboriginal People to improve shared water knowledge
- working with First Nations/Aboriginal People to maintain and preserve water-related cultural sites and landscapes.

The department is committed to providing greater opportunities for Aboriginal water management and participation in water sharing. A new Aboriginal water directorate has been established within the department. The Directorate is progressing an Aboriginal Water Strategy to identify ways to achieving the First Nations priorities of the NSW Water Strategy. The department has also established Regional Aboriginal Water Advisory Committees in each of the NSW water regions and piloted some cultural watering plans in various parts of NSW.

8.4 Stormwater harvesting

The department is developing a stormwater harvesting policy to determine the best way to manage stormwater extraction to maximise the benefits of re-using stormwater and reducing erosion of waterways while ensuring adequate water is available for the environment and water users.

8.5 Climate change

Australia has a highly variable climate, and rainfall is especially variable. This makes it vital that we understand as much as we can about our climate so we can work out how we should manage our water supplies. The frequency and duration of wet and dry events determines how much water we have available.

NSW is already experiencing trends of higher average temperatures and reduced cool season rainfall. There are indications from climate models that drought conditions may become more frequent and severe, and last longer.

Higher demand from a growing population, alongside reductions in supply, will increase water scarcity, putting more pressure on all users, including the environment (Productivity Commission, National Water Reform Issues Paper, May 2020, p.2). We must collectively improve our understanding of these risks to better manage water supply and ensure that our operational, planning and future development decisions take future water reliability and security into account.

The department has developed river models that incorporate stochastic long-term data to help guide regional water strategies. We can use these models to inform water sharing decisions as they are developed across the state. For example, as we develop the sustainable LTAAELs, we will consider the future effects of climate change.

Priority 4 of the NSW Water Strategy is to increase resilience to changes in water availability (variability and climate change). The 2021/22 action plan looks to improve and apply our understanding of climate variability and change. This includes work to determine a methodology and progressively incorporate climate risk data into water sharing plan and environmental water management decision making.

Additionally, the department will consider the outcomes of a current work program informing maintenance of water supply in inland regulated river systems. This is a key piece of work in relation to climate considerations within plans.

Appendix A – References and supporting documents

- Outcomes of Public Exhibition page contains the ‘What we heard’ document and published submissions
- NSW Legislation website contains NSW legislation, including the WM Act
- National Water Initiative
- Water Sharing Plan for the Murray Unregulated River Water Sources 2024
- The rule summary sheets for the Murray 2024 plan
- Murray 2024 plan map and significant wetlands map
- Background document for the Murray 2011 plan
- Details of the macro planning approach:
- Macro water sharing plans - approach for unregulated rivers (PDF 829KB)
- Macro water sharing plans – access and trading rules for pools (PDF 627 KB)
- Macro water sharing plans - the approach for groundwater (PDF 3.11 MB)
- The Natural Resources Commission’s Review of the Murray water sharing plan