

Background, consultation and changes for the Towamba River unregulated and alluvial water sharing plan

Background and changes

July 2023





Acknowledgement of Country

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Background, consultation and changes to the Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023

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Glossary and abbreviations

Term	Definition
Aquifer	<p>An underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt or clay) from which groundwater can be usefully extracted.</p> <p>The volume of water stored in an aquifer, the rate at which water can recharge, the volume of water extracted from it, and the rate at which water can move through the aquifer are all controlled by the geologic nature of the aquifer.</p>
BLR	Basic landholder right
GDE	Groundwater-dependant ecosystem – ecosystems that rely on groundwater for their species composition and their natural ecological processes.
LTADEL	Long-term average annual extraction limit – the long-term average annual volume of water in a water source available to be lawfully extracted or otherwise taken under access licences and BLR requirements.
MER	Monitoring, evaluation and reporting.
NRC	Natural Resources Commission
Share component	<p>An entitlement to a given number of shares of the available water in a specified water source.</p> <p>The share component on an access licence certificate is expressed as a unit share. The share component of a specific purpose access licence (e.g. local water utility, major water utility and domestic and stock) is expressed in megalitres/year.</p>
WM Act	<i>NSW Water Management Act 2000</i>

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1 Introduction

Water sharing plans were developed for rivers and groundwater systems across New South Wales following the introduction of the *NSW Water Management Act 2000* (WM Act). Approximately 99% of the water extracted in NSW is covered by a water sharing plan and managed under the WM Act. These plans protect the health of our rivers and groundwater while providing water users with perpetual access licences, sustainable resource management, equitable water sharing arrangements, and increased opportunities to trade water.

The Water Sharing Plan for the Towamba River Area Unregulated and Alluvial Water Sources 2023 began on 1 July 2023. The new plan replaces the previous *Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2010*.

The replacement plan will expire on 1 July 2033.

This document gives high-level background information on the planning process as well as details of changes to management arrangements in the current plan. It also summarises the public exhibition process, what we heard in submissions, and how we considered submissions in finalising the replacement water sharing plan.

The *Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023* covers 23 water sources:

- Upper Towamba River Water Source
- Jingo Creek Water Source
- Pericoe Creek Water Source
- Wog Wog River Water Source
- Lower Towamba River Water Source
- Myrtle Creek Water Source
- Mataganah Creek Water Source
- Stockyard Creek Water Source
- Far South Coast Water Source
- Wonboyn River Water Source
- Green Cape Water Source
- Towamba Estuary Tributaries Water Source
- Nullica River Water Source
- Eden Tributaries Water Source
- Curalo Lake and Tributaries Water Source
- Pambula Lake Tributaries Water Source
- Merimbula Lake Tributaries Water Source

- Merimbula Creek Water Source
- Tura Beach Tributaries Water Source
- Sandy Beach Creek Water Source
- Bondi Lake and Tributaries Water Source
- Wallagoot Lake and Tributaries Water Source
- Towamba River Coastal Floodplain Alluvial Groundwater Water Source.

This document provides high-level background information on the planning process and details the changes to management arrangements from the 2010 plan. It also explains the public exhibition process, what we heard in submissions, and how we considered submissions in finalising the replacement water sharing plan.

You can find links to the plan, maps and rule summary sheets on the [South Coast region water sharing plans](#) page of the department's website.

There are more details of the plan area, its water resources and resource management in documents referenced in 'Appendix 1 – References and supporting documents'.

2 Purpose of water sharing plans

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

In December 2000, the NSW parliament 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 implementation instrument of 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 WM Act is the guiding piece of legislation for water management in NSW. The Act provides 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 Natural Resources Commission (NRC) that reviews (within the previous 5 years) the extent to which the water sharing provisions have materially contributed to the achievement of, or the failure to achieve, environmental, social and economic outcomes, and whether changes to those provisions are warranted.

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

The WM Act can be found 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 rules in groundwater plans to minimise impacts on other groundwater users, groundwater-dependent ecosystems (GDEs), culturally significant sites, water quality and the stability of the aquifer
- specifying the rules for water trading/dealings
- setting the mandatory conditions that apply to licence holders.

The Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023 is on the NSW Legislation website.

3.3 NSW 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.

4 Water sharing plan review and replacement process

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

During the life of a 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 NSW Natural Resources Commission is the independent body that audits and reviews water sharing plans. The Section 44 audits aim to identify where improvements are necessary to implement the plan rules. The Section 43A review is to determine whether the plan is achieving the intended environmental, social and economic outcomes.

The commission 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 the plan, the department considers the commission's recommendations when developing the replacement plan.

You can find further information and links to the reviews for the Towamba River plan in section 5 of this document.

The minister responsible for water adopted the Natural Resources Commission's recommendation to replace the 2010 Towamba River plan.

To allow time to review and replace the plan, the duration of the plan 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 Manual \(PDF 1.28 MB\)](#).

5 Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023

5.1 Overview

The Towamba River water sharing plan area (shown in Figure 1) is located on the south coast of NSW between Pambula in the north and Genoa in the south. The plan area covers 2,345 square kilometres comprising 3 main catchments and 22 coastal sub-catchments bordered to the east by the Pacific Ocean. The upper parts of each catchment have steep topography, with main river channels confined by gorges with bedrock riverbeds.

Toward the ocean, the landscape opens to a broad floodplain and riverbeds are characterised by bedrock, gravel and sand. Like most of the NSW south coast, there are several estuaries and coastal lakes and intermittently closed and open lakes and lagoons (ICOLLs). There are 10 ecologically significant ICOLLs and 2 ecologically significant estuaries in the Towamba plan area.

There are 22 surface water sources corresponding to the 22 catchments. There is one groundwater water source. There are 4 extraction management units comprised of these water sources.

The extraction management units and water sources managed under the current plan are:

- Towamba River Catchment Extraction Management Unit
 - Upper Towamba River Water Source
 - Jingo Creek Water Source
 - Pericoe Creek Water Source
 - Wog Wog River Water Source
 - Lower Towamba River Water Source
 - Myrtle Creek Water Source
 - Mataganah Creek Water Source
 - Stockyard Creek Water Source
 - Far South Coast Water Source
 - Wonboyn River Water Source
 - Green Cape Water Source
 - Towamba Estuary Tributaries Water Source
- Wonboyn-Merrica Rivers Catchment Extraction Management Unit
 - Nullica River Water Source
 - Eden Tributaries Water Source

- Curalo Lake and Tributaries Water Source
- Pambula River Extraction Management Unit
 - Pambula Lake Tributaries Water Source
 - Merimbula Lake Tributaries Water Source
 - Merimbula Creek Water Source
 - Tura Beach Tributaries Water Source
 - Sandy Beach Creek Water Source
 - Bondi Lake and Tributaries Water Source
 - Wallagoot Lake and Tributaries Water Source
- Towamba River Coastal Floodplain Alluvial Extraction Management Unit
 - Towamba River Coastal Floodplain Alluvial Groundwater Water Source.

The plan manages surface water and alluvial groundwater to specified limits in the plan. It establishes a floodplain alluvial groundwater water source to manage water in the coastal alluvial resources that are less connected to surface water, in areas located downstream of the mangrove limit. More information on this water source can be found in section 6.1.2.

Beef grazing is the main agricultural activity in the Towamba catchment, comprising about 10% of land use in the plan area. A significant area of land is harvested for timber and paper products and there are several commercial oyster leases in the plan area. Tourism is a major contributor to the regional economy. About 40% of the water sharing plan area is national park or nature reserve.

Most of the population in the plan area is located within the coastal towns of Tathra, Merimbula, Pambula and Eden. The population of these towns significantly increases during summer holidays.

Town water supplies are drawn from the Lower Towamba Water Source, with smaller town water supply extraction for the town of Wyndham occurring in Myrtle Creek Water Source.

The greatest agricultural demand for water is stock water and small-scale irrigation of lucerne. There are also a small number of horticultural properties for which irrigation water is required for fruit and vegetable production and orchard maintenance.

No native title determinations exist in the Towamba River water sharing plan area. If determinations are made in the future, access to water and extraction of water may form part of a determination and will be provided for through the water sharing plan.

The average annual rainfall measured at Wyndham from 1968 to 2020 is 824.2 millimetres, with the highest average rainfall recorded in February (202.1 millimetres), and the lowest average rainfall recorded in August (0 millimetres).

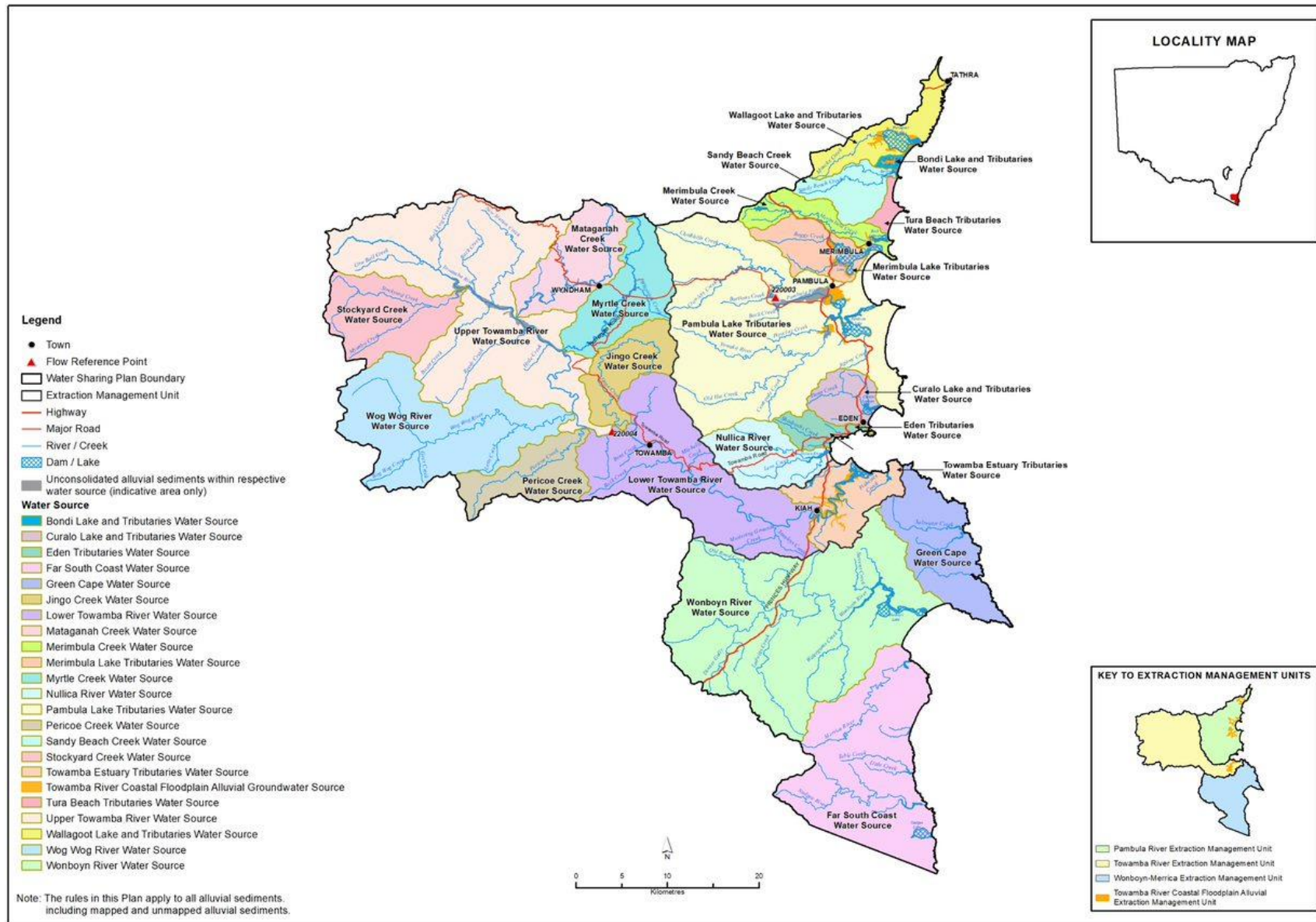


Figure 1 Towamba River Unregulated and Alluvial Water Sharing Plan area

5.2 Current and previous plans

The [previous water sharing plan](#) commenced on 1 August 2009.

You can find more information on the development of the previous water sharing plan in the [Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2010 – background document \(PDF 629 KB\)](#).

The previous water sharing 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. A report to assist community consultation \(PDF 647 KB\)](#)
- [Macro water sharing plans – approach for unregulated rivers. Access and trading rules for pools \(PDF 621 KB\)](#)
- [Macro water sharing plans – the approach for groundwater. A report to assist community consultation \(PDF 1.67 MB\)](#)

The water sources are now managed under the *Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023*.

5.3 Developing the 2023 plan

The department is responsible for implementing the WM Act, including developing water sharing plans for NSW water resources. The replacement water sharing plan was prepared based on:

- the section 44 [audit between 2010 and 2015 of the Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2010](#) (PDF 3.7 MB).
- recommendations from the [Natural Resources Commission \(NRC\) 2021 review of the Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2010](#) (PDF 3.21 MB). You will find a summary of NRC recommendations and how the new water sharing plan has addressed them in ‘Appendix 3 – Responses to Natural Resources Commission recommendations’
- updated data, information and science
- the deliberations across government agencies including: the Water group and Environment and Heritage branch within the Department of Planning and Environment; Department of Primary Industries’ Agriculture and Fisheries branches; and the Natural Resource Access Regulator
- consultation with Bega Valley Shire Council
- consultation with the wider community.

You can download the [Towamba River Unregulated and Alluvial Water Sharing Plan Audit \(PDF 3.7 MB\)](#) from the department’s website.

Details of the changes from the 2010 to the 2023 water sharing plan are given in section 6 of this document.

You can find information on the public exhibition phase in section 7 of this document.

5.3.1 First Nations consultation

We consulted with the Eden Local Aboriginal Land Council in February 2021 in conjunction with discussions for the South Coast Regional Water Strategy. We contacted the Local Aboriginal Land Council prior to the public exhibition period to ask if they were interested in another meeting although they were unable to attend.

5.4 Public exhibition and finalising the 2023 plan

The department exhibited the draft replacement Towamba River water sharing plan between 9 May 2022 and 19 June 2022. We held 2 public information sessions to inform the public and get feedback on the draft water sharing plan. These were in the form of an online webinar on 19 May 2022 and a face-to-face session in Towamba on 26 May 2022.

During the public exhibition period, there were 564 unique hits on the plan's public exhibition website. We had phone discussions with 3 members of the public, and one meeting with a local government representative.

We received 8 submissions. Issues raised in submissions are summarized in the Outcomes of Public Exhibition factsheet.

In finalising the draft plan, the department considered submissions as well as further deliberations and input from government agencies including the Water team and Environment & Heritage team from Department of Planning and Environment, the Department of Primary Industries' Agriculture and Fisheries divisions, and the Natural Resources Access Regulator.

Section 6 of this document details changes from the 2010 plan to the 2023 water sharing plan. Appendix B gives details of changes, including if a change was in response to submissions received.

6 Changes from the 2010 plan to the 2023 plan

6.1 Changes in the replacement 2023 plan

Key drivers for the changes between the previous 2010 plan and the replacement 2023 plan included:

- Natural Resources Commission's review recommendations
- contemporary water resource policy – changes to the plan align it with current policy to help improve efficiency and consistency in achieving water resource management objectives across the state. These changes range from purely administrative to more substantial
- 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 understand, while ensuring provisions can be implemented and are legally accurate.

Changes were made to:

- the general layout of the plan
- include a new alluvial groundwater water source
- the vision, objectives, strategies, and performance indicators
- the location of planned environmental water provisions
- update to the definition of the long-term average annual extraction limit (LTAAEL)
- change the map to include updated information and provide more clarity
- update flow reference points and access rules
- update the basic land holder right estimate and access licence share components
- update distance rules for groundwater works
- remove total and individual daily extraction limits (TDELs and IDELs)
- update trade provisions by allowing trade into Mataganah Creek, Myrtle Creek, Upper Towamba River, Wog Wog River and Lower Towamba River water sources
- the high-priority, groundwater-dependent ecosystem (GDE) map to reflect updated information
- prohibit water supply works approvals near potential acid sulfate soils and coastal wetlands (Resilience and Hazards State Environmental Planning Policy) where the works may cause harm
- adaptive management and amendment provisions.

Appendix B – Substantive changes made between draft and final water sharing plan details changes between the publicly exhibited draft and the final 2023 plan, including if a change was in response to submission received.

For a summary of all issues raised in submissions, regardless of whether they led to a change, please refer to the Outcomes of public exhibition fact sheet.

6.1.1 General layout changes

There are several structural layout changes to the plan. We may have moved or reworded clauses, but their intent is the same. Such changes reflect updated template styles that 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. Examples of such changes include removal of unnecessary notes, as well as moving and consolidating amendment provisions to the amendment part of the plan.

6.1.2 Including a new alluvial groundwater water source

Part 1 of the plan describes the area and water to which the plan applies. The 2010 plan comprises 22 surface water sources, which includes groundwater located in the upriver alluvial sediments upstream of the mangrove limit.

The 2023 plan establishes a new water source to manage groundwater extractions from alluvial deposits downstream of the mangrove limits. The extent of the water source captures alluvial deposits that are less connected to the overlying surface water than upriver alluvial sediments.

The new water source is named the ‘Towamba River Coastal Floodplain Alluvial Groundwater Water Source’. The plan name reflects that it manages alluvial resources.

Any existing WM Act groundwater licences within the alluvial water source will be amended to reflect the new water source. The establishment of the new alluvial water source should not result in tangible changes or impacts to water availability for existing water users taking from the water source area.

Water sources managed under a water sharing plan are subject to long-term average annual extraction limits (LTAAELs). We propose an LTAAEL of 202 megalitres for the new alluvial water source. This volume caters for current and estimated future demand and is the equivalent to 25% of the average annual recharge for the water source. For more information on setting the LTAAEL for this water source, see the water source rule summary sheet available on the department’s website.

In determining the limit, the department considered the principles set out in [Macro water sharing plans – the approach for groundwater \(PDF 1.67 MB\)](#).

We make available water determinations each year to allow a volume of water for each water allocation account. The plan sets out the rules for how those accounts are to be managed.

We also use available water determinations to return extraction in a water source to the to the LTAAEL, if it is exceeded. . It is unlikely that water extraction will exceed the LTAAEL in this water source because the extraction limit is much higher than combined current entitlement and basic landholder rights use.

Aboriginal Community Development and Aboriginal Cultural Specific Purpose access licences may be granted in this water source. Additional licence shares may be granted through a controlled allocation process because the current entitlement and basic landholder rights extraction are well below the LTAAEL.

Trading into the Towamba River Coastal Floodplain Alluvial Groundwater Source is prohibited.

6.1.3 Identification of planned environmental water provisions

Planned environmental water (PEW) is a key component of water sharing plans. The previous plan had a section on PEW that directed readers 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 current plan includes the rules associated with PEW in the relevant sections. Wherever a clause or section of the plan relates to PEW, a note is included, pointing to the relevant section of the WM Act.

6.1.4 Vision, objectives, strategies and performance indicators

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

- health of the water sources and their 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.

The objectives are set out, as are the strategies required to achieve objectives.

We will use the performance indicators to measure the success of the strategies. We have updated this.

6.1.5 Update the definition of long-term average annual extraction limit

The long-term average annual extraction limit (LTAAEL) limits extractions over the long term.

In response to recommendations from the Natural Resources Commission we have split the LTAAEL into 2 components and incorporated all basic landholder rights extraction, including harvestable rights extraction.

The **standard LTAAEL** applies to take from all flows and includes all basic landholder rights extraction (including harvestable rights). This is a fixed volume.

The **higher flow LTAAEL** applies to extraction that can only occur from high flows. This volume can vary as licences are converted to high-flow licences, licences for initial fills of dams and Aboriginal Community Development Licences.

Including maximum harvestable right as at the commencement of the first plan in the standard LTAAEL and fixing the standard LTAAEL allows us to manage any growth in water extraction. If extraction increases to more than 5% above the standard LTAAEL (from licenced take plus basic

landholder rights take, including harvestable rights) then we may announce a reduced available water determination to bring extractions back to the extraction limit. The reduced available water determination can only be applied to licenced water users.

6.1.6 Change to the plan map and plan extent to that shown on the 2010 plan map

The limit of the plan is defined in the plan and shown on the plan map. The updated plan map is included here as Figure 1.

We changed the map to reflect the inclusion of the floodplain alluvial groundwater as a new water source below the mangrove limit.

During public exhibition of the current plan, an error was identified in the mapping of Upper Towamba River Water Source and Mataganah Creek Water Source. We corrected this error so that New Station Creek is captured in the Upper Towamba River Water Source.

6.1.7 Aboriginal community development licences

The plan allows for applications for Aboriginal community development licences in the following water sources to a combined total of 306 ML/yr:

- Upper Towamba River
- Lower Towamba River
- Jingo Creek Water Source
- Mataganah Creek Water Source
- Myrtle Creek Water Source
- Wog Wog River Water Source.

Aboriginal Community Development licences can take in higher flows only. Under this type of licence, extraction can start when flows are above 51 ML/day, above the 50th percentile.

6.1.8 High flow conversions

Water access licences can be granted in some water sources for extraction in high flows in the form of a high flow access licence. To obtain a high flow access licence, shares of an unregulated river access licence need to be surrendered. To encourage uptake of high flow conversions, 1 unit share of unregulated river access licence can be converted to 2.5 unit shares of high flow access licence. High flow conversions would be allowed in the following water sources, to the specified limits:

- Upper Towamba River Water Source to 167 unit shares
- Lower Towamba River Water Source to 119 unit shares
- Mataganah Creek Water Source to 44 unit shares
- Myrtle Creek Water Source to 65 unit shares.

6.1.9 Update to flow reference points and access rules

The 2010 plan had an access rule of no visible flow at the take site for Pambula Lake Tributaries Water Source. There is a gauge located in this water source which is used as a flow reference point in the current plan. The water source has very high ecological values and is experiencing stress from water take in low flows. The current access rules will provide protection for those high values and the estuary.

The current plan refers Wog Wog River, Jingo Creek, Mataganah Creek, Myrtle Creek, Upper Towamba and Lower Towamba River water sources to gauge number 220004 Towamba River. These water sources contain high and very high ecological values, including the endangered Australian grayling fish species. Extraction of the low flows is also causing a medium level of stress to the downstream Lower Towamba River Water Source. Access rules in the plan provide protection for the very high and high ecological values and reduce hydrologic stress downstream.

Access rules can be viewed in the plan itself, or in the water source rule summary sheets.

6.1.10 Updates to basic landholder rights estimates and licence share components

We have updated our estimate of extraction of water under basic land holder rights. We have also updated the water access licence share components (water entitlements for each water source) to reflect total share components for each water source at the commencement 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 basic landholder rights. These methods were superseded by a standard NSW approach to support the development of surface and groundwater macro sharing plans in 2010.

For the current plan, we adopted the method used in the development of macro water sharing plans to estimate the requirements of domestic and stock basic landholder rights. This method can be found in Appendix 5 of the [Replacement Water Sharing Plan Manual \(PDF 1.28 MB\)](#).

The estimates in the current plan may differ from estimates in the previous plan due to changes in land use, population density and the availability of more accurate spatial data.

No native title rights existed in the plan on the day it commenced but if a native title determination is made that includes a volume of water, this volume can be included in the water sharing plan.

We have included a volume of harvestable rights in the plan. This volume represents 10% of rainfall run-off from land that is, or could be, used for a purpose that could have a harvestable right. This volume represents the harvestable rights that existed at the commencement of the first water sharing plan which was the 2010 plan.

6.1.11 Update to distance rules for groundwater works

We have included standard distance rules for groundwater works in the current plan.

The rules include those for:

- minimising interference between water supply works

- water supply works located near contamination sources
- water supply works located near high-priority groundwater-dependent ecosystems
- water supply works located near potential acid sulfate soils
- water supply works located near groundwater-dependent culturally significant areas
- water supply works used solely for basic landholder rights
- replacement groundwater works.

New or amended water supply works will not be granted:

- within 500 metres of a contamination site identified by the plan
- within 250 metres from the edge of a contamination plume and an onsite sewage system
- between 250 and 500 metres of the edge of a contamination plume where drawdown will occur within 250 metres of the edge of the contamination plume.

The plan states that new works to take groundwater must be a minimum of 200 metres from a high-priority groundwater-dependent ecosystem (GDE) identified on the GDE map. unless. However, the restrictions in relation to GDEs does not apply if:

- there is not a high probability of groundwater dependence for the relevant ecosystem
- the work is to be used solely for basic landholder rights
- it is a replacement groundwater work
- the work is for monitoring environmental remediation activities or emergency services
- the location of the water supply work at a lesser distance would result in no more than minimal harm to the groundwater-dependent area.

The plan also has rules for the minimum distance that a groundwater bore can be from a groundwater-dependent culturally significant site. These are 100 metres from a groundwater-dependent culturally significant site if the bore is for basic landholder rights, and 200 metres for all other bores.

Distance rules for new bores near existing bores on neighbouring properties changed from what was included in the 2010 plan. Distance restrictions in the 2010 plan were smaller than other coastal water sharing plans. To prevent impacts to bores on neighbouring properties, standard distances will be applied:

- 200 metres from a bore on a neighbouring property (whether it is used solely for basic landholder rights or licenced extraction)
- 100 metres from the boundary of another property that has a bore unless written consent has been provided from the licence holder of the bore on the neighbouring property.

Before a groundwater water supply work is approved, the application goes through an assessment process to make sure the work would not have impacts to connected surface water, the aquifer, neighbouring bores or GDEs. More information on groundwater assessments is found on the [department's website](#).

6.1.12 Removal of daily extraction limits

The previous plan included a provision that established total daily extraction limits (TDELs) and individual daily extraction limits (IDELs). However, establishing and implementing daily extraction management requires additional infrastructure and management effort including:

- actual or simulated streamflow data
- operational gauges providing daily flow information
- announcements to all users of daily flow class
- daily pumping/metering information
- improved data storage and management
- audit and compliance.

Because of the lack of operational gauges and metering information, implementing daily extraction limits is not possible in the plan. Therefore, we have removed the TDEL and IDEL provisions and replaced them with an amendment clause that allows for establishing TDELs and IDELs as appropriate in the future provided the amendments will not substantially change the LTAAEL.

6.1.13 Changes to trade provisions

Trade between water sources is prohibited if the water sources are hydrologically disconnected. In the plan, the following water sources are disconnected therefore no trade into the water source is allowed:

- Far South Coast Water Source
- Wonboyn River Water Source
- Green Cape Water Source
- Nullica River Water Source
- Eden Tributaries Water Source
- Curalo Lake and Tributaries Water Source
- Pambula Lake Tributaries Water Source
- Merimbula Lake Tributaries Water Source
- Merimbula Creek Water Source
- Tura Beach Tributaries Water Source
- Sandy Beach Creek Water Source
- Bondi Lake and Tributaries Water Source
- Wallagoot Lake and Tributaries Water Source.

The previous plan did not allow trade between any water sources. The risk assessment approach allows us to identify the location of high ecological values within a water source. Because of this and changes to the overall ecological value (called 'consequence' in the risk assessment), we have increased trade opportunities.

Trade is generally allowed between the other water sources in a downstream direction.

Myrtle Creek, Mataganah Creek and Upper Towamba River water sources can trade in an upstream direction into Wog Wog River water source.

Upstream trade is allowed into Myrtle Creek and Mataganah Creek Water sources if licenced shares do not increase above the number of shares in each water source when the plan commenced.

Trade within water sources is allowed, although upstream trade is prohibited in Lower Towamba River Water Source to avoid increasing extraction in areas with high ecological values.

6.1.14 Metering provisions to account for non-urban metering framework

The previous plan included a condition for all water supply works to have a meter. Under the current plan, works required to have a meter under the previous plan need to continue metering. Water supply works approval holders will see this requirement as a mandatory condition on their approval.

The plan has rules relating to the NSW non-urban metering policy. The policy is being rolled out across the state. In coastal NSW, the new metering requirements, which require metering for certain sized works and log-keeping for water extracted for smaller works, will come into effect in December 2024 For more information see the [NSW non-urban water metering framework](#) pages on the department's website.

Works that currently meter will need to ensure those meters adhere to the AS4747 metering standards before December 2024 Any new works constructed after this time will need to adhere to requirements under the non-urban metering policy.

6.1.15 Include a map of high-priority groundwater-dependent ecosystems

The new plan includes a map of groundwater-dependent ecosystems (GDEs). High-priority GDEs were not identified in the previous plan although there are provisions there for their protection.

GDEs are those ecosystems that need access to groundwater to maintain their plant and animal communities, and ecological processes.

The department recently completed a program to identify and prioritise GDEs in NSW. The identification method incorporated existing vegetation community mapping and remote sensing to identify vegetation communities, and analysed monitoring bore data to identify potential groundwater dependence of the vegetation communities. These vegetation communities are identified terrestrial GDEs that overlie alluvial resources.

The mapping was supported by field-based verification of the vegetation in sample areas representing different land cover types. Sites were selected from almost all major catchments distributed across NSW. This was done to ensure that each area had a representative geographic sample that reflected the diverse environmental conditions and management practices.

The high-priority GDEs identified in the plan map are vegetation ecosystems that have a high probability of being groundwater dependent and are of very high or high ecological value. As it is not certain (only highly probable) that the vegetation community is groundwater dependent, the water sharing plan includes a provision that ensures distance rules do not apply if there is not a high probability of groundwater dependence for the relevant ecosystem.

For further information on methods employed to identify GDEs see the paper [Methods for the identification of high probability groundwater dependent vegetation ecosystems \(PDF 8.6 MB\)](#).

The GDE map is shown in Figure 2.

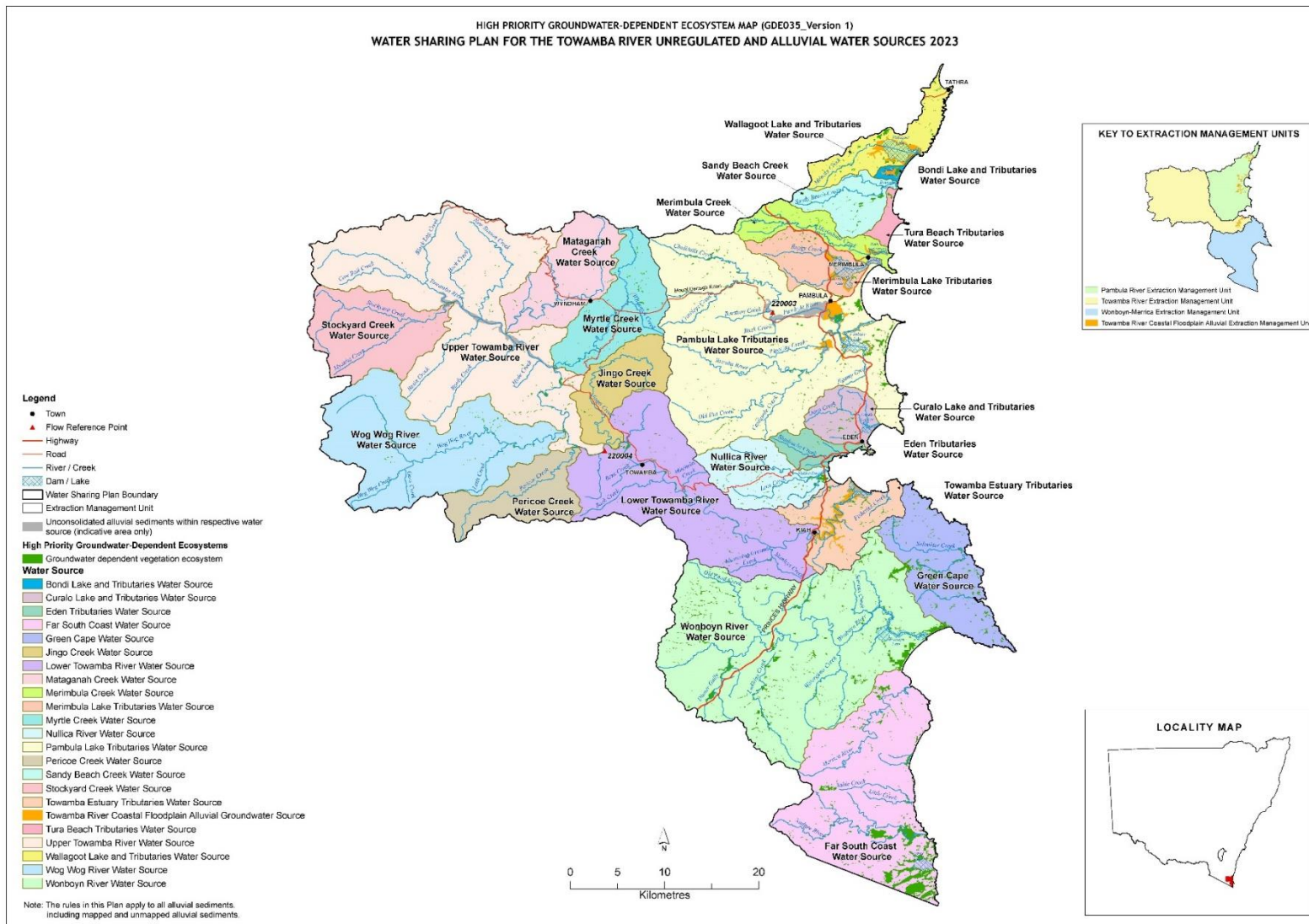


Figure 2 High-priority GDE map for the Towamba water sharing plan

6.1.16 Prohibit work approvals near SEPP wetlands and potential acid sulfate soils

The NSW *Coastal Management Act 2016* and *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP) specify how developments within the coastal zone should be assessed. The Resilience and Hazards SEPP identifies wetlands to protect their ecological values. Coastal water sharing plans must recognise these wetlands to ensure protection and align regulatory objectives.

The plan prohibits the granting of approvals for surface water or groundwater works if it would result in more than minimal harm to a wetland mapped under the Resilience and Hazards SEPP.

You can find more information about the Resilience and Hazards SEPP on the [Coastal management page](#) of the department's website.

The plan includes rules to prevent the acidification of water sources through drainage of potential acid sulfate soils. It prohibits the construction of a water supply work that takes groundwater, such as a bore, from within an area classed as having a high probability of the occurrence of acid sulfate soils.

6.1.17 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 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 provides for amendments during the life of a plan if it is in the public interest. The plan also includes provisions that allow for amendments during the life of the plan. Any future changes that impact water users or the environment's access to water will be subject to public consultation. Part 10 of the plan includes updated amendment provisions.

Examples of adaptive environmental water provisions in the plan include the:

- The ability to amend the access and trade rules in the water sharing plan if it is found that increased capture of rainfall run-off in harvestable rights dams is above the current 10% harvestable rights limit. Any such review would consider the impact the increased harvestable rights capture has on river flows.
- The ability to amend the LTAAELs to be based on a proportion of flow if more information becomes available provided the amendments will not substantially change a LTAAEL.

7 Monitoring, evaluation and reporting

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

Comprehensive monitoring, evaluation and reporting programs are resource intensive and long term. We must prioritise areas where there is a high risk of water extraction impacting on environmental assets or where the demand for water is greater than the volume of water available.

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

8 Areas for further work

Determine flow requirements for key assets and functions

Several government agencies such as DPI – Fisheries and the department’s Environment and Heritage division are working on flow requirements for key assets and ecosystem functions. As these become available and there is sufficient flow data, this information can be used in making water sharing decisions.

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 water ways while ensuring adequate water is available for the environment and water users who rely on this water.

Harvestable rights

Harvestable rights are the rights of a landholder to capture a proportion of runoff from their property. From May 2022, landholders in coastal-draining catchments of NSW are able to capture up to 30% of the average regional rainwater run-off from their property. They will be able to do this in harvestable right dams built on non-permanent minor streams, hillsides and gullies. The remaining runoff will flow into licensed dams and the local river systems, where it is shared among all water users and the environment.

This increase from a 10% limit to a 30% one follows a review and community consultation of harvestable right limits in coastal-draining areas of NSW. It will give landholders in coastal-draining catchments better access to water storage for specific purposes. The permitted uses of the increased right are limited and described on the departments [Harvestable Rights](#) web page.

The department assessed the potential effects on downstream flows that are important for the environment and water users. In some case study catchments, we did this through a hydrological modelling study as part of the review of coastal harvestable rights. These effects were detailed in a discussion paper published for community consultation. The effects varied between catchments.

We will complete more detailed assessments for each catchment to confirm the appropriateness of the 30% limit at a local level. In the meantime, the following important mitigation measures will be in place:

- Harvestable rights dams will continue to be limited to first- and second-order streams, hillsides and gullies to manage the effect on baseflows.

- There will be limits on use for domestic, stock and extensive agriculture purposes to limit demand on water and overall volume taken in harvestable right dams.
- We will ensure landholders who can already take more rainfall runoff than their current maximum harvestable right dam capacity under regulatory exemptions can't benefit from the change over and above other landholders.
- We will require landholders to notify the department of the construction of any larger dams so growth in farm dam development can be monitored and factored into future water planning processes.

To manage any potential effects from increased harvestable rights, we will review the uptake of harvestable rights by year 3 of the plan. If the uptake of harvestable rights has exceeded 10% of the average regional rainfall run-off, we will review the rules for access, trade and works approvals.

Sustainable long-term average annual extraction limits

The Natural Resources Commission has recommended that long-term average annual extraction limits on the coast should be set at a sustainable level. We are considering ways of doing this.

The plan sets a numerical and fixed standard long-term average annual extraction limit and a separate, specific limit for high flows only. This will limit take from low flows.

Climate change

Priority 4 of the State Water Strategy is to increase resilience to changes in water availability (variability and climate change). The 2021–22 State Water Strategy 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.

The department is developing 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 look to develop sustainable long-term average annual extraction limits, we will consider the future effects of climate change. Rising sea level models may also be incorporated into future water sharing decisions.

Appendix 1 – References and supporting documents

- [Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023 maps, background document and rule summary sheets](#)
- [NSW Legislation website](#) – contains NSW legislation, including the WM Act
- [National Water Initiative](#)
- The previous water sharing plan, the [Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2010](#)
- The [background document](#) for the previous (2010) water sharing plan.
- [Replacement water sharing plan manual \(PDF 1.28 MB\)](#) – describes processes followed in developing replacement plans
- Details of the macro planning approach:
 - [Macro water sharing plans – the approach for groundwater \(PDF, 1.63 MB\)](#) – A report to assist community consultation
 - [Macro water sharing plans – the approach for unregulated rivers \(PDF 646 KB\)](#) – A report to assist community consultation
 - [Macro water sharing plans – the approach for unregulated rivers \(PDF 621 KB\)](#) – Access and trading rules for pools
- The Natural Resources Commission’s Review of the previous (2010) plan for [Bega and Brogo Rivers, Murrah Wallaga and Towamba River – Final report \(PDF 3.21 MB\)](#) and [Review of the South Coast water sharing plans – Report Summary \(PDF 1.03 MB\)](#)

Appendix 2 – Substantive changes made between draft and final water sharing plan

Table 1 explains the substantive changes made between the publicly exhibited draft and final versions of the *Water Sharing Plan for the Towamba River Unregulated and Alluvial Water Sources 2023*.

Table 1 Provisions which changed post public exhibition

Provisions proposed in the publicly exhibited draft replacement plan	Final 2023 plan provision	Reason for change
<p>A cease to pump rule of 6.5 ML/day and a commence to pump rule of 34 ML/day was proposed in the following water sources:</p> <ul style="list-style-type: none"> • Wog Wog River • Jingo Creek • Upper Towamba River • Lower Towamba River • Mataganah Creek • Myrtle Creek. 	<p>The commence to pump rule included in the final plan is the same as in the previous (2010) plan which is 15 ML/day.</p>	<p>There was community concern over an increase in commence to pump rule from 15 ML/day to 34 ML/day. A review of the flow data and risk assessment shows the rule change would not have delivered significantly more environmental benefit than the current rule. This considers the low level of entitlement, the flashy nature of flow in the system, and low likelihood ratings for the fresh and high flows in these water sources.</p>

Provisions proposed in the publicly exhibited draft replacement plan	Final 2023 plan provision	Reason for change
<p>Allowance for high flow conversions in Upper Towamba River Water Source, Jingo Creek Water Source, Wog Wog River Water Source and Lower Towamba River Water Source were removed.</p> <p>High flow conversions are allowed at a conversion rate of 1 unregulated river unit share to 2.5 high flow unit shares in:</p> <ul style="list-style-type: none"> • Myrtle Creek Water Source to a limit of 44 unit shares. • Mataganah Creek Water Source to a limit of 65 unit shares. 	<p>High flow conversions can also be granted above the 50th percentile in Upper Towamba River and Lower Towamba River water sources.</p>	<p>There was some stakeholder concern about removing the ability to apply for high flow conversions in Upper Towamba River and Lower Towamba River Water sources.</p> <p>Further investigation following public exhibition identified that limited high flow extraction in these water sources would not have impacts to the fresh or high flows due to the catchment's flashy nature. Due to this it is appropriate to allow high flow extraction in these water sources.</p>
<p>The ability to apply for unregulated river - subcategory Aboriginal community development licences (ACDLs) was removed in Upper Towamba River and Lower Towamba River Water Sources. The total combined limit for ACDLs in 4 water sources of the Towamba River Extraction Management Unit is 306 ML/yr.</p> <p>Upper Towamba River Water Source and Lower Towamba River Water Source were removed from this list due to the presence of flow dependent threatened Australian Grayling and Australian Bass.</p>	<p>ACDLs can also be granted above the 50th percentile in Upper Towamba River and Lower Towamba River water sources. The combined limit for the extraction management unit remains the same – 306 ML/yr allowed in all water sources.</p>	<p>Further investigation post public exhibition identified that limited high flow extraction in these water sources would not have actual impacts to the fresh or high flows due to the catchment's flashy nature and large flows. Due to this it is appropriate to allow ACDLs and high flow extraction.</p>

Appendix 3 – Responses to Natural Resources Commission recommendations

This appendix lists recommendations and actions proposed by the Natural Resources Commission in its review and our responses and actions taken in response to these recommendations. The commission's review combined Bega and Brogo, Murrah Wallaga and Towamba River water sharing plans. Only recommendations and actions relevant to Towamba have been included.

Towamba – key recommendations

Overall

Recommendation 1

The Commission recommends that [the plan be]:

- a) extended for a further 2 years until 30 June 2023, to allow time to complete data collection, analysis and modelling
- b) replaced by 1 July 2023 supported by the completion of the recommendations of the review and consideration of outcomes from the South Coast Regional Water Strategy and other regional planning initiatives where relevant.

Department's response to recommendation 1 at May 2021

We welcome the recommendation to extend the plan for 2 years.

Action taken on recommendation 1 as of November 2022

Status: closed

The plan was extended for two years and a replacement plan is to commence by 1 July 2023.

The water sharing plan considered options being reviewed by the South Coast Regional Water Strategy and increased harvestable rights.

Ensuring sustainable extraction

Recommendation 2

By 1 July 2023, to ensure all extraction under the plans is managed to protect, preserve and maintain the water sources, aquifer integrity and dependant ecosystems, [the department] should:

- a) establish and publish sustainable fixed, numeric LTAAELs, ensuring they are based on best available information, including ecological requirements, an accurate estimate of basic landholder rights and climate change
- b) undertake regular LTAAEL compliance assessments, ensuring they are underpinned by clear, publicly available procedures requiring consideration of basic landholder rights estimates that are no more than five years old when assessing compliance with extraction limits.

Department's response to recommendation 2 at May 2021

- a) The department is investigating a method for determining a 'sustainable LTAAEL' for coastal catchments that will consider ecosystem requirements where these are known, recharge and hydrogeological boundaries for groundwater and connectivity. The investigation will consider extraction at both high and low flows. We are considering a numerically based LTAAEL in the replacement plans.
- b) In the development of implementation programmes for the plans, the department will consider methods for assessing compliance with extraction limits, including developing procedures. This will include estimating annual take by basic landholder rights. We note the need for this estimate to be current in these water sources.

Action taken on recommendation 2 as of November 2022

Status: In progress - closed.

The way the LTAAEL has been described in the plan has been reviewed. It has been divided into a standard LTAAEL and higher-flow LTAAEL. The standard LTAAEL is fixed at the volume at the commencement of the replacement plan for entitlement and the volume at commencement of the first water sharing plan for basic landholder rights. There are very limited circumstances under which the standard LTAAEL can vary, and this is associated with licences being converted from the *Water Act 1912* to *Water Management Act 2000* licences or licences being cancelled for environmental purposes. The LTAAEL has also been updated to be consistent across the coastal systems to include the harvestable rights component of basic landholder rights.

Current licence entitlement in each water source has been updated.

The appropriateness of high flow conversion licences have been reviewed and changes made to ensure only water sources that can support high flow conversions allow them. This assessment included a review of instream and downstream ecological factors.

Licence holders in the Towamba area are required to have a meter. This information can be used to estimate annual take. The department is currently working on a method to estimate take under harvestable rights.

Recommendation 5

By 1 July 2023, [the department] should complete [its] review of trade for coastal catchments and review and address trade barriers for these plans, including but not limited to options to combine water sources and increase flexibility to trade into high flows. Any changes to trade rules should maintain protections for high-value aquatic ecosystems and cultural values, including considering latest HEVAE mapping and risk assessments.

Department's response to recommendation 5 at May 2021

The department is investigating a revised approach for trade. The approach will seek to encourage trading in unregulated rivers in NSW. The trade review will evaluate the levels of entitlement that could be traded into a water source without unreasonably risking riverine ecology and effects on water users.

The department is also undertaking a new risk assessment based on HEVAE mapping. The assessment includes updating variables with the latest data to inform any update to plan rules including trade as part of plan replacement. Where the risk assessment identifies opportunity for trade these will be considered in line with the principles of the *Water Management Act 2000*.

Socio-economic benefits of extraction will be considered alongside environmental requirements when reviewing rules in the water sharing plan.

Action taken on recommendation 5 as of November 2022

Status: closed

Trade opportunities have been reviewed in the plan. Where risks from extraction have reduced as identified in the risk assessment, potential for trade was reviewed. Generally, trade would be allowed between hydrologically connected water sources where hydrologic stress is low or medium. Water sources with medium hydrologic stress only allow trade in once shares have been traded out so there is no net gain of extraction or exacerbation of hydrologic stress in those water sources.

The location of high values based on HEVAE mapping was taken into account, and these high values are generally avoided. For example, where high values exist in upper reaches of a water source, upstream trade within the water source is prohibited, encouraging downstream trade.

Strengthening environmental protections

Recommendation 6

To ensure estuary condition is maintained in the plan areas, [the department] should:

- a) by 1 July 2023, establish clear objectives and estuarine flow requirements for estuaries across the plan areas
- b) by 1 July 2023, include provisions to achieve the estuarine flow requirements defined in (a), including clear agency responsibilities
- c) use data from the [the department's then Environment, Energy and Science branch] estuarine monitoring program and NSW Food Authority to monitor estuarine condition and identify changes to estuarine condition that may be impacted by the plans. Plan provisions should be adjusted as required to ensure that there is sufficient planned environmental water to respond to the needs of these estuaries.

Department's response to recommendation 6 at May 2021

a) DPIE Water undertakes the Estuary Inflow Risk Assessment which assesses the risk of insufficient inflows to NSW estuaries. It is not possible at this time to develop estuary-specific flow targets due to the individual dynamics of each estuary.

b) Current projects are attempting to build hydrodynamic models for specific estuaries. It is unlikely this will be practical for each estuary. Efforts will be focused on estuaries at high risk from extraction.

c) The Estuary Inflow Risk Assessment reviews a range of evidence from various agencies. Components of Estuary Health Assessment are used, but those components influenced by flow are given more consideration. Land-use pressures, for example, are not able to be influenced by flow, and are thus excluded from the Inflow Assessment. Oyster and fisheries values are considered flow-dependent, and thus are included in the assessment. As part of the plan replacement consideration will be given to any provisions that may be required to provide environmental water for estuarine needs.

Action taken on recommendation 6 as of November 2022

Status: closed.

Decisions around flow classes and access rules consider the instream, downstream and GDE values and impact on these values from extraction. The risk assessment considers the value of each estuary and evaluates the risks of extraction impacting on the ecological values of the estuaries.

Water sharing rule decisions take into account the risks to estuaries identified in the risk assessment.

Recommendation 7

By 1 July 2023, to ensure threatened species and endangered ecological communities are protected, [the department] should:

- a) finalise work to establish environmental flow requirements for coastal aquatic species and ensure that plan rules adequately protect them
- b) amend plan rules (for example, cease-to-pump rules and TDEs) where evidence indicates unacceptable impact on low flows
- c) implement monitoring within the plan areas at key strategic locations where significant extraction overlays high environmental values
- d) complete HEVAE mapping so that there is an updated assessment of strategic monitoring locations
- e) update any necessary plan provisions to account for protection of threatened species where updated HEVAE assessment and extraction pressure information identifies current rules are insufficient
- f) ensure alignment with environmental objectives outlined in relevant NSW Government strategic plans including the Batemans Marine Park Operational Plan.

Department's response to recommendation 7 at May 2021

- a) The department has begun work on further understanding species requirements in coastal plan areas. In addition, we have engaged DPI – Fisheries to conduct monitoring for the project, which will:
 - consider flow requirements for functional guilds of coastal fish species with similar life cycle traits

- develop environmental watering requirements for coastal fish species
- conduct eDNA monitoring for fish in selected streams
- developing environmental watering requirements for other coastal fauna including crayfish, turtles and frogs

Completion of these tasks will inform future MER priorities, and will be used to refine risk assessment methodologies.

- b) Plan rules will be reviewed during the plan replacement process considering ecological, social and economic factors.
- c) MER priorities will be reviewed as part of the plan replacement process and be considered as part of the application of current project work being undertaken by the department in relation to developing a transparent and repeatable MER prioritisation framework and tool for water sharing plans.
- d) HEVAE mapping will be completed as part of the risk assessment and plan replacement process.
- e) The need to update plan provisions in relation to threatened species will be informed by the risk assessment results.
- f) We will review relevant water management frameworks and strategies during the development of the replacement plan.

Action taken on recommendation 7 as of November 2022

Status: closed.

We have completed the risk assessment for the plan area. This has included a single reach model that compares the flow regime with and without extraction to determine the likelihood that extraction will impact ecological values. The risk assessment uses the high ecological value aquatic ecosystem (HEVAE) framework to determine ecological values.

HEVAE identifies and defines a range of in-stream values (or level of importance) for freshwater river reaches. These values inform priority areas for focused water management, to benefit all water users including the environment. It adopts 4 criteria: diversity, distinctiveness, naturalness and vital habitat. Each criterion relies on state-wide availability of in-stream value data to produce consistent spatial mapping outcomes.

Decisions around flow classes and access rules consider the instream, downstream and GDE values and impact on these values from extraction.

Bateman's Marine Park is over 60 kilometres north of the water sharing plan area so it is not considered to be directly impacted by extraction under the Towamba water sharing plan. During the development of the replacement plan, we reviewed relevant water management frameworks and strategies.

Recommendation 8

By 1 July 2023, to improve the management of connectivity to protect water sources and dependent ecosystems, [the department] should:

- a) use best available evidence and undertake additional required studies to identify highly connected systems, including the Mid Bega River Sands
- b) revise access rules accordingly to include new bore licences beyond 40 metres from the high bank of a river for areas that are identified in (a) as being highly connected and stage access rules for existing bores
- c) determine the level of connectivity between the aquifers and rivers in the plans and coastal sands aquifers and, if highly connected, provide protection
- d) include comprehensive definitions for surface-groundwater connectivity in the plan dictionaries.

Department's response to recommendation 8 at May 2021

- a) Where updated connectivity data is available to inform plan development, it will be used. Any improved understanding of connectivity will be reflected in documentation supporting plan development and public exhibition.
- b) Where updated connectivity information is available, access rules may be reviewed as above. They will be reviewed as part of plan replacement.
- c) The connectivity between surface water and the aquifers in the plans being replaced and in coastal sands of the South Coast groundwater plan have been determined to have a low degree of connectivity. No further monitoring is proposed for these water sources. Impacts of groundwater extraction on surface water is considered on a case-by-case basis when assessing any application for a groundwater approval.
- d) The definitions in the plan will be reviewed as part of the plan replacement process. Further explanation of connectivity will be provided in the background document to the plan.

Action taken on recommendation 8 as of November 2022

Connectivity between surface water and groundwater in the underlying South Coast Groundwater Water Sharing Plan and the Towamba Coastal Floodplain alluvium were determined to have little connectivity. Definitions for surface water and alluvial water are provided in the plan.

Recommendation 9

By 1 July 2023, to improve the management of GDEs, [the department] should:

- a) map and ground-truth the presence and extent of GDEs, including estuarine and coastal ecosystems and define their groundwater requirements
- b) clearly define groundwater terms and their relevance to the plans, including GDE priority and types (including high-priority GDEs)
- c) review the GDEs in the South Coast Groundwater Plan and where appropriate recognise them in the South Coast replacement plans
- d) review set-back distances for work near identified GDEs and standardise them based on the NSW Aquifer Interference Policy 2012.

Department's response to recommendation 9 at May 2021

- a) HEVAE mapping has been undertaken for the plan areas. High-priority GDEs have been identified. The department is considering the best approach to confirm the presence of high-priority GDEs.
- b) The definitions in the plan will be reviewed as part of the plan replacement process. The groundwater-dependent ecosystem requirements for coastal water sharing plan areas are being reviewed specifically to adopt a similar approach to those taken under the Basin Plan water resource plan definition and terms, with a coastal context where applicable.
- c) HEVAE mapping has been undertaken for these plan areas. High-priority GDEs have been identified and will be included in plan replacements as appropriate.
- d) Set-back distances vary between different aquifer types (e.g. fractured or porous rock water sources generally have different set-back distances to alluvial groundwater sources). A review of set-back distances has been undertaken as part of the water resource plan work in inland NSW, and this will be considered in review of coastal water sharing plan set-back distances.

Action taken on recommendation 9 as of November 2022

Status: closed.

The replacement plan uses the most recent GDE identification and mapping, which uses the best available information and method. We have an identification process that uses the most up-to-date information and assigns an ecological value to each GDE identified. See [High Probability GDE method report \(PDF 8.6MB\)](#). The plan also includes provisions to be updated with new information if it becomes available. We are working on a process to confirm the presence of GDEs if there is a request to build infrastructure within restricted distances.

Our GDE policy protects high-priority GDEs. Moderate- and low-priority GDEs were not considered in the replacement plan.

Set-back distance rules for new works near GDEs were reviewed and updated to align with standard distance rules as deemed appropriate by hydrological expertise.

Groundwater terms used in the plan are defined in the plan.

The Towamba River Coastal Floodplain Alluvial Groundwater Water Source has been included in the plan to manage alluvial groundwater below the mangrove limit.

Recommendation 11

By 1 July 2023, to assist the environment in recovering from bushfires and minimise future risks, [the department] should:

- a) collaborate with DPI – Fisheries and [the department's then Environment, Energy and Science team] to better understand the impacts of bushfires on aquatic species and determine any specific flow requirements that may aid recovery (e.g. cues for fish spawning)
- b) include a provision that can be triggered to support the protection of particular flow events to aid the post-fire recovery of aquatic ecosystems.

Department's response to recommendation 11 at May 2021

The department will be attending the Rivers on Fire symposium to enable project planning for bushfire impact related work to proceed. This project is likely to cover additional matters to those identified within the recommendation, with water quality and critical human needs impacts also under consideration.

The work being conducted on bushfire impacts will inform the appropriateness for associated provisions to be included in water sharing plans.

Action taken on recommendation 11 as of November 2022

Status: closed.

Specific flow requirements including spawning cues were considered during development of the Towamba plan. Our Environment and Heritage team and DPI – Fisheries both sit on the interagency working group and helped identify where the Australian grayling was located throughout the plan area. This informed investigations into plan rules which identified that fresh and high flows experience a medium likelihood of impacts due to extraction, and rules in the plan would not impact migration of the Australian Grayling or the Australian Bass which occurs in the fresh and high flows. Bushfire related impacts are not for inclusion in the water sharing plan. It may be identified that this information is important for inclusion in the Monitoring, Evaluation and Reporting document.

Securing town water supply

Recommendation 12

[The department] should continue to work with Bega Valley Shire Council as part of the regional water strategy process and plan remakes to improve town water supply systems and access. This should include:

- a) revisiting the assignment of TDELs to ensure that they are sustainable and don't unnecessarily constrain town water supply needs on a daily basis or compromise environmental values or other water users (notably domestic and stock use)
- b) consideration of an emergency management provision that, when triggered, allows the local water utility to temporarily draw on individual water sources in emergency situations
- c) investigating revision of plan provisions that provide Bega Valley Shire Council with the flexibility to optimise its water supply systems to meet peak daily demand and critical human water needs in emergency situations
- d) ensuring that plan provisions are based on best available information including:
 - up-to-date flow data
 - Bega groundwater modelling, including scenarios around increasing individual and total daily extraction limits and where possible, using these models to undertake more detailed assessment of the risks of saline intrusion of water sources used for groundwater
 - latest climate data, including stochastic modelling of climate change undertaken as part of the South Coast Regional Water Strategy.

Department's response to recommendation 12 at May 2021

The department will continue to work with Bega Valley Shire Council as part of the water sharing plan replacement to improve where possible and within the requirements of the *Water Management Act 2000* town water supply systems and access.

- a) As part of the Bega/Brogo water sharing plan replacement the department will review TDELS in terms of sustainability and constraints on water availability for town, domestic and stock purposes.
- b) Issues relating to emergency management provisions fall beyond the scope of the water sharing plan replacement. Such issues are universally addressed through the Water Management Act, specifically clause 49A 'Suspension of management plans during severe water shortages'.
- c) [omitted]
- d) In all cases, the plan replacements will be done using the best available information including updated flow data and modelling where available and relevant, including options for saline intrusion of water sources used for groundwater.
- e) [omitted]

Action taken on recommendation 12 as of November 2022

Status: Closed.

TDELS relating to unregulated river access licences have been removed from the plan as they cannot be implemented. One TDEL relating to Bega Valley Shire Council's extraction in the alluvial groundwater of Lower Towamba River Water Source has been retained. This TDEL restricts take to 1 ML/day in A class when there is no flow downstream of the take site (Kiah borefields). The water source flow reference point is a gauge located upstream of the council's take site. This rule is intended to reflect local conditions and prevent over extraction of the aquifer. It will be moved to the specific access rules section of the plan so that it can be added to Bega Valley Shire Council's licence.

The plan includes a specific access rule for Bega Valley Shire Council's extraction in the Lower Towamba River Water Source, which restricts take in the very low flow class to 1 ML/day when storage in Ben Boyd Dam is more than 50%, and allows an increase to 2.5 ML/day when storage is less than 50% in the dam. This rule acts to give council more access in drought circumstances.

Updated flow data was used during plan development.

Improving outcomes for Aboriginal people

Recommendation 13

[The department] should amend all plans to acknowledge the registered native title claim for the South Coast People. Sufficient additional time should be allowed to undertake detailed engagement with Traditional Owners on options to support these values and uses (including fishing) and make any final amendments.

Department's response to recommendation 13 at May 2021

The replacement plan will include any native title determinations that have been made and an amendment provision to amend native title rights following the granting of a native title claim during the life of the plan - this information would be specific to each determination.

The department liaises with native title claimants and determinants regarding water associated with their determination. No immediate update of the plans is needed and no amendments will be made prior to the replacement plan being made as the determination does not specify any specific volumes and no Indigenous land use agreements have yet been established relevant to water.

Action taken on recommendation 13 as of November 2022

Status: closed.

No native title determinations exist in the Towamba plan area. Where native title determinations are granted, the water sharing plan will be amended as soon as practical. Amendments commonly take approximately 6 months to process as it requires sign off by multiple ministers.

Recommendation 14

In order to better achieve cultural outcomes, by 1 July 2023, [the department] should:

- a) identify and protect known high-value cultural sites in the replacement plans
- b) undertake further work with a range of Aboriginal knowledge holders, including Aboriginal women, to better understand water values and uses (including fishing), identify and protect them, and better support water access and use
- c) ensure that where additional allocations become available within the south coast plans, the Aboriginal water needs including any cultural water allocations are assessed as a priority
- d) undertake state-wide actions identified in previous Commission water sharing plan reviews to improve consideration and respect for native title and Aboriginal values in water sharing plans and ensure these are included in the NSW Aboriginal Water Strategy.

Department's response to recommendation 14 at May 2021

- a) and b) The NSW Government is working with peak Aboriginal bodies on a framework for engagement with an intention to consult with the peak bodies on a range of water related issues including regional water strategies and water sharing plans. It is anticipated that consultation will also occur with local Traditional Owners, local Aboriginal land councils and other local Aboriginal groups. This consultation will include knowledge sharing on water sharing plans and identification of opportunities to improve Aboriginal involvement of water management in NSW.
- c) and d) The department is working in partnership with peak Aboriginal groups to co-design and deliver an Aboriginal Water Strategy. The design of the strategy will consider the matters raised by the Natural Resources Commission, including access to water. We will ensure ongoing engagement with Traditional Owners, communities and relevant stakeholders for the best possible outcomes on Country.

Action taken on recommendation 14 as of November 2022

Status: closed.

Aboriginal consultation was conducted in June 2022 in conjunction with regional water strategies. This consultation intended to inform Aboriginal people in the Towamba, Bega-Brogo and Murrah/Wallaga area about water sharing plans. The consultation also sought to identify ways the water sharing plan could protect or enhance values held by Aboriginal groups in the plan area. Consultation will continue with Aboriginal organisations over the public exhibition period and over the life of the plan.

The department will work toward priorities in the State Water Strategy. Priority 2 of the State Water Strategy is to 'recognise First Nations/Aboriginal Peoples' rights and values and increase access to and ownership of water for cultural and economic purposes'.

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

Actions under the State Water Strategy include:

- strengthening the role of First Nations/Aboriginal Peoples 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 Peoples to improve shared water knowledge
- working with First Nations/Aboriginal Peoples 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 and work is progressing on an Aboriginal Water Strategy, which will identify the ways in which we can achieve the priorities under the State Water Strategy.

Monitoring, evaluation and reporting

Recommendation 15

By 1 July 2023, to improve monitoring, evaluation and reporting (MER) and plan implementation, continue to implement state-wide recommendations and suggested actions made in previous Commission water sharing plan reviews (see for reference R 18 and SA G-K in the Commission's Review of the water sharing plans for the Richmond and Tweed unregulated and alluvial water sources – Final Report).

Department's response to recommendation 15 at My 2021

NSW is developing a MER framework for coastal water sharing plans. The framework will help coordinate activities conducted by multiple agencies. In this way, MER activities can deliver on specific agency requirements and contribute to a broader understanding of water management and river and wetland health over time. The implementation of any MER programs is dependent on

having a defined, long-term budget. While every effort is made to maintain a MER program, the ability to implement aspects in a MER is limited by resources.

Action taken on recommendation 15 as of November 2022

Status: closed.

Implementation of the MER program will commence in 2023. This will clarify the roles and responsibilities, reporting requirements, governance arrangements and timeframes associated with the program.

Towamba – recommended actions to support the replacement plan

Strengthening environmental protection

Recommended action A

NSW agencies [should] continue to work with landholders to support riparian management throughout the catchments.

Department's response to recommended action A at May 2021

The department supports ongoing consideration of integrated catchment management approaches where possible. Water sharing plans are developed in accordance with the requirements of the *Water Management Act 2000*.

Action taken on recommended action A as of November 2022

No action required. Riparian condition may be identified as a parameter for inclusion in the monitoring, evaluation and reporting document.

Securing town water supply

Recommended action B

[The department] should consider simplifying the process for developing and implementing integrated water cycle management strategies and assist with upskilling local water utilities in developing and implementing strategies.

Department's response to recommended action B at May 2021

These issues fall beyond the scope of the water sharing plan replacement but are being addressed through the Town Water Risk Reduction Program.

Good strategic planning is critical to the successful development, delivery and management of water supply and sewerage services to communities.

The department provides funding towards integrated water cycle management strategies, a detailed checklist, and support from staff to assist utilities.

The NSW Government in partnership with local water utilities and the wider water sector is collaborating on the Town Water Risk Reduction Program to improve the regulatory framework for strategic planning and options to address skills shortages in regional NSW. The program will develop a new approach to strategic planning.

Details are available in the [Town Water Risk Reduction Program pages](#) of the department's website.

Action taken on recommended action B as of November 2022

No actions required. This is out of scope for the plan replacement.

MER and implementation

Recommended action C

[The department should] work with other agencies, including its then Environment, Energy and Science team and Department of Primary Industries – Fisheries, to implement MER programs to examine bushfire impacts and potential implications for plan rules to aid recovery of aquatic ecosystems.

Department's response to recommended action C at May 2021

Response as per recommendation 11.

Action taken on recommended action C as of November 2022

The departments Water team will continue to work collaboratively with the Environment and Heritage team, and Department of Primary Industries – Fisheries to conduct MER programs in this plan area. Collaborative project with Environment and Heritage has commenced.