



Murray–Darling Basin Plan: Implementation review 2023

Interim report

This interim report has been prepared for further public consultation and input. The Commission will finalise its report after these processes have taken place.

The Productivity Commission acknowledges the Traditional Owners of Country throughout Australia and their continuing connection to land, waters and community. We pay our respects to their Cultures, Country and Elders past and present.

The Productivity Commission

The Productivity Commission is the Australian Government’s independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission’s independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission’s website (www.pc.gov.au).

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Opportunity for comment

The Commission thanks all participants for their contribution to the review and now seeks additional input for the final report.

You are invited to examine this interim report and comment on it by written submission to the Productivity Commission, preferably in electronic format, by 20 November 2023.

Further information on how to provide a submission is included on the inquiry website:
www.pc.gov.au/inquiries/current/basin-plan-2023

The Commission will hold further discussions with participants and prepare a final report after further submissions have been received. The Commission will forward the final report to Government in December 2023.

Commissioners

For the purposes of this inquiry and interim report, in accordance with section 40 of the *Productivity Commission Act 1998* the powers of the Productivity Commission have been exercised by:

Joanne Chong	Commissioner
Chris Guest	Associate Commissioner

Terms of reference

I, Jim Chalmers, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission (the Commission) undertake an inquiry into the effectiveness of the implementation of the Basin Plan 2012 (Cth) (Basin Plan) and water resource plans.

Background

The Basin Plan provides for the integrated management of water resources of the Murray–Darling Basin in ways that optimise the objectives and outcomes in section 5.02 of the Basin Plan and promote the objects of the *Water Act 2007* (Cth) (Water Act).

Under section 87 of the Water Act, the Commission is required to undertake five-yearly assessments of the effectiveness of the implementation of the Basin Plan and water resource plans. This inquiry is the second such assessment. The first assessment was completed on 19 December 2018. This subsequent 5-year assessment is due 19 December 2023.

Scope of the inquiry

In accordance with the provisions of Part 3 of the Water Act, the Commission is to report on the matter of the effectiveness of the implementation of the Basin Plan and water resource plans for the five-year period ending 19 December 2023.

In undertaking the inquiry, the Commission should assess the progress towards implementing the Basin Plan, including the:

- extent to which the Basin Plan is on track to be delivered within statutory timeframes,
- the likelihood and extent to which activities and arrangements currently in place will ensure that these provisions and timeframes will be met,
- the effectiveness of reforms to address previous Productivity Commission recommendations, including the Joint Basin government response to the Productivity Commission inquiry report: Murray–Darling Basin Plan: Five-year Assessment (2019), and
- the extent to which the current framework for implementing the Basin Plan, including the framework for monitoring, reporting and evaluation, is likely to be effective in supporting implementation of the Basin Plan.

In undertaking this assessment, the Commission should have regard to relevant agreements and reviews or audits that have recently been completed or are ongoing. Where possible, the Commission should avoid unnecessary duplication with recently completed or ongoing reviews, including those focused on compliance and enforcement, Basin Plan implementation, the Murray–Darling Basin water reform roadmap and national water reform.

The Commission should consider the impact of major droughts, floods, and the COVID-19 pandemic on the effectiveness of implementing the Basin Plan and water resource plans over the assessment period.

The Commission should also have regard to the differing responsibilities of the Basin states, the Department of Climate Change, Energy, the Environment and Water (DCCEEW), the Inspector-General of Water

Compliance (IGWC), the Commonwealth Environmental Water Holder (CEWH), the Murray–Darling Basin Authority (MDBA), the Australian Competition and Consumer Commission (ACCC) and the Bureau of Meteorology (BOM).

The Commission should assess progress towards full Basin Plan and water resource plan implementation in the context of the differing timeframes applicable.

The Commission should make findings on progress to date and recommendations on any actions required to ensure full implementation of the Basin Plan and water resource plans.

The Commission should also consider and provide practical advice on the Basin Plan and water resource plans that could improve:

- the operation of the Basin Plan and water resource plans, particularly their ability to address future challenges including the impacts of climate change, their recognition of First Nations values, and their ability to efficiently support the maturation of environmental water management; and
- the efficiency and effectiveness of implementing the Basin Plan and water resource plans and contribute to the information available for the 2024 review of the Water Act and the 2026 review of the Basin Plan.

Given the breadth of the issues available for consideration, the Commission should consider reporting separately on:

- the effectiveness of the implementation of the Basin Plan and water resource plans over the five years since the previous assessment; and
- advice and recommendations on future actions and opportunities to simplify the framework of the Basin Plan to ensure effective achievement of its outcomes.

Process

In undertaking the inquiry, the Commission should undertake an appropriate public consultation process, including establishing a stakeholder working group in accordance with section 89 of the Water Act, inviting public submissions and releasing a draft report to the public.

The Commission should consult widely with relevant Australian Government, Basin state and territory government agencies, key interest groups and affected parties. These consultations should include, but not be limited to, parties with interests in agriculture, industry, the environment, First Nations people, local government, regional development, planning, emergency management and tourism. The Government has asked Basin jurisdictions to co-operate with this inquiry, including by providing the Commission with the information it considers necessary in undertaking its inquiry.

The final report is to be provided to the Government by 19 December 2023.

The Hon Jim Chalmers MP

Treasurer

[Received 2 May 2023]

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Overview

Key points

- * **The Murray–Darling Basin Plan (the Basin Plan) is a significant reform that aims to deliver a healthy, working Basin to benefit the environment, Basin communities, and current and future generations. Under the Plan, Basin governments agreed to recover 2,750 GL/y of water for the environment (~20% reduction in water for consumptive use) and an additional 450 GL/y through efficiency measures.**
- * **Some progress has been made implementing the Basin Plan since 2018. Water resource plans – which set out how much water can be taken from the system and how it is managed (and are fundamental to implementing the Basin Plan) – are now all in place in Victoria, Queensland, South Australia and the ACT. Environmental water management frameworks are also in operation, and water recovered for the environment – and partnerships to deliver this water – have improved river flows and connectivity, and ecosystem and biodiversity outcomes.**
- * **But the Basin Plan will not be fully implemented on time or on budget. Key supply measures (infrastructure works and rule changes that offset water recovery) will not be delivered and projects to ease constraints on river operations are progressing slowly (a shortfall of ~315 GL/y is possible). The program to recover an additional 450 GL/y of water via efficiency measures will also fall well short of the target (only 26 GL/y has been recovered). And 13 water resource plans in New South Wales, due in 2019, are still not in place.**
- * **A new agreement to deliver the Basin Plan will, if legislated, provide more time and allow new supply measures and voluntary water purchases. But this will not be enough to implement the Basin Plan in full. Weak accountability and other underlying risks to Basin Plan implementation remain. Existing funding is also not sufficient.**
- * **The Australian Government must take greater responsibility for implementing the Basin Plan, in partnership with Basin states.**
 - Constraints-easing measures are critical to achieving environmental outcomes from recovered water; they are complex projects and should be progressed separately to the 2,750 GL/y target.
 - The Minister for Water should report to the Australian Parliament by June 2024, and annually after that, on the cost-effectiveness and feasibility of existing and new Commonwealth-funded supply projects.
 - The Australian Government should develop a renewed approach to water recovery, including staged voluntary purchases. Waiting until reconciliation (now proposed for the end of 2026) to address the shortfall will perpetuate uncertainty for Basin communities and risks further increasing the cost of water recovery.
 - Future water recovery should occur alongside a commitment from Basin governments to assist communities, where warranted, to transition to a future with less available water. Adjustment assistance should build on the evidence about what programs work and the regional economic context.
 - A new government-owned corporate entity that operates at arm's length from governments is an option for undertaking water recovery and implementing some supply projects.
- * **Recognising First Nations values and delivering on First Nations interests requires Basin governments to improve how they partner and share decision-making with Aboriginal and Torres Strait Islander people. Basin governments should publicly report on how water resource plans deliver on First Nations objectives and outcomes, and strengthen the capacity of Aboriginal and Torres Strait Islander people to engage in Basin Plan activities.**

About the Murray–Darling Basin Plan and our task

What is the Murray–Darling Basin Plan?

The Murray–Darling Basin Plan (the Basin Plan) was put in place in 2012 to deliver a healthy working Murray–Darling Basin (the largest river system in Australia). Established under the *Water Act 2007* (Cth), the Basin Plan was developed in response to increasing concerns about overallocation of water in the Basin (it was put in place during the worst drought recorded, when inflows into the Murray River were at record lows) and a recognised need for a whole-of-Basin approach to manage the Basin's water.

The Basin Plan sets the balance for water management – sharing available water between the environment, towns, irrigated agriculture and other industries, so the Basin's rivers and groundwater can be sustainably managed. To do this, it sets out how much water can be taken from the Basin each year. This volume, or limit, known as the Sustainable Diversion Limit (SDL) is designed to leave enough water for the rivers, lakes and wetlands in the Basin to improve environmental health. There is an SDL for the Basin as a whole, made up of SDLs for individual valleys and shared targets for connected systems.

The SDLs are implemented through water resource plans developed by Basin states. Water resource plans set out how much water can be taken annually from each catchment, how much water is made available for the environment, requirements for surface and groundwater connectivity, and how water quality standards and critical human water needs will be met.

Meeting the SDLs requires the Australian Government to recover water entitlements from existing water users and provide these to the environment. This water recovery process is known as 'Bridging the Gap' (bridging the difference between the Baseline Diversion Limits and the SDLs), and can include voluntary water purchases and water-use efficiency programs. In 2012, the Basin states (Victoria, New South Wales, South Australia, Queensland and the ACT) and the Australian Government agreed that 2,750 GL/y of surface water rights from across the Basin (about 20% less than the Baseline Diversion Limits) would be recovered for the environment by 30 June 2024.¹

To provide flexibility, the Basin Plan has an adjustment mechanism – the Sustainable Diversion Limit Adjustment Mechanism (SDLAM) – which can be used to change SDLs in the southern Basin. SDLAM incorporates 'supply' and 'constraints-easing' projects and 'efficiency measures'. Supply and constraints-easing measures allow water recovery targets to be offset, and efficiency measures represent additional water recovery.

Basin states put forward a package of supply measures, and in 2017 the Murray–Darling Basin Authority (MDBA), with modelling of these projects, determined the projects would achieve equivalent or improved environmental outcomes being sought by the Basin Plan with 605 GL/y less water. Amendments to the Basin Plan SDLs to reflect this – as well as a 70 GL/y reduction in the northern Basin water recovery target² – were made in 2018, resulting in a new target of 2,075 GL/y (figure 1). These amendments effectively changed the 'Bridging the Gap' target to 2,680 GL/y – made up of a 2,075 GL/y water recovery target and the 605 GL/y offset expected via the SDL adjustment mechanism.

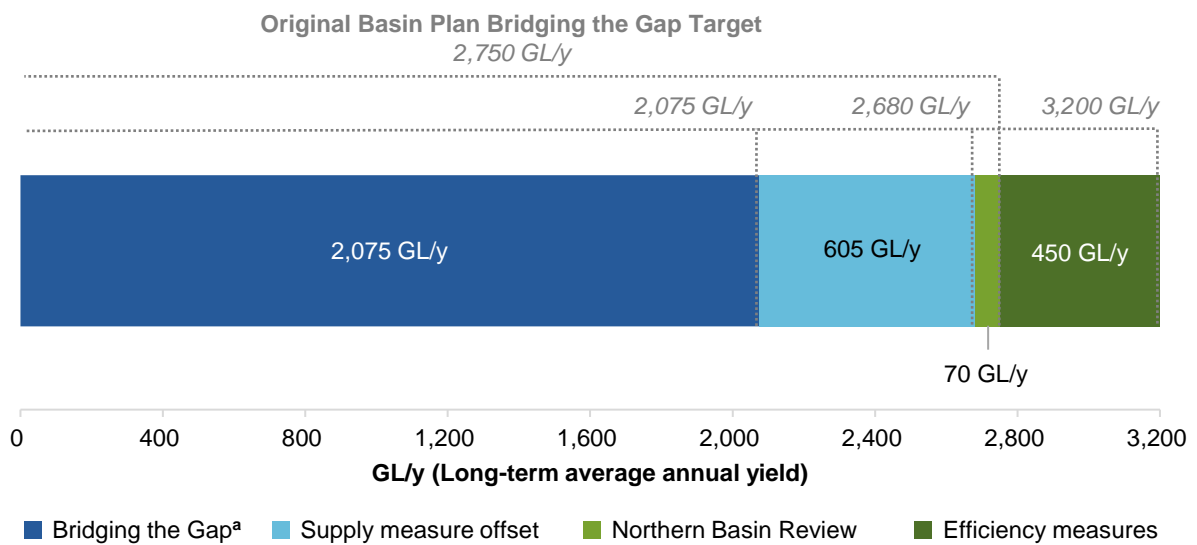
¹ In long-term average annual yield terms (LTAAY).

² The reduction in the northern Basin water recovery was on the condition that the Australian, Queensland, and New South Wales Governments implement the northern Basin toolkit measures to ensure effective management of environmental water in the northern Basin.

The Basin Plan also allows for the recovery of an additional 450 GL/y of water rights via efficiency measures to pursue enhanced environmental outcomes, provided they deliver neutral or improved socioeconomic outcomes. These efficiency measures are additional to the 2,680 GL/y (figure 1).

Water recovery under Bridging the Gap, the SDL adjustment mechanism (supply measures, constraints-easing measures, and efficiency measures) and the northern Basin toolkit are all essential to ‘resetting the balance’ of water uses in the Basin.

Figure 1 – Basin-wide surface water recovery and SDLAM targets



a. Bridging the Gap relies on 2,075 GL/y of surface water recovery and the supply measure offset.

The Basin Plan is an Australian Government instrument, which sits alongside the Murray–Darling Basin Agreement – a water management and sharing agreement between Basin governments with roots back to 1914 – and state-based water management arrangements.

The Australian Government is responsible for resetting the balance and administers water recovery programs to both bridge the gap and deliver the additional 450 GL/y. The MDBA is responsible for implementing the Basin Plan and monitoring and evaluating the outcomes.

Basin states are responsible for delivering the supply, constraints-easing, and northern Basin toolkit measures. Supply and constraints measures are primarily funded by the Australian Government and overseen by a subcommittee of the Basin Officials’ Committee (BOC). BOC is the peak body of Basin government officials, with the chair appointed by the Australian Government.

Under the Basin Plan, water recovery under ‘Bridging the Gap’ and the water resource plans were to be completed by July 2019. All supply, constraints-easing and efficiency measures were to be in place by 1 July 2024.

The Australian Government committed \$5.95 billion to recover 2,750 GL/y under ‘Bridging the Gap’, \$1.21 billion for supply measures, and \$1.775 billion is committed to efficiency measures and constraints-easing projects through the Water for the Environment Special Account (WESA). Just over \$2 billion of funds committed to implementing the Basin Plan remain unspent (table 1).

Table 1 – Funding for resetting the balance as of 31 May 2023^a

	Committed (\$m, nominal)	Spent (incl. contracted) (\$m, nominal)	Remaining (\$m, nominal)
Bridging the Gap – Purchase	2,832	2,832	-
Bridging the Gap – Infrastructure	3,120	2,978	142
Supply measures	1,212	485	727
Efficiency measures	1,575	384	1,191
Constraints-easing	200	128	72
Northern Basin toolkit	180	144	36
Total	9,119	6,951	2,168

a. Data covers the period 2007 to 2023.

What we have been asked to do and our approach

Under the Water Act, the Commission is required to undertake five-yearly assessments of the effectiveness of the implementation of the Basin Plan and water resource plans. This is the Commission's second such assessment (the first assessment was undertaken in 2018).

Our terms of reference ask us to look at whether the Basin Plan is on track to be implemented on time, and where it is not on track, what needs to change. This includes advising and recommending future actions and opportunities to simplify the framework of the Basin Plan to ensure effective achievement of its outcomes.

We approached the task by looking at:

- how the actions of governments are tracking against the timeframes set out in the Basin Plan
- whether the arrangements in place will deliver the objectives of the Basin Plan and enable its impacts and outcomes to be evaluated
- whether actions to implement the Basin Plan are effective and efficient
- whether changes are needed to ensure effective and efficient implementation of the Basin Plan going forward
- whether the governance arrangements are adequate.

We also considered how the Basin Plan could better adapt to a changing climate, better recognise the values of Aboriginal and Torres Strait Islander people and incorporate the best available science.

We did not revisit questions that fundamentally underpin the Plan, such as whether it is necessary to recover water for the environment, or questions that other agencies have been tasked and resourced to answer (such as how much water can sustainably be taken from the Basin).

We engaged widely on the Basin Plan, including with Australian Government agencies, state and territory basin governments, Murray–Darling Basin communities, and Aboriginal and Torres Strait Islander people, communities and organisations.

We held seventeen public forums across the Murray–Darling Basin. Around 330 people attended.

Some context

There is a lot of other monitoring and reporting on the Basin Plan. The MDBA reports on Basin Plan implementation progress in Basin Plan Report Cards and every five years undertakes a Basin Plan

Evaluation (looking at what's working, what's not and where improvement is needed). The last Basin Plan Evaluation was undertaken in 2020.

There will also be a full review of the Basin Plan in 2026 and a review of the Water Act (scheduled for 2024, but now expected to be delayed until 2027).

Many people in Basin communities are frustrated and fatigued by the recurrent reviews and consultation processes and lack of progress in implementation. Communities are also concerned about the lack of coordination between the implementation of the Basin Plan, and the operation of other Australian and state government mechanisms that affect its success.

A new agreement was recently announced

On 22 August 2023, the Australian Government announced a new agreement of Murray–Darling Basin ministers to deliver the Basin Plan in full over a longer time period (it has been apparent for some time that the Basin Plan will not be delivered in full or on time by the June 2024 reconciliation date). The Victorian Government is not party to the agreement.³ The agreement:

- allows more time – until 31 December 2026 – for the delivery of existing supply, constraints and northern Basin toolkit projects and – until 31 December 2027 – for the 450 GL/y target (the last date contracts can be entered into)
- allows Basin states to bring forward *new* supply projects (provided they are proposed by July 2025 and can be delivered by 31 December 2026)
- allows for a broader range of water recovery options – including voluntary water purchases – to be used to meet the 450 GL/y target for enhanced environmental outcomes
- aims to minimise the socio-economic impacts on communities and will provide for community adjustment assistance for the impacts of water purchases toward the 450 GL/y.

The agreement requires amendments to the Water Act and the Basin Plan. The Water Amendment (Restoring Our Rivers) Bill 2023 (the Bill) was introduced to Parliament on 6 September 2023 and was referred to the Senate Environment and Communications Legislation Committee. The committee's report is due on 8 November 2023. The Bill was amended on 18 October 2023, shortly before this interim report was finalised. Where relevant, this interim report takes account of key aspects of the Bill – further consideration will be given to the Bill for our final report in December 2023.

A lot achieved, but key elements will not be delivered

There is some good news

While the Basin Plan, when first put in place, was heavily contested, it is now considered to be part of the landscape and central to securing a healthy and sustainable river system. For the most part, the conversation is no longer about whether or not there should be a Basin Plan, but rather whether there are

³ By not signing up to the new agreement, Victoria will not be eligible for project funding from July next year.

better ways to deliver the Plan. In a recent address to the National and Rural Press Club, the Chief Executive of the MDBA observed that:

... everyone shares a passion for the health of our rivers and importantly, no-one I have come across wants to do away with the Plan. Hand on heart, literally no-one has said ... 'throw it out'.
(McConville, 2022)

And many commented on what the Basin Plan has achieved to date. The National Irrigators' Council, for example, said:

The Plan has been a vital tool in balancing the needs of our communities, our environment and our productive sector. It hasn't always got it right, but it has achieved a great deal since its inception. Ensuring balance is needed so we can keep our rivers and communities healthy and thriving.⁴

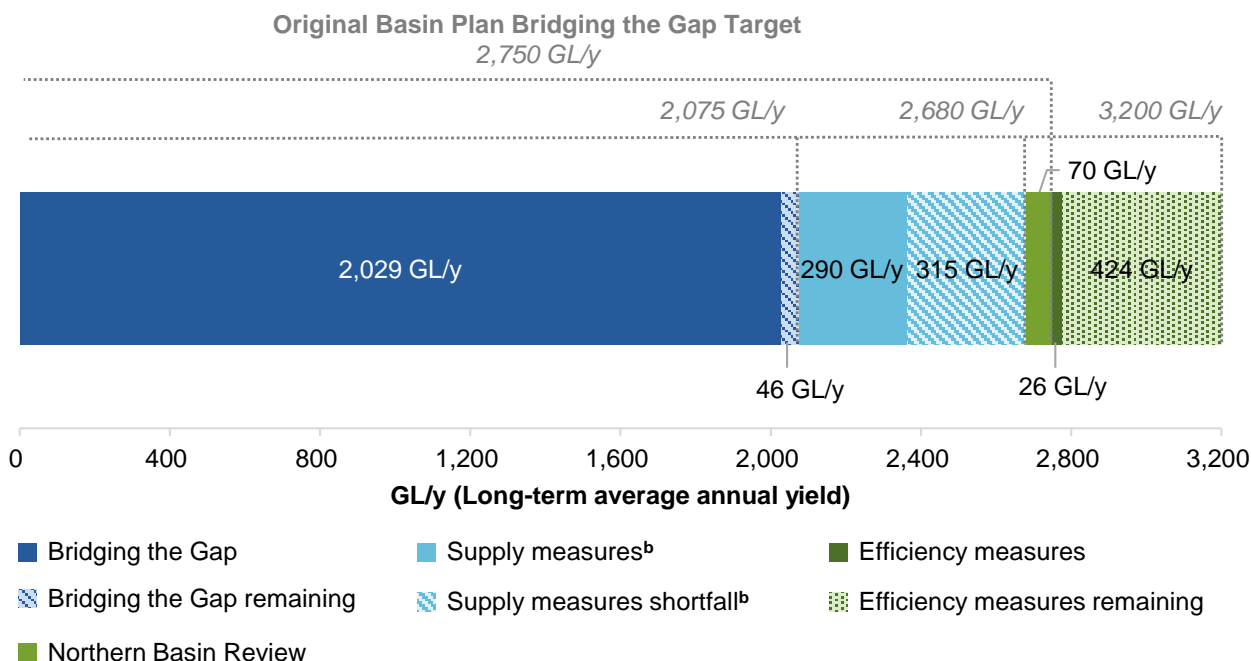
The 2,075 GL/y component of the 'Bridging the Gap' target is almost met

Most of the surface water needed to meet the 2,075 GL/y target has been recovered (figure 2) – however, more than half was recovered before the Basin Plan was finalised in 2012. Just 46 GL/y (about 2%) remains to be recovered.

For groundwater, 92% of water to meet the 'Bridging the Gap' target has been recovered. A further 3.2 GL/y of groundwater is yet to be recovered.

An open market tender is in progress to recover most of the outstanding 2,075 GL/y water recovery target.

Figure 2 – Surface water recovery and SDLAM progress, June 2023^a



a. The figure does not include nominal over-recovery; the full volume recovered under 'bridging the gap' volume is reported at 2,107 GL/y. Shaded cells indicate target not yet achieved. Includes water under contract to be delivered.
b. MDBA estimate of maximum supply measure shortfall.

⁴ Submission to the Department of Climate Change, Energy, Environment and Water Delivering the Basin Plan Ideas Consultation Process (p. 3).

Some, albeit limited, progress has also been made on other elements of resetting the balance since our last review in 2018 (figure 2).

- There are five more supply measures operational (representing approximately 60-90 GL/y of water recovery offset). The 14 operational supply measures are estimated to be delivering about half – 290 GL/y – of the 605 GL/y offset.
- On the 450 GL/y efficiency measures target, 12.2 GL/y was registered to the Commonwealth Environmental Water Holder (CEWH) at the end of June 2023 and another 13.8 GL/y was under contract.
- On the northern Basin toolkit package, four environmental works projects have been approved for an ‘accelerated gateway model’. Three of these projects are currently completing onsite field surveys. Seven other projects are completing preliminary investigations and public consultation.

Significant progress made on environmental water management frameworks ...

The Environmental Watering Plan, as the main instrument for achieving the best possible outcomes from the water available for the environment, is central to the Basin Plan. And significant progress has been made implementing this Plan.

The key components of the Environmental Management Framework, including the Basin-Wide Environmental Watering Strategy, Long Term Environmental Watering Plans and annual environmental watering priorities are now all in place. Pre-requisite policy measures are implemented and a Northern Basin Environmental Watering Group (to coordinate the planning and delivery of water for the environment in the northern Basin) has been established.

The CEWH is well regarded in Basin communities. The CEWH has successfully engaged with local communities and built partnerships with irrigation infrastructure operators, including through its Local Engagement Officers. These partnerships and collaborations have been instrumental to the CEWH’s credibility and its success in facilitating the delivery of environmental outcomes. The Renmark Irrigation Trust, for example, said:

The Trust’s partnership with the Commonwealth Environmental Water Holder, which aimed to bring Trust and Renmark Paringa Council owned floodplain land back to health, has ... been a win/win arrangement; good for the riverine ecosystem, good for our business and local economy and good for our community. (sub. 24, p. 2)

... and benefits from water for the environment are evident

Providing and managing water for the environment is resulting in environmental benefits to the Basin, particularly at the local level. Environmental water has improved native vegetation and wetland conditions, the protection of rare and threatened biodiversity and the migration and breeding of native fish, frogs and waterbirds. Improved river flows and connectivity have helped water quality and environmental water holdings have been used to sustain targeted nurseries and ecosystems during dry periods, so that they can recover. And there are differences in outcomes between sites that are prioritised for environmental water and those that are not. The ACT Government provided the example of Blackfish.

In 2019, environmental flows between Bendora and Cotter Dams supported a large breeding event of the Blackfish that is highly significant following the population decline that resulted from the 2020 bushfires. Blackfish populations above Corin Dam, without environmental flows, have not recovered from the bushfires and remain at risk. (sub. 85, response to information request, p. 5)

The MDBA described environmental water planning and management as ‘a clear success and arrangements are world leading’, noting that the Basin Plan ‘has made a major contribution and water for the environment

is now a secure and enduring element of river management' (sub. 61, p. 17). Many participants commented on the benefits of water for the environment (box 1) and spoke about changing attitudes towards environmental watering since the Basin Plan commenced.

Box 1 – The benefits of water for the environment: what some participants said

Commonwealth Environmental Water Holder

In extremely dry years (2017–20), Commonwealth environmental water played a pivotal role in breaking cease-to-flow events, maintaining flows to enable fish breeding and waterhole replenishment, as well as supporting core riparian and wetland habitat to promote a quick recovery of ecosystems once conditions improved. (sub. 69, p. 11)

The National Irrigators' Council

Over 2100 gigalitres has been transferred to the Commonwealth Environmental Water holder (CEWH) and is being put to use. Over the last couple of years, the CEWH has delivered bird and fish breeding events throughout the Basin and that should be celebrated. ... The CEWH needs to do more to celebrate and communicate its wins, so the public gets a real and true picture of progress. (sub. 62, p. 21)

The Australian River Restoration Centre

To date, the Basin Plan has improved the health of some wetlands and rivers through the implementation of water sharing plans and the delivery of water for the environment. (sub. 13, p. 1)

The Victorian Government noted that at Barmah Forest, a Ramsar-listed wetland, water for the environment has 'improved overall health, protecting, and improving habitat and conditions for fish, waterbirds, frog and turtle species'. The site now supports 30% of the national population of the endangered Australasian Bittern, while turtle populations are recovering and are now considered 'stable'. At the Ramsar-listed Hattah Lakes, environmental watering combined with natural floods has resulted in a huge increase in waterbird breeding (sub. 74, p. 4).

Water resource plans are in place in all Basin states, except NSW

Water resource plans are now all accredited and in operation in Victoria, Queensland, South Australia and the ACT.

While there were delays in the assessment and accreditation of other states' water resource plans, in New South Wales things are well behind schedule – just seven of its 20 water resource plans are accredited.

The absence of accredited water resource plans in New South Wales is a significant risk to the implementation of the Basin Plan (taking more water than the SDL has consequences for the environment and users of water resources in the Basin). But it is not possible for the Inspector-General for Water Compliance (IGWC) to assess New South Wales compliance with the long term annual SDLs without accredited water resource plans. This also extends to Basin Plan requirements around water quality and critical human needs. At the River Reflections Conference in 2022, the IGWC commented that:

While NSW WRPs remain outstanding, full compliance with the Basin Plan cannot be achieved. ... I can't enforce the rules in the plans that don't yet exist. ... The single most important

compliance matter in the Basin Plan is SDL compliance. ... NSW's level of accountability under the Basin Plan is not equal to that of other Basin states and the territory, each of who have accredited WRPs. (cited in sub. 75, p. 17)

But despite the importance of having all accredited water resource plans in place for delivering the Basin Plan, there are no real consequences for New South Wales being so late with their water resource plans. Step-in provisions for the Australian Minister for Water to request the MDBA to develop water resource plans are available but have not been used.

And improvements made to governance and reporting arrangements

Since 2018, there have been some improvements to Basin Plan governance and reporting arrangements.

The IGWC was established in 2021 to provide oversight, monitoring, compliance and enforcement of the Basin Plan and parts of the Water Act.⁵ The establishment of the IGWC is generally considered to be an important positive change that has improved effectiveness and accountability of compliance activities. The National Irrigators' Council, for example, said 'the tough cop on the beat helps build confidence in the system and its participants' (sub. 62, p. 19).

The BOC adopted a new committee structure and transparency has increased. Basin governments have also improved how they engage, including by establishing more direct, local relationships. The MDBA, for example, undertook 'listening tours' and in 2021 achieved its 2019 goal of having one third of staff regionally based. However, notwithstanding these efforts to improve engagement practices, concerns about the quality and value of Basin Plan engagement processes remain (sections 4 and 5).

Several online water information portals have been put in place by Basin state agencies since 2018. The Bureau of Meteorology now provides near real-time water information by combining information from various state water agencies, dam operators, the MDBA and the CEWH. And in 2020, the NSW Government launched an online portal, WaterInsights, which contains daily river reports, meteorology information and various graphs and maps designed to inform decisions around commercial water usage.

The usability and accessibility of some existing information sources have also improved.

But resetting the balance remains far from complete

Supply projects are unlikely to deliver the 605 GL/y offset (even with more time)

The MDBA estimates that the supply measure package could fall short by 190–315 GL/y, if reconciliation takes place prior to June 2024. Seventeen of the 36 supply and constraints-easing measures⁶ are not expected to be in operation (table 2). And despite the prospect of additional time for Basin states to deliver existing and possibly new supply projects, the 605 GL/y offset is still unlikely to be achieved.

⁵ The IGWC was established in response to the Commission's 2018 recommendation to establish a Basin Plan Regulator (with the transfer of MDBA's regulatory functions).

⁶ The notified Menindee Lakes project incorporates the lower Darling constraints-easing project; it is counted in both figures.

Table 2 – Status of southern Basin supply and constraints projects
Progress as at July 2023

Project status	Total	Operational	Likely to be operable by June 2024	Unlikely to be operable by June 2024	Will not be operable by June 2024
Supply projects (excl. constraints)					
NSW	7	1	3	2	1
VIC	9			5	4
SA	4	4			
Shared	11	9	2		
Total	31	14	5	7	5
Indicative expected offset (GL/y)	523	278.1	73.7	40.6	130.6
Southern Basin constraints-easing projects					
NSW	3				3
VIC	1				1
SA	1		1		
Shared	1				1
Total	6		1		5
Indicative expected offset (GL/y)	82.4		20.6		61.8
Project total	37	14	6	7	10
Total indicative expected offset (GL/y)	605.4	278.1	94.3	40.6	192.4

There are a number of reasons why the additional time, while necessary, will not be enough to deliver the 605 GL/y offset in full.

- Some key projects are not viable, including the Menindee Lakes project (it was initially estimated to contribute an offset of about 100 GL/y).
- Implementation costs are higher – some supply projects may no longer represent value for money.
- Most projects to ease constraints are at least 5-10 years from delivering outcomes.
- The likelihood that there are new supply projects that represent value-for-money, can make a meaningful contribution to the offset and be implemented by the end of 2026, is low.
- Accountability for implementing projects is weak – there are no real consequences for Basin states not delivering on supply projects.

Remaining funding for supply and constraints will not be enough

The 2021 review of the WESA found that the estimated cost of the constraints and supply measures programs (largely drawing on the original 2016-17 business cases) was around \$145 million higher than the available funding; and the actual costs of these projects are expected to be even higher than the business cases anticipated.

If new supply projects can be found to reach the 605 GL/y target by 2026, significant additional funding will be needed.

Earlier warnings about the significant risks did not result in change

The Commission's 2018 assessment of Basin Plan implementation highlighted the need for changes to avoid the significant risk that supply and constraints-easing measures would not be implemented as proposed. We recommended an independent advisory panel on supply projects to assess net benefits and the credibility of timeframes and milestones, and to recommend which projects should – and should not – be funded to proceed to implementation. We were also explicit about the requirement to 'make good' if a project failed – that is, that water needs to be recovered to make up any shortfall.

While the recommendation was agreed to in part, no independent panel was established, and there have been no apparent changes to funding approval processes by the Department of Climate Change, Energy, Environment and Water. And critically, no supply projects have been formally amended or withdrawn by the BOC, despite evidence that some projects are no longer viable.

Basin governments' policies put in place over the last few years have also contributed to delayed water recovery projects. The Australian Government, for example, progressively reduced the scope of water recovery options (including ceasing open-market water purchases and legislating a limit of 1,500 GL/y on water purchases towards bridging the gap) and gave priority to slower, riskier and more expensive forms of water recovery. Such policy decisions also reduced the incentive for Basin governments to make progress on projects by undermining the credibility to any threat to make up any shortfalls against the 'bridging the gap' target through additional water recovery.

With a large shortfall looming, what should be done?

Constraints-easing measures should be separated from the supply measure package

Basin rivers are subject to a range of constraints that limit the flow rates that river operators can provide downstream. These constraints may be physical (such as flood-prone infrastructure) or operational (river management rules designed to minimise flooding of private land).

There are potentially significant environmental and operational benefits to be achieved by easing or removing constraints. Getting the most value out of environmental water relies on flow rates that allow rivers to connect to floodplains. Constraints-easing projects can enhance this connectivity by changing river operating rules and negotiating arrangements with landholders. However, the challenges of these projects were underestimated. They will not be finalised by the end of 2026.

Including constraints as supply measures has restricted the ability of Basin governments to adjust these projects in response to community concerns over the proposed flow rates. These projects should be withdrawn from the supply package and pursued under a standalone program. With most constraints-easing

projects needing at least another 5–10 years to implement, the program requires a dedicated, collaborative focus from Basin governments to set it up for success.

Subject to making meaningful progress on existing projects, the Australian Government should assess the costs and benefits of further constraints easing, and consider allocating additional WESA funding towards constraints easing.

Finalising ‘Bridging the Gap’ requires more leadership, transparency and accountability

The limited progress made on the 2,680 GL/year target since 2018 means there is still considerable work to do to complete ‘Bridging the Gap’. The focus of the Australian governments should be on making progress towards this target – using the full range of water recovery options – before pursuing the 450 GL/year efficiency measures target. Operating parallel water recovery programs in a tight water market risks causing sharp price rises and community uncertainty and angst.

The Australian Government should be more transparent about which supply projects will continue to receive funding and why

The 2023 amendments to the Water Act and the Basin Plan – if passed – will extend the timeframe for all supply and constraints-easing projects to the end of 2026, and allow for new supply measures to be proposed (up until July 2025). The Australian Government is responsible for deciding whether existing – or any new – projects will receive funding over the period to end 2026. However, there is no transparency, or explicit accountability mechanism, for how these decisions are made.

Ahead of making these decisions, the Australian Government needs to rigorously assess:

- the likelihood of individual supply projects succeeding – funding agreements should only be extended for projects that can realistically be delivered by 31 December 2026 and
- the cost-effectiveness of supply projects relative to other forms of water recovery.

The Australian Minister for Water should table in Parliament an annual report on funding provided for supply, constraints-easing and northern Basin toolkit projects – with the first report by June 2024. This report should cover all available information on project prospects, including:

- the status of the projects
- funding arrangements, including the amounts expended to date
- reasons for deciding to continue, amend or withdraw project funding, including evidence on the cost-effectiveness of projects relative to other forms of water recovery
- the expected shortfall against the water recovery offset (if any) and planned actions to make good.

The Water Act should be amended to require this annual reporting.⁷ The Basin Plan should also be amended to require the Australian Government to withdraw supply projects from the package – where they are not viable or do not represent value for money – after a reasonable period (say three months) has elapsed for BOC to amend, rescope or withdraw the project.

⁷ Shortly before this interim report was finalised, the Restoring Our Rivers Bill was amended to require the Minister for Water to table in Parliament annual progress reports about water recovery targets.

The Australian Government should not delay making good on the likely shortfall from the 605 GL/y offset

It will take time to recover water to make up the likely significant shortfall from the 605 GL/y offset, and the costs of doing so are expected to increase with time. The Australian Government should not wait until reconciliation to progress, develop and implement other options. To do so would further delay Basin Plan implementation, risk increasing costs to taxpayers and prolong uncertainty for Basin communities.

The Australian Government should develop, without delay, a renewed water recovery program which includes staged, voluntarily purchase of water entitlements.

Some participants argued for an immediate return to open tender water purchases as a way to recover water that delivers environmental outcomes more reliably than offset options. Lifeblood Alliance, for example, said:

Open tender, voluntary water purchases must be resumed as a key cost-effective and transparent mechanism for meeting water recovery targets across the Basin. Reliance on infrastructure projects, both on and off farm, to recover water must be reduced, as these projects are high cost and low return in terms of environmental outcomes. (sub. 55, p. 2)

However, many others raised concerns about the socioeconomic impacts of previous water purchases and opposed further purchases. The Murray River Group of Councils, for example, said ‘buybacks damage communities’ (sub. 22, p. 11).

While structural adjustment in Basin communities has generally been driven by broader economic and industry trends, water purchases have placed pressure on communities, and smaller, remote, irrigation-dependent communities have been affected by purchases more than others (box 2).

All options, including staged, voluntary water purchases, should be on the table for the Australian government to reset the balance in a cost-effective way. As earlier water recovery programs showed, purchasing water is the most cost-effective way for governments to obtain water for the environment. However, purchasing large volumes of water in a short space of time risks market disruption and significant socioeconomic impacts on communities. Market liquidity constraints also means that purchasing water quickly risks increasing the cost of purchases to taxpayers (limiting how much water can be recovered for the environment from a given budget).

Careful design and engagement with communities is required, including to manage risks to irrigation network viability. The Australian Government should start a considered process now.

Irrespective of design and staged implementation, some Basin communities may be adversely impacted by any voluntary water purchase program. Future water recovery should take place alongside a commitment from Basin governments to assist communities, where necessary and warranted, to transition to a future with less available water. Adjustment assistance should be based on the lessons – and learn from the mistakes – of past programs, and the regional economic context.

The water recovery program should also be coupled with a monitoring program to assess the broader community impacts of water recovery in the Basin and help target and design effective structural adjustment assistance.

Box 2 – Socioeconomic impacts of water purchases on Basin communities

Water purchased by the Australian Government to meet commitments under the Basin Plan has had negative socio-economic impacts on some Basin communities. However, overall the economic performance of the Basin has improved – the gross value of irrigated agricultural production in the Basin increased by about 12% between 2013 and 2018, despite the volume of water used in irrigation declining by over 16% over the same period.

People who sold water entitlements were compensated at market prices, with proceeds often funding on-farm capital works, or market exits. Larger and more diverse regional centres in the Basin have largely adjusted to less water. However, there have been negative socio-economic flow-on effects in some small irrigation-dependent communities, particularly following major irrigators selling large parcels of entitlements. Some Basin communities saw agricultural employment fall rapidly, without offsetting growth in other employment areas (the negative effects have only been slightly tempered by improvements to tourism resulting from improved ecological outcomes).

The size and speed of water purchases also appears to influence whether communities adapt relatively quickly (through other economic development and diversification) or experience more severe and lasting economic disruption.

Delivering the 450 GL/y target by 2027 will cost more than budgeted

The additional 450 GL/y cannot be delivered within the existing budget, and recovering this volume of water by 2027 (the timeframe proposed in the Restoring Our Rivers Bill), while also recovering water to meet the 2,680 GL/y target, may cause significant disruption to the water market.

The Bill proposes that water purchases be allowed to contribute to the target. This is a positive step; it will improve the prospects of making progress toward the target, and reduce the budgetary cost of recovering the 450 GL/y (compared to relying on 'efficiency measures').

However, the cost of meeting the target will be substantial. The cost of water rights has risen significantly in recent years, and the Australian Government has said it will provide 'significant transitional assistance' where voluntary water purchases have flow-on impacts on Basin communities. Given this, getting to 450 GL/y by 2027 is expected to require significant additional funding.

The Commission previously raised concerns about the assumptions underpinning the 450 GL/y water recovery target, including the lack of any review point to assess the feasibility of the 'enhanced environmental outcomes' in schedule 5 of the Basin Plan and the value for money of the overall program. Some of the environmental benefits of this additional water are also contingent on the delivery of constraints easing projects – which are still 5–10 years from delivery.

Given these factors, it makes little sense for the Australian Government to rapidly pursue the 450 GL/y target when a significant shortfall in the Bridging the Gap target is expected.

The 2026 Basin Plan review will consider the environmentally sustainable level of take and surface water and groundwater SDLs – this review is also an opportunity to assess how best to deliver the enhanced environmental outcomes that the 450 GL/y target is designed to meet.

Rethinking the model for water recovery?

Since the Basin Plan came into effect, the policies adopted by Basin governments, by limiting options, have increased the cost of water recovery.

There is a large water recovery task ahead for the Australian Government and there are risks with a department undertaking this task. Tender processes tend to be slow and clunky and political pressures can influence purchasing decisions. A number of participants raised concerns about a government department not being well equipped to undertake purchases with a commercial focus or work with entitlement holders on projects.

One option is to establish a Commonwealth corporate entity (at arm's length from government) to purchase water entitlements (and potentially manage the delivery of some supply projects)⁸ which are then transferred to the CEWH. Such an entity may be able to engage with the market more nimbly and quickly than a government department, undertake water purchases and other water recovery projects that do not fit neatly into Commonwealth procurement and grant rules, and help depoliticise water recovery. The entity would be accountable to the community, the Australian Parliament and Basin governments. It would mean there is a clear and visible party responsible for water recovery.

Previous experience with Water for Rivers, a joint venture company established in 2003 to deliver a water recovery program for the Snowy River – which included water purchases and infrastructure projects – underpins this model.

Recognising the values of First Nations people

There are more than 100,000 First Nations people from more than 40 Nations living in the Murray–Darling Basin. First Nations people have deep connections to their land, waters and waterways and tens of thousands of years of knowledge about caring for water and river country.

There are several mechanisms under the Basin Plan for First Nations people to provide input into the development and implementation of water management arrangements – including in the areas of water resource planning, environmental management and knowledge building.

Basin state governments have improved how they work, engage and partner with First Nations people in the Murray–Darling Basin over the last five years. Some developments include:

- the Murray–Darling Basin Indigenous River Rangers Program (through the program, First Nations organisations improve waterway health and manage Country)
- the appointment of an Aboriginal member to the MDBA Board, fulfilling the legislated requirement for Indigenous representation
- the National Cultural Flows Research Project – a project supported by the MDBA and other Australian Government agencies to improve knowledge of cultural flows and ways of integrating cultural flows into Basin water management.

However, almost everyone with an interest in the Basin (including irrigators, governments and environment organisations) agree that the Basin Plan needs to do more to recognise the values and deliver on the interests of First Nations people (box 3).

⁸ The role of the new entity in supply and constraints-easing projects would depend on how quickly the entity could be established and the lifespan of remaining projects.

Box 3 – Calls to do more: recognising the values and delivering on the interests of First Nations people

Murray–Darling Basin Authority

The deep significance of First Nations' knowledge passed down over the generations is ever more pressing and more precious as our climate changes. We all need to work harder to provide a greater place for First Nations people in water management. (sub. 61, p. 7)

National Irrigators' Council

... we are very supportive of further involvement of Indigenous Australians in managing the Basin, including but not limited to, addressing cultural flows. ... NIC would welcome an enhanced First Nations engagement regime to further improve our connections with Indigenous peoples across the Basin. (sub. 62, p. 26)

National Parks Association of NSW

The independence and views of the numerous Aboriginal Nations with a connection to the Basin and its water should not be compromised. Water carries great cultural, spiritual, environmental, social and economic significance to these people ... Despite the National Native Title Council (2014) stating it believed the Water Act was failing in its management objectives for Aboriginal people some ten years ago, not much has changed. (sub. 41, p. 6)

Wentworth Group of Concerned Scientists

.... the next Plan needs to address Aboriginal water rights and interests as a matter of urgency. More support is needed to build capacity of Indigenous land and water ranger programs to manage wetland Country. (sub. 81, p. 6)

River Lakes and Coorong Action Groups

We need to celebrate the wisdom of First Nations people in caring for the land and the water for millennia while it has only taken 235 years of settlement to destroy the system. We need to acknowledge the deep connection of First nations people to the land and to their totems and the intrinsic need to protect them. (sub. 15, p. 4)

MLDRIN

Solutions to the climate crisis must be informed by the knowledge and wisdom of cultures that have survived (and thrived) during significant changes to the climate over the past 60,000 years. ... climate responses in the Plan must be genuinely co-designed with Basin Nations. (sub. 92, p. 25)

The policy landscape has also changed since the Basin Plan was introduced in 2012 (and since the Commission did the last review of the Basin Plan). Notably in 2020, all governments, along with the Coalition of Aboriginal and Torres Strait Islander Peak Organisations, signed the *National Agreement on Closing the Gap*. Under the Agreement, governments committed to work in genuine, formal partnerships with Aboriginal

and Torres Strait Islander people for shared decision-making (priority reform 1) and to transform government organisations so they work better for Aboriginal and Torres Strait Islander people (priority reform 3).⁹

Improving outcomes for First Nations people is also identified by the MDBA as one of the four priority themes for the 2026 Basin Plan Review.

Meaningful, respectful and reciprocal engagement

Despite improvements in engagement made over the last five years, First Nations people – many who have invested a lot of time participating in the Basin Plan and reviews of it – shared their continuing frustration with engagement processes, which they say are often rushed and tokenistic.

A particular concern is the New South Wales Government’s approach to engagement on water resource plans. Water resource plans must be ‘developed having regard to the views of relevant Indigenous organisations ... with respect to the objectives of Indigenous people and ... the outcomes they desire’. In practice, we heard that, while First Nations people were asked to provide feedback and input into plans, there was little evidence that the input was genuinely considered in decision-making.

Meaningful engagement is crucial to building trust and working in partnership. It is not enough to recognise First Nations values in Basin Plan implementation. Transparent, accountable mechanisms by which First Nations people can inform and share decision-making are important (they are also a key element of the priority reforms). Accountability should be improved, including by:

- requiring Basin governments to publicly report on:
 - how they engage with First Nations people on Basin Plan matters
 - how water resource plans deliver on the objectives and desired outcomes of First Nations people for management of water resources in the Basin.
- clarifying and embedding the requirement in the Basin Plan for water resource plans to incorporate First Nations values and interests in water.

The MDBA – in partnership with First Nations people – should develop a framework for monitoring how governments engage with First Nations people on Basin Plan matters.

Empowering First Nations people to participate in the Basin Plan

There is a significant and growing pull on First Nation groups and individuals to participate in government processes about the Basin and broader water policy issues, with little capacity development (or funding) to support First Nations people to navigate complex water governance, policy and management arrangements.

Under the National Agreement on Closing the Gap, governments acknowledge that ‘adequate funding is needed to support Aboriginal and Torres Strait Islander parties to be partners with governments’. Government funding (and other supports) to First Nations people to participate in Basin Plan implementation and review activities is largely ad-hoc. There would be value in Basin governments establishing a more structured and transparent process for providing support to First Nations people to participate in Basin Plan processes.

The MDBA and Basin governments are continuing to grapple with how to engage effectively with all First Nations people. Two groups – Murray Lower Darling Rivers Indigenous Nations (MLDRIN) and the Northern

⁹ The other central pillars of the Agreement are: Building the Aboriginal and Torres Strait Islander community-controlled sector (priority reform 2) and Improving and sharing access to data and information to enable Aboriginal and Torres Strait Islander communities to make informed decisions (priority reform 4).

Murray–Darling Basin Aboriginal Nations (NBAN) – were important in the earlier period of Basin Plan implementation (there are requirements in the Basin Plan for Basin governments to engage with MLDRIN and NBAN, and they have relied heavily on these organisations). However, NBAN has ceased operating. While MLDRIN has continued to actively engage in consultation processes and has made submissions to several reviews, some participants told the Commission that MLDRIN no longer has broad support by all First Nations. Many First Nations people said they felt under-represented or forgotten in key processes.

First Nations bodies can be an effective way for people to communicate concerns, advocate change, and respond to the ideas and proposals of others. The MDBA – in partnership with Aboriginal and Torres Strait Islander people – should consider the merits of establishing a new body for First Nations people in the Basin.

Progress on Aboriginal water ownership has been slow

Water ownership is important for realising Aboriginal and Torres Strait Islander people's cultural, social, economic, spiritual and environmental aspirations. While First Nations people represent about 5% of the Basin population, they hold less than 1% of available Basin water holdings.

Many participants expressed their support for Aboriginal and Torres Strait Islander people holding water entitlements for cultural purposes, to support their economic and social participation in, and contribution to, regional communities. This aligns with the national framework for cultural flows (developed as part of the National Cultural Flows Research Project), which sets out a method for determining, delivering and assessing cultural flows.

The Aboriginal Water Entitlements Program commenced in 2018 with \$40 million to support Aboriginal people in the Basin to purchase cultural and economic water entitlements. However, not a single Aboriginal Water Entitlement Program dollar has been spent on purchasing water. The Department of Climate Change, Energy, Environment and Water is currently consulting further with First Nations people on governance models to deliver the program (despite extensive past engagement on this issue). As highlighted by a number of participants to this inquiry, the \$40 million will buy far less water today than in 2018, and the more than 40 First Nations in the Basin have missed out on cultural and economic benefits of water ownership. While the department intends to implement the Aboriginal Water Entitlements Program in 2023-24, an implementation timeline has not been published and as a result uncertainty about the timing of this program persists.

Partnerships for water delivery show promise

All Basin governments have work to do to demonstrate – and meet – their commitments under the National Agreement for Closing the Gap. That said, we heard about partnerships between Aboriginal and Torres Strait Islander people and governments that were working well, including to deliver environmental water in ways that also achieve cultural benefits. For example, the Victorian Government's *Water is Life – Traditional Owner Access to Water Roadmap* sets out a pathway for how the Victorian Government intends to return water to Traditional Owners and increase their role in determining how environmental water is used for the purpose of healing Country.

There are opportunities for environmental watering to contribute to social or cultural outcomes (shared benefits) without compromising environmental outcomes. As one participant said:

There should be more partnership programs involving Aboriginal water managers and rangers, such as the Nimmie-Caira project, which is training traditional owners in management of watered sites. (Dr Anne Jensen, sub. 39, p. 3)

The Basin-Wide Environmental Watering Strategy is due to be updated by 2024. This is an opportunity for the MDBA – in partnership with Aboriginal and Torres Strait Islander people – to develop objectives and outcomes for shared benefits of environmental water use.

Recognising and valuing First Nations knowledges

The Basin Plan states that the ‘best available knowledge’ will be used in water resource management, which includes the local knowledge of Aboriginal and Torres Strait Islander people. A number of participants commented that there was scope for Basin governments to better draw on Aboriginal and Torres Strait Islander peoples’ knowledges and understanding of the river systems and natural resource management (box 3).

The success of formal partnership arrangements such as the Murray–Darling Basin Indigenous River Rangers Program and the First Nations Environmental Water Guidance Project should be built on to provide further opportunities for Aboriginal and Torres Strait Islander people to use their knowledge, cultural practices and connection to country to contribute to managing and restoring waterway health in the Basin.

The Australian Government’s \$20 million investment in the Murray–Darling Water and Environment Research Program is another key avenue to better understand First Nation’s values, and how water provides social, economic and cultural benefits to First Nation’s communities. It is important that Basin governments recognise that this knowledge is the cultural and intellectual property of Aboriginal and Torres Strait Islander people and respect relevant protocols and permissions around use of this knowledge.

Strengthening the Basin Plan

Bringing new knowledge into the Basin Plan framework

The Water Act requires the Basin Plan to be developed ‘on the basis of the best available scientific knowledge and socio-economic analysis’¹⁰. Adaptive management is also a requirement of the Basin Plan. And to this end, the Basin Plan requires various elements of the water management framework to be regularly reviewed or evaluated. Since the development of the Basin Plan, the relevant knowledge base has improved considerably, particularly in the areas of climate change and ecological water requirements.

A successful adaptive management approach to managing Murray–Darling Basin water resources requires generating new knowledge, reporting on that knowledge, and timely opportunities to update the water management framework to apply the knowledge. There is, however, evidence that not all aspects of the water management framework are adequately updated through the review processes to reflect the best available knowledge.

Climate change science should be further embedded in the Basin Plan ...

The Basin Plan was designed to rebalance the consumptive and environmental use of water and enable the Basin to better adapt to a changing climate, but this is an ongoing challenge. The Basin is expected to become hotter and drier, with more frequent and severe droughts and floods, and greater climate variability. Adapting to climate challenges and increasing resilience is one of the MDBA’s six priority areas for the future, and climate change will be a focus of its 2026 Basin Plan Review.

Neither the Water Act or the Basin Plan are clear and explicit that the best available science about the impact of climate change on Basin water availability, including relevant climate change projections, should

¹⁰ *Water Act 2007* (Cth), section 21(4).

be part of the scientific knowledge on which the Plan should be based. The Commission is keen to hear participants' views about whether and how this should be addressed. For example, should section 21 of the Water Act be amended to make this clear, or are there better ways of embedding climate change science into the Basin Plan?

... and climate change resilience more measurable

The Basin Plan has objectives about ensuring water-dependent ecosystems are resilient to climate change, but the related targets are not sufficiently specific, making it difficult to assess progress against the objectives. There should be more clarity about how the climate change objectives are measured and assessed. The MDBA should set out how it evaluates whether these Basin Plan objectives are being met, including by setting out specific targets and indicators, and consider integrating this information in the Basin Plan.

Transparency and coordination of knowledge generation efforts could be improved

Greater transparency around the use of new knowledge in decision making is important for trust and confidence in the Basin Plan. It can also make it easier for scientific claims to be verified and alternative or better information to be identified and shared. Transparency would be improved by making publicly available the data, modelling outputs and government commissioned research that is used to make decisions about water management in the Basin. This should include data, modelling and research used to reset the sustainable diversion limits in 2026.

Coordination of knowledge generation, and knowledge sharing among researchers and policy makers, could also improve the quality of Basin water management decisions and improve the efficiency of research investment. The lack of a dedicated role focused on overseeing and coordinating knowledge generation across the Basin is a gap in the Basin management framework.

A risk based approach to amending water resource plans

Basin state governments play a key role in the Basin Plan by preparing and implementing catchment-level water resource plans. The Basin Plan sets out what these plans must include, such as how much water can be taken from the system and how water will be managed during extreme events.

Making, assessing and accrediting water resource plans is a slow and complex process. There are 55 requirements in the Basin Plan that need to be met. The scale and complexity of the requirements are a key reason for some of the delays.

A number of Basin states said the requirements in the Basin Plan made for a very resource-intensive process. The MDBA also noted that the number and complexity of the requirements has:

... led to highly complex WRPs that comprise multiple documents and incorporate a range of state instruments and strategies. This complexity, with cross-referencing across numerous state instruments, strategies and plans means WRPs are prone to drafting errors and internal inconsistencies resulting in an invalid instrument which cannot be accredited. (sub. 61, response to information request, p. 2)

While water resource plans are designed to evolve and adapt as new information becomes available, Basin state governments may be reluctant to update their plans if the process is complex and slow. This could undermine the Basin Plan and inhibit adaptive water policy.

In its upcoming review of the Basin Plan, the MDBA should work with stakeholders to review the 55 requirements, some of which should be simplified, removed or made less prescriptive. The principle of subsidiarity should be a guiding consideration given that a core purpose of water resource plans is to implement SDLs and many other parts of the plans are largely the responsibility of state governments. The prospect of this change should not hold-up the overdue NSW water resource plans, which for consistency with other states should meet the existing requirements.

Basin states should also be able to make a greater range of changes to water resource plans without the changes needing to be formally assessed by the MDBA. This includes amendments that are uncontentious and clearly comply with the Basin Plan. The Water Act and regulations would need to be amended to enable these low-risk changes to be fast-tracked.

Improvements to environmental water planning and management

Despite the positive outcomes and achievements from the use of environmental water, there is more to be achieved. Rivers are not regularly connecting to key wetlands on the floodplain, there are too many cease-to-flow events in the northern Basin and end of the system flow targets are not consistently being met. Arresting and reversing long-term declines in native fish and waterbird populations also requires sustained effort.

The focus for environmental management should now be on simplifying and embedding current best practice approaches into the Environmental Management Framework.

- The Basin-Wide Environmental Watering Strategy – which sets out the environmental outcomes expected in key areas – needs to be more relevant and effective (including, for example, providing clear guidance, under all water availability scenarios, on the priority for achieving flow connectivity at the system scale relative to watering within a Water Resource Plan Area).
- Basin annual environmental watering priorities are general in nature, do not change significantly on an annual basis, and provide limited value in prioritising environmental water use. The 2026 review of the Basin Plan should assess the value of these priorities and whether requirements for annual priorities should be amended or removed.
- First Nations peoples' objectives and outcomes for providing shared benefits from environmental water use should be included in the Basin-Wide Environmental Watering Strategy and long-term watering plans.
- A framework for the coordination of environmental water management with natural resource management should be developed (over the long-term) and included in the Basin-Wide Environmental Watering Strategy, and long-term watering plans should include actions to integrate the management of environmental water with natural resource management.

Water quality and critical human water needs

There remain long-standing concerns about water quality and critical human water needs in the Lower Darling. We heard that towns like Walgett show that the arrangements for meeting these needs in the northern Basin are not working. The Dharriwaa Elders Group told us that 'river foods, drinking water and water to swim in and enjoy have been taken from Walgett' and 'warrambuls, lakes and creeks and waterholes are regularly dry'. And that:

Critical human needs must be more clearly defined and given a high priority in water management – otherwise rivers could be understood as only existing for irrigation, water trading and other industrial purposes. We urge the Productivity Commission to ensure that critical human needs are prioritised by the Basin Plan, not only in the context of 'extreme events'. (sub. 86, p. 6)

The New South Wales Government has progressed a number of programs to manage these problems, but water resource plans and water quality plans remain outstanding. While these issues are largely the responsibility of the New South Wales Government, the Commission invites participants to comment on whether the Basin Plan should play a greater role in securing good quality water and meeting critical human water needs in these regions – and if so, to identify the key considerations and options for reform.

Water quality targets across the Basin will also need to be reviewed to reflect updated national guidelines and to ensure they are set at the right scale.

Governance and institutional arrangements

Accountability mechanisms, which are central to Basin Plan implementation, need to be strengthened.

Regular reports to the Australian Parliament by the Minister for Water that identify which supply projects will receive Commonwealth-funding and why (discussed earlier) will go a long way to bolstering accountability.

The rationale for tasking the IGWC with oversight of some, but not all, intergovernmental agreements is not clear. The Australian Minister for Water should prescribe by regulation additional intergovernmental agreements over which the IGWC should have oversight. The rationale for including or excluding agreements in the IGWC's remit should be made public.

The activities and decision of the BOC should also be made more transparent (including publishing decisions and reasoning for decisions) and there is a case for an independent chair.

And while very few participants wanted more engagement by governments on the implementation of the Basin Plan, there was a lot of support for more meaningful (and in many cases, local) engagement. More joined-up engagement efforts could reduce costs for participants and governments and allow for a more holistic consideration of some issues. A strengthened role for the Basin Community Committee in BOC decision making processes – such as a standing item at BOC meetings for the Basin Community Committee to provide advice on key issues and decisions from a community perspective – would allow communities to be part of decisions affecting them.

Monitoring, evaluation, and reporting

Effective reporting, monitoring and evaluation is critical to the successful implementation of the Basin Plan. While there is lots of reporting and monitoring – the 2020 evaluation by the MDBA found more than 100 outputs from monitoring and research programs – it is not necessarily providing the right information (and in fact, the MDBA found that despite all the information available, it did not have the information needed to undertake the evaluation).

A more strategic approach to monitoring and reporting is needed. Ahead of the 2026 Review of the Basin Plan, the MDBA should conduct a 'stocktake' of the Basin-related monitoring information currently being collected (both by governments and other parties). This would allow for important information gaps to be identified. It could also reveal areas of low-value reporting, duplication and overlap in reporting efforts, or areas where responsibility is unclear. The outcomes of this stocktake should inform the development of a new monitoring strategy.

One avenue for this work is the Basin Condition Monitoring Program, which the MDBA is developing to operate alongside other long-term monitoring programs and other focused monitoring programs.

Trading rules

While there has been significant work in recent years on reviewing the framework governing water markets in the Basin, and there are related reforms in the Restoring Our Rivers Bill, the trading rules in the Basin Plan have not been thoroughly reviewed since they were made. The rules aim to improve market integrity and transparency and limit restrictions on trade, but it is unclear whether they have been successful, particularly in removing unnecessary trade restrictions.

The Australian Competition and Consumer Commission, which is responsible for providing advice to the MDBA about the trading rules, should be asked to conduct a comprehensive review of the rules in time for its findings to inform the MDBA's upcoming review of the Basin Plan.

The Australian Government must take greater responsibility for implementing the Basin Plan

The Basin Plan is a significant, long term environmental reform. It has been described as 'one of Australia's most ambitious and complex reforms'. And while there is considerable support for the Basin Plan – it is considered central to securing a healthy and sustainable river system – and real progress has been made – it will not be implemented on time or on budget. Delivery delays reduce the environmental outcomes of the Basin Plan and Basin communities continue to face uncertainty.

The Australian Government's announcement of a new agreement to implement the Basin Plan, while including necessary timeframe extensions, does not address all the factors that have contributed to the lack of progress across the range of projects. Escalating costs, across both water recovery and the supply projects, also means resetting the balance will cost taxpayers considerably more than originally expected.

The key to protecting public investment in the Basin Plan, achieving environmental outcomes and providing Basin communities with greater clarity about their futures, is for the Australian Government to be more accountable for its funding decisions on the supply, constraints easing and toolkits projects during the next phase of implementation.

With an almost certain shortfall against the supply measures offset, the Australian Government also needs to start working on a dedicated water recovery program to finalise bridging the gap. Undertaking any purchases in a well-prepared, staged way is necessary to help minimise market disruption and negative socio-economic impacts on Basin communities. Future water recovery should occur alongside a commitment from Basin governments to assist communities, where warranted, to transition to a future with less available water. Adjustment assistance should build on the evidence about what programs work and complement existing regional development strategies.

Outstanding water resource plans must be a priority for the New South Wales Government. And crucially, all Basin governments must materially improve how they work, partner and share decision-making with Aboriginal and Torres Strait Islander people, not only on water resource plans, but a range of other Basin Plan matters. Changes are also needed to improve how the Basin Plan adapts over time, including to new knowledge, climate change and contemporary views of Basin communities and the wider Australian community.

Findings and recommendations

Chapter 2. Resetting the balance



Interim finding 2.1

Resetting the balance has slowed because of weak governance in a changing water market

Resetting the balance in the Basin has slowed since 2018 and will not be completed by the original deadline of July 2024. Limited progress has been made toward environmental water recovery targets, including under the additional 450 GL/y efficiency measures program. This is largely because of government policy decisions, alongside rapid growth in water entitlement prices.

Key supply projects will not be completed on time. Accountability for implementing the supply projects is unclear, and Commonwealth funding agreements have failed to drive effective project implementation by Basin state governments. Key projects are unviable, but Basin governments are not transparent about the need to rescope or withdraw these projects, or the implications of failing to deliver projects on time.

These delays have substantially increased the financial costs of meeting Basin Plan water recovery targets, prolonged the uncertainty Basin communities face, and reduced the potential environmental outcomes of the investment in the Plan.



Interim finding 2.2

Past program design has not suited the complexity of constraints-easing projects

Constraints-easing projects have progressed slowly, with complex property-level modelling and extensive landholder engagement needed to identify and manage the impacts of higher flow rates. Including constraints in the supply measure package has led to a focus on the water recovery offset, rather than the environmental and operational benefits of easing constraints.



Interim finding 2.3

Slow progress on the northern Basin toolkit reflects unclear accountability for delivering program outcomes

Delays implementing the northern Basin toolkit measures are a result of inadequate accountability for delivery, as well as a lack of oversight and review of the measures. Public information about project progress is sparse, and there is no framework in place to monitor the relative environmental merits of these projects as they progress, or demonstrate their outcomes once implemented.



Interim finding 2.4

The 605 GL/y supply measure offset is unlikely to be delivered by December 2026

The 605 GL/y supply measure offset is unlikely to be delivered in full by December 2026 because:

- key projects, including the Menindee Lakes project, will not be delivered as designed
- constraints-easing projects cannot be completed in full by December 2026 (which may also limit the offset achieved by other supply measures)
- there are unlikely to be enough new supply projects that are implementable by December 2026, represent value for money and can make a substantial contribution to the water recovery offset.

A significant water recovery shortfall in the southern Basin is likely in 2026.



Interim finding 2.5

The costs of achieving the enhanced environmental outcomes (schedule 5 of the Basin Plan) through water recovery have risen substantially

The budget available to recover the 450 GL/y will not be adequate to achieve the target even if water purchases are allowed. Recovering water towards the supply measure shortfall and 450 GL/y targets at the same time over a three-year period would risk significant disruption to water markets and Basin communities.

The 2026 Basin Plan review is an opportunity to assess how to deliver the enhanced environmental outcomes that the 450 GL/y target is designed to meet.



Interim recommendation 2.1

The Australian Government should be more transparent, and have greater authority, over decisions for supply, constraints-easing and northern Basin toolkit measures

The Australian Minister for Water should table in Parliament an annual report about the progress of all supply, constraints-easing and northern Basin toolkit projects. The reports should include:

- the status of the projects
- funding arrangements, including amounts expended to date
- reasons for deciding to continue, amend or withdraw project funding, including evidence on the cost-effectiveness of projects relative to other forms of recovery
- the expected shortfall against the water recovery offset (if any) and planned actions to make good.

The first report should be tabled by 30 June 2024. The *Water Act 2007* (Cth) should also be amended to require the Minister to table these reports.

The Basin Plan should be amended to require the Basin Officials Committee to notify the Murray–Darling Basin Authority of material changes to supply measures within three months of those changes occurring.

The Basin Plan should also be amended to require the Australian Minister for Water to withdraw a Commonwealth-funded supply measure if the Minister considers that the measure will not enter into operation by the deadline in s. 7.12(6) of the Basin Plan.

These amendments to the Water Act and Basin Plan should be made as soon as possible.



Interim recommendation 2.2

Reset and extend implementation of constraints-easing projects

Basin governments should remove southern Basin constraints-easing projects from the supply measure package.

The Murray–Darling Basin Authority should develop an implementation roadmap that includes:

- pathways to incremental improvements in flow rates in each river, including evidence on the benefits of gradual increases in flow rates
- a process to provide procedural fairness to affected landholders
- a sequence for constraints-easing projects that prioritises the major tributaries prior to the River Murray.

Subject to making meaningful progress on incremental constraints easing, the Australian Government should assess the costs alongside the environmental and operational outcomes of further constraints easing, and consider allocating additional Water for the Environment Special Account funding towards constraints easing.



Interim recommendation 2.3

Implement an assurance mechanism for the northern Basin toolkit

The Australian Government should implement a monitoring framework, together with public reporting, to provide assurance of environmental outcomes for completed northern Basin toolkit projects. As part of the 2026 Basin Plan review, the Murray–Darling Basin Authority should stocktake the outcomes of the northern Basin toolkit projects along similar lines to the Sustainable Diversion Limit Adjustment Mechanism reconciliation.



Interim recommendation 2.4

Develop a renewed approach to water recovery

The Australian Government should develop a renewed approach to water recovery to manage the risk of a supply measure shortfall.

This approach should consider all water recovery options, including voluntary water purchases. However, purchasing should be undertaken gradually, to avoid driving rapid water market and community adjustment, and aligned with irrigation network rationalisation where necessary to avoid impacts on irrigation network viability.

The Australian Government should update its water recovery strategy so it is clear how this renewed water recovery program will proceed. The strategy should outline:

- the sequencing of different water recovery targets, based on the progress of supply and constraints measure implementation
- how different water recovery options will be used, based on the availability of projects, their cost-effectiveness and likely socioeconomic impact
- when and how community adjustment programs will be implemented, based on socioeconomic monitoring
- requirements for monitoring, evaluation, reporting and improvement on program design.

**Information request 2.1**

The Commission is considering the merits of establishing a new corporate Commonwealth entity to address the anticipated water recovery shortfall.

The independent entity would initially adopt the existing Australian Government responsibility for water recovery, with a commercial approach to program delivery in closer partnership with Basin entitlement holders and irrigation networks. It would operate at arm's length from government and be in place for a fixed time period.

The Commission invites views on the merits and the design of the entity, including:

1. the likely strengths and weaknesses of a government-owned corporate entity compared to current arrangements
2. the role of the Ministerial Council in providing high-level direction to the entity
3. the scope of its functions, including whether it should have a role implementing supply, constraints-easing and toolkit measures
4. the entity's guiding principles, such as ensuring value for money and minimising community impacts from water recovery.

Chapter 3. Environmental water planning and management

**Interim recommendation 3.1****Improving the effectiveness of the Basin-Wide Environmental Watering Strategy**

The Murray–Darling Basin Authority's next update to the Basin-Wide Environmental Watering Strategy should include:

- an objective that environmental watering should seek to contribute to social or cultural environmental outcomes (where compatible with environmental outcomes)
- First Nations peoples' objectives and outcomes, under all water availability scenarios, for shared benefits from environmental water use (where compatible with environmental objectives) at the Basin-wide scale
- clear articulation, under all water availability scenarios, of the relative priority of key Basin environmental assets to achieving the overall environmental objectives of the Basin Plan and the expected outcomes set out in the strategy
- clear guidance, under all water availability scenarios, on the priority for achieving flow connectivity at the system scale relative to watering within a water resource plan area
- risks to achieving environmental objectives, in a changing and more variable climate.

Over the longer-term, a framework for the coordination of environmental water management with natural resource management should be developed by the Murray–Darling Basin Authority and Basin state governments and included in the Basin-Wide Environmental Watering Strategy.



Interim recommendation 3.2
The adaptive management of long-term watering plans

In the next iterations of long-term watering plans, Basin state governments should include:

- First Nations peoples' objectives and outcomes under all water availability scenarios for shared benefits from environmental water use (where compatible with environmental objectives) for each water resource plan area
- planning and management actions to integrate the management of environmental water with natural resource management (such as habitat restoration or weed and pest control).



Interim recommendation 3.3
Basin annual environmental watering priorities require review

As part of the 2026 review of the Basin Plan, the Murray–Darling Basin Authority should assess the value of Basin annual environmental watering priorities and whether the Basin Plan requirements for these annual priorities should be amended or removed.



Interim recommendation 3.4
Delivering shared benefits from the use of environmental water

First Nations peoples' objectives and outcomes for providing shared benefits from environmental water use for inclusion in the Basin-Wide Environmental Watering Strategy and long-term watering plans should be developed by First Nations people through genuine, resourced partnerships with the Murray–Darling Basin Authority (for the Basin-Wide Environmental Watering Strategy) and Basin state governments (for long-term watering plans), consistent with commitments made by all governments under the National Agreement on Closing the Gap.

Chapter 4. Water resource plans



Interim finding 4.1
Without water resource plans, the Murray–Darling Basin Plan cannot be fully implemented

Most New South Wales water resource plans remain outstanding more than 10 years after the Basin Plan was put in place and almost four years after an already extended deadline. Without all water resource plans in place across the Basin, the Murray–Darling Basin Plan cannot be fully implemented or properly enforced. With 13 outstanding plans, there is a greater risk of over extraction in New South Wales.

**Interim finding 4.2****Preparing and assessing water resource plans is unnecessarily difficult**

The process of preparing and assessing water resource plans is onerous and time-consuming. This is in part because the requirements in the Basin Plan are unnecessarily complex and prescriptive.

**Interim recommendation 4.1****Simplify requirements for water resource plans**

In its 2026 Basin Plan Review, the Murray–Darling Basin Authority should consider how the requirements for water resource plans could be simplified and whether some requirements should be removed or made less prescriptive and more focused on outcomes. The principle of subsidiarity should be a guiding consideration in this review, given many of the arrangements included in the plans should remain largely the responsibility of state governments, with the implementation of sustainable diversion limits being a core purpose of water resource plans.

**Interim recommendation 4.2****A risk-based approach to amending water resource plans**

The *Water Act 2007* (Cth) should be amended to allow the accreditation of amendments to water resource plans to be fast-tracked, where those amendments are low-risk and clearly comply with the Basin Plan.

**Information request 4.1****Reporting on compliance and other arrangements**

The Commission invites comments on whether Basin state governments should continue to be required to report on compliance with their water resource plans (Murray–Darling Basin Plan, Schedule 12, Matter 19), and on any other ways the reporting arrangements for water resource plans should be improved.

Chapter 5. The values of First Nations people



Interim recommendation 5.1

Strengthen the roles of Aboriginal and Torres Strait Islander people in the Basin Plan

In line with the priority reforms committed to under the National Agreement on Closing the Gap, Basin state and territory governments should:

- publish the input and advice received from Aboriginal and Torres Strait Islander people and organisations on draft water resource plans
- publicly report on how the advice is considered, actioned and reflected in finalised water resource plans.

In addition, the Murray–Darling Basin Authority should:

- in partnership with Aboriginal and Torres Strait Islander people, develop a framework for monitoring and reporting on how Basin governments engage with Aboriginal and Torres Strait Islander people on Basin Plan matters. This should be in place before the 2025 evaluation of the Basin Plan
- annually report on Aboriginal and Torres Strait Islander engagement activities undertaken by Basin governments that relate to water management in the Murray–Darling Basin
- consider – in partnership with Aboriginal and Torres Strait Islander people – the merits of establishing a new Basin-wide body to represent Aboriginal and Torres Strait Islander people’s water interests in Basin Plan decision-making.

All Basin governments should:

- actively pursue opportunities to work in formal partnership with Aboriginal and Torres Strait Islander people on the implementation of, and shared decision-making about, the Basin Plan and provide funding and capacity strengthening support to these partnerships
- work in partnership to develop, then make public, their Aboriginal and Torres Strait Islander engagement intentions early, including for the upcoming 2025 Basin Plan Evaluation and 2026 Basin Plan Review.



Interim finding 5.1

Limited progress made on the Aboriginal Water Entitlements Program

The Australian Government has made little progress on the Aboriginal Water Entitlements Program since the program was announced in 2018. Given the increase in water entitlement prices over that period, the \$40 million program budget will buy less water today than it would have in 2018.

An implementation timeline published by the Australian Government Department of Climate Change, Energy, the Environment and Water would provide participants with greater certainty about when and how the program will be implemented across the Basin.

Chapter 6. Bringing new knowledge into the Basin Plan framework



Information request 6.1

Embedding climate change science into the Basin Plan framework

The Commission is considering whether the *Water Act 2007* (Cth) places sufficient emphasis on the application of climate change science to the development and implementation of the Basin Plan. For example, should section 21 of the *Water Act*, which is about the general basis on which the Plan is made and updated, be amended to make clear and explicit that the best available science about the impact of climate change on water availability, including climate projections, is part of the scientific knowledge on which the Plan should be based?



Interim recommendation 6.1

Specific measures or targets for evaluating climate change resilience

The Murray–Darling Basin Authority should set out how it evaluates whether water-dependent ecosystems are resilient to climate change, including by specifying which targets are relevant to climate change resilience and how progress against these targets is monitored. When reviewing the Basin Plan in 2026, the Murray–Darling Basin Authority should also consider whether some of this information should be integrated into the Basin Plan.



Interim recommendation 6.2

Publishing material used for decisions

Government agencies should publish in regular scheduled reports the data, modelling outputs and government-commissioned research that informs their decisions about water management in the Basin. This should include any decisions related to resetting sustainable diversion limits.



Interim recommendation 6.3

Strategic coordination of knowledge generation and sharing activities

The Australian Government should establish a role for overseeing and coordinating knowledge generation and knowledge sharing across the Basin.

Chapter 7. Water quality and critical human water needs



Information request 7.1

Options to improve water quality and availability in the northern Basin

The Productivity Commission invites participants to comment on whether the Murray–Darling Basin Plan should do more to improve water quality and ensure critical human water needs are met in the northern Basin. What options should be considered by the Murray–Darling Basin Authority in the 2026 Basin Plan Review?

Chapter 8. Water trading rules



Interim recommendation 8.1

A comprehensive review of trading rules in the Basin Plan

The Murray–Darling Basin Authority (MDBA) should ask the Australian Competition and Consumer Commission (ACCC) to conduct a comprehensive review of the Basin Plan trading rules. The review should consider, among other things, how unnecessary trade restrictions should be identified and removed.

The *Water Act 2007* (Cth) should be amended to enable the ACCC to provide advice to the MDBA about the trading rules on its own initiative. The ACCC should notify the MDBA before preparing any such advice.

Chapter 9. Governance and engagement



Interim recommendation 9.1

Extending oversight of intergovernmental funding agreements relevant to Basin Plan implementation

The Australian Minister for Water should prescribe by regulation the additional intergovernmental funding agreements that the Inspector-General of Water Compliance should oversee.

The Australian Government Department of Climate Change, Energy, the Environment and Water should consult with Basin state governments, the Inspector-General of Water Compliance and other interested parties to determine which new and existing agreements should be prescribed and make public the rationale for including or excluding each agreement in the Inspector-General of Water Compliance's remit.

**Interim finding 9.1****Information about Basin Plan funding, processes and outcomes can be difficult to access**

Information about Murray–Darling Basin water management is fragmented and difficult to navigate. This can cause confusion about which agency to go to for information. It can also mean that information reported sometimes differs across agencies. This makes it difficult for communities to understand and engage with water policy and practice. Inconsistencies in information can undermine public confidence and trust in Basin institutions and instruments.

**Interim recommendation 9.2****Improving the transparency of Basin Officials Committee**

The Basin Officials Committee (BOC) should be more transparent. The BOC should publish:

- meeting agendas, communiqués and information on meeting outcomes
- BOC decisions and the reasons for those decisions
- formal directions to BOC from the Ministerial Council
- information on BOC’s strategic priorities, governance practices and sub-committees.

The *Water Act 2007* (Cth) should be amended to enable the appointment of an independent Chair to the BOC.

**Interim finding 9.2****Engagement by government agencies on Basin Plan matters is not well coordinated**

There are many Australian Government and Basin state agencies that engage with the community on matters related to the Murray–Darling Basin Plan. These engagement processes are generally not well coordinated, which can frustrate participants. More joined-up engagement efforts could reduce costs for participants and governments and allow for a more holistic consideration of issues.

**Interim finding 9.3****Well defined local outreach can be an effective engagement approach**

Local, place-based engagement mechanisms can be an effective way of ensuring community views are sought, responded to, and considered by decision-makers. A permanent local presence in communities can help foster community understanding of water policy processes and build relationships and trust. The Commonwealth Environmental Water Holder Local Engagement Officer model provides a good template for effective local engagement.



Interim recommendation 9.3

Strengthening the community voice in Basin decision-making

The Basin Community Committee should have a standing agenda item at Basin Officials Committee meetings to provide input and advice on matters from a community perspective. The Basin Officials Committee should publicly report on how this input and advice has been considered and has influenced decision-making.

1. About this inquiry

The Murray–Darling Basin Plan (the Basin Plan) was put in place in 2012 to improve and protect the health of the Murray–Darling Basin (the Basin) to benefit the environment, Basin communities and industries, and future generations. To allow Basin governments and communities to manage the changes needed for a healthy working Basin, the Basin Plan is being implemented over a transition period.

This inquiry is a review of the implementation of the Basin Plan.

The Productivity Commission is required, under the *Water Act 2007* (Cth) (*Water Act*), to assess the effectiveness of the implementation of the Basin Plan and water resource plans every five years. This function was included in the *Water Act* to ensure there is a regular independent review, which the Minister at the time noted ‘is necessary to ensure continuing public confidence in the implementation of the Basin Plan’ (Assistant Minister for Social Services 2014).

This inquiry is the Commission’s second assessment. The first was conducted in 2018.

1.1 About the Murray–Darling Basin Plan

About the Murray–Darling Basin

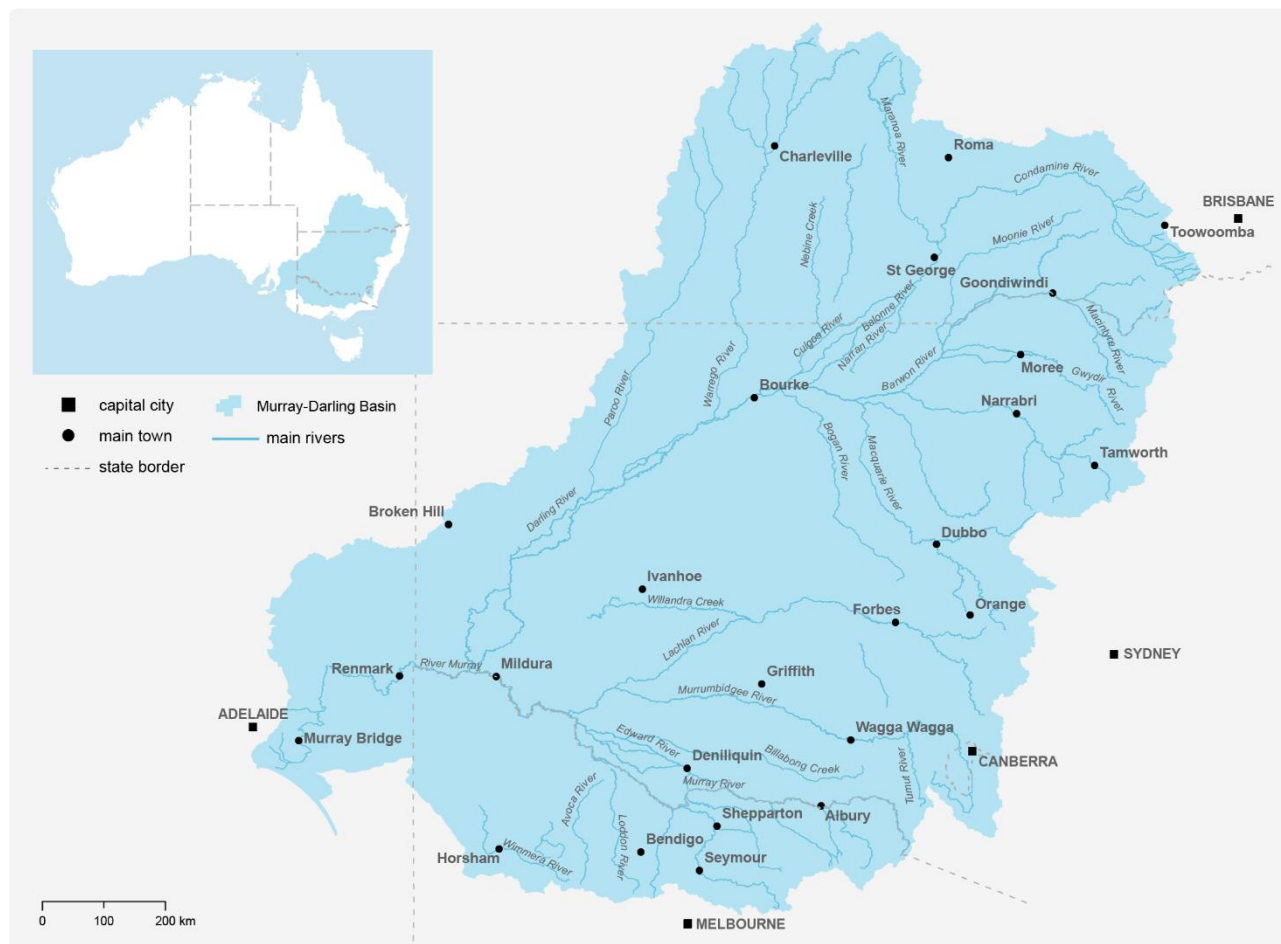
The Basin is a system of interconnected rivers and lakes in Australia’s south-east. The River Murray and the Darling-Baaka River are the two main rivers in the Basin.

The Basin covers over 1 million square kilometres, including large areas of New South Wales, all of the ACT and parts of Victoria, Queensland and South Australia (figure 1.1). It has two key connected areas – the northern Basin and the southern connected system. Water in the northern Basin runs into the Darling-Baaka River and water in the southern Basin runs into the River Murray.

The Basin provides water to more than 2.3 million people and supports 7300 irrigated agriculture businesses (Murray-Darling Basin Authority 2020). It is also home to 16 internationally significant wetlands, 35 endangered species and 120 different species of waterbirds (MDBA 2023p). And it is an area of cultural significance to Aboriginal and Torres Strait Islander people¹ – it is home to more than 100 000 First Nations people from over 40 different First Nations.

¹ We have used both ‘First Nations people’ and ‘Aboriginal and Torres Strait Islander people’ to refer to Aboriginal and/or Torres Strait Islander people. In some instances, we refer specifically to ‘Aboriginal people’. The term ‘Indigenous’ is sometimes used by participants and included in programs and policies (including the Basin Plan), so this term also appears in this report.

Figure 1.1 – The Murray–Darling Basin



What is the Murray–Darling Basin Plan?

The Basin Plan is an Australian Government instrument that gives effect to agreements between Basin state governments² and the Australian Government about how to reset the balance between the use of water for the environment, irrigation and communities to improve the health and sustainability of the river system.

The Basin Plan was developed in response to increasing concerns about over-allocation of water in the Basin and the health of the river system and followed decades of Basin governments seeking to establish arrangements to share and jointly manage the Murray–Darling river system (box 1.1, figure 1.2). The Murray–Darling Basin Authority (MDBA) said:

The introduction of the Basin Plan was recognition that change was needed to past attempts to share the water, and that a whole-of-Basin approach was required to manage the Basin’s water resources in the national interest, including to meet Australia’s international obligations. (sub. 61, p. 1)

² The Basin states are New South Wales, Victoria, Queensland, South Australia, and the Australian Capital Territory.

Box 1.1 – The long road to the Basin Plan

In 1914, after four failed attempts by New South Wales, Victoria and South Australia to agree on how to share and jointly manage the river, the three states and the Australian Government signed the River Murray Waters Agreement (RMWA).

The RMWA set out states' share of the water, a governance structure and an extensive capital works program to regulate the river. The RMWA was settled under the pressure of a drought, funding by the Australian Government (that filled the gap between what the states were prepared to pay for capital works and their estimated costs), and the Australian Government mediating negotiations. Under the RMWA, all decisions required unanimity. As autonomous entities, the states were committed to retaining their independence and would only join in co-operative action when each of them benefited.

The period up to the completion in 1979 of the last regulating structure – the Dartmouth Dam – were the building years, where the capital works program agreed in 1914 was rolled out. This work occurred in the context of water take being well within the volume available, when water quality and riverine environmental health were neither significantly impacted nor well understood, and when social values embraced the extraction of water for irrigation. The RMWA yielded the economic benefits of storing and regulating water for irrigation in the three states and was a vehicle for economic development.

From the 1970s on, as water allocations began to push against the limits of availability, the consequent environmental stress became evident and of increasing concern. Addressing water quality entailed costs, by way of constraints on state prerogative, limits on irrigation water take and capital works projects like salt interception schemes, which yielded benefits outside the jurisdiction. The requirement for unanimity meant it was difficult to agree on the actions needed to address water quality.

In 1987 the RMWA was broadened to cover the entire Murray–Darling river system, and became the Murray–Darling Basin Agreement (MDB Agreement). In time, Queensland and the ACT became signatories. However, governance, roles and powers under the new MDB Agreement did not change to address the environmental challenges.

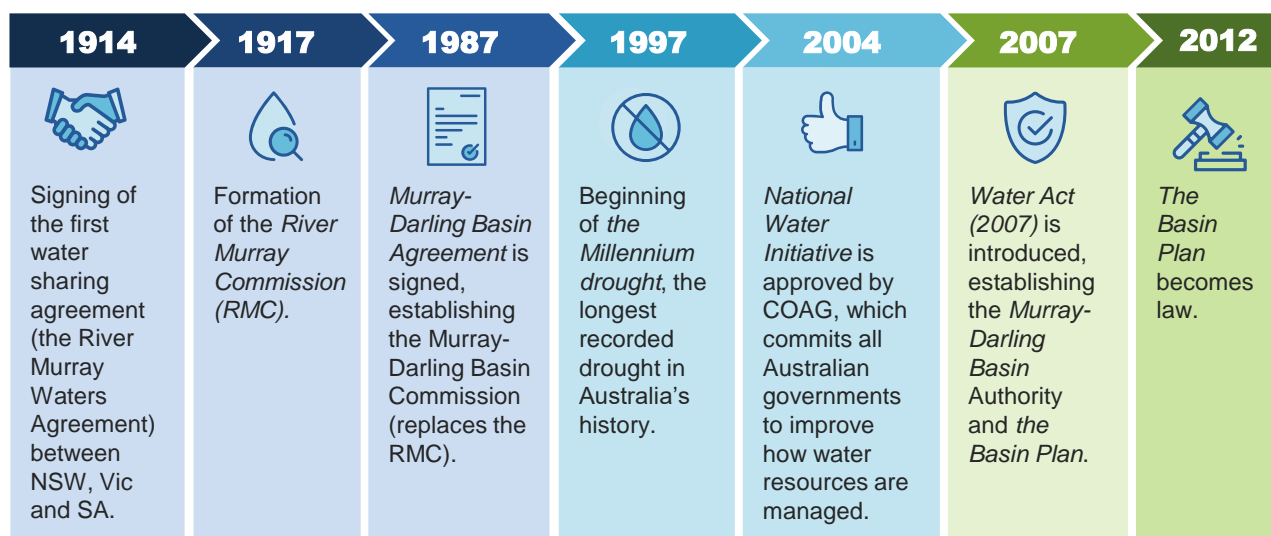
On the eve of Australia Day in 2007, during the worst ever recorded drought, the then Prime Minister John Howard proposed that the Australian Government take over water management in the Basin.

... the old way of managing the Murray–Darling Basin has reached its use-by date. The tyranny of incrementalism and the lowest common denominator must end. I will therefore be writing to all relevant State and Territory Leaders requesting that they refer to the Commonwealth their powers of water management over the Murray–Darling Basin. (Howard 2007)

The proposal required a referral of Constitutional powers from the states to the Australian Government, which did not occur. With bipartisan Parliamentary support, the Australian Government proceeded with the Water Act (that relied on its own powers) which enabled the Australian Government, in conjunction with the Basin states, to manage the Basin's water resources in the national interest. The MDB Agreement remained in place and states retained water management powers. The Water Act established the Murray Darling Basin Authority, a statutory agency with a Basin-wide remit (sitting over the roles and responsibilities that states had exercised for over 100 years).

Source: Guest (2016).

Figure 1.2 – Key developments in the history of the Basin Plan



Source: Based on Inspector-General of Water Compliance, sub. 75, p. 2.

Signed into legislation in 2012 under the Water Act, the Basin Plan sets out how much surface water and groundwater can be taken from the Basin each year for irrigation, town and industry. This volume, or limit, known as the Sustainable Diversion Limit (SDL) is designed to leave enough water for the rivers, lakes and wetlands in the Basin. There is an SDL for the Basin as a whole, made up of SDLs for individual valleys and catchments.

Water resource plans are central to how these SDLs are met. Developed by Basin states, catchment-level water resource plans are the legal mechanism which set out how much water can be taken annually from each catchment, how much water will be made available for the environment and how water quality standards and critical human water needs will be met.

Meeting the SDLs requires the Australian Government to recover water entitlements from existing water users. This process is known as ‘Bridging the Gap’ (bridging the difference between the Baseline Diversion Limits and the SDLs). In 2012, the Basin states and the Australian Government agreed that 2750 GL/y of water from across the Basin would be recovered for the environment by 30 June 2024.

To provide flexibility, the Basin Plan has an adjustment mechanism – the Sustainable Diversion Limit Adjustment Mechanism (SDLAM) – which can be used to change SDLs in the southern Basin. The adjustment mechanisms are ‘supply’ and ‘constraints-easing’ projects and ‘efficiency measures’ (that modernise water delivery infrastructure for consumptive users and are effectively additional water recovery, chapter 2).

In 2017, the MDBA determined that a package of supply measures put forward by Basin states would achieve equivalent or improved environmental outcomes with 605 GL/y less water recovery. Amendments to the Basin Plan SDLs to reflect this – as well as a 70 GL/y reduction in the northern Basin water recovery target³ – were made in 2018, resulting in a new target of 2075 GL/y. Recovery of an additional 450 GL/y of water rights via efficiency measures to pursue enhanced environmental outcomes is also allowed under the Basin Plan, provided they deliver neutral or improved socioeconomic outcomes.

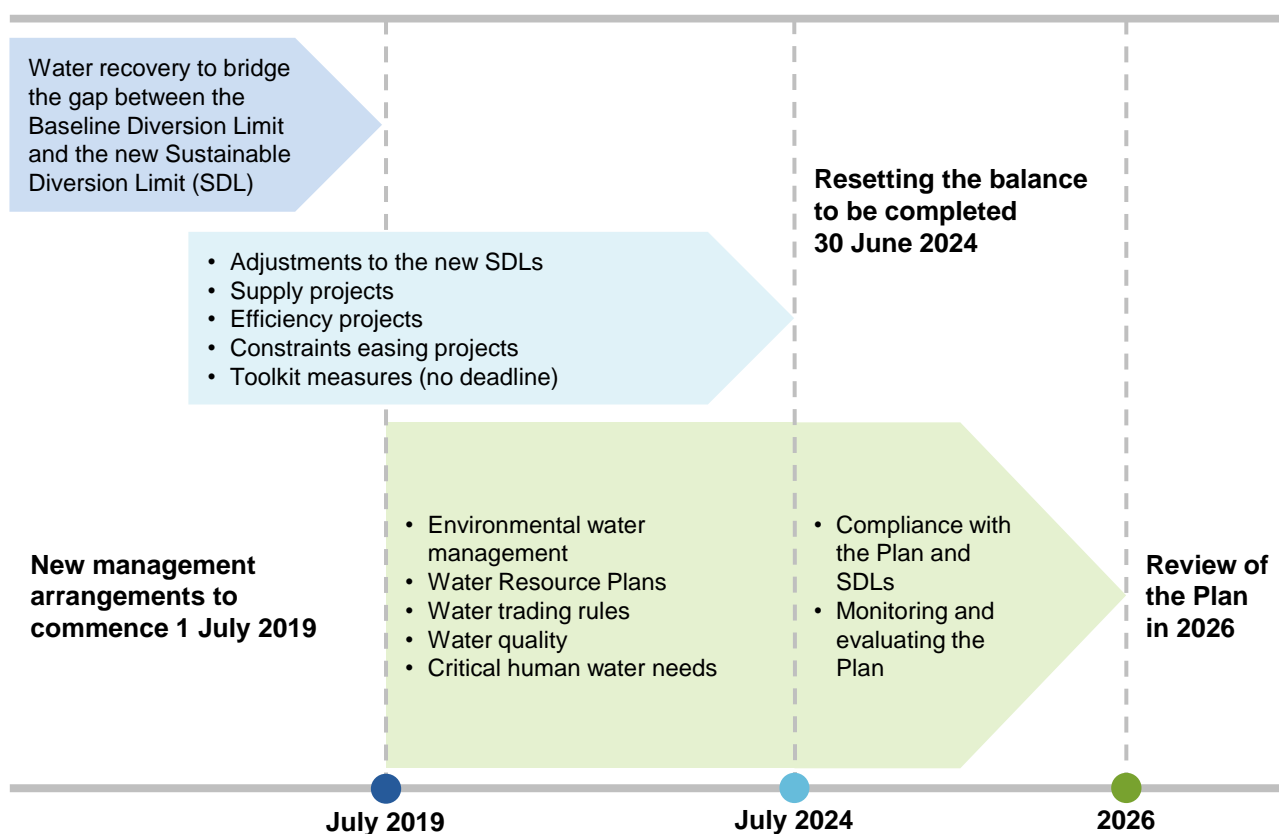
³ The reduction in the northern Basin water recovery was on the condition that the Australian, Queensland, and New South Wales Governments implement the northern Basin toolkit measures to ensure effective management of environmental water in the northern Basin.

Resetting the balance is core to Basin Plan implementation and requires recovering water entitlements for environmental use, implementing the SDL adjustment projects and implementing the northern Basin toolkit (chapter 2).

The Australian Government is responsible for resetting the balance. Basin states are responsible for delivering supply, constraints and northern Basin toolkit projects. All elements of resetting the balance were to be completed by 1 July 2024 (figure 1.3).

The Basin Plan also required new management arrangements, including water resource plans and a framework for the management of environmental water, to commence by 1 July 2019 (figure 1.3). The water resource plans need to be assessed by the MDBA and accredited by the Australian Minister for Water.

Figure 1.3 – Elements of the Basin Plan and timings



The MDBA has two distinct roles. Under the Murray–Darling Basin Agreement, the MDBA is responsible for operating the dams, locks and weirs that regulate the River Murray and managing joint natural resource programs on behalf of the states and the Australian Government. Under the Water Act, the MDBA is responsible developing the whole of Basin Plan, including assessing water resource plans, periodically reviewing the Basin Plan, and monitoring and evaluating outcomes. The Australian Government funds the Basin Plan, and the MDBA is accountable to the Minister for Water (governance arrangements are discussed in chapter 9).

Responsibility for water resource management in the Basin Plan is with the Basin states.

Recent announcements

It has been apparent for some time now that the Basin Plan will not be implemented in full by 30 June 2024. The Australian Government publicly acknowledged this in July 2023. And in late August, the Minister for Water announced ‘a new agreement of Murray–Darling Basin ministers to deliver the Basin Plan in full’ (DCCEEW 2023b). The Victorian Government is not party to the agreement.

The agreement:

- allows more time – until 31 December 2026 – for the delivery of existing supply and constraints projects (and northern Basin initiatives), and – until 31 December 2027 – for the 450 GL/y target (the last date contracts can be entered into)
- allows Basin states to bring forward *new* supply projects (provided they can be delivered by 31 December 2026)
- allows for a range of water recovery options – including voluntary water purchases – to be used to meet the 450 GL target
- aims to minimise the socio-economic impacts on communities and will provide for community adjustment assistance for the impacts of water purchases toward the 450 GL for enhanced environmental outcomes.

The agreement requires amendments to the Water Act and the Basin Plan. The Water Amendment (Restoring Our Rivers) Bill 2023 (the Bill) was introduced to Parliament on 6 September 2023.

The Bill also proposes amendments to:

- remove the 1500 GL cap on buybacks (the cap was added in 2015)
- enable funds from the Water for the Environment Special Account to be used more flexibly
- strengthen Sustainable Diversion Limit compliance, including the Inspector-General of Water Compliance having expanded responsibilities
- change the approach for delivering constraints relaxation projects
- delay the Water Act review until 2027.

1.2 The Basin Plan – a significant reform

The Basin Plan is a significant, long-term environmental reform (box 1.1). It has been described as world-leading and as ‘one of Australia’s most ambitious and complex reforms’ (MDBA 2020c, p. viii). The Chair of the MDBA, for example, said:

All governments decided to act in the national interest. Together, we embarked on a bipartisan water reform journey not seen anywhere else in the world. The significance of that statement cannot be underestimated. (MDBA 2020c, p. iii)

And addressing the MDBA’s annual River Reflections conference this year, Professor N. LeRoy Poff said the Basin Plan was a beacon for other nations on how integrated water management at the Basin scale can work.

I’m particularly impressed by the balance achieved between community and industry needs and the protection of water for the environment in Australia. That commitment is enviable ... In the Colorado River Basin we desperately need a whole system model like the Murray–Darling Basin Plan. One that looks at the trade-offs among end-users and costs of environmental degradation with an eye to a more sustainable future for our grandchildren. (MDBA 2023n)

There is a lot of support for the Basin Plan

The ambition of the Basin Plan is shared by many people across Basin communities (box 1.2). The Basin Plan is now considered to be part of the landscape and central to securing a healthy and sustainable river system. For the most part, the conversation is no longer about whether or not there should be a Basin Plan, but rather how to deliver the Plan and its intended outcomes. In a recent address to the National and Rural Press Club, the Chief Executive of the MDBA, said:

... everyone shares a passion for the health of our rivers and importantly, no-one I have come across wants to do away with the Plan. Hand on heart, literally no-one has said ... 'throw it out'. I struggle to think of anywhere else in the world where such an extraordinary political agreement has been achieved. (McConville 2022)

Several participants argued that with climate change, delivering the Basin Plan is more important than ever.

Box 1.2 – Support for the Basin Plan: what participants said ...

Australian River Restoration Centre

We support the Basin Plan and believe ongoing investment in the objectives it seeks to achieve is vital for the rivers of the Murray–Darling Basin to survive, and hopefully thrive, now and into the future. (sub. 13, p. 1)

Department of Climate Change, Energy, the Environment and Water

In the face of an increasingly harsh climate and greater demand for water, delivering the Basin Plan in full is more important than ever. (sub. 77, p. 28)

Latji Latji Mumthelang First Peoples

We are fully behind the Basin Plan being delivered, including the provision for First Nations water, which is yet to be delivered properly. (sub. 78, p. 1)

NSW Government

The NSW Government agreed to implement the Basin Plan in 2014 and NSW supports implementation of the Basin Plan in full. (sub. 43, p. 1)

Murray River Group of Councils said it supports:

... the balanced implementation of the Murray Darling Basin Plan, to sustain the long-term viability of our regional economy and the wellbeing of our communities and to deliver the environmental outcomes that will protect and preserve our region's ecosystems. (sub. 22, p. 1)

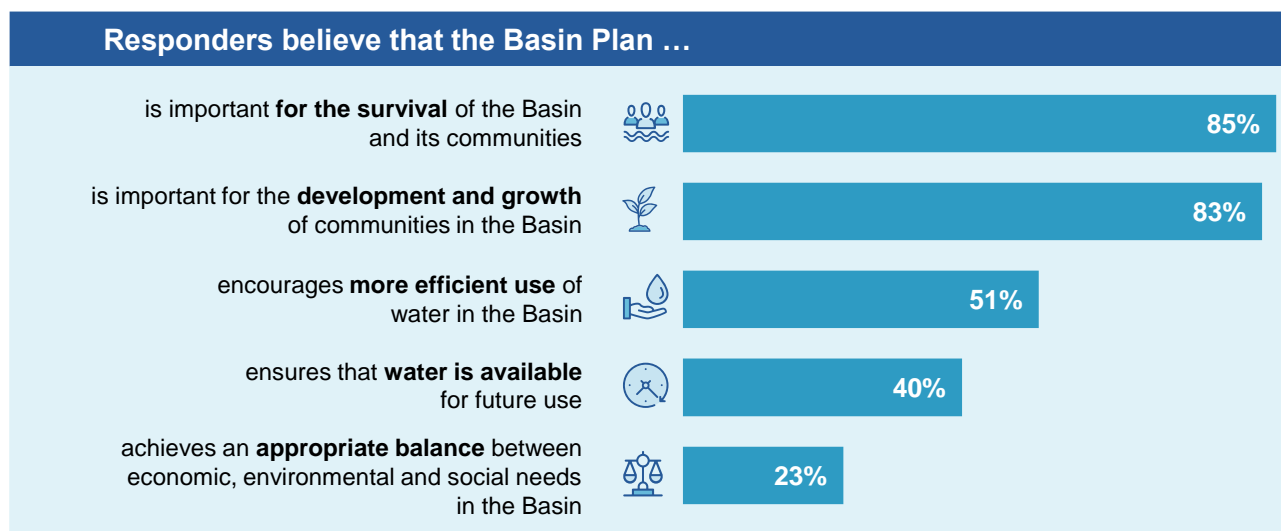
Central Irrigation Trust

Collectively we must look for all opportunities to deliver the outcomes of the Plan without the irrigated agriculture sector being disproportionately impacted. It is imperative that all levels of Government look beyond the numbers in the plan, and work together to deliver the agreed outcomes in alternative and innovative ways. (sub. 33, p. 3)

The Inspector-General of Water Compliance undertakes a community sentiment survey which asks respondents questions about awareness of and support for the Basin Plan. The survey found that most

survey participants are aware of the Basin Plan (but not the details) and of those who were aware of the Basin Plan’s details around half were largely supportive of it (46% of community member respondents and 48% of water licence holders, sub. 75, p. 6). However, a low proportion of participants felt positive about the management of water in the Basin – 6% of community member respondents, 8% of First Nations people and 19% of water licence holder respondents. More than 80% of survey respondents who were aware of the details of the Basin Plan agreed that it was important for the survival of the Basin and its communities and 40% agreed that the Plan ensures water is available for future use (figure 1.4).

Figure 1.4 – Community perceptions of the Basin Plan
 % agree of those who were aware of details of the Plan



Source: IGWC (sub. 75, p. 6).

Many also commented on what the Basin Plan has achieved to date. The National Irrigators’ Council, for example, said:

The Plan has been a vital tool in balancing the needs of our communities, our environment and our productive sector. It hasn’t always got it right, but it has achieved a great deal since its inception. Ensuring balance is needed so we can keep our rivers and communities healthy and thriving.⁴

But while there is support for the objectives of the Basin Plan, some participants observed that the focus is on volumes of water and less on the outcomes the Plan is trying to achieve. For example, the National Farmers Federation said:

... to achieve water recovery targets and meet supply and efficiency measures, a shift towards outcomes-based targets rather than volume-based targets is crucial. By focusing on outcomes, such as maintaining ecological health and supporting viable farming communities, we can ensure a more balanced approach that considers the social and economic impacts of water management decisions. (sub. 46, p. 2).

⁴ Submission to the Department of Climate Change, Energy, Environment and Water Delivering the Basin Plan Ideas Consultation Process (p. 3).

1.3 What we have been asked to do and our approach

The terms of reference ask the Commission to look at whether the Basin Plan is on track to be implemented on time, and where it is not on track, what needs to change. This includes advising and recommending future actions and opportunities to simplify the framework of the Basin Plan to ensure efficient and effective achievement of its outcomes. The terms of reference also ask the Commission to:

- assess the effectiveness of reforms to address previous Productivity Commission recommendations
- consider the impact of major droughts, floods, and the COVID-19 pandemic on the effectiveness of implementing the Basin Plan and water resource plans
- provide practical advice on how the Basin Plan and water resource plans could better address the impacts of climate change and recognition of First Nations values and their ability to support environmental water management.

We assessed the individual elements of the Basin Plan (such as water resource plans and supply measures) as well as broader governance and institutional arrangements and looked at:

- whether the arrangements in place are likely to deliver the objectives of the Basin Plan and enable its impacts and outcomes to be evaluated
- whether actions to implement the Basin Plan have been effective and efficient (box 1.3)
- how the actions of governments are tracking against the timeframes set out in the Basin Plan
- whether changes are needed to ensure effective and efficient implementation of the Basin Plan
- whether the right governance arrangements are in place.

The Commission also considered how the operation of the Basin Plan could better adapt to a changing climate, recognise the values of First Nations people and incorporate the best available science.

We did not revisit questions that underpin the Plan, such as whether it is necessary to recover water for the environment, nor questions that other agencies have been (or will be) tasked and resourced to answer, such as how much water can sustainably be taken from the Basin.

There is a lot of other monitoring and reporting on the Basin Plan. The MDBA provides regular updates on progress of implementation of the Basin Plan and every five years it also undertakes a Basin Plan Evaluation (looking at what's working, what's not and where improvement is needed). Other recent reviews include an assessment of the social and economic conditions in the Basin, work by the Inspector-General of Water Compliance and the Australian Competition and Consumer Commission, the South Australian Murray–Darling Basin Royal Commission and independent assessments of the fish deaths in the lower Darling.

There will be a full review of the Basin Plan in 2026 and a review of the Water Act (now proposed to be undertaken 2027).

Box 1.3 – Efficiency and effectiveness

Efficiency and effectiveness are terms used in both the Basin Plan and the terms of reference for this inquiry.

Economic efficiency and water efficiency

Economic efficiency refers to how well a society is making use of the resources available to it. An increase in economic efficiency improves the material wellbeing of the community. In the context of water, efficiency refers to how much output is produced from a given volume of water. 'Efficiency measures' in the Basin Plan aim to save water through improvements in water-use efficiency, such as through investment in infrastructure.

Taking a community-wide perspective means seeking to identify the policy or program that yields the highest net benefit to the community.

While the benefits of a policy or program could outweigh all the costs involved, and so increasing these net benefits would result in an efficiency improvement (compared with having no policy or program), there may be alternative approaches that achieve higher net benefits. The efficient option is that which generates the *highest* net benefit.

Effectiveness

An effective policy is one that achieves what it was intended to achieve. For example, in the context of the Basin Plan, a 'healthy working basin' or 'implementing SDLAM measures'.

A related concept is 'cost effectiveness', which can be useful where an outcome has been agreed, and the main question is how to achieve the outcome at lowest cost. If an option is economically efficient, it must also be the most cost effective. But the converse is not always true – cost effective policies and programs need not be economically efficient.

A community-wide perspective

The Commission adopted a community-wide perspective to assessing the implementation of Basin Plan (a requirement under the *Productivity Commission Act 1998* (Cth)). This involved taking into account the costs of the Basin Plan in light of the benefits and the impacts on the lives of people, regions and industries affected by the Plan and Australians more generally.

This approach is consistent with the Basin Plan. A healthy, working Basin requires long-term sustainable management of water and other resources to underpin the range of community uses and values. Resetting the balance requires considering the environmental benefits across the Basin and the socioeconomic impacts on industries and regional communities of a permanent reduction in water available for irrigation.

The Australian Government has committed \$13 billion to implement the Basin Plan. The basis for spending this amount of taxpayers' money on implementing the Plan, like that of any public spending, is that the benefits exceed the costs across the economy. Basin communities and the wider community also want assurance that value for money has been achieved in the pursuit of environmental outcomes and sustainable consumptive uses of water. Critical to the community's trust and confidence in the Basin Plan are the governance arrangements holding Basin governments to account for implementation, expenditure and outcomes. The Inspector-General for Water Compliance, noting the importance for the wider community of linking government expenditure to outcomes, said:

Underpinning the management of Basin water resources is the money spent on, or committed to, achieving Basin Plan outcomes. If the public cannot see for themselves where the money for Basin reform has gone, and what outcomes have been achieved, trust in the management of Basin water resources will erode. (sub. 75, p. 7)

Basin governments also need to demonstrate that the funds spent on the Basin Plan are dollars well spent from tax revenues for which there are many competing uses.

Principles of good governance

To assess whether the right governance arrangements are in place, we looked at how well the institutional and governance arrangements aligned with principles for good governance. The principles include:

- **clarity around roles and responsibilities**, with responsibility given to institutions that can best achieve the outcomes. Each institution's purpose and objective should be clear, and they should have the powers, functions and capability to fulfil their responsibility
- **management of conflicting functions**, for example separating regulatory, service delivery and policy-making into separate institutions
- **transparent decision making and clear accountability for decisions and actions**; the costs and benefits of decisions should also be clearly articulated and there should be an effective framework for monitoring, reporting and assessing implementation
- **effective processes for collaboration on implementation**, with all parties having a genuine commitment to shared goals and co-operative working arrangements (as a joint responsibility of Basin governments, the Basin Plan requires collaboration to implement it). Arrangements for collaboration should be clearly documented, while shared risks should be identified and managed, and potential overlaps and gaps should be identified and addressed
- **effective processes for meaningful community engagement**, including giving parties genuine opportunities to influence decisions, providing parties the information, analysis and time to support their deliberations so they can meaningfully contribute, and communicating decisions to parties in an open, transparent and accessible way.

1.4 How we engaged

We engaged widely on this inquiry, including with Australian Government agencies, state and territory and local governments, individuals and organisations, including Aboriginal and Torres Strait Islander people and organisations.

- In May 2023 the Commission released a Call for Submissions paper with key questions on the various components of the Basin Plan. We have received 103 submissions and 19 brief comments.
- We held public forums in 17 locations across the Basin from June to August 2023 (figure 1.5). 330 people attended these forums.
- A stakeholder working group (in accordance with the requirements of the Water Act) was established to provide a forum for the exchange of information and views on issues relevant to the inquiry.

Details of the individuals and organisations who participated in this inquiry are provided in appendix A. Appendix B reports what we heard at the public forums.

**Figure 1.5 – The Commission’s public forums
June to August 2023**



Our assessment has also been informed by detailed responses to information requests submitted to Australian and state and territory government departments and agencies with responsibility for implementing the Basin Plan. Responses to the information requests are published as attachments to their respective submissions to this inquiry (except where the material was provided to the Commission on a confidential basis). The Commission is grateful for the assistance received from these agencies throughout the inquiry, which included providing data and helpful responses to questions about existing arrangements.

Participants are invited to provide submissions in response to this Interim Report.

The Commission is mindful of the heavy engagement burden experienced by many in the community. The Commission thanks all inquiry participants for meeting with Commissioners and staff, making submissions, attending public forums, and providing information to inform the inquiry.

1.5 Structure of the report

The rest of this report is set out as follows:

- chapter 2 – resetting the balance
- chapter 3 – environmental water planning and management
- chapter 4 – water resource plans
- chapter 5 – the values of First Nations people
- chapter 6 – bringing new knowledge into the Basin Plan framework
- chapter 7 – water quality and critical human water needs
- chapter 8 – water trading rules
- chapter 9 – governance and engagement.

Appendix A outlines the engagement processes undertaken for this inquiry and appendix B sets out what we heard when we engaged with communities across the Basin.

2. Resetting the balance

Key points

- ✳ **Resetting the balance of water uses in the Basin is core to implementing the Basin Plan and delivering its outcomes. It requires governments to implement, in full, water recovery, the sustainable diversion limit (SDL) adjustment mechanism, constraints-easing projects, and the northern Basin toolkit.**
- ✳ **For most elements of resetting the balance, little progress has been made since 2018. Even with more time, some key supply measures are not viable, and a substantial water recovery shortfall is expected. Limited progress has been made on most constraints-easing projects, and the program to recover an additional 450 GL/y of water through efficiency measures will fall well short of its target.**
 - Basin states have not delivered projects as agreed, and the Australian Government has not held them to account. Over time, Basin governments have progressively reduced the scope of water recovery options available, and given greater priority to slower and more expensive forms of water recovery.
 - Delays in resetting the balance mean the Basin Plan will be more expensive to complete, limiting the environmental outcomes that can be achieved with the allocated funds. The failure of Basin governments to deliver imposes costs on the environment, Basin communities, and the broader Australian community.
- ✳ **A new agreement of some Basin ministers to deliver the Basin Plan will, if legislated, provide more time and allow new supply measures and voluntary purchases. But this will not be enough to deliver the Plan in full. Waiting until reconciliation in 2026 to address the supply measure shortfall will perpetuate uncertainty for Basin communities and could further erode trust and confidence in Basin governments.**
- ✳ **The Australian Government must take greater responsibility for resetting the balance, in partnership with Basin states.**
 - The Minister for Water should report to the Australian Parliament by June 2024, and annually after that, on the cost-effectiveness and feasibility of Commonwealth-funded supply projects (existing and new).
 - The Australian Government should develop a renewed approach to water recovery, including staged voluntary purchases alongside a commitment to assist communities, to address the likely supply measure shortfall.
 - Delivering the 450 GL/y efficiency measures target by 2027 will cost more than budgeted and risks significant disruption to water markets and Basin communities.
 - A new government-owned corporate entity that operates at arm's length from governments is an option for undertaking water recovery and implementing some supply projects.
- ✳ **Constraints-easing projects underpin environmental improvement, beyond a potential water recovery offset. Easing constraints requires renewed focus, separate to the supply measure package, and substantially more time.**

The Basin Plan resets the balance between water for the environment and water for other uses: towns, households, irrigation and other industries. This balance is established through sustainable diversion limits (SDLs) on water take. Moving to the SDLs requires governments to recover water access rights from consumptive users and make them available for environmental use.

This chapter assesses how effectively governments have rebalanced water use in the Basin since December 2018, and makes recommendations to progress the outcomes of the Plan.

2.1 Resetting the balance is core to Basin Plan implementation ...

What needs to be done to reset the balance?

Resetting the balance has three interconnected components.

1. **‘Bridging the Gap’** by recovering water entitlements for environmental use to meet the SDL in each valley. Water recovery can include voluntary water purchases and water-use efficiency programs.
2. The **SDL adjustment mechanism** in the southern Basin. It includes:
 - a. **Supply measures**: works, measures and rule changes that deliver ‘environmentally equivalent’ outcomes to environmental water recovery, with less water.
 - b. **Efficiency measures**: 450 gigalitres (GL) a year¹ of additional water recovery through projects that improve water-use efficiency with neutral or improved socioeconomic outcomes.
 - c. **Constraints-easing measures**: Projects to ease river operating constraints in the Basin; constraints may be physical (such as flood-prone infrastructure) or operational (river management rules designed to minimise flooding). Most constraints projects are also notified as supply measures.²
3. **The northern Basin toolkit**: a \$180 million package of ten projects and six measures that aim to improve the ecological health of the northern Basin. The toolkit was packaged alongside a reduction in the northern Basin water recovery target from 390 GL/y to 320 GL/y.

Further detail on each of these components is provided in box 2.1.

¹ All water volumes are presented in long-term average annual yield (LTAAY) terms, which provide a common unit for different types of water entitlements in the Basin. Different entitlements will make different contributions to water recovery targets, and individual entitlement types are converted into LTAAY through long-term diversion limit equivalence factors, also known as ‘cap’ factors.

² Being notified under section 7.12 of the Basin Plan means some constraints-easing projects contribute to the supply measure water recovery offset, and are eligible for additional Australian Government funding under the 2013 *Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin*.

Box 2.1 – Components of resetting the balance

Bridging the gap to the SDLs

'Bridging the Gap' refers to programs that reallocate water rights from consumptive uses (including towns, households and industry) to the environment. These targets are defined as the difference between the Baseline Diversion Limits (BDLs; set at 2009 levels of development) and the SDLs defined in the Basin Plan. The 2012 Basin wide surface water target was 2,750 GL/y (in long-term annual average terms). This is a reduction of about 20% from the overall BDL (MDBA 2023d).

Bridging the Gap has included programs to directly purchase water rights through open and limited tenders, infrastructure projects, and other State led projects. Recovered water entitlements are managed by the Commonwealth Environmental Water Holder to achieve environmental outcomes.

SDL Adjustment Mechanism: Supply measures

Supply measures refer to a range of works, measures and rule changes that seek to provide equivalent environmental outcomes to water recovery. These allow SDLs to be increased and water recovery targets to be reduced or offset. Some projects aim to provide localised environmental benefits, while others are more complex and have system-wide impacts.

A package of 36 supply measures was agreed to by Basin state governments. In 2017, the Murray–Darling Basin Authority (MDBA) modelled the environmental equivalence of the package, and assessed that it could offset 605 GL/y of water recovery in the southern Basin. The Basin Plan was amended to reflect this lower water recovery target, subject to the MDBA conducting a 'reconciliation' process that compares the modelled water savings of all completed projects against the original modelling.

SDL Adjustment Mechanism: Constraints-easing measures

Constraints refer to rules limiting the flow rates of regulated rivers to protect infrastructure and avoid flooding of private land. Constraints-easing measures are projects that aim to raise those allowable flow rates, so rivers can reconnect with floodplains more often. Five constraints projects are notified as supply measures (and contribute to the water recovery offset), and one is part of the northern Basin toolkit.

SDL Adjustment Mechanism: Efficiency measures

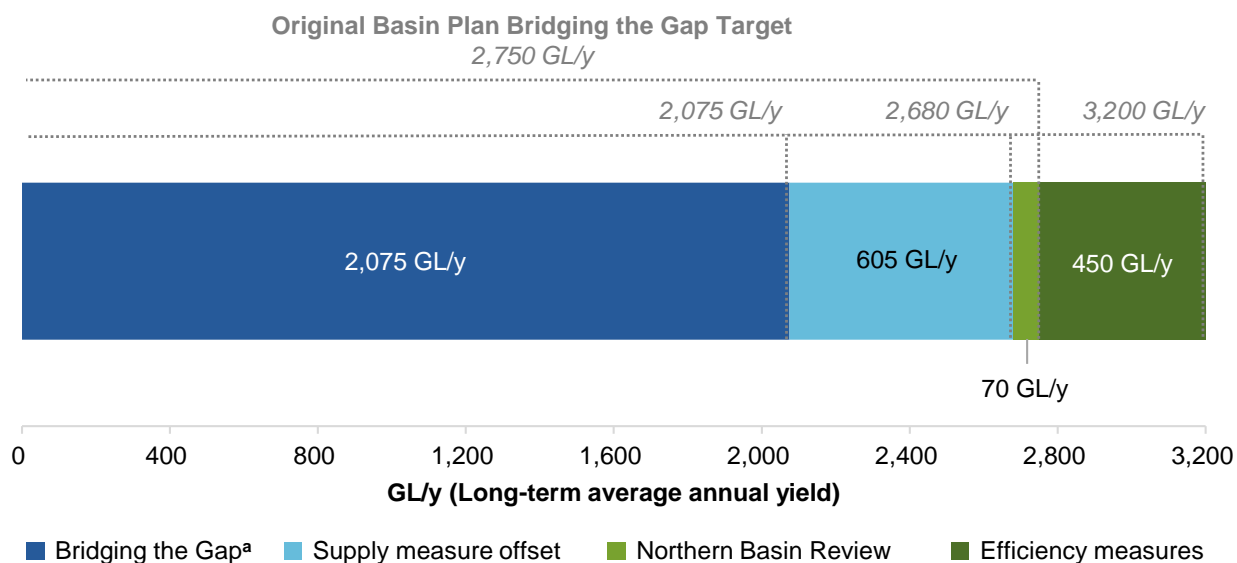
Efficiency measures are an additional water recovery program that aims to recover an additional 450 GL/y with 'neutral or improved socioeconomic outcomes'. These allow SDLs to be reduced alongside improved water-use efficiency for consumptive users. Under the Plan, neutral or improved socioeconomic outcomes are met when an individual voluntarily participates in a water efficiency project (s. 7.17). The MDB Ministerial Council later agreed to a set of 13 additional criteria to assess the socioeconomic impacts of these projects, including that projects do not negatively impact on social outcomes. The 450 GL/y is intended to pursue the 'enhanced' environmental outcomes defined in schedule 5 of the Basin Plan. One of these outcomes explicitly relies on easing constraints.

The northern Basin toolkit

The 2016 Northern Basin Review (MDBA 2016) proposed a range of projects to protect and actively manage environmental flows and concluded that, were those projects implemented, the northern Basin gap-bridging water recovery target could be reduced by 70 GL/y. The Plan was amended in 2018 to reflect this water recovery reduction.

The Basin Plan SDLs led to a Basin-wide surface water environmental water recovery target of 2,750 GL/y, and a 38.45 GL/y groundwater target. These targets are made up of catchment-specific local targets and shared targets for connected surface water systems. The surface water targets were altered in 2018 by the SDL Adjustment Mechanism and Northern Basin Review, resulting in a new water recovery target of 2,075 GL/y (subject to the full 605 GL/y offset under the SDL Adjustment Mechanism; figure 2.1).

Figure 2.1 – Basin-Wide Surface water recovery and SDL adjustment targets



a. Bridging the Gap relies on 2,075 GL/y of surface water recovery and the supply measure offset.

Note: All volumes are reported in long-term average annual yield. These targets are affected by the 5% limits of change in the SDL adjustment mechanism (Basin Plan, s. 7.19), which is 543 GL/y. A 605 GL/y supply measure offset requires 62 GL/y of efficiency measures to be recovered; otherwise, the overall offset is reduced to avoid breaching the 5% limit, and the ‘bridging the gap’ target is increased.

Source: DCCEEW (2023j).

The Australian Government is primarily responsible for resetting the balance³ and administers water recovery programs to both bridge the gap and deliver the additional 450 GL/y. The Australian Government committed \$5.95 billion to recover 2,750 GL/y under ‘Bridging the Gap’ and \$1.21 billion for supply measures. \$1.775 billion is committed to efficiency measures and constraints-easing projects through the Water for the Environment Special Account (WESA) (DCCEEW, sub. 77, response to information request, p. 6; table 2.1).

Basin states are responsible for delivering the supply, constraints-easing, and northern Basin toolkit measures, funded by the Australian Government and overseen by a subcommittee of the Basin Officials’ Committee (BOC). The locations of constraints-easing projects across the southern Basin are shown in figure 2.2. Under the original agreement, all supply, constraints-easing and efficiency measures are to be notified to the MDBA by 31 December 2023, and all elements of resetting the balance were to be completed by 1 July 2024. Under the 2013 *Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin* (2013 IGA), the northern Basin toolkit was also due to be completed by 30 June 2024.

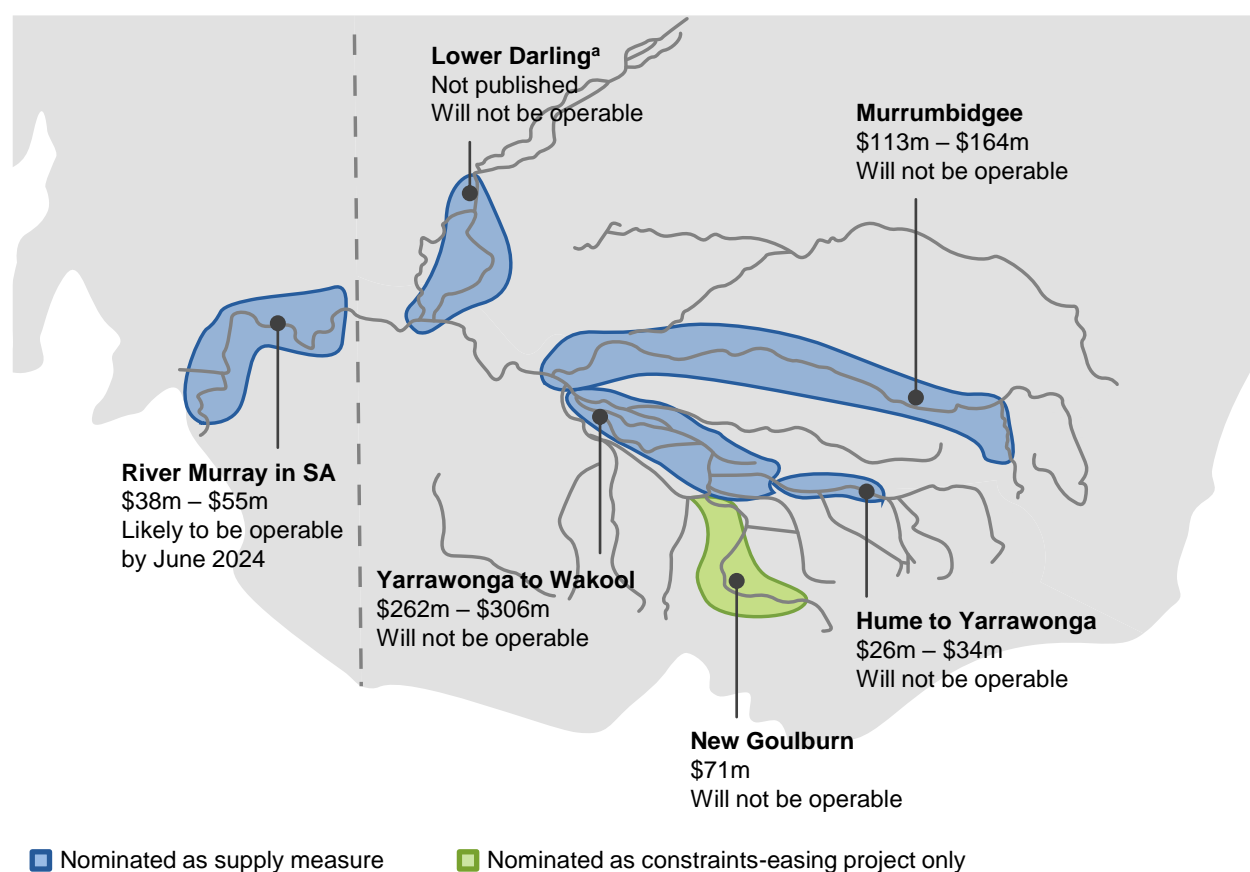
³ *Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin 2013*, s. 2.2.

Table 2.1 – Funding for resetting the balance as of 31 May 2023

	Committed (\$m, nominal)	Spent (incl. contracted) (\$m, nominal)	Remaining (\$m, nominal)
Bridging the Gap – Purchase	2,832	2,832	-
Bridging the Gap – Infrastructure	3,120	2,978	142
Supply measures	1,212	485	727
Efficiency measures	1,575	384	1,191
Constraints-easing	200	128	72
Northern Basin toolkit	180	144	36
Total	9,119	6,951	2,168

Note: Data covers the period 2007 to 2023.

Source: DCCEEW, sub. 77, response to information request, pp. 6–7.

Figure 2.2 – Map of southern Basin constraints-easing measures and estimated costs

a. Lower Darling nominated as part of Menindee Lakes Project.

Note: Cost estimate for River Murray in SA project released as part of Senate Motion No. 685 for production of documents (22 March 2018), p. 662 (p. 5 of document 68).

Sources: (DPI (NSW) 2016; MDBA 2023o, 2023a, p. 15; NSW DPIE 2016; Victorian DELWP 2016a, 2016b).

On 22 August 2023, the Australian Government announced an agreement with Basin states (excluding Victoria) to extend timeframes for the supply measures, northern Basin toolkit measures and a package of

‘no regrets’ constraints projects to 31 December 2026, and the efficiency measures program to 31 December 2027 (DCCEEW 2023b). The Australian Government will also allow Basin states to propose new supply measure projects.

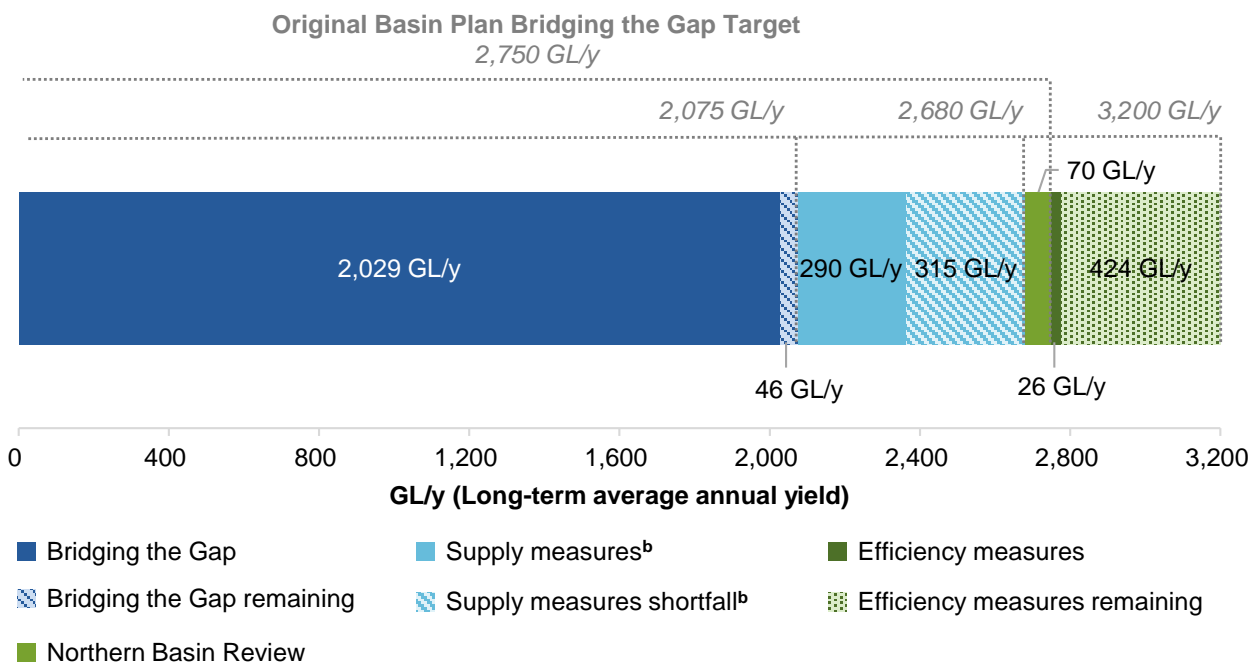
At time of writing, this agreement is subject to the Water Amendment (Restoring Our Rivers) Bill 2023, which is before the Australian Parliament. More detail on the new agreement can be found in chapter 1.

2.2 ... but progress has been limited

Some progress since 2018

Since the Productivity Commission’s 2018 review of the Basin Plan, some elements of resetting the balance have progressed, but substantial gaps remain (figure 2.3).

Figure 2.3 – Surface water recovery and SDL adjustment mechanism progress, June 2023^a



a. Figure does not include nominal over-recovery; full volume recovered under ‘bridging the gap’ volume is reported at 2,107 GL/y. Shaded cells indicate target not yet achieved. Includes water under contract to be delivered. b. Based on MDBA estimate of maximum supply measure shortfall.

Sources: (DCCEEW 2023j; MDBA 2023k).

Incremental gains in supply and constraints-easing measures

Of the 36 notified supply measures, an additional five measures (representing approximately 60-90 GL/y of water (MDBA 2020b, p. 28) are now operational.⁴ The 14 operational supply measures (table 2.2) are delivering about half of the 605 GL/y offset (MDBA 2023l).

⁴ Riverland Floodplain Integrated Infrastructure Program (SA), Eastern Mount Lofty Ranges Flows for the Future Project (SA), Nimmie Caira infrastructure modifications (NSW), South East Flows Restoration Project (SA) and Barmah-Millewa Forest environmental water allocation (Vic).

Table 2.2 – Status of southern Basin supply and constraints projects
Progress as at July 2023

Project status	Total	Operational	Likely to be operable by June 2024	Unlikely to be operable by June 2024	Will not be operable by June 2024
Supply projects (excl. constraints)					
NSW	7	1	3	2	1
VIC	9			5	4
SA	4	4			
Shared	11	9	2		
Total	31	14	5	7	5
Indicative expected offset (GL/y)	523	278.1	73.7	40.6	130.6
Southern Basin constraints-easing projects					
NSW	3				3
VIC	1				1
SA	1		1		
Shared	1				1
Total	6		1		5
Indicative expected offset (GL/y)	82.4		20.6		61.8
Project total	37	14	6	7	10
Total indicative expected offset (GL/y)	605.4	278.1	94.3	40.6	192.4

Source: Commission estimates based on Indec (2021b, pp. 30–66) and MDBA (2023k, pp. 38–41).

Note: Total includes the New Goulburn constraints measure, which was not nominated as a supply measure. Menindee Lakes Project counted as both a supply and constraint project as it includes Lower Darling constraints key focus area. Total excludes Improved Regulation of the River Murray supply measure (not progressed).

Indicative expected offsets are based on INDEC estimates of individual project offset volumes, allocated based on the MDBA's 2023 update of project progress. The actual modelled offset will depend on interactions between the actual measures that are in place at time of reconciliation.

However, other supply measure projects have not progressed at the rate needed to meet the deadline. The MDBA stated that some key projects, including the Menindee Lakes project, are 'not viable' and cannot be implemented as notified, even with more time (MDBA 2023c, p. 5). However, the MDBA also reports that no projects have been formally withdrawn by Basin states.

Constraints-easing measures have also progressed slowly across the southern Basin and an independent review of the overall supply measure program noted the risk in constraint project timelines. MDBA advice, provided to the Australian Minister for Water in July 2023, also stated that four of the five southern Basin constraints projects will not be operable by 2024 (INDEC 2021a; MDBA 2023c, p. 4). The MDBA estimated

in 2022 that several constraints measures were at least 5-10 years away from delivering outcomes (MDBA 2022q, p. 2).

Basin governments have also adjusted their constraints programs.

- The New South Wales Government has rescoped the Menindee Lakes and the Yanco Creek supply projects into the Better Baaka and Better Bidgee projects, respectively, and repackaged the three constraints projects into the Reconnecting River Country program (NSW Government, sub. 43, p. 5). However, these changes have not been formally notified to the MDBA as amendments to the notified package of supply measures.
- The Victorian Government has reset the implementation of the Victorian Constraints Measures Program, with the new Goulburn constraints measure operating in a 'consultative manner to ensure community input based on solid technical information' (Goulburn-Broken CMA, in Victorian Government, sub. 74, p. 23).

A substantial shortfall in the supply measure offset is therefore expected if reconciliation occurs in early 2024. The MDBA estimated the supply measure package could fall short by 190-315 GL/y, with the outcome likely to be at the high end of this range (MDBA 2023k).

Bridging the gap to 2,075 GL/y is nearly complete – but this still leaves a likely shortfall in the supply measure offset

46 GL/y of surface water remains to be recovered (as of 18 September 2023) (DCCEEW 2023j). This is about 2% of the 2,075 GL/y part of 'bridging the gap', subject to an ongoing tender process (discussed below). But this outcome does not account for the anticipated supply measure shortfall, which is expected to re-open an obligation for the Australian Government to bridge the gap in the southern Basin.⁵ The additional 190-315 GL/y would be equivalent to between 9% and 15% on top of the existing 2,075 GL/y bridging the gap surface water target.

A further 3.2 GL/y of groundwater, entirely in the Queensland Upper Condamine Alluvium, is also yet to be recovered (DCCEEW 2023f). An open tender process during 2018, coupled with the Queensland Government choosing to undertake compulsory licence reductions, delivered an additional 31.6 GL/y toward the target (DCCEEW, sub. 77, attachment 2).

Very little progress has been made on finalising the surface water component of bridging the gap. Prior to March 2022, the Australian Government had prioritised limited tender strategic purchases. Two such purchases have been made since 2018, recovering 4.6 GL/y in the Murrumbidgee and Lower Darling (DCCEEW 2023i).

As of September 2023, the remaining surface water gap is larger than it was in 2018. This is because of changes to 'cap factors', as part of the NSW water resource planning process, which led to a 39.7 GL/y reduction in the NSW Murray recovery volume (DCCEEW, sub. 77, response to information request, p. 15). A water recovery target also re-emerged in the ACT in 2019 because previously-recovered entitlements were considered 'invalid' due to their location (ACT Government, sub. 85, response to information request, p. 7).

On 23 March 2023, the Australian Government commenced an open market tender to purchase water entitlements in the surface and groundwater systems with an outstanding gap, excluding the ACT

⁵ The 2013 IGA (s. 3.1) states that the Australian Government will outline implementation of its commitment to bridge the gap through a water recovery strategy, and the role of water entitlement purchase will be 'limited to the residual amount of water recovery required to bridge the gap by 2019'.

(DCCEEW 2023g). The tender is being undertaken subject to the 2023 Strategic Water Purchasing Framework (DCCEEW 2023h). As of 10 October 2023, there were no published outcomes from the tender.

In the ACT, the Australian Government is negotiating directly with the ACT Government to recover 4.9 GL/y (DCCEEW 2023g, ACT Government, sub. 85, response to information request p. 7). This is because a significant share of ACT water entitlements is owned by the urban water provider and, in the ACT Government's view, the 'conditions of the water efficiency program were not conducive to urban water projects', necessitating a direct negotiation with the Australian Government.

Very little progress made on the 450 GL/y

Little has been achieved toward the 450 GL/y efficiency measures target, with 12.2 GL/y registered to the Commonwealth Environmental Water Holder (CEWH) by 30 June 2023 and another 13.8 GL/y under contract (DCCEEW 2023j). The two statutory reviews of the WESA confirmed that the 450 GL/y was unable to be delivered within existing budgets or timeframes. The second review anticipated that only 60 GL/y could be recovered by 2024, citing the lack of support from Basin state governments and shortcomings in the design of the Off-Farm Efficiency Program (OFEP) (Water for the Environment Special Account Review Panel 2021, p. 27).

Most of the funding available under the OFEP is for State-led projects, with projects currently being implemented across five irrigation infrastructure networks expected to deliver 23.4 GL/y towards the target (DCCEEW 2023e).

Some steps towards implementing the northern Basin toolkit measures

Progress across the northern Basin toolkit package is mixed. After seven years, there are improvements to the coordination of environmental water and event-based watering mechanisms (NBPC 2023). Finalising other elements relies on accreditation of NSW water resource plans (discussed in chapter 4) and completion of bridging the gap in the northern Basin.

However, project implementation is still at a very early stage for the Gwydir constraints project and environmental works measures (table 2.3). Four environmental works projects have since been approved for an 'accelerated gateway model', with the Australian Government providing a further \$90 million to New South Wales and Queensland, in addition to the initial \$180 million, to speed up implementation (DCCEEW 2023d). This model was designed to undertake both the pre-construction and construction stages 'concurrently' to enable implementation by 30 June 2024 (DCCEEW, sub. 77, response to information request, p. 21).

Table 2.3 – Works projects in the northern Basin toolkit

Project	State	Status	On track for 2024?	Accelerated funding?
Projects addressing system constraints in the Gwydir catchment				
Gingham Watercourse	NSW	Business case completed	No	No
Lower Gwydir Watercourse	NSW	Business case completed	No	No
Lower Mehi River	NSW	Business case complete	No	No
Environmental works projects to promote fish movement and habitat including fishway construction				
Fish for the Future: Reconnecting the Northern Basin project	NSW	Implementation partially underway	Partially	Yes
Scoping Initiative: Macquarie Marshes enhanced watering project	NSW	Implementation partially underway	Partially	Yes
Fish for the Future: Fish-friendly Water Extraction project	NSW	Implementation partially underway	Yes	Yes
Fish-friendly Water Extraction: Condamine-Balonne and Border Rivers project	QLD	Gateway assessment underway, installation underway	Yes	Yes
Enhance the Flexibility and Capability for Distributing and Managing Low Flows through the Lower Balonne River System Bifurcation Weirs project	QLD	Business case submitted for assessment	No	No
Reconnecting Catchments: Condamine-Balonne project (Jack Taylor and Beardmore dams)	QLD	Business case submitted for assessment	No	No
Improving Within-Catchment Fish Resilience – Lower Balonne project (Culgoa)	QLD	Business case submitted for assessment	No	No

Sources: MDBA (2023i), NBPC (2023).

Limited action, despite earlier warnings and recommendations

The Commission’s 2018 assessment of Basin Plan implementation highlighted the need for changes to be made to avoid the significant risk that supply and constraints-easing measures would not be implemented as proposed. Because there was no process to abandon measures that could not be delivered, or where the anticipated net benefits of measures had significantly declined, we recommended the Australian Government change its processes for reviewing and funding supply measures and consider extending the deadlines (PC 2018, pp. 135–141). The intent was to give worthwhile measures the best chance of success, and reduce the costs of resetting the balance by avoiding expensive water recovery (PC 2018, p. 139).

We also drew attention to the escalating cost of the 450 GL/y efficiency measures program, and the need to re-assess the parameters of that program, and recommended improved oversight of the northern Basin toolkit measures.

Basin governments accepted most of the recommendations at the time (just one was rejected outright), and said other recommendations would require further consideration (Joint Basin Governments 2019). Governments agreed that the delivery of some projects by 2024 would be ‘challenging’, with deadlines to be revisited on a case-by-case basis (Joint Basin Governments 2019, pp. 22–23). But limited progress has been made implementing key elements of the Commission’s advice for resetting the balance.

The opaque operation of the ‘gateway’ process for funding the supply, constraints and toolkit measures is a core concern. The Commission recommended the gateway to ensure projects were carefully assessed for their feasibility and cost-effectiveness, and, if States failed to make reasonable progress, projects could be removed. We were also explicit that the requirement to ‘make good’ if a project failed – that is, the obligation to recover water to make up the shortfall – should remain in place.

But some projects have remained in limbo, even when the MDBA explicitly stated that they are not viable as notified (MDBA 2023c, p. 5). The process under the Basin Plan to amend or withdraw a measure has not been used – despite the existing requirement to amend notifications ‘as soon as practicable’ once the details of a project have changed⁶ – and there is no clarity on the consequences of removing a project from the package. The MDBA has also not published any updated modelling of the expected environmental outcomes of 450 GL/y of additional environmental water with the notified supply measure package or other changes to Murray River operating conditions since 2012.

In 2018 the Commission also noted concerns about the Northern Basin Review process, including how the MDBA used the review to recommend a reduced water recovery target alongside a ‘toolkit’ (PC 2018, p. 143; Wentworth Group of Concerned Scientists 2018). Based on concerns about oversight of the toolkit, we recommended improved transparency and accountability (PC 2018, p. 145).

Although the remit of the new Inspector-General of Water Compliance (IGWC) includes the previous Northern Basin Commissioner’s oversight role (BOC 2023, p. 7), it has not undertaken any dedicated reporting on the northern Basin toolkit, noting the existing monitoring and reporting roles and responsibilities across water agencies (IGWC, pers. comm, 31 July 2023).

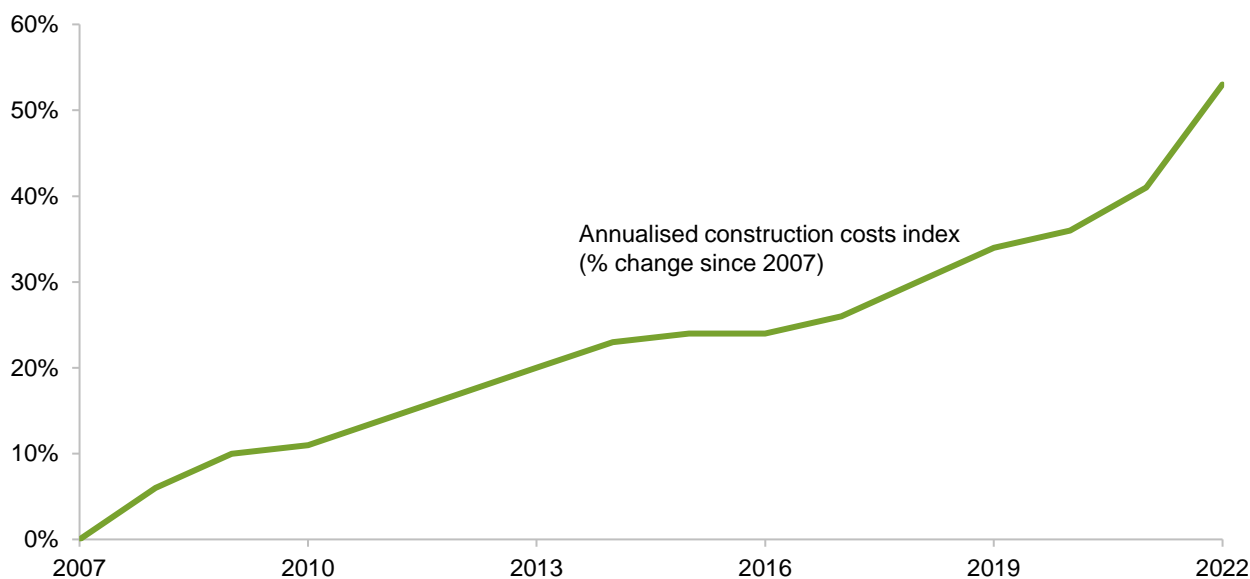
Delays will increase costs and reduce the benefits of delivering the Basin Plan

It has been apparent for some time that resetting the balance will not be complete by 30 June 2024. Although the nominal gap-bridging target (2,075 GL/y) may be achieved by the original deadline, the expected supply measure shortfall means the SDLs will not be in effect, as envisioned, by that time.⁷ The Restoring Our Rivers Bill, currently before the Australian Parliament, intends to extend deadlines to 2026 for supply and toolkit measures, and to 2027 for the additional 450 GL/y. (Section 2.4 discusses the bill in more detail.)

The failure of Basin governments to achieve water recovery targets by the original deadlines, across most elements of resetting the balance, means the cost of delivering the Basin Plan will be considerably higher than first estimated. There have been significant increases in water entitlement prices and construction costs over the last fifteen years (figure 2.4). Taxpayers will bear the costs of delivering Basin Plan targets in this higher-cost environment.

⁶ Basin Plan, s. 7.12(5).

⁷ As discussed in chapter 4, slow progress on finalising water resource plans in NSW also means SDLs cannot yet be enforced in that state.

Figure 2.4 – Construction cost price index, 2007 to 2022^a

a. ABS quarterly Producer Price Index for 'Other heavy and civil engineering construction Australia', converted to annual average.

Source: ABS 6427.0 Producer Price Indexes, Australia, June 2023.

The second WESA review put the cost of recovering the full 450 GL/y, within current legislative constraints, at between \$3.4 and \$10.8 billion (Water for the Environment Special Account Review Panel 2021, p. 31). It also confirmed a likely funding deficit across the available funding sources for supply and constraints-easing projects (Water for the Environment Special Account Review Panel 2021, p. 39). As the South Australian Murray Irrigators put it:

Kicking the can down the road and not addressing the core issues has led to ... a more expensive exercise than it otherwise would have been if the issue had been confronted and funded head on. This is not the fault of the public, or the well-intended taxpayer. This is the fault of governments and bureaucracies trying to generate political mileage and avoid expensive responsibilities. (sub. 96, p. 8)

Delays in meeting water recovery targets in full means that there has been less water available to deliver Basin environmental outcomes. Slow progress on constraints-easing has also limited the benefits of the existing held environmental water portfolio. While there is not enough evidence to conclude whether Basin environmental outcomes are measurably poorer because of the delays in meeting these targets, a new Sustainable Rivers Audit, currently being planned by the MDBA, should help answer this question.

2.3 Why has implementation slowed?

Basin governments' policies have delayed water recovery projects ...

Slow progress recovering water entitlements, under both bridging the gap and the 450 GL/y, reflects policy decisions – including stricter criteria on ways to recover the 450 GL/y – as well as changes in Basin water markets that have increased the cost and complexity of water recovery programs.

Over time, the Australian Government has progressively reduced the scope of water recovery options available and given greater priority to slower and more expensive forms of water recovery. Many of these

changes were made in response to community concerns about water recovery and its effects on some regional communities. Goulburn-Murray Water, for example, said:

Many of the wider communities experienced adverse socioeconomic impacts where water was bought. Economic activity reduced, there were less jobs, outward migration, reduced access to services and, ultimately, a fraying of the social fabric of these communities. Recognising this failing, governments responded by limiting the total volume of water that could be bought-back, and introduced strengthened socioeconomic tests, including for on-farm investment in return for transfer of water to the funder. (sub. 74, p. 9)

Shortcomings in how Basin governments have engaged with communities during Plan implementation have also contributed to community opposition. Effective engagement, which ensures community members feel heard and can see how their input has been taken into account by decision-makers, can help reduce community frustration (chapter 9).

Australian Government policy on bridging the gap

For bridging the gap, the Australian Government made a number of policy changes.

- In 2013, while committing to 'bridging the gap', the Australian Government also stated its intent that 'no water entitlements will be eroded or compulsorily acquired' under the Plan.⁸ This ruled out the use of compensated reductions in entitlement reliability, or other administrative options to reduce allocations.
- In 2014, the Australian Government ceased open-market water purchases and prioritised infrastructure programs (Birmingham 2014). In 2015, the government legislated a limit of 1,500 GL/y on all water purchases towards 'bridging the gap'.⁹
- In 2020, the Australian Government ruled out additional open tender purchases (DCCEEW, sub. 77, p. 7).
- And while the legislated water purchase cap remains in place today, it is not yet binding with 271.6 GL/y remaining (as of 15 September 2023).¹⁰ The limit will impede water recovery if a substantial supply measure shortfall is confirmed following reconciliation. The Australian Government may be limited in terms of purchasing water to make up this shortfall.

The decision to cease open tenders led to the use of 'limited tenders' through direct negotiation. Limited tenders are a slower way to recover large volumes of water. The amounts paid for some water entitlements between 2016 and 2019, alongside weak transparency on the reasons for those amounts, contributed to community concerns that culminated in a 2020 performance audit by the Australian National Audit Office (ANAO 2020). The Department adjusted its processes in response to the ANAO audit to develop frameworks for value for money, probity and monitoring, evaluation, reporting and improvement, and an update to its conflict of interest management policy (DCCEEW, sub. 77, response to information request, pp. 17–18). There have been just two limited tender purchases since 2019 (DCCEEW, sub. 77, attachment 2).

MDB Ministerial Council decisions affected delivery of the 450 GL/y

Recovering water under 'efficiency measures' towards the 450 GL/y target requires projects to meet an additional test of 'neutral or improved socioeconomic outcomes' in the Basin Plan. This test is met where a

⁸ 2013 IGA, section 2.2.

⁹ Water Act, ss. 85B-85D.

¹⁰ The Water Amendment (Restoring Our Rivers) Bill 2023, currently before parliament, includes a repeal of the water purchase cap.

water holder willingly participates in an on-farm or off-farm water use efficiency project, or if a project is proposed by a Basin state government.

The additional socioeconomic criteria, agreed to by the MDB Ministerial Council December 2018, are restrictive. For example, the need to ‘not directly increase the price of water’, is difficult to verify and comply with (DCCEEW 2021b, p. 2). Some inquiry participants supported the criteria,¹¹ but others said they can block a large number of potentially worthwhile projects. Beasley (sub. 47, p. 13) referred to them as ‘absurd’, and Goulburn Valley Environment Group (sub. 28, p. 2) said the criteria cause ‘landholders to miss out of opportunities to rationalise irrigation systems and [deny] communities opportunities to transition to a drying environment’. The Australian Government also agreed to cease on-farm water recovery programs towards the 450 GL/y in Victoria and New South Wales (ABC 2021), prioritising off-farm projects instead.

The Australian Government has opened and closed new programs towards the 450 GL/y multiple times. According to the second WESA Review:

- the South Australian pilot of the Commonwealth On-Farm Further Irrigation Efficiency (COFFIE) program opened in September 2016 and closed in October 2018
- the Murray–Darling Basin Water Infrastructure Program opened in July 2018 and closed in December 2018
- the Water Efficiency Program opened in July 2019 and closed in March 2021
- the OFEP opened in October 2021 and remains operational, albeit closed to new projects unless proposed by a State government (Water for the Environment Special Account Review Panel 2021, pp. 15–18).

Reviews of the WESA concluded that the current program design significantly limited the number of projects that can be proposed. As of December 2021, the panel estimated that the program was only likely to deliver up to 60 GL/y by the expected expiry of the WESA in June 2024 (Water for the Environment Special Account Review Panel 2020, p. 19, 2021, p. 25). Work undertaken for the review indicated that up to 675 GL/y of additional efficiency measures may be technically feasible – but this includes on-farm efficiency projects (which are not included under current program design) as well as urban and industrial projects, stock and domestic efficiency works, and off-farm projects. The assessment of technical efficiency did not consider the cost of these works (MJA 2021, p. 46).

... while water market and other developments have changed the operating context

Southern Basin water markets have changed markedly since the Plan commenced, and this has substantially altered the opportunities – and cost – to recover water for the environment. The ACCC observed that, since 2012:

... there have been significant changes to the volume and location of trade, the participants in the market, Basin State trade administration practices, the evolution of environmental watering arrangements and the impacts of changing climate patterns. (sub. 26, p. 5)

Over this period the cost of recovering water – through purchase and infrastructure projects – has increased substantially. In 2022-23, the Aither water entitlement price index sat at about three times its 2012 value, having grown at an average rate of 15% a year since 2015-16 (Aither 2023, p. 10). This affects the value for money assessment for water purchases and other projects, and is in part why the original budget for recovering the 450 GL/y will not be adequate to meet that target (Water for the Environment Special Account Review Panel 2020, p. 17, 2021, p. 21).

¹¹ CICL, sub. 21, pp. 4-5; MRGC, sub. 22, p. 6; Goulburn-Murray Water, in Victorian Government, sub. 74, p. 9.

The costs of water use efficiency projects have also increased. Substantial past investments in water efficiency means there are fewer cost-effective water use efficiency gains to be made – even before considering higher construction costs (figure 2.4). The current suite of off-farm projects under the OFEP are contracted to recover 23.4 GL/y at a cost of almost \$347 m (DCCEEW 2023e), representing an average cost, in LTAAY terms, of \$14,800 per megalitre (ML). Table 2.4 outlines the average costs of infrastructure modernisation programs over time in the Murrumbidgee Irrigation network, by means of example.

Table 2.4 – Outcomes of off-farm water recovery programs in the Murrumbidgee Irrigation area

	Year	Cost (2022 \$m)	Recovery (ML LTAAY)	Average cost (\$/ML LTAAY)
PIIOP round 1	2009	68.17	5,700	11,959
PIIOP round 2	2011	221.80	36,960	6,001
PIIOP round 3	2015	144.53	13,663	10,578
OFEP	2022	126.48	5,472	23,114
Total		560.97	61,795	9,078

PIIOP: Private Irrigation Infrastructure Operators Program in New South Wales **OFEP:** Off-Farm Efficiency Program.

Sources: DCCEEW (Cth) (2022b, 2023e). Deflated to 2022 dollars using ABS *Consumer Price Index, June quarter 2023* Series A2325846C, converted from quarterly to financial year.

However, expectations about future water entitlement price growth also affects the willingness of entitlement holders to participate in water recovery infrastructure projects. For example, on-farm infrastructure projects are less appealing to entitlement holders if the market value of water entitlements is expected to increase: they are being asked to trade an appreciating asset (a water entitlement) for a depreciating one (on-farm water infrastructure) (MJA 2021, p. 30). Greater water-use efficiency can also introduce additional operating costs, including higher energy use from pumping systems compared to gravity-fed systems (Croke, sub. 12, p. 10). Jeremy Cass observed that:

Smaller growers used the [infrastructure grant] money to convert from flood irrigation to drip irrigation and other efficiencies in the spirit that the scheme was intended, most of these growers would now tell you that had they known what the future would hold they would not have gone down this path due to the rising cost of power to move the water that was once free with gravity. (sub. 20, p. 1)

Holding water entitlements can be a more financially-prudent decision for farmers. The Department's evaluation of the COFFIE pilot program demonstrates this: a survey of program participants found that, in spite of how generous the scheme was, 40% would not participate in a future program (43% said they would). Some cited a lack of viable projects on their properties, but others said the subsequent increase in water prices means they would prefer to keep the water (Cutting, Fenwick and Thorne 2022, pp. 38–39). Analysis undertaken for the second WESA review also suggested that a range of economic, climatic and socio-political factors affect participation in water use efficiency measures (MJA 2021, pp. 30–41).

In recent years, even when the Australian Government has elected to undertake an open tender, willing sellers have not always been forthcoming in the relevant catchments. For example, the Queensland Government's decision to compulsorily acquire groundwater entitlements in the Condamine-Balonne suggests a lack of willing sellers in that catchment. This contrasts with early Basin Plan years where a large number of farmers sold water entitlements: A survey undertaken in 2012 concluded that most sellers at the

time were ‘compelled’ to sell to retire debt or maintain cash flow during drought, while others restructured their economic activity towards less water intensive production (Wheeler and Cheesman 2013).

Poor accountability for under-delivery on supply measures

It has been evident for some time that the full suite of supply measure projects will not be delivered by June 2024. Some projects are years away from being operational, let alone capable of demonstrating ‘environmental equivalence’ to environmental water recovery, and other projects are not viable. There are a few reasons for this under-delivery.

- The initial project selection process appears not to have adequately considered the delivery risks of complex projects.
- The Australian Government’s funding ‘gateway’ process (which outlines how projects progress to receive funding) lacks transparency, and there are no consequences for Basin governments failing to adjust the overall program as recommended by reviews.
- The ‘threat’ of water recovery was ineffective in incentivising Basin states to progress projects, and discouraged them from amending or withdrawing projects.
- More recently, finalising some projects has been delayed because of flooding and the COVID–19 pandemic, which limited the ability of governments to engage with regional communities and start construction.

Box 2.2 outlines the experience with the Victorian Murray Floodplain Restoration projects, from assessment through to their current status, to highlight how some of these factors played out.

Project selection did not adequately consider complexity or delivery risk

The 2017 supply measure package included projects that have since turned out to be either unfeasible or extremely costly. This was, in part, because the initial assessment process underestimated the complexity of some projects, and community engagement may not have been adequate.

In assessing projects for its 2017 determination of the water recovery offset, the MDBA only required the projects to be *likely* to be deliverable to be included in the determination. Basin governments were responsible for developing a joint program to manage implementation risks.

Box 2.2 – Victorian Murray Floodplain Restoration Projects

The Victorian Murray Floodplain Restoration Projects (VMFRPs) refer to nine supply measures included in the 2017 determination. The VMFRPs aim to improve environmental outcomes for high-value floodplains along the Victorian side of the River Murray by constructing infrastructure (such as regulators, pumps, and containment banks) to allow for water to move onto the floodplain more often. Some projects also include other environmentally-beneficial infrastructure, such as fishways.

A list of the projects and their most recent updated status is shown in the table below.

Project	Status (June 2023)	Capital costs to June 2023 (2014 dollars)	Implementation costs to June 2023 (2014 dollars)
Lindsay Island (Stage 2) floodplain management project	Paused	\$63,262,361	\$72,831,526
Wallpolla Island floodplain management project	Paused	\$49,427,395	\$59,523,808
Guttrum and Benwell State forests floodplain environmental works project	Paused	\$28,449,309	Not available
Gunbower national park floodplain management project	Paused	\$12,838,185	Not available
Hattah Lakes North floodplain management project	Not operable; unlikely to be in place by 2024.	\$5,586,623	\$8,811,408
Belsar-Yungera floodplain management project	Not operable; unlikely to be in place by 2024	\$47,177,817	\$55,632,428
Burra Creek floodplain management proposal	Not operable; unlikely to be in place by 2024	\$7,787,033	\$12,138,362
Vinifera floodplain management project	Not operable; unlikely to be in place by 2024	\$5,332,891	\$9,122,148
Nyah floodplain management project	Not operable; unlikely to be in place by 2024	\$7,055,019	\$10,942,589
Total		\$226,916,633	\$229,002,269^a

a. Implementation costs for Guttrum and Benwell, and Gunbower projects were not available. All figures are adjusted for inflation and presented in net present value terms in 2014 dollars, as in the original business cases.

In April 2023, the Victorian Government announced a pause to four VMFRP projects, and stated that:

Due to time and cost impacts from these challenges, the VMFRP was required to refocus its work program in March 2023 as it did not have Australian Government commitment for a time extension or further funding. This was to mitigate any State financial risk and stem any perceptions of being disingenuous in undertaking cultural heritage surveys with no intent to

construct. Negotiations with the Australian Government continue, for further funding and time. (sub. 74, response to information request, p. 22)

Pausing the VMFRP projects has impacted cultural heritage work which would have otherwise been undertaken as part of the project. Latji Latji Mumthelang First Peoples explained that:

[W]hen the Victoria Government halted the VMFRP in 2023, we couldn't get this burial site 'heritage listed' because the cancellation meant that the required Cultural Heritage Management Plan could not be completed (even though it was only a month shy of being finished). The consequence of this is that we cannot get government funding to undertake other requirements to achieve heritage listing of this site and secure its future. (sub. 78, p. 2)

Given that project costs estimated in business cases were calculated using 2014 present value amounts, increases to project costs are expected. The 2019 Stage 1 funding agreement between the Australian and Victorian governments stated that project construction was estimated to cost more than \$300 million (Andrews 2019). This figure represented a 19.4% increase (in constant dollar terms) of the \$226.9 million estimated in the initial capital costs.^b

MDBA reported in June 2023 that all projects are in the planning phases (MDBA 2023k, pp. 24–28), and it is not clear if that funding agreement is able to cover development costs for all projects.

What are the next steps?

In their submission to this inquiry, the Victorian Government stated that the 'cost to complete Stage 1 activities is being finalised to enable Victoria to progress planning and approvals for all nine sites; and enable further negotiations to go to construction' (sub. 74, response to information request, p. 22). This suggests that the funding arrangement made in 2019 was not enough to cover all project costs.

The Victorian Government has not made any further announcements on whether works will restart in the near future. However, Victoria's absence from the August 2023 agreement on Basin Plan implementation indicates that project funding may not continue beyond June 2024.

b. The initial capital costs of \$226.9 million is equal to about \$251.2 million in June 2019, when adjusted using the ABS producer price index for 'other heavy and civil engineering construction'.

Sources: (MDBA 2023k, pp. 24–28; Victorian DEPI 2014a, p. 82, 2014b, p. 113, 2015d, p. 111, 2015g, pp. 96–97, 2015c, p. 92, 2015a, p. 92, 2015b, p. 80, 2015f, p. 84, 2015e, p. 86).

Prior to the MDBA's determination, Basin state governments were required to complete feasibility studies and business cases for each individual supply project. These feasibility studies and business cases were then used by BOC to notify the MDBA of the full suite of proposed measures. Projects were assessed in three phases: feasibility (phase 1), a business case (phase 2) and demonstration of in-principle funding arrangements (phase 3) (MDBA 2017b, p. 5). Through each of these phases, governments had to demonstrate that the projects were technically feasible and cost-effective, were likely to deliver outcomes, and the risks were manageable (MDBA 2017b, p. 9).

Although the business cases included risk assessments, these tended to focus on the risk of adverse environmental outcomes due to project construction and operation, rather than delivery risk. For example, the risk assessment within the Belsar-Yungera project business case only outlined risks to water quality or damage to floodplain ecosystems around the sites (Victorian DEPI 2015a, pp. 44–49), with the subsequent risk management strategy also focusing on these potential impacts (2015a, p. 51).

Limited community engagement in this process may have contributed to project delivery risks not being identified during the initial determination. Many community members said they were dissatisfied with the level of transparency and consultation during the original determination process (PC 2018, p. 128), with inadequate information provided on benefits, costs and impacts of the proposed supply measures. The MDBA's determination report also provided limited transparency on decision-making: it did not provide detailed assessments of individual projects, instead outlining the benefits of projects at a high-level (MDBA 2017d, pp. 36–44). Little consultation was required in this process: the MDBA was only required to consult as part of estimating the water recovery offset, although Basin states had to provide details of engagement as part their project proposals (2017b, p. 10).

Inquiry participants also said that the initial consultation process did not adequately draw on local knowledge. Coleambally Irrigation Cooperative argued for both a 'bottom up' and 'top down' approach to identifying opportunities to develop the supply projects, and noted that:

Many of the SDLAM projects proposed by government had no community ownership and were never built in partnership with communities or with those impacted. It should be no surprise that several large, complex projects, such as constraints relaxation projects and Menindee Lakes reconfiguration, have no prospect of being achieved in the timeframes set, if at all, due to the lack of community consultation and resultant ownership. (sub. 21, p 3)

Murray Regional Strategy Group (sub. 27, p. 2) also raised concerns with the 'top down' approach, which made communities 'resentful and angry'. They likewise noted the 'bureaucratic lens' through which programs were designed and planned meant they were 'not planned with practical knowledge, experience and understanding of locals'. As one participant put it:

Frustration with the MDBA approach has been reported in community consultation meetings, submission and despite appeals for a more flexible and adaptive approach that can incorporate new information or ideas, the rigidity of the MDBA's approach does not permit these sort of concepts. (Louise Burge, sub. 98, p. 7)

Shortcomings in the consultation process undermined community support for key projects. With specific reference to the Menindee project, the Pastoralists Association of West Darling said consultation was poor and at times misled the community (sub. 42, pp. 2–3). They also claimed that information provided in stakeholder meetings was 'extremely limited', with 'no costings, no water savings outcomes and no operational rules' outlined.

Transparency on project delivery has been inadequate

Public information on the scope and progress of supply projects has been relatively limited. Only limited detail has been provided on how close projects are to delivery, and how or why changes are made between updates. And business cases and other information released at the start of the program did not always outline why projects were chosen or warranted ongoing funding. The regular reporting of delivery delays – again, with limited detail – reduces the impact of these statements, and gives no guidance on how this reporting contributes to program-level adjustments.

In 2019, the MDBA commenced annual assurance reporting on the supply measures. Following the 2021 *SDLAM Reconciliation Framework*, the MDBA changed their focus from updating on project delivery progress to reporting on whether operational projects were likely to deliver the expected environmental outcomes (MDBA 2021a, p. 11, 2022q, p. 9). Given that few projects were operational at the time (and a period of operation is needed to judge environmental outcomes) only four projects were assessed in 2021 and nine in 2022 (MDBA 2021a, p. 11, 2022q, p. 10).

Publicly reporting on project delivery is important. However, given poor progress on supply measures has been highlighted in multiple MDBA assurance reports and independent reviews – but not led to any real change to the program – this poor progress has effectively been normalised, with the impact of each new report diminished.

Basin governments have failed to take up opportunities to reset the program

Basin governments are jointly responsible for delivering the supply measure package through the BOC, and it remains unclear where responsibility lies for inadequate project delivery, or for adjusting the overall approach to implementation. Multiple reviews have recommended program-level changes to supply measure implementation, but it is unclear what (if any) changes have been made in response, or how responsibility for adjusting the program is shared between the MDB Ministerial Council and BOC.

In 2021, INDEC undertook a detailed assessment of the supply projects and the risk of non-delivery. The review made eight recommendations, including a ‘reset’ of the supply projects (including constraints projects), and an options assessment of what could ‘be practically implemented, by when’ (2021b, p. 2). Both the Ministerial Council and the BOC outlined responses to these recommendations, with the Ministerial Council agreeing in April 2021 to rescope the Menindee and Yanco Creek projects. In September 2021, BOC released a response to the other five recommendations. Four of the five recommendations in the report were agreed with, including the need for a mechanism to allow changes in project scope. However, the committee stated that the final recommendation – advocating for independent third party verification and reporting on project progress – were not considered necessary at time of response, and warranted further consideration.

Although BOC has commenced quarterly dashboard reporting (in line with recommendations four and six), it is unclear whether the recommendation to review stage 2 funding approval processes (recommendation five) has been implemented, and no re-scoped projects have yet been notified to the MDBA.

Can project delays be attributed to COVID–19 and flooding in the Basin?

While accepting that projects were behind schedule, Basin state governments highlighted issues with supply chains, reduced labour availability, flooding events and lockdowns during the COVID–19 pandemic as reasons for slow progress and increasing costs.

- The NSW Government stated that delays in project commencement and funding were compounded by widespread bushfires, drought and floods, and the pandemic which disrupted project consultation and delivery (sub. 43, p. 5).
- The Victorian Government said ‘record floods, supply chain issues and the COVID–19 pandemic’ contributed to project delays (sub. 74, p. 1).

These factors are likely to have delayed the completion of some projects that were in the pre-construction phase in New South Wales and Victoria. However, other key projects were already behind schedule at the time of the Commission’s previous assessment, prior to flooding or the COVID–19 pandemic. The MDBA’s 2019 assurance report also concluded that some projects were ‘extremely complex, with risks and policy matters to be worked through and resolved for the significant program benefits to be realised’ (MDBA 2019b, p. 6). And while the MDBA acknowledged these broader factors (MDBA 2023k, p. 1), it did not attribute overall delays in the program to the impacts of flooding or the pandemic.

The Australian Government does not hold Basin states to account

As project funders, the Australian Government should be holding Basin state governments to account for project delivery. But while funding agreements were conditional on Basin states achieving development milestones, there are projects that are still in the design and approval stages.

The independent gateway review of projects that the Commission recommended in 2018 (discussed earlier) was designed to ensure there was an opportunity to assess whether a project remained a good use of public funds prior to confirming final funding – as well as providing an avenue to abandon projects that were no longer worthwhile (PC 2018, p. 139).

The Australian Government and Basin state governments finalised funding schedules at the end of February 2019. The agreed schedule was a two-stage funding approach, with some implementation milestones required before agreements could be reached on the second stage of funding. While this mirrors the recommended gateway process, it lacks the recommended independent review panel.

Funding agreements created delays, but not accountability

The late agreement of funding arrangements limited the time to deliver those projects that did not already have other funding and could not otherwise commence planning. As the MDBA said, the ‘funding delay has compressed the timeline for implementation, which may pose a risk for the full delivery of some of the more complex and detailed projects’ (MDBA 2019b, p. 11).

The 2021 INDEC review also identified funding approvals as a major risk for most projects, with delays impacting project continuity and schedules as well as credibility with stakeholders. INDEC recommended a staged release of stage 2 funding to allow for an adaptive design model that ‘better aligns with the reality of delivery challenges’, and that this could be delegated to below a ministerial level (2021b, p. 2).

Basin state governments also highlighted funding delays in their submissions to this inquiry. The Victorian Government said funding negotiations (among other factors) had impacted delivery timelines for projects and negotiations with the Australian Government for funding were ongoing (sub. 74, response to information request, p. 21). The NSW Government also referenced delays to project commencement and funding, noting that inefficiencies in program management arrangements and delays in negotiating amendments to funding arrangements had led to challenges (sub. 43, p. 5).

Ongoing delays in finalising funding agreements could further disincentivise Basin state governments from a full commitment to project delivery, and impact Plan implementation. Chapter 9 discusses the need to draft intergovernmental agreements in ways that provide the right incentives for delivery.

The policy intent to make up any shortfall through water recovery did not motivate Basin governments to deliver projects

If the supply measures fail to achieve the full 605 GL/y offset, Basin governments are meant to ‘make good’ on any shortfalls against the ‘bridging the gap’ target through additional water recovery. With water recovery through purchases unpopular in many Basin communities (ABC News 2023; Minister for Lands and Water 2022), this was seen to provide an incentive for Basin state governments to prioritise delivering the projects and avoiding any water recovery shortfall.

But this incentive has not worked well enough to motivate progress. In part, this is because governments have not made clear how ‘making good’ will take place, including how any shortfall will be recovered following reconciliation. And as discussed earlier, Australian Government policy decisions to amend the Water Act and limit total surface water purchases has undermined the credibility of any threat. In the views of some participants, this model did not provide a sufficiently strong incentive for Basin state governments to implement projects; rather, it created a situation where Basin communities bore the risk of governments

failing to deliver (Committee for Greater Shepparton, sub. 80, p. 10). The Central Irrigation Trust, for example, said:

A learning from the current model is that the current governance and accountability framework has not proven sufficient to hold state governments accountable for the delivery of what they signed up for. For irrigation communities who have done what has been asked of them, the lack of action, particularly from NSW, is creating an unjust scenario where buybacks are considered a viable fix. (sub. 33, p. 2)

The threat of water recovery could also have provided an incentive for governments to avoid being upfront about the infeasibility of certain projects and the need to withdraw or rescope them (as this would have effectively confirmed a shortfall in the full 605 GL/y offset). And the risk of a reduced offset may have encouraged Basin state governments to avoid making changes to projects or delivery processes, even when change could have increased the likelihood of successfully delivering projects.

Ultimately, non-delivery was unlikely to be challenged

Overall, weak and muddled accountability for delivering the supply measure projects between Basin governments has allowed them to avoid and deflect criticism for slow implementation. Planning and delivery have been inadequate at both project and program scales, and the inflexibility of the determination process has hampered any ability to revise projects. Basin states are responsible for formally rescoping and withdrawing projects, through BOC, but they have had no incentive to do so.

Unless these underlying governance issues are addressed, extending timeframes for the supply measures will not substantially improve the prospects of full delivery.



Interim finding 2.1

Resetting the balance has slowed because of weak governance in a changing water market

Resetting the balance in the Basin has slowed since 2018 and will not be completed by the original deadline of July 2024. Limited progress has been made toward environmental water recovery targets, including under the additional 450 GL/y efficiency measures program. This is largely because of government policy decisions, alongside rapid growth in water entitlement prices.

Key supply projects will not be completed on time. Accountability for implementing the supply projects is unclear, and Commonwealth funding agreements have failed to drive effective project implementation by Basin state governments. Key projects are unviable, but Basin governments are not transparent about the need to rescope or withdraw these projects, or the implications of failing to deliver projects on time.

These delays have substantially increased the financial costs of meeting Basin Plan water recovery targets, prolonged the uncertainty Basin communities face, and reduced the potential environmental outcomes of the investment in the Plan.

Constraints-easing projects were hampered by unrealistic expectations

The sluggishness of constraints-easing reflects both the poor accountability and inflexibility of the supply measure package (discussed above), and the difficulty of scoping and progressing these highly complex and long-term projects.

Initial costs and timeline estimates were significantly understated

The initial estimates for the costs and timelines for constraints-easing were optimistic.

Originally, \$200 million was committed to easing constraints through the WESA, but the anticipated costs of the projects have increased significantly since then. Business cases developed as part of the supply measure package led to an updated cost estimate of between \$510-630 million for southern Basin constraints-easing projects by 2016 (figure 2.2). And there is a risk that estimated costs will continue to increase: in 2021, INDEC noted that, based on one of the few funded sub-projects (the NSW Mid-Murray Anabranches Project), costs had roughly doubled from the 2016 cost estimates (INDEC 2021a, pp. 23–24).

Slow progress calls into question whether the estimated timelines were realistic, as previous implementation reviews by the Commission and others noted (INDEC 2021a, p. 5, 2021b, p. 18; MDBA 2020b, p. 13, 2022q, p. 2). Although Basin governments now acknowledge this (DCCEEW, sub. 77, p. 10), it is highly unlikely the full suite of constraints-easing will to be complete by the new proposed 2026 deadline (DCCEEW 2023b).

Inquiry participants also argued that the original flow rates proposed by the MDBA in the Constraints Management Strategy were unrealistic and not supported by affected landholders. Criticising the development of the 2013 Constraints Management Strategy, the NSW Farmers' Association claimed that:

... the delays in achieving implementation of the CMS [Constraints Management Strategy] have initially occurred when under the management in 2013/2014 by the MDBA, as affected landholders did not endorse the higher end flows proposed by the MDBA ... Key concerns of landholders were the risk of elevated flooding, the flow targets, which were not considered feasible or realistic, and the reasoning as to how these targets were calculated. MDBA-led investigations were confined largely to remote desktop studies of what the potential impacts were likely to be. (sub. 76, p. 3)

Including constraints as supply measures has undermined social license for the projects, and skewed incentives for Basin states

Constraints-easing is a standalone component of the SDL adjustment mechanism, designed to enhance the outcomes of held environmental water, including the additional 450 GL/y.¹² Most southern Basin constraints-easing projects were later included in the supply measure package, and are considered to contribute substantially to the 605 GL/y offset.¹³

Easing constraints requires low-level inundation of private land on floodplains. However, both the NSW and Victorian governments have policies in place that prohibit flooding of private land without consent, reflecting their liability under their respective water acts.¹⁴ This means they will need to undertake detailed property-level modelling, and may need to negotiate flood easements or similar instruments with affected landholders.

¹² Basin Plan, schedule 5, s. 2(f).

¹³ INDEC estimated the offset attributable to four southern Basin constraints-easing projects at 80 GL/y, although this estimate depended on progress of other measures, including the enhanced Environmental Water Delivery project (INDEC 2021b).

¹⁴ *Water Act 1989 (Vic)*, s. 157; *Water NSW Act 2014 (NSW)*, s. 37.

The prescriptiveness of the supply measure process has limited scope to adjust project parameters, which undermines meaningful engagement with those affected landholders and hampers negotiations. Louise Burge said:

At the heart of Government failures is a failure to value local knowledge, limited Government actual investigation of the types and extent of issues and a ‘top down’ approach for implementation, a factor now being reinforced in 2023. (sub. 98, p. 10)

Murray Valley Private Diverters also linked this top-down approach, and the resultant mistrust, with the focus of State governments on delivering the supply measure offset, claiming that:

The [NSW Reconnecting River Country] program is not being implemented in a manner that builds trust, instead there is already a high incidence of mistrust and an appearance of divide and conquer to achieve flow objectives that will give the highest scoring card from the MDBA. (sub. 95, p. 13)

As with other supply measures, the focus on avoiding the risk of water recovery has meant Basin state governments have had an incentive *not* to modify, adapt or re-scope constraints-easing projects. The Murray Valley Private Diverters further noted that:

Restrictive MDBA timeframes to lodge projects, an inability to apply new learnings, new ideas and methodologies, is at odds with the concept of good practice in project development. (sub. 95, p. 11)

In some cases, opposition to constraints-easing is linked to opposition to the 450 GL/y of additional water recovery. Some participants argued that both programs lacked a sound basis and should not be continued.¹⁵

Focusing on both the water recovery offset and the link with the 450 GL/y means less focus on the environmental and operational benefits of eased river constraints (discussed below). These broader benefits have not been well communicated, and this has affected broader understanding and support for the measures outside of those directly affected. As put by Anne Jensen:

There has been major misinformation about potential damage from environmental flows and this needs to be strongly countered with correct information about the benefits of water for river health to all river communities ... Going forward, there is a need to invest in selling the value of completing constraints projects better, provide support to landholders and regional department officers, and to counter misinformation equating environmental flows with the devastating impacts of the 2022 floods. (sub. 39, pp. 2, 3)

There are environmental benefits to be achieved by easing constraints, but ongoing delays have meant these are now considerably more costly to achieve. The focus has moved from their broader system-wide environmental and operational benefits, towards a narrow focus on water recovery.



Interim finding 2.2

Past program design has not suited the complexity of constraints-easing projects

Constraints-easing projects have progressed slowly, with complex property-level modelling and extensive landholder engagement needed to identify and manage the impacts of higher flow rates. Including constraints in the supply measure package has led to a focus on the water recovery offset, rather than the environmental and operational benefits of easing constraints.

¹⁵ For example, Beer (sub. 38, p. 14).

The northern Basin toolkit measures lack dedicated focus

Although some elements of the northern Basin toolkit are in place, slow progress on other aspects appears to reflect weak accountability for delivery, as well as broader market issues affecting infrastructure project delivery.

Weak oversight, along with COVID-19 and flood events, has stymied full delivery

The Northern Basin Project Group (NBPG) is a committee of the Australian, NSW and Queensland governments and is responsible for monitoring progress. The NBPG is required under the amended 2013 IGA to report on project progress to the MDB Ministerial Council and BOC on a six-monthly basis (COAG 2019, p. 28). Only two annual progress reports are public (NBPC 2022, 2023).

The MDBA (sub. 61, p. 2) claimed that ‘the commitment of Basin governments to implementing the northern Basin toolkit has slowed and valuable elements of the package will not be implemented by the agreed deadline’.

Rather than being a standalone series of measures, elements of the toolkit package are highly interdependent on completion of other areas of Basin Plan implementation, and are affected by delays in those elements. For example:

- protection of environmental flows is contingent on water resource plans, which are not yet in place in parts of NSW (chapter 4)
- targeted water recovery is entirely subject to the Australian Government’s progress on bridging the gap (discussed above), which also relies on finalisation of cap factors through the NSW WRP accreditation process
- the Gwydir constraints measure is part of the broader NSW ‘Reconnecting Watercourse Country’ program; although not part of the supply measure, it has also run into similar issues with landholder support (Gwydir-Gingham Landholders, sub. 23).

The key aspect of the toolkit, then, is the series of environmental works and measures, which have similarities to the supply measures in the southern Basin. Delays caused by various weather events, COVID restrictions, and difficulties sourcing labour and materials are reported for these works (NSW Government, sub. 43, p. 6; NBPC 2023).

No firm requirements to deliver environmental outcomes

Unlike supply measures, there is no requirement or expectation that the toolkit projects are ‘environmentally equivalent’ to the 70 GL/y reduction in water recovery. Instead, the projects only aim to ‘further enhance river health even with a reduced recovery volume’ (MDBA 2016, p. 12). The annual reporting for toolkit projects is less frequent and detailed than the quarterly and annual progress reporting for the supply and constraints measures (MDBA 2022I, 2023b).

Although the MDBA previously indicated the need for a reconciliation-like process for toolkit environmental outcomes (PC 2018, p. 144), there is no process required under the Basin Plan to ensure the environmental outcomes of the projects are achieved, or to compare this to the outcomes expected from 70 GL/y of water recovery. No assurance monitoring is in place to monitor and report on environmental outcomes over time.

This means there is no built-in mechanism to provide public confidence on the environmental outcomes achieved. As such, even if the projects are implemented in full, there is no guarantee that the environmental outcomes of these projects will align with those expected, or what the benchmarks are to gauge project effectiveness.

There is also reason to suspect the costs and outcomes of some projects have shifted since their proposal (Balonne Shire Council, sub. 70, SmartRivers, sub. 102). The 2023 Progress Report of the Northern Basin Project Committee noted the risk of:

Potential cost escalations as approved funding was based on feasibility cost estimates [which may] result in reduced scope and delivery of environmental outcomes. (NBPC 2023, p. 7)

And like the supply measures, there is no clear point of accountability for ensuring projects deliver the expected outcomes, or to reassess the merits of projects and their alternatives if net benefits change.

The CEWH noted the importance of the toolkit in supporting the protection of environmental water, in line with the ‘prerequisite policy measures’ required under the Plan (sub. 69, p. 21). The most recent report on progress highlighted the opportunity, under the toolkit, to support even greater outcomes through Basin-wide protection of environmental water: that is, the accounting and protection of Northern Basin environmental flows through the Menindee Lakes and to the southern Basin (NBPC 2023, p. 4). While potentially very worthwhile, it is unclear whether and how this option is being pursued, and how it fits within the framework of the toolkit and the Basin Plan.



Interim finding 2.3

Slow progress on the northern Basin toolkit reflects unclear accountability for delivering program outcomes

Delays implementing the northern Basin toolkit measures are a result of inadequate accountability for delivery, as well as a lack of oversight and review of the measures. Public information about project progress is sparse, and there is no framework in place to monitor the relative environmental merits of these projects as they progress, or demonstrate their outcomes once implemented.

2.4 Where do we go from here?

The Australian Government's Restoring Our Rivers Bill includes a set of timeframe extensions for all three elements of the SDL adjustment mechanism and the northern Basin toolkit. It also allows for new supply measure projects to be proposed, and enables a broader set of water recovery options to contribute to the additional 450 GL/y.

But even with more time, the full set of Basin Plan water recovery targets are not achievable within existing budgets and program design. The proposed amendments do not solve the mismatch of responsibility and accountability that has contributed to inadequate progress across the range of projects – particularly for the supply measures.

On its own, more time will not be enough

Delaying reconciliation to 2026 provides more time to implement projects, but also means delaying any robust interrogation of the expected environmental benefits of the supply measure projects. There is still no transparent process for demonstrating that supply measure projects represent value for money, nor is there an effective mechanism to rescope or abandon low-value and undeliverable projects.

As a result, Basin communities, taxpayers and the broader Australian community will be no more informed about the prospects of the Basin Plan being delivered in full and on time.

The new agreement between (most) Basin governments accepts that most constraints-easing projects will not be complete by the proposed 2026 reconciliation. This significantly reduces the water recovery offset deliverable by those measures, and also affects the environmental outcomes of other projects – for example, the outcomes of the Enhanced Environmental Water Delivery project are reliant on constraints-easing (MDBA 2023b, pp. 19–21). And, at time of writing, the agreement does not include an extension for Victorian supply projects. Coupled with the known unviability of some existing supply measures, including the Menindee Lakes project, a shortfall at reconciliation of at least 100 GL/y still appears likely (table 2.2).

The Bill will allow Basin state governments to propose new supply projects (up until 30 June 2025), if those projects can be operational by December 2026. However, noting the negligible progress made on supply measures over the last five years, the Commission views it as unlikely that enough new projects will be identified that:

- can compensate for the entire water recovery shortfall created by delaying constraints and re-scoping the Menindee Lakes project, without impacting the outcomes of other supply measures
- represent value for public money relative to direct water purchase
- can garner the support of affected communities, and
- are able to be designed, approved and implemented by December 2026.

This makes it highly unlikely the full 605 GL/y offset will be delivered by December 2026, leading to a substantial water recovery shortfall in the Southern Basin.



Interim finding 2.4

The 605 GL/y supply measure offset is unlikely to be delivered by December 2026

The 605 GL/y supply measure offset is unlikely to be delivered in full by December 2026 because:

- key projects, including the Menindee Lakes project, will not be delivered as designed
- constraints-easing projects cannot be completed in full by December 2026 (which may also limit the offset achieved by other supply measures)
- there are unlikely to be enough new supply projects that are implementable by December 2026, represent value for money and can make a substantial contribution to the water recovery offset.

A significant water recovery shortfall in the southern Basin is likely in 2026.

Rather than accepting the likely shortfall and providing a clear pathway to addressing it, Basin governments have instead chosen to delay reconciliation. The Australian Government is also aiming to recover the additional 450 GL/y by 2027, even though finalising 'Bridging the Gap' is not yet certain.

The Bill will allow for water purchases to contribute to the 450 GL/y, which will reduce the cost of recovering water towards that target. However, based on current water prices, purchasing the remaining 424 GL/y

needed to reach the target will still not be possible within the existing WESA budget.¹⁶ Further, attempting to purchase such a large volume of water by 2027 also risks significant disruption to water markets. As the ACCC said:

Delays in project delivery, with the associated uncertainty around water recovery strategy, not only inhibit implementation of the Basin Plan, but are also likely to be having a negative impact on potential water market participants' confidence to make water-related investment decisions. ... These interventions may have unintended consequences depending on how they are structured and, even if they successfully recovered remaining water required, they would likely significantly affect market prices, certainty and confidence. (sub. 26, p. 9)

The NSWIC also submitted that:

... less than 100 GL in entitlement is now being traded commercially each year on the water market in the southern connected systems. Therefore, the common notion that the Government could simply enter the market and rapidly purchase 450 GL is not correct. At best, it would take several years for 450 GL to be purchased, with the scale of Government intervention inevitably distorting the market for years ... (sub. 103, p. 33)

Market liquidity constraints mean that only a small volume could be purchased each year without causing excessive disruption to water markets and Basin communities. The expectations of a significant government entry into the southern Basin water market will also affect the decisions of other market participants, and may contribute to price changes.

The Commission previously raised concerns about the assumptions underpinning the program to recover the additional 450 GL/y, including the lack of any review point to assess the feasibility of the 'enhanced environmental outcomes' in schedule 5 of the Basin Plan, the absence of catchment-specific water recovery targets, and the value for money of the overall program (PC 2018; chapter 5).

It is difficult to justify pursuing this additional environmental water when a likely supply measure shortfall means that the 'Bridging the Gap' target remains incomplete – the Australian Government may be forced to operate parallel water recovery programs at the same time. The absence of a credible delivery pathway for the 450 GL/y over the next four years – including catchment-specific targets – provides no certainty to Basin communities or water market participants, potentially undermining planning and investment decisions. The government risks being seen as just chasing a volumetric target, with no interest in the consequences or enough focus on the outcomes sought.

Following the 2026 Basin Plan review, the feasibility and costs of a program to recover water in pursuit of the schedule 5 outcomes should be reassessed by the Australian Government.

¹⁶ The second WESA review in 2021 concluded that the lowest cost scenario of recovering 450 GL/y through efficiency measures, with a 75% premium on market prices, would cost \$3.46 billion (Water for the Environment Special Account Review Panel 2021, pp. 31–32). This implies that directly purchasing those entitlements – and ignoring the likely price impacts of a major water purchase program – would cost almost \$2 billion and exceed the existing \$1.575 available under the WESA. The Australian Government has indicated that more funding is allocated for water purchases, but the total amount is not available.



Interim finding 2.5

The costs of achieving the enhanced environmental outcomes (schedule 5 of the Basin Plan) through water recovery have risen substantially

The budget available to recover the 450 GL/y will not be adequate to achieve the target even if water purchases are allowed. Recovering water towards the supply measure shortfall and 450 GL/y targets at the same time over a three-year period would risk significant disruption to water markets and Basin communities.

The 2026 Basin Plan review is an opportunity to assess how to deliver the enhanced environmental outcomes that the 450 GL/y target is designed to meet.

Basin governments must find a path forward that protects taxpayer investment in the Plan while providing greater clarity and a degree of certainty to Basin communities about their futures. There is a need for clearer roles and responsibilities between Basin governments, with improved accountability mechanisms, consistent with the principles of good governance outlined in chapter 1. The Commission recommends that:

- the Australian Government amends the Basin Plan so it must unilaterally amend or withdraw a supply measure notification if the relevant Basin state (or states) do not do so following material changes to a project
- the Australian Minister for Water reports annually to Parliament to confirm which supply, constraints-easing and toolkit measure projects are feasible and represent value for money, ceases funding projects that do not represent value for money or cannot be delivered, and provides guidance on how any shortfall will be addressed
- southern Basin governments withdraw all incomplete constraints-easing projects from the supply measure package, and co-develop a renewed implementation program
- the Australian Government renews its approach to water recovery to address the likely supply measure shortfall, including gradual voluntary water purchases, coupled with a commitment from all Basin governments to assist communities, where warranted, to transition to a future with less available water.

The Australian Government must be accountable for progress on all elements of resetting the balance

Resetting the balance is the Australian Government's responsibility, but Basin state governments are responsible for designing and delivering the supply, constraints-easing and northern Basin toolkit measures.

A mismatch of accountability and responsibility can in part explain some of the limited progress: the Australian Government is responsible for funding supply projects as part of its commitment to bridge the gap, but it has little control over project implementation beyond the conditions it places on Basin state governments via intergovernmental funding arrangements. And in some cases, this has resulted in a stalemate – the Australian Government appears to have withheld funds to projects with no prospects for delivery, but States have been unwilling to withdraw these projects from the supply package as that would confirm a water recovery shortfall.

The Australian Government should not fund projects that have no realistic prospect of success or of delivering the environmental outcomes sought – but it does not have the authority to unilaterally withdraw such projects from the package. The Basin Plan instead gives the BOC, which is made up of senior officials of all Basin governments, the power to amend or withdraw supply measure project notifications.¹⁷ As

¹⁷ Basin Plan, s. 7.12.

DCCEEW said, BOC is the ‘decision maker’ on whether projects are nominated and withdrawn (sub. 77, p. 11). This prevents the Australian Government from unilaterally ceasing projects that are not capable of being delivered, or that are not value for money for the taxpayer. And arguably it gives a degree of influence over Australian Government funding decisions to a committee of senior officials without corresponding transparency or accountability. The operations of BOC are also discussed in chapter 9.

The Australian Government should amend the Basin Plan so that, where there are material changes to a project, the Australian Government is required to withdraw or amend the project notification after a reasonable period (say three months) has elapsed for BOC to amend, rescope or withdraw the project.

This new power should be coupled with greater transparency on Australian Government funding decisions, including any new supply measure projects that are added prior to June 2025.

As discussed earlier, the existing project funding ‘gateway’ process is opaque. The IGWC (sub. 75, p. 10) highlighted a range of concerns around the transparency of current funding arrangements, noting the lack of publicly available information on whether project payments are being made, and a focus on broad, program-scale reporting rather than specific projects and measures. It also highlighted that there are no legislative requirements for public reporting on supply measure progress (pers. comm., 31 July 2023).

The IGWC could take on a more explicit oversight role over the National Partnership Agreements that govern these funding arrangements, building on its existing role overseeing intergovernmental agreements. Independent assessment of the current *Federation Funding Agreement Environment Schedule on Implementing Water Reform in the Murray–Darling Basin (2021-22 to 2023-24)* would aid transparency in intergovernmental funding relations and reduce the risks inherent in States self-reporting on progress. This option is explored in more detail in chapter 9.

Irrespective of independent oversight of these agreements, it is the Australian Minister for Water that is accountable to the Australian Parliament for how taxpayer funds are spent. The Minister must be able to justify decisions to fund specific supply, constraints-easing and toolkit measures, alongside any water recovery program, towards the Basin Plan targets and outcomes. This clear line of sight for Parliament – and the broader community – is however absent.

The Minister for Water should table in Parliament an annual report on funding provided for supply, constraints-easing and northern Basin toolkit projects. This report should incorporate all available information on project prospects, including the MDBA’s annual SDL adjustment mechanism assurance reporting. At a minimum, these reports should include:

- the status of the projects
- funding arrangements, including amounts expended to date
- reasons for deciding to continue, amend or withdraw project funding, including evidence on the cost-effectiveness of projects relative to other forms of recovery
- any expected shortfall against the water recovery offset and planned actions to make good.

The Australian Government should amend the Water Act to require this annual reporting. These amendments should be made to the Water Act and Basin Plan as soon as possible.



Interim recommendation 2.1

The Australian Government should be more transparent, and have greater authority, over decisions for supply, constraints-easing and northern Basin toolkit measures

The Australian Minister for Water should table in Parliament an annual report about the progress of all supply, constraints-easing and northern Basin toolkit projects. The reports should include:

- the status of the projects
- funding arrangements, including amounts expended to date
- reasons for deciding to continue, amend or withdraw project funding, including evidence on the cost-effectiveness of projects relative to other forms of recovery
- the expected shortfall against the water recovery offset (if any) and planned actions to make good.

The first report should be tabled by 30 June 2024. The *Water Act 2007* (Cth) should also be amended to require the Minister to table these reports.

The Basin Plan should be amended to require the Basin Officials Committee to notify the Murray–Darling Basin Authority of material changes to supply measures within three months of those changes occurring.

The Basin Plan should also be amended to require the Australian Minister for Water to withdraw a Commonwealth-funded supply measure if the Minister considers that the measure will not enter into operation by the deadline in s. 7.12(6) of the Basin Plan.

These amendments to the Water Act and Basin Plan should be made as soon as possible.

Prioritise easing constraints, and commit to procedural fairness

Constraints-easing, if done effectively, provides opportunity to benefit a range of environmental sites in the Basin and to provide flexibility to river operators. Many inquiry participants pointed to constraints as an area where renewed focus is required to support environmental outcomes (box 2.3).¹⁸

Box 2.3 – Easing constraints – what participants said

A broad range of participants highlighted the importance of progress constraints-easing in the next phase of Basin Plan implementation. The Lifeblood Alliance, for example, said:

Environmental water needs to be able to get to the locations on the floodplain that need it most and to arrive downstream in sufficient volumes to flush salt out to sea and out of the system. ... The removal of constraints to the delivery of environmental water is critical to the successful achievement of the Basin Plan, and have lasting private and public benefits, we have an obligation to maximise these benefits. (sub. 52, pp. 4–5)

Goulburn Valley Environmental Group noted that local environmental outcomes were improving, but were limited by the inability of environmental water holders to provide overbank flows:

¹⁸ GVEG (sub. 28, p. 1); NSW Government (sub. 43, p. 12); Lifeblood Alliance (sub. 52, pp. 4-5); MDBA (sub. 61, p. 7); CEWH (sub. 69, p. 2); DCCEEW (sub. 77, pp. 16-7).

Box 2.3 – Easing constraints – what participants said

We are confident of environmental improvement, but disappointed this has been limited by the Victorian Government of flows to ‘in channel’ and denying fully utilising recovered water to maximise the improvements to the health of wetlands and low-lying vegetation. (sub. 28, p. 2)

Renmark Irrigation Trust noted that ‘the benefit of the recovered water and any management of unregulated flows, cannot be maximised without the constraints on the River and floodplains being addressed’ (sub. 24, p. 5). And South Australian Murray Irrigators said:

It cannot be stressed stronger that constraints are the first actions that the government should take through all states to ensure that any water return volumes can be delivered if they can’t be delivered then their recovery is pointless and could cause devastation or floods and further cost local councils in infrastructure destruction. Addressing constraints is something that both sides of government have had the chance to implement and both sides of government have put it in the too hard basket and done little except study and review. Real action has not followed and should be a priority going forward. (sub. 96, p. 5)

Further upstream, the Murray River Group of Councils commented that:

... completion of the constraints relaxation projects is essential to the overall success of the Basin Plan ... By reconnecting rivers to their floodplains more often and especially when operating in conjunction with the [Victorian Murray Floodplain Restoration Program] and other [SDL adjustment mechanism] projects, relaxing constraints would create real and significant benefits for the environment and will enable Basin Plan objectives to be met. (sub. 22, p. 10)

And the MDBA said:

It is the MDBA’s firm view that the constraints projects should remain a focus for delivery by all governments. They are complex and previous experience in constraint easing has shown they require time to properly engage with affected individuals and communities. However, they are essential to realising the full benefit of the investments which have been made to secure environmental water and to achieve the long-term environmental outcomes sought by the Basin Plan. (sub. 61, p. 7)

Constraints – whether operational or physical – limit the ability of environmental water managers to improve environmental outcomes in some wetlands and low-lying flood plains. Under current rules, some of these areas may not receive environmental watering frequently enough to maintain ecological condition, which has a direct negative impact on the health of wetland plants, forests and woodlands, and on native fauna that rely on these for food or shelter. As connectivity between rivers and these wetlands decreases, so too does the scope for aquatic species to move between them, limiting both the availability of food for animals and nutrients for vegetation. There is also increased risk of blackwater events when water eventually reaches floodplains, as organic matter is not flushed frequently enough (CEWH, sub. 69, p. 20; MDBA 2013a).

Improving environmental outcomes in the southern Basin requires progress on easing constraints and adjusting operational rules to better deliver environmental outcomes, not just recovering water. As Environment Victoria put it:

... degradation isn't the result of over-extraction alone. Instead, it is the result of the paradigm of 'working rivers' which repurposed rivers to make over-extraction possible, fundamentally altering patterns of flow. (sub. 99, p. 9)

Some of the environmental outcomes linked to the additional 450 GL/y also require constraints to be eased.¹⁹ But irrespective, easing constraints and enabling higher operational flow rates will allow the existing environmental water portfolio to be managed for greater environmental benefit (CEWH, sub. 69, p. 20). There is also evidence to suggest that, in response to community concerns, some constraints in the southern Basin have become more stringent since the Basin Plan modelling took place (MDBA 2020i, p. 32). This has further restricted the ability for environmental water holders to deliver water to environmental assets like floodplains.

Alongside other changes in water markets, constraints have also created increasingly 'challenging delivery conditions for river operators' (ACCC, sub. 26, p. 5), and limit the ability of river operators to meet consumptive demands along the system (Frontier Economics 2020, pp. 49–50).

Constraints-easing projects have proved challenging for governments to implement. Although there are clear benefits, raising operational flow rates requires significant buy-in from Basin communities, and must incorporate fair recourse to affected landholders. With most constraints-easing projects needing at least another 5–10 years to implement, the program requires a dedicated, collaborative focus from Basin governments to set it up for success.

The Restoring Our Rivers Bill, if passed, will direct the MDBA to develop a constraints implementation roadmap (complementary to the 2013 *Constraints Management Strategy*) by December 2024. This is an opportunity to establish a sound footing for constraints-easing in the southern Basin.

Remove constraints from the supply measures package and extend timeframes

As a first step, incomplete constraints-easing projects should be removed from the supply measure package and implemented under a separate work program. Withdrawing constraints will allow for greater flexibility in delivery over a longer timeframe and could facilitate better engagement with affected landholders.

Withdrawing constraints from the supply measure package will, in effect, confirm a shortfall at reconciliation – even if reconciliation is delayed to 2026. But, because most constraints-easing projects will not be completed by 2026 regardless, withdrawing constraints now will not meaningfully affect the likely shortfall in 2026.

Consistent joint commitment to procedural fairness for landholders

One of the barriers to constraints-easing is inadequate government engagement with the affected landholders, which according to one participant, generates a backlash of local opposition to 'man-made manipulated environmental flood flows' (Beer, sub. 38, p. 2). Recent flooding events in the southern Basin also reinforced the concerns some floodplain landholders have about how floods are managed and communicated by river operators (Central Murray Environmental Floodplains Group, sub. 6).

While there are legitimate concerns, in some cases, landholder objections can resemble a 'holdout problem', where the need for all affected parties to agree gives a small number of people an outsized ability to slow delivery of a project with community-wide benefits. This is a key challenge where State governments have

¹⁹ Basin Plan, schedule 5, s. 2(f).

policies in place that ban involuntary flooding of private land in all circumstances (Victorian Government 1989, p. 457).

Ideally, all affected landholders should be afforded the same commitment to procedural fairness – especially for the River Murray constraints projects. This requires a joint strategy between the New South Wales and Victorian governments, supported by the Australian Government, which commits those states to a clear process over a long time period. The strategy should outline the ‘stages’ of landholder engagement and negotiation, clarifying opportunities for landholders to provide local input to the process. The strategy should also look to identify interactions with projects to improve disaster resilience and flood mitigation through the Basin, as part of flood reconstruction efforts.

Some participants called for compulsory acquisition of easements, at fair market value.²⁰ This could be considered as a last resort where all other options are exhausted, and a standard of due process has been met by governments. Any compulsory acquisition by governments of an interest in private property, including an easement, would need to comply with relevant state laws. For example, the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW) sets out rights to be given notice (usually at least 90 days), ‘just compensation’, and rights to appeal to the Land and Environment Court.

Importantly, any coordinated strategy should build on – not replace – the existing work done on the *NSW Reconnecting River Country* and *Victorian Constraints Measures* programs, both of which are currently inviting detailed property-level input (NSW Government, sub. 43; Victorian Government, sub. 74).

Prioritise incremental improvements

The costs of delivering the flow rates planned under the *Constraints Management Strategy*, to both governments and landholders, are likely to have increased substantially and exceed the available budgets (Water for the Environment Special Account Review Panel 2021, pp. 38–39). This does not mean the projects should be abandoned in their entirety. Rather, governments should instead find ways to prioritise incrementally higher flow rates in a gradual, iterative way, within the available funding, instead of retaining the ‘all-or-nothing’ mindset implicit in the 2013 strategy and constraints-easing business cases.

The CEWH (sub. 69, p. 20) identified a range of ‘stepping-stone’ projects that would ‘produce immediate benefits in terms of the ability of the CEWH to manage and deliver Commonwealth environmental water’. These priorities include restoring operating flows in the Murrumbidgee to the level already provided for in the water sharing plan, and specific improvements to environmental watering infrastructure. These types of incremental improvements can provide some catchment-scale environmental benefits, even before other upstream and downstream constraints are eased.

No-regrets projects, particularly those on tributaries, should be prioritised. Easing River Murray constraints will be more complex and should take place later in the sequence after lessons have been garnered from State implementation in the tributaries.

Depending on progress, the likely environmental outcomes, and the costs of achieving those, the Australian Government should consider further funding for constraints-easing measures. In the near term, funding from the WESA could be reallocated towards constraints to provide funding certainty, in line with improved accountability on Australian Government funding decisions (discussed above).

²⁰ NCC NSW (sub. 50, p. 4); Lifeblood Alliance (sub. 52, p. 4); Temba Orchards (sub. 87, p. 3); EDO (sub. 91, attachment 1, p. 11), Environment Victoria (sub. 99).



Interim recommendation 2.2

Reset and extend implementation of constraints-easing projects

Basin governments should remove southern Basin constraints-easing projects from the supply measure package.

The Murray–Darling Basin Authority should develop an implementation roadmap that includes:

- pathways to incremental improvements in flow rates in each river, including evidence on the benefits of gradual increases in flow rates
- a process to provide procedural fairness to affected landholders
- a sequence for constraints-easing projects that prioritises the major tributaries prior to the River Murray.

Subject to making meaningful progress on incremental constraints easing, the Australian Government should assess the costs alongside the environmental and operational outcomes of further constraints easing, and consider allocating additional Water for the Environment Special Account funding towards constraints easing.

An assurance mechanism for the northern Basin toolkit

The northern Basin toolkit should be subject to the same improved financial accountability arrangements as the supply and constraints measures, but this is not enough to provide confidence that the outcomes of all projects will be delivered by December 2026 as proposed under the Restoring Our Rivers Bill. There also does not seem to be flexibility to adjust the measures to enhance the potential environmental outcomes. Allowing this flexibility could provide some incentives for State governments to find opportunities to deliver improved environmental outcomes, including better accounting for and protection of environmental water between systems.

The Australian Government should put in a place a monitoring framework for implementation of the measures and require the MDBA to assess the overall environmental outcomes of the projects, including any amendments, as part of the Basin Plan review in 2026.



Interim recommendation 2.3

Implement an assurance mechanism for the northern Basin toolkit

The Australian Government should implement a monitoring framework, together with public reporting, to provide assurance of environmental outcomes for completed northern Basin toolkit projects. As part of the 2026 Basin Plan review, the Murray–Darling Basin Authority should stocktake the outcomes of the northern Basin toolkit projects along similar lines to the Sustainable Diversion Limit Adjustment Mechanism reconciliation.

Renew the approach to water recovery

Waiting until reconciliation to start addressing the likely shortfall from the 605 GL/y target will only increase the total cost of implementing the Basin Plan. The Australian Government should renew its approach to water recovery to address the likely shortfall against the 605 GL/y supply measure offset, and to finalise

bridging the gap to the 2,680 GL/y. This should occur alongside a commitment from Basin governments to assist communities, where warranted, to transition to a future with less available water.

All options on the table, including a staged approach to voluntary water purchasing

Many inquiry participants argued for an immediate return to open tender water purchases, including towards the 450 GL/y.²¹ And others argued against them, largely in response to the perceived impact of previous rounds of water purchases on communities.²² Box 2.4 provides some of these perspectives.

Box 2.4 – What participants said about open tender water purchases

In supporting open market water purchases, many emphasise their reliability and cost-effectiveness compared to other options.

Recovering water for the environment through ‘buybacks’ is considerably less expensive than through irrigation efficiency upgrades ... There would need to be compelling reasons to justify the additional public expense of efficiency measures. There are none. (EDO, sub. 91, attachment 1)

Open tender, voluntary water purchases must be resumed as a key cost-effective and transparent mechanism for meeting water recovery targets across the Basin. Reliance on infrastructure projects, both on and off farm, to recover water must be reduced, as these projects are high cost and low return in terms of environmental outcomes. (Lifblood Alliance, sub. 55, p. 2)

Water buy-backs from willing sellers needs to become more of a priority despite the push-back from big irrigation. Willing sellers are the most cost efficient and effective means to recover water for the environment. These buybacks will have the best value ROI of any planned recovery, far better than dubious water efficiency programs. (Trangie Local Aboriginal Land Council, sub. 40, p. 1)

Moira Shire Council observed the impacts of buybacks on the agricultural sector, including irrigation networks.

Water buybacks can have significant impacts on businesses in the region, particularly those reliant on irrigation. The reduced availability of irrigation water, especially during drought periods, can lead to a sharp decline in on-farm production and a decreased demand for agriculture services. This can have severe consequences for the long-term viability of irrigation industries and the irrigation infrastructure managed by Goulburn Murray Water within

²¹ River Lakes and Coorong Action Group (sub. 15, p. 2); Goulburn Valley Environment Group (sub. 28, pp. 1–2); Trangie Local Aboriginal Land Council (sub. 40, p. 1); Beasley (sub. 47, pp. 10–12); NCC NSW (sub. 50, pp. 2–3); Lifblood Alliance (sub. 52, pp. 1–2); ATSE (sub. 71, p. 3); Wentworth Group of Concerned Scientists (sub. 81, p. 2); EDO (sub. 91, attachment 1, p. 9–11); Environment Victoria (sub. 99, pp. 12–16); NSW Aboriginal Land Council (sub. 101, p. 11).

²² LMW SAC (sub. 9, p. 1); CICL (sub. 21, p. 9); MRGC (sub. 22, pp. 10–11); Moira Shire Council (sub. 25, pp. 2–3); VFF (sub. 34, p. 4); NFF (sub. 46, pp. 8–9); NIC (sub. 62, pp. 10–11); ADIC (sub. 64, p. 2); Balonne Shire Council (sub. 70, pp. 2–3); Murrumbidgee Irrigation (sub. 73, p. 3); Victorian Government (sub. 74, pp. 3–4); Bourke Shire Council (sub. 79, p. 3); Committee for Greater Shepparton (sub. 80, p. 8); Southern Riverina Irrigators (sub. 97, p. 10).

Box 2.4 – What participants said about open tender water purchases

Moira Shire. Furthermore, the reduction in agricultural production may render some manufacturers economically unviable. (sub. 25, p. 2)

The Murray River Group of Councils pointed to the impacts on the wider community.

Buybacks damage communities. The evidence of this is not contestable. ... many independent assessments and our own lived experience in our communities all clearly demonstrate that is not possible to recover water from the consumptive pool, either through buy backs or through on farm efficiency projects, without long term negative cumulative effects on people living in the Basin. (sub. 22, p. 11)

However, Beasley noted that many opponents of open tender purchases made assertions that were not supported by evidence.

Assertions have been made in the past (and are currently being made) that voluntary purchases of water for the environment (usually called “buy-backs”) cause economic damage to rural or regional communities ... These assertions are not fully supported by peer reviewed economic research or papers, or defensible economic reports. (sub. 47, p. 11)

Likewise, Environment Victoria noted:

... economists have pointed out that water buybacks have positive impacts on community spending and that government-commissioned reports claiming a simplistic relationship between water use and farm production don't hold true. (sub. 99, p. 14)

The benefits, costs and broader impacts of different water recovery options are well-established (ABARES 2020; Grafton and Wheeler 2018; PC 2010). Previous water recovery programs show that purchasing water is by far the quickest and most cost-effective way for governments to obtain water entitlements for environmental use (Grafton and Wheeler 2018). By purchasing from willing sellers at market prices, direct water purchases protect property rights and encourage irrigators to adjust to a future with less water. By contrast, recovering water through water-use efficiency infrastructure projects, both on-farm and off-farm, are more than twice as expensive on average, and can delay – rather than prevent – structural adjustment (PC 2018; appendix B). As Environment Victoria put it:

It is well-documented that if investments do not meet basic cost-benefit criteria for water saving, they delay the adjustment irrigation areas will inevitably face. In other words, they can lead to ‘gold plating’ assets that may subsequently become stranded while perpetuating a dependence on increasing external support – imposing substantial costs elsewhere. In effect, infrastructure investment may create an imperative to sustain the viability of those assets while perhaps neglecting more difficult, structural reforms. (sub. 99, p. 13)

However, the pace and location of water purchasing has driven structural adjustment pressures that can be harder for smaller, irrigation-dependent communities to adjust to (Sefton et al. 2020a, p. 17). Rapid and uncoordinated water purchasing can also affect the viability of irrigation networks (National Irrigators Council, sub. 62, p. 6).

Some of the strengths of open-market buybacks may not hold in the same way they used to, due to changes in southern Basin water markets since 2007. Previous buyback programs were able to recover water cost-effectively because some farmers sold unused parts of their overall entitlements, while others sold out

of necessity to restore cash flow (Wheeler and Cheesman 2013). With current water entitlement prices, it is unlikely that similar opportunities still exist – entitlement holders would already have had sufficient incentive to sell. Obtaining larger parcels of water may also require a greater reliance on land and water packages (Environment Victoria, sub. 99, p. 15), which may require direct negotiation but can contribute to broader environmental outcomes.

There may also not be as many willing sellers as previously, and market premiums have increased. Any future rapid water purchase program is likely to have significant impacts on water market prices, depending on both the rate of purchasing and the expectations set for market premiums.

For these reasons, a sole reliance on large-scale, rapid open-tender water purchasing is not recommended. The Australian Government needs to operate a holistic program of gradual water recovery that considers all options on their merits, but maintains a primary focus on cost-effectiveness.

Water infrastructure projects may remain part of the mix, but greater attention needs to be paid to rationalising irrigation network footprints. As Coleambally Irrigation Co-operative Limited submitted:

The Basin Plan reduces the volume in the consumptive pool without addressing the irrigation footprint. In fact, policy settings encourage ‘green field’ irrigation developments or enable increased water use (on-farm irrigation efficiency) which combine to increase the pressure on access to remaining volumes in the consumptive pool, causing increased annual allocation and water entitlement prices. ... The Basin Plan and associated instruments ... act to diminish the [irrigation infrastructure operator’s] capacity to adjust to the Basin Plan and a reduction in the consumptive pool, with the responsibility for maintaining the shared infrastructure left with remaining irrigators. (sub. 21, p. 9)

While off-farm water infrastructure projects are generally the most expensive form of recovery, implementing water purchase programs in concert with a reduction in irrigation network footprints can lessen the impact on irrigation network viability. Reduced overall irrigation demand will also help balance supply and demand in the water market, and reduce the price impacts of environmental water recovery overall.

Coupling water recovery with community transition assistance

Purchasing water entitlements, and maintaining property rights, will provide farmers with an opportunity to be compensated to reduce or cease irrigation, but the cumulative impact of multiple willing sellers will create flow-on pressure for some Basin communities to adjust to a future with less water. Many of these communities are also adjusting to a changing climate, which is reducing the levels and reliability of Basin stream flows alongside increased frequency and severity of floods and droughts (chapter 6). Communities also face a broad swathe of short and long-term environmental, social and economic changes, including reduced agricultural labour needs and a highly-developed water market.

Future water recovery should occur alongside a clear commitment from Basin governments to assist communities, where necessary and warranted, to transition to a future with less certain water availability.

The Australian Government’s water recovery strategy should incorporate socioeconomic monitoring to identify likely adjustment pressures exacerbated by specific purchases or projects and to inform more effective targeting of transitional assistance.

Designing and implementing effective adjustment programs for regional communities experiencing structural change is notoriously difficult. There are very few examples of successful adjustment programs, both in the Basin and across the Australian economy. However, the Victorian Government’s establishment of a coordinating Latrobe Valley Authority to assist the region’s transition away from coal mining has been

identified by some participants as a good model to draw lessons from. The Committee for Greater Shepparton observed that the:

... government support to the Latrobe Valley in response to the Hazelwood Power Station closure is approximately ten times that provided to [Goulburn Murray Irrigation District] communities in response to direct job losses associated with the implementation of the Basin Plan (sub. 80, p. 10)

Any future Basin adjustment programs should have clear, bespoke objectives and leverage existing regional development frameworks where possible. The Latrobe Valley Authority provides an example of how adjustment programs can align and link with broader regional economic strategies, and draw on existing community and regional strengths.

The difficulty in delivering successful economic adjustment programs underscores the need for a robust monitoring, evaluation, reporting and program improvement framework, to assess whether funding is delivering on objectives and identify where improvements could be made (PC 2017). Program design must also learn from the lessons of previous adjustment programs in the Basin (box 2.5).

Based on the evidence on the effectiveness of past programs, a well-designed assistance program:

- leverages the existing competitive strengths of the region (PC 2017, p. 22)
- is well-integrated with prevailing regional development strategies and frameworks (PC 2017, p. 209)
- builds on and enhances private sector investment in the community (Mouque 2012, p. 2)
- has a robust monitoring, evaluation, reporting and improvement framework (PC 2017, p. 152).

Box 2.5 – Lessons from recent adjustment programs

Basin governments have implemented multiple economic transition and adjustment programs in the Basin during the period of Basin Plan implementation. The most recent example is the Australian Government's *Murray–Darling Basin Economic Development Program* (MDBEDP).

Most projects funded to date under the MDBEDP are tourism projects, including parks and walking trails. Funding has also been provided to help local governments encourage professionals to relocate to their area, improve local health amenities, and develop cultural and arts centres. Examples of projects funded under the program include:

- \$617,950 for Yarrawonga to Burramine Cycling and Walking Trail in Moira Shire
- \$600,000 for St George CBD Upgrades and Beautification – Victoria Street
- \$250,000 for Water Reservoirs and Public Area Murals in Warren Shire Council
- \$100,000 for Tatura Library Redevelopment Fit Out in Kyabram-Tatura/

The objective of the MDBEDP is to fund community economic development programs, supported by selection criteria and an evaluation strategy for funded projects. However, several participants questioned how well this type of program targeted communities most in need. Inland Rivers Network, for example, said:

... funding programs aimed at assisting impacted communities have been very poorly targeted with no transparency or reporting on benefits of the investment. Many were treated as pork-barrelling exercises and did not go to the areas that needed the most support. (sub. 82, p. 4)

Evaluation is critical to understanding whether programs are achieving their objectives, benefiting the intended beneficiaries, and providing value for money to taxpayers. To date, there has been no extensive

Box 2.5 – Lessons from recent adjustment programs

program evaluation across the 132 MDBEDP projects on achieving the goal of economic development. It is also not clear how many of the beautification and walking trails projects align with an objective of economic development.

The lack of evaluation makes it difficult to know the benefits and cost-effectiveness of adjustment assistance programs, or to glean lessons and insights for future assistance programs. This can add to community scepticism about whether Basin communities are benefiting from adjustment assistance. The Victorian Farmers Federation argued that ‘there have been no true programs that have assisted rural communities adjust to less water’ (sub. 34, p. 8).

Sources: DCCEEW (2022e), MDBA (2016, 2017a), Sefton et al. (2020a).

An updated water recovery strategy

The Australian Government should update its water recovery strategy to provide clear guidance to markets, industry participants and community members on how water recovery will proceed over the next phase of Basin Plan implementation. The Commission’s 2018 advice (recommendation 5.2) remains relevant and should also be adopted.

The strategy should outline how water recovery will be staged over time to lessen market impacts and enable community adjustment, including approximate annual water recovery targets. This will provide guidance for water market participants and some confidence to Basin communities that the speed of water recovery will be realistic and not excessively disruptive.

The water recovery strategy should also include:

- a commitment to all available water recovery options, including community and industry developed proposals, with projects prioritised based on availability, their cost-effectiveness and likely socioeconomic outcomes
- clear prioritisation of different water recovery targets, including interactions with progress on supply measures and constraints-easing projects
- socioeconomic monitoring and interface with community adjustment programs
- commitments and mechanisms to ensure transparency and community engagement
- monitoring, evaluation reporting and improvement.



Interim recommendation 2.4 Develop a renewed approach to water recovery

The Australian Government should develop a renewed approach to water recovery to manage the risk of a supply measure shortfall.

This approach should consider all water recovery options, including voluntary water purchases. However, purchasing should be undertaken gradually, to avoid driving rapid water market and community adjustment, and aligned with irrigation network rationalisation where necessary to avoid impacts on irrigation network viability.

The Australian Government should update its water recovery strategy so it is clear how this renewed water recovery program will proceed. The strategy should outline:

- the sequencing of different water recovery targets, based on the progress of supply and constraints measure implementation
- how different water recovery options will be used, based on the availability of projects, their cost-effectiveness and likely socioeconomic impact
- when and how community adjustment programs will be implemented, based on socioeconomic monitoring
- requirements for monitoring, evaluation, reporting and improvement on program design.

Could an alternative delivery model improve the efficiency of water recovery?

There are sound reasons for the Australian Government to reconsider the delivery model to clarify and strengthen accountability for delivering water recovery targets, as well as improve the efficiency of water recovery programs. While the merits of different water recovery mechanisms are well established, this is not reflected in government decision making.

Participants also raised issues with the quality of engagement by DCCEE. Gwydir Valley Irrigators Association, for example, said:

The recent consultation on the buy-back tenders their [the Department's] engagement and consultation was deplorable and disrespectful to the communities in which they were trying to engage and communicate with. (sub. 89, p. 16)

Inquiry participants – largely representing the irrigation sector – also highlighted shortcomings in the existing delivery model across multiple elements of resetting the balance. The National Irrigators' Council called for:

Basin Governments to evaluate not only the timelines, but the project delivery model for these infrastructure projects. This model from approvals, to budget, to time to build, should be assessed to see if they are the most appropriate way to manage these large projects. (sub. 62, p. 12)

Murray Irrigation (sub. 65, p. 14) called for a review of the delivery model to develop 'a more cost and time-effective project delivery partnership model with the MDB-States and with the entities delivering projects', while CICL (sub. 21, p. 3) noted the inflexibility in the current model, as government programs are unable to consider projects that have elements of both supply and efficiency measures.

Ideas for a new delivery model were also provided in submissions.

- Coleambally Irrigation Cooperative argued for a new model that introduces ‘commercial arrangements for project delivery, including requiring program administrators to have relevant technical and project management expertise’ (sub. 21, p. 4).
- Murrumbidgee Irrigation called for an independent body, because an external body ‘removes the influence of political structures and is more able to adapt to changing circumstances and evolving needs’ (sub. 73, p. 3).
- The Wentworth Group recommended governments ‘partner and collaborate with Basin communities to identify and promote opportunities for water recovery, community development, economic diversification and structural adjustment’ (sub. 81, p. 2).

Murrumbidgee Irrigation (sub. 73, p. 3) pointed to the previous Water for Rivers model as an example of a previous ‘highly successful’ approach to water recovery (box 2.6).

Box 2.6 – Water for Rivers joint government enterprise

In the 1990s, community concerns over deteriorating environmental outcomes in the Snowy River, a consequence of flows diverted for the Snowy Mountain Scheme, led to a negotiation between the NSW, Victorian and Australian governments on how to best return water to the Snowy. The governments agreed to establish a joint government enterprise in December 2003, trading as Water for Rivers, to return average flows of 212 GL/y to the Snowy River and 70 GL/y to the River Murray. (Australian Government, NSW Government and Victorian Government 2002; s. 10-13).

Water for Rivers had the objective of funding water savings and purchasing entitlements, as well as commissioning environmental and riverine works nominated by the joint governments (s. 10.3). Draft business plans, which included proposals to undertake water projects and directly purchase entitlements, were submitted to joint governments for approval, requiring information on the likely third-party impacts of any project (s. 13.1). The deed also outlined limits to entity operations, including a requirement to prioritise water efficiency projects over purchase, and ensure least-cost projects are pursued (s. 13.2).

Water for Rivers was a small, expertise-based public corporate entity, based in Albury NSW. In contrast to some recent infrastructure programs, projects funded by Water for Rivers included network rationalisation to reduce network footprints and transmission costs network viability, as well as a commitment to cost recovery (Water for Rivers 2010, pp. 9–12).

Previous Commission research noted the effectiveness of this model, noting that ‘this institutional arrangement can improve the independence of water recovery, lower its administrative costs, and allows flexibility and innovation in the approach to the water recovery task’ (PC 2010, p. 292).

Water for Rivers was wound up in 2013, ten years after being established, having recovered 90 GL/y for the River Murray and 121 GL/y to the Snowy River (MDBA 2017c).

A government-owned corporate entity to deliver water recovery projects

There may be merit in having an independent, commercially-focused water recovery entity to progress some elements of resetting the balance at an arm’s length from government.

A government-owned corporate entity would provide a commercial focus to water recovery decision-making and implementation, avoiding some limitations imposed by existing procurement and grant rules,²³ and reducing transactions costs. Given a clear water recovery target and fixed budget, and having hired industry expertise, a corporation could make commercial decisions over different water recovery opportunities based on defined criteria (and free from political influence). A corporate entity would also be free to assess and accept or reject unsolicited offers for major water purchases, or for land and water projects, and purchase water on a commercial basis through water brokers rather than open tenders. Projects that rationalise infrastructure networks and reduce irrigation footprints could also be negotiated and implemented in concert with infrastructure operators.

Elements of the Water for Rivers model provide a sound basis for this proposal. Projects could be developed and delivered in partnership with entitlement holders and irrigation networks, or as proposed by Basin governments. A partnership model could be supported by a small, expertise-based entity, possibly based in a regional part of the Basin. Depending on the structure of the corporation's board, this model could provide a clearer point of accountability for delivery.

Such an entity could be set up as a joint venture between governments (similar to the Water for Rivers model) but there are some drawbacks – namely, the time needed to negotiate and establish an entity as a joint government enterprise (noting the cost implications of further unnecessary delays), and the risk that Basin governments will fail to find consensus on aspects of the model.

An alternative is a Commonwealth-owned corporate entity (acting as an agent of the Australian Government). It could take on the existing Australian Government water recovery functions. Similar to the 'first step' taken to establish the IGWC, the existing water recovery branch in DCCEEW could be shifted to a new corporate entity by a regulation proposed by the finance minister.

Any such entity should be time-limited in its operation (7–10 years) to avoid adding to institutional complexity in the Basin.

Some design questions

Subject to a clear water recovery strategy, a corporate entity could provide greater confidence that resetting the balance will be completed in ways that minimise costs to taxpayers and market impacts. The specifics of this require further consultation.

A key question concerns the balance between the need for the entity to operate at an arm's length from Basin governments and avoid ministerial intervention on specific decisions, while providing Basin governments with a degree of control over the direction of the entity that they can trust it will operate in ways that do not unreasonably impact on Basin communities, environments or industries.

As discussed above, constraints-easing should continue to be managed jointly by Basin governments, and a corporate entity is unlikely to improve those engagement processes (at least initially). However, depending on progress in constraints-easing, the entity could be contracted by governments to deliver aspects of the program in future, such as where a consistent approach is required on both sides of the Murray. It could also have a role delivering future supply measure and toolkit projects, if it succeeds in developing effective industry partnerships.

The Commission welcomes views on the strengths and weaknesses of this model.

²³ This is not because these rules are unnecessary, only that they are government processes designed for a very different purpose to water recovery, and introduce long delays and complexity compared to non-government purchasing and project management.



Information request 2.1

The Commission is considering the merits of establishing a new corporate Commonwealth entity to address the anticipated water recovery shortfall.

The independent entity would initially adopt the existing Australian Government responsibility for water recovery, with a commercial approach to program delivery in closer partnership with Basin entitlement holders and irrigation networks. It would operate at arm's length from government and be in place for a fixed time period.

The Commission invites views on the merits and the design of the entity, including:

1. the likely strengths and weaknesses of a government-owned corporate entity compared to current arrangements
2. the role of the Ministerial Council in providing high-level direction to the entity
3. the scope of its functions, including whether it should have a role implementing supply, constraints-easing and toolkit measures
4. the entity's guiding principles, such as ensuring value for money and minimising community impacts from water recovery.

3. Environmental water planning and management

Key points

- * Significant progress has been made implementing the Environmental Watering Plan over the past five years. Key planning and implementation frameworks are now finalised.**

 - Long-term watering plans are in place in all Basin states.
 - Pre-requisite policy measures are in effect.
 - There is now a Northern Basin Environmental Watering Group.
 - In 2021, the Murray Lower Darling Rivers Indigenous Nations joined the Southern Connected Basin Environmental Watering Committee as an advisory member.
- * Providing and managing water for the environment is resulting in environmental benefits. Since 2009, over 15,000 gigalitres of Commonwealth environmental water has been delivered to the Murray–Darling Basin. This has supported increased connectivity; improved native vegetation and wetland conditions; the protection of hundreds of species of waterbirds, native fish, frogs and plants (including 45 threatened and endangered species) and the migration and breeding of native fish, frogs and waterbirds.**
- * But there is more to achieve. Stopping and reversing long-term declines in native fish and waterbird populations requires sustained effort. Environmental outcomes fall short of the outcomes that could have been achieved had more progress been made on constraints-easing and supply measures. Rivers are not regularly connecting to key wetlands on the floodplain, there are too many cease-to-flow events in the northern Basin, and at the end of the system, flow targets are not consistently being met.**
- * The reform focus for environmental management is now on simplifying and embedding current best practice approaches into the Environmental Management Framework.**

 - The Basin-Wide Environmental Watering Strategy needs to adapt to remain relevant. It should include clear guidance, under all water availability scenarios, on the priority for achieving flow connectivity at the system scale relative to watering within an individual water resource plan area.
 - Basin annual environmental watering priorities are general in nature, do not change significantly on an annual basis, and provide limited value in prioritising environmental water use. The 2026 review of the Basin Plan should assess the value of Basin annual environmental watering priorities and whether requirements for annual priorities should be amended or removed.
 - First Nations peoples' objectives and outcomes for providing shared benefits from environmental water use, under all water availability scenarios, should be included in the Basin-Wide Environmental Watering Strategy and long-term watering plans.

Sustaining the health of the Basin’s water-dependent ecosystems – impacted by historical over allocation and overuse of water in the Murray–Darling Basin – is being addressed under the Basin Plan’s arrangements for planned and held environmental water¹. Environmental water is critical to supporting the health of rivers and wetlands and it provides benefits to the communities and First Nations people that rely on the rivers and wetlands. Connectivity is the foundation of river health – flows that connect rivers to floodplains support nutrient cycling, replenish refuge pools and wetlands to maintain water quality, and activate movement and breeding of native fish and waterbirds. Environmental water management aims to restore more natural flow regimes to rivers, creeks and wetlands.

This chapter assesses the effectiveness of environmental water planning and management. Features of the Environmental Watering Plan (chapter 8 of the Basin Plan) are set out in section 3.1 and section 3.2 looks at the management of environmental water holdings. Section 3.3 evaluates progress implementing the Environmental Watering Plan since 2018. The assessment looks at the implementation of the Basin Plan’s requirements for environmental water planning and management, including long-term and annual planning, coordination, shared benefits of environmental water and the integration of environmental water and natural resource management. Section 3.4 discusses opportunities for improvement in each of these areas.

The completion of water recovery under the Basin Plan and progressing constraints-easing on river operations will also have a significant impact on achieving the Basin Plan’s objectives for the environment (chapter 2). Monitoring outcomes, regular reporting and evaluation of environmental water planning and management are essential to assessing progress against the objectives of the Basin Plan and improving adaptive management and decision making (chapters 6 and 9).

3.1 About the Environmental Watering Plan

The Basin Plan provides a framework for prioritising, planning and using water for the environment. The Environmental Watering Plan sets out objectives, targets and annual and multi-year planning activities (figure 3.1). It also prescribes activities to maximise environmental benefits including coordination, using local knowledge and experience, having regard to Indigenous values and social and economic outcomes and strategies to deal with a variable and changing climate.

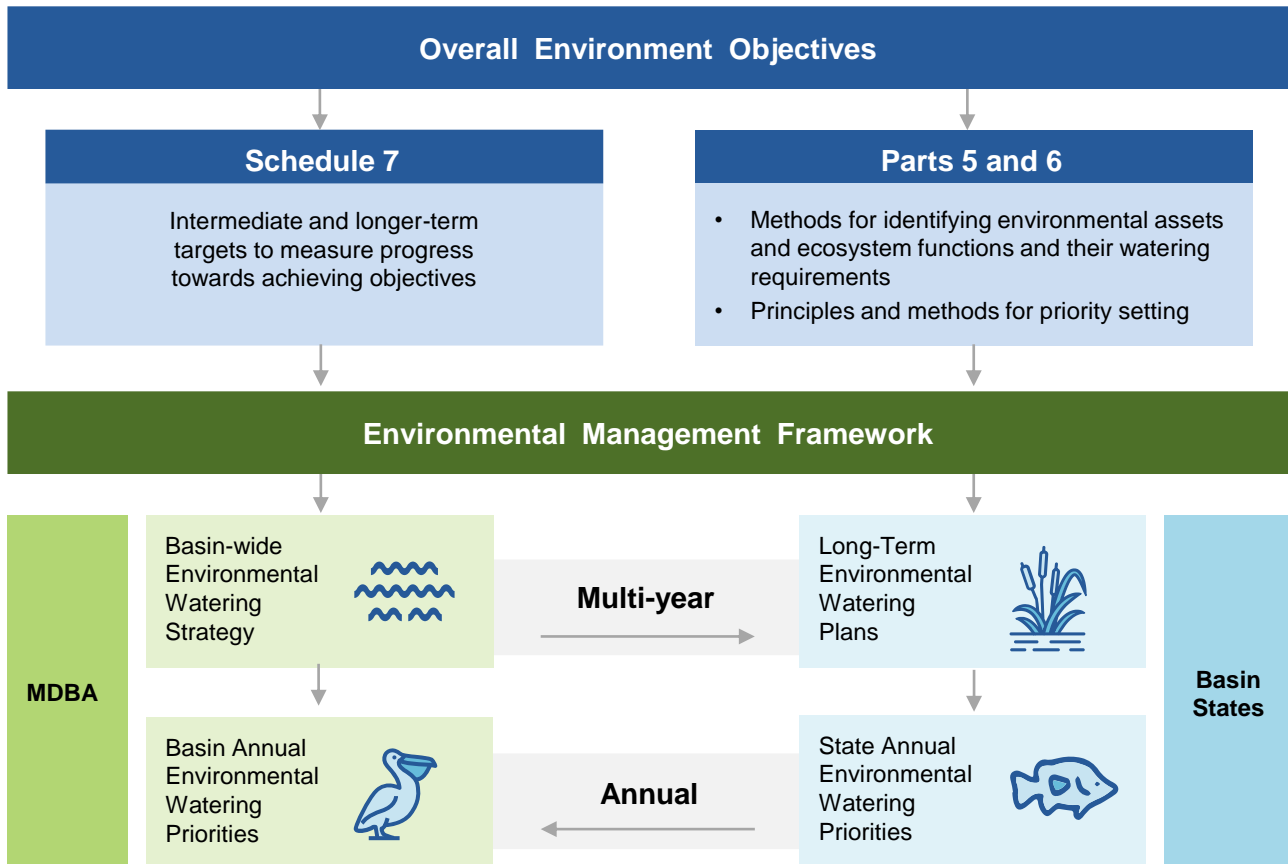
The Environmental Watering Plan is a central part of the Basin Plan. It seeks to achieve the best possible environmental outcomes using the water made available for the environment by the Basin Plan. The three overarching environmental management objectives for the water-dependent ecosystems of the Murray–Darling Basin are to:

- protect and restore water-dependent ecosystems of the Murray–Darling Basin
- protect and restore the ecosystem functions of water-dependent ecosystems
- ensure that water-dependent ecosystems are resilient to climate change and other risks and threats.²

¹ Planned environmental water is water provided through rules on consumptive water users or river operators that constrain the volume and timing of extractions or require releases from storages under certain conditions in order to ensure that water remains in the system to achieve environmental outcomes. Planned environmental water includes water committed by water resource plans (chapter 4) as well as state laws or plans. Held environmental water is water that has been recovered for the environment through the purchase of water entitlements and other mechanisms such as efficiency projects. Entitlements are managed by government environmental water holders, (with the majority held by the Commonwealth Environmental Water Holder) and are used specifically to achieve positive environmental outcomes.

² Chapter 8 of the Basin Plan, Part 2.

Figure 3.1 –The Environmental Watering Plan
Chapter 8 of the Murray–Darling Basin Plan



The Environmental Watering Plan includes the Environmental Management Framework which sets out requirements to guide the long-term and annual planning of environmental water. Key outputs of the Environmental Management Framework include:

- **The Basin-Wide Environmental Watering Strategy (BWEWS).** The BWEWS sets out the long-term watering plan including the expected improvements resulting from environmental water on river flows and connectivity, native vegetation, waterbirds and native fish. Its purpose is to explain the context within which the Basin annual environmental watering priorities will be set, identify Basin-wide environmental watering priorities over the long term, coordinate the management of environmental water and guide the development of consistent long-term environmental watering plans.
- **Long-term environmental watering plans (LTWPs).** These plans provide details on the magnitude, nature and location of the priorities for environmental water to guide environmental watering at a catchment scale. They must identify priority environmental assets and ecosystem functions in the water resource plan (WRP) area, ecological objectives and ecological targets for those assets and functions, and environmental watering requirements to meet those targets.
- **Basin annual environmental watering priorities (Basin AEWPs).** Basin AEWPs identify watering priorities at the Basin scale. They may identify priority environmental assets and priority ecosystem functions that have Basin-scale significance for environmental watering during that water accounting period, priority environmental assets and priority ecosystem functions whose environmental watering during the period will require complex arrangements, and any potential for synergies in environmental watering activities.

- **State annual environmental watering priorities** (State AEWPs). These outline priorities for the watering of environmental assets and ecosystem functions within each catchment. State AEWPs must identify the assumptions on which the priorities were based, and possible co-operative arrangements between holders of held environmental water, managers of planned environmental water, and owners or managers of environmental assets.

The Environmental Watering Plan also specifies the principles to be applied, and the principles and method to be used, to determine the priorities for applying environmental water. And there are intermediate targets and longer term targets for maintaining flows, river condition, hydrological connectivity and water-dependent species such as vegetation, birds and fish. The targets are used to measure progress towards achieving the environmental objectives in the Basin Plan (figure 3.1).

3.2 Held environmental water is being actively managed by environmental water holders

Water recovery is the means by which the Sustainable Diversion Limits are achieved. Water entitlements are transferred from consumptive use to the held water portfolio of environmental water holders to be actively managed to achieve the environmental objectives of the Basin Plan.

Environmental water holdings are the same types of entitlements held by other water users. Environmental water holders can use, trade or carryover each parcel of water based on the best use for the environment. The main environmental water holder in the Basin is the Commonwealth Environmental Water Holder (CEWH). Some Basin state governments (New South Wales, Victorian and South Australian governments) also own entitlements to water for the environment (figure 3.2).

There has been very little change in water recovery since 2018 (chapter 2). And as highlighted in figure 3.3 there are significant differences in the volume of allocations and water delivered between drought (2017–2020) and wet years (2021–2023).

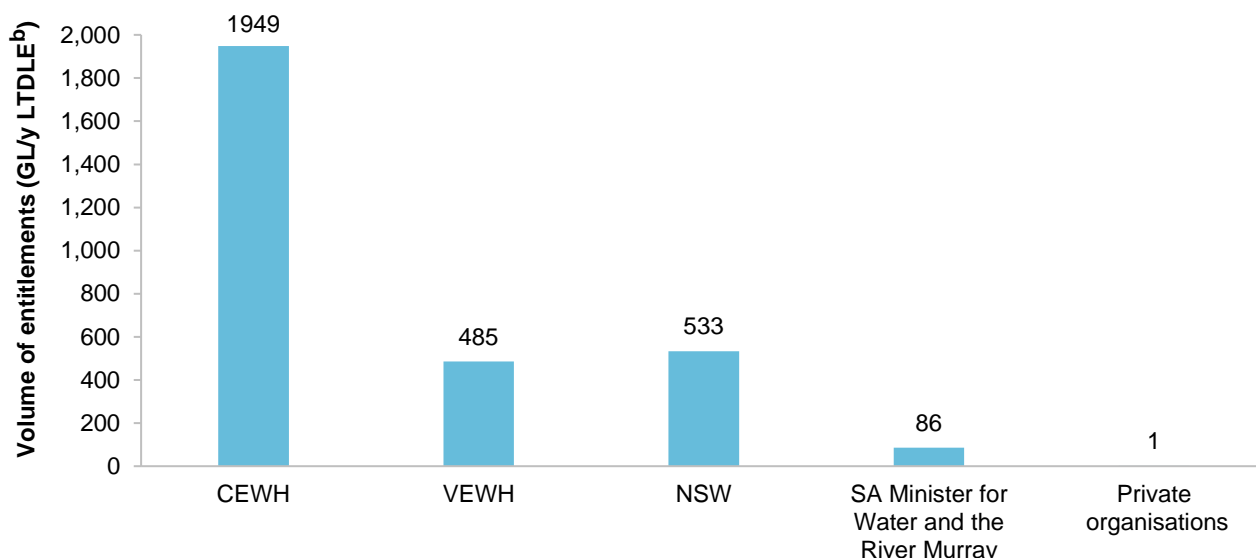
Carryover allows water entitlement holders to retain the unused portion of their water allocation from one year so that it can be used in subsequent years and is available to consumptive water users and environmental water holders in most regulated systems. It allows all entitlement holders to flexibly manage their water availability between seasons to help meet discrepancies between water supply and demand in wet years versus dry years (PC 2021c, supporting paper C, p. 37). The CEWH uses about 70% of its annual allocation each year on average, and carries over about 30% of allocations (CEWH, sub. 69, p. 9).

Trade in environmental water allocations can provide opportunities for environmental water holders to manage low flows as well as to top-up medium flood events for the benefit of water-dependent ecosystems. Trade can help maximise environmental benefits by putting environmental water to better use in different locations or at a later time, to better match the hydrographs of environmental needs. It allows for increased flexibility and reduced risk by better aligning seasonal water resource variability with needs (PC 2021, supporting paper C, p. 38).

The CEWH has not traded (bought or sold) environmental water allocations since the Commission's assessment in 2018. However, the Victorian Environmental Water Holder (VEWH) has traded environmental water allocations on seven occasions since December 2018. The purchase of allocations was used to meet environmental watering shortfalls and revenue raised from the sale of environmental water allocations was used to improve the management of environmental water and outcomes for the environment such as the development of watering and monitoring plans, research and the construction of fishways (Victorian Government, response to information request, sub. 74, p. 18).

Figure 3.2 – Held environmental water entitlements in the Basin by owner^a

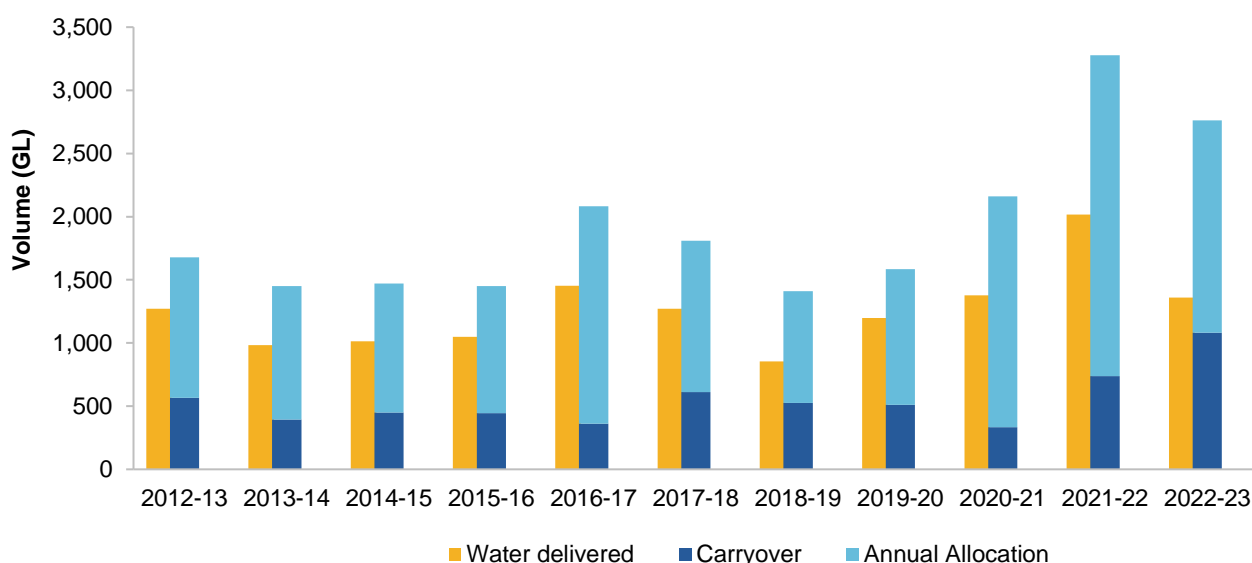
As at 30 June 2022



a. The Living Murray water portfolio is part of state government entitlements included in the chart data. The Living Murray portfolio is managed by the MDBA to give effect to joint government decisions. The jointly held entitlements consist of 489 GL/y owned by: VEWH (223.5 GL/y), New South Wales government agencies (223.1 GL/y) and the South Australian Minister for Water and the River Murray (42.5 GL/y). The CEWH holds environmental water entitlements in all Basin states except the ACT. All held environmental water in Queensland is owned and managed by the CEWH. b. GL/y: gigalitres per year, LTDLE: Long-term diversion limit equivalence factors (estimates of the actual long-term use associated with water entitlements, that allow comparison between entitlements on a consistent basis).

Source: MDBA (sub. 61, response to information request, pp. 9–10).

Figure 3.3 – Commonwealth environmental water availability and use



Source: DCCEEW (2023c).

There is an accountability obligation on environmental water holders to achieve the best outcomes that they can with the water resources they steward. To maximise environmental outcomes, it is important that environmental water holders actively trade water allocations and carry forward revenues. However, decisions to sell environmental water allocations can be contentious, particularly during periods of water scarcity and when significant public investment has been used to procure entitlements. Under the *National Water Initiative*, governments agreed that water for the environment held as an access entitlement may be traded on the temporary market, ‘when not required to meet the environmental and other public benefit outcomes sought and provided such trading is not in conflict with those outcomes’ (COAG 2004, paragraph 35).

This limit (on trade) is about ensuring trading arrangements are consistent with the use of the water for environmental purposes, and are not primarily about raising revenue. But, the concern is that environmental water holders may fail to maximise environmental and community benefits by trading too little. It is important that over time, the CEWH and other environmental water holders fully utilise trade in allocations to maximise benefits for the environment (PC 2021c, supporting paper C, p. 38).

The CEWH reported that it is investigating options to streamline its trading process and improve its responsiveness to market conditions (sub. 69, p. 9).

3.3 Looking back: 2019 to 2023

Significant progress implementing the Environmental Watering Plan

Significant progress has been made since 2018 implementing the Environmental Watering Plan. Key planning and implementation frameworks are now finalised.

Long-term watering plans are now in place

In 2018, the Environmental Management Framework was not fully implemented – while LTWPs were in place in Victoria and South Australia, they had not been finalised in New South Wales, Queensland and the ACT. In 2020 these final LTWPs were put into operation. The Environmental Management Framework is now fully implemented (section 3.4).

Pre-requisite policy measures were in effect within the timeline

Pre-requisite policy measures (PPMs), referred to as ‘unimplemented policy measures’ in the Basin Plan³, are operating rules which enable more efficient use of held environmental water in the southern Basin. PPMs provide:

- credit for return flows from environmental watering events for environmental use downstream (rather than being used to supply the demands of other users)
- the ability for environmental water holders to order water from a specific storage to top up or ‘piggy back’ on naturally occurring high flow events (PC 2018, p. 25).

In its 2018 assessment, the Commission discussed the importance of PPMs being implemented on time. On 1 July 2019, PPMs to support the efficient use of environmental water were deemed to be in effect by the Murray–Darling Basin Authority (MDBA). This was in line with the timeline in the Basin Plan. The Independent River Operations Review Group conducted a review of the MDBA’s assessment to ensure that the criteria was consistently applied and robust and evidence-based conclusions were reached. The

³ Chapter 7 of the Basin Plan, Part 2, Division 4.

findings supported the MDBA's assessment process and the conclusion that the measures are in effect in all relevant jurisdictions (MDBA 2020f).

In 2021, the Environmental Water Protection Strategy and Implementation Plan were developed by the MDBA in collaboration with the states, the Commonwealth, and the Commonwealth Environmental Water Office and endorsed at the Basin Officials Committee (BOC). The implementation plan underpins environmental water protection improvements across the Murray–Darling Basin, to strengthen collaboration on the operating arrangements for environmental water. (MDBA, sub. 61, response to information request, p. 16).

An Environmental Watering Group to coordinate connected watering events in the northern Basin

In 2018 the Commission recommended establishing a northern Basin environmental watering committee as an intergovernmental mechanism for planning and coordinating environmental watering events in the northern Basin (PC 2018, p. 290). The Northern Basin Environmental Watering Group (NBEWG) was established in 2019 to coordinate planning and the delivery of water for the environment across the northern Basin to enhance connectivity using cross-border and multi-catchment coordination. The NBEWG's other roles and responsibilities include:

- supporting event-based delivery of water for the environment.
- improving communication and reporting about the benefits of water for the environment
- developing strategies to support community engagement, including with First Nations people, irrigators and other stakeholders
- holding an annual planning meeting for environmental water holders and river operators
- ensuring First Nations peoples' values are consistently considered in environmental water planning (MDBA 2023g).

The NBEWG includes representatives from the New South Wales and Queensland governments, and the Australian Government, including the MDBA, the CEWH and the Australian Government Department of Climate Change, Energy, the Environment and Water. Representatives from the South Australian and Victorian governments attend the group's meetings as observers. In 2023, the NBEWG terms of reference were reviewed and updated to include membership for two First Nations people in an advisory role (MDBA, sub. 61, p. 23). NBEWG communiques are published on the Australian Government Department of Climate Change, Energy, the Environment and Water website (DCCEE 2022a).

First Nations representatives provide input on the Southern Connected Basin Environmental Watering Committee

In 2021, the Murray Lower Darling Rivers Indigenous Nations (MLDRIN) joined the Southern Connected Basin Environmental Watering Committee (SCBEWC) as an advisory member to support consideration of First Nations peoples' knowledges and values and the outcomes from environmental watering activities that Aboriginal people want. First Nations people's collaboration with environmental water holders on environmental water decision making is discussed in section 3.4.

Outcomes from providing and managing environmental water

Providing and managing water for the environment, both planned and held, is a major reform that has provided environmental benefits, particularly at the local scale. The MDBA described environmental water planning and management as ‘a clear success and arrangements are world leading’ (sub. 61, p. 13). Some of the benefits include: improved native vegetation and wetland condition; protection of rare and threatened biodiversity and the migration and breeding of native fish, frogs and waterbirds.

The State of the Environment Report found that the use of environmental water recovered under the Basin Plan, is restoring the health of rivers and wetlands and mitigating fish deaths and algal blooms (DCCEE 2021a). The National Irrigators Council also noted that ‘over the last couple of years, the CEWH has delivered bird and fish breeding events throughout the Basin and that should be celebrated’ (sub. 62, p. 21). And Murray Irrigation Limited spoke about changing attitudes towards environmental watering since the Basin Plan commenced.

... customers have developed very different and more positive views in regard to successful watering of wetlands than was the case even 15 years ago. There is overwhelming support for the use of the company’s operational staff working with environmental agencies to utilise the network to deliver environmental water into the multiple creeks and streams that transect their properties to create healthier creeks and the growing number of significant wetlands located on private property. e.g. the planned wetting and drying of the large network of Murray and Edwards anabranch creeks and streams. (sub. 65, p. 11)

Benefits from environmental water through extreme dry and floods

The environmental benefits derived from environmental water are challenging to quantify. However, benefits from the use of environmental water are evident, particularly at the local scale. Participants pointed to the benefits of environmental water during drought and prolonged dry periods. The CEWH, for example, said:

In extremely dry years (2017–20), Commonwealth environmental water played a pivotal role in breaking cease-to-flow events, maintaining flows to enable fish breeding and waterhole replenishment, as well as supporting core riparian and wetland habitat to promote a quick recovery of ecosystems once conditions improved. (sub. 69, p. 7)

Key outcomes from the use of Commonwealth environmental water are summarised in box 3.1.

During droughts, environmental water has helped to avoid environmental decline. For example, water delivered for the environment to support the Coorong, Lower Lakes and Murray Mouth during the recent drought prevented environmental degradation of the extent observed during the Millennium Drought (MDBA 2020h, p. xiii). Similarly, in the western region of Victoria the VEWH reported:

The diligent use of the water for the environment entitlement over the last four dry years has helped to prevent extensive drying of rivers, hyper-saline conditions and widespread fish deaths – such as those in the Wimmera and Glenelg systems during the Millennium Drought. (VEWH 2022, p. 10)

During the drought, sites that received environmental water had critical ecosystem functions protected. Some of the benefits of environmental water can be attributed to planned and held environmental water maintaining habitats and river connectivity. Providing refuges was important for maintaining breeding grounds during drought and targeting threatened species. For example, the delivery of water for Murray hardyhead was viewed as particularly important, as reduced natural flows were a key threat to their recovery (Victorian Government, sub. 74, p. 4).

Box 3.1 – Outcomes from the use of Commonwealth environmental water

Since 2009, 15,000 gigalitres of Commonwealth environmental water has been delivered to rivers, wetlands and floodplains of the Murray–Darling Basin. This has supported:

- more than 22,000 kilometres of waterways (the same distance as driving around Australia twice)
- more than 370,000 hectares of lakes, wetlands, estuaries and floodplains
- 10 Ramsar wetlands that have been recognised internationally for their ecological importance
- hundreds of species of waterbirds, native fish and plants, including threatened species such as silver perch, Murray cod and Murray hardyhead
- the flushing of more than 3.3 million tonnes of salt through the barrages.

The significance of Commonwealth environmental water is most apparent at the end of systems in dry years – the Barwon-Darling in the northern Basin and the Lower Murray in the southern Basin. Between 2014 and 2021 Commonwealth environmental water:

- supported a 10% increase in flows in the Barwon-Darling River in 5 out of the 7 years
- supported a 30% increase in flows in the Murray River in 3 out of the 7 years
- accounted for 100% of flows into the Coorong in 3 out of 7 years.

Flows into the Coorong contribute to flushing salt from the Basin, maintaining healthy salinity levels in the Coorong, and maintaining connection between the river and the Coorong to facilitate fish movement. Although barrage releases did not meet the target of greater than 2000 GL/year (3-year rolling average) between 2014 and 2021 environmental water ensured that 2-year minimum flows did not fall below 600 GL (a minimum flow target to be achieved 100% of the time). Without Commonwealth water, in only 1 out of 7 years would barrage flows have been more than 650 GL/year (a minimum flow target to be met in 95% of years). With Commonwealth water, this flow target was met 6 out of 7 years.

During the 2017–2020 drought, Commonwealth environmental water use in the northern Basin:

- played a vital role in breaking cease-to-flow periods in a number of valleys. For example, the Barwon-Darling at Walgett experienced 5 cease-to-flow events from 2017–2020, the longest was 328 days. Without the use of Commonwealth and New South Wales environmental water, it is estimated that this cease-to-flow period would have totalled 666 days
- maintained flows to enable fish breeding and waterhole replenishment, as well as core riparian and wetland habitat to provide a quick recovery when ecosystem conditions improved.

Since 2014, 45 threatened and endangered species have benefited from environmental water including:

- the establishment of new populations of Murray hardyhead
- Southern bell frog recruitment in the Murrumbidgee and Mid and Lower Murray River valleys
- 36 waterbird species of conservation significance which included providing habitat in the Barmah-Millewa Forest for up to 25% of the threatened Australasian bittern population
- aromatic peppercress, found at monitoring sites in the Lachlan River for the first time in 2020–21.

Source: CEWH (sub. 69, pp. 1–15).

Differences in outcomes can be seen between sites that are prioritised for environmental water and those that are not, highlighting the benefits of environmental water and the importance of sound prioritisation settings. The ACT Government, for example, commented that:

In 2019, environmental flows between Bendora and Cotter Dams supported a large breeding event of the Blackfish that is highly significant following the population decline that resulted from the 2020 bushfires. Blackfish populations above Corin Dam, without environmental flows, have not recovered from the bushfires and remain at risk. (sub. 85, response to information request, p. 5)

Environmental watering can have benefits beyond individual wetlands and river reaches. For example, governments are increasingly forming partnerships with First Nations people to improve the delivery of environmental outcomes and to deliver, where possible, Aboriginal people's preferred outcomes from environmental water management (section 3.4).

After the three years of above average warm and dry conditions to early 2020, many areas of the Basin experienced a turnaround from drought conditions to flooding. During the summer and autumn of 2021 to 2022, the northern Basin experienced the largest natural flows in more than 10 years, improving connectivity across the Basin and filling storages. The South Australian Government reported that planned environmental water:

... in the form of unregulated flows has been critical in inundating vast areas of floodplain and wetland habitat that has not received water for many years, supporting native fish recruitment and survival, substantially freshening the CLLMM [Coorong, Lower Lakes and Murray Mouth], as well as enabling various more local scale environmental water operations. (pers. comm., 25 September 2023)

In wetter catchments across the Basin, there were positive responses to high inflows including waterbird breeding at key sites, vegetation growth and recruitment of native fish (MDBA 2022d, p. 4). For example, the NSW Government reported the most extensive colonial waterbird breeding events in more than a decade.

At least 14 waterbird species established more than 80 individual breeding colonies, with more than 250,000 nests across 6 major wetland complexes in the Macquarie, Narran, Gwydir, Lachlan, Lowbidgee and mid-Murray. (NSW DPE 2022b)

After flood events, water for the environment can provide a crucial role for 'topping up wetlands' when, after high inflows water recedes quickly, before birds have completed their breeding cycles. For example, in Dharriwaa (Narran Lakes) in 2022, to mitigate the risk of breeding birds abandoning their nests the CEWH established a grant program to purchase water from on-farm storages on the Narran River to maintain water levels (DCCEEW 2022c). At the Ramsar-listed Hattah Lakes, environmental watering combined with natural floods also resulted in a significant increase in waterbird breeding.

- Monitoring after environmental watering in late 2021 found 1900 nests and more than 6500 chicks of colonial nesting waterbird species as well as 800 chicks of other waterbird species such as grebe and duck. Three threatened species were also recorded as breeding, including blue-billed duck, musk duck and white-bellied sea-eagle.
- During 2022 flooding, monitoring detected 10 species of colonial nesting waterbird species using 7000 nests for over 25,500 chicks, with a further 18 water bird species detected breeding for an additional 1700 chicks. (Victorian Government, sub. 74, p. 4)

Inquiry participants also reported improved environmental outcomes in the lower Murray (South Australia) from environmental water and recent floods. For example, River Lakes and Coorong Action Group (sub. 15, pp. 5–6) and Healthy Rivers Lower Murray (sub. 37, p. 3).

Following the floods, the delivery of water for the environment played a critical role improving water quality, and mitigating the impacts of low dissolved oxygen levels. Water for the environment was used in the

Edward–Kolety Wakool, Lower Darling (Baaka) and Murrumbidgee rivers to help native fish survive low-oxygen water conditions caused by natural flooding. Environmental water was also delivered in the Murray Valley to help fish migration and bird breeding at Barmah–Millewa Forest (an internationally important Ramsar site) (MDBA 2023a, pp. 16–17).

There are positive outcomes but more to achieve

The CEWH, while acknowledging the positive outcomes and achievements from the use of environmental water, highlighted why there is still more to do.

- Waterbird populations have experienced long term declines over the past 40 years, while native fish populations have declined by 90 per cent over the past 150 years – arresting and reversing these declines requires long term and sustained action.
- Due to operational and physical constraints, rivers are not regularly connecting to key wetlands on the floodplain including in the Gwydir, Lower Darling Baaka, mid Murrumbidgee, Goulburn, mid Murray (including Werai Forest) and Lower Murray valleys. In some cases, even delivering elevated in channel environmental flows is restricted.
- In the northern Basin, there are still far too many cease to flow events, which compromises recovery of rivers and their dependent communities.
- At the end of the system, flow targets to ensure salt is flushed from the system and healthy salt levels are maintained in the internationally significant Coorong, are not consistently being met. (sub. 69, pp. 1–2)

Concerns were also raised by other participants on environmental water use and management (box 3.2).

Completing water recovery under the Basin Plan and easing constraints on river operations will have an impact on achieving the Basin Plan's objectives for the environment. Water delivery arrangements in the Murray–Darling Basin were established before held environmental water became a substantial component of water in the system. While water delivery arrangements have evolved under the Basin Plan, they reflect a system that is largely designed to support the delivery of consumptive water. And as the CEWH said:

'Retrofitting' environmental water planning and delivery onto this consumption-driven framework has its limitations. (sub. 69, p. 19)

To make best use of water recovered for the environment, there is a need to change river operating rules and practices. This includes relaxing constraints, increasing connectivity along rivers, upgrading or removing infrastructure (weirs, regulators, pumps, fishways) and implementing the northern Basin toolkit (chapter 2, sub. 69, p. 19).

The variability in climate and environmental conditions over the last five years is evidence of the challenges faced by environmental water managers to deliver environmental outcomes. It is also a reminder that providing and effectively managing environmental water is critical to managing the Basin's water-dependent ecosystems so they can better deal with drought, flood events and adapt to a more variable and dryer climate.

Box 3.2 – Participants concerns about environmental water use and management

Speak Up

- Increased carp breeding events, increased hypoxic blackwater events, increased native fish deaths have consistently been reported since implementation of environmental watering events
- The Barmah choke has lost 25% capacity since implementation of the Basin Plan.
- There are serious local concerns about the degradation of forest health and loss of trees at sites that are repeatedly subject to environmental watering programs, along with rising water table concerns ...
- And despite over a decade of implementation, fish kills in the Darling still shock the nation ... (sub. 2, p. 3)

Riverina and Murray Joint Organisation

The ongoing damage being incurred at the Barmah Choke is an example of inadvertent damage to infrastructure due to poor timing of flows. The Choke's current capacity of 7000ML/day has been steadily diminished (historically 10 400ML/day) by high sustained flows, causing erosion and bank slumping. The reduction in the Choke has resulted in overbank flows and unseasonal flooding events that incur greater conveyance losses and push volumes of water through other waterways or overland. This has ultimately have given rise to irreversible environmental degradation nearby. (sub. 58, p. 14)

Jodie Hay

Environmental watering demands has resulted in constant high flow occurring in the Gunbower Creek which has resulted in unprecedented erosion of the Gunbower Creek banks especially upstream of the Hipwell Rd Regulator in the locally known Narrows ... This bank erosion has caused the loss of the nesting environment for the platypus and kingfishers. (sub. 63, p. 5)

Friends of the Merbein Common

The greatest expectation of the MDB Plan was for the rejuvenation of the Murray Darling Flood Plains with Environmental Flows. This has been the greatest disappointment. The management of Environmental Allocations to benefit the environment has been too conservative, too timid and failed community expectations. (sub. 8, p. 1)

Gingham Lower Gwydir landholders

Environmental water allocations, intended to maintain ecosystem health and restore the water dependent habitats for migratory bird breeding events always seem to come at a cost to the local landholder who are in our view part of the environment and have been so well before water regulation began. (sub. 23, p. 1)

Environmental water is in high demand, supply is limited and decisions about priorities are required, particularly during drought. During droughts, ecological health, water availability and water quality depend on more than the actions of environmental water holders. There was evidence of significant ecological decline in some Basin waterways during the 2018–2020 drought. There was also the significant fish death events from low flows that occurred in the Darling River near Menindee between December 2018 and January 2019. Commenting on the latest drought, CEWH said:

The 2017–2020 drought was the worst on record for the northern Basin. It was characterised by extended cease to flow periods, well in excess of ecological tolerances and significantly worse than those experienced during the Millennium Drought. Towns went without access to fresh drinking water, large scale fish deaths occurred, permanent waterholes dried up and local ecological assets moved to critical need. The numerous cease to flow periods were only broken during this time with water for the environment. (sub. 69, p. 4)

The wetter conditions in 2022-23 provided a reset for many of the Basin's water-dependent ecosystems. However, two wet years are not enough to turnaround decades of environmental degradation from historical over-allocation and overuse of water in the Basin. Predictions of a warmer, drier future with more frequent droughts and extreme weather events (MDBA, sub. 61, p. 2) emphasise the importance of effective environmental planning and management.

And not all Basin catchments benefited from wetter conditions in 2022-23. Flooding in parts of the Basin impacted communities and the environment. Low oxygen levels (caused by flooding induced blackwater events and high temperatures) resulted in millions of fish deaths at Menindee in February 2023 (chapter 7). Some areas of the southern Basin also remained relatively dry and water has not reached some parts of floodplains where there are species struggling to recover from drought (MDBA 2022d, p. 4).

3.4 Effectiveness of environmental water planning and management

It is important to reflect on the lessons learnt during the challenges of the last five years and concerns expressed by participants (box 3.2) and look at where environmental water management policy and frameworks can be improved. The factors we considered when assessing the effectiveness of the implementation of the Basin Plan's requirements for environmental water planning and management and opportunities for improvements included:

- the long-term planning frameworks for achieving environmental objectives through environmental watering, including the effectiveness of the BWEWS and LTWPs
- the annual planning and management of environmental water, including the effectiveness of Basin AEWPs and State AEWPs (and whether Basin AEWPs should be retained)
- the coordination and engagement undertaken by environmental water holders
- maximising the shared benefits of environmental water, with a particular focus on outcomes for First Nations people
- natural resource management: while sitting alongside the Basin Plan, natural resource management is important to maximise the benefits of environmental water and ensure outcomes from environmental water delivery and management are not eroded by other pressures such as invasive and pest species.

Long-term planning

Updates to the Basin-Wide Environmental Watering Strategy are required

Under the Basin Plan,⁴ the MDBA is required to prepare a BWEWS that:

- outlines the expected detailed long-term outcomes from environmental watering for priority rivers, wetlands and key ecosystem components and functions
- explains the context within which annual environmental watering priorities will be developed
- helps to coordinate the management of environmental water at the Basin scale by setting policies and principles for prioritising the use of environmental water under different climate scenarios.

In 2018 the Commission found that while the 2014 BWEWS had provided a strategic foundation for environmental water planning and informed portfolio planning and watering decisions, it did not provide clear guidance on how to prioritise the assets or types of watering events that were most important for achieving the Basin Plan objectives and outcomes. We also noted that the BWEWS would need to build on learnings and incorporate new knowledge to be effective (PC 2018, p. 278).

The BWEWS is reviewed every five years. The first review in 2019 led to some common sense updates to contemporise the strategy, largely reflecting policy changes and new scientific knowledge. The updated strategy had an additional objective to ‘maximise environmental outcomes through effective and efficient environmental water management’⁵ and the refinement of water management strategies to promote collaboration between water managers (MDBA 2019c, p. 1).

The BWEWS review signalled that a second update to the BWEWS in 2022 would include the material changes identified in the BWEWS 2019 review. The changes were to be informed by a MDBA work program to be established in collaboration with First Nations people, Basin governments and environmental water managers (MDBA 2019c, p. 2) to investigate:

- First Nations peoples’ objectives and outcomes for the shared benefits of environmental water
- water management strategies to improve flow coordination
- the best possible environmental outcomes from environmental watering while investigating opportunities to improve social and economic outcomes
- improved SMARTness (including specificity, measurability and achievability) of expected environmental outcomes and better links to Basin Plan objectives
- additional environmental themes where it could be demonstrated that they add value to Basin-wide environmental watering (including ecosystem functions)
- assessing climate risks to the expected environmental outcomes and water management strategies (MDBA 2020d, pp. 88–94).

However, the updates were not made in 2022. The MDBA fulfilled the requirement to review and update the BWEWS in 2019, but the opportunity to implement more important reforms was missed (such as the inclusion of an objective for shared benefits from environmental water, incorporating First Nations peoples’ values and uses, and climate adaptation). The next review and update of the BWEWS is scheduled for 2024. The MDBA has initiated a work program for this update and established a working group with representatives from the CEWH and Basin states, to oversee the development of the next BWEWS (sub. 61, response to information request, p. 11).

⁴ Chapter 8 of the Basin Plan, Part 4.

⁵ This aligned with recommendation 11.1 of the Commission’s 2018 assessment of Basin Plan implementation.

Inquiry participants pointed to areas for improvement and argued the BWEWS could be a more effective tool for guiding environmental water decision-making. For example, the Victorian Government said that:

More work is needed to make the objectives and targets in the BWS more specific and to also point to the combination of sites or assets that need to be managed to achieve the overarching objectives. (response to information request, sub. 74, p. 13).

A number of participants expressed concern about the lost focus on connectivity at the whole of Basin scale and called for the next iteration of the BWEWS to prioritise connectivity. For example, the ACT Government said that ‘environmental water planning is yet to transition from sub-catchment, catchment and state-based management to basin-scale and in the national interest’ (sub. 85 p. 6). The Nature Conservation Council also commented generally on the importance of connectivity.

Connectivity is critical. Flows that connect rivers to each other and break their banks onto floodplains support nutrient cycling. Such flows replenish refuge pools and wetlands to maintain water quality, and trigger movement and breeding of native fish and waterbirds. (sub. 50, p. 7)

To increase its relevance and effectiveness the BWEWS needs to:

- clearly articulate, under all water availability scenarios, the relative priority of key Basin environmental assets to achieving the overall environmental objectives of the Basin Plan and the expected outcomes set out in the strategy. Increased specificity would mean greater direction to, and accountability for, the CEWH’s decision making on environmental watering
- provide guidance, under all water availability scenarios, on the priority for achieving flow connectivity at the system scale relative to watering within a WRP area. By better articulating the relative priorities in connected systems, the BWEWS would provide increased direction, accountability and transparency around priorities at the whole-of-Basin scale
- identify risks to achieving environmental objectives, in a changing and more variable climate, which is expected to increasingly influence the degree to which environmental outcomes are achieved (chapter 6) (MDBA 2020d, p. 94).

Long-term watering plans are an important component of the framework

In accordance with the Basin Plan,⁶ Basin states have prepared a LTWP for each surface water WRP area. An update has been completed for LTWPs in Victoria, Queensland and South Australia. LTWPs detail the magnitude, nature and location of the priorities for environmental water to guide environmental watering at a catchment scale. They can be informed by long-term plans for individual assets, often as a requirement of State legislation or policy. LTWPs are required to:

- be consistent with the BWEWS
- set out the long-term objectives for the use of environmental water
- identify local priority environmental assets and ecosystem functions
- provide details of the watering requirements needed to meet the corresponding ecological targets in the Basin Plan (PC 2018, p. 276).

The implementation of LTWPs is considered to be highly successful. LTWPs are an important component of the Environmental Management Framework because they are undertaken at the catchment scale and are both a top-down and bottom-up mechanism. They facilitate local input into environmental water planning activities and the prioritisation of assets within a catchment. LTWPs have improved the setting of State

⁶ Chapter 8 of the Basin Plan, Part 4, Division 3.

AEWPs and provided valuable information to the CEWH on the investment and use of its holdings to support environmental assets.

However, the MDBA Review of the Environmental Watering Plan (2021i) reported that some LTWPs do not draw sufficiently on ecological information when defining Priority Environmental Assets and Priority Ecosystem Functions. This information is important to determine environmental watering requirements. The review recommended that the MDBA continue to provide advice and support Basin state governments as needed to update and review LTWPs and include sufficient ecological information for Priority Environmental Assets and Priority Ecosystem Functions (MDBA 2021i, p. 17).

LTWPs are improved and adapted through a process of revision. LTWPs must be updated every five years, or earlier, to align with when the BWEWS is updated.⁷ They must also be updated if a WRP is accredited or amended.⁸ Key changes made to LTWPs as Basin states have completed updates in 2020–2022 include:

- improved articulation of target and objectives for water-dependent ecosystems
- improved description of the duration, frequency, depth and timing of environmental watering requirements
- improved co-operative arrangements
- updated lists of priority environmental assets and functions
- better alignment with the Basin Plan
- increased information included from State water planning instruments
- improved consideration of First Nations involvement in planning
- incorporation of updates on constraint management and complementary actions
- improved articulation of risks (MDBA, sub. 61, response to information request, p. 11).

The MDBA provides advice to Basin states to assist them updating their LTWPs. The MDBA will look at how guidance on preparing LTWPs can be improved in the next update of the BWEWS and the next Basin Plan review (MDBA, sub. 61, p. 41). The MDBA has an interjurisdictional working group to support the update of the BWEWS which includes those with responsibility for updating LTWPs in each Basin state to ensure alignment (Victorian Government, sub. 74, response to information request, p. 10).

Annual planning

The Environmental Management Framework⁹ sets out requirements for the annual planning of environmental watering to guide the decisions of environmental water holders. The MDBA is required to identify annual environmental watering priorities at the Basin scale (Basin AEWPs) and Basin states are required to identify annual environmental watering priorities at the local level (State AEWPs).

State annual environmental watering priorities are effective

The Basin Plan¹⁰ requires State AEWPs for each surface water WRP area for the purpose of guiding the annual planning, prioritisation, and use of environmental water at the catchment scale. State AEWPs must have regard to the BWEWS and relevant LTWPs, and outline priorities for environmental watering within each catchment. The MDBA requires the state AEWPs by 31 May each year (unless otherwise agreed).

⁷ Changes to the BWEWS in 2019 were not considered sufficient to trigger a review of LTWPs (MDBA 2020d, p. 1).

⁸ Chapter 8 of the Basin Plan, Part 4, Division 3.

⁹ Chapter 8 of the Basin Plan, Part 4.

¹⁰ Chapter 8 of the Basin Plan, Part 4, Division 4.

Priorities for environmental water must consider a variety of local factors, such as cultural value, feasibility, watering history and trade-offs and are developed through a process of adaptive management. The Victorian Government said that the key changes to Victoria's AEWPs since 2018 include:

- refinement of watering actions for environmental assets in partnership with Catchment Management Authorities (CMAs), key delivery partners and stakeholders
- improved assessment and recognition of First Nations peoples' priorities and outcomes, and social benefits
- commencement in 2022-23 of increased First Nations people's self-determination under Victoria's Water is Life: Traditional Owner Access to Water Roadmap (sub. 74, response to information request, p. 11).

Priorities for environmental water vary under different seasonal conditions. In wet conditions the objective is to reconnect rivers to floodplains and wetlands and enhance recruitment of key species. During dry seasons, the priority is instead to protect at-risk environmental values and avoid critical loss. The NSW Government said:

During dry conditions and drought, priorities for water delivery to environmental assets change. Some sites will end up going dry. This is natural for waterways that have natural wetting and drying phases. Water delivery is prioritised to maintain minimum flow rates and inundation to sites that are identified as critical drought refuges. (sub. 43, response to information request, p. 10)

In 2018 the Commission heard that 'State AEWPs were fundamental for articulating what is needed at the local level on an annual timeframe. State AEWPs are used as a basis for priority-setting and coordination in the southern Basin, and also assist in informing the CEWH's environmental water portfolio plans' (PC 2018, p. 285).

On this inquiry, we heard that a key value of the state annual prioritisation process is the regular, focused community engagement it facilitates and that State AEWPs support robust planning and decision-making for environmental water, with clear linkages to the BWEWS, LTWPs, and Basin Plan.

The Commission is not recommending any changes to State AEWPs.

Basin annual environmental watering priorities are redundant

The MDBA collaborates with the Australian Government and state environmental water managers to prepare Basin AEWPs. The stated purpose of Basin AEWPs is to identify watering priorities that give effect to the BWEWS.¹¹ That is, to help water managers make decisions about delivering environmental water and guide better outcomes at the Basin scale. The priorities consider recent seasonal conditions, past outcomes of watering actions, likely water availability and each state's watering priorities. They are guided by the objectives of the BWEWS. The Basin AEWPs are formed at a mix of geographic scales from site-specific to Basin-wide, reflecting the ecology of species that are the focus of the strategy (MDBA, sub. 61, response to information request, p. 12).

In 2018 the Commission found that the Basin AEWPs were:

- released too late to be considered by environmental water managers in their planning processes
- more of a check-list than a tool to direct environmental watering decisions
- becoming increasingly redundant as significant environmental water holders were moving to rolling multi-year plans.

We recommended that, as part of the 2020 review of the Environmental Watering Plan, the MDBA should examine the usefulness of Basin AEWPs and whether the Basin Plan requirements for these annual priorities should be amended or removed (PC 2018, pp. 286–287).

¹¹ Chapter 8 of the Basin Plan, Part 4, Division 5.

From the 2018-19 water year, the MDBA changed the approach to Basin AEWPs, by developing ‘rolling multi-year watering priorities’ that spanned multiple years under differing water resource availability scenarios (MDBA 2018, p. 3). These multi-year priorities work together with the annual priorities and are guided by the BWEWS.

The effectiveness of this new approach was considered in the 2020 review of the Environmental Watering Plan. The review found that the principles and method for determining environmental watering priorities were ‘fairly or extremely appropriate’. However, an exception was the Basin AEWPs, which practitioners and advocates deemed to be ‘not at all’ or only ‘slightly effective’. The review recommended that the MDBA continue to change the approach to the Basin AEWPs and promote a culture of learning and adaptation (MDBA 2021i, pp. 7, 13).

In 2023 the method for determining Basin AEWPs was improved by new analysis of waterbird and vegetation vulnerability (CEWH 2023). Key findings of this analysis have been used in Basin AEWPs for native vegetation and waterbirds in the 2023-24 water year (MDBA, sub. 61, response to information request, p. 12).

Despite these improvements, the Commission heard that AEWPs remain ineffective, with timing a particular issue. The link between Basin AEWPs and the BWEWS is also not clear and the mechanisms in the Environmental Management Framework need to work better together. The South Australian Government, for example, said:

There is limited formal interaction or connection between State and Basin-wide annual watering priorities. Basin-wide annual watering priorities are generally broad in nature and typically overlap with state priorities. Most practical annual planning is undertaken in advance of Basin-wide annual watering priorities being developed. SA would like to see improved connections with Basin-wide priority planning, regular basin-scale measurement and assessment of ecological condition (e.g. birds, fish, vegetation). (pers. comm., 25 September 2023)

MLDRIN raised issues about how First Nations peoples’ values and uses of environmental water are included in Basin AEWPs.

... it is not clear how the MDBA is having regard to Indigenous values and Indigenous uses in the preparation of the annual priorities, as required by the Basin Plan. The current 2023-24 Basin annual environmental watering priorities document includes only a high-level description of engagement and research activities with Basin Nations. Basin Nations input is not reflected in the substantive annual or rolling priorities ... While MLDRIN has had some discussions with the CEWH and MDBA about supporting Basin Nations input to the Basin-wide Watering Strategy review, it is unclear how this would support direct input to the priorities. (sub. 92, p. 21)

And the Victorian Government argued that ‘there is a great opportunity’ to strengthen the AEWPs.

First, by reviewing the extent to which environmental watering in the preceding 1-2 years have met expected requirements for Basin Wide outcomes and highlighting areas and watering actions that have not been delivered as required and therefore may need additional attention in the coming year. Second, by using an objective assessment of condition and risk across the basin to identify specific watering actions and issues that need to be addressed in particular parts of the basin. (sub. 74, response to information request, p. 12)

The Basin Plan Environmental Management Framework would benefit from simplification. And in practice, in their current form, Basin AEWPs are redundant. The priorities are general in nature, do not change

significantly on an annual basis, and provide limited utility in prioritising environmental water use. The Basin AEWPs are released too late to be useful in the planning process for environmental water managers.

The following mechanisms in the Environmental Framework are sufficient to ensure that environmental water planning is efficient and effective.

- The BWEWS sets the long-term environmental watering priorities at the Basin scale.
- LTWPs draw together local, First Nations peoples' and scientific knowledges to guide the management of water for the environment over the longer term.
- State AEWPs set the rolling multi-year and annual priorities at the local scale, are developed to be consistent with the BWEWS, and are informed at the local level.
- Environmental water holders coordinate through the NBEWG and SCBEWC, which allows for trade-offs and prioritisation at the connected-system scale.

To simplify the environmental watering planning process and remove unnecessary administration, the Basin Plan requirement for the MDBA to produce annual watering priorities should be removed. In 2018 some participants to the Commission's inquiry commented that Basin AEWPs, while not ideal, filled a gap between the BWEWS and State AEWPs (PC 2018, p. 286). Clear articulation, in the BWEWS, under all water availability scenarios, of the relative priority of key Basin environmental assets would inform the development of State AEWPs and address any gap if a decision is made to remove the requirement to produce Basin AEWPs.

Coordination and engagement by environmental water holders

Environmental water management requires effective collaboration and coordination in the delivery of environmental water. And a range of people and organisations are involved, including environmental water holders, state and territory government agencies, community stakeholders, Traditional Owners, and river operators.

The planning mechanism for coordination in the Basin is the BWEWS. Coordination across water holders has significantly increased and become more sophisticated and collaborative over the past five years, with environmental watering committees now operating in both the northern Basin (NBEWG) and southern connected Basin (SCBEWC).

The NSW Government commented that 'the influence of the Basin Plan Framework for improved coordination of environmental watering events is evident in recent connectivity and fish flow events in the northern Basin and piggybacking and return flows accounting in multi-site events in the southern Basin' (sub. 43, p. 12). The MDBA reported that:

Since 2018, environmental water management across the southern connected Basin has evolved from largely site-based with occasional multi-site watering to now include large-scale coordinated watering events to improve downstream and system-wide connectivity outcomes (southern spring flow). The number, scale, ambition, efficiency, and most importantly outcomes of coordinated watering events have significantly increased over the last five years. (sub. 61, response to information request, p. 16)

Coordination of environmental water delivery is important for delivering environmental outcomes in both dry and wet seasons (box 3.3).

Box 3.3 – Coordinated flows

Environmental water holders work together and with river operators to coordinate the delivery of water for the environment.

- In 2019, during drought conditions, environmental water holders delivered over 2,000 GL of environmental water through the Murray system, including 27 coordinated events between water holders resulting in improved system connectivity outcomes (MDBA, sub. 61, response to information request, p. 16).
- In spring 2020 more than 320 GL in coordinated flows were planned and delivered across the Murray, Goulburn and Murrumbidgee rivers. Nearly 25 agencies worked together to deliver flows to multiple Ramsar wetlands (achieving a River Murray peak flow of 17,806 ML/day at Yarrawonga – below the regulated constraint of 18,000 ML/day). A flow above 15,000 ML/day extended for 18 days and achieved significant environmental outcomes for the Ramsar-listed Barmah-Millewa Forest (MDBA, sub. 61, response to information request, pp. 16–17).
- In 2021–22 coordinated flows were being planned and delivered under unregulated and wet conditions. Environmental water holders worked together with land and water managers, river operators and local landholders to build flows to support mid-Murray ecosystems while staying within mid-Murray constraint levels. Many billabongs, creeks and flood-runners on both sides of the Murray received their first drink since 2016 (MDBA, sub. 61, response to information request, p. 17).
- In the northern Basin, the CEWH and the NSW Government have coordinated multiple environmental releases to provide in-valley and downstream environmental outcomes, including the northern connectivity event (April to July 2018), the northern fish flow event (April to July 2019) and the northern refresh flow (April to May 2023) (CEWH, sub. 69, p. 29).

Participants told the Commission that SCBEWC and NBEWG are important to enable effective coordination of environmental watering and are on the whole functioning effectively.

Effective coordination and delivery partnerships are important for delivering environmental water to where it is needed, at the right time. For example, the CEWH's partnership with Murray Irrigation Limited (MIL) has resulted in MIL's network of channels and escapes being used to deliver small volumes of oxygenated water to create areas of better-quality water to support native fish and other aquatic life at critical times (CEWH, sub. 69, p. 8).

MIL has been an important partner contributing to the implementation of the Plan in NSW. For more than 15 years, MIL has worked with the Commonwealth and NSW Government Environmental Agencies to strategically deliver water, sometimes in very large annual volumes, to achieve environmental benefits MIL sees itself as not just delivering a modern and responsive service to irrigators, but increasingly as a key partner in the delivery of water supply and other services to the regional and downstream environment, which are vital to strengthening our region and the MDB. (MIL, sub. 65, pp. 15–16)

During consultations, irrigators spoke positively about their partnerships with governments for the delivery of environmental water. Renmark Irrigation Trust, in its submission to the inquiry, said:

The Trust's partnership with the Commonwealth Environmental Water Holder, which aimed to bring Trust and Renmark Paringa Council owned floodplain land back to health, has also been a win/win arrangement; good for the riverine ecosystem, good for our business and local economy and good for our community. (sub. 24, p. 1)

These partnerships and collaborations have been instrumental to the CEWH's credibility and its success in facilitating the delivery of environmental outcomes.

Local input into environmental water prioritisation and delivery is important for community buy-in to Basin Plan implementation. The CEWH has strengthened engagement with Basin communities and stakeholders over time. Local engagement officers live and work in regional towns throughout the Basin and have extensive networks and understanding of local issues. The CEWH's local engagement model is regarded as highly effective.

'Localism' is vital to engage local communities in environmental watering planning and decision making. Engagement of local areas coordinators and rangers by the CEWH has gone a long way to establishing partnerships and trust through consultation and should be further encouraged as a way of sharing information out of and to Canberra. (National Irrigators Council, sub. 62, p. 22)

At the valley scale, state government agencies have established Environmental Watering Advisory Groups (EWAGs). The CEWH is an active member of these groups, which provide community members with the opportunity to provide advice and input to environmental water planning, and receive updates on environmental water use, outcomes and issues (CEWH, sub. 69, p. 10). The NSW Government commented that:

There has been a substantial expansion of communicating and consulting on management of water for the environment and related outcomes, and it is a continuing journey. NSW uses Environmental Water Advisory Groups (EWAGs) in several valleys, some operating for many years, to successfully guide and inform environmental watering decisions to achieve Basin Plan and LTWP objectives and targets. All EWAGs ensure the views and understanding of First Nations, local communities, industry, and environmental stakeholders are considered when priorities and planning decisions are made. (sub. 43, p. 11)

For many years, in Victoria, CMAs have had an established network of stakeholders from local communities and peak bodies that engage on a range of issues, including the development and implementation of regional waterway strategies, environmental water management plans and annual seasonal watering proposals. In more recent years, as the environmental water portfolio has expanded, some CMAs have established EWAGs to engage with interested individuals and private landholders. For example, the North Central CMA, with VEWH and the community-based Enhancing Northern Waterways Advisory Group, recently planned winter-spring watering to support waterbirds chicks that hatched over a successful breeding season due to the natural floods in Gunbower in 2022 (Victoria, sub. 74, response to information request, p. 20).

Inquiry participants said EWAGs have been a positive step in Basin Plan implementation. For example, The Inland Rivers Network (IRN) said:

IRN supports the level of community engagement in environmental water planning, as exercised in NSW through Environmental Water Advisory Groups (EWAGs). Having the CEWH and state environmental water holders and other water related agencies making combined decisions with community on-ground knowledge is a good model that needs to be replicated. (sub. 82, p. 5)

But despite improved coordination and engagement between environmental water holders, there are concerns about how well the Basin Plan can deliver coordinated flows to improve environmental outcomes at

the whole of Basin level. The BWEWS should provide clear guidance, under all water availability scenarios, on the priority for achieving flow connectivity at the system scale relative to watering within a WRP area. By better articulating the relative priorities in connected systems, the BWEWS would provide better direction, accountability and transparency around priorities on achieving outcomes from coordinated environmental water flows at the whole of Basin scale.

Delivering shared benefits from environmental water

When managing held environmental water, environmental water holders are obliged to focus primarily on environmental outcomes. However, additional benefits can often be achieved that are compatible with environmental benefits sought from the use of environmental water, and align with the objectives of the Basin Plan.¹²

Environmental watering contributes both directly and coincidentally to other community benefits.

- For First Nations people, healthy rivers and wetlands are essential to spiritual, cultural and physical wellbeing (chapter 5). Where environmental and cultural water outcomes intersect, environmental water holders can contribute to achieving cultural outcomes.
- Site-specific watering events can provide recreational opportunities, such as fishing, canoeing and rowing regattas. For example, the VEWH said they ‘have timed the release of water for the environment into some rivers that are popular with kayakers, so that river levels were higher over a long weekend – when most kayakers wanted to paddle’ (VEWH 2019b).
- Environmental watering of rivers, lakes and wetlands can provide coincidental benefits by contributing to the strength of local economies and to the health and wellbeing of community members (PC 2021c, p. 116).

Understanding these additional benefits is important for allowing opportunities for alignment with environmental water use.

Collaborating with First Nations people on environmental water decisions

Basin Governments have made efforts to improve the ways in which they collaborate with First Nations people in environmental water planning and management.

At the Basin scale, First Nations representative groups advise on environmental water planning and delivery through the NBEWG and SCBEWC. Annual workshops with the CEWH support First Nations people’s input into environmental water planning at the Basin scale. The CEWH is also developing arrangements to increase MLDRIN’s capacity to advise on environmental water management in the southern Basin in the longer term (CEWH, sub. 69, p. 17).

The CEWH engages directly with individual First Nations and has developed successful partnerships such as a 10-year partnership with the Nari Nari Tribal Council, which supports the planning, delivering and monitoring of Commonwealth environmental water on Nari Nari Country (CEWH, sub. 69, p. 17).

The CEWH’s approach is evolving towards forming partnership and co-management arrangements with First Nations people, and elevating their role in the management framework from consultative to decision-making (CEWH, sub. 69, p. 17). In the 2023 Australian Government Budget, the CEWH received \$3.5 million to establish a First Nations Environmental Water Partnerships Pilot Program. The program will support the development and implementation of partnership agreements with First Nations organisations in the Basin (DCCEE, sub. 77, p. 17).

¹² Including optimising social outcomes under chapter 5 of the Basin Plan.

The CEWH and MDBA have worked together on projects to increase First Nations peoples' involvement in environmental water decision making.

- The *First Nations Environmental water guidance project* commenced in 2019-20. The MDBA and CEWH partnered with the Northern Basin Aboriginal Nations and MLDRIN, to better integrate First Nations peoples' outcomes into environmental water management (MDBA 2023e). The project helped frame the way that First Nations people, the MDBA, the CEWH and other environmental water holders work together in setting annual priorities for the use of environmental water (PC 2021c, supporting paper C, p. 45).
- In 2021-22, MLDRIN worked with the MDBA and the CEWH in the southern Basin to develop the *First Nations Environmental Watering Statement*. The statement provides First Nations guidance to environmental water managers around system scale watering (across multiple Nations). In 2023, the statement was updated to include First Nations advice around changing resource conditions (watering during and after wet times) (MDBA, sub. 61, p. 23).
- The MDBA Living Murray Indigenous Partnerships Program supports a network of Indigenous facilitators operating across The Living Murray Icon Sites to help engage with local First Nations people to inform management of water for the environment and monitor the outcomes of water use (MDBA, sub. 61, response to information request, p. 29).
- Since 2018-19, the MDBA has reported on how First Nations values and uses of water were considered in the planning and delivery of water for the environment in the Murray–Darling Basin. Information is sourced from the CEWH, the MDBA, Basin state governments, and First Nations people (MDBA, sub. 61, p. 23).
- Environmental water managers are also working with First Nations people to improve outcomes reporting through 'Rivers, the veins of our country' case studies and stories (MDBA, sub. 61, pp. 23–24).

State government agencies lead engagement with First Nations people on environmental water use at the site or valley scale. The NSW Environment and Heritage Group (EHG) and First Nations communities are working together on several Nation-led initiatives to support the planning and delivery of water for the environment under the EHG Healing Country Program (NSW Government, sub. 43, p. 19).

In Victoria, the Water is Life: Traditional Owner Access to Water Roadmap focuses on increasing the role of Traditional Owners in determining how environmental water can be used for healing Country (Victorian DELWP 2022b). This includes developing new guidelines for Traditional Owners to submit seasonal watering proposals; undertaking pilot environmental watering projects; and developing a framework for the transfer of environmental water allocations to Traditional Owners (sub. 74, response to information request, p. 15).

Examples of collaborations with First Nations people in planning environmental watering activities and delivering cultural outcomes where possible, are provided in box 3.4.

There is still scope for governments to enhance partnerships with First Nations people in environmental water planning and management. The most recent First Nations participation in water for the environment report observed that there is disparity between First Nations peoples' input and consistency of engagement across the Basin (MDBA 2022h). Input to environmental water planning is made largely through frameworks and processes not determined or endorsed by First Nations people (MDBA 2022h, p. 23).

Box 3.4 – Achieving outcomes for First Nations people: some case studies

Bringing life back to Dharriwaa

Dharriwaa, as named by the Yuwaalaraay/Euahlayi people (also known as the Narran Lakes), has been an important meeting place for First Nations people in north-west NSW for thousands of years. The site is internationally recognised for its cultural and ecological importance. Environmental water has helped the wetland come back to life after of drought and the long-term effect of over-allocation.

From being so dry and seeing the vegetation come back to life makes our soul sing, that's why we feast, dance and have ceremony, we feel so connected to Dharriwaa Gooni-Ma, Mother earth Narran Lakes our Meeting Place, said Tanya Morgan, who is a Youalaroi Traditional Owner from Narran Lakes Country. (MDBA 2022j, p. 10)

Yarning circles along the Lower Murray

Six yarning circles were held recently [in 2021] along the Lower Murray from Tailm Bend to Meningie where the Ngarrindjeri community, the Ngarrindjeri Aboriginal Corporation (NAC) and the [South Australian] Department for Environment and Water came together to share their experience and knowledge around water management and the River Murray ... these gatherings were about understanding and documenting Ngarrindjeri cultural values, stories and priorities to better inform decision-making for the planning and delivery of water for the environment to Ngarrindjeri Ruwe (Country). Tim Hartman, Chief Executive Officer from the NAC, said that as Ngarrindjeri, they have a cultural obligation to care for and manage country.

'Yarning circles help build, share, and express knowledge though a process of open dialogue and deep reflection,' Tim said. (SA DEW 2021)

Horseshoe Lagoon: an environmental water partnership with Taungurung

Taungurung Land and Water Council (TLaWC) is leading the way at Horseshoe Lagoon demonstrating how cultural values, environmental objectives and on-Country knowledge sharing are critical to long term water management, Healing Country and meaningful collaboration. Culturally significant to Taungurung Traditional Owners, Horseshoe Lagoon near Seymour (Victoria) continues to show promising responses to environmental flow deliveries. Since the water has returned, it is again a living wetland full of birds, frogs and turtles.

Watering activities at Horseshoe Lagoon provide an opportunity to heal knowledge through developing TLaWC capacity and confidence in water management. In 2019, Taungurung women held a Welcome to Country at the site, marking and celebrating the return of water through environmental flows. Water was again delivered to the lagoon in 2020 and 2021, with TLaWC responsible for managing the pumping and delivery. Taungurung rangers also carried out aquatic plantings at the site in 2022.

'We work in collaboration and with the support of our partners. We have taken on more and more responsibilities with time and the support of our partners is essential. Goulburn Broken CMA, Parks Victoria and the VEWH have shown true support for this purpose,' said TLaWC's Water Management Officer. (Victorian Government, response to information request, sub. 74, p. 15)

Auntie Janine and Craig Watson of the Latji Latji Mumthelang First Peoples, for example, said:

... every step of water delivery has been wrong which is particularly related to our lack of connection to decision-makers. ... We as First Peoples have not been properly connected to decision makers. There is disconnect between our interests on country and these reaching and being considered by the eventual decision makers above Local Government departments and Authorities. A recent example of this relates to repairing massive blowouts which had occurred at a burial site area near Mildura, where a consistent lack of water in the right places, at the right times has made the soil structures in the area very susceptible to wind-driven dispersal and the resulting exposure of the remains of our ancestors. We had to rebury these remains; but the risk of it happening again remains strong, without getting allocations of water on country at the right time and place. (sub. 78, p. 2)

Governments recognise that partnerships with First Nations people in water management must be a continued focus for implementing the Basin Plan. The MDBA, for example, said:

While progress is being made towards improved First Nations participation in environmental water management, many of the current collaborations and partnerships have been established through government mechanisms that are not often designed with effective First Nations relationships and outcomes in mind. Much more remains to be done. (sub. 61, pp. 22–23)

First Nations people are increasingly seeking to collaborate with Basin governments on environmental watering activities to improve the health of water-dependent ecosystems and contribute to broader First Nations values where possible. Building meaningful partnerships to deliver shared outcomes from environmental watering activities requires resourcing by Basin Governments, and a commitment to establishing long-term, formal partnerships.

Governments are also planning to enhance and strengthen First Nations people's involvement in environmental water management over the longer term. For example, the Victorian Government is working towards recognition of Traditional Owners as environmental water holders (sub. 74, response to information request, p. 15).

Ambitions articulated by Basin governments to improve collaboration with First Nations people in environmental watering activities are encouraging. The challenge remains for Basin governments to develop decision-making processes and deliver environmental watering activities in partnership with First Nations people, to achieve environmental and cultural benefits throughout the whole Basin.

Embedding shared benefits, objectives and outcomes in the Environmental Management Framework

Although delivering environmental water to achieve shared benefits is incorporated into the current water management practices of environmental water holders, it is yet to be embedded in the Basin Plan's Environmental Management Framework. As MLDRIN put it:

Despite being a critical component of the Basin watering framework, the BWS [Basin-wide Environmental Watering Strategy] has not demonstrated proper, genuine, and realistic consideration of Basin Nations' rights and interests in relation to environmental water management. The current BWS provides general commentary on the benefits of engaging First Nations in environmental water planning and points to areas of 'Future Work' to be addressed in more detail through future revisions of the strategy. The BWS does not include any substantive provisions to guide inclusion of Basin Nations, or consideration of Basin Nations outcomes, in environmental water planning by the CEWH or Basin States. (sub. 92, p. 20)

To inform asset and catchment scale environmental water planning across the Basin it is important that shared benefit objectives and outcomes from environmental water are clearly specified in the BWEWS. In 2018, the Commission said that opportunities to contribute to social or cultural outcomes, where these do not compromise environmental outcomes, should be actively pursued. We also recommended the BWEWS include a secondary objective that environmental watering should seek to contribute to social or cultural outcomes where environmental outcomes are not compromised (PC 2018, p. 280). And while the objective was not included in the 2019 BWEWS update, the MDBA said it will be included in the next update (expected in 2024) (MDBA 2020d, p. 89).

First Nations peoples' objectives and outcomes for shared benefits of environmental water is an area identified by MDBA for ongoing development in the BWEWS. The MDBA has also committed to working with First Nations people to include their objectives and outcomes for shared benefits of environmental water in the next BWEWS (MDBA 2022h, p. 11).

First Nations peoples' objectives, values and outcomes also need to be better incorporated at the local level in LTWPs. MLDRIN reported that:

Overall, while some LTWPs included consultation with Basin Nations, and some include content describing Nations' values and objectives, it is generally not clear if, or how, Basin Nations' inputs have informed the substantive components of the Plans (e.g., objectives, targets, and environmental water requirements). (sub. 92, p. 22)

Basin state governments recognise that there is a need to focus on improving engagement with First Nations people to better capture the watering priorities of First Nations' people and improve the effectiveness of LTWPs. The NSW Environment and Heritage Group is partnering with MLDRIN to revise LTWPs and work through the best approaches to achieve meaningful input led by First Nations people. And the NSW Department of Primary Industries Fisheries is working with local First Nations communities in the Peel valley to develop a culturally appropriate methodology that couples First Nations peoples' knowledge, and values with fish and flow management frameworks to inform environmental water management (NSW Government, sub. 43, p. 19).

First Nations peoples' objectives and outcomes, under all water availability scenarios, for providing shared benefits from environmental water use (where compatible with environmental objectives) should be included in the BWEWS and LTWPs. Consistent with commitments made under the National Agreement on Closing the Gap (Australian Governments and Coalition of Aboriginal and Torres Strait Islander Peak Organisations 2020), these objectives and outcomes must be developed by First Nations people through a genuine partnerships with governments (chapter 5).

An important consideration is how to achieve agreed shared benefits during climatic extremes in an increasingly dry climate. During periods of water scarcity, environmental water allocations are reduced, and other community benefits from environmental watering may be more difficult to achieve. For this reason, First Nations peoples' objectives and outcomes for providing shared benefits from environmental water use, should be developed for different climate scenarios including wet, average and dry years.

Environmental watering is limited to providing cultural and other community benefits that are compatible with environmental objectives. Cultural flows that are owned and managed by Traditional Owners have the potential to provide more significant benefits to First Nations people and fulfill the aspirations of First Nations people for self-determined decision making about water rights and the management of Country. Progress on providing cultural flows in the Basin is discussed in chapter 5.

Natural resource management is important for maximising the benefits of environmental water

Achieving the environmental objectives of the Basin Plan requires more than just environmental watering. For example, invasive species or the impact of infrastructure on native species can undermine the benefits from water delivered to the environment.

In 2018 the Commission recommended that 'Basin States should manage the risks to achieving the environmental watering objectives set out in LTWPs by delivering complementary waterway and natural resource management measures' (PC 2018, p. 294). Complementary natural resource management measures include:

- installing fishways and fish diversion screens
- control of pest species
- investments to address cold water pollution
- riparian management activities and habitat restoration (MDBA 2020d, p. 52).

Natural resource management (NRM) programs that complement environmental water planning and management are important to deliver long-term outcomes, as well as to manage changing conditions. This is especially important in the context of Australia's drying and highly variable climate. The Commission's *National Water Reform 2020* inquiry recommended that NRM programs should give priority to the key environmental assets identified in water planning processes, provide funding and undertake the required works to protect those assets. During periods of water scarcity, NRM should focus on the protection of reserves and refuges and making sure that their regenerative capacity is protected (PC 2021c, p. 108).

Many participants called for a greater focus on natural resource management to support environmental objectives under the Basin Plan (box 3.5).

Basin governments reported that they are increasingly integrating water and NRM planning. One example is the Native Fish Recovery Strategy, which is a joint government initiative developed in partnership with Basin state governments, First Nations people and the wider community to support healthy and resilient native fish populations in the Basin (other examples are provided in box 3.6). And there is potential to scale up this Strategy to further improve environmental outcomes (DCCEEWS, sub. 77, p. 18).

The BWEWS notes the importance of integrating land and water management activities to achieve environmental outcomes (MDBA 2020d, p. 52). And the BWEWS update in 2019 included actions to integrate environmental watering with NRM, including that planning and management should:

- consider the flow requirements to ensure return on investment of natural resource management actions (e.g. flow delivery is appropriate to support fishway operations)
- align watering actions to support the establishment and maintenance of management actions such as revegetation and habitat restoration activities
- prioritise natural resource management actions in locations that have high ecological value and can be supported by water planning and delivery
- coordinate natural resource management actions and the planning and management of water to support the ecological needs of native fish. (MDBA 2020d, p. 69)

Including these actions in the BWEWS was an important step to embed the significance of NRM to achieve environmental outcomes under the Basin Plan. As LTWPs are updated, Basin state governments should take a proactive approach to identify opportunities for integrating land and water management activities at the local level to deliver environmental outcomes.

Box 3.5 – Participants called for a greater focus on natural resource management

Leeton Shire Council

Issues like poor water quality, cold water pollution, habitat degradation, feral animal control, weed management, barriers to fish passage and invasive species need a real and integrated focus if the Basin Plan goals are to be realised fully ... Government should embrace an integrated approach to environmental management, rather than seeing the addition of environmental water as the sole solution to biodiversity challenges (sub. 72, p. 4)

National Irrigators' Council

The irrigated agriculture sector has long advocated the need for complementary measures to improve connectivity and habitat for native fish, concerted action on terrestrial and aquatic animal and plant pest species, and to address cold water pollution. A dedicated focus on these measures is becoming increasingly pressing, where it is underpinned by the outcome of scientific work on native fish, impacts of terrestrial and aquatic pest species etc. Without complementary measures, the water reserved for the river and the environment will not produce the desired environmental outcomes and the expectations of communities. (sub. 62, p. 12)

NRM Regions Australia

Regional NRM organisations consider, plan for, and implement many of the suggested complementary measures, including in-stream and riparian habitat restoration, control of pest and weed hazards, erosion control measures, and meaningful engagement with communities. However, regional NRM organisations need more investment to undertake and support delivery of these activities at a Basin scale. (sub. 36, p. 3)

Lachlan Valley Water

... there also needs to be a focus on how there can be environmental outcomes achieved not only from water management but whether complementary measures such as improving fish passage, improved control of non-native fish species, dealing with cold water pollution, control of feral species and weeds that are causing degradation of wetlands, infrastructure to improve the delivery of water to environmental sites and improving the management of riparian zones will produce a better overall outcome from the management of environmental water. (sub. 54, p. 5)

Cotton Australia

... Basin States should manage the risks to achieving the environmental watering objectives set out in long-term watering plans by delivering complementary waterway and natural resource management measures (such as habitat restoration or weed and pest control). (sub. 68, p. 17)

Integrating land and water management activities at the Basin scale is warranted to support progress towards healthier and more resilient ecosystems (MDBA 2020h, p. 129). The importance of coordinating environmental water management with NRM will increase as the environment adapts to a changing and more variable climate. The MDBA's 2020 Basin Plan Evaluation recommended that Basin Governments work with communities to develop clear priorities and that a framework for broader natural resource measures should be developed (MDBA 2020h, p. 130). The Commission supports the development of a framework for integrating environmental water management and NRM, over the long-term, and including it in the BWEWS.

Key considerations for developing the framework include:

- objectives and outcomes under different climate scenarios (wet, average and dry years)
- collaborations and partnerships, including between Basin Governments, local governments, waterway managers, First Nations organisations, land managers and environmental community groups
- roles, responsibilities and coordination
- actions and initiatives
- monitoring, evaluation and reporting of progress
- funding arrangements.

Box 3.6 – Integrating water and natural resource management, some examples

In New South Wales, the NSW Local Land Services is delivering a number of projects that will contribute to environmental outcomes, such as:

- The Riparian Restoration Project to restore riparian areas suffering cumulative damage from recent droughts, bushfires and flooding across NSW
- Fencing Northern Basin Riverbanks Program to minimise the impacts of livestock on priority reaches in the northern Murray–Darling Basin. (NSW Government, sub. 43, response to information request, p. 14)

In Victoria, the Department of Energy, Environment and Climate Action and the Victorian Environmental Water Holder work with Catchment Management Authorities to manage environmental water with complementary works. These works cover a range of areas including control of pest plants and animals; revegetation; fishway construction; riparian fencing; construction of regulators; snag removal; native fish breeding; and irrigation nutrient management. (Victorian Government, sub. 74, response to information request, p. 17)

Similarly, the South Australian Department of Environment and Water, National parks and natural resource management agencies such as the Murraylands and Riverland Landscape Board co-operate on water delivery planning and operations, grazing management, pest plant and animal control, visitor management in reserves, and groundwater management activities (South Australian Government, pers. comm., 25 September 2023).

Our recommendations

With implementation and policy frameworks in place, the focus now for environmental water management is simplifying and embedding current best practice approaches into the Environmental Management Framework to ensure that environmental water is managed efficiently and effectively to contribute to achieving the objectives of the Basin Plan. The drought and flood conditions in recent years are a reminder that managing our water-dependent ecosystems requires continuous learning and adaptation. And the challenge of a variable and changing climate provides further impetus for making improvements to this key element of the Basin Plan.



Interim recommendation 3.1 Improving the effectiveness of the Basin-Wide Environmental Watering Strategy

The Murray–Darling Basin Authority’s next update to the Basin-Wide Environmental Watering Strategy should include:

- an objective that environmental watering should seek to contribute to social or cultural environmental outcomes (where compatible with environmental outcomes)
- First Nations peoples’ objectives and outcomes, under all water availability scenarios, for shared benefits from environmental water use (where compatible with environmental objectives) at the Basin-wide scale
- clear articulation, under all water availability scenarios, of the relative priority of key Basin environmental assets to achieving the overall environmental objectives of the Basin Plan and the expected outcomes set out in the strategy
- clear guidance, under all water availability scenarios, on the priority for achieving flow connectivity at the system scale relative to watering within a water resource plan area
- risks to achieving environmental objectives, in a changing and more variable climate.

Over the longer-term, a framework for the coordination of environmental water management with natural resource management should be developed by the Murray–Darling Basin Authority and Basin state governments and included in the Basin-Wide Environmental Watering Strategy.



Interim recommendation 3.2 The adaptive management of long-term watering plans

In the next iterations of long-term watering plans, Basin state governments should include:

- First Nations peoples’ objectives and outcomes under all water availability scenarios for shared benefits from environmental water use (where compatible with environmental objectives) for each water resource plan area
- planning and management actions to integrate the management of environmental water with natural resource management (such as habitat restoration or weed and pest control).

**Interim recommendation 3.3****Basin annual environmental watering priorities require review**

As part of the 2026 review of the Basin Plan, the Murray–Darling Basin Authority should assess the value of Basin annual environmental watering priorities and whether the Basin Plan requirements for these annual priorities should be amended or removed.

**Interim recommendation 3.4****Delivering shared benefits from the use of environmental water**

First Nations peoples' objectives and outcomes for providing shared benefits from environmental water use for inclusion in the Basin-Wide Environmental Watering Strategy and long-term watering plans should be developed by First Nations people through genuine, resourced partnerships with the Murray–Darling Basin Authority (for the Basin-Wide Environmental Watering Strategy) and Basin state governments (for long-term watering plans), consistent with commitments made by all governments under the National Agreement on Closing the Gap.

4. Water resource plans

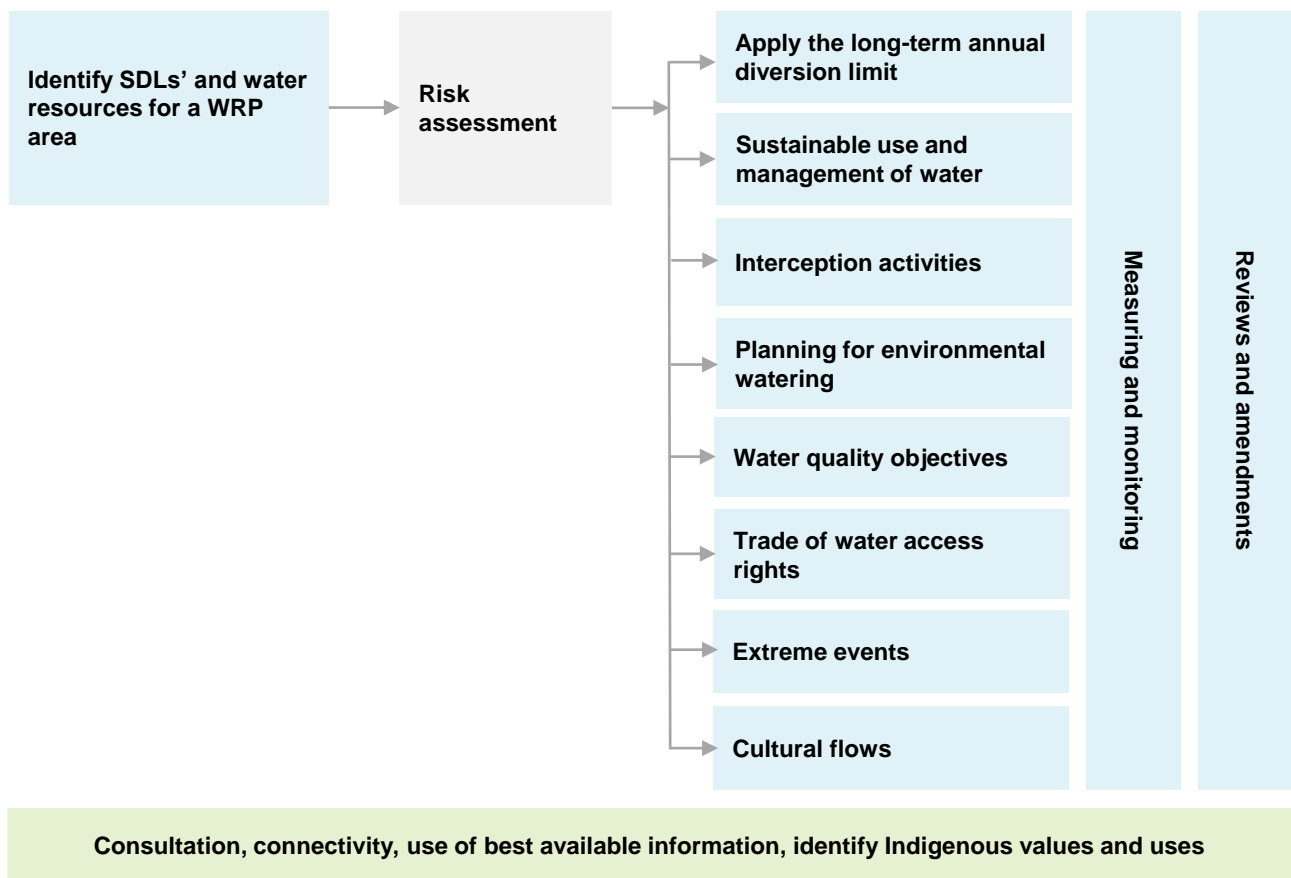
Key points

- * Basin state governments play a key role in the Basin Plan by preparing and implementing water resource plans (WRPs). The Basin Plan sets out what these plans must include – such as, importantly, how much water can be taken for consumptive use from each catchment.
- * All WRPs are now accredited and in operation in Victoria, Queensland, South Australia and the Australian Capital Territory. Thirteen WRPs remain outstanding in New South Wales. Sustainable diversion limits have been breached in New South Wales, but until the plans are accredited, the limits cannot be enforced by the Inspector-General of Water Compliance.
- * While WRPs reflect, to a significant extent, existing state arrangements, the process of making, assessing and accrediting the plans has been slow and complex.
- * The number and complexity of the requirements for WRPs has made the plans difficult to develop and assess and will make them difficult to amend, inhibiting adaptive water policy.
 - Some WRP requirements could be simplified, removed or made less prescriptive. The Murray–Darling Basin Authority should work with stakeholders to do this in its upcoming review of the Basin Plan, guided in part by the principle of subsidiarity and the fact that a core role of WRPs is to implement sustainable diversion limits.
 - Basin states should also be able to make non-contentious amendments to WRPs without the changes needing to be formally assessed by the Murray–Darling Basin Authority. The Water Act should be amended to enable these low-risk changes to be fast-tracked.
- * Where WRPs are in place, there is evidence that annual reporting on water take, sustainable diversion limit compliance and metering is working well. The Inspector-General for Water Compliance has conducted audits and is developing a compliance framework for WRPs. However, it is too early to evaluate whether WRPs are meeting the objectives and outcomes of the Basin Plan.

4.1 Water resource plans are fundamental to implementing the Basin Plan

Water resource plans (WRPs) are fundamental to implementing the Basin Plan. They are the mechanism through which state governments implement sustainable diversion limits (SDLs), which is the long term average annual volume of water for consumptive use that can be taken from the Basin.¹ They also include, among other things, water quality standards and set out how water will be managed during extreme events. The Basin Plan sets 55 requirements for WRPs – setting a consistent standard across the Basin, but also allowing state governments to tailor plans to different areas (figure 4.1).

Figure 4.1 – Key elements of water resource plans



Source: adapted from MDBA (2013b, p. 11).

To a significant extent, WRPs reflect pre-existing state arrangements and instruments, but state governments have had to adjust some of their arrangements to meet the standards in the Basin Plan. For example, all Basin states have had to develop accounting methods that show how they meet SDLs.

¹ An SDL is defined for each SDL resource unit in the Basin, there are 109 units in total including both surface and groundwater units (MDBA 2022k, p. 2).

Status of plans

There should be 33 WRPs across the Basin – 14 surface water plans, 14 groundwater plans, and five plans that each cover both surface and groundwater. All the plans for Victoria, Queensland, South Australia and the Australian Capital Territory (ACT) are now in place. Thirteen plans for New South Wales (NSW) remain outstanding (table 4.1).

**Table 4.1 – Status of WRP accreditation by jurisdiction
October 2023**

	WRP Areas	WRPs accredited	WRPs under assessment
New South Wales	20	7	9
Victoria	5	5	n/a
Queensland	3	3	n/a
South Australia	3	3	n/a
Australian Capital Territory	2	2	n/a

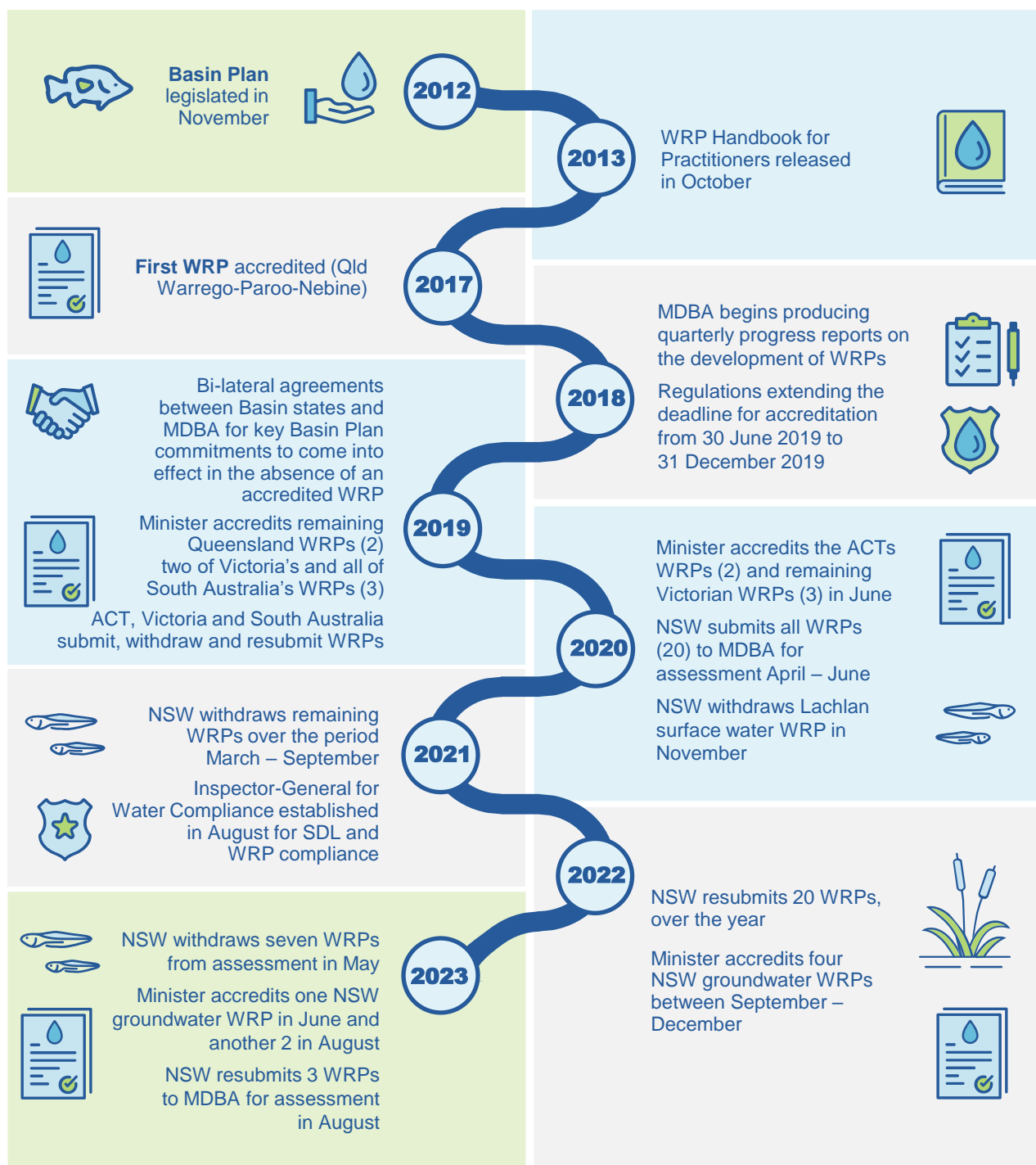
Sources: MDBA (2022p, p. 6), NSW DPE (2023b).

The NSW Government submitted all of its plans to the Murray–Darling Basin Authority (MDBA) in 2020, but later withdrew them following formal advice from the MDBA that the plans did not meet all requirements, including those for planned environmental water and Aboriginal consultation (NSW DPE 2022a). The timeline of WRP development and accreditation is set out in figure 4.2. Seven NSW plans are now accredited and nine are with the MDBA for assessment.² The Macquarie-Castlereagh plan was expected to be resubmitted in August 2023 (carried over to October), but it is not clear when the remaining three plans (Gwydir, Barwon-Darling and Namoi) will be submitted (NSW DPE 2023b).

While in some circumstances the Australian Minister for Water may ask the MDBA to prepare a WRP for a Basin state, these last-resort ‘step in’ powers have not been exercised and are unlikely to be. Some participants suggested the powers should have been used (for example, ACT Government, sub. 85. p. 4), but it is not clear this would be a practical solution.

² As at 16 October 2023.

Figure 4.2 – Timeline of water resource plan development and accreditation



Sources: DPE (NSW) (2022a, 2023a), MDBA (2019e, 2019f, 2020n, 2020m, 2020o, 2020l, 2021l, 2021k, 2021m, 2022g, p. 4, 2022n, 2022o, 2022m, 2022p, 2023a, p. 6).

The Basin Plan relies on all WRPs being in place

The absence of accredited plans in New South Wales brings into question ‘the overall effectiveness and efficiency of the current arrangements’ (MDBA, sub. 61, p. 9). While some arrangements have been made to

ensure key commitments³ are met in the absence of WRPs (MDBA 2022f), there are serious implications for environmental outcomes to not having all WRPs in place.⁴

Where a WRP is not in place in one part of the Basin, this affects other parts of the Basin and the overall effectiveness of the Basin Plan. For example, the ACT Government said that the absence of accredited plans in NSW were affecting water management in the ACT.

The value-add of WRPs is to improve water management across jurisdictional boundaries and between catchments, protect the inherent rights of the environment, and provide water security for downstream communities. For WRPs to be effective, all WRPs must be in place, meet the requirements prescribed under the Basin Plan and have genuine consideration of cross-border water resource management for Basin-scale outcomes. (sub. 85, p. 4)

WRPs must have regard to connected water resource plan areas. For example, they must: account for water with significant hydrological connection to the water resources of the SDL resource unit⁵, specify the impacts of interception where there are connected water resources⁶, enable environmental watering between connected water resources,⁷ and water quality management plans must be developed having regard to the impact of the measures in these plans on the ability of another Basin state to meet water quality targets.⁸ Where WRPs are not in place, these connectivity issues may not be given sufficient consideration (box 4.1).

Box 4.1 – Concerns about connectivity in the Murray–Darling Basin

Connectivity between WRP areas in the northern Basin was raised as a particular concern in regional visits the Commission made as part of this inquiry and in submissions.

NSW water sharing plans do not address connectivity, there are no end of valley flow targets and no end of system flow targets, that is the simple but catastrophic failing of the basin plan. (Pastoralists Association of West Darling sub. 42, p. 1)

SWWU [NSW South-West Water Users Association] believes it is important that flow triggers in the Northern Tributaries, Barwon-Darling and Lower Darling, and storage volumes in the Menindee Lakes be determined to ensure that protecting the health of the river is made a priority ... Targets cannot be tokenistic; targets need to be scientifically backed, demonstrating benefits for whole of river health. The recognition that all WSPs are connected and have repercussions in other valleys urgently needs addressing. (sub. 16, p. 4)

³ Commitments include SDL accounting and protection of environmental water.

⁴ Under section 10.17 and 10.18 of the Basin Plan, WRPs must be prepared having regard to whether it is necessary to include rules which ensures the operation of the WRP does not compromise the meeting of environmental watering requirements of priority environmental assets and ecosystem functions. Planned environmental water (water in the system after extraction) is influenced by these rules and is different to held environmental water entitlements which have specific volumes attached to them (chapter 3).

⁵ Basin Plan 10.12(1)(e).

⁶ Basin Plan 10.23(1)(b) and (3)(b)ii.

⁷ Basin Plan 10.27.

⁸ Basin Plan 10.35.

The Inspector-General of Water Compliance cannot enforce WRPs that are not accredited

Another important implication is that the Inspector-General of Water Compliance (IGWC) cannot enforce WRPs that are not accredited. Therefore, for most of New South Wales, 'there is no SDL compliance' and 'no practical consequence for NSW in failing to deliver commitments on time' (IGWC, pers. comm., 31 July 2023).

When a water resource plan is in place, the full legal suite of monitoring, risk assessment, and compliance tools such as inquiries, audits, and investigations are available to undertake compliance and enforcement. (IGWC 2023f, p. 12)

Outstanding WRPs are also said to undermine trust between Basin Governments and Basin communities. A number of participants expressed concerns about the outstanding plans in New South Wales. For example, the Remark Irrigation Trust said:

There is a sense that the system has failed to ensure all Basin States are meeting their requirements with the same degree of equity and that insufficient authority has been provided to the Commonwealth agencies to enforce these requirements. (sub. 24, p. 4)

While bilateral agreements with the MDBA require the NSW Government to report on water take 'the bilateral agreement is not the legislative tool which can be used to determine and enforce SDL compliance' (IGWC 2023f, p. 12).

Risk of breaching SDLs

Transitional and annual water take reporting over the past four years indicates that multiple NSW valleys in the northern Basin exceed annual limits (MDBA 2019d, 2020k, 2021c, 2022b), and one valley would have been non-compliant under the SDL compliance framework in 2019-20 (MDBA 2021h, pp. 10–12). The most recent SDL compliance report highlights this trend continuing, with two SDL resource units assessed as non-compliant.

The situation in New South Wales is deeply concerning, particularly as there are an increasing number of areas on the interim SDL accounts pointing to an SDL excess beyond the SDL compliance threshold, specifically, the Barwon-Darling watercourse by 40%, Gwydir surface water by 21% and the Murrumbidgee is trending toward the SDL compliance threshold at 18% SDL exceedance. (IGWC 2023f, p. 12)

The IGWC also highlights that 'once a water resource plan is accredited and operational, the register of take commences with a cumulative balance of zero. This means that any interim debits or credits on the interim registers for New South Wales are not carried forward' (IGWC 2023f, p. 14). This essentially enables New South Wales to use more water than they should without having to 'pay it back'.

The South Australian Government advocated for a 'change to the Basin Plan so that SDL compliance commences from 1 July 2019 in all SDL resource units, consistent with the 2018 agreement by Ministerial Council' (SA Government 2023, p. 54). The IGWC supports a legislative change 'to introduce a mechanism that allows for accounting provided prior to the commencement of water resource plans to be maintained in the MDBA's register of take' to 'address a significant transparency and accountability gap in the SDL legislative framework'.⁹

⁹ Submission to the Senate Standing Committee on Environment and Communications inquiry into Water Amendment (Restoring our Rivers) Bill 2023, sub. 32, p. 4.

Inquiry participants also raised concerns about floodplain harvesting in New South Wales (box 4.2). The Floodplain Harvesting licensing rollout is complete in the NSW Border Rivers, Gwydir, Macquarie and Barwon-Darling valleys, covering 80% of the volume of water taken through floodplain harvesting in New South Wales (Namoi valley is expected to be complete by the end of 2023) (NSW Government, sub. 43, response to information request, p. 4).

While individual entitlements to access water are a state responsibility and outside the Basin Plan, the volumes that will be authorised to be extracted under floodplain harvesting licences still need to be within the SDLs set for the WRP areas they are granted in. The IGWC noted that ‘the effects of these reforms are not likely to be seen on the SDL accounts until the 2023-24 water accounting year’ (IGWC 2023f, p. 13). However, none of the WRPs covering these valleys have been accredited, so it is unclear how the floodplain harvesting licences that have been granted will be managed so that the SDLs will be met.

We have licensing of floodplain harvesting in northern NSW above the legislated legal level of cap (while every other southern basin irrigator operates under) with no end of system flows to protect connectivity, despite connectivity remaining a key principle of the plan ... Overextraction ... of the Darling River has resulted in fish kills and poor water quality. Why isn't the Federal Government focusing on licensing floodplain harvesting under the cap to prevent this from happening again and again? (Southern Riverina Irrigators sub. 97, p. 3)

In the *Annual water take report 2020–2021* the MDBA emphasises the importance of WRPs for managing floodplain harvesting:

For SDL resource units in New South Wales, where floodplain harvesting has grown and pushed total use above the limits, the intention is to restrict take by floodplain harvesting where necessary to return total diversions to the SDLs in each resource unit ... The Authority keenly anticipates the completion and implementation of this New South Wales program [Healthy Floodplains Program] and relevant strategies to monitor and manage floodplain harvesting included in proposed WRPs. (MDBA 2022b, p. 41,43)

Box 4.2 – Concerns around floodplain harvesting remain

The NSW Floodplain Harvesting Policy was introduced by the NSW Government in 2013 to bring existing floodplain harvesting extractions into the water entitlement system (DOI (NSW) 2018). Previously landholders with approved works had legally been able to extract water in this way without restriction. Under the policy, landholders' extraction volumes will instead be tied to entitlements granted by the NSW Government, as is the case for other forms of consumptive water take. The new floodplain harvesting entitlements will be identified within water resource plans and will be subject to the requirements around determining permitted and actual annual water take to meet sustainable diversion limits (SDLs).

Concerns raised with the Commission about the NSW Floodplain Harvesting Policy include:

- the process for increasing baseline diversion limits and sustainable diversion limits to accommodate the level of floodplain harvesting is complex, ambiguous and key information is not publicly available (NCCNSW sub. 50, p. 9, Temba Orchards, sub. 87, p. 2) and new estimates of baseline diversion limits do not justify an increase in total diversions (EDO sub. 91, p. 13)

Box 4.2 – Concerns around floodplain harvesting remain

- floodplain harvesting appears to have increased licenced water diversions when implementation of the Basin Plan is to address overallocation (NCCNSW sub. 50, p. 9, Jodie Hay, sub. 63, p. 2, Temba Orchards, sub. 87, p. 2, SRI sub. 97, p. 3, EDO sub. 91, p. 13)
- lack of metering coverage in the northern Basin means the volume of extractions by floodplain harvesting is underestimated (Jodie Hay, sub. 63, p. 2)
- no confidence that floodplain harvesting licensing will improve the health of the rivers (DEG, sub. 86, p. 5)
- floodplain harvesting licensing in the northern Basin prevents continuing and growing overextractions at the expense of historical flows to the southern Basin (DEG, sub. 86, p. 5, Temba Orchards, sub. 87, p. 2, SRI sub. 97, p. 4).

The Environmental Defenders Office reflect many of these concerns in its submission.

We note that current SDLs were developed on the basis that floodplain harvesting accounted for approximately 210GL of water across the entire Northern Basin (which includes Queensland) ... The volumes that [are] to be licensed across Northern NSW are likely to well exceed this figure ... However, it is our legal opinion that any increase in BDLs [baseline diversion limits] should result in an increase in water recovery and reduced SDLs – not maintenance of the same recovery volume and increased SDLs. Indeed, the method proposed by the MDBA is likely to be unlawful insofar as it is unlikely to result in SDLs that reflect an ESLT [environmentally sustainable level of take], as required by s. 23(1) of the Water Act. (sub. 91, attachment 3, p. 13)



Interim finding 4.1

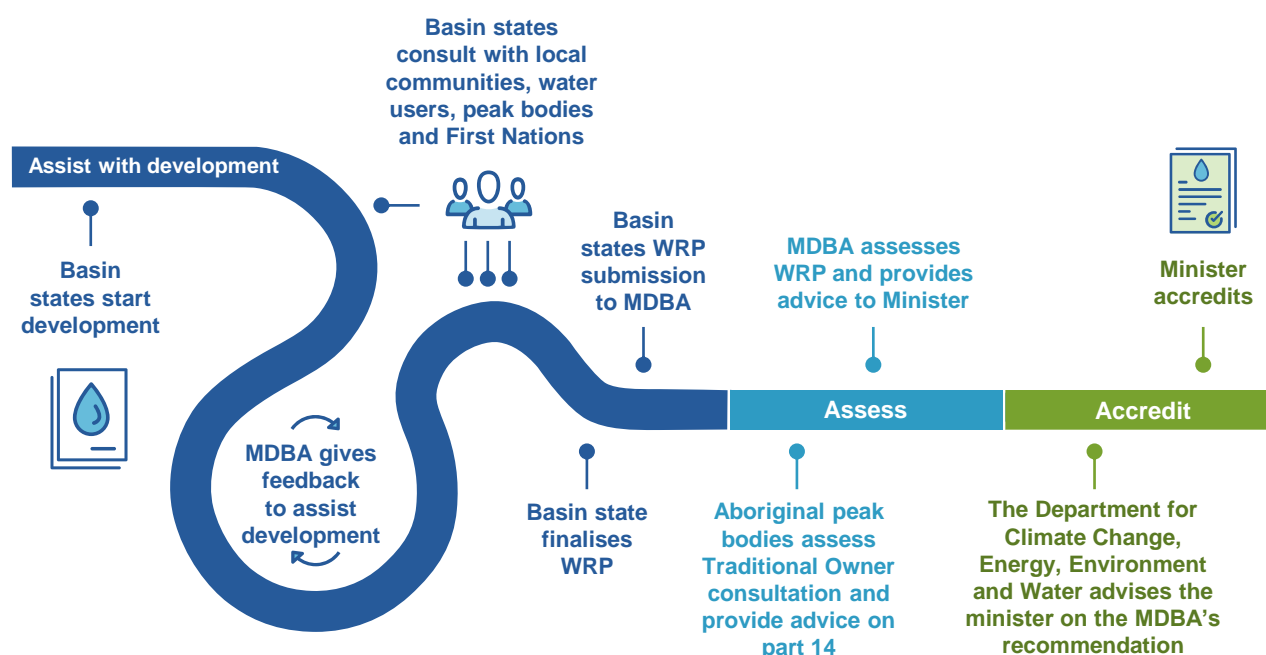
Without water resource plans, the Murray–Darling Basin Plan cannot be fully implemented

Most New South Wales water resource plans remain outstanding more than 10 years after the Basin Plan was put in place and almost four years after an already extended deadline. Without all water resource plans in place across the Basin, the Murray–Darling Basin Plan cannot be fully implemented or properly enforced. With 13 outstanding plans, there is a greater risk of over extraction in New South Wales.

4.2 Making and assessing WRPs

WRPs are prepared by Basin states and then assessed for compliance with the Basin Plan by the MDBA. If a WRP complies with the requirements in the Basin Plan¹⁰, the MDBA submits the plan to the Australian Minister for Water and recommends the Minister accredit the plan (figure 4.3). Basin states must consult stakeholders in preparing the plans; as discussed in chapters five and nine, engagement on some plans, particularly engagement with First Nations, has been poor.

¹⁰ Requirements for WRPs are set out in chapter 10 of the Basin Plan.

Figure 4.3 – Water resource plan path to accreditation

Source: adapted from MDBA (2017f, p. 5).

Only one of the 33 WRPs across the Basin was made in time to meet the original 2019 deadline and 13 plans are still not accredited. There are a number of reasons for these delays, including the COVID-19 pandemic and natural disasters (NSW Government, sub. 43, p. 7). New South Wales has also needed to amend a number of its state-based water management policies in response to compliance reviews in 2017,¹¹ before finalising their WRPs. And preparing the plans cannot be rushed – adequate time is needed to ‘conduct the detailed analysis and consultation required to understand local issues, identify and test feasible solutions and make the necessary amendments to rules and supporting documents’ (PC 2018, p. 26).

But the extent of the delays in making the plans suggests there is a problem. Two key contributing factors are the number and complexity of requirements that WRPs must meet and the process of assessing the plans.

Number and complexity of requirements

Delays in preparing and assessing WRPs are partly the result of the number and complexity of the requirements that these plans must satisfy. The Basin Plan sets out 55 requirements for WRPs and many of the requirements are multi-faceted and interlinked. For example, under Part 3 of chapter 10 of the Basin Plan (‘Incorporation and application of long-term annual diversion limit’), a water resource plan must set out the method for determining the maximum quantity of water that the plan permits to be taken for consumptive use during a water accounting period. The method must account for nine specific matters (such as return flows), be consistent with other provisions of the WRP, and comply with the rules for take. Rules for take need to ensure that the requirements under Part 4 of chapter 10 (‘The sustainable use and management of water

¹¹ Independent Investigation into NSW Water Management and Compliance (Matthews 2017b, 2017a) and The Murray–Darling Basin Water Compliance Review (MDBA 2017e).

resources¹²) – which relate to environmental assets and ecosystem function – can be met, and any identified risks have been assessed and strategies put in place¹³.

The MDBA said meeting all the requirements in the Basin Plan placed ‘a substantial burden’ on Basin states in preparing plans and on the MDBA in assessing them (sub. 61, p. 4). The number and complexity of the requirements has:

... led to highly complex WRPs that comprise multiple documents and incorporate a range of state instruments and strategies. This complexity, with cross-referencing across numerous state instruments, strategies and plans means WRPs are prone to drafting errors and internal inconsistencies resulting in an invalid instrument which cannot be accredited. (sub. 61, response to information request, p. 2)

Every Basin state said that developing WRPs was a difficult and resource-intensive exercise (box 4.3).

Box 4.3 – The development and accreditation of water resource plans: what Basin state governments said

Victorian Government

The Murray–Darling Basin Authority (MDBA)’s process for accreditation was extremely resource intensive for the MDBA and for Victoria. Of note was that the intensive effort was not directed towards the areas of largest risk or opportunity, and appropriate effort was not anticipated or resourced within the MDBA, leading to long delays and backlogs. In Victoria’s case, while WRPs were lodged on time, there was an extended period without feedback which seemed to be caused by inadequate MDBA resourcing to review the plans after lodgement. (sub. 74, response to information request, pp. 2–3)

South Australian Government

The development and accreditation of SA’s three WRPs was a rigorous but prolonged process. The documents required for each WRP contain a significant amount of information and were resource-intensive to prepare. (SA Government, pers. comm., 18 September 2023)

Australian Capital Territory Government

WRPs are conceptually an important Commonwealth planning instrument with detailed requirements described in the Basin Plan. However, the design of the document, the scale of the water management area, scope of requirements and interpretation of those requirements, limit their effectiveness. The process to accredit plans and low materiality threshold for amendments create a barrier for incorporating better scientific knowledge, refined content and to embed policy improvements designed by jurisdictions to address future resource challenges. The accreditation process is labour intensive and requests for relatively minor text amendments trigger reaccreditation. (sub. 85, p. 4)

¹² Basin Plan 10.17-10.21.

¹³ Basin Plan 10.22 and part 9, 10.41.

Box 4.3 – The development and accreditation of water resource plans: what Basin state governments said

New South Wales Government

Getting to this stage has involved a significant body of work involving the development of 31 amended or replacement Water Sharing Plans (WSPs) under NSW legislation, nine long term environmental watering plans (LTWPs), 20 water quality management plans, 20 Incident Response Guides, 20 risk assessments, 10 ecological monitoring and evaluation reports (MER plans), 20 area description reports, 20 WRP consultation reports, and significant work on 18 associated surface water modelling reports (sub. 43, p. 7).

Development and accreditation of WRPs has been resource intensive for Basin States and the MDBA. A key area for improvement in the efficiency and effectiveness of Basin Plan implementation is the accreditation process for WRPs. The MDBA needs to be provided with greater flexibility in how the exhaustive list of considerations for WRPs are assessed.

Documentation and analysis requirements need to reflect the priority and materiality of issues and the risk to the resource. (sub. 43, p. 7)

Some also suggested that the time and effort required to prepare the plans was disproportionate to their value. For example, the ACT Government said the WRP for the ACT ‘provides no value-add, represents the ACT water management arrangements that pre-existed the Basin Plan, and only stifles opportunities to improve water resource management and sustainable development’ (sub. 85, p. 4).

The Victorian Government expressed a similar sentiment about the value of WRPs, saying the state was ‘largely compliant with the Basin Plan’ before it even completed its WRPs:

... there was minimal immediate changes to water planning and management in Victoria as a result of the WRPs. (sub. 74, response to information request, p. 4)

The NSW Government said there was ‘considerable duplication’, because WRPs rely heavily on their water sharing plans, ‘which also have consultation requirements’ (sub. 43, p. 7).

Similarly, the South Australian Government said that in its experience, ‘the amount of effort required for the various other components was not proportionate to the intended or actual use’ and that ‘there have been very few changes in how SA’s water planning and management practices have changed as a result of WRPs being implemented’ (SA Government, pers. comm., 18 September 2023).

The complexity of WRPs also makes it difficult for communities to engage with the plans and provide meaningful feedback (PC 2018, pp. 188–190). The documents are long and technical and consultation timeframes are often short.

Inadequate guidance and shifting expectations

The MDBA’s processes for assessing WRPs has also been criticised. Guidance material was said to have been ‘iteratively developed as issues arose’ and sometimes issued too late (ACT Government, sub. 85, response to information request, p. 4; Victorian Government, sub. 74, response to information request, p. 3; SA Government, pers. comm., 18 September 2023).

The MDBA acknowledged these criticisms and said that working through all 55 requirements and sub-requirements has been an iterative and time-consuming process and caused delays in accreditation (sub. 61, response to information request, p. 2).

In 2018, the Commission found that the process of developing WRPs was onerous and unnecessarily costly because there was inadequate guidance and little clarity on the MDBA's expectations for accreditation (PC 2018, p. 195). The Victorian Government said the process would have been more efficient and effective had the MDBA developed a 'clear and objective assessment framework ... to avoid the shifting of expectations during the preparation and assessment phase' (sub. 74, response to information request, p. 3).

The difficulty of assessing plans and providing clear guidance is no doubt partly a result of the complexity and prescriptiveness of the requirements (MDBA 2020h, p. xii). The MDBA said that while it continues to improve the efficiency of its accreditation processes, it is constrained by the provisions in the Basin Plan and Water Act (MDBA, sub. 61, response to information request p. 3). The MDBA has limited discretion; it is required by the Water Act to formally assess whether each WRP fulfils the requirements in chapter 10 of the Basin Plan (MDBA 2020j, p. 10,11).



Interim finding 4.2

Preparing and assessing water resource plans is unnecessarily difficult

The process of preparing and assessing water resource plans is onerous and time-consuming. This is in part because the requirements in the Basin Plan are unnecessarily complex and prescriptive.

Less prescription needed, and a greater focus on outcomes

What can be done to make the process of making, assessing and amending WRPs more efficient?

In regulatory theory, a distinction is commonly made between 'rules-based' and 'goals-based' laws. Rules-based laws are generally more precise, specific and certain, but less flexible. Goals-based laws are less prescriptive, more flexible, and more open to interpretation and judgment.

Some participants¹⁴ called for a move away from a 'legalistic' focus on the 55 requirements and towards an 'outcomes focused' approach to making and amending WRPs. While there are advantages and disadvantages to making the requirements for WRPs more goals-based, it seems clear that the current approach is too onerous and that at least some of the requirements should be less prescriptive and more focused on outcomes. The MDBA said the 2026 Review provides an opportunity to address 'unnecessary complexity' in the 55 requirements of the Basin Plan and alleviate some of the burden on Basin states and the MDBA, including in making and assessing amendments (MDBA, sub. 61, response to information request, p. 3).

The Commission recommends the MDBA review the requirements for WRPs with a view to making them less prescriptive and more focused on outcomes. The principle of subsidiarity should also be a guiding consideration in this review, given many of the arrangements included in the plans should remain largely the responsibility of state governments, with the implementation of SDLs being a core purpose of WRPs.

¹⁴ MLDRIN (sub. 92, p. 14-15); CICL (sub. 21, p. 6); Victorian Government (sub. 74., response to information request, p. 3); ACT Government (sub. 85. p. 4).

This should not be used as an excuse to further delay finalising WRPs in New South Wales. Nor should the outstanding NSW WRPs be assessed against a different set of requirements to those already assessed, accredited and in operation. The MDBA said these changes ‘should only happen after NSW has completed its first generation of WRPs’ (MDBA, sub. 61, response to information request, p. 3). By all WRPs meeting the original 55 requirements in the Basin Plan, a consistency in the water management arrangements in the Basin will have been achieved.



Interim recommendation 4.1 **Simplify requirements for water resource plans**

In its 2026 Basin Plan Review, the Murray–Darling Basin Authority should consider how the requirements for water resource plans could be simplified and whether some requirements should be removed or made less prescriptive and more focused on outcomes. The principle of subsidiarity should be a guiding consideration in this review, given many of the arrangements included in the plans should remain largely the responsibility of state governments, with the implementation of sustainable diversion limits being a core purpose of water resource plans.

Amending the plans is set to be difficult

WRPs need to be amended over time to account for new information and changing circumstances. Changes have already been canvassed for plans in Victoria and South Australia (SA Government 2022; Victorian Government 2022). All WRPs will probably need to be amended after the Basin Plan Review 2026.

Regular amendments to WRPs would support adaptive water management and it is important that Basin states are not deterred from making these changes. WRPs should not be ‘set and forget’ instruments; they should evolve and adapt over time.

Most amendments need to be assessed by the MDBA for consistency with the Basin Plan and the MDBA has released guidelines about this process (MDBA 2021f, 2021g). Some Basin states are concerned that the problems faced in making and accrediting WRPs will be faced again when they amend their plans. The ACT Government suggested that the process for amending WRPs creates a barrier to incorporating better scientific knowledge and making improvements to address future challenges (sub. 85, response to information request p. 4). A difficult amendment process risks making WRPs static and outdated policy documents.

Even if the requirements for WRPs are simplified, as we recommend above, with the current settings the process of amending the plans is likely to be more lengthy and costly than it needs to be.

A risk-based approach to amendments

Some types of changes to WRPs can already be ‘fast-tracked’. The Water Act states¹⁵ that regulations may prescribe ‘minor’ or ‘non-substantive’ amendments that are taken to have been accredited, provided the MDBA is notified of the change.¹⁶ Examples of such minor amendments include spelling and punctuation, references, formatting and technical errors. These are a narrow range of changes. All other amendments need to be assessed by the MDBA and accredited by the Minister. The MDBA seeks to ‘tailor the amendment process to the scale and complexity of the proposed amendment’ so ‘simple amendments are

¹⁵ *Water Act 2007* (Cth) s. 66.

¹⁶ *Water Regulations 2008* (Cth) reg. 2.11A.

not onerous’ (MDBA 2021f, p. 4), but it is nevertheless constrained by the Water Act and regulations. For example, changes that the South Australian Government considered minor (references to legislation) will nevertheless need to be assessed by the MDBA (SA Government 2022).

To ensure WRPs can be updated regularly and efficiently, a greater range of changes should be eligible for this ‘fast-tracked’ process. These would be changes that are uncontentious, low-risk, and clearly compliant with the Basin Plan. Many amendments that are not related to how SDLs are met may fall into this category. When deciding which amendments should be reviewed by the MDBA, it will be important to consider where the MDBA is most likely to add value, such as to amendments about improvements in modelling and methods for estimating and measuring water take.

This would be a more ‘risk-based’ approach to amending WRPs. To ensure the arrangement is not misused, the MDBA could be empowered to ‘call-in’ an amendment to check that it complies with the Basin Plan. While the IGWC currently has no role in the accreditation process, they could be consulted – as the WRP compliance agency – about where the risks from changes to each WRP are greatest.



Interim recommendation 4.2

A risk-based approach to amending water resource plans

The *Water Act 2007* (Cth) should be amended to allow the accreditation of amendments to water resource plans to be fast-tracked, where those amendments are low-risk and clearly comply with the Basin Plan.

4.3 Compliance and reporting

As noted above, most WRPs have only been in place for three years and 13 remain outstanding (as at October 2023). This means it is too early to assess their effectiveness in supporting Basin Plan outcomes. The Basin Plan brings a system-wide approach to water management and without all WRPs in place, any assessment of their contribution to Basin Plan outcomes – many of which rely on connectivity – would be partial and constrained. Nonetheless, the Commission has identified some arrangements that are working well, and others that need improvement.

SDL accounting and compliance frameworks are in place

The SDL water accounting and compliance framework came into operation on 1 July 2019 as scheduled. Initially both were implemented by the MDBA, but the IGWC took responsibility for compliance in 2021.¹⁷

WRPs set out the maximum amount of water permitted to be extracted for consumptive use (permitted take) in a water accounting period, and any associated rules for water use in each WRP Area. Data about permitted and actual take is collated by the MDBA and published annually in the SDL registers of take

¹⁷ Basin state governments have primary responsibility for regulating water take for individual water licence holders while the MDBA and the IGWC use Basin states water take data to assess compliance against the SDL resource units for each WRP area.

(MDBA 2022a).^{18,19} The MDBA also publishes a water take report which analyses the data in the registers and looks at longer term trends (MDBA 2022b).²⁰

The IGWC can only enforce WRPs that have been accredited. Of the 109 SDL resource units in the Basin, the first SDL compliance report (2019-20) only covered six units; the reports for 2020-21 and 2021–2022 covered 55 units (IGWC 2022e). There has been no recorded non-compliance against those 55 SDL resource units over this period (IGWC 2023f).²¹

Since the IGWC was established in 2021, the MDBA has updated its SDL accounting and reporting framework (MDBA 2022k) and the IGWC is developing its SDL compliance framework (sub. 75, p. 12).

Improvements to metering and measurement are being tracked

WRPs must specify measures for maintaining and, if practicable, improving the proportion of take that is measured in the WRP area and the standard to which take is measured.²² Basin states also agreed to undertake a number of actions on metering accuracy and coverage within specific timeframes under the Murray–Darling Basin Compliance Compact (MDB Ministerial Council 2018).

Recent reviews of metering coverage and accuracy found a lack of progress and room for improvement in reporting (MDBA 2021j) (Pearson 2022, p. 12). It was recommended that the IGWC ‘develop a consistent set of metrics to provide an overview of water take compliance levels and the extent and reliability of metering and measurement’ (Pearson 2022, p. 12).

The IGWC has produced annual metering report cards for the last two years to track the progress of Basin states in meeting their metering and measurement commitments under the Murray–Darling Basin Compliance Compact by 2025. The report cards highlight where Basin states are making improvements in the proportion of water take metered (for example, NSW moved from 78.4% to 81.8% of water take metered between 2020-21 and 2021-22, while Queensland data on % of water take measured for 2020-21 and 2021-22 was not available) and the standard it is measured at (IGWC 2023a, 2023b).

The IGWC has also driven improvements in water measurement by setting metering standards, developing guidelines and convening quarterly forums for compliance and enforcement officers in each Basin state (sub. 75, p. 19).

Audits on WRP compliance obligations

The IGWC currently sets out compliance priorities in the annual work plan, taking a risk-based approach to focus regulatory activities, such as audits, where the risks and consequences of possible or actual non-compliance are greatest (IGWC 2021, p. 3). Priorities and corresponding actions for the IGWC over the

¹⁸ The MDBA also publishes on its website the narratives that Basin states provide accompanying their SDL water accounting data (MDBA 2022b).

¹⁹ Permitted take is underpinned by a number of ‘planning assumptions’ such as historical climate conditions, expected utilisation of entitlement classes, trading patterns and the impact of water sharing rules for a particular WRP Area (for example, carryover, trading, floodplain harvesting and water access rules).

²⁰ For the NSW WRPs that are not yet in place, reporting on SDL water accounting is supported by bilateral agreements signed between Basin states and the MDBA (MDBA 2021d, 2021e, 2022c).

²¹ Non-compliance occurs when the cumulative balance over a three year period exceeds 20% of the long-term annual diversion limit for the SDL and Basin states do not provide a reasonable excuse (IGWC 2023f, pp. 18–19, 2023e, p. 8).

²² Basin Plan 10.45(1).

last three work plans have included managing increasing groundwater use, trade enforcement, WRP compliance and fostering Basin-wide regulatory cooperation (IGWC 2021, 2022a, 2023c).

To date the IGWC has completed three audits,²³ the most recent on the management of overland flow harvesting in the Lower Balonne (IGWC 2023d). While the audit found that the Queensland Government was meeting requirements of the Condamine-Balonne WRP in relation to overland flow licensing and the management of flow events, the IGWC made six recommendations to improve the effectiveness of systems and processes. The Queensland Government accepted recommendations to develop guidance about key compliance activities, implement alternative audit strategies, ensure the requirement to report measured take was consistent and enforceable and verify self-reported take (Qld DRDMW 2023a). Two recommendations about onsite audits and communicating with entitlement holders were accepted in part.

The audit function plays an important role in shining a light on how Basin states are managing key requirements under their WRPs, particularly where the requirements are not captured under state management arrangements – such as the requirement about managing risks to water resources in response to climate change.

The IGWC is developing a compliance framework

In 2018, the Commission found that the requirements for annual compliance reporting had yet to be agreed on, risking unnecessary compliance costs. The IGWC is in the process of developing a regulatory policy and a WRP compliance and enforcement framework.

- The draft regulatory policy outlines the approach the IGWC will take to compliance (risk-based, outcomes focused, proportionate); it will be finalised later this year (IGWC 2023e).
- The WRP compliance and enforcement framework will set out what the IGWC expects to see in Basin state compliance and enforcement action plans and what the IGWC will enforce. It has been commissioned to a consultant with completion scheduled by 31 March 2024 (IGWC, pers. comm., 31 July 2023).

The IGWC receives much of the information it needs to undertake its compliance responsibilities from the MDBA through the register of take and the annual water take reports. The two agencies have a Memorandum of Understanding setting out how they will work together to support their separate roles and responsibilities (IGWC and MDBA 2022, p. 4) (IGWC, pers. comm., 31 July 2023).

An independent review of the IGWC due in January 2024 is underway to look at whether the IGWC has the powers necessary to carry out its functions.

Reporting on compliance

As WRPs are made and accredited, quality reporting on whether they are working will be vital. The Environmental Defenders Office said that reporting on the efficiency and effectiveness of WRPs, ‘including as to whether they provide a robust framework under a changing climate, is of particular importance’ (sub. 91, p. 6).

There is room to improve the WRP reporting arrangements in the Basin Plan. Specifically, it is not clear whether all of the reporting required of Basin states on WRP compliance under Schedule 12 is necessary, particularly given the reporting and audit functions of the IGWC and the MDBA. Some state reporting seems to focus on processes, rather than outcomes, and it is unclear how some state reports help assess the effectiveness of the Basin Plan or inform whether improvements to the Plan are needed (Qld DRDMW 2022,

²³ See also Accounting for Interstate Trade in the Northern Basin (IGWC 2022b) and Goulburn-Murray Water disclosure obligations under the Basin Plan (IGWC 2022c).

p. 19; Qld Government 2022, p. 19; SA Government 2022, p. 19; Victorian DELWP 2022a, p. 19; Victorian Government 2022, p. 19). The audit function of the IGWC provides a much deeper dive into whether or not Basin states are meeting specific requirements under their WRPs and whether or not improvements can be made to make them more effective.

The MDBA said these state reports are important and necessary. The Commission invites participants to comment on whether it is still necessary for Basin states to provide reports each year to the MDBA about compliance with WRPs, and more generally on how reporting on the effectiveness of WRPs could be simplified or otherwise improved.



Information request 4.1

Reporting on compliance and other arrangements

The Commission invites comments on whether Basin state governments should continue to be required to report on compliance with their water resource plans (Murray–Darling Basin Plan, Schedule 12, Matter 19), and on any other ways the reporting arrangements for water resource plans should be improved.

5. The values of First Nations people

Key points

- * More than 100,000 First Nations people from over 40 Nations live in the Murray–Darling Basin. Aboriginal and Torres Strait Islander people have deep connections to their land, waters and waterways, and tens of thousands of years of knowledge about caring for water and river country.
- * The Murray–Darling Basin Plan (the Basin Plan) includes mechanisms for First Nations people to provide input into the development and implementation of water management arrangements – including in the areas of water resource plans, environmental management and knowledge building.
- * The policy landscape has changed since the Basin Plan was put in place. In 2020, all Australian governments signed the *National Agreement on Closing the Gap*, which includes commitments to shared decision-making and transforming government organisations so they work better for First Nations people.
- * Basin governments have improved how they work, engage and partner with First Nations people over the last five years. However, there are continuing concerns about Basin Plan engagement processes.
 - First Nations people said they see little evidence that their values, objectives and desired outcomes are considered in Basin water planning and management decisions, particularly in New South Wales.
 - The Murray–Darling Basin Authority should report on how Basin governments engage with First Nations on Basin Plan issues.
 - Basin governments should be required to publicly report on how First Nations people’s input is reflected in water resource plans, including when amending the plans. Accountability would be further strengthened by embedding a requirement in the Basin Plan that water resource plans incorporate the values and interests of First Nations people in water management.
- * Partnership arrangements in environmental watering and with natural resource management groups are proving to be an effective way of embedding First Nations’ knowledge, cultural practices and connection to Country into Basin water management. However, there is scope to do more, including resourcing First Nations to strengthen capacity, and improving how Basin governments work in partnership and share decision-making.
- * Less than 1% of water entitlements in the Basin are held by First Nations people. No water has been purchased under the Aboriginal Water Entitlements Program since it was announced in 2018. The \$40 million program budget will buy less water today than in 2018.

5.1 Some background

First Nations people's values, uses and knowledges of water

There are more than 100,000 First Nations people¹ from over 40 Nations living in the Murray–Darling Basin (MDBA 2023j). As outlined in the Murray–Darling Basin Plan (the Basin Plan), 'Traditional Owners and their Nations in the Murray–Darling Basin have a deep cultural, social, environmental, spiritual and economic connection to their lands and waters'². It is vital for sustaining Country and connection.

Water energises our country. Water is our driver for bringing everything together to preserve and sustain our country, our Elders, our children and our habitat. (Latji Latji Mumthelang First Peoples, sub. 78, p. 1).

For Aboriginal people the health of the river and the health of people come first. (Dharriwaa Elders Group, sub. 86, p. 3).

First Nations people also have a deep knowledge about how to manage water and improve river health, from thousands of years of knowledges about caring for rivers, waterways and wetlands.

We as elders know the right time for water to be delivered and the right amount ... (Latji Latji Mumthelang First Peoples, sub. 78, p. 2)

Solutions to the climate crisis must be informed by the knowledge and wisdom of cultures that have survived (and thrived) during significant changes to the climate over the past 60,000 years. (MLDRIN, sub. 92, p. 23)

Requirements in the Basin Plan specific to First Nations people

The Basin Plan has provisions that specifically relate to furthering First Nations people's interests in, and objectives for, water management.

In particular, water resource plans (WRPs) must identify the objectives of First Nations people in relation to managing water resources, and the outcomes that are desired by First Nations people³. In doing so, 'regard must be had to':

- 'Indigenous values': the social, spiritual and cultural values of First Nations people that relate to the relevant water resources of the WRP area⁴.
- 'Indigenous uses': the social, spiritual and cultural uses of the relevant water resources of the WRP area by First Nations people⁵.
- The views of First Nations people with respect to cultural flows⁶, and the views of relevant Indigenous organisations on a range of other matters, including native title rights and Indigenous Land Use Agreements⁷.

¹ We have used both 'First Nations people' and 'Aboriginal and Torres Strait Islander people' to refer to Aboriginal and/or Torres Strait Islander people. In some instances, we refer specifically to 'Aboriginal people'. The term 'Indigenous' is sometimes used by participants and included in programs and policies (including the Basin Plan), so this term also appears in this report.

² p. i.

³ Part 14 Chapter 10.

⁴ s. 10.52(2)(a).

⁵ s. 10.52(2)(b).

⁶ s. 10.54.

⁷ s. 10.53(1)(a).

The Plan also has provisions for First Nations people to provide input into:

- improving the knowledge of water requirements in the Basin relating to the social, spiritual and cultural uses of water resources by Indigenous people⁸
- achieving a healthy and working Basin, including water supplies that are fit for a range of intended purposes – domestic, recreational and cultural uses⁹ and to maintain appropriate water quality for environmental, social, cultural and economic activity in the Murray–Darling Basin¹⁰
- having regard to Indigenous values, uses and local knowledge and experience in preparing the Basin-wide environmental watering strategy¹¹ and when undertaking environmental watering activities¹².

And there is funding provided by governments to support First Nations to participate in Basin Plan implementation and review activities. Two groups – Murray Lower Darling Rivers Indigenous Nations (MLDRIN) and the Northern Murray–Darling Basin Aboriginal Nations (NBAN) – were important in co-ordinating and facilitating Aboriginal engagement in the earlier period of Basin Plan implementation (and they are explicitly mentioned in the Plan¹³).

All Basin governments have made policy commitments under the National Agreement on Closing the Gap

The policy landscape has changed considerably since the Murray–Darling Basin Plan was introduced in 2012 and since the Commission last reviewed Basin Plan implementation in 2018.

In 2020, all governments, along with the Coalition of Aboriginal and Torres Strait Islander Peak Organisations, signed the *National Agreement on Closing the Gap* (the Agreement). The central pillars of the Agreement are four Priority Reforms.

- Priority Reform 1 – Formal partnerships and shared decision making.
- Priority Reform 2 – Building the Aboriginal and Torres Strait Islander community-controlled sector.
- Priority Reform 3 – Transforming government organisations so they work better for Aboriginal and Torres Strait Islander people.
- Priority Reform 4 – Improving and sharing access to data and information to enable Aboriginal and Torres Strait Islander communities to make informed decisions.

These reforms require changes to the way governments work with Aboriginal and Torres Strait Islander people across all areas of policy and program delivery, including implementation of the Basin Plan. When signing the Agreement, governments made a commitment to ‘a fundamentally new way of developing and implementing policies and programs that impact on the lives of Aboriginal and Torres Strait Islander people and to do so in a way that ‘takes full account of, promotes, and does not diminish in any way, the cultures of Aboriginal and Torres Strait Islander people’.

Performance monitoring and public reporting arrangements to support transparency and accountability for progress against outcomes are also part of the Agreement.

⁸ s. 4.03(g)

⁹ s. 5.02(a)

¹⁰ s. 5.04(1)

¹¹ s. 8.15 (4)(e)

¹² s. 8.29 (3)(g) and 8.35 (iii-iv)

¹³ s. 10.52

There has also been a shift in recognition of First Nations in the community since the Basin Plan was put in place. As noted by the Murray–Darling Basin Authority (MDBA):

Since the Basin Plan came into force there has been an important shift in the recognition of First Nations people's values and uses of water across the Basin. Community expectations and knowledge on these issues has progressed considerably over the last decade and there is much more to be done. (sub. 61, response to information request, p. 5)

Improving outcomes for First Nations people is one of the key themes for the 2026 Basin Plan Review, along with the need for regulatory changes to facilitate greater involvement of Aboriginal and Torres Strait Islander people in Basin Plan policy setting and decision-making. The MDBA said 'we'll work with First Nations people, supporting them to gather and provide input, including testing policy options' (MDBA 2023j, p. 9).

5.2 Assessing progress: 2019 to 2023

There has been a lot of activity over the past five years aimed at increasing the involvement of Aboriginal and Torres Strait Islander people in water management in the Basin (box 5.1). There is also evidence that Basin state governments have improved how they work, engage and partner with First Nations people in the Murray–Darling Basin, particularly in environmental watering activities and water resource plan development activities (in most Basin states).

Environmental watering

All Basin state governments are working more with First Nations people to plan and manage environmental watering activities in the Basin (chapter 3).

First Nations people are now more directly involved in key Basin-wide environmental watering processes – MLDRIN joined the Southern Connected Basin Environmental Watering Committee in 2021, and First Nations people have been represented on the Northern Basin Environmental Watering Group since 2019. Both these groups coordinate planning and the delivery of water for the environment to enhance cross-border and multi-catchment connectivity, drawing on First Nations people's knowledge and values of river systems.

Other important developments in the area of environmental water since the Commission's assessment in 2018 include the:

- 2019-20 First Nations Environmental Water Guidance project – this project seeks to better integrate First Nations outcomes directly into Basin Plan water management by synthesising the environmental watering priorities of 16 southern Basin Nations (PC 2021c, supporting paper C, p. 45).
- First Nations Environmental Watering Statement 2021-22 – sets out southern Basin Traditional Owners' preferred outcomes from environmental water management and Aboriginal peoples' views on the legal, policy and governance settings affecting water management in the southern Basin (MDBA, sub. 61, p. 23).
- First Nations Environmental Water Partnership Pilot Program – in the May 2023 Budget, the Commonwealth Environmental Water Holder received \$3.5 million to establish this program. The Commonwealth Environmental Water Holder is seeking to embed First Nations peoples' knowledge and science into the future science program (Flow-MER 2.0) to ensure environmental watering is underpinned by the best available knowledge (DCCEEW, sub. 77, p. 18).

There is also better reporting on how the values of First Nations people are considered in the planning and delivery of water for the environment in the Basin, drawing on information from the Commonwealth Environmental Water Office, the MDBA, Basin state and territory governments, and First Nations people.

Water resource plans

As discussed in chapter 4, Basin state and territory governments are responsible for developing Water Resource Plans (WRPs) in accordance with the requirements set out in the Basin Plan, including those specific to Aboriginal and Torres Strait Islander people. And in doing so, the person or body preparing a WRP 'may' identify opportunities to strengthen the protection of Indigenous values and Indigenous uses and, if identified, must specify them in the WRP¹⁴.

The MDBA is responsible for assessing WRPs against these provisions and are 'expected to consult with relevant Indigenous organisations' when making this assessment¹⁵. Subject to the outcome of this assessment, the MDBA is also responsible for recommending that the Minister for Water accredit the WRP.

The Commission's 2018 assessment found that Basin states had improved their formal processes for engaging Traditional Owners as part of water resource planning development, but warned that compressed timelines for WRPs accreditation risked having too little time for effective engagement and having regard to the views of Traditional Owners in preparing water resource plans (PC 2018, p. 209)

In this inquiry, we heard mixed reports about the ways Basin governments have worked with First Nations people in developing WRPs.

A number of participants emphasised that the NSW Government has failed to address key gaps in their WRP processes, including limited or no consultation with all Nations identified in WRPs, a lack of clarity about the scope and purpose of the engagement, and insufficient time for participants to respond or follow up when substantial issues or concerns emerge. For example, the NSW Aboriginal Land Council outlined concerns about the NSW Government's failure to include input from Aboriginal communities (sub. 101, p. 8) and MLDRIN said:

... some Traditional Owners were unaware that their WRP consultation was supposed to address both surface waters and groundwater relevant to multiple WRPs. Instead, the NSW Government used outcomes from what Nations understood to be surface water-focused consultation to meet Basin Plan requirements of its groundwater WRPs. (sub. 92, p. 6)

The Commission also heard concerns about the narrow scope of the relevant Basin Plan provisions:

... [the] focus is only on the social, spiritual and cultural values and uses (section 10.52(2)) and objectives and strategies (section 10.53(1)(d)). Traditional Owners have expressed deep dissatisfaction that this scope excludes economic or environmental values, uses, and objectives from consultation conversations and legal consideration in water resource planning. (MLDRIN, sub. 92, p. 15)

And several participants expressed frustration that WRPs have been assessed by the MDBA and accredited by the Minister for Water despite First Nations groups raising significant concerns during the assessment process. For example, the Environmental Defenders Office highlighted that:

... the Authority has endorsed a 'Nations based' approach to First Nations engagement. However, when the rubber hit the road in NSW, the substantial and material issues raised in the First Nations assessments as to compliance with the Basin Plan appear to have made little to no difference to the accreditation decisions. (sub. 91, p. 28)

¹⁴ s. 10.52(3).

¹⁵ Part 14 of the Basin Plan 2012.

Notwithstanding these concerns, we also heard that when advice from First Nations people about WRPs was considered and acted on, better outcomes resulted. MLDRIN, for example, said:

Victoria’s responsiveness in addressing gaps in WRPs saw Nations’ procedural rights respected and led to better outcomes and improved relationships with Aboriginal people. Arguably, the relationships and improved processes that were developed between Nations and the Victorian Government during this period have contributed to other ongoing positive outcomes beyond the Basin Plan, such as ensuring a good foundation for more recent work ... (sub. 92, pp. 5-6)

In some respects, the frustrations and experiences of First Nations people about the development of WRPs is unsurprising. There is no formal requirement on Basin state governments to meaningfully and consistently take account of, and address, the objectives of Aboriginal and Torres Strait Islander people (and their desired outcomes for water management) in developing WRPs. The Basin Plan requirement to ‘have regard to’ these matters can be (and clearly is, in some cases) interpreted in a minimal way, with limited accountability. This is discussed further in section 5.3.

Engaging and partnering with First Nations people

Basin governments have sought to improve how they engage and partner with First Nations people on Basin Plan issues, beyond environmental watering and WRP consultations, over the last five years (box 5.1).

Box 5.1 – Examples of recent policies aimed at improving engagement and partnerships with First Nations people

The Australian Government’s Department of Climate Change, Energy, the Environment and Water (DCCEEW) recently released *Statement of Commitment to First Nations* has components to deepen engagement with Aboriginal and Torres Strait Islander people. It aims to deliver on the National Agreement on Closing the Gap targets and advance key policy priorities that directly relate to Aboriginal and Torres Strait Islander people, including water. The Statement acknowledges the value of Indigenous knowledges.

Our work will recognise that Indigenous knowledge is critical to living sustainably in Australia. The 65,000 years of knowledge that Aboriginal and Torres Strait Islander peoples hold as custodians of Australia’s land and natural resources is essential to achieving our vision. Traditional knowledge will be used with permission and respect of Indigenous cultural and intellectual property. (DCCEEW 2023k, p. 2).

The 2017 Aboriginal Partnership Action Plan, reviewed and updated in 2022, has become the Murray–Darling Basin Authority (MDBA) Strategy for Engagement with First Nations (2022–26). The Strategy outlines the MDBA’s objectives for cultural flows, partnerships and collaboration, embedding action and participation, knowledge research and policy, and reconciliation. It also outlines MDBA’s vision to achieve healthy rivers by incorporating First Nations’ science, expertise, knowledge and values in water management (sub. 61, response to information request, p. 27). An Aboriginal member was also appointed to the MDBA Board (MDBA 2020c, p. xxii) and Aboriginal representation on the Basin Community Committee was increased to enable more effective incorporation of Aboriginal values and uses in Basin water management.

Box 5.1 – Examples of recent policies aimed at improving engagement and partnerships with First Nations people

The Queensland Government allocated \$11.7 million over 3 years for a First Nations Water Strategy to support partnerships with First Nations people in water management (Qld DRDMW 2023b). The Strategy follows the passing of the Path to Treaty Act 2023 (Queensland Government 2023a).

The South Australian Government has also committed to strengthening partnerships with First Nations people through several initiatives such as the *First Nations Voice Act 2023* (South Australian Government 2023c) and the signing of a 'Statement of Commitment' to collaborate with First Nations people to manage, protect and restore landscapes, by each of the 9 regional landscape boards (South Australian Government 2023b). In addition, the South Australian Aboriginal Partnerships Program aims to increase the participation of Aboriginal people, groups and organisations in all levels of landscape management, including environmental watering and wetlands management (South Australian Government 2023a).

The Victorian Government's Water is Life – Traditional Owner Access to Water Roadmap sets out a pathway for how the Victorian Government intends to return water to Traditional Owners and increase their role in environmental watering (Victorian DELWP 2022b, p. 41).

The Commission heard about partnerships between First Nations and governments that were working well, including to deliver environmental water in ways that also achieve cultural benefits. For example, we heard that the National Cultural Flows Research Project – a project supported by the MDBA and other Australian Government agencies – has helped to improve knowledge of cultural flows and identify ways of integrating cultural flows into Basin water management.

The *Murray–Darling Basin Indigenous River Rangers Program*, the *First Nations Environmental Water Guidance Project*, and partnership programs implemented by Catchment Management Authorities – were also highlighted as effectively drawing on First Nations people's knowledge and understanding of river systems and natural resource management to help design and implement water management practices and policies.

Dharriwaa Elders Group (DEG) River Rangers now provide DEG with a daily observation capability and have turbo-charged DEG's evidence and knowledge base. They have observed and reported two Walgett native fish kills in February and August 2023. They are observing Walgett water quality, the disappearance of mussels and other river invertebrates and the triumph of European carp and other invasive species. (sub. 86, p. 4)

Catchment Management Authorities have a lot of skills we don't have here, hence the importance of partnerships. (Wamba Wamba First peoples representative, pers comm., 27 June 2023)

The Senate Select Committee on the Multi-Jurisdictional Management and Execution of the Murray–Darling Basin Plan also heard from Dr Phil Duncan, then Chair of the Basin Community Committee, about the value of partnerships:

... now the time is for us to be more engaged in repairing our country. We are seeing rivers go on to evolutions and change in flow regimes. We are seeing less and less water going in. If you look at the 150-year research around climate change, I believe that our people have a significant range of knowledge that can help the basin recover and be more sustainable into the future. (Duncan in Australian Government 2021, p. 147)

The knowledges of First Nations people are also being drawn on increasingly via Basin state projects and initiatives. For example:

- The NSW Government is establishing Regional Aboriginal Water Committees to provide advice to the Department of Planning and Environment where it affects Aboriginal water rights. The Committees will inform water management policy, projects and programs as they apply to Aboriginal people (sub. 43, response to information request, p. 20).
- The Victorian Government has set aside 1.36 gigalitres of additional water savings from the Goulburn Murray Connections project for Traditional Owners in northern Victoria (Goulburn Murray Water 2022). The Victorian Department of Environment, Land, Water and Planning continues to work with Traditional Owners in the region to determine the appropriate process and arrangements for the long-term management of this water. The government is also funding 17 Aboriginal water officers in the Basin to deliver projects in partnership with government and Traditional Owner organisations (sub. 74, response to information request, p. 82).
- The *Queensland Water Act 2000* was amended to allow for recognition of the importance of water to Aboriginal and Torres Strait Islander people by providing for water plans to include cultural outcomes. This builds on existing mechanisms that provide a statutory right to take water for traditional activities or cultural purposes. (Queensland Government 2023b).
- The ACT Water Strategy 2014–44 Striking the Balance Implementation Plan Two (2019–23) outlines 18 actions, including to: ensure Aboriginal representation on governance bodies; establish an Upper Murrumbidgee Aboriginal Nations Group; empower local communities to share their knowledge of land and water; and investigate arrangements for Indigenous cultural flows. (ACT Government 2019, pp. 18–21).

The ambition set out in these initiatives is encouraging. However, such initiatives do not automatically lead to improved outcomes for First Nations people. Despite increased efforts by Basin governments to engage First Nations people in water planning and management, particularly in environmental watering, the Commission heard frustrations about current processes and calls for Basin governments to do more to empower Aboriginal and Torres Strait Islander people in Basin water planning, management and ownership.

5.3 Strengthening the role of First Nations people in the Basin Plan

Almost everyone with an interest in the Basin – including irrigators, governments and environment organisations – agree that the Basin Plan needs to do more to deliver on the values and interests of First Nations people (box 5.2).

Box 5.2 – Calls to do more: recognising the values and delivering on the interests of First Nations people

Murray–Darling Basin Authority

The deep significance of First Nations' knowledge passed down over the generations is ever more pressing and more precious as our climate changes. We all need to work harder to provide a greater place for First Nations people in water management. (sub. 61, p. 7)

Box 5.2 – Calls to do more: recognising the values and delivering on the interests of First Nations people

National Irrigators' Council (NIC)

... we are very supportive of further involvement of Indigenous Australians in managing the Basin, including but not limited to, addressing cultural flows. ... NIC would welcome an enhanced First Nations engagement regime to further improve our connections with Indigenous peoples across the Basin. (sub. 62, p. 26)

National Parks Association of NSW

The independence and views of the numerous Aboriginal Nations with a connection to the Basin and its water should not be compromised. Water carries great cultural, spiritual, environmental, social and economic significance to these people ... Despite the National Native Title Council (2014) stating it believed the Water Act was failing in its management objectives for Aboriginal people some ten years ago, not much has changed. (sub. 41, p. 6)

The NSW Aboriginal Land Council

The NSW Government needs to work more closely with existing Aboriginal structures, such as LALCs [Local Aboriginal Land Councils] and Indigenous ranger programs on future water management approaches and to take into account Aboriginal people's knowledge and wisdom. (sub 101, pp. 9–10)

Wentworth Group of Concerned Scientists

... the next Plan needs to address Aboriginal water rights and interests as a matter of urgency. More support is needed to build capacity of Indigenous land and water ranger programs to manage wetland Country. (sub. 81, p. 6)

River Lakes and Coorong Action Groups

We need to celebrate the wisdom of First Nations people in caring for the land and the water for millennia while it has only taken 235 years of settlement to destroy the system. We need to acknowledge the deep connection of First nations people to the land and to their totems and the intrinsic need to protect them. (sub. 15, p. 4)

The Commission also heard that Basin governments' engagement practices often fall short (especially around WRPs in NSW) and the capacity of First Nations people and organisations to participate in key processes is being stretched.

Engagement is not always meaningful

Aboriginal and Torres Strait Islander people – many of whom have invested a lot of time participating in the Basin Plan and reviews of it – expressed concerns about engagement processes.

Aboriginal and Torres Strait Islander people considered that engagement processes are often rushed and tokenistic, and their input rarely influences decisions. There is a sense that government representatives only engage with First Nations people 'to tick a box', rather than to understand and genuinely consider Aboriginal perspectives in decision-making (box 5.3).

Box 5.3 – Meaningful engagement? What First Nations people said ...

Latji Latji Mumthelang First Peoples

We as First Peoples have not been properly connected to decision makers. There is disconnect between our interests on country and these reaching and being considered by the eventual decision makers above local government departments and authorities. (sub. 78, p. 2)

Werai Land and Water Aboriginal Corporation

We're not involved in any process as such. We were not consulted. After the fact, after the stuff is done, then they want to speak to us to get us to tick the box and approve what they've done. (Taylor in Australian Government 2021, p. 128)

Millewa Mallee Aboriginal Corporation

You should have various focus groups from each area and then feed this all into decision-making bodies, so that we get peoples' ideas to decision makers. (pers. comm., 27 June 2023)

We also heard that there is little two-way exchange to understand whether and how input has influenced decisions, or otherwise been worthwhile. This concern is especially prevalent around the development of WRPs. The National Parks Association of NSW, for example, said:

Many of the water resource plans created by the states only give scant reference to Indigenous peoples' water ... States have given inadequate provision to ensure consistent engagement with Indigenous people. (sub 41, p. 7)

And MLDRIN said:

We've had lots of meetings with MDBA since 2019 but our advice is not being considered. We're being disregarded. [Water Resource] Plans being approved against our advice feels token again. We're not being listened to. We've been duped in this process – we thought this [assessment role] was a good process and we were keen to be part of it. Now we have nothing really to show for it. There's disregard for us. We've never ceded our rights to water and there's no recognition of that anywhere. We're pretty disappointed. (sub. 92, p. 14)

Consultation fatigue and frustration is evident across the Basin.

Consultation experiences for some NSW Traditional Owners has been so poor that it has nearly completely undermined their trust in the NSW Government, the MDBA, and any other water related consultation processes more broadly (MLDRIN, sub. 92, p. 14).

In addition, contributing to engagement processes can be difficult for participants if unnecessarily complex and technical language is used.

The language of water management is not always well understood by Indigenous people. Water sector language can be highly technical and results in the alienation of Indigenous knowledge and values. Conversely, cultural values of water are often poorly understood by water managers. (Jackson 2015 in Moggridge and Thompson 2021, p. 7)

First Nations groups are somehow expected to understand complex legal documents. We're not scholars, it's all practical. (Barkindji Maraura Elders Environment Team Limited pers. comm., 27 June 2023)

We also heard concerns about consultation on sustainable diversion limit adjustment mechanism (SDLAM) projects. For example, the Millewa Mallee Aboriginal Corporation expressed concern about a cancelled SDLAM project in Victoria and the way this was communicated:

The Murray Floodplain Program by the Victorian Government was amazing before it was scrapped. The whole ecosystem came back to life and it was restored into a living cultural area. We were never told why it was scrapped. (pers. comm., 27 June 2023)

Related to the issue of meaningful engagement is the way knowledges of First Nations people are recognised and valued in Basin water management. The Basin Plan has a commitment to using ‘best available knowledge’ in water resource management (chapter 6), which includes the knowledge of Aboriginal and Torres Strait Islander people. A number of participants commented that there is scope for Basin governments to better draw on First Nations peoples’ knowledges and understanding of the river systems and natural resource management (box 5.2).

While Basin governments have improved how they engage with First Nations people in the Murray–Darling Basin over the last 5 years, there is scope for Basin governments to:

- be more accountable for the outcomes of First Nations engagement processes
- strengthen the role of First Nations people in Basin water management (including in key decision-making processes)
- demonstrate their commitment to the priority reforms in the National Agreement on Closing the Gap.

The capacity of First Nations to engage in key processes is being stretched

There is a significant and growing pull on Aboriginal and Torres Strait Islander groups and individuals to participate in government processes about the Basin. Participants said that the capacity of Aboriginal and Torres Strait Islander organisations to attend meetings, sit on working groups and write submissions does not match the demands being put on them.

It is imperative that governments ... listen to and learn from the ways Indigenous populations wish to manage water ... and recognise that the security of long-term indigenous water management may require some form of support to ensure the governance mechanisms around indigenous water use remain healthy and vibrant. (National Parks Association of NSW, sub. 41, p. 8)

Deep participation by First Nations in regulatory decision making that affects their Country requires resourcing that will facilitate and scaffolds such participation. (Environmental Defenders Office, sub. 91, p. 30)

One of the principles of good water governance (chapter 1) is providing support to groups that are less represented to engage in decision-making processes. For example, the Organisation for Economic Co-operation and Development Principles on Water Governance highlight the importance of ‘paying special attention to under-represented categories such as youth, the poor, women, Indigenous people’ and ‘encouraging the capacity development of relevant stakeholders’ (OECD 2015, p. 12).

And as noted earlier, the National Agreement on Closing the Gap commits governments to ‘building and strengthening structures that empower Aboriginal and Torres Strait Islander people to *share* decision-making authority with governments’ (Priority Reform 1). Policy partnerships – partnerships created for the purpose of working on discrete policy areas – are a key mechanism identified in the Agreement to help achieve this. Such partnerships will require investment by governments and enactment of power sharing arrangements if decisions are to be made jointly with Aboriginal people (Productivity Commission 2023, p. 3).

Governments seeking to engage with Aboriginal and Torres Strait Islander people in the Basin have relied heavily on MLDRIN and NBAN. However, NBAN has ceased operating. While MLDRIN has continued to actively engage in consultation processes and has made submissions to several reviews, some participants told the Commission that MLDRIN no longer has broad support by all First Nations. Basin governments have started to shift their Basin Plan (and other) engagement practices to focus more on individual Nations.

Outside the funding provided to these two bodies, government support to empower First Nations people to participate in Basin Plan activities is ad hoc. Inquiry participants called on governments to do more to strengthen the capacity of First Nations organisations to engage in key processes:

Experience shows that community consultation and engagement can be improved by resourcing local Aboriginal community-controlled organisations (ACCOs) to engage their own independent water researchers and advisors ... (Dharriwaa Elders Group, sub. 86, p. 11)

The MDBA needs to establish funded partnership arrangements directly with Nations as well as with their preferred peak bodies, such as MLDRIN and NBAN. Basin Nations and their peak bodies need to be set up for genuine and sustained success in working with dominant settler state agencies, including ongoing, sustainable investment that is commensurate with Nation-determined functions. (MLDRIN, sub. 92, p. 24)

What more can be done?

The Commission sought to identify practical and cost-effective actions that Basin governments could take to:

- better achieve First Nations people's objectives and Basin Plan outcomes.
- demonstrate their commitment to the priority reforms of the National Agreement on Closing the Gap.

Greater accountability on Basin states to incorporate the values and objectives of First Nation's people in water resource plans

There is little accountability on Basin states to meaningfully consider and address the objectives of Aboriginal and Torres Strait Islander people (and their desired outcomes for water management) in making WRPs. This is at odds with governments' commitments to share decision-making and work in formal partnerships with Aboriginal and Torres Strait Islander people under the National Agreement on Closing the Gap.

Basin governments should be required to publicly report on how WRPs deliver on the objectives of First Nations people, and publicly respond to the concerns and issues raised by First Nations groups as part of the WRP assessment process. While all Basin states except NSW now have their WRPs in place (chapter 4), these plans will be amended over time, and Basin states should be accountable and transparent about how Aboriginal and Torres Strait Islander people's views are considered as part of the WRP amendment process.

Accountability on Basin governments to ensure the objectives of First Nations people are delivered, would be further strengthened by embedding a requirement in the Basin Plan that WRPs incorporate the values and interests of First Nations people in water management.

Public reporting on how governments engage with Aboriginal and Torres Strait Islander people on Basin Plan matters

There is no comprehensive reporting on whether and how Basin governments engage with Aboriginal and Torres Strait Islander people on the implementation of the Basin Plan, or how insights and views shared by First Nations participants were considered in Basin Plan water management processes and decisions.

This limits any assessment of the scope, effectiveness and outcome of governments' efforts on engagement with Aboriginal and Torres Strait Islander people. Without public reporting, government accountability on engagement with First Nations people on Basin Plan implementation is less than it should be.

Better monitoring and reporting of how governments engage with Aboriginal and Torres Strait Islander people on Basin Plan decision making and implementation activities would:

- assist in holding Basin governments to account with respect to how they engage and share decision-making with First Nations people on water resource plans, environmental watering and other aspects of Basin Plan policy and program development.
- highlight gaps in engagement processes and opportunities for collaboration and streamlining
- allow for learnings to be shared and engagement processes to be refined and improved.

The MDBA – in partnership with Aboriginal and Torres Strait Islander people – should develop a framework for monitoring how governments engage with Aboriginal and Torres Strait Islander people on Basin Plan matters. This framework should identify:

- What should be monitored and reported on (for example, what information or data could be used to measure the quantity, quality and/or effectiveness of engagement practices).
- How monitoring and reporting will be undertaken (including processes for ensuring the veracity of reported information). This could include collecting information on what Basin state agencies heard in consultations with First Nations people and their response to the issues raised.
- How engagement outcomes will be documented and published.

The framework should be developed and implemented ahead of the upcoming Basin Plan Evaluation and Basin Plan Review, and the information that is collected should be published by the MDBA on an annual basis.

Invest in partnerships and the capacity of First Nations to have enhanced roles in decision-making

Policy and place-based partnerships for shared decision-making

The commitment by Basin governments to a fundamentally new way of developing and implementing policies and programs that impact on the lives of Aboriginal and Torres Strait Islander people has direct implications for how the Basin Plan is to be implemented, evaluated and changed over time.

Formal partnership arrangements between Aboriginal and Torres Strait Islander people and governments at all levels is one aspect of the National Agreement commitments. There is considerable scope for (and potential benefit from) establishing genuine partnership arrangements between Basin governments and Aboriginal and Torres Strait Islander people on water management and water policy matters, including to deliver environmental water in ways that also achieve cultural benefits. As one participant said:

There should be more partnership programs involving Aboriginal water managers and rangers, such as the Nimmie-Caira project, which is training traditional owners in management of watered sites. (sub. 39, p. 3)

As the National Agreement makes clear, 'adequate funding is needed to support Aboriginal and Torres Strait Islander parties to be partners with governments in formal partnerships'. In addition, it is important that Basin governments recognise that First Nations' knowledge about water management is the cultural and intellectual property of Aboriginal and Torres Strait Islander people, and respect relevant protocols and permissions around use of this knowledge.

A new body for First Nations people in the Basin?

Governments need to recognise the value and importance of engaging with different Basin Nations, and that peak or representative bodies do not necessarily speak (nor do they intend to speak) on behalf of all the diverse views of First Nations people. However, a collective body or group can be a valuable additional model for individuals and groups to communicate concerns, advocate for change, and respond to the ideas and proposals of others. For governments, engaging with such bodies is established practice with various practical benefits.

The Dharriwaa Elders Group highlighted the potential value of:

... a body with the specific role of overseeing Aboriginal interests and involvement in water management' (sub 86, p 12).

Given recent developments with NBAN and MLDRIN, there may be value in establishing a new body to represent First Nations' interests in Murray–Darling Basin Plan decision making. The expertise and knowledges of First Nations people throughout the Basin, including members of existing bodies such as the Committee on Aboriginal and Torres Strait Islander Water Interests and the Basin Community Committee, could be used to help establish the body. That said, any decision about representation should be made by First Nations people.

The MDBA – in partnership with Aboriginal and Torres Strait Islander people – should consider the merits of establishing a new body for First Nations people in the Basin, including the representation and expertise of members. The Basin Plan Review is an opportunity to consider whether and how best to embed the roles of specific organisations in the Basin Plan, given existing references to MLDRIN and NBAN¹⁶.

Early planning of First Nations engagement activities is key

The upcoming Basin Plan Evaluation and Basin Plan Review are also opportunities for advancing the interests and objectives of First Nations people in the Murray–Darling Basin. The MDBA has said its engagement activities will be guided by the Akwé: Kon Guidelines, to ensure Aboriginal and Torres Strait Islander people are engaged in a respectful manner and with free, prior and informed consent (box 5.4). However, while a framework for the Basin Plan Evaluation has been developed, it does not include a plan for First Nations engagement or articulate how First Nations objectives and outcomes will be evaluated (MDBA 2022r).

Box 5.4 – Free, Prior and Informed Consent is central to effective engagement

In 2007, the United Nations General Assembly adopted the United Declaration on the Rights of Indigenous Peoples, recognising their rights and making specific mention of Free, Prior and Informed Consent (FPIC) as a pre-requisite for any activity that affects their ancestral lands, territories and natural resources.

FPIC is a principle protected by international human rights standards that state, 'all peoples have the right to self-determination' and – linked to the right to self-determination – 'all peoples have the right to freely pursue their economic, social and cultural development'.

Backing FPIC are the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the Convention on Biological Diversity and the International Labour Organization Convention 169 that recognises Indigenous peoples' right to self-determination within a nation-state. ... United Nations (2007)

¹⁶ s. 10.52(2)(b)

Box 5.4 – Free, Prior and Informed Consent is central to effective engagement

- The Akwé: Kon Guidelines are voluntary and designed to facilitate the full involvement of Indigenous and local communities in the assessment of the cultural, environmental and social impact of proposed developments on sacred sites and on lands and waters they have traditionally occupied. The guidelines, which represent best practice, were endorsed by the Parties to the Convention, including Australia, in 2004.

To foster meaningful and effective engagement with First Nations people in these forthcoming processes, the MDBA – in partnership with Aboriginal and Torres Strait Islander people – should plan how, when and where it will engage with First Nations people and publicise these plans well in advance. In doing so, the MDBA should articulate the desired outcomes from engagement and ensure all Basin Nations across the Basin are provided genuine opportunities to participate.



Interim recommendation 5.1

Strengthen the roles of Aboriginal and Torres Strait Islander people in the Basin Plan

In line with the priority reforms committed to under the National Agreement on Closing the Gap, Basin state and territory governments should:

- publish the input and advice received from Aboriginal and Torres Strait Islander people and organisations on draft water resource plans
- publicly report on how the advice is considered, actioned and reflected in finalised water resource plans.

In addition, the Murray–Darling Basin Authority should:

- in partnership with Aboriginal and Torres Strait Islander people, develop a framework for monitoring and reporting on how Basin governments engage with Aboriginal and Torres Strait Islander people on Basin Plan matters. This should be in place before the 2025 evaluation of the Basin Plan
- annually report on Aboriginal and Torres Strait Islander engagement activities undertaken by Basin governments that relate to water management in the Murray–Darling Basin
- consider – in partnership with Aboriginal and Torres Strait Islander people – the merits of establishing a new Basin-wide body to represent Aboriginal and Torres Strait Islander people’s water interests in Murray–Darling Basin Plan decision-making.

All Basin governments should:

- actively pursue opportunities to work in formal partnership with Aboriginal and Torres Strait Islander people on the implementation of, and shared decision-making about, the Basin Plan and provide funding and capacity strengthening support to these partnerships
- work in partnership to develop, then make public, their Aboriginal and Torres Strait Islander engagement intentions early, including for the upcoming 2025 Basin Plan Evaluation and 2026 Basin Plan Review.

5.4 First Nations ownership of water in the Basin

Background

Water ownership is important for realising First Nations people's cultural, social, economic, spiritual and environmental values and interests. The Basin Plan does not define 'cultural flows' but recognises that the following definition is used by NBAN and MLDRIN:

Water entitlements that are legally and beneficially owned by the Indigenous Nations and are of sufficient and adequate quantity to improve the spiritual, cultural, environmental, social and economic conditions of those Indigenous Nations. This is our inherent right. (Australian Government 2012a, p. 174)

The Plan also notes that 'provision of cultural flows will benefit Indigenous people in improving health, wellbeing and provides empowerment to be able to care for their country and undertake cultural activities' (Australian Government 2012a, p. 174).

First Nations ownership of water is a national issue, and there is a growing awareness on the part of Australian governments about the importance of providing cultural flows, including in the Basin. Efforts to increase ownership have been made, particularly in Victoria and beyond the Basin. However, Aboriginal and Torres Strait Islander people's ownership of water remains very low. While First Nations people represent about 5% of the Basin population, they hold less than 1% of available Basin water holdings (MLDRIN and NBAN 2021, pp. 13–15).

MLDRIN expressed concern about the progress made on cultural flows:

No Basin Nation currently holds a cultural flow entitlement nor is there a legal mechanism in place (federal or state based) that enables a cultural flow entitlement to be applied for, let alone attained, by any Nation. Any future iterations of the Basin Plan and WRPs must push all levels of government to invest time, resources, and effort to make the policy and legal reforms needed to make cultural flows possible. (sub. 92, p. 16)

Other participants noted their support for Aboriginal people holding water entitlements for cultural purposes, to support their economic and social participation in, and contribution to, regional communities. This aligns with the national framework for cultural flows, developed as part of the National Cultural Flows research project.

The National Agreement on Closing the Gap includes new outcome areas, targets and indicators that support the cultural wellbeing of Aboriginal and Torres Strait Islander people in several areas, including land and waters. There is a provisional target for First Nations ownership of national water entitlements in inland waters of 3%. The National Native Title Council has indicated that this target is expected to be considered and endorsed by the Joint Council for Closing the Gap in late 2023 (NNTC 2023).

Little progress made on the Aboriginal Water Entitlements Program

The Aboriginal Water Entitlements Program (AWEP) – while not part of the Basin Plan – aims to support Murray–Darling Basin First Nations communities' investment in cultural and economic water entitlements and associated water planning activities.

The AWEP commenced in 2018 with \$40 million to support Basin First Nations to purchase cultural and economic water entitlements. However, none of the money has been spent on purchasing water and since 2018 responsibility for the program has been transferred between three Australian Government agencies. Responsibility for the program now sits with DCCEEW.

As highlighted by a number of inquiry participants, the \$40 million will buy less water today than in 2018. First Nations people have missed out on the cultural and economic benefits of water ownership¹⁷. The Environmental Defenders Office, for example, said:

The Commonwealth Government made a commitment to return \$40m worth of water rights to First Nations across the Basin in 2018 and yet this is still to be achieved. Meanwhile, the price of water has increased such that the real value of the proposed acquisition has materially decreased. (sub. 91, p. 30)

DCCEEW has said that while the program has had implementation challenges, the ‘Australian Government remains fully committed to delivering the \$40 million and the full entire amount remains available’ (sub. 77, p. 26). The department is currently working with First Nations people on governance models to deliver the program (there has been extensive engagement on this issue in the past).

The mechanism for the First Nations water holder arrangement is yet to be determined as First Nations peoples need to be engaged about how models would work, and how these can support the principles of self-determination ... The department will work with the Committee for Aboriginal and Torres Strait Islander Water Interests, the Coalition of Peaks, the Indigenous Land and Sea Corporation, National Indigenous Australians Agency and other stakeholders to engage with First Nation people. This engagement will help to develop a fit-for-purpose model for First Nation people to own, access and manage water in Australia. (sub. 77, p. 26)

While the Australian Government aims to start purchasing water entitlements in 2023-24, an AWEP implementation timeline has not been published. Publicly identifying program milestones and timeframes would provide participants with greater certainty about when and how the AWEP will be implemented across the Basin.



Interim finding 5.1

Limited progress made on the Aboriginal Water Entitlements Program

The Australian Government has made little progress on the Aboriginal Water Entitlements Program since the program was announced in 2018. Given the increase in water entitlement prices over that period, the \$40 million program budget will buy less water today than it would have in 2018.

An implementation timeline published by the Australian Government Department of Climate Change, Energy, the Environment and Water would provide participants with greater certainty about when and how the program will be implemented across the Basin.

¹⁷ River Lakes Coorong Action Group (sub. 15, p. 4); Anne Jensen (sub. 39, p. 3); Environmental Defenders Office (sub. 91, p. 29); NSW Aboriginal Land Council (sub. 101, p. 10).

6. Bringing new knowledge into the Basin Plan framework

Key points

- ✳ **An adaptive management approach to managing Murray–Darling Basin water resources, as established under the Murray–Darling Basin Plan (the Basin Plan), requires relevant knowledge to be continually improved and the management of the Basin water resources linked to this knowledge.**
 - The required regular reviews and revisions of the water management framework and plans establish opportunities to apply new knowledge to Basin water management.
 - However, there is evidence that the water management framework is not updated as fully as it should be to reflect best available knowledge.
- ✳ **Climate change and its impacts must be considered in the 2026 review of the Plan. The Murray–Darling Basin Authority advises that it will do so.**
 - The Commission is considering whether the *Water Act 2007* (Cth) should be amended to ensure climate change science is appropriately considered when amending, reviewing and implementing the Basin Plan – and invites participants to comment on how climate science can be better embedded into the Basin Plan.
 - The framework for evaluating the Basin Plan and water resource plans should include indicators and targets specifically related to the resilience of water-dependent ecosystems to climate change.
- ✳ **Some decisions made about the Basin Plan and ongoing management of Basin water resources lack transparency and it is unclear what information is used to inform those decisions. This lack of transparency affects trust in the Basin Plan, government agencies responsible for implementing it, and the underpinning knowledge base.**
 - Transparency should be improved through the publication of all data, modelling outcomes and scientific and socio-economic research used in decisions.
- ✳ **More coordination of knowledge generation, and sharing among researchers and policy makers, would improve the efficiency of research investment and better support water management decisions.**
 - Greater consistency in climate change modelling approaches and application is a key area for improvement.

Achieving the outcomes of the Murray–Darling Basin Plan (the Basin Plan) depends on the Plan and supporting management activities being informed by a sound knowledge base. The *Water Act 2007* (Cth) requires the Basin Plan be developed ‘on the basis of the best available scientific knowledge and socio-economic analysis’.¹ The Basin Plan requires the best available knowledge, or information, is to be used for:

- developing water resource plans
- the application of environmental water
- prioritising assets for environmental watering
- the assessment of river inflows to manage critical human water needs
- monitoring and evaluation.²

Establishing a sustainable long-term adaptive management framework for Basin water resources is one of the objectives of the Basin Plan, which the Plan defines to include ‘linking knowledge (including local knowledge), management, evaluation and feedback over a period of time [and] ... improving knowledge’.³ To this end, the Basin Plan requires various elements of the water management framework be regularly reviewed or evaluated. Environmental watering plans, long-term watering plans, water quality targets and socio-economic impacts of the Basin Plan are required to be reviewed at least every five years.

This chapter assesses the extent to which the Basin Plan framework provides opportunities for adaptive management and how new knowledge can be further embedded in the Basin Plan framework (section 6.1). The way knowledge is generated and applied in practice is discussed in section 6.2.

6.1 The Basin Plan framework has an adaptive management approach

An adaptive management approach to managing Basin water resources requires knowledge relevant to the Plan be continually improved and the management of the Basin water resources to be linked with this knowledge. Relevant knowledge includes results of scientific research, First Nations’ knowledges, community insights and experience, monitoring data and the findings of reviews and evaluations (including reviews of socio-economic conditions).

Since the development of the Basin Plan, the relevant knowledge base has improved considerably, particularly in the areas of climate change and ecological water requirements. The question is how well does the management framework established under the Basin Plan allow for newly generated knowledge to be incorporated into Basin water management activities?

While a number of participants commented on the importance of having access to the most up-to-date evidence, some were of the view that the Basin Plan is not as adaptive as it could be and/or updated information is not incorporated in the Plan in a timely way (box 6. 1). Improved accountability could help encourage water agencies to apply more effective adaptive management processes (chapter 9).

¹ *Water Act 2007* (Cth), section 21 (4).

² Sections 4.03, 8.53, 8.56, 8.62, 10.49, 11.03, 13.04.

³ Chapter 1, Part 3.

Box 6.1 – New knowledge and the Basin Plan: what participants said ...

Participants commented on the importance of relying on the best available knowledge.

Renmark Irrigation Trust

The ‘best available science’ will be important in the ongoing management of the available water resources in order to maximise the health of our riverine ecosystem and to maintain the social, economic, environmental balance for the long term. (sub. 24, p. 7)

Temba Orchards

We must be making our decisions based on evidence and best available science, as is demanded by the Water Act. (sub. 87, p. 1)

Environmental Defenders Office

Government decision-making with respect to water resources must be based on demonstrated best available scientific knowledge. This must necessarily incorporate climate change projections. The scientific information underpinning decision-making must be accessible, intelligible and peer reviewed. (sub. 91, p. 28)

Murray Irrigation

The expectation that the Plan will commit to the best available science is an important principle as communities have a right to expect that threshold levels of take and water quality targets are based upon a sound understanding of the biophysical processes. (sub. 65, p. 37)

But some questioned how well new knowledge is used.

Murray Valley Private Diverters

The Basin Plan is not adaptive and politicians and the MDBA [Murray–Darling Basin Authority] have not enabled meaningful improvements based on updated information to be incorporated. (sub 95, p. 20)

National Farmers’ Federation

The implementation of the Plan does not adequately reflect a commitment to the best available scientific knowledge. Insufficient evaluation and a lack of adjustments based on scientific findings indicate a failure to incorporate scientific knowledge effectively. (sub. 46, p. 20)

Institute for Water Futures and Institute for Climate, Energy and Disaster Solutions

The requirement for commitment to the best available scientific knowledge is broadly commendable, and the Murray–Darling Basin Authority ... has invested in significant programs, such as the Water and Environment Research Program ... to ensure relevant and accessible science. However, it is important to review the kind of science that is preferred and privileged in this context, and determine whether more innovative and diverse approaches to ‘best available scientific knowledge’ are needed. (sub. 35, p. 7)

The first comprehensive Basin Plan review is in 2026

The first full review of the Basin Plan – in 2026 – will be 14 years after the Basin Plan was put in place. The long time between initial drafting and review means new knowledge and ideas are not integrated at this level of the management framework.

Some parts of the Basin Plan are out of date and not considered adequate in today's context. Climate change and the First Nations' interests are two such areas and the MDBA has identified these areas as key themes of focus for the 2026 review of the Basin Plan (MDBA 2023j; Wyborn et al. 2023). The need to better reflect the current state of understanding of climate change and adequately account for the associated risks is discussed in this chapter. First Nations' interests and knowledge, and how Basin Plan implementation can put into effect current best practice and government commitments to First Nations engagement, are discussed in chapter 5.

Amendments to the Basin Plan can be made before the scheduled 10 yearly review.⁴ Under the Water Act, the MDBA may, after conducting prescribed consultation, prepare an amendment to the Basin Plan for consideration by the Minister. The requirements for proposing an amendment are sufficient to discourage frequent use which may undermine the certainty of the plan, and the MDBA does not have processes in place to systematically identify circumstances that would warrant initiating an amendment to the Basin Plan. And, to this point, there does not appear to have been a situation requiring the MDBA to use their powers in this area.

While reviewing the Basin Plan earlier in its life span may have meant these shortcomings could have been remedied earlier, more generally, increasing the frequency of reviews would reduce certainty provided by the Plan, which in turn could undermine trust. Full reviews of the Basin Plan are also expensive⁵ and time consuming for all governments involved and the wider community. The nature of the content of the Basin Plan and the slow dynamic of developments in this space mean that more frequent updates may not be necessary.

There are other opportunities for adaptive management

Water resource plans

Other instruments in the Basin management framework also allow for adaptive management. Water resource plans (WRPs), which establish how Basin states will allocate and manage water in the river system at a local level (chapter 4), must reflect best available information to be accredited. And as new information becomes available, especially information relevant to a local area, there is scope to revise WRPs through a re-accreditation process. Advances in, and updates to, hydrological modelling should be reflected in WRPs.

However, as discussed in chapter 4, the process to have initial WRPs accredited has been onerous for Basin states and the MDBA. While no WRPs have been re-accredited as at July 2023, the expectation is that, unless there are changes to the process, re-accreditation will be similarly difficult. The ACT Government, for example, said:

The WRP is a static policy document of the Australian Government. Without changes to its structure, and improved administrative processes for amendment and accreditation, the WRP will become outdated and serve to limit progressive policy implementation. (sub. 85, response to information request, p. 5)

⁴ The Basin Plan was amended in 2018 following the Northern Basin Review and in 2021 to establish the role of the Inspector-General of Water Compliance. Further amendments are currently before Parliament to extend the timeframe for full implementation of the Basin Plan (chapter 1).

⁵ The MDBA was allocated \$103.7 million in the 2023-24 budget for the 2026 review of the Basin Plan, with updated science to enable the Basin to adapt to the impacts of climate change (Australian Government 2023a).

While WRPs need to be sufficiently stable and enduring to provide certainty and trust in water management arrangements, an overly burdensome amendment and re-accreditation process could act as a disincentive to updating WRPs with new information. Chapter 4 (section 4.2) discusses this issue further.

Environmental water planning and management

Adaptive management is particularly important for environmental watering activities as much remains to be learnt about the ecology of the Basin. Implementing new knowledge as it comes to light enables the best use of environmental water to achieve optimal environmental outcomes (MDBA 2021i; Thurgate et al. 2019). The 2021 Review of Environmental Watering Plan⁶ identified opportunities to improve implementation of environmental watering without legislative change, including addressing knowledge gaps and continued investment in adaptive management (MDBA 2021i).

The environmental watering framework, including the environmental watering strategy, long-term watering plans and annual watering priorities, applies knowledge about environmental conditions and watering techniques to environmental water management. These documents are reviewed and updated either annually or every five years, but can also be revised earlier if required.

The Basin-wide environmental watering strategy was reviewed, revised and updated in 2019 (five years after the initial strategy was drafted) to reflect changes in policy, new scientific knowledge and updated information about the condition of some Basin ecosystems (MDBA 2020d). At the time of the review, the MDBA noted the need for further updates earlier than the next five-year review to address issues such as climate change and to reflect the findings of the 2020 Basin Plan Evaluation. The planned update for 2022, however, was not conducted (chapter 3). As it stands, material changes to the strategy have not been made despite deficiencies and the need for updates identified. Without these updates the strategy does not support maximising environmental benefits from environmental watering as required under the Basin Plan.

The Commonwealth Environmental Water Holder (CEWH) states that its water use is adaptively managed as conditions unfold, using different scenarios and responding to water availability. They also monitor results and feed findings back into future planning activities (CEWH, sub. 69). The Inspector-General of Water Compliance (2022d, pp. 13, 18) found that CEWH ‘relies strongly on productive working relationships with Basin State delivery partners’ and has ‘a positive culture of continuous improvement’ by responding to the findings of reviews.

State environmental water holders also have adaptive management approaches to planning and delivering environmental water flows to respond to seasonal weather conditions, water availability and environmental conditions. Watering plans are updated annually and use scenarios to plan for actions under different conditions (NSW DPE 2019; SA DEW 2023a; VEWH 2019a). Water delivery activities by river operators throughout the Basin are managed daily based on operating rules, science, monitoring and modelling (MDBA 2023f).

Summing up

Successfully adopting an adaptive management approach to managing Basin water resources requires both generating advances in knowledge as well as timely opportunities to update the water management framework to apply that knowledge. Different elements of the Basin Plan framework can be updated at varying timeframes.

⁶ The Environmental Watering Plan is chapter 8 of the Basin Plan.

There is, however, evidence that not all aspects of the water management framework are satisfactorily updated through the review processes to reflect the best available knowledge. One example of this is the Basin-wide environmental watering strategy.

Further accounting for climate change in the Basin Plan

The climate in the Murray–Darling Basin is changing and is expected to become hotter and drier in the future, with more frequent and severe droughts and floods, and greater climate variability (box 6.2). The Basin Plan was designed to rebalance the consumptive and environmental use of water and enable the Basin to better adapt to a changing climate. Whether it does so successfully is a key measure of the Plan's success.

A number of participants argued that the Basin Plan already accounts for climate change. For example, some emphasised that water allocations are adjusted each year to respond to changes in water availability (Renmark Irrigation Trust, sub. 24, p. 5). Others said a significant and sufficient amount of water had already been recovered for the environment – and either more was not needed, or it would be unfair for farmers to bear a greater share of the risk of climate change (for example, Murray Irrigation Limited, sub. 65, p. 24).

Box 6.2 – Climate change in the Murray–Darling Basin

Between 1910 and 2019, the Murray–Darling Basin experienced an average temperature increase of approximately 1.4°C, and there has been an increase in the incidence of extreme daily heat events (BOM 2020). The average annual inflows to the River Murray over the last two decades (2000–2020) is 39% less than that from 1900 to 2000 (MDBA 2020h, p. 21). However, the 2020–2022 period was significantly wetter with widespread and prolonged flooding, particularly in the second half of 2022. And since 1900 there has been highly variable rainfall from year to year and from decade to decade posing significant challenges for water management in the Basin (Bureau of Meteorology, sub. 17, p. 4).

Studies suggest a future characterised by hotter and drier conditions in the Basin, with increased frequency and severity of floods and droughts (BOM 2020; Prosser, Chiew and Stafford Smith 2021; Zhang et al. 2020). The median projection for 2046–2075, relative to 1981–2010, for a high global warming scenario is a 20% decline in streamflow across the Basin (Chiew et al. 2022).

Climate change affects water resource availability and management in the Basin and environmental outcomes. There are also concerns that climate change poses a significant and disproportionate burden on First Nations communities, their Country, and cultural values (Wensing, Taylor and Cannon 2023, p. 12). Chapter 5 discusses First Nations' values, knowledge and their involvement in Basin Plan implementation.

Some argued that the Basin Plan was not well equipped to respond to climate change, with many focusing on whether it allows enough water to be recovered for the environment. The Wentworth Group of Concerned Scientists, for example, said the current water recovery target does not take into account climate change or its impacts on water availability and the condition of wetlands (sub. 81, p. 2). The Commissioner for the Murray River argued that without more water for the environment, climate change is likely to lead to irreversible ecological degradation (sub. 47, p. 14). And the Healthy Rivers Lower Murray Group said:

A major re-set and re-commitment is needed to get the Basin Plan back on track to achieve a sustainable level of take. This needs to happen before the next phase of incorporating the impacts of climate change on future water availability, predicted to reduce by 30-50% in the next few decades. (sub. 37, p. 1)

Others said climate change needed to be better considered when recovering water for the environment. The River Lakes and Coorong Action Group, for example, said:

So far the Plan has not delivered sufficient water for ecosystem health. ... There needs to be recognition that environmental water, or water for river health, is the most important water, maintaining a sustainable source for every user. ... The impact of climate change must be considered and responsibility taken for not including allowances for a possible 30-40% reduction in inflows over the Basin in the original Plan. ... Climate change must be accounted for with flexibility in the volume of environmental water needed to sustain a healthy system. All consumers will have to manage with reduced allocations to maintain river health. (sub. 15, pp. 2–6)

Reporting on the environmental flow requirements in the changing climatic context, the Wentworth Group of Concerned Scientists said:

With changes in climate and declining water availability, it may not be possible to achieve every water requirement in the Basin. Governments need to be transparent about what we are trying to achieve, what we are failing to protect, and how we manage the consequences. (WGCS 2023, p. 1)

The variability of climate change can pose challenges to decision making about environmental watering. The CEWH, for example, said:

Under climate change, a range of threats are likely to arise more frequently. This will put pressure on environmental water managers like the CEWH to address issues and emergencies beyond what was contemplated at the time of the Basin Plan's creation, while also constraining its ability to do so. (sub. 69, p. 2)

The MDBA recognises the importance of assessing climate risks to the expected environmental outcomes and water management strategies (MDBA 2020d, 2023h). It has also identified 'adapting to climate challenges and increasing resilience' as one of the six priority areas for the future and has made recommendations and commitments to enhancing climate resilience and adaptation in the Basin (MDBA 2020h, p. 118). The MDBA, in its 2020 evaluation of the Basin Plan, said:

While there are mechanisms embedded within the Basin Plan and water resource plans to respond to the implications of climate change, these instruments need to be continuously monitored and adapted to keep pace with the challenges of climate change. (MDBA 2020h, p. 120)

Climate change will be a focus for the next Basin Plan Review. The MDBA's 'Roadmap to the 2026 Basin Plan Review' notes that its:

... understanding of the impacts of climate change on the management and resilience of river environments and water users has improved significantly since the Basin Plan was developed and up to date climate data and science needs to be incorporated in the Basin Plan's strategies and activities. The Review will explore how best to plan for an uncertain future, and what actions we can take to help the Basin adapt to a changing climate. (MDBA 2023j, p. 11)

In October 2022, the Government announced \$22 million to update science to ensure the impacts of climate change are accounted for in managing Basin water resources (DCCEE 2022d).

Although the importance of climate change to the future of the Basin is now widely recognised, as discussed below, the Commission considers that climate change should be more explicitly embedded in the Basin Plan and resilience to climate change should be more thoroughly measured and monitored.

It should, however, be noted that the Basin Plan is an adaptation strategy, with the instrument confined to water management, and is not designed to address *all* impacts of climate change. Climate change will affect

communities, agriculture, business and infrastructure in ways that are outside the scope of the Plan to manage. This is reflected in definitions of climate change resilience that refer to the capacity of communities, economies and environmental systems to cope (for example, definitions from the Intergovernmental Panel on Climate Change and the Australian Government in its National Climate Resilience and Adaptation Strategy 2021–2025). The MDBA recognised that:

There are many actions that will increase the Basin’s resilience to climate change but are beyond the remit of the Authority and the Basin Plan, and indeed the remit of water management alone. (sub. 61, p. 2)

Policies and programs related to climate change resilience more broadly include Australia’s National Climate Resilience and Adaptation Strategy 2021–2025, and the national climate risk assessment and national adaptation plan currently being developed by the Australian Government (DCCEEW 2023a).

Climate change science – including climate projections and climate change impacts – should be explicitly considered in the Plan

The Basin Plan was intended to help the Basin adapt to climate change and a number of its features are focused specifically on climate change (box 6.3). However, neither the Water Act nor the Basin Plan explicitly state that climate change science, including projections, must be considered when making, reviewing or amending the Plan, nor do they describe how this science should otherwise be integrated into Basin water management arrangements.

Box 6.3 References to climate change in the Water Act and Basin Plan

The Basin Plan must be prepared giving effect to Australia’s obligations under a variety of international environmental agreements, including the United Nations Framework Convention on Climate Change and the Ramsar Convention (s21 of the Water Act).

The Basin Plan must identify ‘the risks to the condition, or continued availability, of the Basin water resources’, including risks to the availability of Basin water resources that arise from the effects of climate change (s22 of the Water Act).

The MDBA and the Minister for Water, in exercising certain powers and performing certain functions – which include preparing, reviewing and amending the Basin Plan – must ‘act on the basis of the best available scientific knowledge and socio-economic analysis’ (s21 (4) of the Water Act).

The Plan also sets out objectives and outcomes for the environment, which include protecting and restoring water-dependent ecosystems and ensuring they are resilient to climate change and other risks and threats (s5.03). Related targets are set out in Schedule 7.

There is some disagreement about whether future climate scenarios were adequately considered in the making and implementation of the Basin Plan, particularly in setting the sustainable level of take. The South Australian Royal Commission, for example, was highly critical of the MDBA for not considering projections and said it ignored the obviously sound advice they were given by the CSIRO in 2009 to incorporate climate change projections into its modelling for the determination of the Ecologically Sustainable Level of Take (ESLT) and the Basin-wide sustainable diversion limit (SDL). The MDBA disagreed with these findings, arguing that when the Plan was developed there was scientific uncertainty about the impact of climate

change on water availability and it was difficult to anticipate exactly how global changes to the climate would play out at smaller scales such as across the Murray–Darling Basin (MDBA 2019a, pp. 13, 16).

There is much less disagreement about whether projections *should* be considered. There is a growing recognition that climate projections are an important part of the knowledge that needs to be considered in the design and implementation of the Plan. Several participants argued that climate modelling and projections should be considered in the 2026 Basin Plan Review (Beasley, sub. 47, p. 15; Beer, sub. 38, p. 19; Central NSW Joint Organisation, sub. 31, p. 8; Lifeblood Alliance, sub. 52, p. 10; Peerson et al., sub. 35, p. 4).

While the MDBA has said it will explore ways to better integrate climate change in its upcoming review of the Basin Plan, amending the Water Act to make this clear may give climate change science, including climate projections and climate change impacts, greater emphasis and provide a stronger and more enduring mechanism for embedding climate science into the Basin Plan. This might ensure, for example, that climate change scenarios are considered when assessing the impacts of climate change on water resource availability and determining the ESLT.

One option is to amend section 21(4)(b) of the Water Act, which states that the MDBA and the Minister must, in exercising certain powers and performing certain functions, ‘act on the basis of the best available scientific knowledge and socio-economic analysis’. The Commission is interested in participants’ views about whether the Water Act should be amended to make clear and explicit that the best available science about the impact of climate change on water availability, including climate projections, is part of the scientific knowledge on which the Plan should be based and reviewed. The Commission is also interested in hearing about any other ways to ensure the Plan is based on the best available climate science.



Information request 6.1

Embedding climate change science into the Basin Plan framework

The Commission is considering whether the *Water Act 2007* (Cth) places sufficient emphasis on the application of climate change science to the development and implementation of the Basin Plan. For example, should section 21 of the Water Act, which is about the general basis on which the Plan is made and updated, be amended to make clear and explicit that the best available science about the impact of climate change on water availability, including climate projections, is part of the scientific knowledge on which the Plan should be based?

Climate change resilience needs to be more measurable

The Basin Plan includes ‘overall environmental objectives’ for the water-dependent ecosystems of the Murray–Darling Basin – namely, to ‘protect and restore’ the ecosystems and ecosystem functions and to ensure they are ‘resilient to climate change and other risks and threats’ (s8.04). The MDBA is required to monitor and report every five years on progress against these objectives.

The Basin Plan does not specify what is meant by ‘climate change resilience’, and while targets to assess progress against these environmental objectives are set out in Schedule 7 of the Plan, they are general and aggregated, rather than specifically focused on climate change resilience, and difficult to measure. The targets relate to flow regimes; hydrologic connectivity; improvements in river, floodplain and wetland types; the condition of the Coorong and Lower Lakes and Murray Mouth; native water-dependent vegetation; native water-dependent species, including birds, fish and macroinvertebrates; and the community structure of

water-dependent ecosystems. This lack of specificity makes it difficult to understand how progress towards climate change resilience is measured and whether progress is being made at all.

The Plan also requires the MDBA to have regard to certain strategies when undertaking its functions, including strategies to improve knowledge of the impact of climate change on water requirements and water resources (s4.03). The strategies are clearly ‘high-level’ and have been criticised for being somewhat ‘minimal’ (Owens 2022, p. 23) and even ‘whimsical’ (SA Government 2019, p. 253).

The Basin Plan would be improved if there was more clarity about how objectives related to climate change are to be measured and assessed. A clear definition of climate change resilience and more detailed targets and related indicators, some tailored to specific ecosystems, would be significant improvements. This could be a challenging task, in part because of differing level of climate hazard, exposures, and adaptive capacities across the Basin. However, without some specific indicators or measures of climate change resilience, it is difficult to rigorously assess progress and make necessary changes in response. There are examples of quantitative climate change resilience measures, for instance, the Economist Intelligence Unit developed a Climate Change Resilience Index that can be compared across different locations and time periods (The Economist Intelligence Unit 2019). The index used indicators such as loss of land, crop yields, tourism and labour productivity due to extreme climatic events.



Interim recommendation 6.1

Specific measures or targets for evaluating climate change resilience

The Murray–Darling Basin Authority should set out how it evaluates whether water-dependent ecosystems are resilient to climate change, including by specifying which targets are relevant to climate change resilience and how progress against these targets is monitored. When reviewing the Basin Plan in 2026, the Murray–Darling Basin Authority should also consider whether some of this information should be integrated into the Basin Plan.

6.2 Processes for generating and using knowledge

Knowledge generation activities⁷ are undertaken by a variety of bodies, including government research institutions, universities and the private sector. These activities are funded by Australian, state and territory governments and research corporations.

Since 2018, the Australian Government has made significant investments in the generation of knowledge relevant to the Murray–Darling Basin Plan, including via the following programs.

- The MDBA manages the Murray–Darling Water and Environment Research Program (MD WERP), the Basin Condition Monitoring Program, the Sustainable Rivers Audit, the Sustainable Yields project, the Integrated River modelling uplift program and the River Reflections Conference (MDBA, sub. 61, response to information request).

⁷ By knowledge generation we mean activities that build understanding of the current state of the world, what is expected to happen and what may happen if things change. These activities include discovering new information, also collating information in new ways to enhance understanding. Knowledge can include results of scientific research, First Nations’ knowledges, community insights and experience, monitoring data and the findings of reviews and evaluations (including reviews of socio-economic conditions).

- The MDBA developed a climate workplan for 2021 to 2026 which includes filling climate change knowledge gaps and sharing information with communities, industry and Basin governments (MDBA 2023h).
- The CEWH's key science program is the Flow Monitoring, Evaluation and Research program (FLOW-MER). CEWH also undertake short-term intervention monitoring projects and monitoring programs for the Living Murray and state governments (CEWH, sub. 69).
- As part of the National Environmental Science Program, the CSIRO is developing methods for projecting hydrological metrics which will support science and modelling for national climate projections. The CSIRO is also collaborating on methods to quantify evapotranspiration (CSIRO 2020).

Basin states are also making investments.

- The NSW Government has developed a new climate data and modelling framework to inform regional water strategies (DPIE (NSW) 2020a).
- The Victorian Government updated their guidelines for assessing the impact of climate change on water availability in Victoria drawing on the findings of the first phase of the Victorian Water and Climate Initiative (Vic DEECA 2023).
- The Queensland Government is investing in seven new water modelling projects to improve their capacity to model water resources. This includes a project to improve Queensland's ability to integrate First Nations' cultural knowledge, values, and land and water management skills into scientific water modelling and management practices (Queensland DES 2023).
- In South Australia, the Healthy Coorong, Healthy Basin program includes scientific trials and investigations to fill knowledge gaps and provide a scientific evidence-base to inform management actions to improve the long-term health of the Coorong (SA DEW 2023b).
- The ACT Government commenced a project in 2022 to develop a model that incorporates climate projections to assess vulnerability of the ACT water resources (ACT Government, sub. 85, response to information request).

Greater transparency needed around how knowledge is used in decision making

Some water agencies operating in the Basin highlighted where new knowledge is used in Basin Plan processes.

- Much of the current investment in knowledge generation by the MDBA is intended to be applied to the 2025 Basin Plan Evaluation and the 2026 Basin Plan Review. Climate research will inform prioritisation of environmental assets, values and functions for targeted water management (MDBA, sub. 61).
- The CEWH draws on information, knowledge and advice from scientists, First Nations people, local communities and other government agencies to inform decisions on the delivery of water for the environment (CEWH, sub. 69).
- NSW's long term watering plans are based on Environmental Water Requirements, which is described as a much-improved knowledge base compared to the original indicators developed to inform the Basin Plan (NSW Government, sub. 43).

However, some decision-making processes lack transparency so it is unclear if and how this knowledge is used. And without clear, accessible and understandable explanations of what information is used to inform key decisions (and what other factors are considered when making decisions), decision makers are unlikely to gain the trust of the community. The NSW Government, for example, commented that:

Greater accountability and transparent use of best available science is central to the credibility of decision-making by governments and to the credibility of any reform agenda. Clear evidence supporting

how and why decisions are made is important – but equally, ensuring that this evidence is available and can be understood by customers, stakeholders, and the broader community. (sub. 43, p. 17)

A noteworthy example of a decision taken that lacked transparency was the setting of SDLs under the Basin Plan. The reasoning, modelling data and assumptions used to underpin the final SDLs were not made public in any form, accessible or otherwise. The level at which SDLs were set, and the process by which they were determined, has been an issue for the life of the plan and the evidence underpinning SDLs has been consistently questioned (Rural and Regional Affairs and Transport References Committee 2013; SA Government 2019). This lack of transparency has had wide ranging effects on community confidence in the Basin Plan, and trust in science and government agencies.

Enhanced transparency about the factors considered in decision making, and improved access to the supporting information, can have a number of positive effects: the community is assured that the best available knowledge is being considered; scientific claims can be verified; alternative or better information can be identified and shared; and it can spark constructive discussion and debate around the best course of action, potentially leading to improved outcomes.

As SDLs are such a fundamental aspect of the Basin Plan, building support for the SDLs through the 2026 review period will be essential. When SDLs are reassessed in 2026 it is critical that the MDBA publish the information that supports the SDL decisions to ensure the controversy surrounding the initial SDLs is not repeated.

One way to improve transparency, and demonstrate what information is considered by decision makers across the Basin Plan framework, is to routinely publish all data, modelling outputs and government commissioned scientific research that is used when making decisions about water management in the Basin. Ensuring the information is accessible and understandable for all interested parties is equally important.

Since 2018 there have been some improvements to the publication of information.

- The MDBA has committed to publishing data and reports from two of their key science programs: Murray–Darling Water and Environment Research Program and the Basin Conditioning Monitoring Program (MD WERP 2022; MDBA 2022e).
- The MDBA is currently undertaking the Integrated River Modelling Uplift, a program to integrate 24 separate river models by 2024. The program will develop a public-facing data portal which will help improve public understanding of hydrologic modelling scenarios and results (MDBA 2023m).
- In 2021, the Bureau of Meteorology released the Murray–Darling Basin Water Information Portal. The portal brings together information about water storages, river flows, water allocations and water trading information for Basin regions. The portal was designed to meet the needs of members of the Basin community (BOM 2023).
- The CEWH are currently redeveloping their website to better meet the needs of users. They publish highlights of monitoring and research findings on the FLOW-MER website and all monitoring and science reports on data.gov.au (sub. 69).
- The NSW Government launched the Open Data Framework to support commitments to transparency made in the 2021 NSW Water Strategy. Climate and hydrological modelling data and outputs will be included in the data published (NSW DPE 2022c).

But more could be done. The National Farmers' Federation observed that:

The communication of scientific knowledge within the Plan has been inadequate. The information provided to the public lacks clarity and accessibility, hindering the understanding and engagement of stakeholders. There is a need for improved communication channels that effectively convey scientific findings, their implications, and the rationale behind decision-making processes. (sub. 46, p. 20)



Interim recommendation 6.2 Publishing material used for decisions

Government agencies should publish in regular scheduled reports the data, modelling outputs and government-commissioned research that informs their decisions about water management in the Basin. This should include any decisions related to resetting sustainable diversion limits.

Coordination of research efforts and knowledge sharing

Knowledge generation activities should be undertaken in a coordinated and strategic way to ensure the best possible information is available to support decision makers' needs (current and future) and investments in knowledge generation are cost effective. Strategic coordination of knowledge building across agencies and policy or program areas can also ensure efforts are aligned, future focused and support the overall objectives of water policy. While some water knowledge needs are specific to a particular location or region, others are shared across jurisdictions. Coordination of knowledge generation efforts and information sharing helps to reduce duplication of effort, generate additional research activity through pooling of resources and build consensus on common issues (PC 2021b).

Some participants highlighted a lack of strategic coordination of knowledge sharing. The NSW Government, for example, called for the MDBA to undertake a coordinating role.

The MDBA should focus on a coordinating role working with state agencies to access the best available information, analytics, and communications. (sub. 43, p. 17)

Without effective coordination, there is not only a risk of duplication or that decision makers will not consider all available information, but there is also a risk that messaging from different jurisdictions results in confusion in the wider community. Diversity in approaches to knowledge generation is valued and can be facilitated within a coordinated approach.

The Commission acknowledges that coordinating Basin governments' knowledge generation can be a challenging task, however, it has been done successfully in the past. Previously dedicated bodies or initiatives established to coordinate a strategic approach to water research have included Land and Water Australia, the National Water Commission and most recently the Basin Wide Knowledge Platform. These programs ended, and no similar initiative is currently in place.

Knowledge sharing between Basin states currently occurs through discussions at the Basin Officials Committee and informal networking. At the project scale, end user advisory groups review each project under MD WERP and include representatives from each Basin state. These advisory groups provide an opportunity to share and discuss research outcomes of specific projects and ensure research is translatable to government policy needs (MDBA 2021b). Program-level co-operation is also occurring, such as through the Integrated River Modelling Uplift program where MDBA is working to improve how individual regional river models 'talk' to each other and improving approaches to sharing water data and modelling information (MDBA 2023m).

The lack of a dedicated body or role focused on overseeing and coordinating knowledge generation across the Basin is a gap in the Basin management framework. A dedicated role or office for knowledge coordination could:

- identify water-related knowledge gaps with a strategic, future-focus
- signpost priorities for knowledge generation for use by academics, non-profit organisations and government agencies
- share information between jurisdictions and water agencies

- aid in the establishment of relationships or links among knowledge generators and with policy makers.

This role will provide a valuable contribution to implementation of the Basin Plan. As noted in the Commission's report on the National Water Initiative, coordination of knowledge generation activities across the nation is also a desirable outcome (PC 2021b). The knowledge coordination role could cover both Basin Plan and national water interests. It could be established under the Department of Climate Change, Energy, the Environment and Water or, if established, the National Water Commission.



Interim recommendation 6.3

Strategic coordination of knowledge generation and sharing activities

The Australian Government should establish a role for overseeing and coordinating knowledge generation and knowledge sharing across the Basin.

Consistency in climate change modelling approaches and application

Basin states use different climate models and risk assessment methods when developing their water resource plans and water sharing plans, and the results are communicated in different ways. These models and methods inform, for example, plan responses to extreme events, such as extended periods of drought. The MDBA said:

There has been extensive work undertaken by each jurisdiction to develop and apply high quality climate change information. There are systematic differences underlying each approach and significant structural differences in how climate model projections are applied. (sub. 61, p. 21)

Using different climate models and risk assessment methods across the Basin presents a number of challenges. Aside from the question of whether some models and methods are better than others, using different models can make it difficult to compare outputs. Different models may use different combinations of equations, approximations, and assumptions, which means they are likely to produce different results for the same scenario. There are scientific evidences that different models can produce a range of future climate conditions for a specific geographic region (Sauchyn et al. 2022). More specifically, it can make it difficult to:

- compare climate risks and vulnerabilities across the Basin
- compare climate change projections
- monitor and evaluate climate change impacts
- track trends and progress
- assess various risk management measures.

Such differences can also make it more difficult to clearly communicate the effects of climate change on water resources. Prosser et al. (2021), for example, said:

The availability of multiple climate projection products or datasets, as well as the different methods that can be used to develop hydrological projections, can add to the confusion and challenge in interpreting the projections. (Prosser, Chiew and Stafford Smith 2021, p. 4)

The Commission also heard that some Basin agencies appear to make little use of climate change modelling in their water management. The National Parks Association of NSW said:

It widely acknowledged that least four of the NSW's 13 water-sharing plans did not take the Millennium Drought into consideration when calculating water availability. ... this caused

over-allocation and serious deficiencies in water security during an intense drought, particularly in the Northern Basin River systems. (sub. 41, p. 5)

Similarly, the Nature Conservation Council of New South Wales said:

Climate predictions are not used when extraction limits and available water determinations are calculated. (sub. 50, p. 7)

The SA Government acknowledges that while future climate and water availability may not reflect historical trends, their water allocation limits and principles have predominantly relied on historical data. Additionally, the SA Government emphasised the need for Basin-wide climate projections, which are currently unavailable, posing challenges for water management planners to integrate climate change considerations (SA Government, pers. comm., 25 September 2023).

The Bureau of Meteorology has said it would be beneficial if Basin states, when developing WRPs and water sharing plans, considered using common assumptions or at a minimum communicated their assumptions in a consistent manner (Bureau of Meteorology, pers. comm., 24 July 2023). This would foster a more cohesive understanding of climate change impacts on water resources and lead to informed decisions that account for the shared challenges posed by climate change across different regions. The NSW Government also said:

It is critical that the development and application of fit for purpose hydroclimate information, consistent with best practice, informs Basin Plan implementation and related water policy and planning needs. Currently, there is no agreed tool or plausible future climate scenarios between Basin jurisdictions and the MDBA. (sub. 43, p. 16)

It is not practical or desirable for all Basin states to be required to use the same model or assessment method. The change would add administrative and transaction costs and may make it difficult for states to adapt and take advantage of new developments in modelling and methodology. Differences in geographical features across states and catchments may also present challenges. However, there would be advantages to Basin states agreeing upon key assumptions and principles for future climate models and assessment methods – for example, a standard about using the historical water flows and climate conditions to compare model predictions. There are examples of such standardisation in climate modelling. For instance, the Intergovernmental Panel on Climate Change develops a set of emission scenarios to apply in different climate models (Hausfather 2019).

The Commission understands the MDBA is currently working with Basin states to understand differences in climate models and collaborate on clear messaging. As part of this work, they could also seek to agree on certain assumptions and principles for the models and assessment methods.

This would help ensure the models and methods are fit-for-purpose, produce results that can be compared across the Basin, and inform decision-making, including decisions about environmental watering. It may also enable the MDBA and Basin states to synthesise results from the various models and better communicate the most likely climatic scenarios and potential impacts on water resource availability and management.

Summing up, the use of different climate models and risk assessment methods across the Basin present multiple challenges. For example, it makes it difficult to compare climate risks and projections across the Basin, track trends and progress, and make informed decisions about water management. It also makes it difficult to clearly communicate the effects of climate change on the Basin. Greater cooperation and collaboration across the Basin may help meet these challenges.

7. Water quality and critical human water needs

Key points

- ✳ **The Murray–Darling Basin Plan (the Basin Plan) sets water quality objectives and targets and requires Basin states to include water quality management plans in their water resource plans. Water resource plans are also required to describe how water resources will be managed during ‘extreme events’, in part to ensure critical human water needs are met.**
 - Ensuring fit-for-purpose water quality in the Murray–Darling Basin relies on the full implementation of the Basin Plan. With most water resource and water quality plans still outstanding in New South Wales, water quality and limits on consumptive water use are at greater risk in that state.
- ✳ **Water quality targets and objectives will need to be reviewed in the Murray–Darling Basin Authority’s 2026 review of the Basin Plan. National water quality guidelines are being updated and there are questions about whether targets in the Basin Plan are set at the right geographic and temporal scale.**
- ✳ **There are long-standing concerns about water quality and critical human water needs in the northern Basin. The NSW Government has progressed a number of programs to manage these problems, but there are calls for the Basin Plan to do more.**
 - Several towns in western NSW, such as Walgett, have had limited access to safe drinking water for some time – not only during ‘extreme events’.
 - There are questions about whether the Basin Plan should play a greater role in improving water quality and securing critical human water needs in the northern Basin.

This chapter sets out the framework in the Murray–Darling Basin Plan (the Basin Plan) for managing water quality and meeting critical human water needs, summarises Basin governments’ progress on implementing these arrangements, and considers how the arrangements could be improved, particularly in the northern Basin.

7.1 Water quality

The framework

The Basin Plan seeks to ensure that water quality is appropriate for environmental, social, cultural and economic activity.¹ It does this by setting objectives and targets and requiring Basin states to include local targets, objectives and actions in catchment-level water quality management plans (WQM plans). There are targets and objectives for salinity levels, dissolved oxygen (blackwater events), blue green algae, and for specific types of water use, such as cultural, recreational and consumptive water use.² The Basin Plan also includes an objective to discharge an average of 2 million tonnes of salt from the River Murray System into the Southern Ocean each water accounting period.³

Basin governments use the targets to identify areas experiencing water quality problems and inform water management decisions. Meeting the targets is not mandatory; rather, the targets help identify and manage risks (MDBA, sub. 61, p. 11) and assess whether environmental values are being achieved (DPIE (NSW) 2020b, p. 2). Basin governments also use the targets to inform the assessment and development of state water planning instruments, such as the Victorian Waterway Management Strategy (Victorian Government, sub. 74, response to information request, p. 6).

River operators and managers are required to take into account water quality targets when making decisions related to flows. The water quality benefits of environmental watering are discussed in chapter 3.

Monitoring and evaluation

The Murray–Darling Basin Authority (MDBA) monitors and reports on water quality outcomes on a regular basis. For example, summaries of water quality threats by type and location are provided on the MDBA website and information about water quality is included in their mid-year and end-of-year Basin Plan Report Cards (MDBA 2023a, p. 16). The MDBA also reports each year on salinity levels at five sites⁴ and overall salt export performance for the entire Basin⁵ (sub. 61, response to information request, p. 7).

The MDBA, Basin states and the Commonwealth Environmental Water Holder also report annually to demonstrate water quality targets are being considered when managing flows (MDBA, sub. 61, response to information request, p. 7).

Basin states must report on water quality outcomes every five years.⁶ The most recent reports, which covered the period between 2014 and 2019,⁷ found that water quality objectives were generally being met, although some targets were not. Notable instances of targets not being met are outlined in box 7.1.

¹ Basin Plan, s. 5.02 and 5.04.

² Basin Plan, ss. 9.04 to 9.07 and ss. 9.16 to 9.19.

³ Basin Plan, s. 9.09(3).

⁴ Basin Plan, s. 9.14(6).

⁵ Basin Plan, s. 9.09(5).

⁶ Basin Plan, Schedule 12, Matter 12.

⁷ DELWP (Vic) 2020; Department for Environment and Water (SA) 2020; DPIE (NSW) 2020.

Box 7.1 – Basin state government reporting on water quality

The Basin Plan requires Basin state governments to report on water quality every five years. NSW, Victoria and South Australia released detailed reporting that measured water quality outcomes against targets they had set in water quality management plans (WQM plans). The ACT provided a summary of water quality outcomes as part of the Murray–Darling Basin Authority’s annual reporting (MDBA 2020a, pp. 5–6). Queensland reported that water management processes complied with water quality objectives, but it did not present water quality measurements against targets (QLD DNRM 2020, p. 15).

NSW

The NSW Government reported that several significant poor water quality events occurred between 2016 and 2019, including blackwater and fish death events and blue green algal blooms (DPIE (NSW) 2020b, pp. 105–116).

While water quality was found to be ‘fair’ or ‘good’ for most water resource plan areas in NSW, many still exhibited declining water quality over the five year period.

Importantly, it was reported that targets in the Barwon-Darling area were ‘inappropriate’ (2020b, p. 76), as targets set in the Plan are such that the Darling River will always be classed as having poor water quality (2020b, p. iv). This reporting echoed findings in the Commission’s 2018 review of Basin Plan implementation (discussed below).

Victoria

The Victorian Government reported that it had ‘actively delivered on its water quality requirements’ (DELWP (Vic) 2020, p. 3). Reporting on dissolved oxygen levels showed that almost all sites in the north-east of the state measured above target levels of saturation, while there were ‘more incidences of samples not attaining the target’ in the north west of the state (2020, p. 12).

Dissolved oxygen levels below target risk the ability of waterways to support aquatic life.

Salinity in the Ovens, Kiewa and Wimmera Rivers was maintained below target values over the reporting period, while targets were exceeded for at least one year at five other sites (2020, p. 16).

South Australia

In South Australia, water quality reporting covers a broader range of measures than in other states.

Water quality targets for maintaining flows, irrigation water and recreational water were rarely exceeded, which meant water sampled was of an acceptable quality to allow these uses of water. During the 2006 to 2020 period covered in reporting, dissolved oxygen levels fell below targets in some locations.

However, there were more widespread examples of dissolved oxygen levels falling below target in 2010–11 and 2016–17. High flow events during these years meant that multiple locations exhibited hypoxic blackwater conditions, dangerous for aquatic life (SA DEW 2020, p. 13).

There were minimal exceedances of salinity targets in the River Murray, and some minimal exceedance of salinity in Lake Alexandrina in 2011, 2018 and 2019 (2020, p. 14). Total phosphorus levels have been recorded above targets on occasion during the monitoring period, with significant exceedances measured in 2010 and 2013 for all sites within the River Murray (2020, p. 16). From 2016 to 2020, phosphorus continued to be recorded above target levels. Higher total phosphorus levels impact food webs and can reduce the availability of food resources for native fish and birds.

Box 7.1 – Basin state government reporting on water quality

Australian Capital Territory

Water Quality reporting published by the MDBA summarised findings from ACT's State of the Environment report, which found that samples met water quality guidelines for most measures. However, there were examples of turbidity exceeding guideline levels (MDBA 2020a, p. 5). The ACT's Catchment Health Indicator Program assessed water quality as excellent in 35% of reaches, and good in 62% of reaches (2020a, p. 5).

Results for recreational water were not as favourable. Nearly every monitored site experienced closures due to exceedance of enterococci guidelines, and there were closures at some sites due to blue-green algae occurrences (2020a, p. 6).

Queensland

Rather than focusing on water quality outcomes against targets, the Queensland reports outlined the risks to water quality, accredited water management measures used to address these risks, and the implementation status of these measures (QLD DNRM 2020, pp. 2–15). Queensland reported progress against all three types of water quality targets and that all measures were 'either ongoing or completed, thus demonstrating progress towards the water quality targets' (2020, p. 15).

Water quality management plans

Water resource plans must include WQM plans, which must set out targets and identify risks and causes of water quality degradation. WQM plans must also include measures to help meet water quality objectives, including measures related to land-use. Examples of measures include the use of salt interception schemes and regulations around the use of intensive livestock operations (such as feedlots), which can pollute watercourses. As outlined in chapter 3, Basin governments are undertaking natural resource management works and activities in part to improve water quality in the Basin.

There should be 33 water resource plans (WRPs) in place across the Basin, but 13 remain plans outstanding in New South Wales (chapter 4). In its 2020 evaluation, the MDBA stated 'the Basin Plan's contribution to ensuring fit-for-purpose water quality in the Basin relies on full implementation of the Basin Plan' (MDBA 2020h, p. 68). This includes having all 33 WRPs in place. As discussed later in this chapter, the continued absence of water resource plans is a particular concern for the Lower Darling.

Targets and objectives need to be updated

Water quality targets and objectives will be considered in the MDBA's 2026 review of the Basin Plan. The MDBA will need to consider updated national guidelines and the general question of whether water quality targets are sufficiently specific and set at the right geographic and temporal scale.

Updated national guidelines

National water quality guidelines, which are reflected in targets and objectives in the Basin Plan,⁸ are currently being reviewed. The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZ Guidelines), which are part of the National Water Quality Management Strategy (NWQMS), are being revised through the Water Quality Guidelines Improvement Program (sub. 77, p. 14). The Department of Climate Change, Energy, the Environment and Water (DCCEEW) submitted:

Incorporating the ANZ Guidelines and NWQMS into the upcoming review of the Basin Plan will ensure it continues to reflect best practice in water management. It will also be a practical example of how water quality and broader water management issues are integrated to address quantity and quality outcomes. (sub. 77, p. 15)

Changes to the ANZ Guidelines will need to be reflected in the Basin Plan and therefore considered by the MDBA in its upcoming review.

Changes to specific targets

In a 2020 review of Basin Plan water quality targets, the MDBA found that most targets were working well. The targets were supported by Basin states and were ‘instrumental in driving change in key management areas of the Basin, such as salinity’.

When applied well, they provide an opportunity to engage with an understanding of the risk posed by water quality stressors and the potential need for change. ... Targets should continue to be applied as guideline values triggering action or risk mitigation, rather than enforceable limits leading to regulatory response. (MDBA 2020g, pp. 57–58)

However, the MDBA recommended that some water quality targets and objectives be improved, including the objectives about salt export, cultural use, and raw water for treatment for human consumption (MDBA 2020g, pp. 3–6). It also recommended building a ‘shared understanding’ of water quality targets and a risk-based approach to selecting and implementing targets.

The Commission also raised concerns in 2018 about some water quality targets, including the salt export target and the Burtundy salinity target, and noted that there can be a conflict between the salt export objective and salinity targets (PC 2018, pp. 224–225). The MDBA review agreed that both targets should be further investigated (MDBA 2020g, p. 56).

In its submission to this inquiry, the MDBA said that water quality targets and objectives are currently being reviewed and that this work will inform its 2026 Basin Plan Review (sub. 61, response to information request, pp. 6–7).

Targets need to be set at the right scale

There are significant differences in the types of water quality threats and risks seen in different valleys and river reaches across the Basin, and within some of the same water resource plan areas. For example, surface water systems can:

- be heavily regulated and used for irrigated agriculture

⁸ Some of the water quality targets for fresh water-dependent ecosystems in Schedule 11 of the Basin Plan refer to the ANZ Guidelines. The Basin Plan also allows WQM plans to specify alternative water quality targets if, among other things, the targets are determined in accordance with procedures set out in the ANZ Guidelines. See sections 9.16 and 10.32 and Schedule 11 of the Basin Plan.

- include large storages and interconnected infrastructure that supply urban areas, or
- include unregulated rivers with high conservation value.

This raises the question of whether the Basin Plan and WQM plans sufficiently account for these differences. For example, the MDBA has suggested the targets for deoxygenated water in the Basin Plan may be too broad (MDBA 2020g, p. 35). There is considerable natural variation in deoxygenation in the Basin, and a uniform target value does not take this into account. Aquatic life can be severely impacted by localised deoxygenation (box 7.2).

The MDBA's 2020 review found that some water quality targets in the Plan need defined locations to better reflect local conditions (MDBA 2020g, pp. 3, 44). Basin states observed that they 'generally preferred to consider the management of water quality issues at the sub-catchment scale', and suggested that the scale of water quality targets were sometimes 'too broad for management of water quality issues' (2020g, p. 23).

Ensuring water quality targets are set at the right scale and allow for effective monitoring and adaptive water management within WQM plans will be an important consideration for the MDBA's review of the Basin Plan.

Box 7.2 – Fish deaths the result of localised poor water quality

Deoxygenated blackwater has resulted in several significant fish death events over the past five years, including in the Darling River near Menindee in late 2018/early 2019 and again in early 2023.

The events in 2018-19, which were the subject of an independent review, are estimated to have resulted in hundreds of thousands of fish deaths (some estimates suggest over one million fish deaths) (Vertessy et al. 2019, p. 8). The review found that high flow events in 2012 and 2016 led to high numbers of fish spawning in the Menindee Lakes, and these events were followed by low flows and hot conditions by the end of 2018, which restricted oxygenated water to the surface of the lakes only. These conditions, along with restriction of fish movement due to weirs, meant that when temperatures dropped and hypoxic water spread, fish were unable to escape and died in large numbers (Vertessy et al. 2019, p. 10).

A number of recommendations were made in the review, including reducing extraction during low flows, maintaining connectivity along the Barwon-Darling River, and changing operating procedures in the Menindee Lakes in order to minimise the likelihood of lakes being at very low levels prior to summer. Importantly, it was recommended that NSW and Queensland adopt an 'active event-based management approach' to providing flows through the Barwon–Darling system (Vertessy et al. 2019, p. 13).

An independent review of the 2023 event in Menindee presented similar findings and recommendations. Low levels of dissolved oxygen, high biomass and poor water quality were all found to cause the death of millions of fish (Chief Scientist & Engineer (NSW) 2023, p. 1). The review noted that 'mass fish deaths are symptomatic of degradation of the broader river ecosystem over many years' (2023, p. 14). Some of the recommendations were similar to the previous review, with recommended long-term strategies including the restoration of flow regimes and connectivity across the catchment. Shorter-term recommendations included modifying the nature of water releases to maximise desired benefits and looking into pumping, oxygenation and fish passage infrastructure to enable movement and refuge in selected areas (2023, pp. 2–3). As at October 2023, a response from the NSW Government had not been made public.

7.2 Critical human water needs

The Basin Plan is required to give critical human water needs (CHWN) the highest priority. There must be water to meet ‘core human consumption’ needs (that is, drinking water) and to meet other needs that, if unmet, ‘would cause prohibitively high social, economic or national security costs’.⁹ These provisions ‘were forged during the Millennium drought and reflect the lessons of that extreme dry period’ (MDBA, sub. 61, p. 12).

The provisions in the Basin Plan about CHWN for the southern Basin are more detailed than those for the northern Basin.

Arrangements for the southern Basin – in place but untested

For communities that depend on the River Murray System, the Basin Plan sets out the amount of water for consumptive use and conveyance required to meet CHWN.¹⁰ It also sets out water quality and salinity trigger points at which water becomes unsuitable for meeting CHWN, at which point an emergency response is required.

There is a three-tier system that allows action to be taken in certain circumstances. Tier 1 represents normal water availability, tier 2 is very low water availability and tier 3 is extremely low water availability. Tier 2 and 3 water sharing arrangements occur in extreme conditions, such as the Millennium Drought. The Basin Plan sets triggers for moving between tiers and the MDBA is responsible for declaring Tier 2 or Tier 3 water sharing arrangements. Basin states, the MDBA and DCCEE are required to report on the implementation of these emergency responses.¹¹

The MDBA said that these arrangements are working effectively but have not been tested by a severe drought (sub. 61, p. 12). A 2020 review of urban water in the Murray–Darling Basin also noted that communities that rely on the River Murray generally view the CHWN rules with confidence (Marsden Jacob Associates nd, p. 30)

In 2018, the Commission reported that the arrangements for meeting CHWN in communities in the River Murray system appeared to be operating effectively – the relevant provisions in the Basin Plan were ‘robust’ and did not need to be changed (PC 2018, p. 240). On this inquiry we have not heard any evidence to suggest this view should be revised.

Extreme events

Water resource plans – within and outside the River Murray System – must set out how water resources will be managed, including to meet CHWN, during extreme events.¹² The MDBA said that accredited water resource plans have ‘fully incorporated the Basin Plan’s critical human water needs requirements into Basin state water management practices’ (sub. 61, p. 16).

Where WRPs have not been finalised and accredited, the effectiveness of the Basin Plan’s arrangements for meeting CHWN cannot be evaluated because the provisions are not in place. As discussed below, this is of particular concern in the northern Basin.

⁹ Water Act, s. 86A.

¹⁰ Basin Plan, chapter 11. ‘Conveyance water is water in the River Murray System required to deliver water to meet critical human water needs as far downstream as Wellington in South Australia’: Water Act s. 86A(4).

¹¹ Basin Plan, Schedule 12, item 13.

¹² Basin Plan, chapter 10, part 13.

7.3 The northern Basin

There are long-standing concerns about water quality and CHWN in various reaches of the Barwon-Darling.¹³ The Commission heard about these concerns while visiting areas of regional NSW, including Menindee and Bourke. The issue was also raised in a number of submissions.¹⁴

The Dharriwaa Elders Group in Walgett NSW argued that CHWN are not given sufficient priority in some areas outside of the context of extreme events. The Group also said that extreme events are not well defined in the Plan and critical human needs ‘must be more clearly defined and given a high priority in water management’ (sub. 86, p. 6).

Other participants said that the experiences of towns like Walgett show that arrangements to meet CHWN in the northern Basin have failed. For example, the Wentworth Group of Concerned Scientists said that the arrangements were ‘inadequate’ and that this was ‘most evident in the northern Basin where water quality in towns such as Walgett and Wilcannia has been compromised for some time’ (sub. 81, p. 3). Slattery & Johnson said that several towns in Western NSW have had no safe drinking water for the last decade (not just during ‘extreme events’) and that these towns had large Aboriginal populations (sub. 90, p. 16).

The Environmental Defenders Office (EDO) said the failure to provide safe drinking water in Walgett showed there should be ‘more rigorous’ provision for CHWNs for the entire Basin (sub. 91, p. 22). Outside the River Murray System, the EDO submitted, ‘there is no assurance of conveyance water, or any other form of base flows, for delivering CHWNs’ and CHWN provisions were undermined by ‘complex and inconsistent water management rules and practices’ (sub. 91, p. 20). These pressures, the EDO said, would only increase with climate change.

The recently developed NSW Western Regional Water Strategy highlights that poor water quality has been a long-term concern for the region:

Water quality is generally poor during periods of low or no flow in the Barwon-Darling and Lower Darling. Poor water quality also occurs after droughts when flows return and during floods – debris and dissolved material from previously dry river channels and floodplains then begin to accumulate ... Poor water quality affects aquatic organisms, is a risk to human health and stock, impacts the amenity of waterways and affects Aboriginal people’s ability to practice culture on or near waterways. (DPE (NSW) 2022, p. 10)

A 2019 review of the NSW Barwon-Darling water sharing plan by the Natural Resources Commission found ‘an ecosystem in crisis’ and that the plan had not effectively prioritised the protection of the water source and dependent ecosystems (NRC (NSW) 2019, p. 1). Specifically, it found that the ‘risk of decreasing water quality and increasing algal blooms has elevated under the Plan rules’ (NRC (NSW) 2019, p. 4).

The Basin Plan and water sharing plans are not the only instruments that affect water quality. For example, the Murray–Darling Basin Agreement (chapter 1, chapter 9) sets out rules for managing water in the Menindee Lakes. An independent assessment of fish deaths in 2018-19 found that ‘environmental outcomes downstream of the Menindee Lakes were constrained by the need to adhere to sharing arrangements of the Murray–Darling Basin Agreement’ (Vertessy et al. 2019, p. 58). More generally, the Inspector-General of Water Compliance has highlighted the sometimes-competing demands of the Agreement and the Basin Plan and the difficulties this causes for river operators (IGWC 2022d, p. 2).¹⁵

¹³ Specifically, the areas covered by the surface water resource plans for NSW Murray and Lower Darling, and Barwon-Darling watercourse.

¹⁴ Fleur Thompson (sub. 14, p. 1), Pastoralists’ Association of West Darling (sub. 42, pp. 2, 8), SWWU (sub. 16, p. 3).

¹⁵ See also Independent River Operations Review Group suggested changes to governance arrangements to meet these challenges (IRORG 2021, pp. 28–30).

What is being done?

In 2018, the Commission found that Basin communities were justifiably concerned about water quality and the management of CHWN in the Lower Darling and said this should be resolved through the development of the water resource plan for the NSW Murray and Lower Darling (PC 2018, p. 231). This plan was submitted to the MDBA in August 2023 (having previously been submitted and withdrawn) and as of October 2023, is being assessed for accreditation. Where WRPs are not in place, the Basin Plan's arrangements for water quality and CHWN cannot be fully implemented. The need to finalise the WRP for the Lower Darling is again pressing, given the prospect of another drought.

The NSW Government has acknowledged community concerns about poor water quality along the Barwon–Darling and Lower–Darling (Baaka) River and said that these issues are ‘likely to continue and intensify’ in future droughts (sub. 43, p. 10). It pointed to a number of programs and strategies in place that seek to address these concerns.

- The ‘Extreme Events Policy’ provides a framework for making decisions during extreme events and ‘establishes the principles by which water resources will be managed’. The policy was recently updated (NSW DPE 2023c) and it explicitly discusses CHWN (NSW Government, sub. 43, p. 10).
- Regional water strategies set out a long-term road map to improve water security, water quality and flood management for regional towns and communities and improve the health and integrity of environmental systems and assets (DPE (NSW) 2022, p. 11)
- The North-West Flow Plan recognises the importance of inflows from the main Barwon-Darling tributary valleys in maintaining sufficient water quality and quantity for people and the environment in the Barwon-Darling River (NSW DPE 2022d).

However, some participants questioned whether the NSW Government is doing enough. For example, the Central NSW Joint Organisation suggested that the aspirations of some policies are not being realised ‘on the ground’ and ‘better policy and protocols’ were needed ‘in a new climate future to ensure water for critical human needs are met as the highest priority’ (sub. 31, pp. 5–7).

Should the Plan do more to meet critical human water needs?

Meeting critical human water needs is considered a responsibility of state governments. The Basin Plan does not regulate in detail how CHWN should be met in the northern Basin. Although the Plan and the Water Act deal with CHWN in the River Murray System, this was because the issue was considered ‘inextricably linked with the shared management of the River Murray System including its infrastructure, and therefore also with the operation of the [MDB] Agreement’ (Australian Government 2012b). In the northern Basin, there is no shared regulating infrastructure, however New South Wales and Queensland have intergovernmental agreements for the Paroo and Border Rivers for water sharing and management.

There are good reasons for state governments to drive policy about CHWN and remain responsible for meeting these needs. For example, the states are better placed to take into account local conditions and considerations. The Coleambally Irrigation Co-operative warned against a ‘prescriptive’ approach and said that CHWN issues ‘should be addressed catchment-by-catchment and entrenched in state planning frameworks’ (sub 21, p. 6). The Commission’s 2020 review of the National Water Initiative concluded that ensuring access to a ‘basic level of service’ was the responsibility of state and territory governments.

A renewed National Water Initiative should include a commitment by State and Territory Governments to each develop a definition of, and to ensure access to, a basic level of water services for all Australians. At a minimum, this would include safe and reliable drinking water. (PC 2021c, p. 175)

However, the ACT Government suggested that addressing CHWN was one of several issues that were not unique to the Basin and that would ‘benefit from national policy direction, through the renewed National Water Initiative, and coordinated through a national policy agency’ (sub. 85 p. 8).

Some participants, however, argued that the Basin Plan should do more.

- The NSW Government said CHWN provisions ‘could be reviewed to improve clarity and relevance for water resources beyond the River Murray’ and pointed to the need for ‘ongoing support and engagement with the Commonwealth’ to deal with some of these issues (sub. 43, pp. 9–10).
- The Environmental Defenders Office recommended improvements to the reporting and compliance arrangements and said that the MDBA or the Inspector-General of Water Compliance should be given a ‘substantial compliance and oversight role in relation to the delivery of water for CHWNs’ (sub. 91, p. 24).
- The Wentworth Group of Concerned Scientists called for Basin-wide criteria for town water supply and quality, and a ‘systematic assessment of the drivers of poor water quality’ which would ‘consider the potential impacts of upstream irrigation water use, domestic water quality, including the rules governing irrigation water allocations, carryover, and drought reserves in storage dams’ (sub. 81, p. 3).
- A number of participants stressed the importance of water for food security and some said the definition of CHWN could be expanded to reflect this. The National Irrigators Council, for example, said that ‘human needs should always remain the highest focus, but that should be extended to include some form of food security and availability’ (sub. 62, p. 25).¹⁶

While noting the CHWN provisions in the Basin Plan are ‘generally adequate’, DCCEEW observed that upcoming reviews could consider whether CHWN provisions can be improved to ‘provide certainty across a range of climate change scenarios’ (sub. 77, p. 16). The MDBA also said that the framework for supporting CHWN in the Basin Plan was ‘limited and focused on the southern Basin’ and that a ‘set of objectives supported by investment and innovation may be needed to manage this direct risk to social and economic outcomes under climate change’ (2020 evaluation, p. 122; MDBA, Basin Plan annual report 2021–22, December 2022, p. 28).

The Commission invites participants to comment on whether the Basin Plan should do more to improve water quality and ensure CHWN are met in the northern Basin. This may partly be a question of which level of government is best placed to address these concerns and whether there is a need for greater consistency across the Basin, including consistency in the arrangements for reporting and compliance. While the detailed design of any new arrangements would be a matter for the MDBA’s 2026 Basin Plan Review, the Commission invites participants to identify key considerations and options for reform.



Information request 7.1

Options to improve water quality and availability in the northern Basin

The Productivity Commission invites participants to comment on whether the Murray–Darling Basin Plan should do more to improve water quality and ensure critical human water needs are met in the northern Basin. What options should be considered by the Murray–Darling Basin Authority in the 2026 Basin Plan Review?

¹⁶ While Australia is one of the most food secure nations in the world on average (ABARES 2023; Economist Impact 2023), some individuals, households and communities are still affected by food insecurity due to a lack of resources, a lack of access to nutritional food at affordable prices, and geographical isolation (Rosier 2011, p. 2).

8. Trading rules

Key points

- * **The Murray–Darling Basin Plan seeks to support and improve the operation of water markets. Water markets provide a mechanism through which users can adapt to changes in the availability of water, promoting the efficient allocation of water, and they enable water to be purchased for the environment.**
- * **Recent reviews have found that water markets in the Murray–Darling Basin need reform, including in the areas of insider trading, price reporting, water announcements, rule-making processes, and institutional and governance arrangements.**
 - Basin governments have committed to a roadmap for reform and the Water Amendment (Restoring Our Rivers) Bill 2023 seeks to implement some of the recommended changes.
- * **The trading rules in the Murray–Darling Basin Plan are one part of the framework governing water markets. They seek to limit restrictions on trade, improve transparency and access to market information, and maintain market integrity and confidence.**
- * **The implementation of the trading rules has been challenging and the water market itself has changed significantly since the trading rules came into effect in 2014. The trading rules have not been comprehensively reviewed since they were made and, given the experience and pressures of the last nine years, the rules should now be reviewed.**
- * **The Australian Competition and Consumer Commission (ACCC) is responsible for providing advice to the Murray Darling Basin Authority (MDBA) about the trading rules. The MDBA should ask the ACCC to conduct a comprehensive review of the rules, including the rules about trade restrictions and how they can be effectively monitored and enforced.**
 - The *Water Act 2007* (Cth) should also be amended to enable the ACCC to provide advice to the MDBA about the rules on its own initiative, to make water market policy more adaptive. The ACCC should notify the MDBA before preparing any such advice.

8.1 Trading rules support water markets

The Murray–Darling Basin Plan (the Basin Plan) relies on water markets – for example, to enable water rights to be purchased for the environment – and aims to support and improve their operation. The Basin Plan seeks to facilitate the operation of an efficient and effective water market (so water reaches its most productive use), minimise transaction costs on trade, and provide protection for the environment and the interests of third parties.¹

The Australian Competition and Consumer Commission (ACCC) described the Basin’s water markets as a ‘core element of the Basin Plan’s design’, noting that they ‘support the delivery of the plan’s objectives to reset the balance between consumptive and environmental water holdings’. And under a ‘cap and trade’ system, with sustainable diversion limits capping consumptive water, ‘markets are the tool that allow water to move to where its economic value is highest’ (sub. 26, p. 3).

Water markets are also important for helping industries and communities in the Basin adapt to a drier and more volatile climate.

The purpose of the trading rules

One mechanism to achieve the Basin Plan’s objectives for water markets is the trading rules of the Basin Plan. The rules provide a common framework for the trading of water rights across the Basin. They seek to:

- limit restrictions on trade
- improve transparency and access to market information
- maintain market integrity and confidence.

The trading rules also seek to contribute to the market and trading objectives and principles in the Water Act² and reflect, at the Basin level, one of the objectives of the Intergovernmental Agreement on a National Water Initiative – the ‘progressive removal of barriers to trade in water and meeting other requirements to facilitate the broadening and deepening of the water market, with an open trading market to be in place’³. Under the National Water Initiative, Australian states and territories agreed that their water market and trading arrangements should:

- facilitate efficient water markets and opportunities for trading within and between states
- minimise transaction costs on trades
- enable the appropriate mix of water products to develop based on access entitlements which can be traded
- recognise and protect the needs of the environment
- provide appropriate protection of third-party interests.⁴

The trading rules in the Basin Plan are prepared by the Murray Darling Basin Authority (MDBA) on the advice of the ACCC and are enforced by the Inspector-General of Water Compliance (IGWC). The IGWC’s draft regulatory policy states that regulatory action will be triggered when:

- restrictions are placed on trades inconsistently with the Basin Plan
- information is not provided about water delivery rights and irrigation rights
- trade approval authorities do not disclose interests in a trade

¹ Basin Plan, s. 5.07.

² Water Act 2007, s. 22(1), item 12 and Schedule 3.

³ National Water Initiative Agreement 2004, par. 23 (v).

⁴ National Water Initiative Agreement 2004, par. 58 (i) - (v).

- information about water access rights is not provided, is inadequate or is not managed in accordance with the Basin Plan
- trading prices are not made available in accordance with the Basin Plan or [relevant information] is inadequate (IGWC 2023e, p. 9).

The trading rules are only one part of the framework governing water markets in the Basin. Most of the rules governing water trade in the Basin are made by Basin state governments. Basin states are responsible for approving trades and enforcing state trading rules, although state rules must be consistent with the Basin Plan.

The Basin Plan water trading rules are also intended to complement other related instruments, such as the water market rules and the water charge rules. The water market rules ‘provide protections for irrigators who want to permanently transform their irrigation right into a statutory entitlement to water’ (ACCC 2023b). The water charge rules ‘provide price transparency for infrastructure and related services’ in the Basin (ACCC 2023a). These rules are enforced by the ACCC and are not part of the Basin Plan.

Reflecting on the effect of the Basin Plan trading rules since they were made in 2014, the ACCC said the rules had:

... led to improvements in the information available to water users on trade arrangements and restrictions, and to the removal of some distortionary trade restrictions, including volumetric limits and thresholds on water ownership by non-water users. (sub. 26, p. 5)

On water markets more generally, the Commission in its 2021 assessment of the implementation of the National Water Initiative found that since 2017 there has been ‘continued progress in a number of jurisdictions in removing trade restrictions and other barriers to trade’ (PC 2021a, p. 57).

However, there are still issues with restrictions and distortionary arrangements in some Basin markets and challenges enforcing some of the rules (ACCC sub. 26, p. 5).

The IGWC 2022-23 workplan states that trade enforcement is a priority for the agency, in particular price-reporting, trade disclosures, trade accounting and compliance (IGWC 2022a). The Inspector-General has conducted two audits on the water trading rules. One looked at interstate trade in the Northern Basin (IGWC 2022b) and the other at compliance with disclosure obligations by Victoria’s largest rural water provider, Goulburn-Murray Water (IGWC 2022c). Both audits found ‘process and system failures’ in relation to Basin Plan obligations (sub. 75, p. 18).

The IGWC recently expressed frustration with some of the rules it enforces, including rules about reporting trade prices. Asked at a Senate Estimates hearing in May 2023 about illegal water trading practices, the Inspector-General said his office had closed multiple investigations in recent months in part because the legislation had ‘more get out of jail clauses and opportunities than a Monopoly board’ (Grant 2023, p. 7).

8.2 Recent reviews of Basin water markets

The trading rules in the Basin Plan are one part of a larger framework governing water markets in the Basin. This larger framework was recently the subject of two significant reviews – one by the ACCC (ACCC 2021) and another by Daryl Quinlivan, who was tasked with testing the ACCC’s recommendations with Basin states and other stakeholders and developing a ‘roadmap’ for reform (Quinlivan 2022).⁵

⁵ The Commission’s terms of reference state that we should avoid unnecessarily duplicating recently completed or ongoing reviews, including the water reform roadmap.

A call for decisive and comprehensive reform

The 2021 report on Basin water markets by the ACCC found that many water users ‘do not trust that the markets and key institutions are fair or working to the benefit of water users’ and that ‘decisive and comprehensive reform’ was needed (ACCC 2021, pp. 2, 3).

The final report made recommendations about:

- market integrity and conduct – including about market conduct and integrity legislation, a code for water market intermediaries, and insider trading obligations
- trade processing and water market information – including on data standards, trade approval service standards, water announcements, a repository for water market data, a hub for trade approvals, and a market information platform
- market architecture – transparency of allocation decisions, metering and monitoring, and mechanisms for delivery of environmental water
- governance – the institutional architecture and processes for rule-making.

In its submission to this inquiry, the ACCC emphasised the importance of implementing reforms to fill gaps in the governance of water markets, including by establishing an ‘independent expert body responsible for advising on market design and assessing whether Basin water markets are operating efficiently’ (ACCC, sub. 26, p. 3).

A roadmap for water market reform

In October 2022, the *Water Market Reform: Final Roadmap Report* (Quinlivan 2022) was released, and the Australian Government and the Murray–Darling Basin Ministerial Council agreed in principle to implement all of its recommendations (MDBA 2022i).

The Water Amendment (Restoring Our Rivers) Bill 2023, introduced into Parliament on 6 September 2023, seeks to implement a number of the recommendations, including by establishing stronger insider trading rules, prohibiting market manipulation and introducing a mandatory code of conduct for water market intermediaries, with conduct provisions to be regulated by the ACCC.

Some of these changes affect the trading rules in the Basin Plan. The Bill proposes to remove some rules from the Plan and place them, in a modified form, in the Water Act – specifically, the rules about reporting trade prices, making water announcements, and insider trading (currently in sections 12.48 to 12.52 of the Basin Plan). The Bill also seeks to implement the roadmap’s recommendation about tagged water entitlements, removing an exemption from trade restrictions that applied to these entitlements. This would make ‘grandfathered tagged entitlements’ subject to the same restrictions as other water allocation trades.

The Bill also introduces new functions and powers for the Bureau of Meteorology. This includes issuing water markets data standards and collecting, publishing and providing advice about water markets information, as this is defined in the Bill. The Inspector-General would have the role of enforcing compliance with the new data standards.

The Bureau of Meteorology is also developing a water data hub and a website with Basin-wide near real-time water market information, including pre-trade bids and offers. The Bureau said the changes will ‘build transparency, integrity, and confidence’ in the Basin’s water market (sub. 17, p. 13).

The Australian Government has not announced when the remainder of the Quinlivan recommendations will be implemented. Some of the reforms are complex and will take time to implement and some could be

progressed with later legislative responses to the review of Schedule D of the Murray–Darling Basin Agreement or the reviews of the Water Act and Basin Plan (Quinlivan 2022, pp. 92–93).⁶

Water market institutions

Both the ACCC and Quinlivan reports found shortfalls in the governance of water markets in the Basin. The ACCC found that fragmented institutional arrangements were impeding Basin water markets (ACCC 2021, p. 547). This concern was echoed in the Quinlivan report, which said the governance of Basin water markets was ‘highly fragmented’, with numerous government agencies having a role and sharing responsibilities, causing duplication and confusion among market participants (Quinlivan 2022).

In part to address these concerns about governance, the ACCC recommended that a new national water markets agency be established. Quinlivan found little support from stakeholders for this proposal, and instead recommended that new water market functions be allocated amongst existing Commonwealth agencies and the proposed new National Water Commission (Quinlivan 2022, pp. 12, 16).

The ACCC has since said that these proposed arrangements would substantially improve water market governance, but ‘uncertainty remains on the establishment, timing and functions of the National Water Commission’ (ACCC sub. 26, p. 4).

The Restoring Our Rivers Bill implements some but not all of the institutional changes recommended in the Quinlivan report. The Bill does not establish a National Water Commission. In a submission to a Senate inquiry, Professors Wheeler, Grafton, Quiggin and Connor express support for many of the Bill’s proposed changes to water market laws, but suggest the governance arrangements will remain fragmented, arguing that there remains ‘a strong argument for a reestablished and revamped National Water Commission’.⁷

8.3 Review of trading rules

Rules not reviewed since 2014

The trading rules in the Basin Plan have not been comprehensively reviewed since they came into effect in 2014. Such a review was not in the scope of the recent work of the ACCC or Quinlivan.

If a review were needed, this would be a task for the ACCC; the Water Act states that the MDBA must obtain advice from the ACCC before proposing amendments to the rules (s 42(2)). The ACCC said that the rules need a ‘thorough evaluation’ and suggested that its advice be sought soon, to ensure it has time to consult widely and so that their advice can inform the MDBA’s 2026 review of the Basin Plan (sub. 26, p. 6).

The ACCC noted a number of developments in Basin water markets that highlight the need for a review:

... there have been significant changes to the volume and location of trade, the participants in the market, Basin State trade administration practices, the evolution of environmental watering arrangements and the impacts of changing climate patterns. The ACCC inquiry found that trade is facilitating significant changes in patterns of water use in the Southern Connected Basin. These

⁶ Schedule D allows water users in some states to trade water across state boundaries and between valleys. A review of this schedule is underway and is seeking to identify ‘opportunities to improve efficiency and access to intervalley trade opportunities’ and is expected to ‘address relevant roadmap recommendations’ (DEECCW, sub. 77 p. 22).

⁷ Submission to Senate Standing Committee on Environment and Communications inquiry into the Water Amendment (Restoring our Rivers) Bill 2023 (pp. 12–13).

patterns are posing increasing challenges to river operators, who are also faced with changing system conditions on a number of fronts. (sub. 26, p. 5)

The Inspector-General said that the process and system failures of certain trading rules obligations that it identified in recent audits will not be addressed by the current market reforms.

The majority of the Basin Plan water trading rules will remain largely unchanged under the water market reform process. Ongoing compliance, enforcement and review of the Basin Plan water trading rules will be required to ensure they support Basin Plan outcomes. (sub. 75, p. 18)

The ACCC suggested that the recent audits of the IGWC also highlight the need for the trading rules to be reviewed. For example, it said one audit ‘identified discrepancies in water trade and sustainable diversion limit accounting’:

The audit identified water being traded from one state but not appearing in an account in the other state, incorrect volumes being recorded in water accounts, and manual adjustments being made by the authorities without documented explanations.

The 2026 review of the Basin Plan, including the Basin Plan water trading rules should help ensure that these rules are effective and can be enforced. (sub. 26, pp. 7–8)

The MDBA should ask the ACCC to conduct a detailed review of the trading rules, to be completed prior to the 2026 review of the Basin Plan. The review should consider, among other things, whether the current trading rules are operating effectively or need to be clarified or otherwise amended, and whether new rules are needed. It could also consider whether the rules should be changed in light of the Australian Government’s commitment to implement the roadmap for water markets and, as discussed below, give particular attention to the effectiveness of the rules about trade restrictions.

The review should consider trade restrictions

The rules that seek to remove unnecessary trade restrictions may need particular attention in a review. Removing restrictions on trade is one of the main objectives of the trading rules, consistent with the National Water Initiative. Most restrictions are simply prohibited, but some are permitted when they would be ‘necessary’ for one of the reasons set out in the Plan. The Plan provides that a restriction may be necessary because of:

- the existence of a physical constraint
- the need to address hydrologic connections and water supply considerations
- the need to protect the needs of the environment
- the level of hydraulic connectivity.⁸

These restrictions are described in the Basin Plan at a relatively high level of generality. The terms ‘hydrologic connections’ and ‘water supply considerations’ are defined in the Plan, but otherwise little further guidance is provided about which restrictions might be considered necessary.

A complete list of trade restrictions is not available, but in 2018 the MDBA reported that there were over 1500 restrictions on surface water trade. It is understood that these largely remain in place.

⁸ Basin Plan, ss. 12.16 and 12.18.

If a Basin state imposes certain restrictions, it must notify the Inspector-General and give reasons for its decision.⁹ It may also ask the Inspector-General for a declaration that the restriction is necessary.¹⁰ If such a request is made, the Inspector-General must publish the declaration and supporting reasons.¹¹

In 2018, the Commission recommended that the MDBA (which was then responsible for compliance with the Basin Plan trading rules) prepare a framework for assessing trade restrictions (PC 2018). This was intended to help expedite the MDBA's review of trade restrictions, which it had identified as a difficult and time-consuming exercise. Relevant matters to consider when deciding whether a restriction should be assessed might include:

- the volume of the affected entitlement
- whether a complaint has been received about the restriction
- whether the restriction appears on its face to be necessary – that is, consistent with the Basin Plan.

An assessment framework could also help ensure decisions about restrictions are principled and consistent, help others understand how and why these decisions are made, and increase transparency and accountability around these decisions.

The MDBA and Basin governments agreed with the recommendation and indicated that work on the framework was underway, but no framework has been publicly released. Related reforms recommended by the Commission in 2018, including publishing the reasons given by Basin states for restrictions on trade and publishing compliance determinations and supporting assessments, also remain 'under consideration' (MDBA sub. 61, p. 37).

In a review of the trading rules, the ACCC could consider whether unnecessary trade restrictions are still in place, and if they are, how they might be identified by the regulator and removed, both now and in the future. The review could also consider whether a framework for assessing trade restrictions is needed, or whether the trading rules themselves should be amended to provide greater clarity on which trade restrictions are necessary.

This is not to suggest that there is no place for restrictions on water trade. As noted above, the Plan recognises that some restrictions are necessary to manage hydrological constraints and protect the environment. And in any event, formal trade barriers are not the only obstacle: trade can be inhibited in other ways, such as poor market transparency (PC 2021a, p. 57), which current reforms seek to address.

Ongoing advice from the ACCC

There is a related question about when, more generally, the ACCC should provide advice about the trading rules. The Water Act suggests that the ACCC's advice must first be sought by the MDBA. However, it is not clear that this is a necessary step, particularly if other agencies, such as the IGWC and the ACCC, play a role in the trading rules and are in a good position to know when changes to the rules might need to be considered.

Allowing the ACCC to provide advice about the rules on its own initiative could also ensure the agency maintains an ongoing interest in the effective operation of the rules and has the resources to perform this function. It could also mean that the rules can be more readily changed, when necessary, consistent with an adaptive water market framework.

⁹ Basin Plan, s. 12.19.

¹⁰ Basin Plan, s. 12.20.

¹¹ Basin Plan, s. 12.20(3).



Interim recommendation 8.1

A comprehensive review of trading rules in the Basin Plan

The Murray–Darling Basin Authority (MDBA) should ask the Australian Competition and Consumer Commission (ACCC) to conduct a comprehensive review of the Basin Plan trading rules. The review should consider, among other things, how unnecessary trade restrictions should be identified and removed.

The *Water Act 2007* (Cth) should be amended to enable the ACCC to provide advice to the MDBA about the trading rules on its own initiative. The ACCC should notify the MDBA before preparing any such advice.

9. Governance and engagement

Key points

- * **Implementing the Murray–Darling Basin Plan (the Basin Plan) – and achieving its objectives – requires robust, transparent governance arrangements, appropriate monitoring, reporting and evaluation processes and genuine community engagement. The transboundary nature of Murray–Darling Basin water management means governance and institutional arrangements are inherently complex.**
- * **There have been some positive developments in the governance arrangements supporting Basin Plan implementation since 2018.**
 - The Inspector-General of Water Compliance was established as the Basin Plan Regulator.
 - The Basin Officials Committee adopted a new structure and modest transparency improvements.
 - Basin governments have improved how they engage, including by establishing more direct, local relationships, but there is further room for improvement.
- * **Strong accountability mechanisms are central to Basin Plan implementation, and despite some modest improvements since 2018, arrangements remain weak.**
 - Accountability for implementing the Basin Plan would be increased by ensuring there is adequate oversight of intergovernmental funding agreements.
- * **Greater transparency around the actions and decisions of Basin governments would strengthen accountabilities and help foster community confidence.**
 - The activities and decisions of the Basin Officials Committee should be made much more transparent.
 - The Murray–Darling Basin Authority is working on a new monitoring strategy. It should take the opportunity to streamline and improve reporting arrangements. Ahead of the 2026 Review of the Plan, the Murray–Darling Basin Authority should conduct a stocktake of monitoring and reporting arrangements and assess how this aligns with what is required to evaluate the Plan.
- * **Communities want more meaningful opportunities to participate in Basin Plan processes and decisions.**
 - Basin governments rarely provide participants with feedback on the outcomes of Basin Plan engagement processes, including how community participation was used or influenced decisions.
 - Permanent, local engagement mechanisms can be an effective way of seeking and responding to participants views, help foster community understanding of policy processes, and build trust.
 - More coordinated, joined-up engagement efforts by Basin governments could reduce costs and allow for a more holistic consideration of some issues, including those that are affected by other Australian and state government instruments.

The success of the Murray–Darling Basin Plan (the Basin Plan) depends on effective institutional and governance arrangements for implementing the Plan, appropriate monitoring, reporting and evaluation processes, and meaningful community engagement. This chapter examines these arrangements and identifies changes to improve the efficiency and effectiveness of Basin Plan implementation.

An overview of existing arrangements, and key developments since the Commission’s last assessment in 2018, are discussed in section 9.1. Section 9.2 assesses how Basin Plan accountability mechanisms could be strengthened. Section 9.3 focuses on information and transparency arrangements, including monitoring, reporting and evaluation processes. Section 9.4 examines community engagement practices and identifies opportunities for improvement.

9.1 An overview of arrangements

Governance and institutional arrangements for implementing the Murray–Darling Basin Plan are complex. To some extent, this reflects the multijurisdictional nature of water and natural resources management in the Basin.

The *Water Act 2007* (Cth) (Water Act) and the Basin Plan 2012¹ are instruments of the Australian Government. They establish the legal basis for Basin management arrangements and assign the Australian Government a significant and ongoing role. However, Basin states are constitutionally responsible for water management in accordance with their respective laws. Basin governments also share Basin water resources (and the management of them) in accordance with the Murray–Darling Basin Agreement (2008) (MDB Agreement, box 9.1).

Roles and responsibilities

The Australian Government and Basin states share responsibility for implementing the Basin Plan and for managing the Basin’s water resources (figure 9.1).

The Australian Government has played a central role in resetting the balance through establishing Sustainable Diversion Limits (SDLs), recovering water to Bridge the Gap to SDLs and investing in the SDL adjustment measures. It also has a role in environmental water management, facilitating water trading, monitoring, evaluation and reporting and ensuring compliance with the Plan.

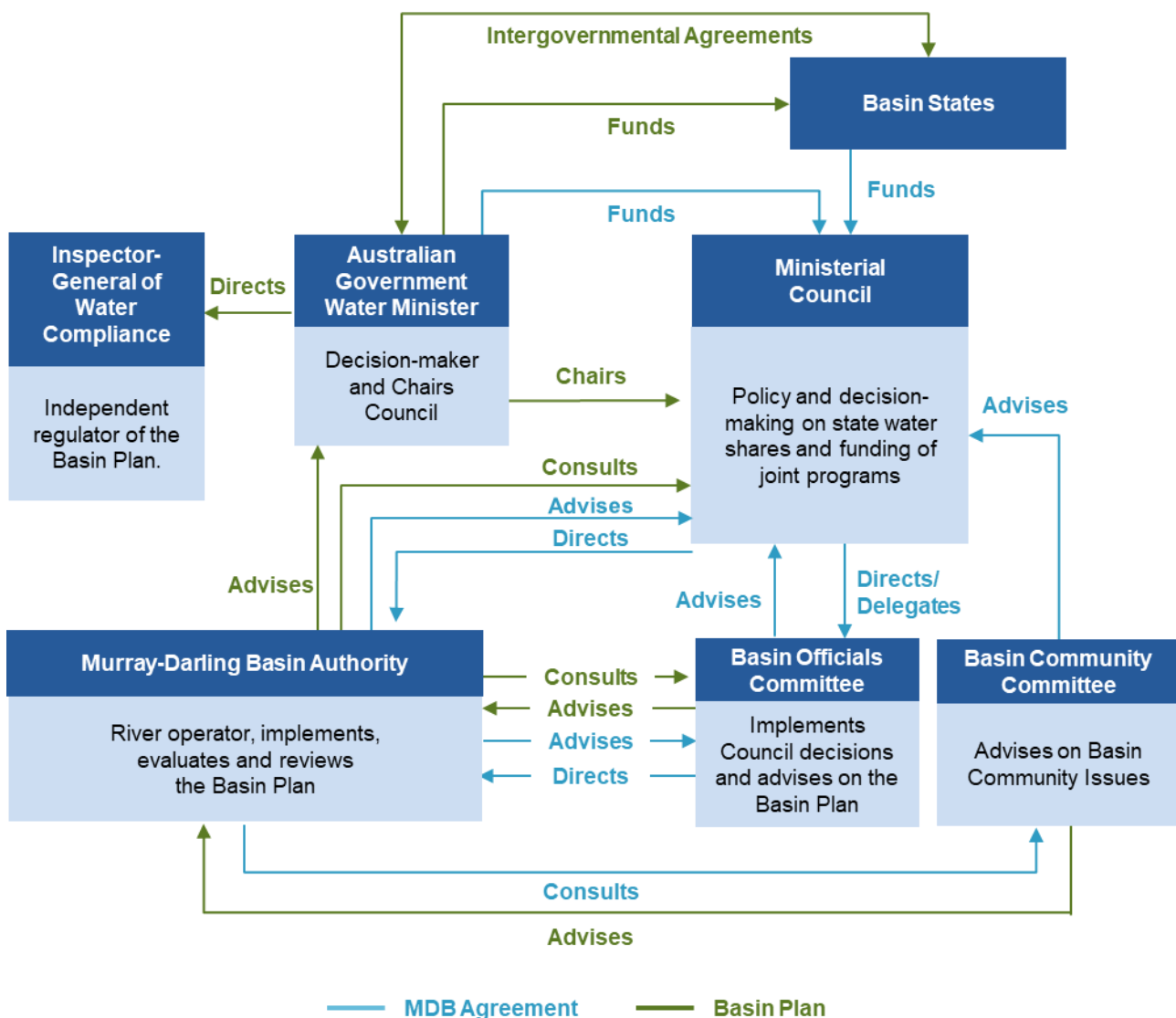
The Basin states, in addition to implementing state-based water management arrangements (including water resource planning and environmental water management), facilitate water trading and support Aboriginal and Torres Strait Islander values and uses. They are also responsible for ensuring critical human water needs are met, managing water quality and salinity, some aspects of monitoring, reporting and evaluation and implementing the SDL adjustment mechanism.

The Basin Officials Committee (BOC) is the peak body of Basin government officials established under the Water Act to provide advice to decision-makers on all Murray–Darling Basin matters. It has representatives from the Australian and Basin state governments. The chair of the BOC is appointed by the Australian Government and must be a senior Australian Government official.²

¹ An instrument of the Water Act (part 2, division 1).

² Water Act s. 201A.

Figure 9.1 – Current institutional settings and decision-making arrangements



Sources: Basin Plan 2012 (Cth); *Water Act 2007* (Cth).

BOC has dual roles, with responsibilities under both the Basin Plan and the MDB Agreement:

- Under the Basin Plan and the Water Act, BOC advises the Murray–Darling Basin Authority (MDBA) on matters referred to it and engages with the Basin states in developing and amending the Basin Plan. It also facilitates cooperation and coordination between the Australian Government, the MDBA and the Basin states in managing water resources. And BOC is the key decision-maker for some components of the SDL adjustment mechanism program (DCCEEW, sub. 77, p. 11).³
- Under the MDB Agreement, BOC advises the Ministerial Council on the management of the southern Basin’s water and other natural resources. BOC implements Ministerial Council decisions, including on Basin state water shares. BOC also exercises responsibility for high-level decision-making regarding river operations and directs the MDBA on MDB Agreement functions. It approves the MDBA’s operating plan and budget for these functions.

³ Basin Plan s. 7.12.

The MDBA also has roles and responsibilities under the Basin Plan and the MDB Agreement.

- Under the Basin Plan, the MDBA as an independent authority advises the Australian Government on amendments to the Basin Plan. The MDBA is also responsible for periodically evaluating the Plan, conducting the ten-yearly Basin Plan Review, and for several monitoring and reporting functions.
- Under the MDB Agreement, the MDBA is a service provider, funded by Basin states. The MDBA is responsible for calculating how much water is in the River Murray and notifying New South Wales, South Australia and Victoria of their water share. It is also responsible for delivering River Murray operations, including delivering water to entitlement holders, water management, and the construction, maintenance and management of water infrastructure assets.

Box 9.1 – Murray–Darling Basin Agreement

The Murray–Darling Basin Agreement (the MDB Agreement) is a long-standing agreement between the Australian Government and Basin states for sharing water in the southern Basin and for operating the regulated River Murray system.

The MDB Agreement has a consensus decision-making model, with each party holding an effective veto. Over time, in addition to operating the regulated River Murray system, jurisdictions have collectively made several significant water and natural resource management reforms, including:

- managing salinity, with the first strategy agreed in 1985
- capping water extractions across the Basin in 1995
- improving environmental flows in the River Murray through The Living Murray program, which recovered 500 GL of water for the environment and built environmental works along the River Murray
- establishing the framework for southern Basin interstate water trading.

Key elements of the MDB Agreement include provisioning water for system demands (conveyance water) to keep the system running, as well as ensuring that critical human water needs can be met and maintaining water in reserve to meet the following year's system needs. The MDB Agreement provides for the MDBA to manage the River Murray and to deliver state water entitlements. The MDBA also manages the maintenance and operations of infrastructure (such as dams, weirs and locks) on behalf of Basin governments. Each Basin state contributes funding for managing the regulated River Murray system based on its level of water use. The MDB Agreement also defines the agreed approach between Basin states for how available water resources are shared and outlines supporting water accounting arrangements.

The Basin Plan and MDB Agreement are separate instruments that operate in parallel, with neither instrument having primacy over the other.

Sources: Murray Darling Basin Agreement (2008); *Water Act 2007* (Cth).

The Inspector-General of Water Compliance (IGWC) is a statutory office holder responsible for providing independent oversight, monitoring, compliance, and enforcement functions for the Water Act and the Basin Plan. Under the Water Act, the IGWC monitors and oversees the performance of Basin governments and their water agencies. This includes monitoring of commitments and intergovernmental agreements specified in section 215C(3) of the Water Act. Other functions of the IGWC include enforcing compliance with the Act,

conducting inquiries into agency performance under the Act and engaging with the Australian public on Basin water management.⁴

Funding arrangements

The Australian Government, through the Department of Climate Change, Energy, the Environment and Water (DCCEEW), funds implementation of the Basin Plan. Some of this funding is spent by the Australian Government; and some is provided to Basin governments to implement the Basin Plan through the Federal Financial Relations Framework. The Australian Government makes financial contributions to Basin states and in return the Basin states have agreed to implement certain outcomes (such as water efficiency programs, environmental initiatives or infrastructure improvements). For example:

- the Australian Government committed \$174 million through the National Partnership Agreement on Implementing Water Reform in the Murray–Darling Basin (NPA) (COAG 2014) which expired 30 June 2020
- under the Federation Funding Agreement – Environment Schedule on Implementing Water Reform in the Murray–Darling Basin (2021-22 to 2023-24) (the FFA) the Australian Government committed up to \$60 million in payments to Basin state governments to support Basin Plan implementation. This agreement expires 30 June 2024 (CFFR 2021).

Under the FFA, Basin states are required to report annually to the Australian Government on progress against milestones and key performance indicators listed within the FFA. DCCEEW assesses Basin state performance against key performance indicators to determine payments. The NPA was also subject to annual milestone and key performance indicators reporting.

The Australian Government funds the MDBA's roles under the Basin Plan. Basin states provide the majority of the funding to the MDBA to operate the River Murray system and to support the management of river assets, structures and other joint programs. These costs are shared between the Basin states based on periodic assessments of the relative benefit that each jurisdiction derives from these joint activities (Buckley 2014). For natural resource management programs, after allowing for contributions from Queensland and the Australian Capital Territory, the balance of costs is shared equally between the Australian Government, New South Wales, Victoria and South Australia (Buckley 2014).

Reporting and evaluation requirements

Schedule 12 of the Basin Plan outlines a range of matters that the MDBA, the Commonwealth Environmental Water Holder (the CEWH), the DCCEEW and Basin states are required to report against (table 9.1). The IGWC has also taken on some reporting. Some matters are reported annually – these are predominantly related to the implementation of, and compliance with, different elements of the Basin Plan. Other elements, more focused on the outcomes of the Basin Plan, are reported five yearly.

The Basin Plan also prescribes a program for evaluating its effectiveness. The MDBA reports annually on the effectiveness of the Basin Plan, conducts an evaluation every five years (the latest in 2020) and is scheduled to review the Basin Plan in 2026.

⁴ Water Act s. 215C.

Table 9.1 – Matters to be reported (Schedule 12 of the Basin Plan)

Matters to be reported on an annual basis	Reporter
The effectiveness of the management of risks to Basin water resources	Basin states, MDBA
The transition to long-term average sustainable diversion limits	DCCEEW
The extent to which local knowledge and solutions inform the implementation of the Basin Plan	Basin states, MDBA, CEWH
The identification of environmental water and the monitoring of its use	Basin states, MDBA, CEWH
The implementation of the environmental management framework	Basin states, MDBA, CEWH
The implementation, where necessary, of the emergency response process for critical human water needs	Basin states, MDBA, DCCEEW
The implementation of the water quality and salinity management plan	Basin states, MDBA, CEWH
The implementation of water trading rules	Basin states, MDBA
Compliance with water resource plans	Basin states
The prioritisation of critical human water needs	Basin states
The accountability and transparency of arrangements for water sharing	Basin states
Matters to be reported on a five-yearly basis	Reporter
The transparency and effectiveness of the management of the Basin water resources	MDBA
The protection and restoration of water-dependent ecosystems and ecosystem functions in the Murray–Darling Basin, including for the purposes of strengthening their resilience in a changing climate	MDBA
The extent to which the Basin Plan has affected social, economic and environmental outcomes in the Murray–Darling Basin.	MDBA, DCCEEW
The achievement of environmental outcomes at a Basin scale	MDBA, CEWH
The achievement of environmental outcomes at an asset scale	Basin states
The fitness for purpose of the Basin water resources	MDBA
Progress towards the water quality targets	Basin states, MDBA
The facilitation, by efficient and effective water markets, of tradeable water rights reaching their most productive use	MDBA
The certainty of access to Basin water resources	MDBA
The efficiency and effectiveness of the operation of water resource plans, including in providing a robust framework under a changing climate	Basin states, MDBA

Key developments since 2018

There have been some important developments in the governance arrangements and engagement processes supporting Basin Plan implementation since the Commission's last assessment in 2018.

A dedicated Basin Plan regulator was established

In August 2021, the IGWC was established to provide independent oversight, monitoring, compliance and enforcement of the Basin Plan and parts of the Water Act.

The establishment of the IGWC follows the Commission's 2018 recommendation to establish a Basin Plan Regulator and transfer the MDBA's regulatory functions to it (PC 2018, p. 364).

While it is too early to assess the effectiveness of the IGWC, its performance and activity to date suggests it has been an important and positive change that is providing greater transparency and accountability around compliance (for example, in relation to metering and measurement as explored in chapter 4). Many participants to this inquiry were positive about the establishment of the IGWC and its performance. The National Irrigators Council, for example, said it:

... supported the introduction of the IGWC and has welcomed its contribution to the Basin Plan through a number of inquiries and reports delivered to date. The tough cop on the beat helps build confidence in the system and its participants. Further work is needed on this front, but progress is being made (sub. 62, p. 19).

And the ACT Government stated 'the IGWC was a positive division of responsibilities to address conflicting functions previously held by the MDBA' (sub. 85, p. 7) and that:

the status of Basin Plan implementation and water recovery reaffirms the importance of the independent oversight role of the IGWC to strengthen accountability in any future redesign of Basin Plan implementation (sub. 85, p. 3).

However, some participants questioned the administrative arrangements for the IGWC. Following the transfer of the compliance function from the MDBA to the IGWC, the Office of Water Compliance that supports the IGWC is now located in the DCCEEW. Some participants suggested this arrangement could lead to regulatory capture and a loss of independence (Chipperfield, sub. 85, p. 4). Healthy Rivers Lower Murray observed that:

The office of the Inspector-General needs to be truly independent, with powers to investigate all serious breaches, whether failure to deliver projects, water theft or other actions undermining the security of the Basin Plan (Healthy Rivers Lower Murray, sub. 37, p. 1).

Other participants (Gwydir Valley Irrigators Association sub. 89; Namoi Water, sub. 94) reported concerns about potential duplication of the role of the IGWC and state authorities (such as the Natural Resources Access Regulator in New South Wales) on compliance monitoring. The New South Wales Government also noted the importance of making sure that the roles and responsibilities of the IGWC and the Natural Resources Access Regulator are clearly communicated to water users to avoid confusion (NSW Government, sub. 43, pp. 13-14). The IGWC advised the Commission that it is aware of this issue and continues to communicate to stakeholders about the distinction between the two agency's roles, including through its broader community engagement.

Risks to the IGWC's independence (actual or perceived) – and any duplication or overlap in regulatory responsibilities – should be monitored and assessed as the IGWC matures. Potential efficiency benefits aside, locating the Office of Water Compliance within the DCCEEW, an agency which the IGWC oversees, does not align with principles of good governance (chapter 1).

On 14 September 2023, the Australian Government announced an independent review of the IGWC (Australian Government 2023b). The review will consider whether the IGWC has the relevant powers to carry out its functions, including: the IGWC's powers to take enforcement action for illegal activities; its ability to conduct compliance audits and publish reports; and to issue standards and guidelines for government agencies.

Reforms to committee structure of Basin Officials Committee

In 2018, Basin governments commissioned the *Review of the Murray–Darling Basin joint governance arrangements* (the Claydon Review). Released 18 March 2019, the Claydon Review assessed BOC's committee and governance arrangements and identified opportunities for improving them (box 9.2).

Box 9.2 – Review of the Murray–Darling Basin joint governance arrangements

On 18 March 2019, Mr Greg Claydon delivered his report *Review of the Murray–Darling Basin Joint Governance Arrangements Final Report* (the Claydon Review). The Review examined how well the decision-making and decision implementation processes that support the delivery of water reforms and Basin water management were working. The Review found the current arrangements to be complex and that:

The existing governance arrangements are unwieldy, there are too many committees adversely affecting coordination and streamlined decision-making (Claydon 2019, p. 2).

Claydon also found that the BOC was not operating effectively and was neither managing or considering strategic directions or strategic risks. The Claydon Review noted a lack of role clarity and responsibility:

All external stakeholders contacted were confused as to who has what roles and responsibilities, and 'who is in charge?', or 'is there no-one in charge?' They were especially concerned about the lack of engagement with the high-level committees and transparency in their decision-making. (Claydon 2019, p. 2)

Claydon also noted that there were too many committees, with some past their 'use-by dates' and this was harming coordination and decision-making. There was also a strong need for effective collaboration, coordination and cooperation among Basin governments.

To support a shift from an operational to strategic focus and a more programmatic and 'board-like' approach, Claydon supported an independent Chair for BOC. BOC's stakeholder engagement was found to be poor and transparency lacking around the forum and its decision-making. Claydon also noted cultural issues among members such as a lack of collegiality, courtesy and common purpose that were adversely impacting BOC's effectiveness.

Claydon recommended several options for reform to BOC ranging from 'light-touch' to more comprehensive 'renovations' of BOC and joint governance arrangements.

Source: Claydon (2019)

In December 2019, the Ministerial Council endorsed BOC's response to the Claydon Review and committed to ten actions to improve the committee's effectiveness, strategic focus and to foster joint stewardship. These actions included:

- clarifying the role of BOC in decision-making
- adopting a board-like approach to BOC functions and meetings
- reviewing BOC chairing arrangements by 30 June 2020
- improving communication and stakeholder engagement
- restructuring board committees.

It is difficult to assess the implementation status of many of these actions based on publicly available information. However, the DCCEEW advised that these recommendations were completed or implemented as part of business-as-usual BOC settings (pers. comm, September 2023).

There is now more transparency around aspects of BOC's operations. BOC proceedings are more transparent – since 11 June 2021, 12 meeting communiqués have been published by BOC on the MDBA website. Prior to this, none appear to have been published. There is also information on BOC's committee structure and a refreshed Basin Officials Committee website. BOC also holds at least one regional meeting each year during the River Reflections Conferences.

The DCCEEW informed the Commission that engagement between the BOC and Basin Community Committee (BCC) includes a joint BOC and BCC meeting annually, as well as BOC Chair attendance at several BCC meetings each year. In 2021, the BCC developed in consultation with BOC, draft principles for BOC transparency which were published by the BCC (BCC 2023). The BCC has continued to stress with BOC the importance of these transparency principles to Basin communities (Basin Community Committee 2023).

There are further opportunities to improve the transparency of BOC processes, and to elevate community voices in Basin Plan decision-making, as discussed later in this chapter (sections 9.3 and 9.4).

Greater centralisation of Australian Government water functions under the responsibility of the DCCEEW's water division

In May 2023, the Australian Government centralised several water agencies and functions within the DCCEEW:

- The CEWH's environmental water and statutory functions were integrated into the DCCEEW's water division.
- The water infrastructure function was transferred from the Australian Government Department of Infrastructure, Transport, Regional Development, Communications and the Arts to the DCCEEW's water division.

And, as already noted, while the statutory position remains independent, the IGWC is supported by staff from the Office of Water Compliance, which is now housed in the DCCEEW.

These changes may potentially reduce institutional complexity and increase the DCCEEW's ability to drive reforms by having greater control over water functions. However, centralisation of water functions can also introduce risks, including reduced role clarity and accountability, and real or perceived conflicts of interest.

Basin governments are engaging more ...

There have been some improvements to engagement practices over the last five years.

Some agencies have strengthened their local connections and increased investment in direct relationships with Basin organisations and communities. For example, the CEWH has partnered with various basin organisations (such as the Australian Landscape Trust) to foster collaboration on infrastructure and resource management to improve environmental watering outcomes (CEWH 2020).

The CEWH also works with the Department of Environment and Water in South Australia to assess potential uses of environmental water, and to design the watering strategy (CEWH 2021). The CEWH's Local Engagement Officers are also well regarded for building on-ground connections between community and the agency (chapter 3). Heather Built of the First People of the Millewa Mallee, for example, said:

LEOs (Local Engagement Officers) are a great idea, get people living and participating in the area (pers. comm, 27 June 2023).

Several participants commended the positive impact of the Local Engagement Officer program and the IGWC has called for its expansion (IGWC 2022, p. 17).

The MDBA has also sought to improve community connection and engagement across the Basin, including by:

- undertaking ‘listening tours’ (involving senior MDBA officials and representatives from the DCCEEW, the CEWH, and Basin states) to provide an opportunity for community members to meet with a range of decision-makers at a single event
- establishing a dedicated engagement team to support specific initiatives. For example, the Barmah-Millewa Feasibility Study included dedicated workshops and online forums to help ensure local views and knowledge were captured and considered in the decision-making process
- hosting the annual River Reflections conference in a regional centre each year to discuss water management challenges and opportunities.

These initiatives are complemented by the MDBA regionalisation process which commenced in 2017 (MDBA 2020e). Key elements of this process include establishing Regional Engagement Officers (REOs) to build community relationships in the Basin, and locating MDBA staff in regional offices in Griffith, Mildura and Murray Bridge. In 2021, the MDBA achieved its 2019 stated goal of having one third of staff regionally based (MDBA 2021b).

However, several participants commented that although they know the MDBA has a representative in town, their presence and impact is not strongly felt. As discussed in section 9.4, effective community engagement should advance partnerships and actively involve communities in decision-making – a local presence in communities is important but it is not enough.

The DCCEEW has also implemented various programs aimed at working collaboratively with communities to deliver the Basin Plan. These include:

- a ‘Have your say’ page on the DCCEEW website to receive submissions from the community on Basin Plan implementation.
- hosting over ten water recovery and water reform community engagements in the Basin since 2018
- targeted information sessions in six Basin catchments covering remaining water recovery targets.

The Commission heard that Basin states have also taken steps to improve how they engage with Basin communities (box 9.3). Notwithstanding these efforts to improve engagement practices, concerns about the quality and value of Basin Plan-related engagement processes remain (discussed in section 9.4).

Box 9.3 – Basin state government initiatives to improve community engagement

Basin states have invested in several new community engagement activities in recent years.

- The Victorian Department of Energy, Environment and Climate Action established a consultative committee in April 2022 as part of their Constraints Measures Program feasibility study (Victorian Government, sub. 74, response to information request, p. 35).
- The NSW Department of Planning and Environment established a monthly webinar Water Engagement Roundup which provides updates on current consultation and engagement activities surrounding water policy and programs from the Department (New South Wales Government, sub. 43, response to information request, p. 23).
- The ACT Environment, Planning and Sustainable Development Directorate provided funding for the Upper Murrumbidgee Waterwatch program, including platypus monitoring and a regional frogwatch program.

... and have increased online water information sources

Several online water information portals have been put in place by Basin government water agencies since 2018 to improve data accessibility. The Bureau of Meteorology (BOM) now provides near real-time water information by combining information from various state water agencies, the MDBA and the CEWH. In 2020, the NSW Government launched an online portal *WaterInsights* which contains daily river reports, meteorology information and various graphs and maps designed to assist community members make informed decisions around their commercial water usage.

The usability and accessibility of some existing information sources have also improved. The BOM added features to the Murray–Darling Basin Water Information Portal, including data on groundwater levels and groundwater trade as well as more interactive river diagrams for major Basin catchments.

More significant changes to governance arrangements and engagement practices are needed

While there have been some modest positive developments in governance arrangements and engagement practices since 2018, there remains significant scope to strengthen the arrangements supporting Basin Plan implementation.

It has been known for some time that the Basin Plan will not be delivered by 30 June 2024 – in the past five years alone, over 30 reports and reviews have documented the lack of progress, highlighted significant delivery risks, and made recommendations aimed at getting the Basin Plan on track. However, this reporting has not spurred sufficient effort and action by Basin governments to deliver the Basin Plan (despite Basin governments frequently committing and recommitting to implementing the Basin Plan in full).

Some inquiry participants argued that this ‘talk without action’ has eroded confidence and trust in the Basin Plan and the institutions responsible for delivering it. For example, a licence holder from Bourke, said:

Community trust and confidence in water management are completely eroded as the Bourke community keeps asking for tangible action, however, they are met with a raft of summits, conferences, and working parties obsessed with review annotation and not practical outcomes. (Mervyn John Gordon, sub. 19, p. 2).

The Australian Dairy Industry Council also remarked:

The result of ... inaction over many years is that communities feel over-consulted yet unheard, and that there is a high level of cynicism about participation in future consultations. The same questions are asked, and the same recommendations are made time and time again (sub. 64, p. 4).

Implementing the Basin Plan – and achieving its outcomes and objectives – relies on dedicated effort and timely action by all Basin governments. However, as recent history shows, it has been difficult to persuade or incentivise Basin Plan parties to deliver on their commitments and operate in a collaborative way.

There are several relatively simple, low-cost changes that could improve the prospects of delivering the Basin Plan in an efficient and timely way. These changes complement the recommendations made in earlier chapters of this report.

- Accountability for implementing the Basin Plan would be strengthened by ensuring funding agreements between the Australian Government and Basin states are well-designed, and there is adequate regulatory oversight of intergovernmental funding agreements (section 9.2).
- Open and transparent decision-making aids accountability, and information on Basin Plan processes and outcomes builds the public’s trust and confidence in the Basin Plan. While a lot of information is published,

it is disparate and difficult to navigate, and governments are not always transparent about the reasons for their decisions or the evidence on which decisions are based (section 9.3).

- Meaningful engagement with industry and local communities on Basin Plan implementation can improve outcomes and is central to the public's understanding of, and trust in, the Basin Plan. Engagement processes that are well-coordinated (among government agencies), have a local and enduring presence in Basin communities, and facilitate genuine exchange, are more effective than one-way, siloed engagement processes (section 9.4).

9.2 Accountability mechanisms under the Basin Plan

Mechanisms that hold Basin institutions to account for their various roles and responsibilities are critical for effective implementation of the Basin Plan, and the achievement of its objectives.

However, progress to date demonstrates that accountability arrangements under the Basin Plan are often weak or ineffective. Basin governments have failed to deliver the SDL Adjustment Mechanism as agreed (chapter 2), develop water resource plans on time (chapter 4), and prepare long-term environmental watering plans (chapter 3).

Clear roles and responsibilities, coupled with independent oversight of how effectively institutions are exercising their responsibilities, are fundamental to accountability. Where taxpayer funds are used to fund Basin Plan activities, there must be mechanisms in place to hold the funding body and the recipient to account. There is scope to improve in each of these areas. Greater transparency around the actions and decisions of Basin governments can also strengthen accountability, as discussed in section 9.3.

Roles and responsibilities should be clear and coherent

As pointed out by some participants, the roles and responsibilities for Basin Plan implementation across Basin governments are complex and can be confusing. Many participants called for greater clarity and coherence of roles and responsibilities. We heard about 'unclear or disputed responsibilities among governments and government agencies' (Slattery and Johnson, sub. 90, p. 2) and that it is difficult 'to navigate and find simple explanations for the various aspects of the Basin Plan' (Renmark Irrigation Trust, sub. 24 p. 6).

Some participants suggested the complexity and lack of role clarity is resulting in blame shifting (Louise Burge, sub. 98 p. 5), and reducing the effectiveness of community engagement (Murray Irrigation Limited, sub. 65 p. 30).

Many called for greater clarity on roles and responsibilities. The NSW Government, for example, said:

Further improvements could be made to clarify roles and responsibilities as it relates to implementation of the Basin Plan as there are a lot of entities especially in the government-owned water sector, across all tiers of government, with various overlapping roles and accountabilities and differing arrangements between States (sub. 43, p. 13).

On coherence, the ACT Government suggested an 'independent functional review of the Commonwealth institutional and governance arrangements for the future Basin Plan implementation and water policy reforms' (sub. 85, p. 8).⁵ And the Central NSW Joint Organisation, a regional collaboration of councils, suggested the complex institutional arrangements would benefit from more effective collaboration between

⁵ See also Slattery and Johnson (sub. 90, pp. 22-23) and Renmark Irrigation Trust (sub. 24, p. 5).

the Basin governments and agencies that enables ‘a fully integrated, whole of catchment approach’ that ‘moves beyond the silos of the past’ (sub. 31, p. 7).

Others said there is a lack of clarity and potential duplication around the monitoring, evaluation and reporting responsibilities of the IGWC and MDBA (IGWC, sub. 75 p. 23). A foundational principle for good water governance is clarity of roles and responsibilities (chapter 1). Role clarity supports clear expectations and accountabilities which promotes public trust and confidence. Where roles and responsibilities are unclear, it can lead to important activities and decisions being overlooked (or duplicated), increase coordination costs and reduce accountability by making it easier to shift blame and avoid responsibility. It can also make it difficult for participants to raise concerns (if there is confusion about which agency is responsible for the issue) and reduce the effectiveness of engagement activities.

Most concerns raised by participants to this inquiry were general in nature – and focused more on the number of bodies involved rather than specific examples of functions being unnecessarily duplicated, not performed at all or lacking coherence. The complex institutional landscape around the Basin Plan is not necessarily unjustified. The Basin Plan is a significant policy endeavour and involves actions, decisions, investments and processes by the Australian Government one territory and five state governments. And while some Basin Plan activities and roles are best suited to distinct government agencies, other roles need to be shared among several agencies. Basin governments are also responsible for many water and natural resource management functions that are adjacent to – but separate from – the Basin Plan. In this context, a relatively crowded institutional landscape is an inherent feature of the Basin Plan framework.

That said, it has not always been clear who is responsible for leading implementation of the Basin Plan: the Australian Government or Basin states. This absence of leadership and responsibility for implementation has meant key implementation risks have not been managed effectively. As chapter 2 explores, effective implementation of a ‘Basin-wide’ Plan requires national leadership. The Australian Government needs to exercise leadership to deliver key elements of the Basin Plan and be accountable for its decisions to avoid a future stalemate.

A further driver of institutional and governance complexity around the Basin Plan is the number of laws, plans, agreements, policies and other instruments that govern Basin water management. In addition to the Plan itself, there is the *Water Act 2007*, the MDB Agreement, water resource plans, and other state-based water management instruments (such as water sharing plans).

The IGWC submitted that the separate instruments guiding water management in the Basin do not always align well.

[An] unresolved conflict that exists between the Basin Plan, with its focus on environmental requirements, and the [MDB] Agreement, which focuses on water delivery for the southern states and irrigation. This conflict is exemplified by the lack of clear and transparent processes for prioritising needs when there are competing demands for water delivery. (sub. 75, p. 22)

Multiple governance instruments, each operating simultaneously over the same geographical area, may be necessary to reflect the complexity of the Basin and its cross-jurisdictional management arrangements, but this does not necessarily promote coherent governance arrangements. There is the risk that overlapping instruments work against each other, due to different focuses or policy objectives, leading to inefficient decision-making processes, unclear roles and responsibilities, and undermining trust and confidence in the overall arrangements (for example, the interaction between the Basin Plan and the MDB Agreement). This can further exacerbate the difficulty people face establishing ‘who is responsible for what’ in the Basin.

Clear and coherent governance arrangements for the Basin Plan, while important, will be insufficient for realising the Basin Plan’s objectives. Effective coordination between the implementation of the Basin Plan,

and the operation of other Australian and State government instruments that affect the Basin (such as those relating to natural resource management, town water service delivery and planning arrangements) is also needed. As chapter 3 explores, greater coordination of land and water management activities at the Basin scale will be needed to fully realise the Basin Plan’s objectives.

Based on the views submitted to this inquiry, there is scope to improve community understanding of the specific roles and responsibilities of each Basin government agency involved in Basin Plan implementation. Governance arrangements may also benefit from a more coherent and holistic framework that clearly – and transparently – articulates how key governance instruments work together and explains how conflicts among instruments are managed when they arise. Further, given governance and institutional complexity can lead to a confusing monitoring and reporting environment, and a high volume of fragmented engagement processes, there is a case for clarifying and streamlining these arrangements. These issues are discussed in sections 9.3 and 9.4 respectively.

Funding agreements need to set the right incentives ...

The Basin Plan is underpinned by a series of intergovernmental funding agreements. A review by the IGWC identified 40 agreements in relation to water and Basin Plan deliverables with 58 schedules and 774 milestones covering \$1.84 billion in payments (IGWC, sub. 75, p. 8). Implementing the Basin Plan cost-effectively and on time relies on the parties to these agreements meeting their commitments.

Under the new agreement,⁶ in exchange for extending the deadline for the SDL adjustment mechanism, Basin states will ‘provide additional assurances and accountabilities’. At the time of this interim report, the full details of these strengthened accountability arrangements, and their potential effectiveness, were not public.

The Water Amendment (Restoring Our Rivers) Bill 2023 seeks to ensure Basin states are held to account for meeting their SDL obligations. The Bill aims to give the IGWC responsibility for determining whether a Basin state has failed to meet SDL obligations and if so, whether the state has a reasonable excuse for doing so. The Bill also seeks to ‘formalise and expand on’ related reporting requirements: non-compliant states would need to prepare ‘action plans’, which would essentially set out how they will ensure the SDLs are met in the future.

The Commission’s 2018 assessment of the Basin Plan found that there were weaknesses in the design of the (now expired) National Partnership Agreement on Implementing Water Reform in the Murray–Darling Basin (the NPA) that reduced its usefulness to hold Basin states to account for meeting their commitments. The weaknesses included milestones that were poorly defined; no option for partial payments; key information relevant to progress was not publicly released and assessments against milestones were not released in a timely manner (PC 2018, p. 55). The Commission recommended that any future funding agreements should ensure:

- the roles of the Australian Government and Basin state governments are clearly identified
- specific performance milestones are identified, and that clear responsibility is assigned for the delivery of each milestone
- where milestones are linked to payments, that these payments are disaggregated with a payment per milestone to provide a genuine incentive for implementation
- reporting on the progress of Basin governments in meeting milestones is timely
- independent assessment of the progress of Basin governments is undertaken

⁶ Agreement of Murray-Darling Basin Ministers to Deliver the Basin Plan in Full (CFFR 22 August 2023).

- advice provided by relevant agencies (such as the Murray–Darling Basin Authority or the Commonwealth Environmental Water Holder) is used to inform assessments of progress and is published in full (PC 2018, p. 326).

A 2020 review of the NPA by ARTD Consultants also found that there were opportunities to improve future intergovernmental funding agreements, including ensuring that milestones and key performance indicators clearly prescribe outputs and outcomes. (DAFF 2020, p. vi,vii).

Since 2018, reforms to the Federal Financial Relations Framework have addressed some of these concerns. Standardised processes and documentation for funding agreements have increased the identification of roles and responsibilities and disaggregation of milestone payments has improved. That said, some agreements still contain key performance indicators or milestones that are poorly defined and outputs and outcomes that could be more clearly prescribed (for example, Implementing Water Reform in the Murray–Darling Basin Agreement (Implementing Water Reform Agreement)).⁷

While some agreements have clear reporting arrangements, there is scope to improve the reporting, including around what measured outcomes were achieved and evidence on their cost-effectiveness, in line with Principle 8 of the Federal Financial Agreement Principles (nd, p. 2). As discussed in chapter 2, with the proposed extension of timelines for delivering the Basin Plan, there is an opportunity to improve future funding agreements to ensure they incentivise parties to deliver on their commitments.

... and be subject to adequate oversight

Participants raised concerns about gaps in the compliance and oversight arrangements of intergovernmental agreements that cover financial arrangements between the Australian Government and Basin state governments for Basin Plan implementation (Slattery and Johnson, sub. 90 and IGWC, sub. 75).

The functions of the IGWC include independent oversight of the performance of Australian Government and Basin state agencies in meeting their obligations to manage Basin water resources, including some intergovernmental agreements. Through its oversight function, the IGWC provides the public with the assurance that agencies are doing what they say they are doing, which drives transparency and accountability and promotes trust and confidence in the Basin Plan and its institutions. The IGWC can also improve agency performance and drive continuous improvements to the Basin Plan's delivery. For example, performance monitoring can show where implementation is being done well and where there are opportunities for improvement.

The IGWC stated it has oversight of nine of the 40 intergovernmental agreements relevant to Basin Plan implementation (sub. 75, p. 23). The nine agreements are listed in 215C of the Water Act (some of the listed agreements have expired). Intergovernmental funding agreements outside of the IGWC's remit are only subject to broader government accountability arrangements (such as the Australian National Audit Office oversight and accountability arrangements under the Federal Financial Relations Framework). This creates a mismatch where some agreements are within the remit of the IGWC while others are not, without a good basis for the difference in treatment.

The IGWC contends that its oversight and compliance role would be more effective if it had jurisdiction over additional intergovernmental funding agreements (sub. 75, p. 23). Slattery and Johnson also recommended enhancing the powers of the IGWC to monitor and oversee additional agreements (sub. 90 p. 23). An example of an agreement that is currently *not* in the jurisdiction of the IGWC is the Implementing Water

⁷ Implementing Water Reform in the Murray–Darling Basin 2021–22 - 2023–24 (CFFR 1 March 2022).

Reform Agreement, which builds on the already completed National Partnership Agreement on Implementing Water Reform in the Murray–Darling Basin.

The rationale for providing IGWC with oversight of some, but not all intergovernmental agreements, is not clear. The explanatory memorandum for the Bill that established the IGWC does not detail why some agreements are listed in the Act and not others. The Australian Minister for Water can prescribe additional agreements under regulation, but this option has not been used. There may be good reasons why some intergovernmental agreements are not suited to being overseen by the IGWC (for example, where the financial outlay is small, or there is minimal connection to the IGWC's function), but generally speaking, because of the remit and expertise of the IGWC, it is well placed to provide regulatory oversight of more intergovernmental funding agreements relating to Basin Plan implementation.

Given the importance of independent oversight, and the work program the IGWC has established in this area, the Australian Minister for Water should prescribe by regulation additional intergovernmental agreements over which the IGWC should have oversight.



Interim recommendation 9.1

Extending oversight of intergovernmental funding agreements relevant to Basin Plan implementation

The Australian Minister for Water should prescribe by regulation the additional intergovernmental funding agreements that the Inspector-General of Water Compliance should oversee.

The Australian Government Department of Climate Change, Energy, the Environment and Water should consult with Basin state governments, the Inspector-General of Water Compliance and other interested parties to determine which new and existing agreements should be prescribed and make public the rationale for including or excluding each agreement in the Inspector-General of Water Compliance's remit.

9.3 Information and transparency

Transparent information is central to accountability, and it can give taxpayers and the broader community confidence that the Murray–Darling Basin is being managed effectively and efficiently. However, the Commission heard that many participants find it difficult to navigate and use the information available on Basin Plan funding, decision-making processes and outcomes. And some participants said they would like different types of information, including information about key processes and decision-making forums.

It is difficult to access information

While there is a lot of information available on the Basin Plan, it can be difficult to access, navigate, understand and interpret. Participants commented on the lack of a single source of truth for Basin information. The Lifeblood Alliance, for example, described the situation as a 'plethora of voices and gigababble' (sub. 52, p. 12).

Tracing where taxpayer money is spent on implementing the Basin Plan (and the outcomes achieved from the spending) is not easy. The IGWC described the available information as 'opaque', in part because of the number of changes to Basin Plan-related programs over time and said 'it would be almost impossible for a member of the public to digest and comprehend the movements and program changes' (sub. 75, p. 7). The

Inland Rivers Network (sub. 82, p. 2) also called for improved transparency and regulation around the investment of public money in Basin Plan implementation.

The Basin Plan evaluation is an important opportunity to provide transparency about the costs and benefits of the Basin Plan (discussed below).

Information about SDL adjustment mechanism projects is difficult for community members to access. Leeton Shire Council remarked:

... getting updates on the SDLAM projects has proved challenging at both the national and state level, even for local Councils. These projects have huge consequences for communities and there is absolutely no excuse for secrecy or a lack of transparency. (sub. 72, p. 2)

Concerns were also raised about whether and how decision-making in the Basin is informed by good information. The IGWC's 2022 Annual Community Sentiment Survey found that many respondents considered:

... water management decisions were not transparent, and that political motives or mismanagement were affecting the public perception of water management across the Basin. (sub. 75, p. 6)

Several participants emphasised the importance of making all information used in decision-making publicly available, to promote good decision-making and to help hold decision-makers to account. The Australian Conservation Foundation, for example, said:

Information used to manage the water in the basin needs to be freely available if management is to improve and public trust restored and maintained. (sub. 88, p. 2)

Participants were also frustrated with a lack of scientific information about the outcomes achieved using water that has been recovered for the environment (Central Murray Environmental Floodplains Group, sub. 6, Northern Victorian Irrigators, sub. 7).

The CEWH monitors and evaluates the delivery of Commonwealth environmental water in the Basin through the Flow-MER program. The program publishes annual reports, a quarterly newsletter and holds an annual forum to share findings from the monitoring of water for the environment. Articles are also posted on the CEWH website with examples of outcomes from environmental watering activities. Improving the accessibility of this information may ease community distrust of the water recovery process. Ideally, information would be concise, clear, simple and from a trusted body. Communicating and demonstrating the benefits of environmental watering activities is a challenging task, but one that needs to be done well if the Basin Plan is to be accepted and trusted.

The complex institutional landscape around the Basin Plan can make accessing information difficult. Participants said they often do not know who to contact, or how. The IGWC Community Sentiment Research also found that – with at least 6 Australian Government agencies having a direct role in water management in the Basin, and many more at the state and territory level – there is confusion when identifying which agency is responsible for publishing particular information (sub. 75, p. 5).

The fragmented nature of information provided in the Basin can also lead to inconsistencies between information sources.

- The ACT Government flagged that the amount of water used in the Basin during 2018-19 – as reported by four separate Australian Government agencies (MDBA, BOM, Australian Bureau of Statistics, Australian Bureau of Agricultural and Resource Economics and Sciences) – ranged from 4176 gigalitres to 7484 gigalitres (ACT Government, sub. 85, p. 7).

- Similar problems were observed with water storage information provided via the NSW Water Insights portal and the BOM water storage interactive maps (information is updated at different times, resulting in significantly different storage levels for the same catchments).

Some commented that the lack of a ‘publicly accessible, single set of water accounts for the Basin’ hinders accountability for achieving Basin Plan objectives (Wentworth Group of Concerned Scientists, sub. 81, p. 4).



Interim finding 9.1

Information about Basin Plan funding, processes and outcomes can be difficult to access

Information about Murray–Darling Basin water management is fragmented and difficult to navigate. This can cause confusion about which agency to go to for information. It can also mean that information reported sometimes differs across agencies. This makes it difficult for communities to understand and engage with water policy and practice. Inconsistencies in information can undermine public confidence and trust in Basin institutions and instruments.

Complex monitoring and reporting arrangements are reducing transparency

Effective reporting, monitoring and evaluation is critical to the successful implementation of the Basin Plan. There are two important aspects to reporting on the Basin Plan:

- Basin states, the MDBA, the IGWC and others report on implementation of and compliance with different elements of the Plan. This is generally reported annually.
- The MDBA reports on the effectiveness of the Basin Plan and progress against its objectives. This includes annual reports on effectiveness, evaluations of the Basin Plan every five years, and the upcoming review of the Basin Plan in 2026.

It was expected that as implementation of the Plan progressed, governments and the community would want to focus less on the first type of reporting and more on the second. This would enable judgements on whether the significant public investment in the Basin Plan had been worthwhile and whether more needed to be done (or done differently). But very slow progress by Basin governments on key Basin Plan elements (chapters 2 and 4), and the related difficulty this leads to in terms of maintaining trust and confidence in the Plan, has encouraged a continued focus on maintaining accountability around implementation. For example, the Australian Dairy Industry Council called for reporting to focus more on outcomes:

The ADIC supports the intent of the Basin Plan to improve environmental outcomes across the Basin – that is the reason for the Basin Plan. Environmental outcomes should be the focus of measuring success of the Basin Plan, not simplistic measures of volumes recovered. This includes developing a systematic approach to quantifying outcomes, modelling to estimate what can be achieved, and the adoption of complementary measures to help us get there (sub. 64, p. 7)

While reporting on implementation progress is important, the volume of implementation monitoring and reporting – by multiple agencies – may be obscuring important information and impeding accountability. For example, the 2020 evaluation by the MDBA found more than 100 outputs from monitoring and research programs, with important learnings and recommendations were ‘most often buried in numerous highly technical reports, which results in information being inaccessible to many audiences’ (MDBA 2020j, p. 172).

All this reporting may not be contributing meaningfully to the bigger picture. The MDBA found that – despite the large amount of information available – it did not have the information needed to undertake the Basin Plan evaluation in 2020.

A number of monitoring programs across the Basin were developed for purposes other than the Basin Plan (e.g., the Sustainable Rivers Audit) and have been modified in an attempt to meet current needs. While there is evidence that pre-existing and new programs broadly align with Basin Plan objectives, a combination of issues – including fragmented results and findings, variability in monitoring methods, and disconnection across state boundaries – have reduced the value of information available to the Evaluation. These knowledge gaps have influenced the ability to fully evaluate against baseline conditions and to understand how conditions have changed over time. (MDBA 2020h, p. 131)

There is a need for Basin governments to explicitly shift focus toward reporting that supports accountability for the *outcomes* of the Basin Plan and better supports adaptive management. The NSW Government observed:

The investment in a coordinated long-term Basin-scale MER program would facilitate the collection of comprehensive, consistent and relevant data on water availability, water quality, biodiversity, social, economic, cultural and ecological indicators and the impact of climate change, to support evidence-based decision-making and adaptive management strategies in future reviews and implementation (sub. 43, p. 15).

In 2018, the Commission recommended the evaluation framework provide the basis to guide development of a monitoring strategy. This recommendation was accepted by governments, and the MDBA said its implementation is in progress (MDBA, sub. 61, p. 45). The two key elements to ensure the new monitoring strategy is effective are to take a more strategic approach to monitoring and reporting, and to ensure the periodic evaluations of the Basin Plan are effective.

How to make the new monitoring strategy more effective

A more strategic approach to monitoring and reporting is needed. Ahead of the 2026 Review of the Basin Plan, the MDBA should conduct a stocktake of the Basin-related monitoring information currently being collected (both by governments and other parties) and undertake an assessment of how this aligns with what is required to evaluate the Basin Plan. This would allow for important information gaps to be identified. It could also reveal areas of low-value reporting, duplication and overlap in reporting efforts, or other areas where responsibility is unclear. The outcomes of this stocktake should inform the development of the new monitoring strategy.

The MDBA reports that it is working towards such a process.

There is an opportunity in the 2026 Basin Plan Review to consider the framework for Monitoring and Reporting (Basin Plan chapter 13). In its current form, it is designed to support the MDBA role of evaluating the effectiveness of the Basin Plan however there could be room to simplify and improve these arrangements by drawing a better distinction between the evaluation function that rests with the MDBA and the compliance function that rests with the Inspector-General of Water Compliance. (sub. 61, p. 17)

That is not to say that existing monitoring of important processes and outcomes should be abandoned. Indeed, the Commission is recommending expanding oversight of intergovernmental funding agreements (interim recommendation 9.1), publication of material used for decisions (interim recommendation 6.2) and a monitoring framework for the northern Basin toolkit (interim recommendation 2.3). But there is a need to work towards a system of monitoring and reporting that contributes to the overall strategic direction and goal of the Basin Plan, not just its individual parts. As the NSW Government put it:

... continued efforts to establish a robust monitoring framework into the future that encompasses comprehensive and consistent data collection across the Basin is required. This includes monitoring water quality, water flows/groundwater levels, social, economic, cultural and ecological indicators, and climate trends to capture the complex dynamics of the hydrological system (sub. 43, p. 14).

One avenue for this work is the Basin Condition Monitoring Program, which the MDBA is developing to operate alongside other long-term monitoring programs. This program consists of 15 projects on cultural, environmental, social, hydrology and economics issues, and is scheduled to run through to December 2025 (MDBA 2022e).

This presents an opportunity to improve the approach to monitoring and reporting. The MDBA described its process as a ‘community-centred ‘bottom-up’ approach to identify key issues and themes’ (MDBA 2022e, p. 4). At the same time, MDBA has been consulting an inter-jurisdictional working group to ‘ensure there is no overlap and the projects complement existing monitoring’ (MDBA 2022e, p. 5). The intention is for this monitoring program to integrate with and complement other monitoring and research work occurring across the Basin (MDBA 2022e, p. 6).

While the community is interested in ensuring integrity around implementation of the Basin Plan, participants are often overwhelmed and confused by current monitoring and reporting arrangements. The MDBA, in its role in evaluating the Basin Plan at the Basin scale and monitoring the condition of the Basin, should look for opportunities to ‘cut through’ this overcrowded space.

The need for effective evaluation

Evaluation is a key tool for evidence-based policy and works best when it is integrated into each stage of policy and program development. While including regular reporting and evaluation in the Basin Plan is good practice in one aspect, it is also important that the evaluations are high-quality and lead to lasting improvements in program or policy design (or better decisions about where to spend public funds).

Participants to this inquiry raised concerns about the MDBA’s 2020 evaluation and the response to it. Coleambally Irrigation Cooperative, for example, said:

The MDBA evaluation of the Basin Plan in 2020 produced data and reports but did not provide the analysis needed to deliver improved decision-making. As noted earlier in this submission, our observation is the MDBA has not taken a leadership role in identifying solutions or changes needed to Basin Plan implementation. (sub. 21, p. 7)

The MDBA itself noted that problems with data and information had led to knowledge gaps that affected its ability to conduct the evaluation (MDBA 2020b, p. 131).

In its 2018 report, the Commission raised concerns about a real or perceived conflict of interest, with the MDBA being involved in implementing the Basin Plan while also conducting reviews and evaluations – the MDBA could be ‘marking its own homework’ (Productivity Commission 2019, p. 257). To rectify this, the Commission recommended the Basin Plan Regulator take on the evaluation role.

Murray Valley Private Diverters supported this view:

If monitoring and evaluating the success of the Murray Darling Basin Plan ... is to be managed or overseen by the MDBA, then conclusion is easily reached that this would be ‘monitoring one’s own homework’ and that systemic failures will never be rectified (Murray Valley Private Diverters, sub. 95, p. 16).

The MDBA is currently planning for the 2025 evaluation of the Basin Plan. It is critically important that this evaluation draws out learnings and lessons from Basin Plan implementation, identifies what is working well

and what could be done better, and holds all responsible agencies to account for their actions (including expenditure of taxpayer funds).

The Basin Officials Committee is a ‘black box’

How the BOC operates is not well understood or documented

The BOC has key roles and responsibilities for Basin Plan implementation (section 9.1). However, there are concerns about the transparency of BOC’s activities and processes, including a lack of timely and clear information about the:

- outcomes of committee meetings, especially subcommittees
- decisions made by the BOC, for example in relation to SDLAM projects, and the evidence base and reasoning for these decisions. While some decisions will be confidential, more could be disclosed
- directions and delegations from Ministerial Council to the BOC
- community engagement activities undertaken by the Committee.

This lack of transparency makes it difficult to fully articulate and understand BOC’s role, have confidence in what it is doing, monitor its performance or hold it to account. The National Irrigators Council noted that, while improvements have been made in recent years, this is not delivering the level of transparency that is required.

The Federal Minister has started to publish agendas ahead of [Ministerial Council] meetings, but it is often only a day or two before the meeting and is very limited. Both [Ministerial Council] and [BOC] should publish the full agendas and papers of their meetings well in advance of the meetings, and detailed minutes of discussions and outcomes in a timely way following the meetings. Every drop of productive water use is monitored, modelled, metered and reported on by multiple agencies. The community deserves the same level of transparency and accountability from decisions makers. (sub, 62, p. 23)

While BOC has previously made commitments to improving transparency, other than the published communiqués, there is no evidence of additional transparency initiatives being progressed.

The transparency of Basin Officials Committee’s should be improved

While there may be aspects of BOC’s operations that should remain confidential, there are several practical ways transparency could be improved. Wherever possible, BOC should publish:

- meeting agendas, communiqués and other relevant information on meeting outcomes
- BOC decisions and the reasoning for decisions
- formal directions to BOC from Ministerial Council
- information on the Committee’s governance practices, including on subcommittees and establishing instruments or terms of reference.

An independent Chair for BOC?

The BOC is chaired by a senior Australian Government official appointed by the Australian Minister for Water.

In 2018, the Commission found that there was a strong case for an independent Chair of BOC (Productivity Commission 2019, p. 28). The Claydon Review came to the same conclusion (Claydon 2019, p. 3). An independent Chair offers several advantages:

- it would remove the real or perceived conflicts of interest that can arise from having an Australian Government official in this role

- by not being aligned with any Basin government, an independent Chair may be more effective at facilitating a culture of joint ownership and collaboration among Basin governments and building productive relationships with individual BOC members
- by being independent of short-term political pressures, an independent Chair could help to steer BOC towards decisions that take a basin-wide and longer-term approach to managing the basin's water resources.

For the same reasons, the Murray–Darling Basin Commission, which preceded the BOC, had an independent chair for at least 20 years before the Water Act was made.

Changes to chairing arrangements would require amendments to the Murray–Darling Basin Agreement and the Water Act. These amendments should be pursued as part of the upcoming Water Act review or as part of any legislative amendments following the Basin Plan review.



Interim recommendation 9.2 Improving the transparency of Basin Officials Committee

The Basin Officials Committee (BOC) should be more transparent. The BOC should publish:

- meeting agendas, communiqués and information on meeting outcomes
- BOC decisions and the reasons for those decisions
- formal directions to BOC from the Ministerial Council
- information on BOC's strategic priorities, governance practices and sub-committees.

The *Water Act 2007 (Cth)* should be amended to enable the appointment of an independent Chair to the BOC.

9.4 Community engagement

Effective engagement is critical to the success of the Plan

Implementation of the Basin Plan hinges on effective community engagement on a range of matters including environmental watering activities, the development of water resource plans, and how to best manage the impacts on communities of a reduction in the consumptive pool of water.

When engagement is done well, it supports the community's confidence and trust in the Basin Plan, and ensures that the views, knowledge and of Basin communities are genuinely considered in Basin water resource management. Good engagement can also facilitate accountability through the sharing of information on the performance of Basin government institutions, and the achievement (or otherwise) of Basin Plan outcomes.

Effective engagement with the community is another core principle of good water governance (chapter 1). We also considered principles of effective community engagement (box 9.4) and the International Association for Public Participation (IAP2) participation spectrum in assessing Basin Plan-related engagement processes. The IAP2 participation spectrum (table 9.2) is a widely accepted means of selecting the level of participation that best defines the public's role in an engagement program and is a valuable tool for shaping effective engagement processes in the Basin.

Despite some evidence that engagement has improved in recent years (section 9.1), many participants expressed frustration and disillusionment with Basin governments' engagement practices. For example, the National Farmers Federation noted that:

The community consultation and engagement efforts in the implementation of the Plan have fallen short of expectations. Despite extensive consultations, the lack of meaningful action and implementation of the recommendations has undermined the effectiveness of these efforts. (sub. 46, p. 15).

Table 9.2 – The IAP2 participation spectrum

	Inform	Consult	Involve	Collaborate	Empower
Participation goal:	To provide the public with information to help understand issues and opportunities	To obtain feedback	To work with the public to ensure that concerns are understood and considered	To partner with the public in each aspect of the decision	To place final decision-making in the hands of the public
Participation promise:	We will keep you informed	We will keep you informed, listen to concerns and seek feedback	We will work with you to ensure your concerns and aspirations are reflected in the alternative options developed	We will look to you for advice and incorporate your advice to the maximum extent possible	We will implement what you decide

Source: International Association for Public Participation (2019).

Box 9.4 – Effective community engagement

Some of the principles commonly used to describe effective community engagement in the Basin are:

- partnership and collaboration with those affected by a decision throughout the decision-making process
- participants being given the time, information and evidence to support meaningful engagement with the issues
- decisions being communicated openly, transparently and in an accessible way
- an environment where decisions makers and those affected by decisions can engage in a meaningful and on-going fashion.

Participants called for engagement practices that are consistent with these principles. For example:

Government needs to engage early, fully, transparently and authentically with local communities, valuing and respecting them as genuine partners with capabilities for co-designing solutions. (Leeton Shire Council, sub. 72, p. 3).

Box 9.4 – Effective community engagement

Having the CEWH and state environmental water holders and other water related agencies making combined decisions with community on-ground knowledge is a good model that needs to be replicated. (Inland Rivers Network, sub. 82, p. 5)

Sources: Moore (2016), OECD (2022), Productivity Commission (2019).

Similarly, the National Irrigators Council observed that:

[DCCEEWS] latest round of ‘consultation’ on the ‘Strategic Purchasing Framework’ was a textbook example of what not to do. Invitation only sessions, ID checks and heightened security, locked doors and ludicrously short notice periods is unacceptable and needs to be called out. (sub. 62, p. 27)

Kay Blades emphasised that good planning and advance notice is key to effective engagement.

I met people who had only found out about the meeting [with DCCEEWS] 2 days before it happened. I really didn’t have sufficient time to look at the documents they sent, it was bad communication. It was a flawed process from the get-go (pers. comm, 15 August 2023).

Issues related to how Basin governments engage with Aboriginal and Torres Strait Islander people on Basin Plan matters is explored in chapter 5.

Participants do not always feel genuinely heard or understood

Very few participants said there should be more engagement by governments on implementation of the Basin Plan. However, there was a lot of support for more meaningful engagement.

We heard that engagement is often a ‘one-way conversation’ and participants do not feel that their participation is influencing key decisions (or even reaching ultimate decision-makers). There is very little feedback provided by governments on the outcomes of engagement processes.

Box 9.5 – Community views on the lack of meaningful engagement

Some participants said they are felt their concerns were not heard.

We know that our concerns over these [dune] blowouts did not go above the Catchment Management Authority (CMA); they got lost in the government bureaucracy. We need to cut out that middle section and directly connect our cultural interests with the actual decision-makers at DEECA. (Latji Latji Mumthelang First Peoples, sub. 78, p. 2).

The sentiment that engagement processes are often futile is particularly strong among Aboriginal and Torres Strait Islander people and groups. For example, on planning workshops for water resource use and water resource plans, the Environmental Defenders Office reported on MLDRIN’s assessment.

Box 9.5 – Community views on the lack of meaningful engagement

... there was not always enough time or provisions of appropriate information to enable Nations to participate fully and in an informed way. (sub. 91, p. 31).

Similarly, Dharriwaa Elders Group said:

... engagement with Dharriwaa Elders Group seems to be about managing us rather than truly listening to us. (sub. 86, p. 10).

Gwydir Valley Irrigators Association also noted a lack of meaningful engagement practices.

... at the MDBA River Reflections conference, they [DCCEEW] appeared aloof and without interest in answering the questions and concerns raised with them. (sub. 89, p. 16).

Lachlan Valley Water observed that some engagement processes feel like a box-ticking exercise.

We are also concerned that the community engagement has not actually been about listening to communities throughout the Basin but about simply complying with a requirement to 'consult' communities rather than listen to them. (sub. 54, p. 8).

Likewise, South Australian Murray Irrigators observed that:

The consultation processes are multi-jurisdictional and layered. Many community leaders are exhausted by this because of the frustration and lack of substantial achievements towards solving problems. (sub. 96, p. 9)

Effective engagement principles (box 9.4) point to the importance of decisions being communicated openly and transparently. This includes communicating the information and processes that led to a decision being made, as well as the decision itself. For communities to observe that engagement has been genuine and meaningful, Basin governments should communicate how community participation influenced the decision-making process. This transparency can also incentivise meaningful engagement practices by Basin parties.

Engagement across agencies is not well coordinated

There are many Australian Government and Basin state government agencies that undertake some level of community engagement on the Basin Plan. For example, the Victorian Department of Energy, Environment and Climate Action, New South Wales Department of Planning and Environment, South Australian Department for Environment and Water, Queensland Department of Regional Development, Manufacturing and Water, Victorian Environmental Water Holder, ACT Environment, Planning and Sustainable Development Directorate, MDBA, CEWH, IGWC, DCCEEW, BOM, Commonwealth Scientific and Industrial Research Organisation, Australian Bureau of Agricultural and Resource Economics and Sciences and the Commission all have responsibilities that involve engaging with communities and other key stakeholders on matters related to Basin Plan implementation and Basin water management.

However, the Commission heard that engagement by different government agencies is generally not well coordinated, creating a significant burden on those participating in Basin processes. Disjointed engagement can create barriers to participation (as there are time, travel and other costs involved with each process) and often people must repeat their views and stories to multiple agencies, leading to frustration and engagement fatigue. Lifeblood Alliance observed that:

Unfortunately, little has changed in the intervening period [since 2018], with the same issues being raised again and again by the same people at consultation forums, and the Basin Plan continuing to be blamed for all manner of ills in the irrigation industry for which it is not responsible (sub. 52, p. 11).

Similarly, Griffith City Council said:

The Community is suffering from 'consultation fatigue'. Further, many express frustration that environmental priorities have been considered as more important than the people who live and work in the Basin. (sub. 18, p. 2)

Participants also noted that engagement opportunities are often advertised at late notice, clash with other agencies' engagement processes, or are held in regions of the Basin that do not make sense. The National Farmers Federation noted that:

Recent examples of poor notice, apparent 'limited access' and misleading information do little to instil community confidence in process and support for their concerns. (sub. 46, p. 2).

Citrus Australia also pointed out that Basin governments do not sufficiently consider the seasonal nature of agricultural work when scheduling engagement sessions, particularly around harvest time (pers. comm, June 2023). Additional concerns over coordination are discussed in appendix B.

While some government agencies such as DPE in New South Wales have taken positive steps to publish their engagement plans in advance, it remains difficult for community members to identify the many disparate engagements processes going on across the Basin.

More generally, participants observed that the relatively narrow focus of engagement activities around a specific issue or agency responsibility, does not always align with how people experience issues in the Basin, namely, as holistic problems with which they have full lived experience.

The Committee for Greater Shepparton stated:

... the ongoing consultation with communities that is often framed or limited to a local, state or even system level is inconsistent with the community's ability to impact the outcomes and has progressively contributed to the ongoing sense of futility and fatigue. (sub. 80, p. 10).

More coordination of engagement plans by government agencies with Basin Plan responsibilities could reduce the engagement burden on participants, save public resources and avoid some of the frustration that comes from repeatedly participating in processes without feeling genuinely heard.

On a positive note, the MDBA has conducted nine rounds of 'listening tours' which involved a range of senior MDBA officials as well as representatives from DCCEE, CEWH and state water agencies visiting Basin communities. This batched approach to engagement allows community members to engage with multiple different decision-makers without expending additional time and effort attending separate events.

Conversely, the Commission also heard that government engagements on environmental watering activities are generally conducted separately by the Victorian Environmental Water Holder, MDBA and CEWH.

There are trade-offs to consider when coordinating engagement processes, and trying to combine processes that have distinctly different purposes is unlikely to be effective. However, batching together complementary processes can reduce overlap and duplication for participants and governments, and potentially allow for a more holistic consideration of key issues.

**Interim finding 9.2****Engagement by government agencies on Basin Plan matters is not well coordinated**

There are many Australian Government and Basin state agencies that engage with the community on matters related to the Murray–Darling Basin Plan. These engagement processes are generally not well coordinated, which can frustrate participants. More joined-up engagement efforts could reduce costs for participants and governments and allow for a more holistic consideration of issues.

Lessons for more effective engagement in the Basin?**Local engagement mechanisms for decision-making**

One instance where the engagement approach appears to be working well – for participants and the agency alike – is the Local Engagement Officers (LEOs) program used by the CEWH (section 9.1). The LEOs provide a local, direct, continuing and responsive mechanism for feeding community views into the development and implementation of environmental watering proposals. The Commission also heard that the LEOs are effective at building relationships and trust in local communities, something that can be difficult for government departments to achieve. For example, Sunrice supported the collaborative and integrated relationships built by LEOs:

We have two in the Murrumbidgee. They are great. They work really collaboratively with the NSW environmental water managers as well. (pers. comm, 8 June 2023).

The MDBA has sought local engagement through its use of Regional Engagement Officers (REOs). Unlike the LEO's, the scope and purpose of the REO's role is quite broad (reflecting the broad nature of the MDBA's roles and responsibilities in the Basin). The Commission has heard that this broad remit has created some ambiguity about the purpose and utility of the REOs, which may have limited their integration and engagement with local communities.

**Interim finding 9.3****Well defined local outreach can be an effective engagement approach**

Local, place-based engagement mechanisms can be an effective way of ensuring community views are sought, responded to, and considered by decision-makers. A permanent local presence in communities can help foster community understanding of water policy processes and build relationships and trust. The Commonwealth Environmental Water Holder Local Engagement Officer model provides a good template for effective local engagement.

Strengthening community voices

Establishing formal mechanisms for inputting community views into key decision-making processes is another way to improve the effectiveness of engagement and move toward a more participatory approach to decision-making.

One option for doing this within the Basin Plan's existing institutional and governance arrangements is by leveraging the role of the BCC. The BCC's role is to advise the MDBA on the Authority's performance

regarding Basin Plan activities which impact the community's water resources. The BCC also attends Ministerial Council meetings with a standing agenda item to present community views.

However, the impact of the BCC on BOC decision-making is unclear – the two bodies appear to interact mostly indirectly, through advice the BCC gives to Ministerial Council. BCC does share community perspectives with the MDBA (which are then provided to BOC). However, the impact that BCC advice has on BOC decision is unclear – it is not directly reported on, and it is rare for BCC to be mentioned in BOC communiqués.

Strengthening the role of BCC in BOC decision-making processes would allow communities to be directly represented when important decisions are made concerning their communities. One way to do this is via a standing agenda item at BOC meetings, where the BCC can provide advice on Basin water management issues and decisions from a community perspective. Bringing this perspective into BOC meetings would improve decision-making and restore a sense of agency among Basin communities.

There may be times where the sensitive nature of the issues being discussed and deliberated at BOC mean the BCC should not be present (for example, where the Chair considers that the discussion would be unduly constrained by having a community representative there). However, as a broad principle, would be value in having Basin communities 'at the table' during important water management decisions. The BOC should also publicly report on how the views and advice of BCC have been considered and influenced decisions.



Interim recommendation 9.3

Strengthening the community voice in Basin decision-making

The Basin Community Committee should have a standing agenda item at Basin Officials Committee meetings to provide input and advice on matters from a community perspective. The Basin Officials Committee should publicly report on how this input and advice has been considered and has influenced decision-making.

A. Public engagement

This appendix outlines the engagement process undertaken for this inquiry and lists the organisations and individuals who participated.

Following the receipt of the terms of reference on 2 May 2023, an advertisement was placed in *The Australian* and *The Land*, and a circular was sent to interested parties. A call for submissions was released on 17 May 2023 to assist people wanting to make a written submission to the inquiry.

To date, the Productivity Commission has received 103 submissions (table A.1) and 19 brief comments.

The Commission met with representatives from Australian, state and territory government agencies, First Nations groups, water authorities, private irrigation corporations, local government, regional development groups, environmental and catchment management groups, irrigator and dryland farming groups, agricultural industry groups and corporations, and regional and local community groups (table A.2).

We also held 17 public forums over the period June to August 2023 (table A.3). The forums gave Basin communities an opportunity to share their views on the implementation of the Basin Plan over the past five years and provide ideas for improvements. Appendix B provides details on what the Commission heard at the forums and one-on-one meetings across the Murray–Darling Basin.

In accordance with section 89 of the *Water Act 2007* (Cth), the Commission established a stakeholder working group for this inquiry. The working group is an important avenue for engagement. It provides a forum to exchange information and views on issues relevant to this inquiry (table A.4 lists the membership of the group).

The Commission welcomes submissions on the interim report, including responses to the information requests, interim findings, and interim recommendations.

The Commission would like to thank everyone who has participated in this inquiry so far.

Table A.3 – Submissions

Participants	Submission no.
ACT Government	85
Anne Jensen	39
Australian Academy of Technological Sciences and Engineering	71
Australian Competition and Consumer Commission	26
Australian Conservation Foundation	88
Australian Dairy Industry Council	64
Australian River Restoration Centre	13
Balonne Shire Council	70
Barrie MacMillan	45
Barry Croke	12
Ben Blackburn Racing	3
Bourke Shire Council	79
Bureau of Meteorology	17
Campaspe Shire Council	49
Central Irrigation Trust	33
Central Murray Environmental Floodplains Group	6
Central Murray Environmental Floodplains Group	57
Central NSW Joint Organisation	31
Cobram Estate Olives	51
Coleambally Irrigation Cooperative	21
Commissioner for the River Murray (SA)	47
Committee for Greater Shepparton	80
Commonwealth Environmental Water Holder	69
Cotton Australia Ltd	68
Department of Climate Change, Energy, the Environment and Water	77
Dharriwaa Elders Group	86
Dr Melinda Hinkson	59
Dugald and Justine Bucknell	66
Environment Victoria	99
Environmental Defenders Office	91
Fleur Thompson	14
Friends of the Merbein Common	8
Fruit Growers Victoria	44
Goulburn Valley Environment Group	28

Participants	Submission no.
Griffith City Council	18
Gwydir Valley Irrigators Association	89
Healthy Rivers Lower Murray	37
Inland Rivers Network	82
Inspector-General of Water Compliance	75
Institute for Water Futures and Institute for Climate, Energy and Disaster Solutions, Australian National University	35
Jan Beer	38
Jason Modica	32
Jeremy Cass	20
Jodie Hay	63
Kate Chipperfield	56
Ken Jury	100
Lachlan Valley Water	54
Latji Latji Mumthelang First Peoples	78
Leeton Shire Council	72
Lifeblood Alliance	52
Louise Burge	98
Lower Murray Water Strategic Advisory Committee	9
Macquarie Marshes Environmental Landholders Association	93
Mervyn John Gordon	19
Moira Shire Council	25
Murray Irrigation Limited	65
Murray Lower Darling Rivers Indigenous Nations	92
Murray Regional Strategy Group	27
Murray River Group of Councils	22
Murray Valley Private Diverters	95
Murray–Darling Basin Authority	61
Murraylands and Riverland Landscape Board	48
Murrumbidgee Irrigation	73
Namoi Water	94
National Farmers' Federation	46
National Irrigators' Council	62
National Parks Association of NSW	41
Nature Conservation Council of New South Wales	50

Participants	Submission no.
Newly formed Gingham Lower Gwydir landholders	23
Northern Victorian Irrigators	7
NRM Regions Australia	36
NSW Aboriginal Land Council	101
NSW Farmers Association	76
NSW Irrigators Council	103
NSW Government	43
NSW South-West Water Users Association	16
Pastoralists Association of West Darling	42
Renmark Irrigation Trust	24
Ricegrowers' Association of Australia	60
River Lakes and Coorong Action Group	15
Riverina and Murray Joint Organisation	58
Robert Campbell	29
Robert Watson	53
Ron McWhae	10
Russell Crichton	55
Slattery and Johnson	90
SmartRivers	102
South Australian Murray Irrigators	96
Southern Riverina Irrigators	97
Speak Up	2
Stephen Henty	1
Summerfruit SA	30
Ted Hatty	5
Temba Orchards	87
Trangie Local Aboriginal Land Council	40
Tuesday Browell	4
Upper Murrumbidgee Catchment Network	84
Upper Murrumbidgee Demonstration Reach	83
Val McWhae	11
Victorian Automotive Chamber of Commerce	67
Victorian Farmers Federation	34
Victorian Government	74
Wentworth Group of Concerned Scientists	81

Table A.2 – Consultations

Participants

Australian Almond Board

Australian Commercial Wine Producers Limited

Australian Competition & Consumer Commission

Australian Conservation Foundation

Balonne Shire Council

Barkandji Native Title Group

Barkindji Maraura Elders Environment Team Limited

Barwon-Darling Water

Bourke Shire Council

Bureau of Meteorology

Citrus Australia

Coleambally Irrigation Co-Operative Limited

Commonwealth Environmental Water Holder

Department for Environment and Water (SA)

Department of Climate Change, Energy, the Environment and Water (Australian Government)

Department of Energy, Environment and Climate Action (Victoria)

Department of Planning and Environment (NSW) – Water

Department of Planning and Environment (NSW) – Water for the Environment

Department of Regional Development, Manufacturing and Water (QLD)

Dried Fruits Australia

Environmental Defenders Office

Environment, Planning and Sustainable Development Directorate (ACT)

First People of the Millewa Mallee Aboriginal Corporation

Goondiwindi Regional Council

Goulburn-Murray Irrigation District Water Leadership Group

Goulburn-Murray Water

Goulburn Valley Environmental Group

Greater Shepparton City Council

Griffith City Council

Gwydir Valley Irrigators Association

Hay Shire Council

Healthy Rivers Dubbo

Inspector-General of Water Compliance

Kilter Rural Ltd

Participants

Lachlan Valley Water

Latji Latji Mumthelang First Peoples

Leeton Shire Council

Macquarie River Food and Fibre

Macquarie Marshes Environmental Landholders

Mallee Catchment Management Authority

Manandanji First Peoples

Menindee Food and Fibre

Menindee Local Aboriginal Land Council

Mildura Rural City Council

Moree Shire Council

Murray–Darling Basin Authority

Murray Irrigation Limited

Murray Lower Darling Rivers Indigenous Nations

Murray Region Strategy Group

Murray River Group of Councils

Murray Valley Winegrowers Inc

Murrumbidgee Field Naturalists

Murrumbidgee Irrigation

Namoi Water

National Farmers Federation

National Irrigators' Council

Nature Conservation Council of NSW

NSW Irrigators Council

NSW South Western Water Users

Pastoralists Association of West Darling

Renmark Irrigation Trust

Ricegrowers Association of Australia

River Lakes and Coorong Action Group

Riverina Winegrape Growers

South Australian Murray Irrigators

South-West Indigenous Corporation

SunRice

Trangie Area Aboriginal Land Council

Victorian Environmental Water Holder

Participants

Victorian Farmers Federation
Wamba Wamba First Peoples
Yarkuwa Aboriginal Corporation
Yorta Yorta Nation Aboriginal Corporation

Table A.3 – Public forums

Forums	Dates, 2023
Shepparton	6 June
Echuca	7 June
Deniliquin	8 June
Griffith	27 June
Mildura	28 June
Hay	28 June
Renmark	29 June
Leeton	29 June
Goolwa	7 July
Menindee	18 July
Dubbo	18 July
Warren	19 July
Bourke	20 July
Moree	31 July
Goondiwindi	1 August
St George	2 August
Dirranbandi	3 August

Table A.4 – Stakeholder working group

Participants

Australian Floodplain Association
Committee for Aboriginal Water Interests (observer)
EDOs of Australia
Lifeblood Alliance
Murray Darling Association
Murray Lower Darling Rivers Indigenous Nations
National Farmers Federation
National Irrigators Council

B. Public forums – what we heard

The Productivity Commission engaged with communities across the Murray–Darling Basin, visiting towns, holding public forums and one-on-one meetings. This appendix sets out how we engaged with communities across the Basin and ‘What we heard’ from people and organisations in these communities.

We want to thank everyone who participated in the public forums and one-on-one meetings. We recognise the importance of what we heard, and its value in informing this interim report.

B.1 Our approach

We undertook an eight week round of public engagement across the Murray–Darling Basin, commencing 6 June 2023 and concluding on 3 August 2023.

We visited 17 towns across the Basin, holding a public forum in each location (table B.1).

Table B.1 – Public Forums

Towns visited across the Murray–Darling Basin

Towns visited	When
Shepparton – Echuca – Deniliquin	6, 7 & 8 June
Griffith – Hay – Leeton	27, 28 & 29 June
Mildura – Renmark	27, 28 & 29 June
Goolwa	7 July
Menindee	18 & 19 July
Dubbo – Warren – Bourke	18, 19 & 20 July
Moree – Goondiwindi – St George – Dirranbandi	31 July, 1, 2 & 3 August

In total, 330 people attended the forums. The forum in Deniliquin had the most attendees (around 115 people).

In each town, we also offered to meet separately with groups to facilitate one-on-one discussions. 54 groups took up this invitation, covering First Nations, water authorities, private irrigation corporations, local governments, regional development groups, environmental groups, catchment management entities, and irrigation and dryland farming organisations.

We sought to meet with First Nations people on their country. We met with Elders, representatives and members of 11 First Nations of the Murray–Darling Basin (table B.2).

Table B.2 – First Nations we met with

Who	When
Yorta Yorta Nation Aboriginal Corporation	7 June
Yarkuwa Aboriginal Corporation	8 June
Wamba Wamba Local Aboriginal Land Council	27 June
First People of the Millewa Mallee Aboriginal Corporation	27 June
Barkindji Maraura Elders Environment Team Limited	27 June
Latji Latji Mumthelang First Peoples	28 June
Barkandji Native Title Group	18 July
Trangie Area Aboriginal Land Council	18 July
Menindee Local Aboriginal Land Council	19 July
South-West Indigenous Corporation	2 August
Manandjanji First Peoples	2 August

The following sections set out what we heard at the Basin-wide and regional level.

B.2 What we heard Basin-wide

The Commission heard a diversity of views on water management topics. Some of the topics raised were within, and others beyond, the scope of this inquiry. From those within scope, there were a number of themes.

Generally, we observed greater interest and engagement in Basin Plan issues across the southern Basin towns we visited than those in the northern Basin. This was reflected in the attendance numbers in respective locations (notwithstanding difference in town size, an average of 29 in southern Basin forums, compared with an average of 5 in the northern Basin). The factors influencing a difference of this scale are hard to pinpoint, though at a general level, consultation fatigue may offer some explanation as might seasonal factors like harvesting time and possibly less northern Basin interest in the Plan due to a lesser scale of possible buyback as compared to the Southern Basin.

We observed a much broader community acceptance that the Basin needed a plan; such that the focus of interest had, for most part, shifted to questioning whether there were better ways to deliver the Plan. This rising interest in improving the Plan was often accompanied by concern and frustration that the broader benefits of environmental watering were not evident, along with a much stronger sense of wanting to see and understand the benefits delivered by the Basin Plan so far. People told us that going forward, the Plan needed to have a greater focus on outcomes because ‘we seem to have lost sight of why we are doing this’.

That said, there were different views on specific elements of the Basin Plan across the Basin. For example, in some areas of the Basin the strong message was ‘no return to buybacks’; while in others it was ‘restart buybacks immediately’. And on the 450GL recovery element, some communities said it was ‘pointless and detrimental’; while others said it was essential for restoring the health of the Basin.

People were critical of the lack of effort by State and Australian government agencies to engage with Basin communities. They spoke of engagement fatigue but also frustration about ongoing uncertainty, a perceived lack of engagement in regions and little uptake of local solutions.

This was expressed in a number of ways. We often heard that Basin governments ignored the Commission's 2018 inquiry recommendations; and many questioned the point of putting in time and effort again. A variation of this was that Basin governments should 'stop talking to us from the capital cities about implementing the Basin Plan, come out and talk with us, because we want to engage you with our ideas'.

That said, many commented favourably about the Commonwealth Environmental Water Holder (CEWH) and its Local Engagement Officers (LEOs) and the way they work with Basin communities. Some communities said they had seen benefits in their region from the environmental watering activities undertaken by the CEWH in partnership with the state environmental watering, catchment management, water storage and delivery and irrigation infrastructure entities across NSW, Victoria and South Australia. They saw this as evidence of what is possible when governments and communities work in partnership.

Apart from environmental watering, First Nations people were less positive about the Basin Plan, with some referring to Commonwealth water reform programs such as the Aboriginal Water Entitlements Program (AWEP) – the \$40 million commitment made in 2018, which is yet to buy any entitlements.

First Nations people reiterated their aspirations for self-determined decision making about water rights and river country management. One First Nations group, for example, said:

Government comes to us with great ideas but offer us no decision making, they need to let Indigenous people have a say. DCCEEW and others should come to us for ideas, not come and push their ideas on us. (Wamba Wamba First Peoples, pers. comm., 27 June 2023)

We heard frustration with governments' approaches to engagement, including submissions and views on water resource plans not being considered. Though, examples were given of partnerships and initiatives that are working well – river rangers and partnerships to manage environmental water entitlements for cultural and ecological purposes.

Needing more time to deliver the Basin Plan was a re-occurring theme. Some spoke about the need for more time to finish the SDL adjustment mechanism projects, and separately, to work through the concerns and issues held by communities who feel threatened by the potential impacts of lifting constraints. And some acknowledged that more time needed to be accompanied by clearer accountability for project delivery.

Often underlying the support for more time was a fear of further buybacks if the SDL adjustment mechanism projects were not delivered; and concern that governments had not learned lessons about the impacts of previous buybacks on industries, communities and regional prosperity. Many expressed fears about the future of some smaller towns.

Many participants told us no more time should be allowed for certain elements of the Basin Plan. There was a widespread view, in NSW and elsewhere, that the remaining NSW Water Resource Plans needed to be put in place as soon as possible.

Climate change, and the implications for water resource management, were front of mind for many and it was argued that these need to be at the centre of any discussion about the future of the Basin Plan.

Across all of the themes, we observed, in one way or another, an acceptance that fully implementing the Basin Plan and realising its benefits would not happen unless there was much stronger collaboration and a renewed partnership between all Basin governments. We regularly heard that all Basin governments need to take responsibility for their role in the Plan's implementation, having repeatedly committed to implementing the Plan 'on time and in full'.

B.3 Regional insights

Northern Victoria and the NSW Murray Valley

For this leg, we held public forums in Shepparton, Echuca and Deniliquin. There was a lot of interest from these communities – we had 170 people attend the three forums. And we met with a further 13 organisations.

These communities, and their surrounding areas, suffered a lot in the flood events that went through the southern Basin in 2023. With that as context, there was a consistent theme of community apprehension about the prospect of the Australian Government recommencing water buybacks.

The collective memory of earlier buyback programs still runs deep in these areas. Some said that their communities are still recovering from these earlier buybacks. Any return to buybacks was seen as a probable tipping point for their long term survival. Concerns were raised about towns with declining populations, falling school enrolments and sports teams that could not be filled. These concerns were sometimes accompanied by a view that structural adjustment cannot work for small communities because ‘there is nothing to adjust to’. Though in contrast, others pointed to adjustment opportunities through attracting new investment to this region, particularly as part of renewable energy transition initiatives. But as we heard from one person that ‘while there is desire to pursue such opportunities, the pathway is not clear’.

From an irrigation farming perspective, the fears were around poorly targeted buybacks creating a ‘swiss cheese’ effect in irrigation networks, resulting in stranded assets and higher fixed costs for other irrigators.

There was general frustration around the performance of all Basin governments, including around poor co-ordination of consultation efforts, communities not being listened to, little or no effort to implement the Commission’s 2018 recommendations, and the continuing politicisation of the Plan. These elements and other perceived deficiencies (such as modelling accuracy) underscored an on-going lack of community trust towards politicians and government water agencies. One participant at the Shepparton public forum, for example, spoke about the frustration of being ‘dragged back for consultation’.

That said, many wanted to see and understand better the benefits of environmental water. There were concerns about the lack of data and measurement of both environmental water use and its outcomes. People said they wanted to see environmental benefits achieved in their region from the water they had contributed up to now. There was disappointment with the continuing focus of the Australian Government on securing end of system environmental outcomes; ignoring the environmental needs of the landscapes that CEWH water passed through on its way to South Australia.

Some said that as much as they were farmers, they were also committed environmentalists. In their words, land in a healthy environmental condition underpins productive farming. They felt that governments, by not appreciating this connection, were foregoing an important opportunity to fashion environmental rehabilitation on private land to complement their efforts on public land.

We also heard that First Nations people in this region had no real voice in Basin water policy design and consultation on water management processes. And because they were not being included in efforts to stop damaging impacts to Country, their effort and energy was going into repeatedly producing messages and reports to show the harm happening to Country.

NSW Murrumbidgee Valley

42 people attended the three forums held in Griffith, Hay and Leeton. We also met with a further eight organisations.

The themes were similar to what we heard in Shepparton, Echuca, and Deniliquin:

- The southern Basin is bearing the brunt of Basin Plan implementation through water recovery – the northern Basin is getting off lightly.
- The needs of South Australia are being prioritised ahead of others.
- We would like to see the evidence of environmental benefits from water recovery to date before recovering any more water. One participant at the Griffith meeting said ‘none of us know anything about the environmental outcomes of these projects. It’s all about just buying water back’. At Hay, it was expressed slightly differently: ‘Do we know how the water that has been bought back is being used and what’s been achieved with that water? Do people know how much the CEWH is using every year? If you can’t determine where you are now, with 15-20 years of environmental water, how can you go and buy more?’.
- Basin governments are not listening to the voices of the regional people affected by the Basin Plan. One person at Griffith, for example, said, ‘Why am I coming here again, to say the same things we’ve been saying for so long but falling on deaf ears?’

The lack of transparency around water information, water management and water trading was a theme we heard not only in this valley but elsewhere as well. People were concerned about speculators distorting the water market. One take on this was ‘we don’t know where water is going, who’s got it – it’s about making the whole thing as murky as you can’. A participant at Leeton commented that the ‘current system destroys productivity by encouraging people to bank water and then sell to desperate farmers’. Lack of access to real time water information was highlighted. We heard from one participant at Leeton that ‘There’s good historical information, which gives you a good idea of what’s gone wrong, but a lot of the information comes 12-18 months later. Real-time stuff is missing’.

We also observed many amongst the community attribute a wide range of water and land management concerns to the Basin Plan, which are related to aspects of other state government roles and responsibilities outside of the Basin Plan. At the Griffith forum, a number of speakers spoke about their frustration with matters relating to NSW water management decisions. One person asked that ‘we be given the water we’re entitled to, what’s on the piece of paper. We are not getting our allocations anymore. There was a flood and we only got our full allocation in January’. Another said ‘SA know they’re starting on 100%. Victoria already know what they’re likely to get. NSW do not provide that certainty each year for general security entitlements’.

When we asked what should be considered by Basin governments to progress the Plan’s implementation, common responses were around pausing the plan to take stock of what had been achieved to date – having a rethink. Many commented that the Basin Plan cannot be delivered in full under the current approach to implementation.

Victorian Sunraysia and the South Australian Riverland

A total of 60 people attended the public forums in Mildura and Renmark. We also held 13 additional meetings with First Nations groups, local government, irrigator groups and water delivery managers.

First Nations people around Mildura were deeply concerned about the health of Country. Their ask of Basin governments was to take action to get water back on Country consistent with commitments made by the governments, in particular, the Australian Government’s AWEPP Program.

With the geographic proximity of Mildura and Renmark, the issues raised were broadly similar though some nuancing was observed. We were told that, by and large, the economic prosperity of Mildura and Renmark was underpinned by irrigated agriculture, though Mildura’s economic base is more diversified. That said, there were also views unique to each community.

Concern over the resumption of local water buybacks was heard in both communities, though the view in Renmark was less strident than Mildura. This was based in part on a belief that Mildura's small horticultural irrigators would leave their farms for good this time, and the consequential impacts on both communities would be severe. In Mildura, this was accompanied by a concern about the impacts on the nation's food production capability and the future cost of food for all Australians. In Renmark, the accompanying concern about buybacks focused on the town having already contributed more than its fair share in earlier buyback rounds, and that any further recovery from the Renmark district could be a tipping point for the future of irrigation farming.

Related to the shared concern about resumption of buybacks, we also heard concerns about the continuing corporatisation of both agriculture and water holdings. Mention was made of the increasing foreign corporate ownership of Australia's consumptive water resources and the negative side effects of this in terms of connecting with, and supporting, the communities they operate within. One participant spoke about big corporates leaving as profit incentive disappears, leaving communities stranded with no economic activity.

Participants also mentioned what they considered to be poor performance of governments (federal, state and local) in co-ordinating between themselves. The comments focused on the disconnect between agricultural land use planning and water management. We heard examples of poor practice in each region attributed to this disconnect. These focused mostly on highlighting the continuing influx of corporate investment to expand permanent plantings with little regard for the emerging water security risks to supply in the Sunraysia and Riverland districts.

On concerns unique to each town, we observed in Mildura a perspective that the Basin Plan was too top-down, prescriptive and lacked nuance. One comment, for example, was that:

... the Basin Plan is a linear prescription; the problems it seeks to solve are too complex for it. It's fixated on water when what we face is really an economic issue. The plan only measures water metrics, when really it should be measuring economic metrics and taking a bigger picture view of the problem. (Mildura Rural City Council, pers. comm., 28 June 2023)

There was also a strong view that communication and coordination had been poor. The Mildura Rural City Council expressed this sentiment as:

The good news stories don't get spread, such as the saved wetlands and species. There is material for telling these stories but it's not adequately disseminated. We hear what they're doing, but never why we are doing this and these are going to be the benefits. (Mildura Rural City Council, pers. comm., 28 June 2023)

We heard clear disappointment with both the Australian and NSW governments. This related to a range of matters: unfinished water resource plans, slow rollout of metering, minimal contribution to the water recovery effort so far, and unfettered growth in high water demand agricultural development.

We also heard dissatisfaction with aspects of the CEWH's performance, namely that they are not using their water for the benefit of Sunraysia's riverine floodplains via overbank flow events; preferring instead to run their water within channel to the Lower Lakes, Murray Mouth and the Coorong. There was also dissatisfaction with CEWH trading policies, which meant the CEWH did not sell environmental water to farmers even in times of severe drought.

In Renmark, we were told that the opportunities for improving water use efficiency in their irrigation systems had been exhausted through efforts to date. Therefore, it would be unfair for future buybacks to target the Riverland. To do so would unfairly punish South Australia for the shortcomings of NSW and Victorian efforts to improve water use efficiency in their irrigation regions.

South Australia's Lower Lakes

We held a public forum in Goolwa attended by nine people, along with a meeting with the River Lakes and Coorong Action Group (RLCAG).

The narrative in South Australia's Lower Lakes was more positive (than in the upstream southern Basin communities) about the Basin Plan, its achievements to date and its prospects for further beneficial environmental health outcome across the Lower Murray, Lower Lakes and Coorong regions.

There was a strong theme around the importance of building on the opportunity given by the recent sequence of flood events. This narrative talked about 'the river being flushed out by the floods and if everyone could work together, we could prevent the river falling back into the parlous state that it was in'.

The sense was that time should not be wasted getting the Plan fully operational.

The importance of not forgetting about water quality was highlighted. One participant commented on 'needing to ensure that the benefits of environmental water were not diminished by degraded water quality'.

While acknowledging the benefits observable in the lower parts of the Murray, it was commented that it is equally important that the Basin Plan delivers environmental benefits for all of the Basin's river systems. And that this would only happen where governments and communities worked together in pursuit of a common easily understood goal.

One suggestion was to build greater cross border connection and understanding among basin communities – 'bringing different communities together and sharing differing views'.

There was some support for resuming buybacks. One person observed that:

... there is opposition to buy-backs, this needs to shift because it's the most efficient. The Federal Minister just has to do it, as long as you still invest in the communities to allow for transition.
(RCLAG, pers. comm., 7 July 2023)

Also from a basin governance perspective, concern was expressed about recent changes to the Basin Community Committee which limit the connection of its members to the communities that they are selected to represent and lessen the transparency around how the Committee operates.

NSW Menindee Lakes and the Lower Darling

There were 10 people at the Menindee public forum. We also had five additional meetings with local farming groups and First Nations organisations.

The people that we met were strongly engaged with water management issues in their part of the Basin. We were reminded of their recent experiences with drought, flooding and fish kills. As a consequence, what they saw as poor implementation of the Basin Plan to date was front of mind and, as such, they welcomed the opportunity to provide their views on Basin Plan and Darling Baaka River water management issues.

We heard that without Water Resource Plans in place, there is no Basin Plan. Coupled to this was a view that NSW Water Sharing Plans were inadequate as planning instruments because their focus at valley level ignores system level objectives, such as maintaining river connectivity. There is a view that what has happened to the Darling Baaka over recent decades illustrates the consequences of this disconnect on river health, especially in dry conditions. Mention was also made of the looming consequences of earlier government decisions to not include climate change considerations into Water Resource Plans and Water Sharing Plans.

As in other communities, there was a conflation made between the Basin Plan and NSW water management processes that reflected a general frustration with agency performance in both spheres. This was very clear

to us in the comments of some people about the performance of Australian and NSW government water agencies during the recent flood event that impacted the town. A related comment was ‘rules change, there was no talking between agencies, ego in outdoing each other and communities suffer’.

This sceptical view of the performance of governments and their water agencies was also heard in relation to the rollout of NSW floodplain harvesting licences, the management and operation of the regulated River Murray system as it impacted the Menindee Lakes storages, and the processes undertaken to develop and consult on SDL adjustment mechanism project proposals.

Driven by their experiences with fish kills in recent years, the Menindee community has real concerns about the on-going decline in Darling Baaka River water quality, in particular the individual and shared impacts arising from this for their drinking, domestic and other basic water needs. Also strongly connected to this issue was the value that the community places on the contribution of tourism to the economic health of the town and its surrounds. In that context, they do not want to see this asset put at risk through continued poor management of in-river water quality by the Australian and NSW governments. In part, this reflects their long held view that the Lower Darling Baaka always comes off second best against the needs (and perceived economic value to the state of NSW) of the northern Darling Baaka and its tributaries.

And similar to other towns we visited, we heard that community engagement on all water matters affecting the town continues to be inadequate and/or inappropriate and that transparency around decision making in Basin water management processes is lacking. In the words of one participant, ‘there are no federal agencies coordinating with locals (in Menindee), there is a lack of clarity of the changes in rules. They just work to satisfy the ministers and politicians’.

From the First Nations people that we met with, we heard about the importance of having water in the Darling Baaka for cultural, social and economic use by First Nations people. One person commented that ‘when there is no water in the river and the lakes, mental health suffers’.

Concern was also expressed about the continuing lack of knowledge about the true extent of water extraction from the Darling Baaka upstream of Menindee, and the need for a greater presence from the NSW Natural Resource Access Regulator in far western NSW to monitor water extraction.

NSW Macquarie and Barwon-Darling Valleys

We travelled through central and north western NSW visiting Dubbo, Warren and Bourke. We held a public forum in each town attracting 24 people across the three sessions. We also held eight additional meetings with local government, environment groups, irrigator groups, and First Nations organisations.

There was considerably less interest in matters (than in other areas we visited) related to Basin water recovery. That said, concerns were raised about what was to become of the over recovery in the Macquarie-Castlereagh system. The view in Warren was that this over recovery should be handed back to the valley, not shared with others.

We heard that the last two water years had been a boon for this part of NSW in terms of replenishing water stocks. As such, many of the views we heard focused on local or regional level water issues – some contemporary, others dating back to the 2017–19 drought.

We heard criticisms about decisions to release water for environmental purposes during the drought, too much environmental water being released causing subsequent damage to downstream riverine landscapes through higher than normal streamflow velocities, and environmental water causing a spike in carp numbers. We also heard some concern that the NSW Government had not taken sufficient account of the lessons of

the recent drought. In particular, we heard that Water Sharing Plans in this region still do not include operating rules for critical human water needs.

And, as in some other basin regions, there was disquiet about the growing corporatisation of agriculture, its impacts on land and water prices, and its role in accelerating the decline of small rural towns in north western NSW.

Water resource plans were topical. We heard about a lack of clarity around how they connected to one another and their ‘reviewability’. The lack of closure on the NSW water resource plans was also mentioned. One person suggested the Inspector General of Water Compliance be empowered to make NSW finish its water resource plans.

The quality of engagement efforts by the Murray Darling Basin Authority, the CEWH and the NSW Government also attracted comment.

XXXX, XXX and I are on the Macquarie environmental watering advisory group. It seems the state and commonwealth are working effectively on that ... Isn’t perfect but seems to work reasonably well. (Johnson, pers. comm., 7 June 2023)

On First Nations matters, we heard a consistent view across the region that delivery of the Australian Government’s AWEPP Program needs to ‘get going’ and in NSW, needed to be underpinned by a partnership between the State and Local Aboriginal Land Councils. We also heard that any water entitlements sourced under this program should not be held in a trust – ‘they need to be held by the 40 nations’. And one person said consideration should be given to ‘allocating half of all environmental water to cultural water’.

In the three towns, we heard about issues particular to each community.

In Dubbo, we heard about the adverse impacts of Burrendong Dam on First Nations cultural activity along the Macquarie River. There were concerns about the governance and operation of the Macquarie Cudgegong Environmental Water Advisory Group. We also heard support for complementary measures as an alternative to further water recovery. There was a desire for more timely conduct of annual SDL Accounting and the subsequent reporting of annual water take. Mention was also made of the observed poor performance by water agencies during water resource plan accreditation processes in undertaking consultation with First Nations on draft plans.

In Warren, we heard that water recovered had benefited the Warren community through the improvement in the condition of the Macquarie Marshes; though this had to be considered in light of evidence of more prolonged drying periods. Concern was also raised about the rollout of floodplain harvesting licences in light of these apparent impacts of climate change being observed.

In Bourke, the mood was pessimistic. There were three messages we heard consistently.

Security of drinking water supply and its quality for the people of Bourke remains very uncertain.

Water recovery over the past two decades has badly affected the town and any further recovery may be a tipping point for the viability of the town. This picture of decline was best summed up in one comment we heard:

... impact to our community was significant. We went from 4000 to 2600 people. We lost a school with 95 children. We lost the Chesterfield farm machinery outlet, the John Deere, Toyota and Suzuki dealerships, shops closed, and the NRMA has gone. (Bourke Shire Council, pers. comm., 20 July 2023)

And the town’s First Nations people have been devastated by loss of their cultural link to the Darling Baaka river through drought and upstream over extraction.

NSW Gwydir Valley, NSW/Qld Macintyre Valley, Qld Lower Balonne Valley

At the end of July-early August, we travelled from northern NSW into south west Queensland visiting the towns of Moree, Goondiwindi, St George and Dirranbandi. A return to drier conditions through these areas was noticeable, We held a public forum in each town attended in total by 15 people. We also held seven additional meetings with local government, irrigator groups and First Nations organisations.

As was the case with our visit to central and north western NSW, we heard a mix of views; some relating to Basin Plan implementation and others to local and regional water management issues.

While there was an acceptance of the Basin Plan and environmental watering undertaken by the CEWH, communities in this region remained concerned about the Plan's flexibility and adaptability going forward.

There was a general tone of frustration about a perceived lack of accountability and transparency around environmental water decision making. This frustration related to feelings of not being consulted enough by decision makers, and a lack of recognition of the impacts of environmental water delivery on their land. Other participants commented about unrealistic goals being set through long-term environmental watering plans. Others felt that 'third-party impacts caused by environmental water should be compensable'.

Concerns were raised about a range of water recovery related matters. There were criticisms of the Australian Government's recent water tender process being 'exclusionary, poorly communicated and lacking transparent engagement with impacted communities'. Others criticised the Australian Government's renewed focus on buybacks at the expense of infrastructure-based recovery. This view was accompanied by reference to the negative impacts of buybacks on 'towns and communities, leading to job shortages and service reductions'.

One participant was sceptical about whether there was any scientific justification for the Australian Government attempting to recover a further 14GL of water licence in their catchment. They suggested consideration be given to requiring 'scientific justification for additional water purchases, along with consideration of technological solutions'.

Other participants were keen to highlight the benefits seen in their region, including bird breeding events after environmental water releases. There was also support for environmental water processes to shift the focus from 'volumes to outcomes'.

Across those we spoke with, there was also on-going frustration across this region with the quality of consultation efforts by the Australian, NSW and Queensland governments. This was around the perceived lack of effort by governments in actioning the Commission's 2018 recommendations on implementing the Basin Plan, water buybacks, environmental watering, over-watering, water resource plans, disconnects within and across governments around water management and a general lack of collaboration and goodwill from government agencies.

We met with a number of First Nations groups across the region. There was a strong message that First Nations in this region want to collaborate with governments, fusing their traditional water knowledge into the approaches embedded in current approaches to water management.

First Nations people said they wanted to be brought into the water loop, recognising each mob's connection to their Country. Participants said they preferred a participatory approach involving all mobs rather than a representative body. Water licences issued to each mob was also considered preferable to a collective cultural water licence.

At a local level, some participants said that limited access to river country caused by fencing was impeding efforts to heal River and Country and was having a detrimental impact on peoples' health and wellbeing. This

was summed up in a comment about ‘river’s declining, health impacts, fish scarcity, and a wish to restore the river as a community resource’.

B.4 Our concluding reflections

Drawing together the threads of our many conversations with people across the Basin, there are some clear messages, including:

- a strong desire by Basin communities (albeit expressed in differing ways and tones) for Basin governments to work collaboratively to finalise delivery of the Basin Plan
- a strong expectation that Basin governments will put in place better ways of working with local communities
- a growing interest in Basin Plan success being communicated through the lens of ‘environmental outcomes achieved’ rather than volumes of ‘annual environmental water used’
- a consistent call from First Nations people to be listened to, and involved in getting water onto their Country.

We have thought carefully about each of these issues, and reviewed the relevant evidence. And in our report, we have tried to address these issues in the recommendations we make.

Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACCC	Australian Competition and Consumer Commission
ACT Government	Australian Capital Territory Government
ADIC	Australian Dairy Industry Council
AEWP	Annual Environmental Watering Priorities
ANAO	Australian National Audit Office
ANZ Guidelines	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
ATSE	Australian Academy of Technological Sciences and Engineering
BCC	Basin Community Committee
BDL	Baseline Diversion Limit
BOC	Basin Officials' Committee
BOM	Bureau of Meteorology
BWEWS	Basin-Wide Environmental Watering Strategy
CAWI	Committee for Aboriginal and Torres Strait Islander Water Interests
CEWH	Commonwealth Environmental Water Holder
CICL	Coleambally Irrigation Co-operative Limited
CMS	Constraints Management Strategy
COAG	Council of Australian Governments
COFFIE	Commonwealth On-Farm Further Irrigation Efficiency
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DCCEEW	Department of Climate Change, Energy, the Environment and Water
EDO	Environmental Defenders Office
EHG	Environment and Heritage Group (New South Wales)
ESLT	Ecologically Sustainable Level of Take
EWAG	Environmental Watering Advisory Groups
GL	Gigalitre
CMA	Catchment Management Authority
DEG	Dharriwaa Elders Group
GVEG	Goulburn Valley Environment Group
GVIA	Gwydir Valley Irrigators Association

IGA	Intergovernmental Agreement
IGWC	Inspector-General of Water Compliance
IRN	Inland Rivers Network
LALC	Local Aboriginal Land Council
LEO	Local Engagement Officer (Commonwealth Environmental Water Holder)
LTAAY	Long-Term Average Annual Yield
LTWP	Long-Term Watering Plan
LVA	Latrobe Valley Authority
LVW	Lachlan Valley Water
MDB Agreement	Murray–Darling Basin Agreement
MDBA	Murray–Darling Basin Authority
MDBEDP	Murray–Darling Basin Economic Development Program
MD WERP	Murray–Darling Water and Environment Research Program
ML	Megalitres
MLDRIN	Murray Lower Darling Rivers Indigenous Nations
NBAN	Northern Basin Aboriginal Nations
NBEWG	Northern Basin Environmental Watering Group
NBPG	Northern Basin Project Group
NCC NSW	Nature Conservation Council of NSW
NFF	National Farmers' Federation
NIC	National Irrigators Council
NRM	Natural Resource Management
NSW	New South Wales
NSW DPE	New South Wales Department of Planning and Environment
NSW DPI	New South Wales Department of Primary Industries
NSW DPIE	New South Wales Department of Planning, Industry and Environment
NSW NRC	New South Wales Natural Resources Commission
NSWIC	New South Wales Irrigators' Council
NWQMS	National Water Quality Management Strategy
OECD	Organisation for Economic Co-operation and Development
OFEP	Off-Farm Efficiency Program
PC	Productivity Commission
PIIOP	Private Irrigation Infrastructure Operators Program
PPM	Pre-requisite Policy Measures
Qld DNRM	Queensland Department of Natural Resources and Mines

Qld DRDMW	Queensland Department of Regional Development, Manufacturing and Water
Qld DES	Queensland Department of Environment and Science
REO	Regional Engagement Officer (Murray–Darling Basin Authority)
RMWA	River Murray Waters Agreement
SA DEW	South Australian Department for Environment and Water
SCBEWC	Southern Connected Basin Environmental Watering Committee
SDL	Sustainable Diversion Limit
SDLAM	Sustainable Diversion Limit Adjustment Mechanism
SWWU	NSW South-West Water Users Association
TLM	The Living Murray Program
TLaWC	Taungurung Land and Water Council
Victorian DELWP	Victorian Department of Environment, Land, Water and Planning
VEWH	Victorian Environmental Water Holder
VMFRP	Victorian Murray Floodplain Restoration Project
WEP	Water Efficiency Program
WESA	Water for the Environment Special Account
WQM Plan	Water Quality Management Plan
WRP	Water Resource Plan

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