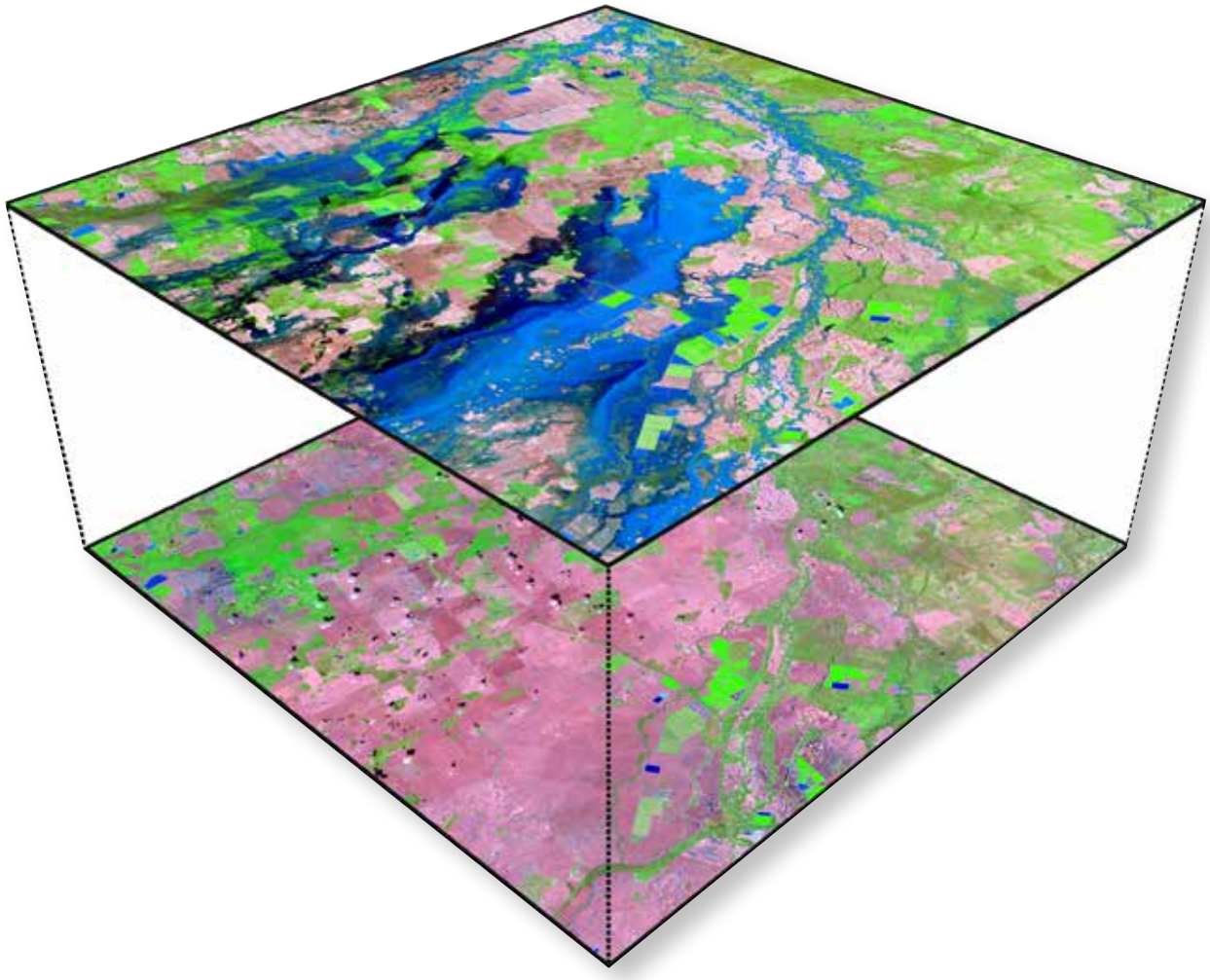
Australian Government

MURRAY–DARLING BASIN AUTHORITY

MURRAY–DARLING BASIN AUTHORITY

ANNUAL REPORT 2020–21



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Cover image: European Space Agency Sentinel-2 satellite images of floodplains near Mungindi and Boomi, as seen on 13 March 2021 (bottom) and 02 April 2021 (top), showing Short-wave Infrared (SWIR) which highlights moisture and vegetation. MDBA uses this imagery in its Basin-wide remote sensing monitoring program, MDBSat, which produces a fresh image of the Basin every 5 days at a resolution of 10 m. The system supports important ongoing MDBA work programs, including environmental monitoring and evaluation.

This annual report is available online on the MDBA's website: https://www.mdba.gov.au/publications/mdba-reports/mdba-annual-report

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Acknowledgement of First Nations Australians

The Murray–Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray–Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

We greatly value the guidance and support we received from First Nations throughout the Basin, especially the Murray Lower Darling Indigenous Nations and the Northern Basin Aboriginal Nations and our many First Nations friends and colleagues.

Aboriginal Nations of the Murray–Darling Basin

Barapa Barapa
Barkindji (Paakantyi)
Barunggam
Bidjara
Bigambul
Budjiti
Dhudhuroa
Dja Dja Wurrung
Euahlayi
Giabel
Githabul
Gomeroi/Kamilaroi
Gunggari/Kungarri
Gwamu (Kooma)
Jarowair
Kambuwal
Kaurna
Kunja
Kwiambul
Latji Latji
Maljangapa
Mandandanji
Maraura
Mardigan
Murrawarri
Mutthi Mutthi
Nari Nari
Ngadjuri
Ngambri
Ngarabal
Ngarigu
Ngarrindjeri
Ngemba
Ngintait
Ngiyampaa
Ngunnawal/Ngunawal
Nyeri Nyeri
Peramangk
Tati Tati
Taungurung
Wadi Wadi
Wailwan
Wakka Wakka
Watjobaluk
Waywurru
Weki Weki
Wemba Wemba
Wergaia
Wiradjuri
Wolgalu
Yaitmathang
Yita Yita
Yorta Yorta

Contents

Introduction

About this annual report

The Murray–Darling Basin Authority Annual Report 2020–21 gives an overview of performance from 1 July 2020 to 30 June 2021. It reviews performance against the purpose and goals published in the Portfolio Budget Statements and the *Murray–Darling Basin Authority Corporate Plan 2020–21*.

Part 1	Includes a foreword by the Authority Chair, the Chief Executive's review and an overview of the Murray–Darling Basin and the Murray–Darling Basin Authority
Part 2	Presents the Murray–Darling Basin Authority's performance during 2020–21 and priorities for the next reporting period
Part 3	Has governance and accountability details including the organisational structure and how the business is run
Part 4	Contains the financial statements and the independent auditor's report
Appendices	Contain the glossary, abbreviations, table of annual report requirements, details of accountable authority and index

Letter to the Minister

Australian Government | MURRAY–DARLING BASIN AUTHORITY

Office of the Chief Executive

Ref: EC21/000717

The Hon. Keith Pitt MP
Minister for Resources, Water and Northern Australia
PO Box 6022
Parliament House
CANBERRA ACT 2600

Dear Minister

It is my pleasure to present the Murray–Darling Basin Authority (MDBA) annual report for the 2020 – 21 financial year.

During the year the MDBA has continued to:

- drive the implementation of the Murray–Darling Basin Plan in collaboration with communities, governments and industries of the Basin
- direct the sharing of water of the River Murray on behalf of Basin governments.

The report has been prepared in accordance with the *Public Governance, Performance and Accountability Act 2013* (Cwlth) (s. 46) and the *Water Act 2007* (Cwlth) (s. 214).

I certify that the MDBA has prepared fraud risk assessments, fraud control plans and practices, fraud prevention, detection, investigation, and reporting, and data collection in compliance with the Commonwealth Fraud Control Framework. I also certify that I have taken all reasonable measures to minimise the incidence of fraud in the MDBA.

I would like to acknowledge the commitment of MDBA staff and their contribution to achieving a healthy, productive Murray–Darling Basin.

Yours sincerely

Andrew Reynolds

7 October 2021

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Adelaide, Albury-Wodonga, Canberra, Goondiwindi, Griffith, Mildura, Murray-Bridge, Toowoomba

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Part 1
Overview

Foreword by the Authority Chair

The Murray–Darling Basin is one of Australia's most important water catchments, given we live on the driest inhabited continent on Earth. The Basin's sustainability now and into the future is critical for the nation's water security. Our top priority at the Murray–Darling Basin Authority is the wellbeing and resilience of the Basin's river systems, its people and places.

In the past 12 months, my first year as Chair of the Murray–Darling Basin Authority, I have had the privilege of visiting many of the Basin's communities and walked along many riverbanks and waterways, COVID-19 restrictions permitting. I've met with First Nations people and heard their deep economic, spiritual and cultural connections to the rivers. I've met with farmers who grow the food and fibre that fuel local economies. I've engaged with leaders of hundreds of local communities, with river operators and with the people who focus their skill on the needs of the natural environment.

Whether you're in Cunnamulla, Goondiwindi, Dubbo, Wagga Wagga, Canberra, Mildura, Shepparton, Renmark, Murray Bridge or anywhere in between, we have one defining connection that makes us dependent on each another – the health of our network of rivers, creeks and groundwater systems.

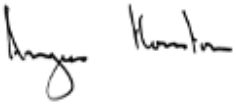
It is clear to me from these conversations that we have a shared vision for a healthy river system, one that can support successful businesses and resilient communities. This gives me heart, because there are significant challenges on the horizon, not least of which is climate change.

As you will see in this annual report, our team of river operators, scientists, engineers, modellers, water managers and administrators has continued to pursue the best possible outcomes. Our responsibility is to take a Basin-wide view and advocate for the entirety of this most important water catchment. This means monitoring and regularly reporting to governments and the community on the progress and outcomes of the Murray–Darling Basin Plan. Expert management of the River Murray on behalf of the Basin governments has also ensured water is delivered to towns, irrigators, wetlands and floodplains – from times of drought to full dams.

One of the most significant steps in the past year has been to welcome the appointment of the Authority's first Indigenous member. It is immensely reassuring that through the leadership of Rene Woods, the First Nations people of the Murray–Darling Basin are now at the table where decisions are made.

With engaged communities and an impressive store of strong local, regional and industry leaders, the future of the Basin is in good hands. It is critical that we all pull in same direction, constructively, collaboratively and taking a whole-of-Basin approach – the future of the Basin depends on it.

I commend to you this annual report.



Air Chief Marshal Sir Angus Houston AK, AFC (Ret'd)
Authority Chair

Chief Executive's review

I am delighted to present the Murray–Darling Basin Authority (MDBA) annual report for 2020–21. The year has seen a substantial turnaround in seasonal conditions for many parts of the Basin, with more rain than previous years, although this has not been universal. Recovery from drought is neither a fast nor easy process, and it will take many years for renewal and restoration. For many, greater abundance of water has brought hope and positivity.

I have certainly enjoyed seeing the broader benefits that more water in the system has brought to many areas, while acknowledging there's still a long way to go for some.

We also operated in a year of uncertainty of the implications of COVID-19 for Basin communities and our staff. We have continued to embed innovative solutions to get on with our work, but we have missed some of the planned opportunities to meet face to face with stakeholders. COVID-19 has also impacted the ability of our partner governments to maintain momentum engaging communities and delivering some projects.

I am pleased to report that progress was made on all our priorities, even though some timeframes will now extend into the new financial year.

Implementation of the Basin Plan

This year was key in working with Basin governments to assess water resource plans (WRPs), including the transition to implement sustainable diversion limit (SDL) accounting. WRPs are a key part of implementing the Basin Plan, as they set out the rules on water management at a local or catchment level. The assessment of WRPs for accreditation was behind schedule, which in turn impacted the water accounting and compliance activities. WRPs are accredited and in operation in Queensland, South Australia, Victoria and the Australian Capital Territory.

In December 2020 *The Basin Plan 2020 Evaluation* was published. It was a stocktake on the Basin Plan, identifying what was working and where resets are needed. It provided strong recommendations to governments about the benefits of the reform to date and the challenges ahead.

Operating the River Murray system for partner governments

We maintain and operate the River Murray system on behalf of partner governments and in accordance with the Murray–Darling Basin Agreement to achieve a healthy working Basin through the integrated management of water resources.

Our success is reviewed by the Independent River Operations Review Group (IRORG), which looks closely at our activities in managing this vital resource. We met all 6 performance measures, with most asset activities delivered and progressed.

Our focus to maintain and improve the health of the River Murray system (and the Basin where relevant) in accordance with the Murray–Darling Basin Agreement and associated agreements was substantially met. The only issue was the target for maintaining or improving the environmental health of key icon sites through The Living Murray program. The environmental health indicators in this annual report are based on monitoring results from the previous year (2019–20), which was the third consecutive year of hot and dry conditions across the southern Basin. These difficult conditions meant less water for the environment was available and contributed to several sites declining in environmental health compared with the previous year.

Improving transparency and confidence in the Basin Plan

Our comprehensive regionalisation program to substantially strengthen our presence and activities in all regions of the Basin has paid dividends. By the end of the year, we had one-third of our workforce in regions. Our highly skilled and motivated staff are in Adelaide, Albury–Wodonga, Goondiwindi, Griffith, Mildura, Murray Bridge and Toowoomba, as well as Canberra. This has enabled us to forge strong and connected relationships at local levels that inform and enhance our work on wider scales. I firmly believe our regional presence will continue to build greater transparency in our work and confidence in the Basin Plan and river operations.

Our updated communication and engagement strategy has also improved stakeholder awareness and understanding, as identified in a broad-reaching stakeholder survey.

Our regional operations have improved coordination with and between partner agencies and enabled us to engage more proactively across the Basin.

Strengthening the culture of compliance

The MDBA monitored and enforced compliance with the Basin Plan and published results of compliance and regulatory activities, a vitally important task to achieve a healthy working Basin. Six measures of success were assessed to inform compliance performance. Three of these measures were met and 3 were partially met, but I am pleased to advise clear progress was made against the identified activities.

We also assisted with the final stages of transferring our Office of Compliance across to the Inspector-General of Water Compliance, due for completion in August 2021.

Applying best science and knowledge

Water management is complex and often means managing competing demands. Therefore, equitable and sustainable use of the Basin's resources needs to be underpinned by collaboration and access to the best information and science. We back our decisions with solid data and information to build trust and provide transparency about our water management decisions.

We don't do this alone – our advisory committees such as the Basin Community Committee, the Advisory Committee for Social, Economic and Environmental Sciences and the Independent Assurance Committee have been integral to our success. Importantly, we also ensure engagement with First Nations means their knowledge is integrated into water management where possible.

As part of our focus on the future we have developed a climate workplan to guide our work from now until 2026 towards a sustainable, productive and resilient Murray–Darling Basin under changing climate conditions.

Looking forward

While in the short term we expect above-average rainfall, the longer-term outlook is for less water in the Basin. We need improved knowledge to understand and respond to changing conditions in the Basin over time, which will require all Basin governments, industries and communities to collaborate, allowing us to plan more confidently.

In the year ahead, our priorities will be to drive the successful implementation of the Basin Plan, to operate the River Murray efficiently and effectively for partner governments, and to improve transparency of, and confidence in, our work.

We will continue to boost collaboration and improve transparency about water management to build stakeholder confidence through our new communication and engagement initiatives. Key to this is partnering with others as much as possible to connect and help stakeholders navigate the complexity of water management.

The COVID-19 pandemic will influence and shape how all Australians connect, communicate and engage, and the MDBA is no different. We will continue to use innovative approaches to reach and engage with communities and stakeholders, but when we are able to, we look forward to opportunities for face-to-face engagement so we can keep building genuine and meaningful relationships with local and regional Basin communities.

Progressing water reform by implementing the Murray–Darling Basin Plan over the coming year will continue to be central to our work. Our monitoring and evaluation capabilities will also ramp up in the coming year, to provide the evidence and assurance that water management across the Basin is improving and to identify where it isn't. We'll work closely with local communities and state agencies to get the greatest benefit from their efforts and to make sure local insights are taken on board. This work will continue through to 2025, when we will undertake a stocktake to examine what's working and what's not, considering input from the science community and community representatives. In 2026, we'll conduct a formal review of the Basin Plan. In the year ahead we'll be working hard to develop an approach, with stakeholder input, for the 2026 Basin Plan Review.

On behalf of the Chief Executive, Phillip Glyde, and the MDBA's executive team, I thank all our staff for their efforts this year in supporting the Basin Plan and running the Murray River on behalf of Basin governments. It's undoubtedly in our national interest to continue our mission to rebalance the scales and create a sustainable long-term footing for industries and communities.

Acting Chief Executive Andrew Reynolds

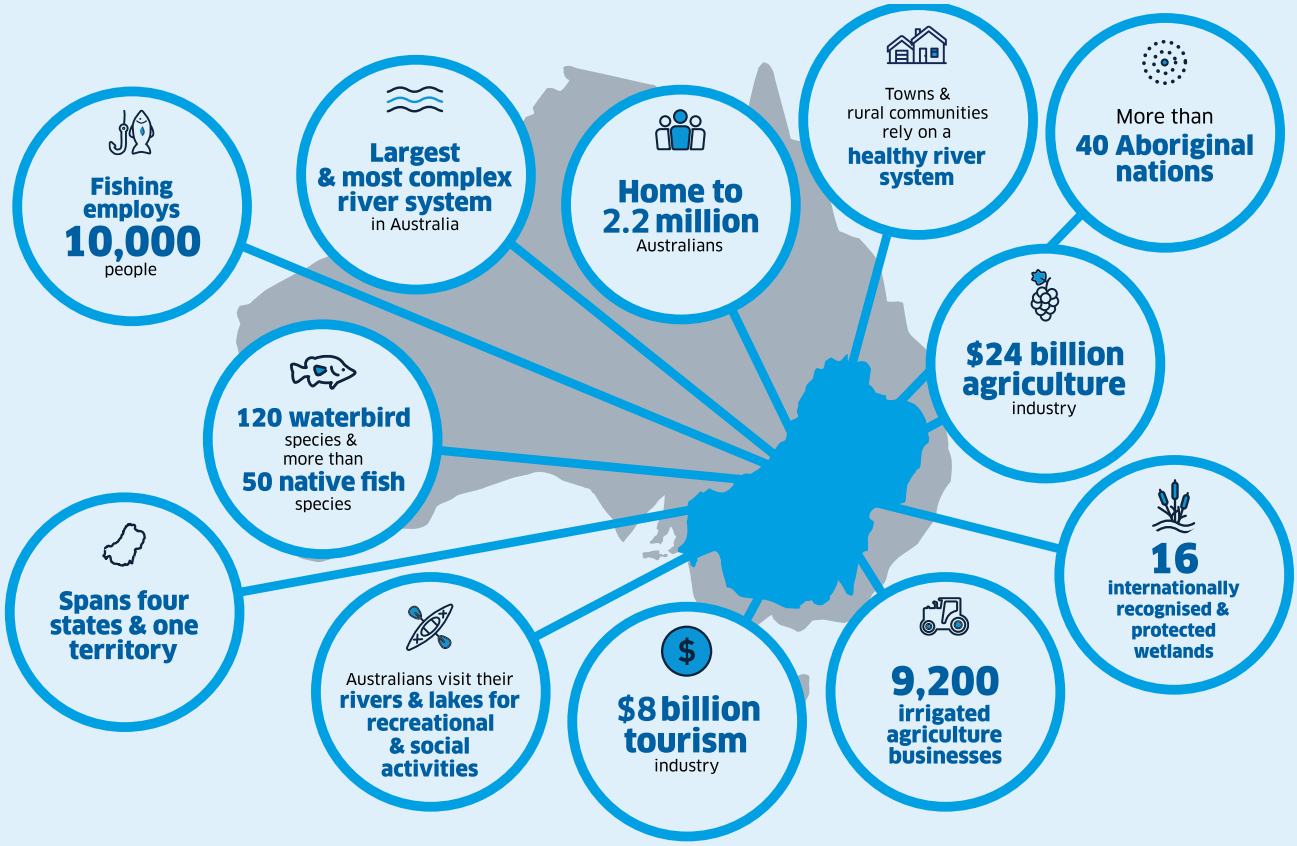


Figure 1: Map of the Murray–Darling Basin and key facts as at 24 December 2020

About the Murray–Darling Basin

The Murray–Darling Basin is a large area of south-eastern Australia where water flows through a system of interconnected rivers and lakes. The Basin stretches from southern Queensland through New South Wales, Victoria, the Australian Capital Territory and into South Australia. One of the flattest water catchments on earth, the Basin covers 14% of Australia's land mass and has significant environmental, cultural and economic value.

More than 2.2 million people live in the Basin, including people from more than 40 different First Nations. Water is central to the cultural, social and spiritual identity of First Nations people, and they are activity involved in the planning and management of water in the Basin.

The network of rivers, floodplains and groundwater reserves supports a diverse range of plants and animals, many of them protected under Australian legislation and international agreements. The Basin has over 100 sites registered as nationally important, some of which are also internationally important and recognised under the Ramsar Convention. The Living Murray program identifies and protects 6 'icon sites' along the River Murray selected for their ecological value and cultural significance.

The Basin has a thriving tourist industry, pre-COVID worth over $8 billion per year. River-based tourism, including fishing, boating and eco-tourism, has flow-on effects such as job creation and support for food and beverage businesses.

The Basin is one of Australia's most productive agricultural regions, containing over 40% of Australia's farms. Often termed 'Australia's food bowl', the Basin's food and fibre industries are worth $24 billion annually. Produce includes fruit and vegetables, wool, cotton, sheep, cattle, dairy products, rice and wine. The Basin supports around 9,200 agricultural businesses.

The Basin spans one million square kilometres and includes diverse landscapes. This means it has one of the most variable climates in the world, characterised by severe droughts, summer floods and extreme temperatures. Climatic conditions range from sub-tropical in the far north to hot and dry in the west, temperate in the south-east and cool in the high alpine areas.

Over the years, the amount of water used in the Basin has increased substantially. Droughts and the impacts of climate change affected the quantity and quality of the water, which has had flow-on effects for both the humans and animals that rely on the Basin's water. The 2012 Basin Plan was a result of the realisation that water in Basin needed to be managed to protect it into the future.

The Basin Plan

The Basin Plan is a significant reform, both in scope and intention. Building on the National Water Initiative and the Murray–Darling Basin Agreement, it was created to guide the management and sharing of water in the Basin in a sustainable way. The Basin Plan was legislated in the *Water Act 2007* and agreed to in 2012 (see Figure 2). It is a shared responsibility. The success of the Basin Plan relies on cooperation from the 6 Basin governments – the Australian Government and the governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

The Basin Plan sets out the amount of water that can be taken from the Basin each year, while leaving enough for the rivers, lakes and wetlands and the plants and animals that depend on them. The Basin Plan aims to restore the health of the Basin while continuing to support agriculture and the other industries for the ongoing benefit of the Australian community. The context in which this will happen has changed since implementation of the Plan started in 2012. Climate change, changes in agricultural production, environmental obligations and socio-economic changes have all had an impact in the Basin Plan's implementation.

The Basin Plan is now more than halfway through its implementation. The implementation of the Basin Plan spans 2012 to 2026, with evaluations in 2017, 2020 and 2025. One the MDBA's key roles is to drive its implementation.

Operating context for 2020–21

During 2020–21, there was steady progress on implementing the Basin Plan, including achieving the major milestone of *The Basin Plan 2020 Evaluation*. Also, for the first time, the Basin annual environmental watering priorities were developed with input from First Nations. These achievements were despite some challenging conditions.

The COVID-19 pandemic continued to affect travel and gatherings, slowing consultation processes but also resulting in some innovative solutions including virtual gatherings.

Weather patterns continued to be unstable. In 2020 the hot weather continued, with the Bureau of Meteorology confirming that 2020 was Australia's fourth warmest year on record. Most of the Murray–Darling Basin recorded hotter than average temperatures.

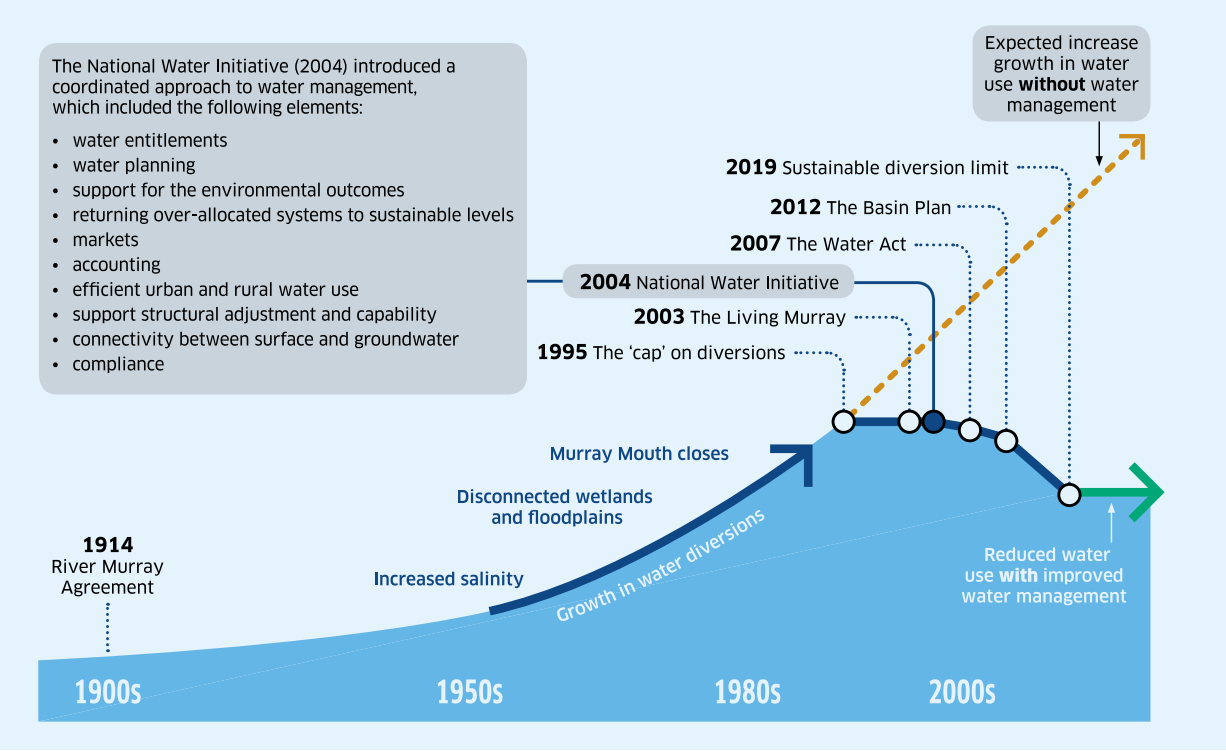


Figure 2: History of water reform in the Murray–Darling Basin

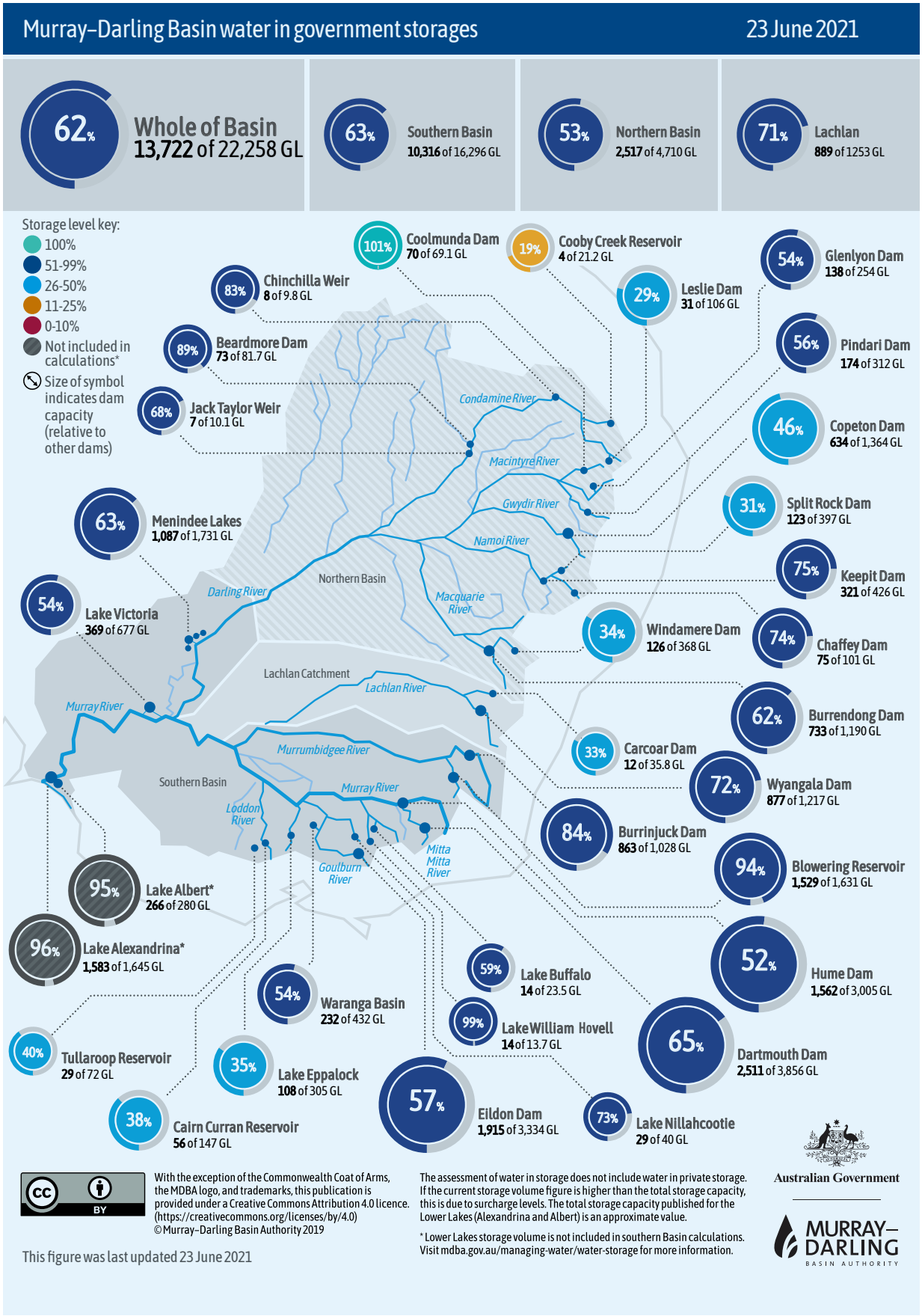


Figure 3: Storage capacity across the Basin as at 23 June 2021

In the latter part of 2020, a La Niña cycle brought above-average rainfall for much of the southern Basin, although northern areas received less rain. The above-average rainfall continued into the first part of 2021 and extended into the northern Basin, causing flooding in some areas. Record March rainfall in Queensland and northern New South Wales resulted in good flows in the Barwon–Darling rivers, and water storage levels in the Menindee Lakes reached their highest in 4 years. In mid-May the MDBA announced that on behalf of the Basin state governments small amounts of water would be released from Menindee Lakes. It's the first time since 2016 that this has been possible.

As at 23 June 2021 storage levels were at 62%, up from 38% at the end of 2019–20. The southern Basin was at 63%; the northern Basin at 53%.

Operationally, the MDBA continued to establish a stronger regional presence, with one-third of the workforce based in regional areas across the Basin. To support the implementation of the Basin Plan, the Australian Government launched the Murray–Darling Communities Investment Package in September 2020 aimed at boosting jobs and economic activity in Basin communities.

The government also announced the creation of a new statutory compliance role separate from the MDBA, and in December 2020 the Hon Troy Grant was appointed to the position of Interim Inspector-General of Water Compliance (IGWC). This will lead to some changes in the next reporting period as this position is merged with the MDBA's compliance role.

During 2020–21 there were several reviews into water management which have an impact on the MDBA. The report of the Australian Competition and Consumer Commission's inquiry into tradeable water rights in the Murray–Darling Basin was released on 26 March 2021. The report recommended reforms to improve Basin water markets in keeping with their size and complexity.

On 28 May 2021 the Productivity Commission handed its report *National Water Reform 2020* to the Australian Government. The report meets the Commission's obligations under the Water Act to undertake 3-yearly inquiries into Australia's water resources.

The government is considering its response to these 2 reports.

While the MDBA continued to be scrutinised during 2020–21, the publication of *The Basin Plan 2020 Evaluation* report made a major contribution to setting out the facts. The need for 6 governments and a range of stakeholders to have confidence in the Basin Plan and be able to work together continues to be among the most critical elements in the operating environment.

> Basin states are actively implementing the [Basin] Plan. [The MDBA's] job is to monitor, report and advise on Basin health.
>
> Over the first 8 years the Basin Plan has been tested – but we know it's working.
>
> – **Air Chief Marshal Sir Angus Houston AK, AFC (Ret'd)**, Chair, Murray–Darling Basin Authority in a speech at the Murray–Darling Association Conference 2021 on 19 May 2021

About the Murray–Darling Basin Authority

Purpose: To achieve a healthy working Basin through the integrated management of water resources for the long-term benefit of the Australian community.

IMPLEMENT THE BASIN PLAN

RUN THE RIVER

IMPROVE TRANSPARENCY AND CONFIDENCE IN THE BASIN PLAN, THE RIVER MURRAY OPERATIONS AND THE MDBA

DRIVE THE SUCCESSFUL IMPLEMENTATION OF THE BASIN PLAN

STRENGTHEN THE CULTURE OF COMPLIANCE IN THE MURRAY–DARLING BASIN

OPERATE THE RIVER MURRAY SYSTEM EFFICIENTLY FOR PARTNER GOVERNMENTS

TO APPLY THE BEST AVAILABLE SCIENCE AND KNOWLEDGE TO THE MANAGEMENT OF THE MURRAY–DARLING BASIN

MDBA CAPABILITIES

SUPPORTING CAPABILITIES

COMMUNICATIONS AND ENGAGEMENT • EDUCATION • ADAPTIVE WATER PLANNING AND POLICY

BASIN PLAN REGULATION • ABORIGINAL PARTNERSHIPS • HYDROLOGICAL ANALYSIS

WATER DELIVERY • WATER MANAGEMENT • ASSETS MANAGEMENT • APPLIED SCIENCE

CROSS PORTFOLIO CAPABILITIES

GIS REMOTE SENSING • PROJECT MANAGEMENT AND GOVERNANCE • DATA

REGIONAL OPERATIONS • GOVERNMENT RELATIONS

ENABLING SERVICES

LEGAL • GOVERNANCE • ICT • OFFICE SERVICES • HUMAN RESOURCE MANAGEMENT • FINANCE

Figure 4: Purpose and work of the MDBA

Authority

The Murray–Darling Basin Authority (MDBA) establishes and monitors the sustainable and integrated management of the water resources of the Murray–Darling Basin. This is done in collaboration with stakeholders in a way that best meets the needs of the Basin and its communities.

The MDBA operates under the authority of the Commonwealth *Water Act 2007* (the Water Act). It delivers its functions under the Murray–Darling Basin Agreement (Schedule 1 of the Water Act) in conjunction with and on behalf of the contracting governments: the Australian Government and governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

Most of the MDBA's operations are governed by the Water Act and the Basin Plan 2012, a legislative instrument made under Part 2 of the Water Act.

The MDBA also performs functions under the Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin (the IGA). Built on the 2008 Intergovernmental Agreement, the IGA came into effect in 2013 and has been amended 5 times. The most recent amendment in August 2019 was to agree to measures to improve environmental outcomes in the northern Basin.

Portfolio and ministers

The MDBA is in the Agriculture, Water and Environment portfolio, reporting to the then Minister for Resources, Water and Northern Australia, the Hon Keith Pitt MP. On 2 July 2021 Mr Pitt became the Minster for Resources and Water.

The MDBA works in collaboration with the policy owner, the Department of Agriculture, Water and the Environment (DAWE) and compliance owner the IGWC to implement the Basin Plan and the IGA.

Role

The MDBA's key roles are to:

- drive the successful implementation of the Basin Plan
- operate the River Murray on behalf of partner governments.

Figure 5 shows roles and responsibilities for the broader Murray–Darling Basin reform. As noted above, the MDBA is no longer responsible for enforcing compliance with the Basin Plan. This responsibility has been transferred to the IGWC.

Water resource plans

Water resource plans set local rules for water and outline how each region aims to achieve community, environmental, economic and cultural outcomes.

MDBA

assesses and recommends for accreditation

Basin states

develop and implement

Compliance*

An effective and fair compliance system will underpin the integrity of environmental water, water resource plans, water markets and water entitlements.

MDBA

monitors and enforces Basin-scale compliance

Basin states

implement and enforce compliance locally

Water markets and trade

Water in the Murray–Darling Basin can be bought or sold permanently or temporarily.

MDBA

provides information and enforces compliance

Basin states

implement the rules, including allocating water

Australian Competition and Consumer Commission

provides advice on rules and complaints

Recovering water

Under the Basin Plan, water is recovered and retained in the system to keep rivers, lakes and wetlands healthy.

Basin states

implement some efficiency programs

Department of Agriculture, Water and the Environment

undertakes strategic purchases and efficiency programs

Water for the environment

Water for the environment is used to improve the health of our rivers, wetlands and floodplains.

MDBA

plans, coordinates and prioritises at a Basin scale

Basin states

plan and implement at a local level

Commonwealth Environmental Water Holder

plans and implements across the Basin

Monitoring and evaluation

Monitoring, evaluating and reporting are critical to ensuring the way water is managed works and is on track.

MDBA

evaluates and monitors the Basin Plan

Basin states

report and monitor at a local level

Department of Agriculture, Water and the Environment

monitors water recovery program

Commonwealth Environmental Water Holder

monitors and reports results of water for the environment

Sustainable diversion limit adjustment mechanism

The sustainable diversion limit adjustment mechanism involves a suite of projects that are being developed to ensure water delivery systems are more effective and water losses are reduced.

MDBA

coordinates, assesses and monitors projects

Basin states

propose, design and implement projects

Department of Agriculture, Water and the Environment

funds and implements projects

River Murray operations

Infrastructure such as dams and levees are developed, maintained and operated to store water and allow flows to occur.

MDBA

operates and manages the River Murray

Basin states

undertake day-to-day management of dams, locks, weirs and barrages

*See page 12 for information on the transfer of compliance to the IGWC.

Figure 5: Roles and responsibilities for the broader Murray–Darling Basin reform

Collaborations

All Basin governments, communities and change makers must work together to improve the health and productivity of the Murray–Darling Basin.

(The *Basin Plan 2020 Evaluation*, p xvii)

To carry out its work the MDBA collaborates with governments, communities, First Nations, industry and research organisations (Figure 6). The aim is to build a shared purpose and commitment to a healthy and productive Basin.

Examples of collaborations and interdependencies include:

- *Basin governments* – the MDBA works with the Australian Government and the governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory to coordinate work programs and oversee the implementation of the Basin Plan
- *First Nations* – the MDBA engages with First Nations to ensure their perspectives are considered in the implementation, monitoring and evaluation of the Basin Plan. There are over 40 Aboriginal Nations in the Basin. The MDBA provides support to the Northern Basin Aboriginal Nations and the Murray Lower Darling Rivers Indigenous Nations. These are the peak Traditional Owner-based organisations in the Basin with a focus on natural resource management
- *Basin communities* – the MDBA works with Basin communities in managing the Basin in many ways, including advisory groups and Regional Engagement Officers
- *Australian Government agencies* – the MDBA works with other agencies including the Commonwealth Environmental Water Office (CEWO), the Australian Competition and Consumer Commission (ACCC) and the Bureau of Meteorology (BoM), which also have roles under the Water Act
- *science and research communities* – the MDBA has research collaborations with universities and research organisations. A key collaborator is the CSIRO
- *industry and special interest groups* – the MDBA works with agriculture, environmental, tourist and other industry groups that are stakeholders in the Basin.

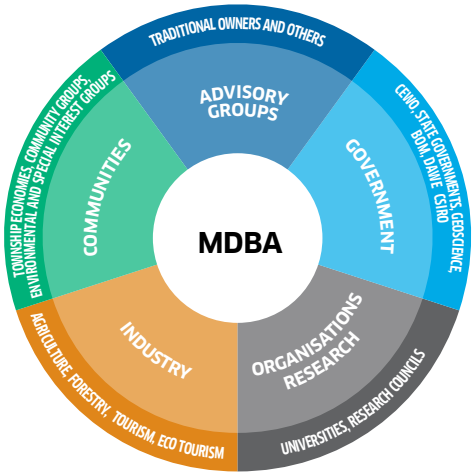


Figure 6: MDBA collaborations

Location

A strong regional presence and engagement with local communities is essential to successfully implementing the Basin Plan. In March 2019, the then Minister for Agriculture and Water Resources, the Hon David Littleproud, announced that the MDBA would be increasing its regional presence to a total of 103 positions by mid-2021. The MDBA has opened regional offices and is liaising with a network of Regional Engagement Officers (REOs) and Basin Community Committee members (see Basin Community Committee).

The MDBA operates from 8 offices in various parts of the Murray–Darling Basin:

- Adelaide – South Australia
- Albury–Wodonga – New South Wales and Victoria
- Canberra – Australian Capital Territory
- Goondiwindi – Queensland
- Griffith – New South Wales
- Mildura – Victoria
- Murray Bridge – South Australia
- Toowoomba – Queensland.

As of 30 June 2021, there were 96 MDBA staff located in regional offices, with the government's target of 103 positions in the Basin being met in 2021. As well as allowing the MDBA to engage more effectively with stakeholders, the regional presence has flow-on effects such as creating jobs and boosting economic diversification. There are more details of the numbers of MDBA staff in each state or territory in Employee arrangements (see p 101).

In 2020–21 the Australian Government provided funding for an extra part-time Regional Engagement Officer at Goolwa in South Australia.

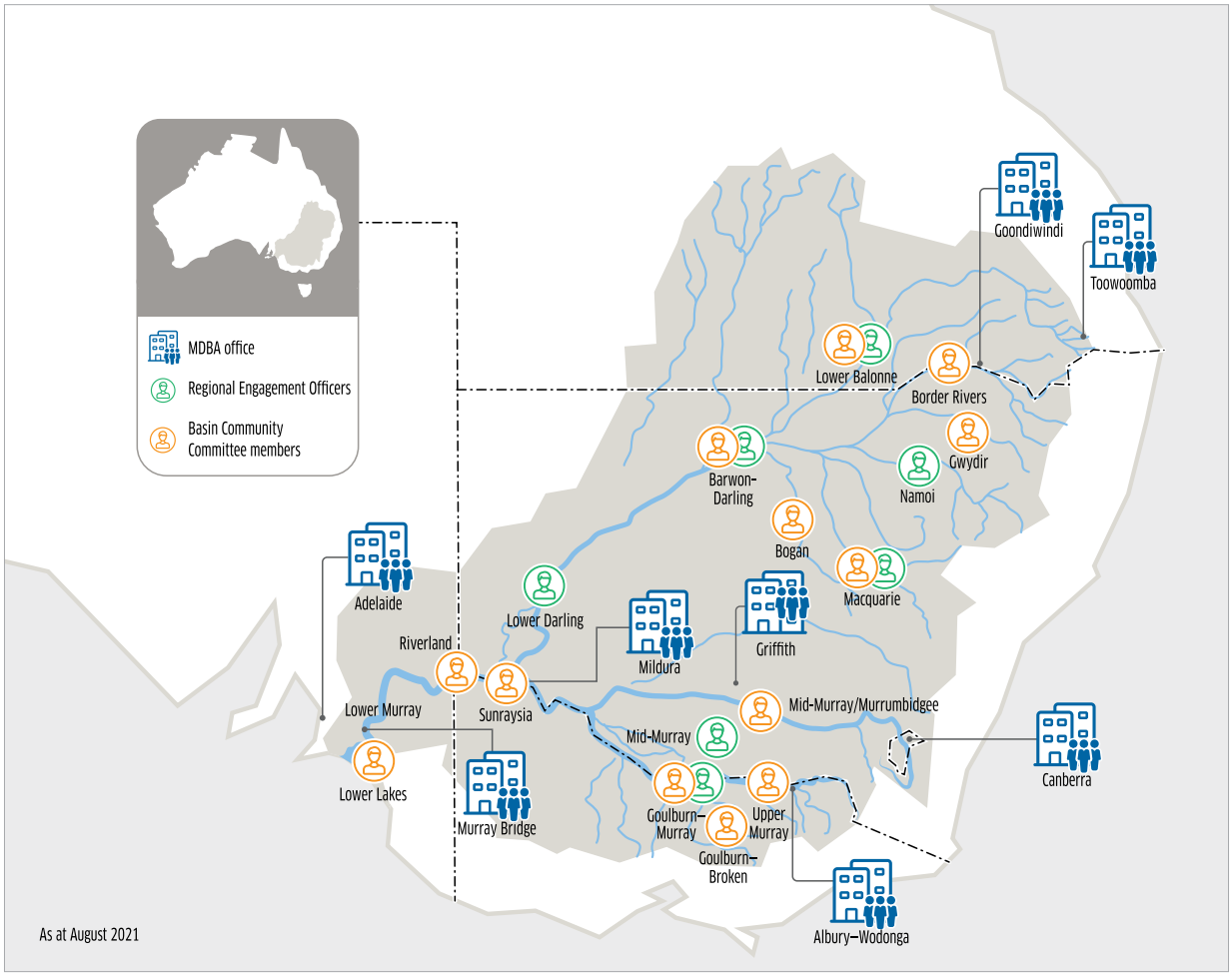


Figure 7: Map showing MDBA offices and locations of BCC members and Regional Engagement Officers

MDBA people and values

As at 30 June 2021 the MDBA had 266 ongoing staff and 34 non-ongoing staff.

The MDBA's work requires specialists working in areas including engineering, hydrology, environment science, social science, communications, project management, law and policy. The regionalisation of staff has better positioned the MDBA to meet business needs into the future. It also helps to strengthen engagement with stakeholders and improve transparency about decision-making.

The MDBA is committed to investing in its people's capabilities. Through the People Strategy 2021–2026, the MDBA's vision is to build a capable, engaged and connected workforce with a diverse, inclusive and agile culture. Aligned to the strategic priorities, the MDBA's People Strategy demonstrates the commitment to support and develop MDBA people so that the MDBA can become a more capable, trusted and flexible organisation that can adjust to changes in the external environment.

The MDBA will achieve its people vision through the delivery of program and projects under the following 5 strategic pillars:

- strengthen capability
- build a diverse, inclusive and agile culture
- support health and wellbeing
- deliver the MDBA's workforce strategy
- enable effective business delivery.

Across 2020–21 the MDBA has embarked on a workforce planning process that has identified the people capabilities needed to achieve the MDBA's strategic objectives. These capabilities have been organised into 20 capability groups in which workforce capability plans have been developed.

The capability planning process enables the MDBA to:

- define MDBA's people capabilities and how to best use them
- define the set of knowledge, skills and abilities that sit beneath each core capability
- shape a pathway that supports maintaining and building capability
- take a stocktake of the capability that currently exists and understand gaps between the current state and desired future state
- understand trends and innovations that influence how capability might change over the next 3 years.

Through the People Strategy the MDBA will continue to promote a dynamic, flexible and capable workforce with a single organisational culture. Priority workforce initiatives to support building and maintaining these capabilities will be considered across 2021–22.

Staff are guided by both the Australian Public Service values and the MDBA's CREATE values to ensure the MDBA continues to meet the expectations of stakeholders and deliver on the commitment to lead the planning and management of the Murray–Darling Basin.

The MDBA uses the CREATE values to capture how staff approach their work:

Figure 8: MDBA staff values

Part 2
Performance

Part 2—Performance

Introductory statement

I, as the accountable authority of the Murray–Darling Basin Authority, present the 2020–21 annual performance statement, as required under the Commonwealth *Public Governance, Performance and Accountability Act 2013* (PGPA Act) (paragraph 39(1)(a)).

In my opinion, this annual performance statement is based on properly maintained records, accurately reflects the performance of the entity, and complies with the PGPA Act (subsection 39(2)).

Andrew Reynolds, Acting Chief Executive

7 October 2021

Reporting approach

The PGPA Act sets out how corporate Commonwealth entities, such as the Murray–Darling Basin Authority, must report.

Figure 9 shows the links between the annual report and other aspects of the performance framework. The MDBA manages its performance against a single outcome. The key deliverables are measured against the strategic goals listed in the corporate plan.

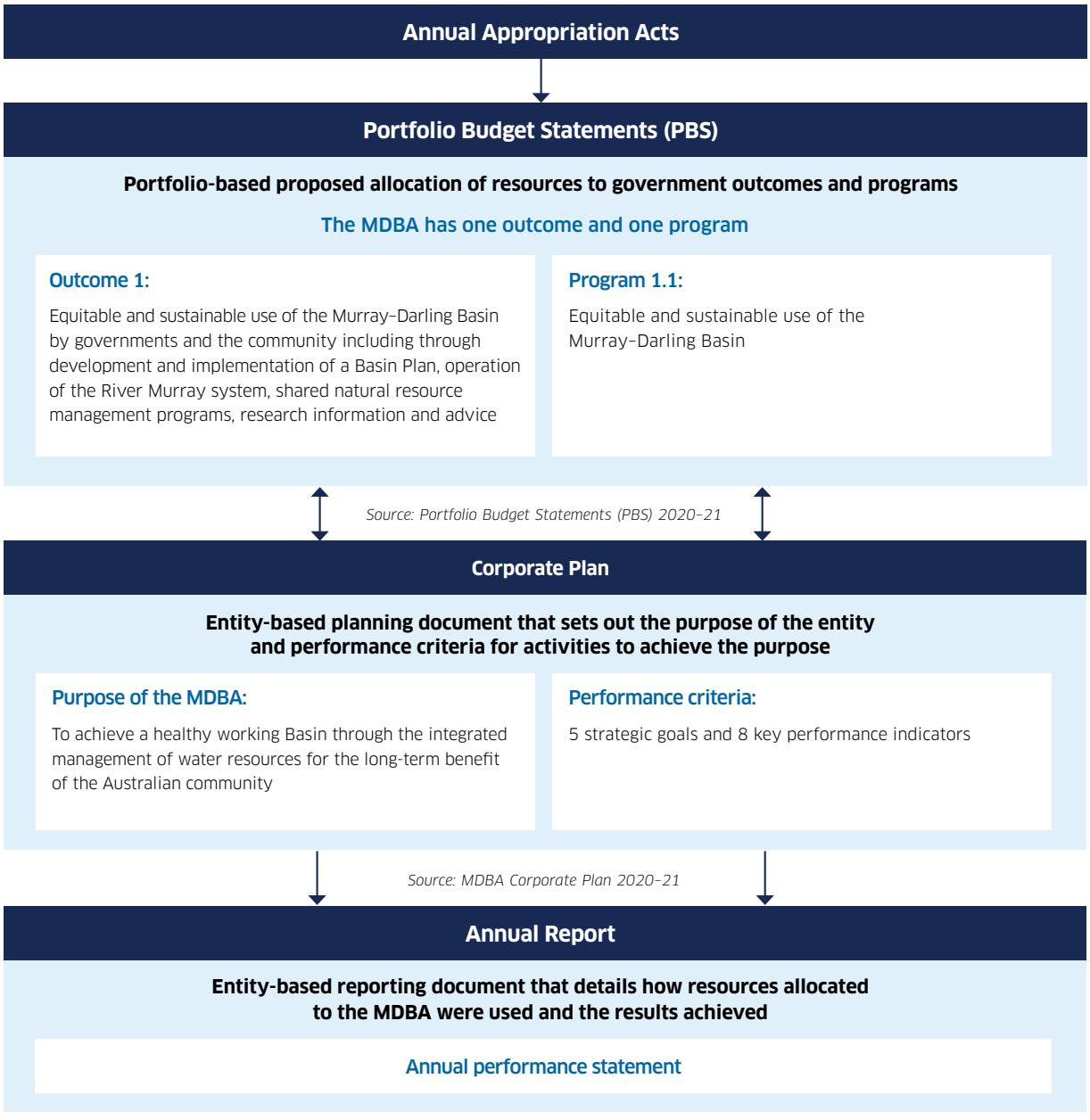


Figure 9: Performance framework

Performance snapshot

This section includes a summary of overall performance. More detailed analysis of the results follows under each goal.

Table 1: Performance against KPIs

Strategic goal	KPI	Result	Comment
Goal 1: Drive the successful implementation of the Basin Plan	**KPI 1**: Collaborate with Basin governments to achieve accreditation of water resource plans, and transition to implement sustainable diversion limit accounting, while managing instances of non-compliance	Partially met	While the MDBA has a target for this measure, the process involves many parties. At 30 June the assessment of WRPs for accreditation was behind schedule, which has an impact on the water accounting and compliance activities.
	KPI 2: Collaborate with Basin governments to achieve delivery of toolkit measures	Substantially met	Both measures in KPI 2 have been substantially met. Collaboration with Basin governments is critical to progressing the implementation of the toolkit measures. The significant toolkit measure milestones achieved during the 2020–21 financial year – particularly with respect to the protection of environmental water and environmental works infrastructure measures – demonstrate the collective efforts of the Australian, Queensland and NSW governments. This is despite climatic challenges of drought and floods and the impact of the COVID-19 pandemic.
Goal 2: Strengthen the culture of compliance in the Murray–Darling Basin	**KPI 3**: The MDBA monitors and enforces compliance with the Basin Plan and publishes results of compliance and regulatory activities	Partially met	Six measures of success were assessed to inform performance against the KPI. Three of these measures were met and 3 were partially met, with clear progress against the identified activities.

Strategic goal	KPI	Result	Comment
Goal 3: Efficiently and effectively operate the River Murray System for partner governments	**KPI 4**: Operate the River Murray System in accordance with the MDB Agreement	Met	The 6 performance measures were all met. The majority of asset activities were delivered and progressed, as endorsed by the River Murray Operations Committee. The most recent report of the Independent River Operations Review Group concluded that all the general objectives for river operations were achieved overall in 2019–20 and the MDBA responded appropriately to challenging conditions.
	KPI 5: Maintain and improve the health of the River Murray system (and the Basin where relevant) in accordance with Murray–Darling Basin Agreement and associated agreements	Substantially met	Four of the 5 performance measures were met. The target for maintaining or improvement the environmental health of 7 key sites was not met, because of the impact of a third consecutive year of hot and dry conditions across the southern Murray-Darling Basin. These climate conditions placed stress on the key sites and resulted in less water being available for the environment.
Goal 4: Improve transparency and confidence in the Basin Plan	**KPI 6**: Stakeholder awareness and understanding of the Basin Plan, River Murray operations and MDBA's role*	Met	The MDBA measures achievement of this KPI through a stakeholder survey. A greater regional presence and a new communication strategy has improved stakeholder awareness and understanding. The MDBA is focused on national leadership and influence, regional place-based engagement, and communicating Basin facts and information. In this first year of implementing the new strategy, the MDBA has improved coordination with partner agencies, published a number of public webinars and used its greater regional presence to engage proactively across the Basin.
Goal 5: Apply the best available science and knowledge to the management of the Murray–Darling Basin	**KPI 7**: Leverage the MDBA's deep understanding of environmental, social, cultural and economic considerations to make robust and defensible decisions	Met	Both measures in KPI 7 have met their targets. Reports, reviews, partnerships and collaborations provide plenty of evidence that decision-making is well supported by data and knowledge.
	KPI 8: Collaborate and cooperate with Basin governments and other external stakeholders to share knowledge, collect data and manage it appropriately	Substantially met	Collaboration and cooperation is the cornerstone of successfully implementing the Basin Plan. Evidence shows the MDBA collaborates widely and uses the data and knowledge generated in decision-making. During the year, an external provider assessing the management of data recommended some improvements. This, combined with changes of priorities associated with the COVID outbreak, means that one of the 2 measures for KPI 8 was substantially, rather than completely, met.

*Note: changes have been made to Goal 4 from *MDBA Corporate Plan 2019–20*: KPI 6 and KPI 7 have been merged into one KPI to consolidate and improve reporting under the goal.

Source: Murray–Darling Basin Authority Corporate Plan 2020–21

Goal 1
Drive the successful implementation of the Basin Plan

Role of the MDBA

Lead the implementation of the Basin Plan in collaboration with Basin state and territory governments and other Australian Government agencies.

Desired outcomes

- Accreditation of water resource plans (WRPs) that are consistent with the Basin Plan
- Ensuring WRPs can continue to evolve and be adapted over time as new information becomes available, including reaccreditation in the future as plans are adjusted and improved
- Improved water accounting and reporting on water resources in the Murray–Darling Basin
- Water use across the Basin is compliant with sustainable diversion limits (SDLs)
- Environmental benefits are maximised through the use of the northern Basin toolkit measures
- SDL Adjustment Mechanism projects are substantially progressed
- Efficient delivery of environmental water with minimum impact on the people, land and infrastructure

2020–21 key activities

- Assess WRPs for accreditation
- Set up processes to enable amendments to accredited WRPs
- Complete the SDL accounts and any actions arising
- Progress SDL accounting improvements
- Monitor the implementation of toolkit measures in the northern Basin
- Support active management of northern Basin flows
- Progress MDBA responsibilities in the Basin Plan commitments package
- Complete the review of the Environmental Watering Plan (Chapter 8 of the Basin Plan) and publish the final review report by 30 December 2020
- Develop an implementation plan to action the environmental watering priorities, reviewing recommendations during the first quarter of 2021

Source: Murray–Darling Basin Authority Corporate Plan 2020–21

Performance and analysis

Goal 1 has 2 key performance indicators (KPIs):

KPI 1: Collaborate with Basin governments to achieve accreditation of water resource plans, and transition to implement sustainable diversion limit accounting, while managing instances of non-compliance

KPI 2: Collaborate with Basin governments to achieve delivery of toolkit measures

Performance on KPI 1

The aim of the Basin Plan is to achieve a sustainable, healthy system for the benefit of all stakeholders. Having accredited WRPs, transitioning to sustainable diversion limits and accounting, and managing non-compliance are key to meeting this aim. Delays in the development, assessment and accreditation of WRPs, the SDL Adjustment Mechanism projects and the Northern Basin toolkit projects mean that the full benefits of the Basin Plan cannot yet be realised. Meeting the targets will require renewed commitment from Basin governments and all stakeholders.

Table 2: Performance against targets for Goal 1, KPI 1

KPI	Measure	Target	Result
KPI 1: Collaborate with Basin governments to achieve accreditation of water resource plans, and transition to implement sustainable diversion limit accounting, while managing instances of non-compliance	1.1 Percentage of water resource plans which have been assessed by the MDBA for accreditation	100%	39%[t]
	1.2 SDL reporting and compliance framework is applied	SDL compliance report published	Partially met[+]

tAt 30 June 2021, 20 NSW plans remain to be assessed for accreditation. However, during 2020–21 the MDBA has provided preliminary advice to NSW on all 20. At 30 June NSW had withdrawn 12 for review and resubmission.

+2019–20 compliance report delayed due to analysis of 'Reasonable Excuse' claims.

Water resource plans assessed for accreditation

Water resource plans are a key part of implementing the Basin Plan, as they set out the rules on water management at a local or catchment level. The development, assessment and accreditation of WRPs is a thorough process that involves close collaboration at local, state and national level. Figure 10 shows the key elements taken into account for each WRP.

WRPs are developed by Basin state governments. The MDBA's role is to provide assistance in developing WRPs and to assess them using a documented framework consistent with the requirements of chapter 10 of the Basin Plan. The MDBA then makes a recommendation to the Australian Government minister responsible for water as to whether the WRP is suitable for accreditation.

The Basin Plan requires 33 WRPs to be developed:

- 14 for surface water
- 14 for groundwater
- 5 covering both surface water and groundwater.

As at 30 June 2021, the WRPs are accredited and in operation for Queensland, South Australia, Victoria and the Australian Capital Territory. These account for 13 of the total number of WRPs; the remaining 20 are all in New South Wales.

New South Wales submitted all its WRPs by 30 June 2020 but needs to make some amendments before the WRPs can be submitted to the Commonwealth water minister for accreditation. COVID-19 restrictions have caused delays in meetings with community groups and engagement with First Nations living in the 20 WRP areas in New South Wales. The MDBA is working with the Northern Basin Aboriginal Nations (NBAN) and the Murray Lower Darling Rivers Indigenous Nations (MLDRIN) in relation to the 'Indigenous values and uses' part of each WRP.

Because these WRPs were not accredited by 1 July 2020, the MDBA and the New South Wales government signed a new bilateral agreement. This agreement safeguards key Basin Plan commitments.

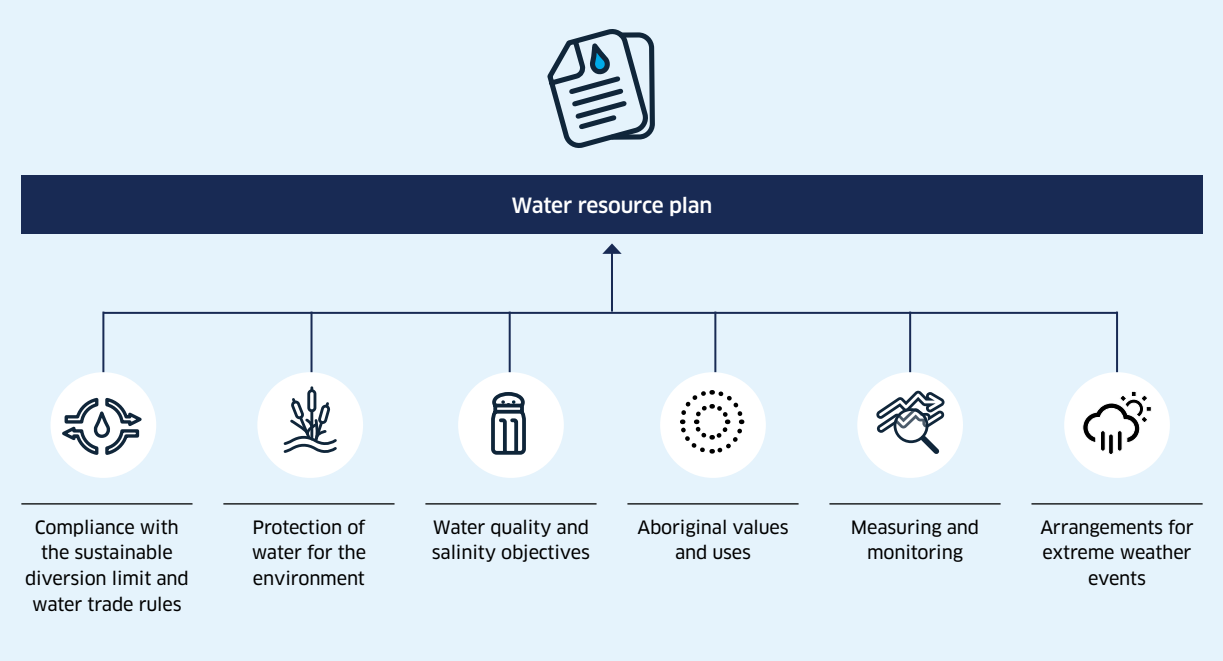


Figure 10: Key elements of water resource plans

WRP amendment process ensures relevance

Climate change, changes to state legislation, new information and other changes mean that water management will continue to evolve. This will necessitate amendments to accredited WRPs. Getting the plans right takes time and it is important that all stakeholders have confidence in them.

The MDBA has developed WRP amendment guidelines to help Basin states draft amendments to their WRPs. The MDBA will undertake a tailored approach to assessment that is suited to the scale and complexity of an amendment when determining consistency with the Basin Plan. Regulations are also in place to enable the streamlined accreditation of minor or non-substantive amendments to WRPs.

The MDBA publishes quarterly reports documenting WRP progress. Read these and other information about WRPs on the MDBA website at https://www.mdba.gov.au/basin-plan-roll-out/water-resource-plans

SDL accounting improvements assist compliance

Since 2012–13, the MDBA and the Basin states have been developing processes to report on and manage compliance with the new SDL accounting system. These trials have been published in a series of transition period water take reports that can be found on the MDBA website at https://www.mdba.gov.au/publications/mdba-reports/transitional-sdl-water-take-reports

The sustainable diversion limits commenced from 1 July 2019, but need an accredited WRP before they can be applied. As only one WRP had been accredited by the start of the 2019–20 water year, the compliance assessment was split:

- an assessment under the Basin Plan for those SDL resource units where the WRP had been accredited
- an assessment under a bilateral agreement between the Basin state and MDBA where a WRP had not yet been accredited.

The MDBA has been working with Basin states to understand compliance against these limits for the 2019–20 water year. Accounting for the water taken across the whole Basin is a complex undertaking. It's important to get water take accounts right to ensure that there is accurate information and to provide confidence that water is being taken within the rules.

A small number of SDL resource units have needed considerable effort to finalise in this first year. In turn, this has led to a delay in publishing the SDL compliance outcomes, which was expected to occur early in the 2020–21 water year.

Water Take Report 2019–20 will also be published in the 2021–22 water year. This will set out the results of the Cap compliance assessment as well as report on held environmental water and any trends in water use.

The MDBA is committed to continuous improvement in water measurement and accounting:

- The MDBA published the SDL Accounting Framework Improvement Strategy 2020–2025 in May 2020 on the MDBA website. The strategy outlines how the MDBA will continue to improve the SDL accounting framework in conjunction with the Basin states over the next 5 years. It includes work to align water accounting concepts with the Bureau of Meteorology and the Australian Bureau of Statistics.
- The SDL Accounting Data Management Project aims to improve the accounting and compliance processes in a streamlined system. The system is a key part of the SDL Accounting Framework Improvement Strategy and includes data acquisition, management, analysis and reporting.

Basin Plan 2020 Evaluation – Recommendation 2

There is still scope for Basin governments to propose new and innovative approaches to achieving the long-term sustainable limits for water use in the Basin. As Basin governments and communities engage on completing the remaining elements of Basin Plan implementation it will be vital to show how these new approaches could contribute to delivery of sustainable water use limits.

https://www.mdba.gov.au/basin-plan/monitoring-evaluation/2020-basin-plan-evaluation/implementing-basin-plan

Performance on KPI 2

Table 3: Performance against targets for Goal 1, KPI 2

KPI	Measure	Target	Result
KPI 2: Collaborate with Basin governments to achieve delivery of toolkit measures	2.1 Milestones and actions in Schedule 3 to Inter-Governmental Agreement (IGA) are being progressed for each of the 6 toolkit measures	As set out in Schedule 3 of IGA	Substantially met
	2.2 MDBA, NSW, Qld and Department of Agriculture have processes in place to demonstrate the successful implementation of toolkit measures	Quarterly progress report published by MDBA	Met

Implementation of toolkit measures a collaborative process

The toolkit measures complement the SDLs to improve water management practices and achieve a sustainable northern river system.

Implementation of the toolkit measures depends on collaboration between the Australian, Queensland and New South Wales governments and stakeholders in the northern Basin.

The 6 toolkit measures are:

1. targeted recovery of water – aims to improve environmental watering into Narran Lakes, Lower Balonne and Culgoa floodplains and the Barwon–Darling River while managing any adverse socioeconomic impact
2. protection of environmental flows – aims to strengthen environmental flows across the northern Basin, particularly in the unregulated river systems of the Condamine–Balonne and Barwon–Darling
3. event-based environmental water mechanisms – aims to support the development of contractual and other mechanisms to complement environmental water management; aims to benefit the Narran Lakes, some areas of the Lower Balonne, the Border Rivers and Namoi regions, and Barwon–Darling
4. improved coordination and management of environmental water – aims to maximise environmental outcomes of water for the environment moving from upper catchments to downstream rivers such as the Barwon–Darling and Lower Balonne
5. Gwydir constraints – aims to remove constraints in the Gwydir catchment that are preventing flows from reaching the Gwydir wetland
6. environmental works and measures – aims to implement works that promote fish movement and habitat and broader ecological outcomes in the northern Basin.

Full details of the toolkit measures are available on the MDBA website – https://www.mdba.gov.au/basin-plan/northern-basin-projects/northern-basin-toolkit-measures – (which includes links to relevant Australian Government websites).

Several toolkit measure milestones were due in the 2020–21 financial year. Timeframes for completing other milestones are in future financial years (that is after June 2021). Timeframes and progress against these toolkit measures are provided in Table 4.

During 2020–21, there was solid progress on delivering the toolkit measures. Significant milestones were achieved for both the policy and management measures and the environmental works infrastructure measures, showing commitment by Basin governments. Overall, the implementation is at various stages, with some projects delivered and others on track providing confidence to communities, while other projects are delayed.

NSW's start to implementing a measure known as 'active management' was a key milestone achieved during 2020–21. This enduring solution to protect water for the environment along the Barwon–Darling and through the lower Gwydir and lower Macquarie unregulated river systems was a key aspect of NSW water reform. It replaced the interim arrangements NSW used over recent years during northern flow events. Challenges remain around timing of formal accreditation of the NSW water sharing arrangements through WRPs.

Progress on environmental works and measures infrastructure projects – such as fishways and the Gwydir constraints project – has been slower than expected. A key milestone was achieved in March 2021 when the Australian Government minister responsible for water announced approval of 10 toolkit projects in NSW and Queensland. This announcement followed a Commonwealth assessment of value for money and ability to deliver maximum environmental outcomes in the northern Basin, including consideration of recommendations of an independent expert scientific panel.

A number of factors have contributed to the slower than expected progress for the environmental works infrastructure measures:

- Delays in developing feasibility proposals, partly due to COVID-19 restrictions, meant that the agreed IGA timeframe for submitting business cases in the second half of 2020 was not met. The consequence of delays is that it will be challenging to deliver some of the larger, more complex prioritised projects by 30 June 2024.
- Basin governments recognised that there are likely to be more projects proposed seeking funding than can be funded. Hence, initial efforts focused on developing a rigorous and transparent framework to prioritise a package of toolkit projects based on maximising environmental outcomes.
- Multi-jurisdiction and agency collaboration and cooperation is critical for toolkit implementation but processes seeking agreement take time and require consultation.
- There were delays with the execution of funding agreements.
- Decision on which projects were selected to proceed to the next phase took longer than anticipated. This was necessary to ensure Commonwealth due diligence process to ensure value for money and ecological merit, including seeking independent scientific advice.

Table 4: Summary of toolkit measures, milestones and progress

Toolkit measure	Milestones and timeframe	Progress
1. Targeted recovery of water	• Monthly reports on progress towards water recovery targets • Report giving examples of how the water recovered is helping to achieve environmental outcomes	• The Australian Government, in consultation with NSW, Queensland and the MDBA, will recover water for the environment by modernising off-farm water delivery infrastructure. On 3 March 2021, Minister Pitt announced the new Off-farm Efficiency Program including $1.33 billion in state-led efficiency projects and $0.15 billion in direct grants. There is an additional $60 million available for on-farm projects. Further details are available at Off-farm Efficiency Program - Department of Agriculture at: https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program • The Australian Government regularly publishes information on progress of Commonwealth environmental water recovery at: https://www.agriculture.gov.au/water/mdb/progress-recovery/progress-of-water-recovery • As at 31 March 2021, there was 30.2 GL of water recovery remaining in the northern Basin. • Progress to achieving full recovery in the northern Basin has stalled. Recovery needs to be fast-tracked to ensure compliance with sustainable diversion limits and conclude the Bridging the Gap program. A plan and timeframe for achieving the remaining northern Basin water recovery is needed and should be transparently communicated to provide confidence and certainty to communities.

Toolkit measure	Milestones and timeframe	Progress
2. Protection of environmental flows	• Mechanisms to protect environmental flows included in WRPs submitted for accreditation by 31 December 2019 and in place and operating by end 2020 • Accounting method supported by protocols and procedures for Qld-to-NSW cross-border held environmental water in place and operating by end 2020	• Mechanisms to better manage and protect environmental water and low flows have been included in all WRPs. • In Qld, all WRPs are accredited and fully operational. • Qld, in collaboration with NSW and the CEWO, has progressed the development of an accounting method for cross-border held environmental water. An interim arrangement was in place by the end of 2020 (consistent with the agreed IGA timeframe), which was trialled in early 2021. Qld plans to finalise the improved cross-border water accounting arrangements, including formal supporting procedures and protocols, by 30 June 2021. • NSW has developed enduring arrangements for protection of water for the environment to be implemented through water resource plans. All 11 groundwater plans and 9 surface water plans have been submitted to the MDBA for accreditation under the Basin Plan. MDBA accreditation assessment is ongoing with a number of draft WRPs being withdrawn for amendment before being resubmitted. • NSW commenced active management to protect water for the environment on 1 December 2020 in the 3 unregulated water sources (consistent with the agreed IGA timeframe). Three other aspects of NSW reform came into effect from 1 July 2020 in accordance with the amended Water Sharing Plan for the Barwon–Darling unregulated water source: – managing resumption of flows in the Barwon–Darling after an extended dry period (first flush rule) – daily extraction limits – increases to some A Class access pumping thresholds near Bourke to protect low flows. • In January 2021, the new 'resumption of flow' rule was activated for the first time since it was introduced by NSW in 2020. It prohibited irrigation licence access until enough water was forecast to flow through the system to provide system connectivity from Bourke to Wilcannia. In total, 8,000 ML was protected using the resumption of flows rule (see WaterNSW Resumption to Flows event report at :https://www.waternsw.com.au/__data/assets/pdf_file/0019/165034/Resumption-to-Flows-event-report-January-2021.pdf)

Toolkit measure	Milestones and timeframe	Progress
3. Event-based environmental water mechanisms	• A workplan for developing a suitable framework for event-based mechanisms finalised by 31 December 2019	• The *Event-based mechanisms in the Lower Balonne: implementation overview* report was published on the Department of Agriculture, Water and the Environment website in January 2020. It is available at: http://environment.gov.au/water/cewo/publications/event-based-mechanisms-lower-balonne-implementation-overview • An independent review has been completed and published on the CEWO website of the pilot grant scheme that was implemented in early 2020. The pilot involved paying a water allocation holder that was legally entitled to pump water from the Narran River to not pump. The review was supportive of the design and implementation of the event-based mechanism. It is available at: http://www.environment.gov.au/water/cewo/publications/narran-lakes-event-based-mechanism-pilot-project-review-final-report • The CEWO continues to explore opportunities to use event-based mechanisms to enhance environmental outcomes in the northern Basin if suitable flow conditions arise. In early 2021, the CEWO sought interest from water allocation holders to participate in another grant to allow additional water to pass into Narran Lakes. However, on this occasion, no water allocation holders chose to accept the voluntary grant offer. • Qld has committed to review accounting and management arrangements within the seasonal assignment framework. This will facilitate the most comprehensive take-up of event-based mechanisms to allow for flow event transfers between entitlement holders and the CEWO.
4. Improved coordination and management of environmental water	• Draft terms of reference agreed to by the parties by end 2019 • All projects that are assessed and approved for Commonwealth funding must have entered into operation by June 2024	• The CEWO and NSW coordinated joint environmental releases to achieve whole-of-north connected flows in 2018 (the Northern Connectivity Event, http://www.environment.gov.au/water/cewo/northern-rivers), 2019 (the Northern Fish Flow, http://www.environment.gov.au/water/cewo/catchment/northern-fish-flow-2019) and 2020/21, (the Northern Waterhole Top-Up, https://www.environment.gov.au/water/cewo/catchment/northern-waterhole-top-up) • A Northern Basin Environmental Watering Group (NBEWG) comprising officials from the MDBA, CEWO, NSW and Qld has been established and has met on several occasions. The NBEWG will provide an enduring and formalised way to coordinate planning and delivery of water for the environment across the northern Basin. Initial terms of reference for NBEWG were agreed in November 2019 and revised terms of reference were agreed by Basin governments in May 2021. These are consistent with the findings of the MDBA's joint governance review. • A new Environmental Water Committee comprising senior officials from all Basin governments was established in 2021 to provide support and advice on responsibilities with regards to joint government business and any relevant Basin Plan matters related to environmental water. It will work with NBEWG to ensure environmental water is being better coordinated across catchment and state boundaries, including addressing environmental water policy issues in the northern Basin.

Toolkit measure	Milestones and timeframe	Progress
5. Gwydir constraints	• Revised Gwydir constraints project business case finalised by the second half of 2020 • Any project that is assessed and approved for Commonwealth funding must have entered into operation by June 2024	• In July 2020 NSW submitted feasibility proposals to the Commonwealth to address constraints in the Gwydir catchment. • The Australian Government minister responsible for water determined in March 2021 that Commonwealth funding be made available to develop business cases for 3 Gwydir constraints projects: – Gwydir – Gingham Watercourse – Gwydir – Lower Gwydir Watercourse – Gwydir – Lower Mehi River. • The business case submission timeframe for environmental works projects of December 2020 agreed by Basin governments was not met. Business cases are expected to be submitted to the Commonwealth in November 2021 for Commonwealth assessment. • Decisions on the implementation of these projects will be determined by the Australian Government minister responsible for water following submission of the business cases. • Gwydir constraints projects are large, technically complex projects requiring extensive community and stakeholder support. Implementation by the agreed June 2024 implementation timeframe will be challenging and there is significant risk that it will not being met. Further delays will increase implementation risk.

Toolkit measure	Milestones and timeframe	Progress
6. Environmental works and measures	• All projects for this measure that are assessed and approved for Commonwealth funding must have: – submitted business cases to the Australian Government department in the second half 2020 – entered into operation by June 2024	• An ecological prioritisation framework has been developed and endorsed by the Basin Officials Committee to prioritise toolkit projects to be implemented according to their ability to deliver maximum environmental outcomes in the northern Basin. • NSW and Qld submitted feasibility proposals in July 2020 for Commonwealth assessment using the prioritisation framework. • in March 2021 the Commonwealth Minister announced that 10 toolkit projects in NSW and Qld, including the 3 Gwydir constraints projects, have been approved. Ninety million dollars has been made available to NSW and Qld to support the accelerated implementation of 4 of the projects and develop business cases for the remaining 6 projects. Activities to develop projects are expected to include community consultation. • A summary of each of the 10 projects selected to proceed to the next phase is provided on the MDBA website at https://www.mdba.gov.au/basin-plan/northern-basin-projects/northern-basin-toolkit-measures • There is further information on the DAWE website (https://www.agriculture.gov.au/water/mdb/basin-plan/northern-basin-toolkit) about the 4 projects fast-tracked for implementation. It is expected on-ground delivery of these project will begin this year. • The business case submission timeframe for environmental works projects of December 2020 agreed by Basin governments was not met. Business cases are expected to be submitted to the Commonwealth in November 2021 for Commonwealth assessment. • Decisions on implementation of these projects will be determined by the Australian Government minister responsible for water following submission of the business cases. • While efforts to fast-track implementation of some projects through an accelerated gateway model is welcome progress, delivering the prioritised environmental works infrastructure projects by the agreed June 2024 implementation timeframe will be challenging. Good progress by June 2024 is still achievable, including delivery of smaller scale and less complex projects. The risk of not meeting implementation timeframes is greatest for larger, technically complex projects and those requiring extensive community and stakeholder engagement and support. Further delays will increase implementation risk with the likelihood of meeting implementation timeframes steadily decreasing over the past 2 years. The accelerated delivery of some projects will assist to reverse this trend but further action is likely to be required.

Processes to show progress on toolkit measure implementation

The MDBA and the Australian, NSW and Queensland governments all have roles to play to implement the toolkit measures. There are multiple processes in place to show the successful implementation of toolkit measures and many mechanisms are used to provide publicly available information on implementation progress.

The Northern Basin Project Committee (NBPC) and Environmental Water Committee (EWC) monitor progress, including the activities of each agency. The NBPC meet approximately quarterly and report on progress twice a year to the Basin Officials Committee (BOC) and the Ministerial Council. They are supported by the EWC, which assists with monitoring progress and reporting on implementation of the policy and management toolkit measures.

Reviews and information relating to the implementation of the toolkit measures are also published on the website of the new Inspector-General of Water Compliance (IGWC) for the Murray–Darling Basin at https://www.igwc.gov.au The Hon Troy Grant was appointed in this role on 16 December 2020. The role is independent of the MDBA.

Since 2018 the MDBA has published 6-monthly report cards on the MDBA website, providing regular and comprehensive assessment of progress. The reports respond to feedback from Basin communities for short, timely and accurate updates. The report cards assess progress on the 6 key elements of the Basin Plan implementation:

- water resource plans
- water recovery
- compliance
- northern Basin initiatives
- SDL adjustment mechanism
- environmental water delivery.

The MDBA released *The Basin Plan 2020 Evaluation* in December 2020. This comprehensive evaluation of Basin Plan implementation included a Plan implementation evidence report that provides an assessment of progress with implementing the northern Basin toolkit. The Evaluation report is available at: https://www.mdba.gov.au/2020-basin-plan-evaluation

In December 2020, the Murray–Darling Basin Ministerial Council published a Commonwealth, NSW and Queensland jointly agreed work plan for toolkit implementation on the MDBA website. An updated version was published in April 2021 to reflect progress. In May 2021 the MDBA published summaries of the 10 approved environmental works infrastructure projects including information on each project's implementation status: https://www.mdba.gov.au/basin-plan/northern-basin-projects/northern-basin-toolkit-measures

The MDBA will continue to publish regular updates (minimum 6-monthly) of the work plan and status of the 10 environmental works infrastructure projects.

The role and reporting by the NBPC, the 6–monthly report cards, Basin Plan Evaluation, up-to-date work plans and corporate plan annual reporting demonstrate how the MDBA has processes to report on the implementation of toolkit measures. In total, the MDBA has published 4 separate progress reports during 2020–21 financial year: the annual report, Basin Plan Evaluation and two toolkit implementation work plans.

While much of the reporting is 6-monthly, the many intergovernmental committees that oversee the process discuss projects quarterly, which meets the target of quarterly reporting. It corresponds with the expected rate of progress and is consistent with timeframes of other established progress reporting processes – for example, the MDBA report cards.

Goal 2

Strengthen the culture of compliance in the Murray–Darling Basin

Role of the MDBA

Implement a strategic approach to compliance and enforcement of the Basin Plan and Basin governments' water resource plans.

The work towards this goal will transition to the Inspector-General of Water Compliance in 2021–22, with the Water Legislation Amendment (Inspector-General of Water Compliance and other measures) Bill 2021 having passed the Parliament. Until the Inspector-General was appointed on 5 August 2021, the MDBA remained responsible for compliance and enforcement under the *Water Act 2007* and is reporting on its delivery of compliance activities for 2020–21.

Desired outcomes

- The MDBA's compliance and enforcement information is available and transparent.
- The MDBA is identifying and responds to non-compliance.
- The MDBA is conducting assurance of, and identifying improvements in, Basin state compliance and enforcement systems.
- There is increased coverage, quality and transparency of water measurement in the Murray–Darling Basin.
- Basin Plan compliant water markets are advanced.
- The MDBA has developed systems and processes to perform its Basin Plan regulatory responsibilities, including ensuring WRP compliance.

2020–21 key activities

- Monitor and report on Basin government progress implementing the 2018 Murray–Darling Basin compliance compact commitments
- Conduct and publish compliance audits and reviews to provide assurance about Basin state compliance and enforcement systems and activities
- Assist Basin governments to improve metering, monitoring and reporting of water take
- Monitor and assist with the implementation of the Basin Plan water trading rules
- Manage allegations and instances of non-compliance in accordance with the MDBA's Compliance and Enforcement Policy 2018–21
- Coordinate the water compliance community of practice, a forum for water compliance officers across Australia to share best practice and operational insights
- Strengthen the MDBA's internal regulatory culture and capability
- Progress the northern Basin remote sensing capability and water information portal.

Source: Murray–Darling Basin Authority Corporate Plan 2020–21

Performance and analysis

Goal 2 has one key performance indicator (KPI):

KPI 3: The MDBA monitors and enforces compliance with the Basin Plan and publishes results of compliance and regulatory activities

Performance on KPI 3

Compliance with the Basin Plan is paramount to achieving a healthy, working Basin. The MDBA takes a Basin-wide approach to compliance, with a focus on providing assurance that Basin state compliance arrangements and activities are effective.

The Compliance and Enforcement Policy 2018–21 and the SDL Reporting and Compliance Framework set out key elements of the MDBA's compliance program. They are among a number of compliance and enforcement documents that are available on the MDBA website.

Six measures of success were assessed to inform performance against the KPI. Three of these measures were met and 3 were partially met, with clear progress against the identified activities.

Table 5: Performance against targets for Goal 2, KPI 3

KPI	Measure	2020–21 Target	Result
KPI 3: The MDBA monitors and enforces compliance with the Basin Plan and publishes results of compliance and regulatory activities	3.1 Percentage of MDBA's annual compliance priorities achieved	100%	Partially met
	3.2 Percentage of MDBA's compliance audit and review reports published	100%	Met
	3.3 Information regarding the MDBA's regulatory activities is published quarterly	Information published quarterly	Partially met
	3.4 The MDBA's engagement with states to support the improvement of the metering and monitoring of water take	Qualitatively assessed	Met
	3.5 The MDBA's engagement with regulated entities to implement the water trading rules	Qualitatively assessed	Met
	3.6 The MDBA's biennial maturity assessment on the Modern Regulator Improvement Tool	70% 'maturing' or above	Partially met

Annual compliance priorities partially met

Measure 3.1 is 'Percentage of MDBA's annual compliance priorities achieved'. The 2020–21 target was '100%'.

The 2020–21 result is assessed as 'partially met'.

The MDBA prepares an annual statement of compliance priorities based on risks to the Basin Plan and Water Act compliance. The statement identifies high-risk areas and activities that will be undertaken by the MDBA to further understand, monitor or respond to the identified risks.

In 2020–21 there were 5 priorities, with 12 activities planned to address these. Four activities were completed, 5 activities were commenced, and 3 were deferred until 2021–22 due to resourcing constraints and new priority activities.

A report on the compliance priorities for 2020–21 can be found on the MDBA website at www.mdba.gov.au/basin-plan/compliance-enforcement/compliance-priorities

Table 6: Annual compliance priority area activities undertaken in 2020–21

Activities	Result
Water Resource Plan Compliance (one activity complete)	
• Commence its WRP compliance program to ensure WRPs are complied with. This includes a rolling program of WRP compliance audits and setting annual WRP compliance reporting for the Basin states.	• Complete. • The MDBA's risk based approached was enhanced by the development and implementation of an internal Compliance dashboard, to manage risk detail content for risk assessments. • The risk assessment process identified compliance priorities to inform and support the introduction of the Inspector General for Water Compliance formed by the amended Water Act. • The first Matter 19 report (Schedule 12, Basin Plan 2012) was received from Queensland for the Warrego–Paroo–Nebine Water Resource Plan. The report provided a summary of the compliance and enforcement approach and undertakings in relation to the rules and obligations contained within the water resource plan. For more information see: https://www.mdba.gov.au/basin-plan/basin-wide-compliance-enforcement • The MDBA assessed water resource plans and SDL water accounting for the 2019–2020 water year. These regulatory functions act as key inputs into shaping the compliance program.
Unauthorised water take (4 activities: one complete, one partially met, 2 deferred)	
• Assurance review of the implementation of revised Basin state metering policies, with a focus on compliance of large meters in the northern Basin.	• Partially met • A review of the NSW Metering Policy Implementation with a focus on surface water pumps 500 mm and above, was commenced and will be finalised in the 2021–2022 year. • To assist the implementation of metering reform, the MDBA has been involved in the growth of the metering market. There are 15 meters, from 11 manufacturers on the Australian market which meet the requirements of the Australian Standard for non-urban water meters (AS4747). Compliant meters are available for pipes ranging from 25 mm to 1800 mm. • To ensure coverage, accuracy and consistency of Basin states metering implementation, the Metrological Assurance Framework 2 (MAF2) was progressed building on earlier national metering reform work that started with the National Water Initiative. MAF2 will make it easier to comply with the Australian Standard for non-urban water metering.

Activities	Result
• Audit and assurance activities into meter coverage and accuracy.	• Complete. • The *Compliance Compact Review* May 2021 (https://www.mdba.gov.au/sites/default/files/pubs/murray-darling-basin-compliance-compact-2021.pdf) was jointly reviewed by Basin parties. The review highlighted improvements across a range of compliance activities in all states, particularly in metering and measurement. Recommendations from the review involve developing and adopting water compliance standards, that can provide a consistent set of benchmarking metrics for water compliance and performance assessment. • The *Murray–Darling Basin Compliance Compact Assurance Report 2020* (https://www.mdba.gov.au/sites/default/files/pubs/murray-darling-basin-compliance-compact-assurance-report-2020.pdf) provided the MDBA's annual independent assessment of Basin governments' progress against commitments which they made in the Basin Compliance Compact 2018.
• Targeted compliance reporting on compliance and enforcement efforts around floodplain harvesting take.	• Deferred • Targeted compliance efforts around floodplain harvesting take have been deferred due to delays in New South Wales regulation on floodplain harvesting licensing.
• Targeted review of groundwater compliance arrangements.	• Deferred • The targeted review of groundwater compliance arrangements has been deferred to the 2021–2022 water year.
Protection of environmental water and first flush flows (3 activities: 2 complete, one deferred)	
• Audits and compliance reporting on first flush flow protections and protection rules in the northern Basin.	• Complete. • An audit was commenced on the Warrego–Paroo–Nebine Water Resource Plan (QLD) application of rules to protect first flush flows, during the significant rain in the northern Basin in early 2020. Final report due to be published in July. The audit confirmed that announced periods of water harvesting for the flow event in the Warrego from February to April 2020 were determined in accordance with the accredited rules set out in the Resource Operation Plan, although it raised concerns regarding the compliance arrangements in place to ensure accurate metering and measurement of take. • A review examined how the Southern Spring Flow event (2019) complied with Basin Plan environmental watering principles (No. 3, 4, 7 and 8)[1]. The review, to be published in July, found adherence to the principles is evident and improving, largely due to the coordination role of the Southern Connected Basin Environmental Water Committee and their stakeholder involvement.
• Support for Basin state compliance agencies to use remote imagery to complement their water compliance monitoring and enforcement activities.	• Complete • The MDBA uses remote sensing to proactively monitor compliance with rules around water flows and take across the Basin. The MDBA improved the access and automation of live satellite imagery data, to support the on-ground role of Basin state water compliance agencies, enabling timely and targeted water compliance activities.
• Reporting and audits of the implementation of prerequisite policy measures.	• Deferred • A review on the implementation of prerequisite policy measures (PPMs) has been deferred.

1 As per Chapter 8, Part 4, Division 6 of the Basin Plan 2012

Activities	Result
Sustainable Diversion Limit accounting (one activity partially met)	
• Commence a 6-year program to ensure that the MDBA is continuously improving how annual water accounts are compiled. This will incorporate methods for addressing growth in use, interstate trade accounting arrangements and updated climate change research.	• Partially met • The MDBA has published the *Sustainable diversion limit (SDL) accounting improvement strategy 2020 – 2025* (https://www.mdba.gov.au/publications/policies-guidelines/sustainable-diversion-limit-sdl-accounting-improvement-strategy) The strategy outlines how the MDBA will continue to improve the SDL accounting framework in conjunction with the Basin states over the next 5 years. It includes work to align water accounting concepts with the Bureau of Meteorology and the Australian Bureau of Statistics. • An SDL Accounting Data Management Project commenced to improve the accounting and compliance processes in a streamlined system, including data acquisition, management, analysis and reporting. The first phase is scheduled to be in place for the collection and analysis of the 2020–21 water take data. • The sustainable diversion limits commenced from 1 July 2019. The MDBA has been working with Basin states to account for water taken in the 2019–20 water year and compliance against SDL limits. The publication of the SDL compliance outcomes is expected to occur early in the 2020–21 water year.
Water trade (3 activities)	
• Increase resourcing and expand its water trade program.	• Partially met • Existing resources were directed to the water trade program to undertake the audits. Some additional resources were provided for specific short-term tasks.
• Dedicate resources to ensuring compliance with the Basin Plan by irrigation infrastructure operators, and compliance with market integrity rules such as insider trading.	• Partially met • A project commenced to investigate the options for a monitoring system to proactively address insider trading in the Murray–Darling Basin. • An audit was undertaken to assess Irrigation Infrastructure Operators' compliance with basin plan requirements to disclose the reasons for any restrictions on the trade, specifically delivery entitlements. • Additionally, an audit was undertaken on the obligations by an Approving authority to disclose interest to trade when approving trade of water access rights.
• Review the priorities by the end of 2020 to include our response to the findings of the ACCC inquiry into water markets in the Murray–Darling Basin.	• Partially met • The MDBA supported the ACCC's inquiry into water markets. The ACCC's final report was published in March 2021. The report identified issues requiring policy reform and regulatory control. • Review of strategic priorities for Basin Plan water trading rules has been deferred and will be considered in conjunction with the establishment of Inspector-General of Water Compliance.

The MDBA publishes information about audit activities

Measure 3.2 is 'Percentage of MDBA's compliance audit and review reports published'. The 2020–21 target was '100%'.

The 2020–21 result is assessed as 'met'. One completed review was published.

Section 13.20 of the Basin Plan requires that all audits carried out under section 13.10 of the Basin Plan be published. Measuring the percentage of compliance audit and review reports that are published demonstrates whether there is compliance with the Basin Plan and also demonstrates the MDBA's commitment to increasing transparency about water compliance.

Performance is assessed by measuring the number of reports finalised during the water year against the number of reports published.

The Audit Work Program for 2020–21 proposed 9 audits and reviews addressing a range of compliance priorities. The Audit Work Program can be found on the MDBA website.

The MDBA publishes other information about regulatory activities

Measure 3.3 is: 'Information regarding the MDBA's regulatory activities is published quarterly'.

The 2020–21 result is assessed as 'partially met'.

Aside from its legal obligation to publish audits under section 13.20 of the Basin Plan, the MDBA is committed to increased public reporting about its regulatory activities under the December 2018 Commonwealth–state *Murray–Darling Basin compliance compact*.

The MDBA maintains a water compliance reporting webpage where it publishes information about its regulatory activities.

During 2020–21 the MDBA maintained a register of allegations of non-compliance it had received. It published updates in November 2020, March 2021 and June 2021 noting whether allegations had been received, referred or closed.

Table 7: The MDBA's Audit and Assurance Work Program for 2020–21

Audit	Compliance priorities addressed	Status
Condamine–Balonne WRP	• Metering • SDL compliance • Compliance enforcement arrangements	In progress
ACT WRP	• Metering • SDL compliance • Compliance enforcement arrangements	Deferred
NSW Stage 1 Non-urban Metering Framework Implementation	• Metering	In progress
Southern Spring Flow event 2019	• Environmental water	In progress
NSW Prerequisite Policy Measures implementation (NSW, Vic, SA)	• Environmental water	Deferred
Irrigation Infrastructure Operators compliance	• Water trade compliance	In progress
Approval Authority – Disclosure of Interests	• Water trade compliance	In progress
Basin Compliance compact Assurance	• Compliance improvement	Completed
SDLAM Project Assurance	• Basin Plan implementation	In progress

Note: From 2021–22 progress or deferral will be managed and reported by IGWC.

The Independent Assurance Committee (IAC) provides expert advice on the design, implementation and adequacy of the MDBA's Basin Plan compliance program. The IAC consists of 4 independent experts with knowledge across a range of relevant fields, including water and natural resources policy and management, and regulation and compliance.

The committee generally meets 4 times a year and provides written reports about the MDBA's regulatory framework and activities to the Authority. The committee met in September 2020. Copies of published IAC reports can be found on the MDBA website at www.mdba.gov.au/basin-plan-roll-out/compliance-enforcement/compliance-independent-assurance-committee

Annual assurance of Basin state and Australian Government progress in implementing their Murray–Darling Basin Compliance Compact commitments was also completed. *The Murray–Darling Basin Compliance Compact Annual Assurance Report 2020* was published in June 2021 (see Measure 1.1—Percentage of WRPs assessed by MDBA for accreditation) and is available on the MDBA website at www.mdba.gov.au/publications/independent-reports/basin-compliance-compact

The MDBA supports improvement in metering and monitoring of water take

Measure 3.4 is 'The MDBA's engagement with states to support the improvement of the metering and monitoring of water take'. Performance is qualitatively assessed.

The 2020–21 result is assessed as 'met'. Progress has been made towards a number of improvements as reported in the Compliance Compact Annual Report and with a revised Metrological Assurance Framework agreed by all Australian states and territories and published.

The MDBA engages with the states to support the improvement of metering and monitoring of water take. Accurate measurement and increased transparency of water take is fundamental to monitoring compliance with the Basin Plan. Water metering is one of the 5 themes to be addressed under the Compliance Compact. The MDBA works with the states through interjurisdictional working groups and active engagement in collaborative projects.

In December 2019 the Basin governments agreed to work together to make it easier to select compliant meters and maintain a meter throughout its life.

On 4 June 2021 the MDBA released its annual assessment of actions described in the Basin Compliance Compact. Basin governments have made good headway in the past year across many of the agreed compliance initiatives; however, progress on delivering water metering accuracy and coverage is uneven. Accurate metering, measurement and monitoring are fundamental to public confidence about equitable and sustainable water use.

All states and territories have recently agreed to updated rules and guidelines to support the regulation of non-urban water meters. Changes to the Metrological Assurance Framework include easier and cheaper ways to maintain meters and validate their accuracy. It is also now easier to understand when existing meters may be retained in service, with clear pathways for regulators and water users to follow. In addition, work is underway with a significant number of stakeholders, including regulators, water users, meter manufacturers, meter verification authorities and others, to revise the Australian Standard for non-urban water meters. This work will not change the technical requirements for non-urban water meters, but it will adjust the processes and methods to maintain meters for accuracy and durability. The revision is expected to take more than 12 months.

The MDBA is also working with industry to bring more compliant meters to the market, improve communication on maintenance requirements and support the use of accurate meters.

Basin states require, or are moving to ensure, that new and replacement non-urban water meters comply with the Australian Standard for non-urban water meters (AS4747). Each Basin state has its own policy for non-urban water meters, and in time most meters will be renewed and will meet the Australian Standard.

The MDBA continues to work with the Queensland and New South Wales governments towards improving the monitoring and reporting of floodplain harvesting.

The MDBA engages with regulated entities on water trading rules

Measure 3.5 is 'The MDBA's engagement with regulated entities to implement the water trading rules.' Performance is qualitatively assessed.

The 2020–21 result is assessed as 'met'.

Engaging with regulated agencies is an essential element of the MDBA's compliance and enforcement role. Regulated entities need to understand and know their obligations in order to foster compliance.

The Basin Plan water trading rules contribute to achieving the Basin water market and trading objectives set out in Schedule 3 of the Water Act.

The rules apply to the Australian Government, the Basin states, irrigation infrastructure operators and individual market participants. The rules only apply to water access rights that can be traded under state water management law and are outlined in the guidelines to the water trade rules on the MDBA website at: www.mdba.gov.au/publications/policies-guidelines/guidelines-water-trading-rules

The MDBA prioritises its regulatory and compliance activities in accordance with the Strategic Priorities – Basin Plan water trading rules. The priorities are published on the MDBA website at www.mdba.gov.au/basin-plan/compliance-enforcement/compliance-priorities

During the year the MDBA continued its ongoing engagement work. As well, the MDBA supported the Australian Competition and Consumer Commission's inquiry into water markets. The ACCC's final report was published on 26 March 2021.

The MDBA assesses the Modern Regulator Improvement Tool

Measure 3.6 is 'The MDBA's biennial maturity assessment on the Modern Regulator Improvement Tool', with a 2020–21 target '70% 'maturing' or above'.

The 2020–21 result is assessed as 'partially met'.

The Modern Regulator Improvement Tool is a best-practice tool developed by the Australasian Environmental Law Enforcement and Regulators neTwork (AELERT), an international group that aims to share best-practice expertise and learnings in environmental regulation. The tool sets out key criteria for regulators to assess their agency maturity and identify areas for improvement.

Assessments are undertaken biennially. The MDBA completed the assessment in 2020–21, with a score of 64% and 8 out 12 areas in mature attributes. This was an improvement from 41% in 2018–19, with 5 out of the 7 areas still not in mature attributes.

The MDBA works continuously to improve its maturity as a modern regulator and engages with other regulators with a focus on capability building.

Under the Compliance Compact, the MDBA committed to establishing the Water Compliance Community of Practice to enable water compliance officers across Australia to develop networks, collaborate on water compliance policies and frameworks and share information. The MDBA coordinates the Water Compliance Community of Practice through AELERT.

Goal 3

Efficiently and effectively operate the River Murray system for partner governments

Role of the MDBA

In partnership with Basin governments, promote and coordinate planning, management and sharing of water and other natural resources of the Basin. The water sharing and joint management arrangements for this partnership are set out in the Murray–Darling Basin Agreement 2008. The joint programs include River Murray operations and natural resource management programs.

The natural resource management programs have evolved as a shared response to the need to manage some of the environmental consequences of water use in the Basin. A work plan is agreed between the joint program parties and the MDBA specifying the key activities to be undertaken.

Desired outcomes

- River Murray operations assets allow efficient, effective and safe management and delivery of water that is fit for purpose
- The waters of the River Murray system are:
  - shared between the states of New South Wales, Victoria and South Australia as per the Murray–Darling Basin Agreement
  - managed to meet multiple outcomes and objectives set by partner governments
- Improved environmental outcomes in the southern connected system, consistent with the Basin Plan
- Delivery of all water for the environment in the southern basin is coordinated, including the jointly held water portfolio
- Water management, monitoring and First Nations engagement at the River Murray icon sites supports adaptive management
- Partner governments jointly manage salinity to deliver the Basin Salinity Management 2030 Strategy (BSM2030), consistent with Schedule B of the Murray–Darling Basin Agreement
- Water quality of the River Murray system is monitored consistent with the Murray–Darling Basin Agreement and informs improved management
- Recovery and persistence of native fish populations
- Communities are actively involved in native fish recovery

2020–21 key activities

- Implement asset management strategies and oversee asset management activities
- Manage and deliver Basin government water shares in accordance with the Murray–Darling Basin Agreement
- Direct the operation of River Murray system assets to meet multiple human and environmental objectives
- Investigate the loss of capacity within the Barmah Choke and potential options to by-pass the choke and reduce shortfall risk
- Coordinate implementation of natural resource management programs on behalf of partner governments, including The Living Murray initiative, water quality monitoring, the Basin Salinity Management 2030 Strategy and the Native Fish Management and Recovery Strategy
- Coordinate implementation of enabling programs on behalf of partner governments including water resources core modelling, interstate water trade under Schedule D, secretariat, data management, Basin science platform and environmental monitoring and evaluation

Source: Murray–Darling Basin Authority Corporate Plan 2020–21

Performance and analysis

Goal 3 has two key performance indicators (KPIs):

KPI 4: Operate the River Murray system in accordance with the Murray–Darling Basin Agreement

KPI 5: Maintain and improve the health of the River Murray system (and the Basin, where relevant) in accordance with the Murray–Darling Basin Agreement and associated agreements

Performance on KPI 4

Table 8: Performance against targets for Goal 3, KPI 4

KPI	Measure	2020–21 Target	Result
KPI 4: Operate the River Murray system in accordance with the Murray–Darling Basin Agreement	4.1 MDBA has coordinated and overseen the asset activities as agreed and approved by the Ministerial Council in the Annual Work Plan	Qualitatively assessed	Met
	4.2 MDBA has fulfilled its obligations under the objectives and outcomes as independently assessed	Met	Met
	4.3 Number of adverse rulings from jurisdictional dam safety regulators	Zero	Met
	4.4 Number of unscheduled major outages of assets	Zero	Met
	4.5 Significant incidents managed in accordance with River Murray Operations Committee endorsed procedures	All	Met

The MDBA operates the River Murray system

The MDBA maintains and operates the River Murray system on behalf of partner governments and in accordance with the Murray–Darling Basin Agreement to achieve a healthy working Basin through the integrated management of water resources.

The River Murray is Australia's longest river, and flows for 2,500 km through New South Wales, Victoria and South Australia. The river sustains towns and communities and agricultural production, and provides habitat for many unique Australian plants and animals.

Basin states have long-standing arrangements, dating back more than 100 years, to jointly manage the water and build the assets of the River Murray system. The MDBA operates the River Murray system on behalf of the New South Wales, Victorian and South Australian governments. The Murray–Darling Basin Agreement (the agreement) sets out the water sharing rules across the states.

A detailed overview of the management of the River Murray system can be found on the MDBA website.

Under the agreement, the MDBA and the Basin states store, manage, deliver and share water; operate salinity interception schemes; enable navigation; and support recreation and tourism. Regular River Murray updates about rainfall, inflows, salinity and river operations are published on the MDBA website.

The Independent River Operations Review Group reviews river operations

The MDBA's maintenance and operation of the River Murray system is reviewed by the Independent River Operations Review Group (IRORG). IRORG is an advisory committee established under section 203 of the Water Act.

The outcome for a number of the measures for this KPI are verified through the review conducted by IRORG. The review is based on data from the previous year due to the lead time involved in collecting and reporting the data, but IRORG also assesses the practice and procedures of the river operations team which are the basis of activity for the current year.

The policies and processes for operating the river system are well prescribed and do not change from year to year other than to make incremental improvements. In this regard, a positive assessment from IRORG for the previous year can be taken as a general satisfaction with the operating procedures carried forward to the current water year.

The IRORG review considers the MDBA's performance in managing the river to meet the states' consumptive and environmental water demands and compliance with the provisions of the Objectives and Outcomes document agreed by the Basin Officials Committee (*Objectives and outcomes for river operations in the River Murray System*, various dates).

IRORG's review process is based on:

- issues documented in the MDBA's report *River Murray system summary of river operations report 2019–20 water year* (https://www.mdba.gov.au/publications/independent-reports/river-murray-system-annual-summaries-reviews-river-operations)
- issues raised in interviews and in formal submissions by jurisdictions
- any issues arising from IRORG's own review of available information.

The Interim Inspector-General of Murray–Darling Basin Water Resources commented in his April 2020 report *Impact of lower inflows on state shares under the Murray–Darling Basin Agreement* (www.igwc.gov.au/reviews-reports) that the IRORG review process was independent and effective.

Water year operating context

The 2020–21 MDBA water year brought welcome relief with wetter conditions than previous consecutive dry years for the River Murray system. However, rainfall for the 2020–21 water year was below average to very much below average for the mid and lower Murray regions and into South Australia.

River Murray system inflows (not including releases from Snowy Hydro, inter-valley trade deliveries, managed environmental deliveries from tributaries or inflows to the Menindee Lakes) during the 2020–21 water year were approximately 5,325 GL.

Total active storage for the River Murray System started the water year at 2,960 GL, around 2,000 GL less than the long-term average for that time of the year. The active storage peaked at 5,200 GL in early November 2020 before reducing to a low of 3,720 GL by the end of April 2021. At the end of May 2021, the MDBA active storage had increased to 4,525 GL.

Significant rainfall in the northern Basin commenced in December 2020 and contributed to stream flows that connected the upper Darling with the Menindee Lakes system in January 2021. Further significant rainfall and flooding across the catchments of northern NSW and southern Queensland in March 2021 generated substantial inflow into the Barwon–Darling with the event providing inflows to the Menindee Lakes system. Storage in the Menindee Lakes reached the 640 GL trigger (as set out in the Murray–Darling Basin Agreement) to become a part of shared River Murray system resource on 7 May 2021. This is the first time since December 2017 that Menindee Lakes has contributed to the shared River Murray resource. Under the water sharing arrangements, the MDBA can call on water from the lakes on behalf of the states to meet water orders downstream. Operating the Menindee Lakes is challenging, and whenever the MDBA calls on water on behalf of Basin states we consider meeting community needs, enhancing environmental outcomes as well as the needs of downstream water users who order water.

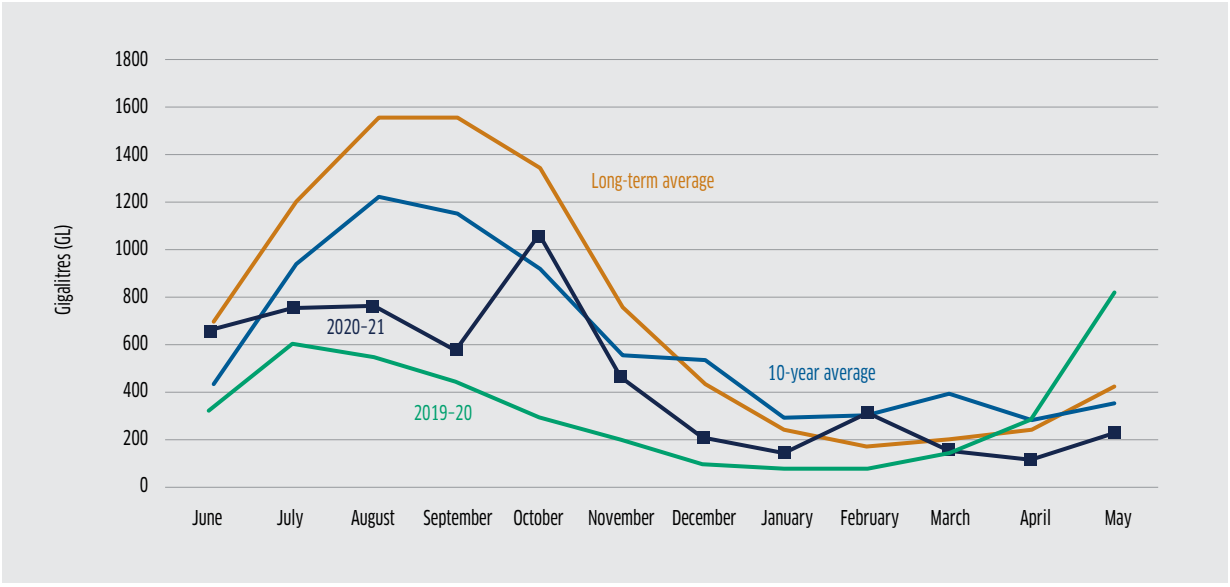


Figure 11: River Murray System monthly inflows: 2020–21, 2019–20, 10-year average, long-term average

Source: River Murray System Summary of River Operations – 2020-21, September 2021, Figure 3.

The MDBA oversees asset activities

Measure 4.1 is 'MDBA has coordinated and overseen the asset activities as agreed and approved by the Ministerial Council in the Annual Work Plan'. Performance is qualitatively assessed.

The 2020–21 result is assessed as 'met'. The majority of asset activities were delivered, and progressed as endorsed by River Murray Operations Committee.

Each year the asset activities are agreed and approved by the Ministerial Council and set out in the Annual Work Plan. Assessment and reporting is ongoing throughout the year so that any issues can be dealt with.

Coordinating and overseeing the asset activities in the Annual Work Plan demonstrates:

- work is delivered efficiently and integrated with operational requirements
- work delivered meets the requirements of the joint venture partners and the Basin Plan
- assets remain able to deliver their required level of service
- the MDBA protects the interests of the partner governments.

Despite the impacts of COVID-19, overall, the assets program has delivered the majority of its planned activities. There is no evidence of an asset and the state constructing authorities not meeting a service level requirement in delivering water allocations and providing navigation and fish passage. The assets are well maintained and are not deteriorating faster than expected.

Of the agreed deliverables for 2020–21, 78% have been completed or are on track (see Figure 12). Of the remaining 22% of deliverables, the majority had minor issues resulting in slight delays in delivery, mostly as a result of the impact of COVID-19 restrictions and effects on supply chains.

To enhance the program, the MDBA led and progressed the major revision of the River Murray Operations (RMO) Asset Management Plan in 2020–21. This revision incorporates improved clarity in line of sight from the corporate objectives to level of service, risk-based prioritisation of work activities and updated asset management strategies. This was done with the involvement of the state constructing authorities. Further work is required in 2021–22 to complete this project.

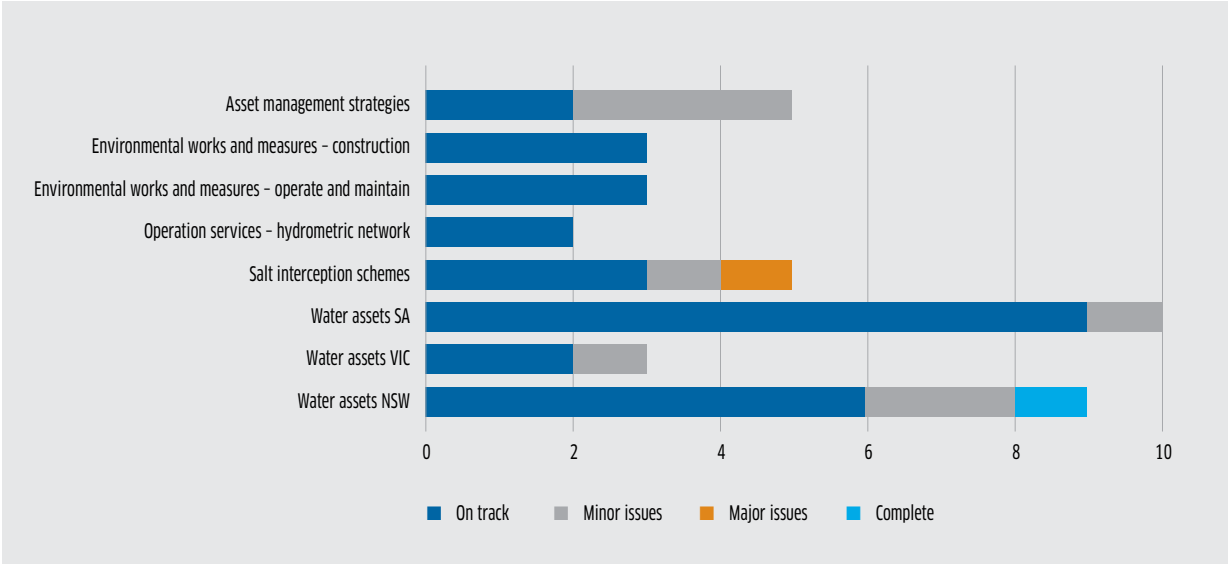


Figure 12: Performance against agreed 2020–21 Annual Work Plan deliverables for assets program

The MDBA also led the preparation of the RMO 2021–22 budget and work plan, working closely with the state constructing authorities to challenge the prudency, efficiency and deliverability of the budget activities. A risk-based prioritisation method was used to justify the river management budget.

Two other measures relate to asset management.

Measure 4.3 is 'Number of adverse rulings from jurisdictional dam safety regulators'. The 2020–21 target was zero.

The MDBA oversees the RMO asset program, which is required to manage dam safety in accordance with state dam safety legislation or, if that does not exist, the Australian National Committee on Large Dams guidelines. Where dam safety is not managed in accordance with appropriate dam safety legislation and/or does not comply with best practice, an adverse ruling will be issued from jurisdictional dam safety regulators.

During 2020–21 no adverse rulings were received.

Measure 4.4 is 'Number of unscheduled major outages of assets'. The 2020–21 target was zero.

Unscheduled major outages of assets could impact on the ability to deliver water as required under the agreement and the Basin Plan. Unscheduled outages are reported in the annual IRORG report. Any outage with exceptional impacts is reported at the time through the specified channels and is also reported by IRORG.

In 2020–21 no major outages were reported.

The MDBA has obligations under the objectives and outcomes

Measure 4.2 is 'MDBA has fulfilled its obligations under the objectives and outcomes as independently assessed'. Performance is qualitatively assessed.

The 2020–21 result is assessed as 'met'. Due to the complexities of pulling together information on any particular water year, the performance assessments outlined here are lagged measures and focus on the 2019–20 water year.

The review of 2019–20 river operations by the IRORG concluded that the MDBA had generally complied with the range of provisions in the Objectives and Outcomes document, including:

- that all the general objectives for river operations were achieved overall in 2019–20, despite one specific outcome area receiving a 'qualified achievement rating' in relation to the management of hydrometric stations. The MDBA contracts states to undertake hydrometric monitoring and advised IRORG that it is moving to ensure all states can provide formal assurance of data quality and methods. These have yet to be fully implemented hence the qualified achievement.
- 98% of the specific objectives and outcomes were fully achieved. The one area of qualified achievement related to minor breaches of flow targets which had no material impact on river operations, the environment or communities.

IRORG's overall assessment was that the MDBA performed well throughout 2019–20 and monitored system performance closely and responded appropriately with adjustments to operations in the face of these challenging conditions. All partner governments endorsed this assessment of the MDBA's performance.

The MDBA manages significant incidents

Measure 4.5 is 'Significant incidents are managed in accordance with River Murray Operations Committee (RMOC) endorsed procedures'. The 2020–21 target was that all significant incidents are managed as such.

If any significant incidents occurred and were not managed in accordance with endorsed procedures under the Objectives and Outcomes, the matter would be addressed as part of the IRORG annual review.

For an event that triggers the River Murray system emergency action plan (EAP), a post-event report would be prepared as soon as practicable. This report would include proposed changes to recommendations for the EAP and/or flood operations procedures arising from the learnings during an event. The post-event report would also identify whether the endorsed procedures were followed.

In 2020–21 no incidents were reported as not being managed in accordance with the endorsed procedures.

Performance on KPI 5: Maintain and improve the health of the River Murray system

Table 9: Performance against targets for Goal 3, KPI 5

KPI	Measure	2020–21 Target	Result
KPI 5: Maintain and improve the health of the River Murray system (and the Basin, where relevant) in accordance with the Murray–Darling Basin Agreement and associated agreements	5.1 Percentage of report cards with maintained or improved environmental health for 7 key sites of the River Murray system (taking account of natural climate variability)	70%	Not met
	5.2 Evidence that key site report cards were used in the annual planning for the coordinated delivery of water for the environment to maintain and improve the health of the River Murray system	Qualitatively assessed	Met
	5.3 Percentage of BSM2030 salinity target in Schedule B of the Murray–Darling Basin Agreement achieved	100%	Met
	5.4 Percentage of BSM2030 biennial audit findings that are progressed	100%	Met
	5.5 Monitor and report on water quality in the River Murray system to aid in decision-making	100% fortnightly reports sent and qualitatively assessed	Met

Assessing the environmental health of The Living Murray icon sites

Measure 5.1 is 'Percentage of report cards with maintained or improved environmental health for 7 key sites of the River Murray system (taking account of natural climate variability)'. The 2020–21 target was '70%'.

The 7 key sites referred to in measure 5.1 are the icon sites of The Living Murray initiative.

The Living Murray initiative

The Living Murray initiative is a partnership between the Australian Government and Basin state and territory governments. It aims to improve the environmental health of significant forests, wetlands and lakes along the River Murray as part of helping to deliver the Basin Plan objectives and outcomes. The initiative is managed by the MDBA.

The icon sites are a collection of locations along the River Murray, selected for their high ecological value and cultural significance. Each site is regionally and nationally significant to First Nations and other communities and most are recognised internationally under the Ramsar Convention, an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Living Murray icon sites are therefore important indicator sites that provide information about the health of the River Murray system. More information about the icon sites is available on the MDBA website at www.mdba.gov.au/issues-murray-darling-basin/water-for-environment/progress-outcomes

To demonstrate that the environmental health of the River Murray system is being maintained and improved in accordance with the Murray–Darling Basin Agreement and associated agreements, The Living Murray activities focus on:

- coordinating, planning and delivering water for the environment
- undertaking complementary natural resource management activities
- monitoring and tracking the environmental health of key indicator/icon sites through time.

Working together with regional communities is foundational to The Living Murray activities. This includes over a decade of supporting First Nations participation in water management and planning through The Living Murray Indigenous Partnerships Program.

In conjunction with other environmental water holders, The Living Murray publishes an annual booklet of case studies on the MDBA website – https://www.mdba.gov.au/sites/default/files/pubs/rivers-the-veins-of-our-country-2019-20.pdf – to highlight the partnerships at work with First Nations people to achieve shared environmental and cultural benefits.

The icon site report cards

Each year, the MDBA monitors and reports on the health of the icon sites using a report card system.

Site report cards contain condition grades that are derived from approximately 100 scientific monitoring reports each year. This includes condition monitoring to assess site health and intervention monitoring to inform the real-time management of water for the environment and measure ecological responses to watering. The projects also monitor emerging risks, such as the potential for poor water quality.

Progress is qualitatively assessed by using the monitoring reports to determine whether each site's ecological objective has been met, not met or partially met each year. There are between 8 and 12 environmental objectives per site that cover fish, birds, vegetation and other key fauna. The percentage of objectives met is then used to calculate an overall grade for the site.

Measure 5.1 concerns the percentage of report cards with maintained or improved environmental health for 7 key sites. The measure is calculated by comparing the current year's overall grade for a site to the previous year's grade. The health of the site is considered:

- improved if it moves to a higher grade
- maintained if the grade does not change from an A or B
- declining if the grade falls, or remains as a C or D.

The 2020–21 target for measure 5.1 was that 70% of report cards show maintained or improved environmental health for the 7 key sites.

The grades for the 2020–21 reports are based on 2019–20 monitoring results, as it takes time to assess and assemble the monitoring reports. The target of 70% reflects an outcome of 5 out of 7 reports cards maintaining or improving condition and recognises that environmental water managers are working within a highly variable natural system. The annual report cards are published on the MDBA website at https://www.mdba.gov.au/issues-murray-darling-basin/water-for-environment/progress-outcomes

The 2020–21 target for measure 5.1 was not met. The 2019–20 results show that one site improved condition, 2 sites maintained 'good' condition, whilst the remaining 4 sites were classified as declining (see Figure 13). Therefore, the target of 70% was not met. This result reflects the impacts of a third consecutive year of hot and dry conditions across the southern Murray–Darling Basin. These climate conditions placed stress on the icon sites and resulted in less water for the environment being available to help meet ecological objectives.

Grades

A	**Excellent**	Most (75–100%) of ecological objectives have been met
B	**Good**	More than half (50–74%) of ecological objectives have been met
C	**Fair**	Fewer than half (25–49%) of ecological objectives have been met
D	**Needs attention**	Few (0–24%) of ecological objectives have been met
–	**Data not available**	–

- Condition grade is based on how well the sites are tracking against ecological objectives for birds, fish and vegetation at each site.
- Shape indicates how condition compares to the previous year. For example, a downward arrow means fewer objectives were met compared to the previous year, and a box shape means condition was maintained.

Figure 13: Icon site report card grades for 2019–20

Use of icon site report cards in planning

Measure 5.2 is 'Evidence that key site report cards were used in the annual planning for the coordinated delivery of water for the environment to maintain and improve the health of the River Murray system'. Performance is qualitatively assessed.

The 2020–21 result is assessed as 'met'. Icon site report cards were used in the Southern Connected Basin Environmental Watering Committee (SCBEWC) planning.

This measure refers to evidence that icon site report cards were used in the annual planning for the coordinated delivery of water for the environment to maintain and improve the health of the River Murray system. To maintain and improve river health under a highly variable natural system, it is important to employ adaptive management. Monitoring allows the MDBA and Basin states to learn and adapt but, to do this, monitoring results have to connect in with the annual planning cycle for water for the environment.

The SCBEWC is the group responsible for coordinating the delivery of water for the environment in the southern Basin to maximise environmental outcomes and give effect to the Basin Plan. The SCBEWC's membership includes environmental water holders, water managers, river operators and representatives from the Murray Lower Darling Rivers Indigenous Nations.

	Barmah-Millewa Forest	Gunbower Forest	Koondrook-Perricoota Forest	Hattah Lakes	Lindsay-Mulcra-Wallpolla Islands	Chowilla	Lower Lakes Coorong Murray Mouth
2019-20	B	B	D	A	B	C	C
2018-19	B	A	D	B	B	B	C
2017-18	A	B	D	A	B	B	C
2016-17	A	B	C	A	B	B	B
2015-16	B	B	D	A	B	C	C
2014-15	B	B	D	A	-	C	B
2013-14	C	B	D	B	C	C	B
2012-13	C	B	D	C	C	C	B
2011-12	C	C	D	B	B	C	B
2010-11	B	B	D	C	C	B	D
2009-10	C	C	D	D	D	C	D
2008-09	D	C	D	D	D	C	D
2007-08	D	D	D	D	D	-	

Grades

A	**Excellent**	Most (75–100%) of ecological objectives have been met
B	**Good**	More than half (50–74%) of ecological objectives have been met
C	**Fair**	Fewer than half (25–49%) of ecological objectives have been met
D	**Needs attention**	Few (0–24%) of ecological objectives have been met
-	**Data not available**	-

- 8–17 ecological objectives per site
- Bird, fish and vegetation objectives
- 80–100 monitoring reports each year
- 13 years of data

Environmental works/works used

Dry Very wet Wet Moderate

Figure 14: Icon site conditions over time

At the River Murray system scale, monitoring data from around 100 reports per year is used to determine the annual performance against objectives both for each site and ecological theme. This then informs the prioritisation of water for the environment demands across the River Murray system for the coming year via the SCBEWC's annual planning process.

A summary report of 2019–20 monitoring results and trends in condition was presented and discussed at the SCBEWC annual planning forum in April 2021.

Key points included:

- Site condition over the longer term is showing a trend of overall improvement as environmental flows are delivered and environmental works are used.
- Rapid improvement of health (condition scores) can be seen after large natural floods, with environmental water helping to maintain condition during dry times.

- In 2019–20 there were mixed results for site condition. Most sites are starting to show a decline in their relative grade, meeting fewer objectives in 2019–20 than in 2018–19. This is likely to be in response to 3 consecutive years of challenging hot, dry and low flow conditions.
- Downstream icon sites are typically in poorer condition than upstream sites.
- Sites where environmental works are not able to be operated are also in poor condition.
- Several years of consecutive watering will be required to significantly improve the poor health and highly stressed condition of the Koondrook–Perricoota Forest.

Overall trends by ecological theme include a steady improvement in vegetation condition over time and increasing detection of juvenile native fish in recent years, potentially due to the increased emphasis on providing coordinated environmental flows. In contrast, waterbird numbers continue to decline to low levels. This could be due to lack of suitable habitat conditions or triggers for breeding, as well as lack of suitable conditions for juveniles to survive to adults.

The SCBEWC Annual Report provides an overview of the significant achievements made in delivering water for the environment each water year. The report is provided to the Ministerial Council for noting by 30 December each year as well as published on the MDBA website at: https://www.mdba.gov.au/publications/mdba-reports/southern-connected-basin-environmental-watering-committee-annual-reports

The BSM2030 salinity target is achieved

Measure 5.3 is 'Percentage of BSM2030 salinity target in Schedule B of the Murray–Darling Basin Agreement achieved'. The target for 2020–21 was '100%'.

The 2020–21 result is assessed as 'met', as reported to Ministerial Council in March 2021.

Basin salinity management 2030 (BSM2030) is a strategy for managing salinity in the Basin, agreed in 2015. Measure 5.3 is the percentage of the BSM2030 salinity targets described in Schedule B of the Murray–Darling Basin Agreement that were achieved. The requirement of the BSM2030 strategy is to achieve the salinity targets on an annual basis.

The BSM2030 strategy's focus is to continue to ensure salinity levels in the shared water resources are appropriate to protect economic, environmental, cultural and social values. When the elements of the strategy are implemented and Murray–Darling Basin Agreement obligations are met, it contributes significantly to maintaining and improving the health of the River Murray system.

The impacts of any works and measures and development activity undertaken by Basin governments on river salinity are assessed using computer models of the river system, recorded in a register and published annually. In this process, the achievement of the salinity target in Schedule B of the Murray–Darling Basin Agreement is assessed, reported annually and reviewed by the Independent Audit Group for Salinity every 2 years.

The main Basin salinity target is to maintain the average daily salinity at Morgan at a simulated level of less than 800 electrical conductivity (EC) for at least 95% of the time. This is modelled over the benchmark period (1975–2000) under the current land and water management regime. The benchmark period provides a mechanism for consistently assessing river salinity outcomes over a climatic sequence that includes both wet and dry periods.

This is the tenth year in a row that the modelled river salinity at Morgan has been below 800 EC for 95% of the time (see Figure 15). This is a result of implementing consecutive salinity strategies by the MDBA and Basin governments since 1988.

The operation of salt interception schemes contributed to achieving the Morgan salinity target by diverting approximately 452,431 tonnes of salt away from the River Murray and nearby landscapes in 2020–21.

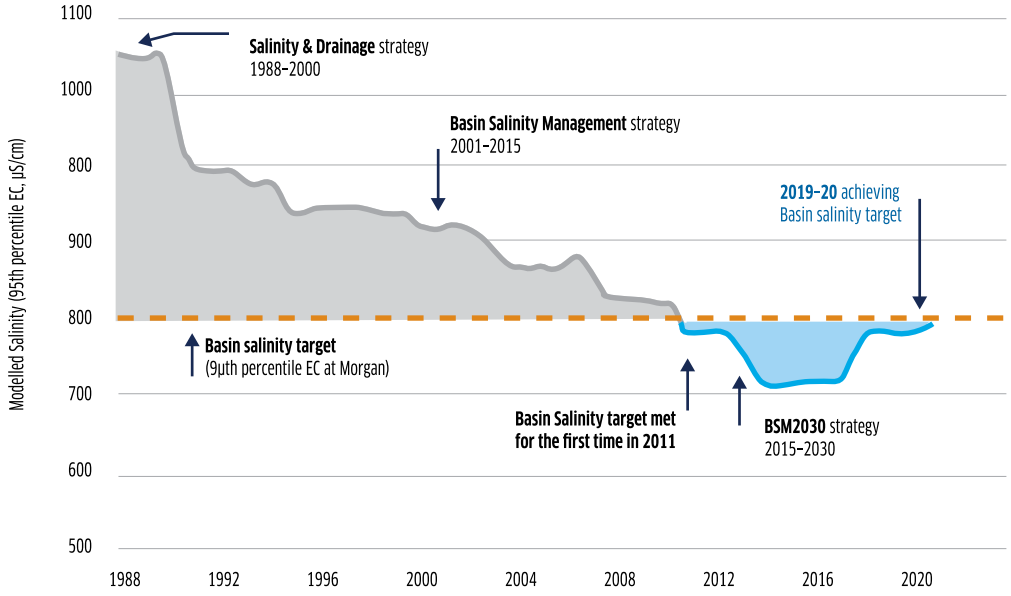


Figure 15: Modelled 95 percentile salinity over the 1975–2000 benchmark period at Morgan in South Australia due to the implementation of salinity management programs from 1988 to 2020 (excluding the salinity benefits from the Basin Plan implementation and The Living Murray initiative)

CASE STUDY

Case study: salinity registers

The salinity registers are a critical aspect of the BSM2030 Strategy and are an effective environmental accountability framework that considers economic impacts as well. The registers provide the primary record of jurisdictional accountability for actions that affect river salinity.

The registers are an accounting tool that records the debit and credit balance of accountable actions that significantly affect river salinity at Morgan in South Australia. This accounting system provides a transparent basis for making decisions on Basin-wide trade-offs on salinity management actions and investments in joint works and measures.

Actions that reduce river salinity are recorded as credits, while actions likely to increase river salinity are recorded as debits. Actions such as constructing salt interception schemes and improvements in irrigation practices can generate a credit. Actions such as irrigation development may generate a debit because in some areas they may lead to increased salt loads to the River Murray. In addition, actions such as permanent water transfers in or out of an irrigation area may result in either a credit or a debit. State and territory governments report annually to the MDBA, providing new or updated information on accountable actions.

It is the MDBA's responsibility to collate and analyse this information and update the registers each year. This enables changes in river salinity impacts to be tracked over time. It also provides estimates of the economic costs and benefits arising from these salinity effects. The updated salinity registers are reported to Ministerial Council and are published biennially at: https://www.mdba.gov.au/publications/mdba-reports/basin-salinity-management-2030

The MDBA reported to Ministerial Council that the states of New South Wales, Victoria and South Australia maintained a net credit status in the salinity registers, as required under the Schedule B of the Murray-Darling Basin Agreement, for 2019–20.

Progress on BSM2030 audit findings

Measure 5.4 is 'Percentage of BSM2030 biennial audit findings that are progressed'. The 2020–21 target was '100%'

The 2020–21 result is assessed as 'met', noting that 3 recommendations were superseded with new recommendations.

The BSM2030 strategy implementation, including the MDBA and contracting governments' performance, is biennially audited (in the years the BSM2030 comprehensive reporting is carried out) by the Independent Audit Group for Salinity. Their report is presented to the Authority and the Ministerial Council. The contracting governments advise the MDBA quarterly via the Basin Salinity Management Advisory Panel and this guides the BSM2030 implementation.

The biennial audit tracks the progress of BSM2030 implementation. Through these audits any risks to strategy implementation and possible implications on river salinity management are identified. The progress of recommendations of the biennial audits ensures that the salinity risks are managed to maintain or improve the health of the River Murray system. The completion of all audit recommendations over a 2-year period demonstrates continuous improvement in salinity management.

Some audit recommendations are short term and others are long term. For example, a recent audit recommended that a range of knowledge gaps, such as climate change impacts, be explored in the lead-up to the BSM2030 strategic review in 2026. There is an expectation that this work will be undertaken over the next 6 years and there is no requirement to complete this work in the 2-year period. Also, some of the recommendations only apply to the states, whereas others require the states to complete some work before the MDBA can complete the recommendation. For example, the 2019 audit included one recommendation directed at New South Wales and another directed at Queensland.

The 2017–19 biennial audit report is at: https://www.mdba.gov.au/publications/independent-reports/reports-independent-audit-group-salinity Of the 9 recommendations in the report, 4 have been completed, 3 have been progressed significantly and the other 2 longer-term recommendations (which would take multiple years to address) have made satisfactory progress. The MDBA will present progress on the audit recommendations to the 2019–21 audit to be held in November 2021.

The MDBA reports on water quality in the River Murray system

Measure 5.5 is 'Monitor and report on water quality in the River Murray system to aid in decision-making'. The 2020–21 target was '100% of fortnightly reports sent and qualitatively assessed'.

The 2020–21 result is assessed as 'met'. 100% of Basin Condition, Basin in Brief reports and Water Quality Threats Map updates were prepared and published.

To demonstrate that the health of the River Murray system is being maintained and improved in accordance with the Murray–Darling Basin Agreement and associated agreements, the joint programs focus on measuring, monitoring and assessing river health outcomes.

The water quality monitoring carried out under the River Murray Water Quality (RMWQ) program provides a measure of the status of water quality of the River Murray system and assists the Water Quality Advisory Panel (WQAP) and the MDBA in their decision-making to maintain or improve water quality.

The legacy impacts from the 2019–20 Upper Murray bushfires presented additional challenges for sustaining water quality. In late February 2021, significant water quality impacts occurred in Lake Hume and immediately downstream as a result of chemical and biological processes associated with bushfire debris and sediment runoff into the lake. This led to water with very low dissolved oxygen levels being released from the lake, which impacted aquatic species and the quality of potable water being supplied to Albury City.

The MDBA responded with coordinated water quality monitoring to better understand the processes driving the water quality issues and adaptively managed Lake Hume releases until the water quality conditions improved and stabilised. Additional water quality monitoring requirements were also investigated to manage such situations in the future.

The fortnightly water quality reports have evolved into monthly Basin Condition reporting and Basin in Brief updates. The target of 100% was met with Basin in Brief updates published on the MDBA website every month during 2020–21. While each state government also publishes water quality information for their jurisdiction, this is the only whole-of-Basin update that is available.

The MDBA also publishes a water quality threats map, which is a qualitative risk matrix that is reviewed regularly or updated as conditions change. The map is a public communications tool providing information about ongoing and emerging water quality risks. The map and more information on managing water quality is available on the MDBA website at: https://www.mdba.gov.au/water-management/mdbas-river-operations/water-quality

These updates provide information about ongoing and emerging water quality risks to the community, operators and other agencies to aid their respective decision-making and communication and enable coordination across the Basin. For example, this information has been used by environmental water holders to work with river operators to target environmental water delivery to meet multiple outcomes. In addition, this information has also been used to brief the MDBA and other relevant agencies on specific incidents as part of the MDBA's Basin Condition Tracking and Emergency Response Group.

The River Murray Water Quality Monitoring Program (RMWQMP) continued to collect data from state contracting governments (South Australia, Victoria and New South Wales) in the southern Basin. This data directly informs decision-making by river operators/managers. It is provided on request to researchers, scientists and other relevant users.

Other water quality projects progressed or completed under the RMWQ program in 2020–21 include:

- RMWQMP – water quality data trends analysis 2021 – La Trobe University
- Lake Hume blue-green algae monitoring and forecasting – CSIRO
- flow and stratification based algal bloom prediction model for the Murray River – University of Technology Sydney
- regulation of Lake Victoria, developing strategies to minimise water quality risks – SA Water
- assessment and mitigation options of blackwater risk in the Murray River system – CSIRO

During the year, the Water Quality Advisory Panel continued to meet quarterly, and when required advice was provided to the River Murray Operations Committee or Basin Officials Committee Alternates.

Goal 4

Improve transparency and confidence in the Basin Plan

Role of the MDBA

The MDBA improves transparency and confidence in the Basin Plan, River Murray operations and the MDBA through:

- making information accessible, timely, relevant and evidence-based
- being proactive and responsive to the interests and needs of stakeholders
- improving partnerships and relationships with Basin governments, industry, interest groups and communities.

Desired outcomes

- Improved stakeholder awareness and understanding of the Basin Plan and River Murray operations
- Improved stakeholder awareness and understanding of the MDBA's role
- Accessible information on the Basin Plan, River Murray operations and the MDBA

2020–21 key activities

- Develop, implement and manage stakeholder engagement communications, education and media support for key MDBA tasks and activities
- Maintain and expand regional presence and engagement
- Support the Basin Community Committee

Source: Murray–Darling Basin Authority Corporate Plan 2020–21

Performance and analysis

Goal 4 has one key performance indicator (KPI):

KPI 6: Stakeholder awareness and understanding of the Basin Plan, River Murray operations and the MDBA's role

Performance on KPI 6

Improved transparency and confidence in the Basin Plan, River Murray operations and the MDBA is critical to securing the ongoing water reform that will deliver a healthy, working Basin for future generations.

The MDBA's regional offices have increased the MDBA's capacity to engage effectively with Basin communities. An evaluation of the Regional Engagement Officers program during the year showed it has been highly effective at providing two-way information sharing opportunities. The MDBA's continuing support for the Basin Community Committee ensures representation from communities across the Basin.

The MDBA's greater regional footprint is enhancing its ability to engage face-to-face with Basin communities and develop constructive relationships built on trust.

In 2020 the MDBA used this opportunity to implement a 3-tiered communications and engagement approach that guides all engagement, communications and media activities. This approach has been informed by the market research conducted by ORIMA Research during the year. The research:

- added to understanding about stakeholder knowledge, attitudes, and perceptions
- provided a solid base of evidence on which to further refine and optimise the approach.

The broader, scientifically rigorous market research program conducted by ORIMA Research across water licence holders and Basin communities has subsumed the MDBA's stakeholder survey for 2020–21. This approach was considered to be appropriate in the context of the ongoing COVID-19 pandemic. Since 2017, the MDBA has committed to conducting a stakeholder survey every 3 years and comparing results to the baseline established in 2018. As the breakdown of surveyed groups in the 2020–21 research did not align precisely to the MDBA's 2018 stakeholder survey, the 2021 results are more appropriately compared to the results of the previous market research program undertaken by ORIMA Research in 2018.

Table 10: Performance against targets for Goal 4, KPI 6

KPI	Measure	Target	Result
KPI 6: Stakeholder awareness and understanding of the Basin Plan, River Murray operations and the MDBA's role	6.1 Awareness and understanding of the Basin Plan and River Murray operations based on the MDBA stakeholder survey (every 3 years)	5% increase on 2018 results	Substantially met Basin Plan awareness: 67% as compared to 56% in 2018 River Murray operations awareness: Direct comparison data not available
	6.2 Awareness and understanding of the MDBA's role based on the MDBA stakeholder survey (every 3 years)	5% increase on 2018 results	Met 73% as compared to 57% in 2018
	6.3 The MDBA delivers stakeholder engagement activities that improve stakeholder awareness and understanding of the Basin Plan, River Murray operations and MDBA's role	Qualitatively assessed through case study	Met as shown by River Management Transparency Plan case study

Stakeholders better understand the Basin Plan and River Murray operations

The 2020 ORIMA Research study observed that 67% of Basin community members and nearly 100% of water licence holders had heard of the Murray–Darling Basin Plan – an increase from comparative 2018 data.

Compared to awareness of the Basin Plan, awareness around River Murray operations and water management was slightly lower. Only 66% of surveyed Basin community members and 73% of water licence holders were aware that water in the Basin is managed in partnership between the Australian, state and territory and local governments.

Research showed there was limited active information-seeking from key stakeholder groups. The MDBA is committed to leading a proactive and coordinated approach with water management agencies to reach and engage the diverse audiences of the Basin.

This includes developing the River Management Transparency Plan to increase trust, transparency, awareness and understanding of water management (see the Case study: River Murray transparency improvements project).

Basin Plan 2020 Evaluation – Recommendation 6

Basin governments and the MDBA need to work in partnership with industry, First Nations and other water users to ensure water information is more accessible, understandable and timely, in order to create a more transparent, effective, practical operating environment for water users.

https://www.mdba.gov.au/basin-plan/monitoring-evaluation/2020-basin-plan-evaluation/strengthening-social-economic-outcomes

Stakeholders better understand the MDBA's role

In 2018, 57% of survey respondents reported being aware of 4 key facts about the MDBA's role and involvement in the operation of the River Murray system. While the 2020 market research took a different approach and a comparable statistic is not available, research participants were presented with a list of organisations that deal with water in the Murray–Darling Basin and asked which they were aware of. The results – that 65% of Basin community and 90% of water licence holders were aware of the MDBA – were higher than any other organisation in the list, and provide indirect evidence of improved stakeholder understanding of the MDBA's role in operation of the River Murray system.

In a smaller survey of stakeholders from representative bodies in the Basin, participants were asked to consider the statement: *To what extent do you feel you understand the roles and responsibilities of [the MDBA] in relation to water?* They were asked to provide a rating from 0 (not at all) to 10 (completely). The average rating across the group was 8.3 out of 10.

An improved understanding of the roles and responsibilities of government entities across the Basin is a key information need stakeholders identified. This is an important area to address to build a shared understanding and improve transparency.

Stakeholder awareness is improved through MDBA engagement activities

There is both quantitative and qualitative evidence that the MDBA's engagement activities have improved stakeholder awareness during 2020–21.

The support for existing regional programs, as well as new initiatives such as Authority Chair Sir Angus Houston's listening tours, has enhanced the regional engagement that is key to building stakeholder knowledge and awareness. During his 7 listening and learning tours across the Basin, Sir Angus has met with hundreds of landholders, irrigators, First Nations people, representatives from partner agencies and community groups, while complying with COVID-safe requirements.

The MDBA has continued to build and maintain relationships with First Nations and representative bodies (MLDRIN and NBAN). This takes place through:

- liaising, educating and coordinating with business areas to ensure that First Nations issues are considered in all aspects of the MDBA's work
- working with other government agencies to provide advice and coordination activities with First Nations organisations
- improving First Nations governance and water literacy.

WEBSITE TRAFFIC UNIQUE PAGE VIEWS

PREVIOUS PERIOD

998,975

3-year rolling average 2017–18 to 2019–20

THIS PERIOD

1,098,449

3-year rolling average 2018–19 to 2020–21

+9.06%

Change against the previous period

During the COVID-19 pandemic, the growing sophistication of the MDBA's virtual engagements has attracted new audiences.

- The new river management webinar series gives the community an opportunity to learn more about water management in the Murray–Darling and ask questions of the MDBA team. There have been more than 600 attendees to the River Murray Webinar Series, and 127,374 unique visitors to the water management section of the MDBA website (https://www.mdba.gov.au/water-management).
- Ongoing improvements to the website, with publication of new pages including the Water Management 101 resources, have resulted in an increase in traffic over the 3-year rolling average of 25%.

- The 6-month Southern Basin Panels pilot project consisted of 9 virtual engagement activities for each of 3 pilot groups (up to 20 members) in the southern Basin. All activities were independently facilitated by a third party, providing informative and interactive discussions between the panel participants and their chosen subject matter experts.

Similarly, the MDBA has been growing its social media presence so that it now has:

- 1,330 more LinkedIn followers (up 59% to 3,530)
- 640 more Facebook followers (up 7.3% to 9,540)
- 200 more Twitter followers (up 3.5% to 5,900).

Physical and virtual gatherings engage many stakeholders who would otherwise be unable to attend forums and conferences.

- The MDBA hosted the inaugural River Reflections conference in Griffith, New South Wales on 9 to 10 June 2021. It provided a forum for the diverse communities and industries of the Murray–Darling Basin to come together and share innovations in water management, knowledge and lessons learned.
- As part of the Capacity Policy Working Group (including state counterparts from New South Wales, Victoria, and South Australia) the MDBA presented more than 35 online and face-to-face sessions from February to April 2021. These sessions provided updates to stakeholders in the southern Basin about the investigations to date and principles for the management of shortfall risk. The sessions followed the publication of the report *Managing Delivery Risks in the River Murray System*.
- The MDBA hosted the Basin Climate Resilience Summit, an opportunity for leaders across 31 participating organisations to share their climate adaptation knowledge and innovations.
- The MDBA holds online Peak Groups Briefings 3 times a year on behalf of all Commonwealth water agencies. These briefings share updates, seek information from and test ideas with more than 30 peak groups representing Basin stakeholders. The forums also provide an opportunity for peak representatives to share what is important to them and ask questions about water management and reform.

There's also been greater engagement with the media. During 2020–21 the MDBA has provided group and one-on-one briefings on water management issues and comprehensive sessions on key water management topics including the Basin Plan 2020 evaluation, Menindee Lakes and the sediment build-up in the Barmah Choke.

The MDBA also maintains key international engagements that enhance the MDBA's access to the latest global research and practices, and shares the MDBA's knowledge with international water agencies. During 2020–21 MDBA staff met with the New Zealand High Commission and Sir Mark Solomon, a former Maori tribal leader, to share knowledge on water management and indigenous partnerships. The MDBA also supported a range of international partners online including in Germany and India.

With the 2020 market research results continuing to emphasise the need for foundational knowledge as a basis for further information, the MDBA has been working with younger Australians. The MDBA:

- partnered with Petaurus Education Group to deliver Basin-themed classroom workshops and lessons to 421 students and 142 teachers, as well as more than 50 hours of professional learning activities to equip staff with better knowledge and resources for teaching about the Basin
- initiated the pilot Basin Heroes education program to schools in 5 regional office locations. This program, which will be delivered across the 2021 calendar year, facilitates connections between schools and their communities and empowers students to develop research projects on local Basin issues. These projects will be published as lasting education resources for their school's use and will help to build understanding by students, their families, and the wider communities.

CASE STUDY

Case study: River Murray transparency improvements project

As stakeholders across the Basin adapt to new trends in water use and new policies, clear, consistent and meaningful information about river management in the Basin needs to be made available. This will support the program of changes aiming to modernise how the River Murray system is operated. It is also part of the MDBA's response to the Australian public's declining trust in government, institutions and scientific processes.

The MDBA's River Management Transparency Plan aims to:

- build trust in and support for ongoing water reform
- improve stakeholder understanding of water management
- help water users access information to plan and manage their business.

The MDBA is working with relevant Basin state governments and Commonwealth agencies to develop this plan. It involves coordinating and amplifying consistent and effective messaging, including a broad narrative on river management and its history, along with targeted communication and engagement on specific topics.

So far, the MDBA has:

- published 11 editions of the Flows in the River Murray System update, issued monthly, and all available on the MDBA website
- published the River Operations Weekly Report, which has had 10,884 unique viewers during 2020–21
- expanded the Water Management 101 series of resources with 2 extra topics – special accounting and seasonal irrigation trends and the Murray–Darling Basin Agreement
- hosted 5 successful public webinars with deliverability and capacity issues explained. These were attended by more than 600 people and had 1,454 unique page views on the relevant web page
- increased the transparency of the Independent River Operations Review Group (IRORG) through publishing the IRORG Review of River Operations, annual report, and new website content
- held more stakeholder briefings and engaged extensively on capacity and deliverability issues across the southern Basin
- developed and published 17 new pages of web content on unregulated flows, flood management, erosion of the Barmah Choke and flow contributions from the Darling part of an updated River Murray website section. This section has had 111,886 unique visitors between July 2020 and May 2021
- had a large increase in the number of phone enquiries fielded by the River Operations team since the plan's launch.

These and future measures are designed to make river management information accessible, timely, relevant and evidence-based. By meeting their needs and interests it aims to foster stronger partnerships with key stakeholder groups across the Basin.

Goal 5

Apply the best available science and knowledge to the management of the Murray–Darling Basin

Role of the MDBA

The MDBA collects and collates the best available data, knowledge and analysis to inform its decisions, and uses this information to guide the implementation, monitoring, evaluation and reporting of the Basin Plan.

Desired outcomes

- Evidence-based policy and decision-making founded upon robust and defensible data
- The MDBA has a deep understanding of the social, economic, cultural, hydrological and ecological conditions of the Murray–Darling Basin
- The MDBA collaborates and cooperates with external partners to generate data and knowledge, which is then managed appropriately

2020–21 key activities

- Complete the 2020 Basin Plan Evaluation Report
- Coordinate and fund research through the Murray–Darling Water and Environment Research Program
- Liaise with stakeholders regarding MDBA data and knowledge requirements, including committees such as the Advisory Committee on Social, Economic and Environmental Sciences
- Contribute to the Basin Science Platform
- Implement the Land and Ecosystem Accounting Program
- Undertake climate adaptation planning
- Publish report under the Water (Indigenous Values and Uses) Direction 2018 under section 175 of the Water Act
- Ensure best available science is applied to legislated reviews, evaluations and the management of risks (for example, fish deaths and drought)
- Share the right technical and scientific information across the MDBA at the right time to input into key decisions
- Plan and develop enhanced data and information communications technology systems, processes and frameworks
- Provide more efficient data storage, access and retrieval

Source: Murray–Darling Basin Authority Corporate Plan 2020–21

Performance and analysis

Goal 5 has 2 key performance indicators:

KPI 7: Leverage the MDBA's deep understanding of environmental, social, cultural and economic considerations to make robust and defensible decisions

KPI 8: Collaborate and cooperate with Basin governments and other external stakeholders to share knowledge, collect data and manage it appropriately

Performance on KPI 7

The importance of science and knowledge as the basis for decision-making in the Basin has been emphasised in many reviews and assessments of the Basin Plan implementation. In the context of a changing climate and often conflicting demands, equitable and sustainable use of the Basin's resources can only be possible through collaboration and access to the best information. Substantiating decisions with solid data builds trust with Basin communities and improves transparency about water management decisions.

The MDBA draws on advice from advisory committees such as the Basin Community Committee and the Advisory Committee for Social, Economic and Environmental Sciences (ACSEES). Better engagement with First Nations ensures their knowledge is integrated into water management, including through the co-design of some science projects.

During 2020–21 the publication of *The Basin Plan 2020 Evaluation* provided an opportunity to report, evaluate and re-set where needed.

Table 11: Performance against targets for Goal 5, KPI 7

KPI	Measure	Target	Result
KPI 7: Leverage the MDBA's deep understanding of environmental, social, cultural and economic considerations to make robust and defensible decisions	7.1 Environmental, social, cultural and economic impacts are factored into Authority decisions	Qualitatively assessed	Met
	7.2 The MDBA reports on the social, economic, cultural, hydrological, water quality and ecological conditions of the Murray-Darling Basin	Basin Plan evaluation report and Basin Plan annual report published	Met

Science and knowledge used to adapt to climate change

The MDBA has developed a climate workplan to steer effort from 2021 to 2026 to work towards a sustainable, productive, and resilient Murray–Darling Basin under a changing climate.

The MDBA is using the Australian Government's Climate Compass (https://www.environment.gov.au/system/files/resources/1f56cd3f-dd0f-4f4e-9f14-66ceca36125b/files/climate-compass-climate-risk-management-framework-commonwealth-agencies.pdf) developed by the CSIRO to help government agencies assess climate change risks. The CSIRO has developed a number of river health metrics and a range of scenarios representing future climates. These metrics help to understand how different climate scenarios will affect river health and complements the science being done by Basin state governments.

Basin state governments actively incorporate climate change and adaption into on-ground water management. They work collaboratively with the MDBA, which has a Basin-wide role and considers the long-term policy and water management settings.

The MDBA has started climate adaptation meetings with Basin state partners, the CSIRO, ABARES and BoM.

Basin Plan 2020 Evaluation – Recommendation 11

Basin governments should prioritise higher levels of continuing strategic investment in science and monitoring. The new Australian Government Murray–Darling Water and Environment Research Program and the Basin governments' Science Platform provide a much-needed foundation for an enduring Basin science program. Any framework and program of investment must be transparent and embed continuous improvement. The investment should also cement enduring collaborative relationships between researchers, communities and managers to improve use of the best available science to water management (https://www.mdba.gov.au/basin-plan/monitoring-evaluation/2020-basin-plan-evaluation/advancing-science-monitoring)

River modelling used in decision-making

The 2020 Basin Plan Evaluation found that improving science, monitoring and modelling is the key to adaptive management of the Basin Plan. The further development of the Source modelling platform is needed to ensure that best-practice modelling techniques are used. Source was built by the MDBA, state governments and the eWater Cooperative Research Centre and is now managed by eWater Ltd.

The Australian Government has made a commitment for the MDBA to design an approach and potential funding arrangements for a modelling uplift in collaboration with Basin states. This is expected to be the largest investment in Basin River modelling in more than a decade.

The funding will be used to uplift all models into the National Hydrological Modelling Platform (otherwise known as 'Source') This will strengthen the Basin's river models to:

- assist with compliance, transparency and trust
- result in better water management decisions
- drive economic gains through an increase in the availability of water information to Basin communities and industries.

Basin Plan reports published

In December 2020, the MDBA published the 2020 Basin Plan Evaluation reports and all scientific datasets used to inform the findings, recommendations, and commitments. This material is available on the MDBA website at: https://www.mdba.gov.au/publications/mdba-reports/2020-basin-plan-evaluation-reports-data

The Basin Plan evaluation is an opportunity to assess Basin Plan implementation and identify areas for improvement. The 2020 Basin Plan Evaluation made 12 recommendations to facilitate improvements, and the MDBA has committed to 6 priority areas designed to increase collaboration. The *Basin Plan 2020 Evaluation* report drew from a wide range of sources, including:

- the science community
- independent advisors
- the Australian Government
- Basin state and territory governments
- and various reviews, which included significant community, First Nations and other stakeholder input.

In 2020, the MDBA published the *Basin Plan 2020 Evaluation*, which fulfilled the requirement to produce the annual Basin Plan report. The annual Basin Plan report sums up information from a variety of other reports provided to the MDBA at the end of the financial year to give a yearly update on the progress of the Basin Plan. The MDBA has produced a Basin Plan annual report each year since 2012 and these reports are available on the MDBA website at https://www.mdba.gov.au/basin-plan/basin-plan/basin-plan-annual-report

First Nations participation in environmental watering report published

The Water (Indigenous Values and Uses) Direction 2018 requires the MDBA to annually publish a report on how First Nations' values and water uses are considered in the planning and delivery of water for the environment in the Basin.

In December 2020 the MDBA published First Nations People participation in environmental water 2019–20 (https://www.mdba.gov.au/publications/mdba-reports/first-nations-people-participation-environmental-watering).

The report covers the water year of 2019–20. Information in the report came from the Northern Basin Aboriginal Nations (NBAN), the Murray Lower Darling Rivers Indigenous Nations (MLDRIN), the CEWO and Basin state governments.

The report is part of the work of government agencies to improve engagement and reporting on First Nations' involvement in managing water for the environment in the Basin. It reflects that water is an important part of First Nations' culture and livelihood. A companion document, *Rivers, Veins of our country*, provides more detail through a series of case studies.

First Nations' environmental water guidance was included in the Basin annual environmental watering priorities for the first time in 2019–20. Basin-scale outcomes were identified by First Nations groups through the First Nations Environmental Water Guidance project (FNEWG). The aim of this project was to include First Nations' objectives and priorities into the Basin-scale environmental watering planning on an annual basis. Funding enabled 32 Nations from the northern and southern Basin to use their cultural knowledge to identify important animals and vegetation, as well as the timing and scale of the flows needed across the Basin to support them. The MDBA will work with First Nations groups to develop an enduring mechanism to reflect these outcomes through the next update of the Basin-wide environmental watering strategy.

Fred Hooper, Chair of NBAN said:

'The 2020–21 watering year will, for the first time in history, see First Nations' environmental watering objectives acknowledged and incorporated into environmental water management at a federal level. This is a significant step forward.'

Performance on KPI 8

Table 12: Performance against targets for Goal 5, KPI 8

KPI	Measure	Target	Result
KPI 8: Collaborate and cooperate with Basin governments and other external stakeholders to share knowledge, collect data and manage it appropriately	8.1 Collaborate and cooperate with research institutions and other external entities to collect data and share knowledge	Qualitatively assessed	Met
	8.2 MDBA has a data management framework that is applied for business needs	Qualitatively assessed	Substantially met

Murray–Darling Water and Environment Research Program enhances knowledge of Basin

The MDBA collaborates with the Basin states, research community and relevant government agencies on a range of projects that contribute data and knowledge.

For example, the Murray–Darling Water and Environment Research Program (MD-WERP) is funded through the Department of Agriculture, Water and the Environment (DAWE) and administered by the MDBA in collaboration with DAWE and the Commonwealth Environmental Water Office. Due to be completed in June 2025, it is designed to contribute to scientific knowledge of the Basin. This will help inform water and environment management decisions and improve outcomes for the Basin and communities.

During the year, 2 consortia were selected through a tender process to form the Murray–Darling Water and Environment Research Consortium:

- a CSIRO-led group with collaborators from Deakin University, eWater with inputs from BoM, Alluvium Consulting, Aither, Monash University, Newcastle University, University of Queensland, University of Canberra, University of NSW.
- a La Trobe University-led group with collaborators from Griffith University, NBAN, MLDRIN and the Institute for Development of Environmental–Economic Accounting (IDEEA) Group.

First Nations are at the centre of the MD-WERP. Program administration has ensured that MLDRIN and NBAN are research partners with both consortia, positioning them to advise on research scope and refer researchers to networks and project opportunities that contribute to valid results. Better inclusion of First Nations' knowledge relating to environmental outcomes and climate change, as well as progressing socioeconomic benefits from cultural flows, are key areas of interest. The MDBA and its research partners are working within Nation capacity to engage, with consideration to the impacts of COVID-19, and many the competing demands on MLDRIN and NBAN delegates' time.

Research work in the strategic area, which applies research across the 4 theme areas, will start early in the 2021–22 financial year. Also starting in mid-2021 is a project examining the causes of reduced flow in the northern Basin and a project aiming to increase capacity to understand trends in waterbird populations.

Collaborations build data and knowledge

In 2020–21 key collaborations were with:

- *the CSIRO*, in a partnership to deliver the Ecosystem Functions Project. This 3-year research project aims to improve knowledge on the relationship between flow and ecosystem functions such as longitudinal and lateral connectivity, habitat, biological movement and productivity.
- the *University of NSW Centre for Ecosystem Science*, to better understand waterbird requirements in the Basin. The first project involves identifying the characteristics (vegetation, inundation and flow data) of waterbird breeding sites in the Murray–Darling Basin. The second project involves analysing long-term survey data to support a review of the expected outcomes for different climate scenarios, and to identify Basin-significant waterbird sites and their contribution to the expected outcomes under different climate scenarios. Outcomes of the research will inform the next Basin-wide environmental watering strategy.
- *the University of Adelaide*, to undertake monitoring and analysis of the native southern pygmy perch. These analyses compared hatch rate, age and life span to previous years to better understand the relationship between southern pygmy perch breeding and flow pulses in the Lower Lakes.
- *the ANU and University of Adelaide*, to explore the use of drone technology and Sentinel-2 to assess riparian vegetation. This project pilots and explores the application and use of unmanned drone and Sentinel-2 (10 m) imagery to assess the extent and condition of lignum and riparian vegetation at a key Murray–Darling Basin site.
- *streamology geomorphologists*, to investigate and understand sediment transport, movement and origin through the Barmah Choke.
- *Rivers and Wetlands principal, Dr Darren Baldwin*, to quantify risks and potential contaminant loads to the Upper Murray and Lake Hume following heavy rainfall in bushfire affected catchments. This was generating runoff with high loads of sediment and debris and continuing to cause water quality issues in local streams and rivers, Lake Hume and further downstream.
- *SA Water*, through ongoing engagement with archaeological, natural, geological, ecological and vegetation expertise to assist with land management and cultural heritage conservation at Lake Victoria.
- *DAWE*, on the Land and Ecosystem Accounting Program, a study at Gunbower–Koondrook–Pericoota (GKP) Forest icon site. By building ecosystem accounts for 2010 and 2015 the study improves understanding of the health of the environment and the flow-on economic costs and benefits to people.

The MDBA has also established stronger partnerships with research and policy institutes such as:

- *the Goyder Institute* through their new research hub. The research hub aims to increase resilience and management of the Coorong, Lower Lakes, Murray Mouth system including environmental, economic, social, and cultural, working alongside communities, First Nations, researchers, and governments.
- *the proposed One Basin Cooperative Research Centre*, which is a focused collaboration developing policy, technical and financial solutions to support and reduce exposure to climate, water and environmental threats in the Basin. The MDBA have agreed to be Tier 1 partners of One Basin if it is successful in the cooperative research centre process.
- the recently established *Watertrust Australi*a, an independent policy centre focused on helping improve the way decisions are made about water and catchments across Australia.

MDBA strengthens partnerships with Basin First Nations

The MDBA engages with First Nations in the Basin through both formal and informal arrangements. Formal arrangements include attendance at MLDRIN and NBAN meetings. Core funding is provided for MLDRIN and NBAN, including funding for cultural flow officers and other fee-for-service activities. The MDBA also meets with representatives of individual Nations to discuss on-country issues.

There are also regular meetings of the Interdepartmental Committee on Aboriginal Engagement, which consists of Australian Government agencies as well as meetings with Aboriginal engagement teams of the Basin states. COVID-19 movement restrictions have affected all engagement activities. Face-to-face engagement was limited throughout 2020 but increased in 2021. The focus is on relationship building and looking towards the 2026 Basin Plan review.

The MDBA is developing a set of guidelines for the use of administrative data (for example census, Commonwealth-funded programs) relating to First Nations. The framework refers to national and international standards for First Nations' knowledge interests, to ensure that First Nations in the Basin share control with the MDBA of the choice of monitoring indicators, secondary data access and uses of that data that relate to their interests.

MDBA's data management framework meets business needs

The MDBA's activities and collaborations with external partners generate a significant amount of data and knowledge. This information is used to inform decision-making, so it is essential that it is stored and managed in a way that enables timely access and retrieval. The data management team liaises with MDBA business areas and committees to make sure their data and knowledge requirements are being met.

The MDBA uses an enterprise data management framework to manage the data and knowledge. It is based on the principles of the Data Management Body of Knowledge (DMBoK) and adapted to best fit the MDBA's needs. The framework includes analytical capabilities that support the MDBA's ability to deliver major projects including this year's Basin Plan Evaluation. It also enables the MDBA to have access to information that allows it to develop strategies to deal with changing situations, such as climate conditions across the Basin.

In 2020–21 the framework was assessed by the outsourced internal audit function as part of the 2020–21 Internal Audit Plan. The internal audit provided an assessment of the effectiveness of the framework in meeting the MDBA's business needs and associated risks. The maturity assessment resulted in several recommendations that have been accepted.

Agreed management actions resulting from the audit include:

- improving the design and approach in applying the data framework
- developing a change management plan to support framework implementation
- assigning an executive group with oversight responsibilities to support data management initiatives.

The ICT, Data and Support Services group had also planned to do a case study, based on informal interviews, to assess how the Data Management Framework had improved results for MDBA business areas. This didn't happen due to other priorities:

- 2 significant programs of work – the SDL Accounting Uplift and the Hydrometric Network and Remote Sensing Program
- demands on resources related to remote working arrangements due to the continuing COVID pandemic.

As part of the new governance structure, the work previously done by the Information Management and Technology Committee (IMTC) is now part of the Program Board's responsibilities. This ensures the MDBA's information and technology needs are considered as an essential part of organisational capability.

Looking ahead to 2021–22

Operating context

The challenges of the 2020–21 year, with climate emergencies and the COVID-19 pandemic, affected not only the Murray–Darling Basin but also the way the MDBA carried out its work. Like other organisations, it had to adapt to new ways of working, while continuing to communicate effectively with stakeholders all over the Basin. The MDBA's ongoing regionalisation policy and its investment in high-level data and information technology systems meant that it was well placed to meet these challenges during the year and into the future.

While the Bureau of Meteorology predicts that most of Australia will have above-average rainfall between July and October 2021, longer-term trends show that there will be less water in the Basin. CSIRO data shows that over the last 20 years there's been a huge fall in inflows across the Murray–Darling Basin.

The 2020 Basin Plan Evaluation showed that improved knowledge is needed to understand and respond to changing conditions in the Basin over time. Basin governments will need to collaborate and invest more in science and monitoring. Improving modelling is seen as a way to build confidence and understanding and help with planning for the future.

Less water, changing conditions and often conflicting interests mean that Basin communities can lose trust in the Basin Plan. Some states have already indicated the water-saving projects they committed to under the Basin Plan won't be finished by the 2024 deadline.

The Sefton report (https://www.mdba.gov.au/publications/independent-reports/independent-assessment-social-economic-conditions-basin) released in September 2020 found that in many areas of the Basin communities no longer felt confident about their future.

The MDBA is focusing on boosting collaboration and transparency about water management to reset stakeholder confidence. As a further way to increase transparency in decision-making, the MDBA's compliance functions will shift to the new Inspector-General of Water Compliance.

Priorities

The focus on communities is a clear priority for the next year. The MDBA is committed to working with communities to share information and incorporate local knowledge into the Basin Plan implementation. Improving the opportunities and involvement of First Nations continues to be a priority. The biggest barrier for First Nations engagement is access to and availability of water. Funding for 4 Indigenous River Ranger groups in the Murray–Darling Basin is one of the initiatives to improve First Nations involvement.

An important area of work will be to work with stakeholders to develop an approach for the 2026 Basin Plan Review.

The MDBA continues to undertake work associated with the Keelty report's (https://www.igwc.gov.au/reviews-reports) recommendations, particularly on increasing transparency and accessibility of water management information.

The *Basin Plan 2020 Evaluation* (https://www.mdba.gov.au/2020-basin-plan-evaluation) identified 6 future focus areas for Basin governments and stakeholders:

- continuing to implement the Basin Plan with a 'one Basin' approach
- adapting to climate change and increasing resilience
- establishing a clearer and committed pathway for improved First Nations outcomes
- strengthening social and economic outcomes through targeted support for communities in the Basin
- integrating water management with other activities to achieve environmental restoration
- advancing science and monitoring.

While the MDBA retains responsibility for overseeing implementation of the Basin Plan, the MDBA's regulatory and compliance responsibilities are now with the Office of the Inspector-General of Water Compliance.

For further details about priorities, see the *MDBA Corporate Plan 2021–22*.

Part 3
Management and accountability

03

Governance

The Murray–Darling Basin Authority (the 7-member Authority) was established under the *Water Act 2007* which sets out how the water resources of the Murray–Darling Basin are to be managed.

Water in the Basin is managed in a cooperative arrangement between the Australian Government and the governments of the Basin states – New South Wales, Queensland, South Australia, Victoria and the Australian Capital Territory. The Basin Plan provides the overview to ensure that water is shared between all users in a sustainable way.

The 7-member Authority is supported by the Murray–Darling Basin Authority (the MDBA), an independent Australian Government agency. Figure 16 shows governance arrangements.

Australian Government water minister

The Murray–Darling Basin Authority reports to the Minister for Resources, Water and Northern Australia, the Hon Keith Pitt. As the Australian Government water minister, Mr Pitt also chairs the Murray–Darling Ministerial Council and, under the Water Act, can direct the Authority on how it performs its functions.

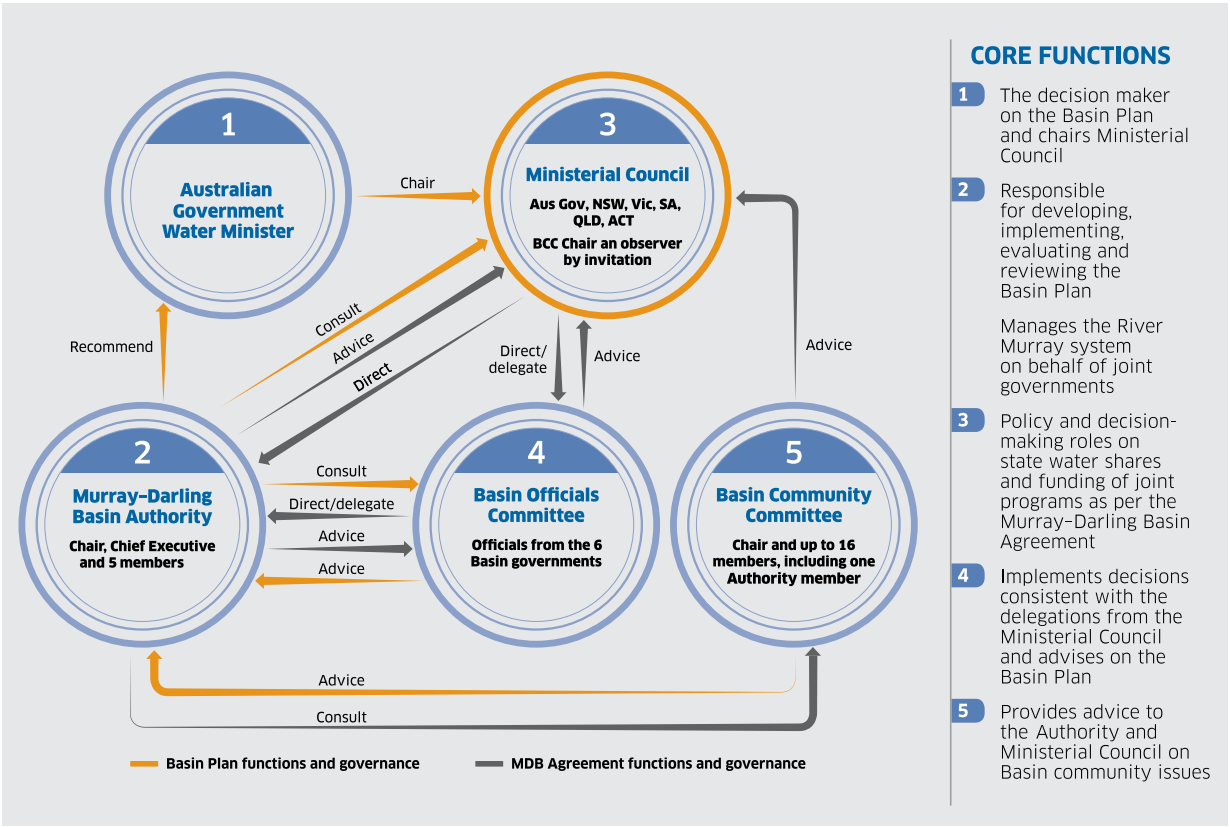


Figure 16: Governance arrangements

Figure 17: Members of the Murray–Darling Basin Authority (L to R: Rene Woods, Joanna Hewitt (seated), Stuart Bunn, Susan Madden (seated), Sir Angus Houston, Phillip Glyde

The Authority

The Murray–Darling Basin Authority (the Authority) is made up of a part-time Chair, full-time Chief Executive, and 5 part-time members, including an Indigenous member. The passing of the Water Amendment (Indigenous Authority Member) Bill on 3 October 2019 established the permanent Indigenous Authority member position on the Board. This increased the board from 6 to 7 members.

Members of the Authority are appointed for their skills and experience in areas including water resource management, governance, policy, the environment, community and Indigenous matters. In response to the outcomes of the Compliance Compact 2018 the Australian Government committed to review the Authority appointments process to ensure that a broad range of experience is considered as part of the selection process to appoint Authority members. In July 2019 the Ministerial Council agreed to a new appointment process with an aim to streamline the existing process and increase transparency of the appointments.

Their performance is measured by the outcomes of the Basin Plan, with the Audit Committee and the Independent Assurance Committee (IAC) providing additional assurance. The Authority has 3 formal advisory committees and takes advice from the MDBA on Basin-wide strategy and policy and planning. It collaborates with, and also takes advice from, the Department of Agriculture, Water and the Environment (DAWE), the Commonwealth Environmental Water Holder (CEWH) and Basin jurisdictions, as well as receiving advice from Basin communities, industry, environmental groups and other government organisations (including the Bureau of Meteorology and the Australian Competition and Consumer Commission) to secure Basin water resources. Regular briefings from these groups ensure the Authority's decision making is robust and well informed.

As at 30 June 2021 the members of the Authority were:

- Air Chief Marshal Sir Angus Houston AK, AFC (Ret'd) – Chair
- Professor Stuart Bunn – member
- Ms Joanna Hewitt AO – member
- Ms Susan Madden – member
- Mr Rene Woods – Indigenous member
- Mr Phillip Glyde – Chief Executive.

There is one vacancy.

Authority members

Air Chief Marshal Sir Angus Houston AK, AFC (Ret'd) is Chancellor of the University of the Sunshine Coast and chairs many boards including the Authority. He was awarded the Knight of the Order of Australia in 2015 for outstanding service to Australia. Sir Angus served for 41 years in the Australian Defence Force including holding the positions of Chief of the Australian Defence Force from 2005 to 2011 and Chief of the Air Force.

Professor Stuart Bunn is Director of the Australian Rivers Institute at Griffith University, Chair of the Science Committee for Healthy Land and Water, and a member of the International Planning Committee for the Sustainable Water Future Programme. From 2008 to 2012 he was a National Water Commissioner. He has served as Chair of the Scientific Advisory Panel for the Lake Eyre Basin Ministerial Forum and the MDBA's ACSEES, on which he continues to play an observer role.

Ms Joanna Hewitt AO chairs the Scientific Advisory Group of the Department of Agriculture, Water and Environment. She has worked at senior levels in the Australian Public Service including Secretary of the Department of Agriculture, Fisheries and Forestry from 2004 to 2007 and Deputy Secretary in the Department of Foreign Affairs and Trade. She was Commission Chair of ACIAR from 2011 to 2014 and has worked at the OECD and consulted internationally.

Ms Susan Madden is Principal Economist with international consulting firm GHD. She is Chair of the Central West Local Land Services and sits on the Local Land Services Board of Chairs. Ms Madden has a background in family farming and extensive experience working in agricultural and natural resource management roles in the public and private sectors. Her leadership capabilities and contributions have been recognised through a number of awards. She is a Fellow of the Peter Cullen Trust.

Mr Rene Woods is a Nari Nari man from Hay in south-west NSW. He has extensive experience in the management of Aboriginal culture, heritage and natural resources. He is a conservation officer with Nature Conservancy Australia and has previously been Chair of the Murray Lower Darling Indigenous Nations and Vice-Chair of the Nari Tribal Council.

Mr Phillip Glyde came to the MDBA from the Department of Agriculture, where he was a deputy secretary. He has been a member of the Australian Public Service since 1980, working in natural resource management, industry and environmental policies for a number of departments. Mr Glyde has also worked overseas with the OECD in Paris and the Department of Environment, Food and Rural Affairs in the United Kingdom.

Read more details about the Authority on the MDBA website at: https://www.mdba.gov.au/about-us/governance-water-management-murray-darling-basin/authority

Details of accountable authority during the reporting period 2020–21 are in the Appendices.

Murray–Darling Basin Ministerial Council

The Murray–Darling Basin Authority is accountable to the Ministerial Council for matters under the Murray–Darling Basin Agreement. The council's key functions and powers are:

- considering and determining policy outcomes and objectives
- determining matters specified in the Murray–Darling Basin Agreement
- approving the MDBA's annual corporate plan, budget and asset management plan
- agreeing to amendments to the Murray–Darling Basin Agreement.

The Ministerial Council is made up of the Australian Government minister responsible for water and the ministers responsible for water from each Basin jurisdiction. As at 30 June 2021, members were:

- Australian Government minister responsible for water – the Hon Keith Pitt (Chair)
- New South Wales water minister – the Hon Melinda Pavey MP
- Victorian acting water minister – the Hon Richard Wynne MP
- South Australian water minister – the Hon David Speirs MP
- Queensland water minister – the Hon Glenn Butcher MP
- Australian Capital Territory water minister – Mr Shane Rattenbury MLA.

Read more about the Ministerial Council at: https://www.mdba.gov.au/publications/mdba-reports/murray-darling-basin-ministerial-council

Basin Officials Committee

The Basin Officials Committee (BOC) is established under Part IV of the Murray–Darling Basin Agreement. It is the peak body of Basin government officials providing advice to decision-makers on all Murray–Daring Basin matters.

The key functions and powers of the BOC are:

- to advise the Authority on engaging the Basin states in preparing the Basin Plan and proposed amendments to the Basin Plan
- to advise the Ministerial Council in relation to major policy issues of common interest in relation to the management of water and other natural resources of the Basin
- to exercise responsibility for high level decision-making regarding river operations, including setting objectives and outcomes to be achieved by the MDBA
- to facilitate cooperation and coordination between the Commonwealth, the Authority and the Basin states in managing Basin water resources.

The BOC consists of a senior official from each Basin jurisdiction. It is chaired by the Commonwealth member. The Authority's Chief Executive is an advisor to the BOC and is able to attend and participate in BOC meetings, but does not have a vote in meeting decisions.

In 2019 the structure of the BOC was revised to include 4 standing and 3 time-bound 'tier 1' committees (see Figure 18).

As at 30 June 2021 the 6 members were:

- Commonwealth – Ms Lynn O'Connell (Chair)
- New South Wales – Mr Jim Bentley
- Victoria – Ms Helen Vaughan
- South Australia – Mr Ben Bruce
- Queensland – Mr David Wiskar
- Australian Capital Territory – Mr Geoffrey Rutledge.

Read more about the BOC at: https://www.mdba.gov.au/about-us/governance/basin-officials-committee

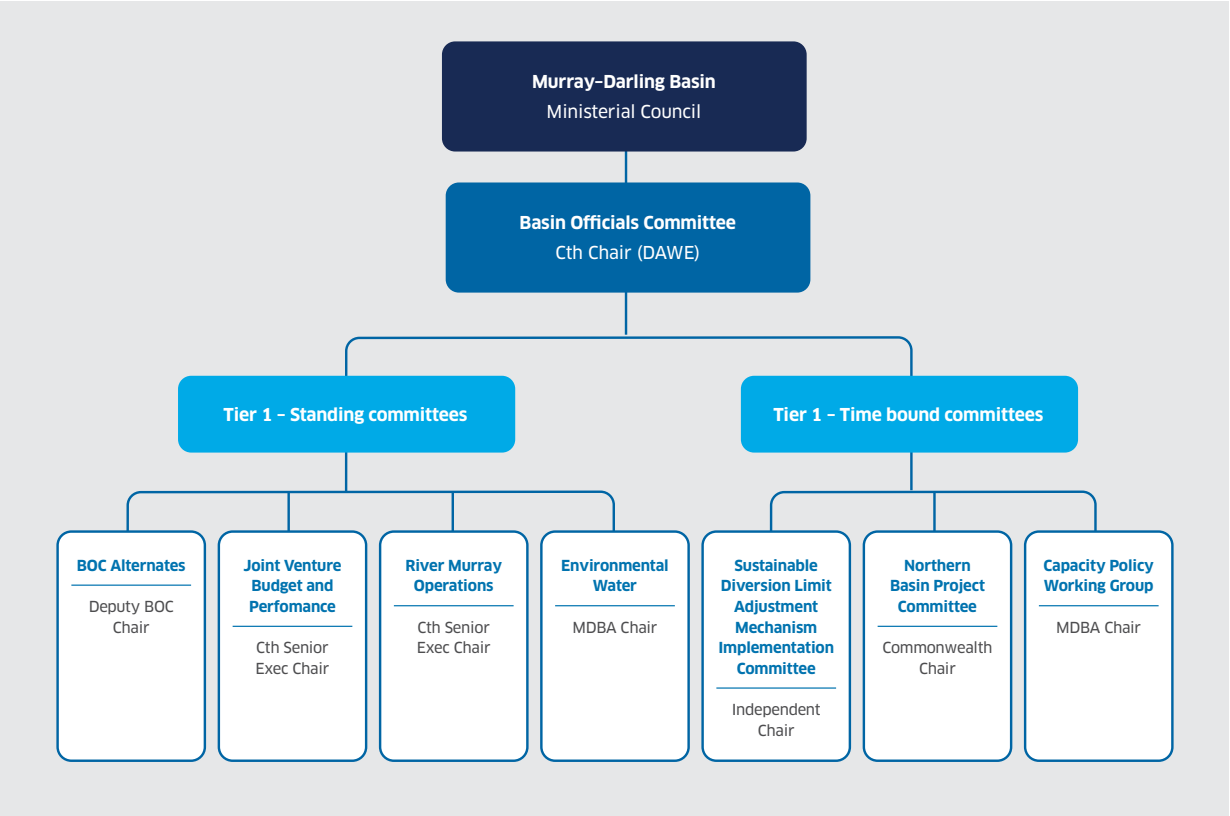


Figure 18: Structure of the Basin Officials Committee

Basin Community Committee

The Basin Community Committee (BCC) gives a community perspective on water resource environmental, cultural and socioeconomic matters in the Basin. It provides advice to the Authority and Ministerial Council and engages with the BOC, DAWE and Authority advisory committees. Members come from all over the Basin (see Figure 19) and are selected for their expertise or interest in relevant areas. The committee meets up to 5 times a year, either face-to-face or virtually, and is strongly valued as a forum to provide advice to the MDBA and Basin governments on water management issues.

As at 30 June 2021 members and their locations were:

- Mr Phil Duncan (Chair) – Gwydir
- Mr Sam Coulton – Border Rivers
- Ms Amy Fay – Goulburn–Murray
- Mr Edward Fessey – Culgoa–Barwon–Darling
- Ms Rachel Kelly – mid-Murray and Murrumbidgee
- Ms Susan Madden (Authority member) – Dubbo
- Mr Neil Martinson – Riverland
- Mrs Samantha O'Toole – Lower Balonne
- Mrs Sandra Peckham – Bogan
- Mrs Sue Rudd – Sunraysia
- Mr David Thurley – upper Murray
- Mr Adrian Weston – Goulburn–Broken.

Ms Emily Jenke (Lower Lakes) resigned from the BCC in March 2021.

Read more about the BCC at: https://www.mdba.gov.au/about-us/governance-water-management-murray-darling-basin/basin-community-committee

Figure 19: Basin Community Committee members

Advisory committees

Several independent committees provide specialist advice to assist the Authority in making robust and defensible decisions for the sustainable management of the Basin's resources.

Advisory Committee on Social, Economic and Environmental Sciences

The Advisory Committee on Social, Economic and Environmental Sciences (ACSEES) gives the Authority independent, strategic advice to help ensure the implementation of the Basin Plan is supported by robust methodology, science and knowledge.

It was established under section 203 of the Water Act and consists of 7 members with expertise in areas including economics, hydrology, ecology, water governance and law, sociology and sustainable systems. An important part of the committee's work is communicating science-related matters within academic, community and industry networks.

As at 30 June 2021 ACSEES members were:

- Professor Rob Vertessy (Chair) – consultant (Victoria)
- Professor Michael Stewardson – University of Melbourne (Victoria)
- Professor Nick Bond – Latrobe University (Victoria)

- Dr Rebecca Nelson – University of Melbourne (Victoria)
- Professor Roger Stone – University of Southern Queensland (Queensland)
- Professor Sue Jackson – Griffith University (Queensland)
- Dr Neil Byron – consultant (Australian Capital Territory)
- Professor Stuart Bunn – Authority member; observer to ACSEES
- Steve Hatfield-Dodds – technical advisor to ACSEES.

Read more about ACSEES member and the ACSEES Communiques at: https://www.mdba.gov.au/about-us/governance-water-management-murray-darling-basin/advisory-committee-social-economic

Compliance Independent Assurance Committee

The MDBA established the Independent Assurance Committee (IAC) as a statutory committee in 2018 under section 203 of the Water Act. The committee consists of 4 independent experts who provide advice on the design, implementation and adequacy of the Murray–Darling Basin Authority's Basin Plan compliance program.

Among its other business the IAC provides advice on the creation of a new compliance entity separate from the MDBA, which was announced by the Australian Government on 7 September 2020. The new entity will combine the MDBA's Office of Compliance with the office of the Interim Inspector-General of Water Compliance.

As at 30 June 2021 members of the IAC were:

- Mr Allan Holmes (Chair)
- Ms Lisa Corbyn
- Mr Garry Smith
- Mr Martin Dolan.

Read more about the committee's areas of expertise at: https://www.mdba.gov.au/basin-plan-roll-out/compliance-enforcement/compliance-independent-assurance-committee

IAC's reports are published on the MDBA's website at: https://www.mdba.gov.au/publications/mdba-reports/compliance-independent-assurance-commitee-reports

Organisational structure

The MDBA is structured to best allow it to achieve its purpose (see Figure 20). Chief Executive Phillip Glyde leads an Executive Board comprised of the heads of the 4 work portfolios:

- Basin Strategy and Knowledge – which drives and facilitates science and decision support information that guides river management and implementation of the Basin Plan
- Basin Plan Regulation – which is responsible for regulatory functions and includes the Office of Compliance
- River Management – which works with state and territory partners to coordinate the management of the River Murray system under the Murray–Darling Basin Agreement
- Business Services – which runs the business of the MDBA by providing strategic and support services.

The Executive Board role is to:

- approve the MDBA's strategic direction
- approve risk mitigation strategies for projects and programs for all investments.

The enterprise Portfolio Management Office (ePMO) is at branch level but reports directly to the Chief Executive. The ePMO supports prioritisation, visibility and accountability of the MDBA's work. It was implemented as part of the MDBA's new operating model to support regionalisation.

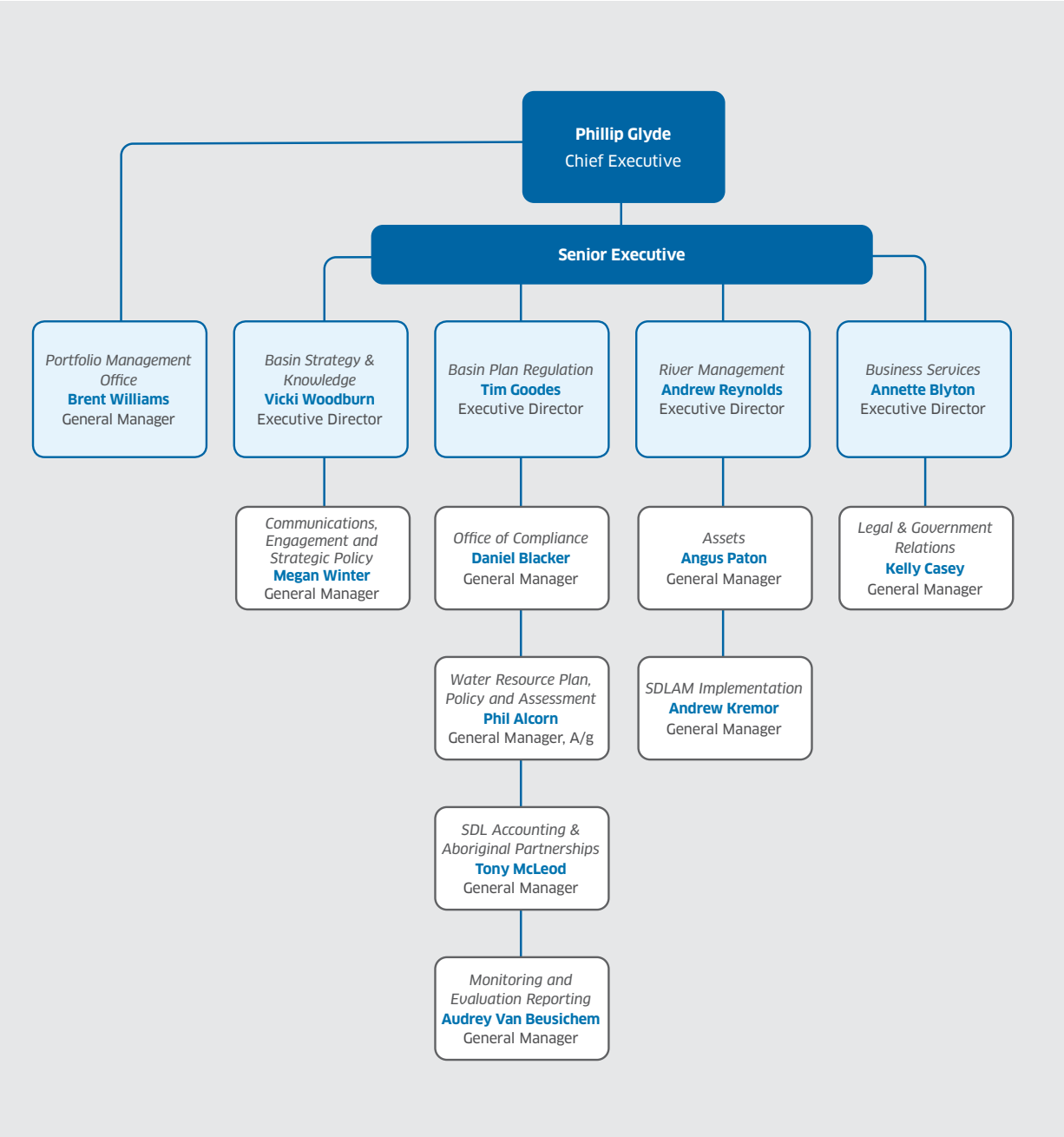


Figure 20: MDBA organisational structure as at 30 June 2021

MDBA Executive Board

The Executive Directors of each of the 4 portfolios make up the MDBA Executive Board.

Phillip Glyde

Chief Executive

Phillip's biographical details are included in The Authority.

Vicki Woodburn

Executive Director, Basin Strategy and Knowledge

Vicki joined the MDBA leadership team in 2016. She has over 20 years of practical experience in policy and applied science, focused on Australia's natural resources, agricultural industries, biosecurity and regional development.

Before joining the MDBA, Vicki held technical and leadership roles in the Rural Industries Research and Development Corporation, private sector consulting businesses and the Australian Government agricultural department. In these roles, she led cross-sectoral research in areas including soils, climate change, rural policy, agricultural extension, digital innovations, the primary industry health and safety. She has also delivered high-profile policy reviews and undertaken extensive stakeholder engagement.

Vicki has a Bachelor of Applied Science from the Australian National University.

Andrew Reynolds

Executive Director, River Management

Andrew joined the MDBA leadership team in 2013. He has more than 27 years of experience in the water industry, managing major water supply infrastructure.

Before joining the MDBA, Andrew held various roles with Goulburn–Murray Water. His work there included managing the headworks business responsible for 16 large dams and associated infrastructure, delivering several major dam safety upgrades, and leading the business's engineering and scientific resources.

Andrew has a Bachelor of Engineering (Agricultural) (Hons) from the University of Melbourne. He is the current chairman of the Australian National Committee on Large Dams.

Tim Goodes

Executive Director, Basin Plan Regulation

Tim joined the MDBA leadership team on 15 June 2020. Before commencing in this role, Tim was the Deputy Chief Executive of the Department of Primary Industries and Regions in South Australia. He was responsible for agriculture, food and wine, regional development, major program delivery and corporate services.

From 2009 to 2017 Tim was the Deputy Chief Executive of the Department of Environment, Water and Natural Resources in South Australia. In that role, he was responsible for the policy and strategy development of the department, including serving as the Basin Official for South Australia, overseeing the implementation of the Basin Plan and other major water projects.

Tim came to natural resources management after 12 years in the Justice portfolio, in Courts and the Attorney-General's Department. This included time as the Sheriff of South Australia and 3 years as an executive director in the Department of the Premier and Cabinet.

Tim has a Bachelor of Social Administration and a Master of Public Policy and Administration.

Annette Blyton

Executive Director, Business Services

Annette joined the MDBA leadership team in 2017. She has worked in a broad range of corporate areas since starting her public service career in 1986. These areas include corporate and business management, farm surveys, data, social research, finance, property and major projects and procurements.

From 2002 to 2012, Annette was Corporate Manager for the Australian Bureau of Agriculture and Resource Economics and Sciences. She then joined the Office of the Commonwealth Director of Public Prosecutions where she worked as National Manager, People from 2012 to 2015. Annette moved to the Department of Agriculture and Water Resources in 2015, where she was responsible for the department's national property interests and a range of other national business functions.

MDBA senior management boards and committees

The Executive Board is supported by boards and committees that advise them on specific areas (see Figure 21).

Program Board

The Program Board takes strategic direction from the Executive Board. It oversees the planning and implementation of approved MDBA programs and projects. The Program Board has taken over the work of the former Information Management and Technology Committee.

The Board's role is it to oversee the implementation of approved portfolios, programs and projects. It regularly takes advice about external issues from the strategic policy group.

Capability Board

The Capability Board plans, develops and deploys workforce capability. It informs the MDBA's Portfolio Management Office of strategic capability plans and advises of gaps and resource requirements.

The Board's role is to ensure the MDBA actively develops, monitors and strengthens its capabilities so that it can perform its functions.

Senior management committees

There are 4 senior management committees:

- Audit Committee
- Employee Consultative Committee
- Health and Safety Committee
- Strengthening Connections Committee.

There is one subcommittee – the Financial Statements subcommittee.

The work of these committees is included in other parts of this report and on the MDBA website.

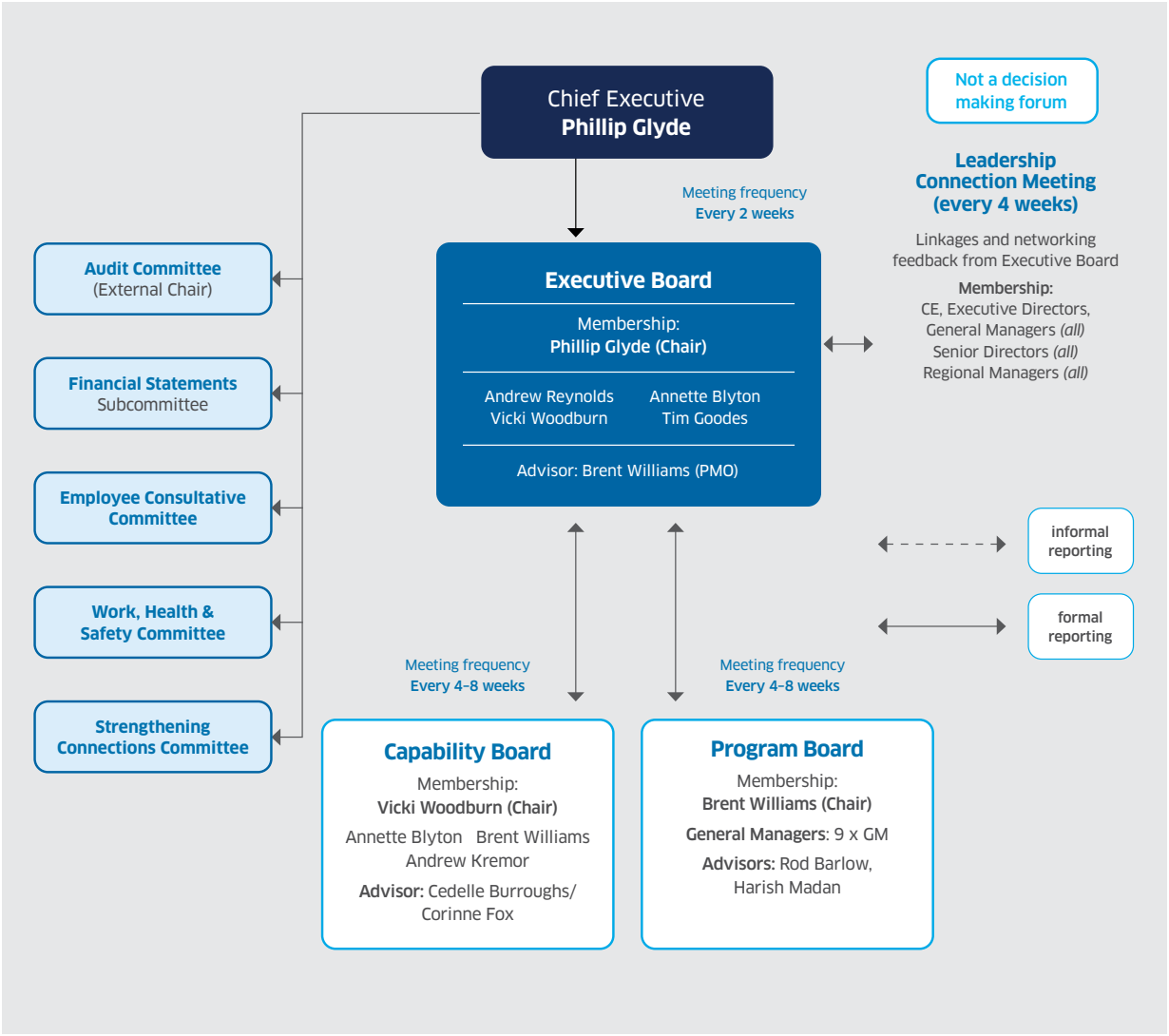


Figure 21: MDBA governance structure

Corporate accountability

Corporate governance practices

As a corporate Commonwealth entity, the MDBA uses practices that enable it to meet objectives while managing risk and using resources in an accountable way. The MDBA's planning, performance and reporting framework is supported by policies and guidelines and, where appropriate, external review.

The corporate plan is the key planning document, setting out how the MDBA will achieve its purpose through goals that have measurable targets. The MDBA reports on its performance annually in the annual report. A performance framework helps individual staff and teams manage performance and contribute to organisational goals.

The MDBA's ability to achieve its goals and respond to change relies on building organisational capability. This is done through having strong values, good leadership, a dynamic and flexible workforce, and processes and systems that are regularly reviewed and improved. Figure 22 shows the MDBA's capability strategy.

The MDBA has identified the need for a strong regional presence and decentralised workforce as a priority. Other strategies include:

- looking for ways to streamline governance arrangements, such as using shared services
- building knowledge management and capability through improving systems and practices
- enhancing financial and non-financial performance measurement
- improving transparency through clear communications, partnerships and engagement.

Figure 23 shows MDBA's capability planning process.

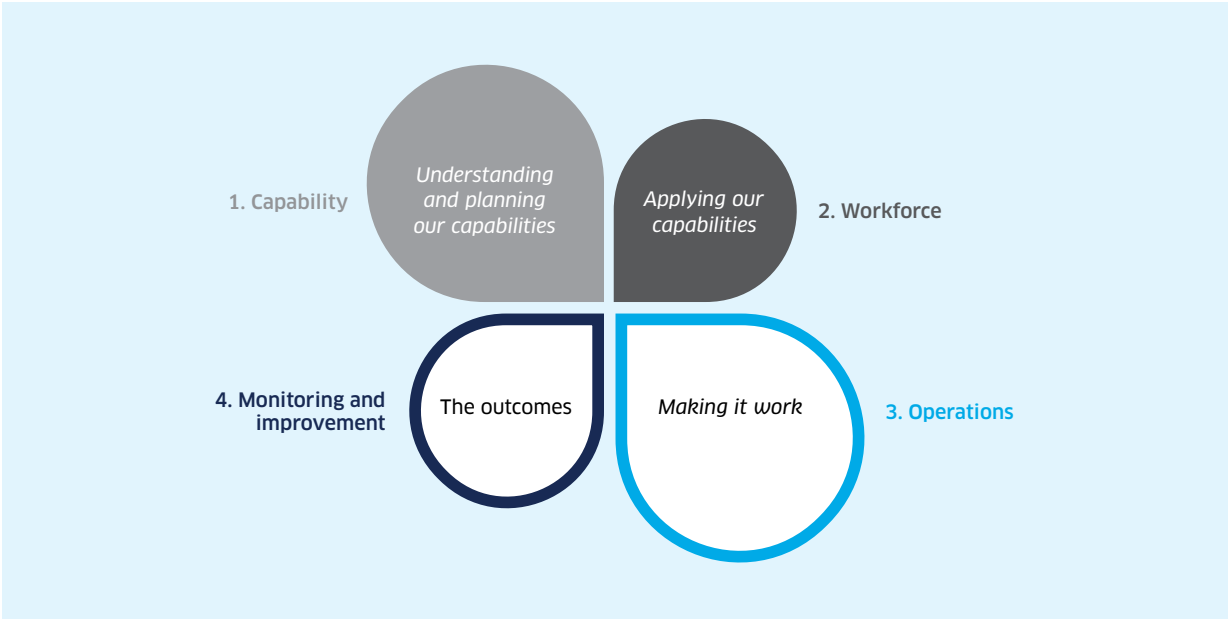


Figure 22: MDBA capability strategy

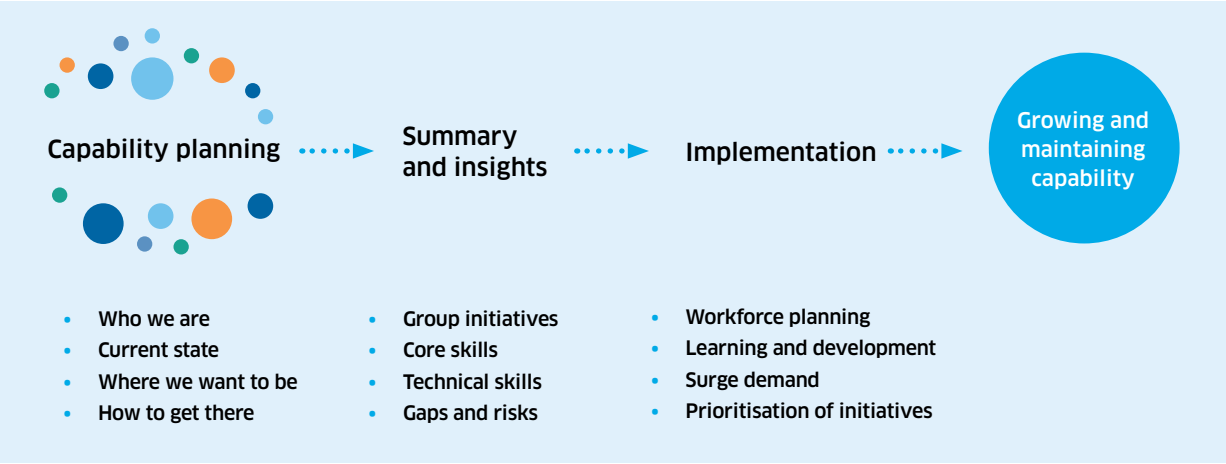


Figure 23: MDBA capability planning

Risk management

The MDBA's approach to risk management is to foster a positive risk culture and engage proactively with risk at all levels of the organisation. This approach is consistent with the Commonwealth Risk Management Policy and the International Standard for Risk Management (AS ISO 31000:2018) and is regarded as best practice in practical management of risk.

Risk management framework

The MDBA reviews and updates the risk management framework and policy every 2 years and continually monitors and reviews risks, risk controls and treatments. Progress against the implementation of treatments is reported as required to the Ministerial Council, Basin Officials Committee and Audit Committee.

Risk management is integrated into MDBA planning and business systems. Each business unit in the organisation conducts environmental scanning as part of its forward planning. This information feeds into the MDBA Enterprise Risk Management Plan.

The MDBA's risk appetite and tolerance for each major business function is established in the Risk Management Framework and Policy. The MDBA is more tolerant of risk where positive engagement with risk presents opportunities for innovation, improvement and building capability and capacity. It has a low appetite for fraud, work health and safety risks and compliance risk impact.

The MDBA has identified at the enterprise level those risks that interact with its strategic objectives. These risks are identified from an analysis of the sources of risk for the MDBA and evaluated against the MDBA's risk categories. This ensures risks are fully visible across the business of the agency and are appropriately treated.

The MDBA has also articulated several activity-based sub-risks for key enterprise risks. This sits with an analysis of all the causes of risk, critical controls and an assessment of the effectiveness of those controls. The approach:

- allows the MDBA to make informed decisions for the allocation of resources for the management of risk and the achievement of objectives
- enables MDBA personnel to have a clear line of sight between their day-to-day work and managing risk and the achievement of the overall objectives of the MDBA.

As part of managing risk, all new employees and contractors receive risk management induction and online training in ethics, fraud and conflicts of interest. This also includes managing sensitive water market information.

Comcover

Comcover provides the MDBA's insurance cover. Insurable risks are identified and assessed annually through Comcover's insurance renewal process. The MDBA is separately insured by Comcover for workers compensation for employees.

Comcover conducts a benchmarking survey biennially and it was conducted in the reporting period. The Risk Management Benchmarking Program is a key part of Comcover's risk management services. It is designed so fund members can assess their current and target level of risk management maturity against 5 identified areas of focus, using a risk maturity model.

The 5 areas of focus for the risk maturity model are:

- risk governance
- risk culture
- risk capability
- risk management framework and practices
- organisational resilience and agility.

The MDBA performed well against each of the areas of focus. Its strongest capability is in:

- risk management framework and practices
- organisational resilience and agility.

Fraud

The MDBA's fraud control arrangements align with the Commonwealth Fraud Control Framework. This framework establishes systems and processes for preventing, detecting, monitoring, evaluating, reporting and responding to fraud. The MDBA regularly reviews its fraud prevention and control measures, which include fraud risk assessment and the fraud control plan.

In 2020–21, there were 3 reports of suspected fraud. Preliminary inquiries showed no evidence of fraud to warrant a formal investigation.

Business continuity and ICT disaster recovery plans

The MDBA has 4 main documents that outline arrangements for recovering from a business disruption:

- MDBA Business Continuity Plan
- MDBA Business Impact Analysis
- River Murray system emergency action plan
- ICT Disaster Recovery Plan.

Each plan is updated as required and at a minimum annually. The ICT disaster recovery arrangements are tested at desktop level.

As with the previous year, in 2020–21 the major business continuity event was the MDBA response to COVID-19. The ongoing response to COVID-19 presented the MDBA with a number of opportunities to stress test and continuously improve its response to disruptions caused by critical incidents and other business continuity events. This particularly related to the MDBA's operating environment and infrastructure. The MDBA demonstrated it was ahead of the curve in planning and preparedness for the pandemic across Australian Government entities.

Internal audit

Internal audit services were provided by PwC in 2020–21. Internal audits were developed in consultation with senior management and their teams, having regard to the MDBA Enterprise Risk Management Plan and the MDBA Assurance Strategy.

The internal audit reports finalised during the year were:

- Data Management and Improvement Plans
- Water Quality Monitoring – Lessons Learned
- Management Initiated Review on ICT Logging and Monitoring.

The audit reports did not raise any serious matters. The implementation of internal audit report recommendations is monitored by the Audit Committee.

Compliance reporting

It is a requirement of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) that the MDBA reports significant non-compliance with finance law. Finance law includes:

- the PGPA Act
- the Public, Governance, Performance and Accountability Rule 2014 (PGPA Rule)
- instruments made under the PGPA Act (including Accountable Authority Instructions) and Appropriation Acts.

The compliance reporting process helps to identify and disclose instances of non-compliance with the PGPA framework, as a basis for continuous improvement.

There were no significant reportable breaches of the PGPA Act, the PGPA Rule or Australian Government policies in 2020–21.

Audit committee

The MDBA's governance framework includes the Audit Committee, which provides independent advice and assurance. In keeping with s17(2) of the Public Governance, Performance and Accountability Rule 2014 the Audit Committee reviews and gives advice on the MDBA's:

- financial reporting
- performance reporting
- system of risk oversight and management
- system of internal control.

Read the Audit Committee Charter on the MDBA's website at https://www.mdba.gov.au/sites/default/files/attachments/Audit%20Committee%20Charter%20-%20February%202020.pdf

Table 13 shows membership of the audit committee and other required details.

Table 13: Audit Committee

Member name	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of meetings attended/ total number of meetings	Total annual remuneration (GST inc.)	Additional information
Mrs Jenny Morison FCA (Chair) Independent member	Jenny has 38 years of experience in the accounting, commerce and government. She was a National Board Member of the Chartered Accountants of Australia and New Zealand for 4 years. Jenny was the CFO of a public company and has held senior positions in the major international accounting firms. She founded Morison Consulting Pty Limited in 1996. Jenny originally specialised in implementation of Commonwealth financial reforms and then project managed significant process reform projects in the Department of Defence. She was awarded a Centenary medal in 2000 for services to accounting. For the last 15 years, Mrs Morison has become one of the most experienced independent member and Chair of Commonwealth audit and risk committees. Her current portfolio of agencies covers 45% of the total spend of the Australian Government.	6/6	$23,100.00	N/A

Member name	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of meetings attended/ total number of meetings	Total annual remuneration (GST inc.)	Additional information
Ms Karen Hogan (Deputy Chair) Independent member	Over the past 10 years, Karen has contributed as a member of several audit committees in various Australian Government agencies, including chairing the audit committee in one agency. Karen has extensive leadership experience in accounting, finance, corporate governance, risk, procurement, information technology and human resources. This experience encompasses both the public and private sectors and has been gained in such diverse areas as the cultural institutions, regulation, manufacturing, energy, farming, tourism and fast-moving consumer products. Areas of interest are improving financial literacy, the exploitation of technology and improving corporate governance in an efficient and effective manner.	6/6	$7,201.02	N/A
Mr Andrew Cox Independent member	Andrew is a corporate governance professional with extensive experience in governance, audit and risk management. He works for the Institute of Internal Auditors–Australia as internal audit subject matter expert. He has managed internal audit functions over his career including senior executive roles as National Manager of Internal Audit at Centrelink and Director of Risk Management Services for the Northern Territory Government, a whole-of-government internal audit bureau service. He previously worked with the federal government of the United Arab Emirates where he was Chief Operating Officer and Project Director for a major capacity building project at the federal audit office. Mr Cox has worked in Australia, Afghanistan, Bahrain, Bangladesh, Brunei, Fiji, France, Ghana, Indonesia, Iraq, Kuwait, Malaysia, the Netherlands, New Zealand, Papua New Guinea, Qatar, Saudi Arabia, Uganda, the UAE, the UK and the USA. He has made presentations on governance and assurance in Australia and internationally, and has taught internal auditing in Australia and other countries. He has authored numerous publications, white papers and fact sheets for the IIA–Australia. He is an independent chair and member of a number of audit committees.	3/3	$5,148.00	Appointed December 2020

Member name	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of meetings attended/ total number of meetings	Total annual remuneration (GST inc.)	Additional information
Mr Michael Parkinson Independent member	Michael Parkinson has more than 40 years experience in internal auditing and risk management. His experience is predominantly in government and covers all 3 levels. He has also provided technical advice and support in other countries within the Asia–Pacific region. Mr Parkinson has served at international level in professional bodies developing the profession and professional standards and guidance for internal auditors and information systems auditors. He is also recognised for his professional expertise in these fields. Michael served for 8 years on the Standards Australia/ Standards New Zealand joint technical committee on risk management standards. He was chair of this committee for 4 years and during that time was head of the Australian delegation to the corresponding ISO committee. He also served on the committee that developed the international standard on Compliance Management Systems. Michael continues to serve on a number of audit committees and, additionally, provides quality reviews and advice to internal audit and to risk management functions.	3/3	$5,016.00	Appointed December 2020
Mr Stephen Sheehan Independent member	Stephen has 40 years of financial management experience. He has a Bachelor of Commerce degree, was previously an Australian Public Service senior executive and held the positions of Chief Financial Officer at the Commonwealth Department of Immigration and Citizenship and the Department of Health and Ageing.	3/3	$7,170.00	Appointed December 2020. Mr Sheehan also chairs the Financial Statements Sub-Committee of the MDBA Audit Committee
Mr Andrew Reynolds Advisory member+ for MDBA Joint Venture	Executive Director, River Management Division (see Andrew's biographical details at page 85)	5/6	$0	N/A

Member name	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of meetings attended/ total number of meetings	Total annual remuneration (GST inc.)	Additional information
Dr Tony McLeod Advisory member+	General Manager, SDL Accounting and Aboriginal Partnerships Tony has extensive experience in a scientifically-based working environment related to water policy development, implementation and working with states and territories. He has long-term SES experience in the Australian Public Service including a key role in the development and implementation of the Water Act, amendments to the Act in 2008 and the 2012 Murray-Darling Basin Plan. He has a PhD in Environmental Engineering.	4/6	$0	N/A
Tim Goodes Advisory member+	Executive Director, Basin Plan Regulation (see Tim's biographical details at page 85)	5/6	$0	N/A

+ Advisory members are not appointed under the PGPA Act

External scrutiny

The reporting requirements for corporate Commonwealth entities require the MDBA to report on significant developments in external scrutiny that occurred during the reporting period. This includes judicial decisions or decisions by administrative tribunals that may have had an effect on the MDBA's operations.

Judicial or administrative tribunal decisions

There were no judicial decisions or decisions of administrative tribunals relating to the MDBA made during 2020–21.

Auditor-General reports

The MDBA's financial statements are audited by the Auditor-General.

The Australian National Audit Office made no formal reports relating to the MDBA during 2020–21.

Parliamentary committee reports

No parliamentary committee reports relevant to the MDBA were tabled during 2020–21.

Commonwealth Ombudsman reports

The Commonwealth Ombudsman made no formal reports relating to the MDBA during 2020–21.

Office of the Australian Information Commissioner reports

There were no findings or reviews made by the Office of the Australian Information Commissioner relating to MDBA freedom of information or privacy matters during 2020–21.

Capability reviews

No capability reviews in relation to the MDBA were released during 2020–21.

Freedom of information

Under the *Freedom of Information Act 1982* (Cth) (FOI Act), individuals have the right to access copies of documents held by Australian Government ministers and agencies. There are some exceptions.

During 2020–21, the MDBA received 7 freedom of information requests. Six requests were processed in accordance with the statutory timeframes and one request was withdrawn.

The MDBA maintains a disclosure log and complies with the obligation to publish a range of information on its website as part of the Information Publication Scheme.

This information includes:

- the organisational structure
- what the MDBA does and how it does it
- statutory appointments
- annual reports
- consultation arrangements and other information held
- details of how to obtain information released after freedom of information requests
- information routinely provided to parliament.

The MDBA's approach is outlined in the Murray–Darling Basin Authority Information Publication Scheme Agency Plan at: https://www.mdba.gov.au/publications/policies-guidelines/information-publication-scheme-agency-plan

Ministerial directions and government policy orders

Under the PGPA Rule, the MDBA is required to report on any ministerial directions which are given under an Act or instrument. The MDBA did not receive any new ministerial directions during 2020–21 and continues to comply with the Water (Indigenous Values and Uses) Direction 2018 (Cth).

Under the PGPA Act the MDBA must report on any government policy orders that applied to it during the reporting period. The MDBA was not subject to any government policy orders during 2020–21.

Advertising and market research

Under s 17AH of the PGPA Rule, the MDBA is required to report on any advertising and market research undertaken during the financial year above the threshold set out in s 311A of the *Commonwealth Electoral Act 1918*.

There was no advertising, polling or direct mail expenses that met the threshold of more than $14,300.

In 2020–21 the MDBA undertook stakeholder research and market research (see Table 14). During these activities the MDBA considered the effects of COVID-19 and subsequent changes to society and the economy did not negatively impact the participants or the research results.

Table 14: Stakeholder and market research

Activity	Provider	Cost
Stakeholder research	ORIMA research*	$104,786
Market research	ORIMA research	$309,992

Note: See Goal 4, p 61.

Ecological sustainability and environmental performance

Ecological sustainability is at the core of the MDBA's activities and reflected in the Water Act. As per the *Environmental Protection and Biodiversity Conservation Act 1999* the MDBA is required to report on its environmental performance. This includes how the MDBA is considering the principles of ecologically sustainable development (ESD) in its business activities.

There are 5 principles of ecological sustainable development:

- the integration principle – decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
- the precautionary principle – if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- the intergenerational principle – the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
- the biodiversity principle – the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.
- the valuation principle – improved valuation, pricing and incentive mechanisms should be promoted.

Table 15 shows some examples of how the MDBA is meeting and advancing these principles in its work.

Table 15: MDBA performance in ecological sustainable development

MDBA activity	How activity meets and furthers ESD principles
Developing and implementing the Basin Plan	• Meets the integration principle by incorporating long- and short-term considerations of economic, environmental, social and equitable aspects • Meets the biodiversity principle by including biodiversity considerations in decision-making • Meets the intergenerational principle by ensuring the health of the Basin is preserved for future generations
Facilitating the development and implementation of environmental watering plans, including plans in the northern Basin toolkit measures	• Meets the integration principle by incorporating long- and short-term considerations of economic, environmental, social and equitable aspects • Meets the precautionary principle by acting to prevent potential environmental damage • Meets the biodiversity principle by including biodiversity considerations in decision-making • Meets the intergenerational principle by ensuring the health of the Basin is preserved for future generations
Reporting on the social, economic, cultural, hydrological, water quality and ecological conditions of the Murray–Darling Basin	• Meets the integration principle by incorporating long- and short-term considerations of economic, environmental, social and equitable aspects • Meets the precautionary principle by acting to prevent potential environmental damage • Meets the biodiversity principle by including biodiversity considerations in decision-making • Meets the intergenerational principle by ensuring the health of the Basin is preserved for future generations

MDBA activity	How activity meets and furthers ESD principles
Using satellite imagery to watch over the 1 million square kilometre Murray–Darling and better manage water	• Meets the integration principle by incorporating long- and short-term considerations of economic, environmental, social and equitable aspect • Meets the biodiversity principle by including biodiversity considerations in decision-making • Meets the intergenerational principle by ensuring the health of the Basin is preserved for future generations
Directing river operations in the River Murray in accordance with the objectives and outcomes set by the Basin Officials Committee	• Meets the integration principle by incorporating long- and short-term considerations of economic, environmental, social and equitable aspects • Meets the biodiversity principle by including biodiversity considerations in decision-making • Meets the intergenerational principle by ensuring the health of the Basin is preserved for future generations

Environmental performance

The MDBA takes a proactive approach to managing its activities in way that minimises the effect on the environment. This approach is shown in Table 16.

Table 16: MDBA's environmental performance

Theme	MDBA measures
Energy efficiency	• Factoring in whitegoods and ICT equipment with the highest energy-saving when saving when determining procurement best value • Installing LED lighting with movement sensors throughout MDBA offices and turning lights off in areas not in use • Using power-efficient centralised multi-function devices instead of desktop printers • Directly heating all hot water in kitchens through zip heater systems • Achieving a 6-star NABERS Energy Tenancy rating for the MDBA Canberra office space. Similar performances have been achieved in applicable regional offices such as a 5.5 star energy rating for Goondiwindi, and a 5 star energy rating for Mildura • Asking staff to: – turn off lights to rooms when not in use – turn off computer monitors overnight
Waste	• Minimising paper and toner usage by defaulting printer settings to print paper double-sided and use black and white ink • Minimising paper usage by enabling 'swipe-to-print', allowing staff to only print the documents they need • Publishing only in electronic format, unless print copies are required • Basin-wide recycling initiatives are in place across MDBA offices including, but not limited to, soft plastic, battery, organic plastic bottle tops, coffee pods and organic waste recycling. An example of this performance is the total of 75,420 litres of waste in the Canberra office • 6 star NABERS Waste Management ratings achieved at Griffith, Goondiwindi, Mildura and Murray Bridge regional offices • Using toilet tissue supplies from a company that uses 100% renewable resources and donates 50% of profits to help build ablution blocks for those communities in need

Theme	MDBA measures
Water	• Working with building management in applicable MDBA office locations on water-saving initiatives including installing: – water-efficient toilets – low-flow shower heads – sensor-operated taps in bathrooms – low flow taps in all kitchen areas
Travel	• Encouraging staff to minimise non-essential travel and providing all staff with access to video conferencing software to facilitate electronic meetings. This performance can be measured by a reduction in air travel of 63.74% and an overall travel reduction of 57.13% • Supporting staff who cycle to work by providing a secured bike storage area, and end-of-trip facilities consisting of lockers, toilets and showers in the Canberra office

People and culture

The MDBA's people are its most important asset. The important work of implementing the Basin Plan requires skills in a range of areas. MDBA people have skills in a variety of areas including engineering, environmental science, hydrology, social science, economics, communications, policy, technology and project management. One-third of MDBA staff are located in regional parts of the Basin, allowing them to work more closely with local communities.

CASE STUDY

Case study: Focus on reconciliation

The MDBA is committed to supporting the national reconciliation movement. The Diversity and Inclusion Strategy and Cultural Protocols and First Nations Engagement Guide provide advice and direction. The MDBA's second Reconciliation Action Plan (RAP) has been in place since November 2019.

This 'Innovate' RAP has a work program that will be implemented over 2 years to contribute to connecting with First Nations cultures through relationships, respect and opportunities.

The Strengthening Connections Committee (SCC), formed in 2015, is responsible for the implementation the MDBA's RAP. It's made up of volunteers from throughout the MDBA who want to contribute towards reconciliation.

Each year the SCC go above and beyond to provide great opportunities for staff to celebrate the rich history and culture of Australia's First Nations people:

- NAIDOC week 2020 – *Always Was Always Will Be* – featured Associate Professor Bradley Moggridge as the keynote speaker; a cooking class with celebrity chef, Aunty Dale Chapman; and a presentation on the Gayini Nimmie Caira project by Authority member Rene Woods; films, poetry and art; and a performance by Sharron Mirri Bell.
- National Reconciliation Week 2021 (27 May to 3 June) – *More than a word* – had Dr Virginia Marshall as the keynote speaker; on-Country events led by First Nations people for Adelaide/Murray Bridge and the Canberra offices (the Mildura event was deferred due to COVID); book club, film and bush tucker events.

Staff can also use the Garrandarang Library, which gives MDBA staff and their families access to a range of First Nations books and resources. Broadening knowledge and appreciation of Aboriginal and Torres Strait Islander history and culture supports MDBA staff and families on their own reconciliation journey. In the Wiradjuri language, the word *Garrandarang* means book.

Ethical standards

The MDBA is committed to good and transparent governance. The MDBA's ability to deliver its activities and functions relies on public confidence in the integrity of the agency. The MDBA promotes a single organisational culture built on the CREATE values. As a Commonwealth agency, these values are underpinned by the Australian Public Service (APS) values: committed to service, ethical, respectful, accountable and impartial.

Standards and behaviours are set out in the APS Code of Conduct in section 13 of the *Public Service Act 1999*. The MDBA supplements this with policies that support ethical standards including:

- Procedures for determining APS Code of Conduct breaches
- MDBA Conflict of Interest Policy 2019–2021
- Fraud control policy
- Conflict of interest Policy 2019–2021.

These policies are published on the MDBA's website at: https://www.mdba.gov.au/about-us/accountability-reporting

Work health and safety

Initiatives delivered in 2020–21 included:

- regular workplace inspections and risk assessments monitored by the Health and Safety Committee
- promotion of R U OK? Day
- early intervention services to prevent and mitigate chronic injuries or illnesses developing
- annual flu vaccinations
- workstation assessments (including home-based) by qualified occupational therapists
- rehabilitation support
- confidential support services for employees and eligible family members through the Employee Assistance Program
- an annual health and wellbeing allowance
- activities for the annual health and wellbeing week.

There was one reported incident. No active compensation claims nor new claims were approved (see Table 17).

Table 17: Health and safety statistics over a 7-year period

	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Internal reports on workplace hazards and incidents	44	16	7	23	12	7	1
Lost time caused by incidents and injuries not reported to Comcare (staff days)	4.5	1.5	58	14.5	2.5	0	0
Lost time caused by incidents and injuries reported to Comcare (staff days)	10	0	0	3	0	0	0
Incidents reported to Comcare	1	0	0	1	0	0	0

A comparison of Comcare claims over a 7-year period shows that there have been no new claims for the past 3 years (see Table 18).

Table 18: Comparison of Comcare claims and premiums over a 7-year period

	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Number of new claims	1	0	0	1	0	0	0
Total cost of new claims ($)	11,625	0	0	2,552	0	0	0
Average cost of new claims ($)	11,625	0	0	2,552	0	0	0
Comcare premium ($)	1,080,859	1,062,746	1,040,669	1,026,752	357,142	116,181	87,435

Health and Safety Committee

The MDBA's Health and Safety Committee assists the MDBA's Executive to ensure health and safety for MDBA employees at work. This includes assisting with developing policies and procedures and coordinating activities for special events including the annual health and wellbeing week.

The committee meets 4 times each year. Membership comprises:

- Chair – Senior Director, River Operations and Modernisation
- Deputy Chair – Chief Operating Officer
- Director, People and Culture
- Management representative
- Chief Emergency Warden
- Health and safety representatives – Canberra
- Health and safety representative – regional office.

Employee arrangements

As at 30 June 2021, the MDBA had 300 staff: 266 ongoing and 34 non-ongoing (see Table 19 and Table 20). The MDBA did not have any staff in the Northern Territory, Tasmania, the external territories or overseas.

Staff are employed under the Murray–Darling Authority Enterprise Agreement, which came into effect on 10 July 2017. The terms of this agreement will continue to apply until 10 July 2023 or until replaced by a new enterprise agreement under the provisions of the *Fair Work Act 2009*.

In May 2020 MDBA staff agreed to a Determination under s 24(1) of the Public Service Act to increase salaries and allowances. The Determination allowed for 3 pay rises of 2% in July 2020, July 2021 and July 2022. The first pay rise was on 11 January 2021 following a decision by the Australian Government to defer public service salary increases for 6 months due to COVID-19.

Employee Consultative Committee

The Employee Consultative Committee provides advice to the Chief Executive on matters relating to the enterprise agreement. It also acts as a forum for involving staff in the decision-making process for changes to existing policies, guidelines or procedures, and the development of new ones.

It is established under clause 11 of the Murray–Darling Basin Authority Enterprise Agreement 2017–2020.

Membership comprises:

- Chief Executive (Chair)
- representatives from management
- an elected employee from each portfolio or regional office
- an employee representative from the relevant unions.

Table 19: Ongoing employees current reporting period (as at 30 June 2021)

	Male			Female			Indeterminate			Total
	Full time	Part time	Total Male	Full time	Part time	Total Female	Full time	Part time	Total Indeterminate	
NSW	6	2	8	9	0	9	0	0	0	17
QLD	3	0	3	5	0	5	0	0	0	8
SA	12	0	12	5	2	7	0	0	0	19
VIC	11	0	11	14	1	15	1	0	1	27
WA	0	0	0	0	1	1	0	0	0	1
ACT	93	3	96	78	20	98	0	0	0	194
Total	**125**	**5**	**130**	**111**	**24**	**135**	**1**	**0**	**1**	**266**

Table 20: Non-ongoing employees current reporting period (as at 30 June 2021)

	Male			Female			Indeterminate			Total
	Full time	Part time	Total Male	Full time	Part time	Total Female	Full time	Part time	Total Indeterminate	
NSW	1	0	1	2	0	2	0	0	0	3
QLD	1	0	1	1	0	1	0	0	0	2
SA	4	2	6	4	0	4	0	0	0	10
VIC	2	0	2	3	1	4	0	0	0	6
WA	0	0	0	0	0	0	0	0	0	0
ACT	8	1	9	4	0	4	0	0	0	13
Total	**16**	**3**	**19**	**14**	**1**	**15**	**0**	**0**	**0**	**34**

Tables 21 and 22 show ongoing and non-ongoing employee numbers for the previous reporting period.

Table 21: Ongoing employees previous reporting period (2019–20)

	Full-time male	Part-time male	Total male	Full-time female	Part-time female	Total female	Total
NSW	4	1	5	3	–	3	8
Qld	3	–	3	2	–	2	5
SA	12	–	12	6	–	6	18
Vic	4	–	4	5	1	6	10
WA	--	–	–	–	1	1	1
ACT	94	7	101	94	27	121	222
Total	**117**	**8**	**125**	**110**	**29**	**139**	**264**

Table 22: Non-ongoing employees previous reporting period (2019–20)

	Full-time male	Part-time male	Total male	Full-time female	Part-time female	Total female	Total
NSW	1	–	1	2	–	2	3
Qld	1	–	1	2	–	2	3
SA	2	1	3	2	–	2	5
Vic	1	–	1	2	–	2	3
ACT	7	1	8	2	1	3	11
Total	**12**	**2**	**14**	**10**	**1**	**11**	**25**

Note: In 2019–20 the MDBA did not have any employees who identified as indeterminate.

Executive remuneration

The Remuneration Tribunal is the independent statutory body that determines the remuneration of Commonwealth Office Holders. The MDBA Authority members are Commonwealth Office Holders and are, at 30 June 2021, the Chair, Chief Executive and 3 part-time members. The Authority members' total remuneration is in accordance with the Remuneration Tribunal 2021 Full-time and Part-time Office Holder determinations.

The Chief Executive determines the remuneration for the MDBA's Senior Executive Service (SES) officers under section 24 (1) of the *Public Service Act 1999* (Cth), with regard to the Workplace Bargaining Policy 2018, which came into effect on 6 February 2018. The MDBA's remuneration policy allows variations in remuneration between individual jobs, based on market and work-value considerations. This is vital to the MDBA's ability to compete effectively for the best people in the employment market.

Non-salary benefits provided to SES employees are part of the SES remuneration package which includes conditions such as superannuation and payment for car parking (where applicable).

Table 23: Remuneration for key management personnel

		Short-term benefits			Post-employment benefits	Other long-term benefits	Termination benefits	Total remuneration
Name	Position title	Base salary[1] $	Bonuses $	Other benefits and allowances $	Superannuation contributions $	Long service leave $	$	$
Air Chief Marshal Sir. Angus Houston AK AFC (Ret'd)	Authority Chair	107,476	-	-	10,206	-	-	117,682
Prof. Stuart Bunn	Authority Member (Acting Chair 1/7/2020-6/8/2020)	88,370	-	-	8,395	-	-	96,765
Joanna Hewitt AO	Authority Member	71,556	-	-	6,798	-	-	78,354
Susan Madden	Authority Member	56,477	-	-	5,496	-	-	61,972
Rene Woods	Authority Member	38,382	-	-	3,789	-	-	42,171
Phillip Glyde	Chief Executive	392,833	-	5,049	65,085	-7,215	-	455,752
William Goodes	Executive Director	313,740	-	-	45,141	65,488	-	424,369
Annette Blyton	Executive Director	280,643	-	5,049	49,534	2,646	-	337,871
Andrew Reynolds	Executive Director	285,502	-	5,049	42,168	1,204	-	333,923
Vicki Woodburn	Executive Director	261,981		5,049	49,533	2,366	-	318,929

1 Base salary includes the current reporting period's annual leave accrual and excludes the leave paid in the current reporting period.

Table 24: Remuneration for senior executives

		Short-term benefits		Post-employment benefits	Other long-term benefits	Termination benefits	Total remuneration
Total remuneration bands	Number of senior executive staff	Average base salary[1] $	Average other benefits and allowances $	Average superannuation contributions $	Average long service leave $	Average termination benefits $	Average total remuneration $
$220,000 or less	2	124,954	2,524	27,439	-3,077		151,840
$220,001-$245,000	1	217,862	-	23,636	2,439	-	243,936
$245,001-$270,000	5	217,895	2,306	30,672	5,092	-	255,964
$270,001-$295,000	1	201,614	-	32,162	48,678	-	282,454
$295,001-$320,000	1	246,494	5,325	40,849	10,829	-	303,497
$320,001-$345,000	1	229,517	-	33,428	75,592	-	338,537

Table 25: Remuneration for other highly paid staff

		Short-term benefits		Post-employment benefits	Other long-term benefits	Termination benefits	Total remuneration
Total remuneration bands	Number of other highly paid staff	Average base salary[1] $	Average other benefits and allowances $	Average superannuation contributions $	Average long service leave $	Average termination benefits $	Average total remuneration $
$230,001 - $245,000	2	187,397	7,424	32,993	7,096	-	234,910

1 Base salary includes the current reporting period's annual leave accrual and excludes the leave paid in the current reporting period.

Part 4
CFO report and financial statements

04

Chief Finance Officer's report

Financial performance

For 2020–21 the MDBA reported a total comprehensive income attributable to the Australian Government of $9.2 million (2019–20: $10.3 million). This was a result of:

- Revenue received during the year for new projects, where the funds were not spent in 2020–21. These projects included Hydrometric network and remote sensing (HN&RS); Water and Environmental Research Program (WERP); and Cameras to monitor Barwon–Darling flows received and recognised funding of $57.2 million and spent and recognised expenses of $19.2 million.
- Lower spending than anticipated on the Murray–Darling Basin Agreement functions. A significant portion of this will be carried over into the 2021–22 financial year to complete the projects in progress.
- Expenditure for Murray–Darling Basin Agreement functions were lower than budgeted due to an underspend by the State Construction Authorities (SCA) against budget. Underspends by SCAs are mostly delays in the completion of construction and maintenance projects and will require a carryover of the unspent budget. In addition to this, a number of underspends in the joint programs were due to the COVID-19 related restrictions in place, which again prevented timely procurement of resources or conducting workshops across jurisdictions. This included delays in the receipt of vehicles, plant and equipment from overseas and the flow-on impacts on the activities dependent upon these items.

Revenue

During 2020–21, the MDBA revenue comprised:

- Revenue from the Australian Government totalling $62.0 million (2019–20: $75.2 million). This was lower in 2020–21 primarily due to the reduction in funding received for the South Australian Riverland Floodplains Integrated Infrastructure Program to $11.2 million (2019–20: $25.0 million).
- Contributions from jurisdictions of $83.2 million (2019–20: $86.4 million). This was lower in 2020–21 due to some jurisdictions exercising the offset option available against prior year contribution unspent.
- Other revenue (excluding interest received) of $34.4 million (2019–20: $29.5) primarily comprised of funding for a range of new projects commissioned by the Australian Government and royalty from hydropower generation. Revenue for new projects from the Australian Government relate to Memorandums of Understanding (MOUs) signed with the Department of Agriculture, Water and the Environment (DAWE). This year's other revenue increase is due to receiving the proceeds from the disposal of River Murray Operations (RMO) surplus assets of $5.2 million.

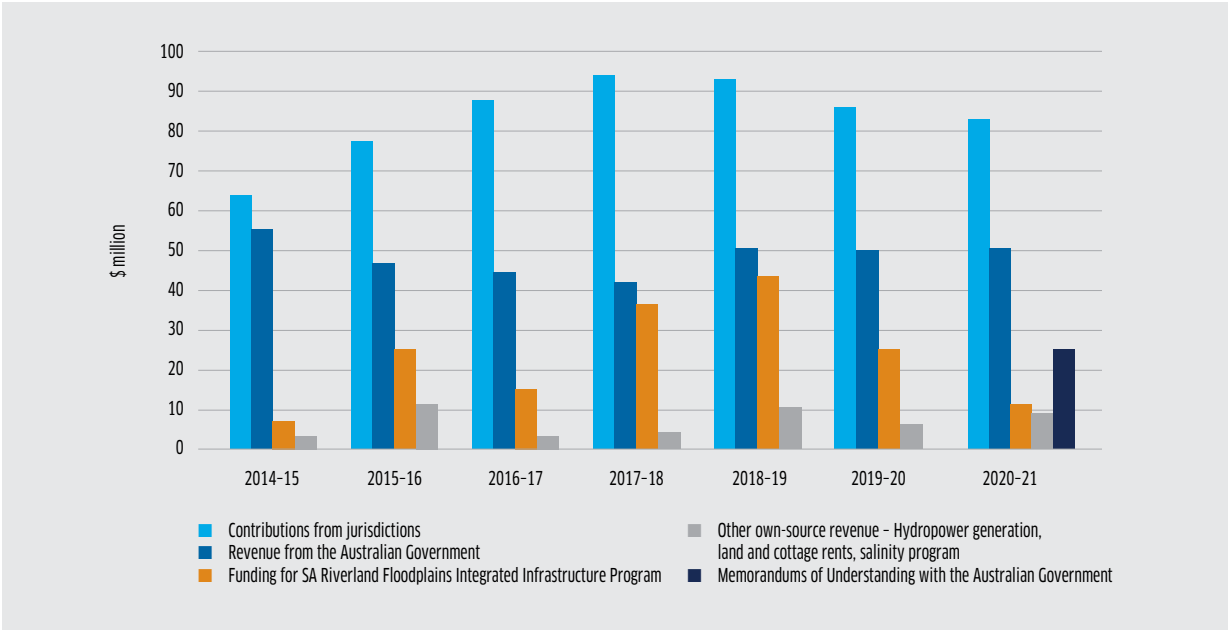


Figure 24: MDBA revenue trends (2014–15 to 2020–21)

Expenditure

The MDBA total expenditure for 2020–21 was $171.1 million (2019-20: $182.3 million). The decrease from the prior year is primarily due to a decrease in expenditure on the South Australian Riverland Floodplains Integrated Infrastructure Program.

Figure 25 shows revenue received, expenditure incurred and the available funds. On transition from the Murray–Darling Basin Commission to the MDBA during 2008, the available funds were $441.5 million. A significant component of these funds have been applied for RMO key construction projects, including the Environmental Works and Measures Program; and the MDBA share in the acquisition of water entitlements for The Living Murray program, which resulted in declining cash reserves. These reserves have now started to increase again due to the recent surpluses in the joint program activities from lower than anticipated expenditure on capital infrastructure projects. The balance held in the special account primarily relates to accumulated underspends of the joint program and payments received from the Department of Agriculture, Water and the Environment (DAWE) for the HN&RS; WERP; and Cameras to monitor Barwon–Darling flows projects (MOUs) with the Australian Government.

The MDBA operating bank account is a special account under section 209 of the *Water Act 2007* (the Water Act). The account is not a Special Account for the purposes of the *Public Governance, Performance and Accountability Act 2013* (the PGPA Act). The Water Act specifies that all amounts received by the MDBA in connection with the performance of its functions under the Water Act must be credited to this special account. The bank account opening balance at 1 July 2020 was $147.0 million. This increased to $154.1 million at the end of the year after receipts of $190.8 million and payments of $183.7 million.

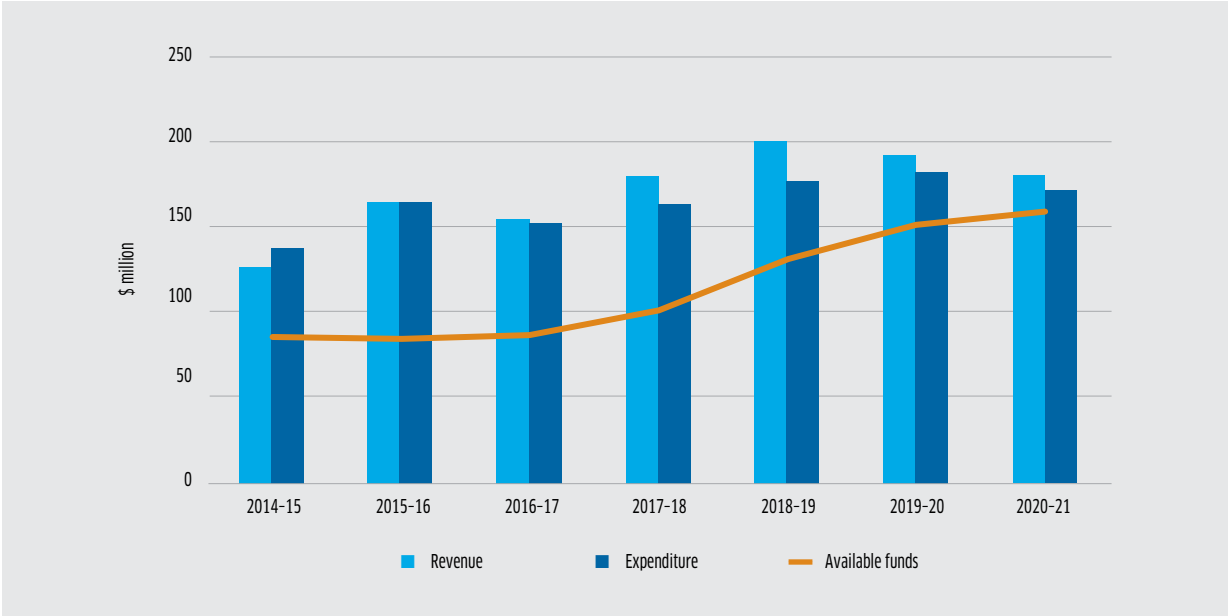


Figure 25: MDBA revenue, expenditure and special account (2014–15 to 2020–21)

Managing our assets

Assets and asset management

The MDBA financial statements include total assets at the end of 2020–21 of $182.4 million (2019–2020: $176.3 million). When the Murray–Darling Basin Commission transitioned to the Murray–Darling Basin Authority in December 2008, a significant amount of the assets were transferred to the River Murray Operations (RMO) and Living Murray Initiative (LMI) joint ventures.

Managed assets: Joint ventures

The two joint ventures were established through separate agreements: Asset Agreement for River Murray Operations Assets (RMO Assets); and Further Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray–Darling Basin-Control and Management of Living Murray Assets (LMI Assets).

Under the agreements the MDBA has responsibility for managing the following classes of assets:

- infrastructure, plant, land, and easements, which are recorded in the RMO joint venture; and
- water entitlements, which are recorded in the LMI joint venture.

At 30 June 2021, the RMO joint venture held net assets of $2.7 billion, including the Hume Dam, the Dartmouth Dam and the locks and weirs on the River Murray. The RMO infrastructure asset base remained relatively constant during 2020–21. As a result of annual movements such as asset additions, depreciation, disposals and revaluations, the total value of assets recorded in the RMO joint venture increased by $10.6 million in 2020–21.

Assets acquired under the asset agreement comprise:

- plant and equipment purchases of $1.6 million
- assets constructed and held in work in progress of $3.8 million.

In 2020–21 MDBA undertook an internal asset valuations process of the RMO assets as independent valuations were unable to occur due to COVID-19 restrictions. Independent valuation advice was sought for the appropriateness of the internal valuation methodology adopted.

The LMI joint venture held net assets of $667.6 million, comprising gross investment in water recovery measures of $695.9 million and accumulated impairment losses of $28.3 million. The change in the LMI asset values during 2020–21 was the impairment on water entitlements of $5.3 million.

Consistent with the prior year, a whole-of-government approach was adopted when undertaking the active market assessment and valuation of water entitlements. This ensured that the valuation methodology and processes were consistent for the entitlements held within the LMI portfolio and the Department of Agriculture, Water and the Environment.

Financial management

Special purpose reporting

One of the key functions of the MDBA is to act as an asset manager (on behalf of the assets controlling governments) for key infrastructure assets throughout the Basin. Infrastructure assets primarily comprise RMO assets, such as the Hume Dam, Dartmouth Dam and the locks and weirs on the River Murray, and water entitlements as part of the LMI joint venture. These water entitlement assets were either purchased from willing sellers or acquired as a result of infrastructure improvement-based savings projects to achieve the objectives of The Living Murray Initiatives. RMO and LMI assets do not form part of the MDBA general purpose financial statements. They are reported separately in the RMO joint venture and LMI joint venture special purpose financial statements. These special purpose financial statements do not form part of this annual report but are independently audited on an annual basis. As part of the preparation of RMO financial statements, the infrastructure assets are revalued by an independent external valuer on a 3-year cycle. An independent external valuation was undertaken on 30 June 2018. In the intervening financial years, including 2020–21, the MDBA conducts an internal revaluation by adjusting the value of its infrastructure assets using the Building Price Index and using a calibration factor of 74% to reflect the appropriate valuation for the unique nature of the RMO asset base.

As part of the preparation of the LMI financial statements, an impairment assessment is undertaken based on an independent valuation report. Water entitlements trading prices are recorded in the state registers. The state registries' water trading data is refined to reliably undertake an impairment assessment that is recorded in the LMI joint venture special purpose financial statements in accordance with Australian Accounting Standards.

Both the RMO and LMI special purpose financial statements are subject to an independent audit each year. The audit for the 2020–21 financial year was completed and the financial statements distributed to all stakeholders in accordance with the requirements of the relevant asset agreements. The audits resulted in unmodified audit reports.

Internal controls

The MDBA has appropriate financial controls in place and these operated effectively and reliably during the year. Similarly, no major issues have been identified by the MDBA internal audit process. There is a sound internal control framework in place, including effective identification and management of business risks, and a reliable financial management reporting system. As part of the MDBA's corporate accountability and compliance, MDBA APS staff members are required to complete a financial management compliance survey which assists in identifying if any staff have reported non-compliance with the finance law.

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Resources and Water

Opinion

In my opinion, the financial statements of the Murray-Darling Basin Authority (the Entity) for the year ended 30 June 2021:

(a) comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015*; and

(b) present fairly the financial position of the Entity as at 30 June 2021 and its financial performance and cash flows for the year then ended.

The financial statements of the Entity, which I have audited, comprise the following as at 30 June 2021 and for the year then ended:

- Statement by the Accountable Authority and Chief Finance Officer;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Cash Flow Statement; and
- Notes to the financial statements, comprising a summary of significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Entity in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Accountable Authority's responsibility for the financial statements

As the Accountable Authority of the Entity, the Chief Executive is responsible under the *Public Governance, Performance and Accountability Act 2013* (the Act) for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Reduced Disclosure Requirements and the rules made under the Act. The Chief Executive is also responsible for such internal control as the Chief Executive determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Chief Executive is responsible for assessing the ability of the Entity to continue as a going concern, taking into account whether the Entity's operations will cease as a result of an administrative restructure or for any other reason. The Chief Executive is also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

GPO Box 707, Canberra ACT 2601
38 Sydney Avenue, Forrest ACT 2603
Phone (02) 6203 7300

Auditor's responsibilities for the audit of the financial statements

My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Accountable Authority;
- conclude on the appropriateness of the Accountable Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Entity to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with the Accountable Authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office

Bola Oyetunji

Group Executive Director

Delegate of the Auditor-General

Canberra

24 September 2021

Murray-Darling Basin Authority

Statement by the Accountable Authority and Chief Finance Officer

In our opinion, the attached financial statements for the year ended 30 June 2021 comply with subsection 42(2) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), and are based on properly maintained financial records as per subsection 41(2) of the PGPA Act.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Murray-Darling Basin Authority will be able to pay its debts as and when they fall due.

Signed

Andrew Reynolds
Acting Chief Executive
24 September 2021

Signed

Harish Madan
Chief Finance Officer
24 September 2021

Statement of Comprehensive Income
for the year ended 30 June 2021

	Notes	2021 $'000	2020 $'000	Original Budget $'000
NET COST OF SERVICES				
Expenses				
Employee benefits	1.1A	**38,895**	38,420	40,533
Suppliers	1.1B	**101,778**	102,902	130,823
Grants	1.1C	**25,184**	36,536	16,578
Depreciation and amortisation	2.2	**4,765**	4,117	4,353
Write-down and impairment of assets	1.1D	**167**	-	-
Finance costs	1.1E	**300**	344	316
Total expenses		**171,089**	182,319	192,603
Own-source revenue				
Contributions from jurisdictions	1.2A	**83,152**	86,380	92,001
Interest		**162**	1,502	1,502
Other revenue	1.2B	**34,435**	29,466	29,015
Total own-source revenue		**117,749**	117,348	122,518
Gains/(Losses)				
Other (Losses)/Gains	1.2C	**(14)**	61	78
Reversal of write-downs and impairment	1.2D	**185**	-	-
Total Gains		**171**	61	78
Total own-source income		**117,920**	117,409	122,596
Net cost of services		**(53,169)**	(64,910)	(70,007)
Revenue from Government	1.2E	**62,007**	75,244	62,007
Surplus/(Deficit) attributable to the Australian Government		**8,838**	10,334	(8,000)
OTHER COMPREHENSIVE INCOME				
Changes in asset revaluation reserve		**409**	-	-
Total comprehensive income		**9,247**	10,334	(8,000)
Total comprehensive income attributable to the Australian Government		**9,247**	10,334	(8,000)

The original budget comprises the Departmental budget as disclosed in the Portfolio Budget Statements (PBS) 2020-21.

The above statement should be read in conjunction with the accompanying notes.

Budget Variances Commentary

Budget variance explanations are outlined in Note 5. The Original Budget amounts have been adjusted so as to be consistent with the financial statements classification.

Statement of Financial Position
as at 30 June 2021

	Notes	2021 $'000	2020 $'000	Original Budget $'000
ASSETS				
Financial assets				
Cash and cash equivalents	2.1A	**154,063**	147,005	136,651
Trade and other receivables	2.1B	**4,833**	3,637	3,652
Total financial assets		**158,896**	150,642	140,303
Non-financial assets[1]				
Buildings	2.2	**18,214**	21,745	19,116
Property, plant and equipment	2.2	**2,477**	1,727	1,671
Intangibles	2.2	**2,308**	1,380	5,852
Prepayments		**468**	842	842
Total non-financial assets		**23,467**	25,694	27,481
Total assets		**182,363**	176,336	167,784
LIABILITIES				
Payables				
Suppliers	2.3A	**17,844**	21,176	21,557
Other payables	2.3B	**1,507**	1,909	1,513
Total payables		**19,351**	23,085	23,070
Interest bearing liabilities				
Lease liabilities	2.4	**14,228**	16,693	13,786
Total interest bearing liabilities		**14,228**	16,693	13,786
Provisions				
Employee provisions	3.1	**12,120**	10,921	11,332
Other provisions	2.5	**1,063**	1,205	1,237
Total provisions		**13,183**	12,126	12,569
Total liabilities		**46,762**	51,904	49,425
Net assets		**135,601**	124,432	118,359
EQUITY				
Contributed equity		**(1,852)**	(3,774)	(1,852)
Reserves		**411**	2	2
Retained surplus		**137,042**	128,204	120,209
Total equity		**135,601**	124,432	118,359

The above statement should be read in conjunction with the accompanying notes.

[1] Right-of-use assets are included in the line items: Buildings and Property, plant and equipment.

Budget Variances Commentary

Budget variance explanations are outlined in Note 5. The Original Budget amounts have been adjusted so as to be consistent with the financial statements classification.

Statement of Changes in Equity
for the year ended 30 June 2021

	2021 $'000	2020 $'000	Original Budget $'000
CONTRIBUTED EQUITY/CAPITAL			
Opening balance			
Balance carried forward from previous year[1]	**(3,774)**	(11,199)	(3,774)
Equity injection[2]	**1,922**	7,425	1,922
Closing balance	**(1,852)**	(3,774)	(1,852)
RETAINED EARNINGS[3]			
Opening balance			
Balance carried forward from previous year	**128,204**	113,934	128,209
Adjustment for changes in accounting policies	-	3,936	-
Adjusted opening balance	**128,204**	117,870	128,209
Comprehensive income			
Surplus/(Deficit) for the year	**8,838**	10,334	(8,000)
Other comprehensive income	-	-	-
Total comprehensive income	**8,838**	10,334	(8,000)
Closing balance	**137,042**	128,204	120,209
ASSET REVALUATION RESERVE			
Balance carried forward from previous year	**2**	2	2
Comprehensive income			
Other comprehensive income	**409**	-	-
Total comprehensive income	**409**	-	-
Closing balance	**411**	2	2
TOTAL EQUITY			
Opening balance			
Balance carried forward from previous year	**124,432**	102,737	124,437
Adjustment for changes in accounting policies	-	3,936	-
Adjusted opening balance	**124,432**	106,673	124,437
Comprehensive income			
Surplus/(Deficit) for the year	**8,838**	10,334	(8,000)
Other comprehensive income	**409**	-	-
Total comprehensive income	**9,247**	10,334	(8,000)
Contributions by owners			
Equity injection	**1,922**	7,425	1,922
Total transactions with owners	**1,922**	7,425	1,922
Closing balance	**135,601**	**124,432**	118,359

The above statement should be read in conjunction with the accompanying notes.

[1] The negative contributed equity is a historical legacy relating to the transition of the Murray-Darling Basin Commission (MDBC) to the Murray-Darling Basin Authority (Authority) on 15 December 2008. As part of the transition arrangement, all cash held by the MDBC totalling $441.488 million was paid to the Official Public Account (OPA) before being appropriated to the Authority. Once appropriated to the Authority these funds were recorded as revenue in the financial statements of the Authority.

Liabilities of $19.180 million and assets of $7.981 million were transferred to the Authority during the 2008-09 financial year. The excess of liabilities over assets of $11.199 million has subsequently been reduced by equity injections in 2019-20 and 2020-21 and the remaining amount of $1.852 million continues to be reported in the Financial Statements of the Authority as negative contributed equity.

[2] Equity injection received to fund capital purchases required to support the relocation of resources to regional areas as part of the regionalisation initiative.

[3] The retained earnings is inclusive of unspent funds the Authority has received in relation to the joint program. The Ministerial Council approves the use of these funds as part of the joint program work plan approval process.

Accounting Policy

Equity Injections

Amounts appropriated which are designated as 'equity injections' for a year (less any formal reductions) and Departmental Capital Budgets (DCBs) are recognised directly in contributed equity in that year.

Budget Variances Commentary

Budget variance explanations are outlined in Note 5. The Original Budget amounts have been adjusted so as to be consistent with the financial statements classification.

Cash Flow Statement
for the year ended 30 June 2021

	Notes	2021 $'000	2020 $'000	Original Budget $'000
OPERATING ACTIVITIES				
Cash received				
Receipts from Government		**62,007**	75,244	62,007
Contributions from jurisdictions		**83,095**	86,412	92,001
Interest		**380**	1,953	1,502
Net GST received		**9,959**	11,415	14,734
Other		**33,403**	30,235	29,015
Total cash received		**188,844**	205,259	199,259
Cash used				
Employees		**38,007**	37,762	40,533
Suppliers		**113,939**	110,425	143,858
Grants		**26,356**	37,596	18,235
Interest payments on lease liabilities		**289**	332	284
Other		**-**	150	**-**
Total cash used		**178,591**	186,265	202,910
Net cash from/(used by) operating activities		**10,253**	18,994	(3,651)
INVESTING ACTIVITIES				
Cash received				
Proceeds from sales		**-**	**-**	**-**
Total cash received		**-**	**-**	**-**
Cash used				
Purchase of property, plant and equipment		**1,314**	2,519	1,656
Purchase of intangible assets		**1,307**	1,060	4,482
Total cash used		**2,621**	3,579	6,138
Net cash (used by) investing activities		**(2,621)**	(3,579)	(6,138)
FINANCING ACTIVITIES				
Cash received				
Contributed equity		**1,922**	7,425	1,922
Total cash received		**1,922**	7,425	1,922
Cash used				
Principal payments of lease liabilities		**2,496**	2,076	2,487
Total cash used		**2,496**	2,076	2,487
Net cash (used by)/from financing activities		**(574)**	5,349	(565)
Net Increase/(decrease) in cash held		**7,058**	20,764	(10,354)
Cash and cash equivalents at the beginning of the reporting period		**147,005**	126,241	147,005
Cash and cash equivalents at the end of the reporting period	2.1A	**154,063**	147,005	136,651

The above statement should be read in conjunction with the accompanying notes.

Budget Variances Commentary

Budget variance explanations are outlined in Note 5. The Original Budget amounts have been adjusted so as to be consistent with the financial statements classification.

Overview

Objectives of the Murray-Darling Basin Authority

The Murray-Darling Basin Authority (the Authority) is an Australian Government controlled corporate Commonwealth entity established by the *Water Act 2007*. It is a not-for-profit entity. The principal objective of the Authority is to manage the Murray-Darling Basin's water resources in the national interest so that there may be an equitable and sustainable use of the Basin's resources.

The continued existence of the Authority in its present form and with its present programs is dependent on:
• Funding from Basin jurisdictions towards meeting the cost of Murray-Darling Basin Agreement functions; and
• Government policy and on continuing funding by Commonwealth Government for the Authority's administration and programs relating to the Basin Plan and Murray-Darling Basin Agreement functions.

The Authority's activities are classified as departmental. Departmental activities involve the use of assets, liabilities, income and expenses controlled or incurred by the Authority in its own right.

From 1 July 2013, the Authority became responsible for the South Australian Riverland Floodplains Integrated Infrastructure Program (SARFIIP). SARFIIP aims to enhance the effectiveness of improved environmental flows to South Australia, in particular at the Pike and Katarapko - Eckert's Creek (Katfish Reach) Floodplains and was initially expected to extend over 7 years, with an estimated cost of $155 million. While these activities are not controlled by the Authority it exercises effective project oversight and funding on behalf of the Commonwealth. SARFIIP funding is recorded as revenue from government and expenses are recorded as a grant expense in the Authority's Statement of Comprehensive Income. Prior to 2014-15, the project was reported as an Administered item.

In the 2020-21 Budget, additional funding of $37.6 million over 2 years was approved, bringing the Government's total funding in the program to $192.6 million. New projects have been included in the existing SARFIIP program as a result of the additional funding.

Basis of Preparation of the Financial Statements

The financial statements are general-purpose financial statements and are required by section 42 of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act).

The financial statements have been prepared in accordance with:

a) *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015* (FRR); and
b) Australian Accounting Standards and Interpretations – Reduced Disclosure Requirements issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and in accordance with the historical cost convention except for certain assets and liabilities reported at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position.

The financial statements are presented in Australian dollars and values are rounded to the nearest thousand dollars unless otherwise specified.

Unless alternative treatment is specifically required by an accounting standard, income and expenses are recognised in the Statement of Comprehensive Income, when and only when the flow, consumption or loss of economic benefits has occurred and can be reliably measured.

New Accounting Standards
All new, revised or amended standards and interpretations that were issued prior to the sign-off date and are applicable to the current reporting date did not have a material effect on the Authority's financial statements.

Taxation
The Authority is exempt from all forms of taxation except for Fringe Benefits Tax (FBT) and the Goods and Services Tax (GST).

Revenues, expenses and assets are recognised net of GST except:
• where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
• for receivables and payables which are recognised inclusive of GST.

Comparative Figures
Comparative figures are adjusted so that those amounts conform with changes in the presentation of the financial statements where required.

Events After the Reporting Period
On 24 June 2021, the *Water Legislation Amendment (Inspector-General of Water Compliance and Other Measures)* Bill 2021 was passed by the Commonwealth Parliament. This Bill amends the Water Act 2007 to establish the role of an independent Inspector-General of Water Compliance to monitor, and provide independent oversight of, water compliance. The Office of the Inspector-General of Water compliance assumes the water compliance function from the Murray-Darling Basin Authority effective 5 August 2021. This requires a transfer of the water compliance function from the Authority to the Office of the Inspector-General of Water compliance, which includes budgeted appropriations and full-time equivalent staff. We estimate the impact of this transfer to be $5.5 million of budgeted appropriation and 18 full-time equivalent staff.

No other matters or circumstances have arisen since the end of the financial year which significantly affected or may affect the operations of the Authority, the results of these operations or state of affairs of the Authority in subsequent years.

Financial Performance

This section analyses the financial performance of the Authority for the year ended 30 June 2021.

Note 1.1: Expenses

	2021 $'000	2020 $'000
Note 1.1A: Employee Benefits		
Wages and salaries	**28,512**	27,459
Superannuation:		
Defined contribution plans	**3,627**	3,300
Defined benefit plans	**1,680**	1,873
Leave and other entitlements	**4,773**	5,232
Separation and redundancies	**303**	556
Total employee benefits	**38,895**	38,420

Accounting policy

Accounting policies for employee related expenses are outlined in Note 3.1.

Note 1.1B: Suppliers		
Goods and services supplied or rendered		
Expenditure by State Constructing Authorities	**57,906**	67,754
Water licence fee	**4,260**	3,562
Consultants and contractors	**32,852**	23,477
Communication & IT services	**3,218**	2,703
Other employment related expenses	**1,206**	1,076
Committee expenses	**293**	536
Travel	**603**	1,312
Other	**1,216**	1,698
Goods and services supplied or rendered	**101,554**	102,118
Goods and services are made up of:		
Provision of goods	**434**	483
Rendering of services	**101,120**	101,635
Total goods and services supplied or rendered	**101,554**	102,118
Other suppliers		
Short-term leases	**116**	644
Workers compensation expenses - Commonwealth government entity	**108**	140
Total other suppliers	**224**	784
Total suppliers	**101,778**	102,902

The Authority has no short-term lease commitments as at 30 June 2021.

The above lease disclosures should be read in conjunction with the accompanying notes 1.1E, 2.2 and 2.4.

Note 1.1: Expenses - continued

Accounting policy

Short-term leases and leases of low-value assets

The Authority has elected not to recognise right-of-use assets and lease liabilities for short-term leases of assets that have a lease term of 12 months or less and leases of low-value assets (less than $10,000). The entity recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

	2021	2020
	$'000	$'000
Note 1.1C: Grants		
State and Territory Governments	**11,576**	9,890
South Australian Riverland Floodplains Integrated Infrastructure Program	**11,223**	24,500
Private sector:		
Commercial entities	**100**	20
Non-profit institutions	**1,853**	1,679
Other	**432**	447
Total grants	**25,184**	36,536
Note 1.1D: Write-Down and Impairment of Assets		
Impairment on intangible assets	**167**	-
Total write-down and impairment of assets	**167**	-
Note 1.1E: Finance Costs		
Unwinding of discount on make good provision	**20**	12
Interest on lease liabilities	**280**	332
Total finance costs	**300**	344

The above lease disclosures should be read in conjunction with the accompanying notes 1.1B, 2.2 and 2.4.

Note 1.2: Own-Source Income

Own-Source Revenue	2021 $'000	2020 $'000
Note 1.2A: Contributions from Jurisdictions		
Australian Government	**12,560**	12,165
New South Wales	**28,639**	29,660
Victoria	**21,800**	21,800
South Australia	**19,715**	22,325
Queensland	**110**	108
Australian Capital Territory	**328**	322
Total contributions from jurisdictions	**83,152**	86,380

Accounting policy

The Authority receives contributions from jurisdictions based on an agreed contributions model (the model). The model is based on a number of different requirements including specific provisions under the Murray-Darling Basin Agreement. These contributions are recognised as revenue when received or when the Authority has control over the underlying assets.

Note 1.2B: Other Revenue		
Hydropower generation	**722**	3,517
Funding from other MOUs[1]	**25,298**	23,425
Contributions by States - Salinity program	**1,198**	1,055
Revenue from use of Land and Cottage	**331**	325
Proceeds from disposal of RMO assets [2]	**5,172**	-
Other [3]	**1,714**	1,144
Total other revenue	**34,435**	29,466

[1] Amounts relate to revenue received in relation to Memorandums of Understanding (MOUs) signed with the Department of Agriculture, Water and the Environment (DAWE) for the Murray-Darling Basin Water and Environment Research Program, Independent Assessment of Social and Economic Conditions, Ecosystem Functions Research Program, Hydrometric Network and Remote Sensing Funding Program, Northern Basin Cameras Project, Office of Compliance Machinery of Government Transfer, and Enhanced Environmental Water Delivery project.

[2] Proceeds received from disposal of River Murray Operations (RMO) surplus assets. The Authority is responsible for managing the RMO assets on behalf of the asset controlling governments. The proceeds were paid to the Authority to offset future contributions from jurisdictions under section 82 (2) of the Water Act 2007 (Cth).

[3] Other revenue includes an amount of $85,000 (2020: $78,000) for audit services provided free of charge by the Australian National Audit Office.

Accounting policy

Hydropower generation

Hydroelectricity revenue is generated when the release of water from Hume and Dartmouth Dams is routed through electricity generating plants. Revenue is recognised over time based on recovery of a set percentage of the hydroelectricity revenue earned during the period.

Funding from other MOUs

Revenue is recognised over time based on milestones achieved.

Contributions by States - Salinity program

Revenue is recognised over time on a cost recovery basis.

Revenue from use of Land and cottage

Revenue is recognised at a point in time as it is earned.

Other revenue

Other revenue comprises of miscellaneous revenue that is recognised both at a point in time and over time depending on the nature of the transaction.

Note 1.2: Own-Source Income - continued

	2021	2020
	$'000	$'000
Gains/(Losses)		
Note 1.2C: Other (Losses)/Gains		
Gain/(loss) on movement in provisions	-	61
(Loss) on disposal/write-off of assets	(14)	-
Total other (losses)/gains	(14)	61
Note 1.2D: Reversal of write-downs and impairment		
Reversal of impairment losses	185	-
Total reversals of previous asset write-downs and impairments	185	-
Revenue from Government		
Note 1.2E: Revenue from Government		
Corporate Commonwealth entity payment item:		
Department of Agriculture	-	44,615
Department of Agriculture, Water and the Environment	62,007	30,629
Total revenue from Government	62,007	75,244

Accounting Policy
Funding received or receivable from non-corporate Commonwealth entities (appropriated to the Department of Agriculture, Water and the Environment as a corporate Commonwealth entity payment item for payment to the Authority) is recognised as Revenue from Government by the Authority unless the funding is in the nature of an equity injection or a loan.

Financial Position

This section analyses the Authority's assets used to conduct its operations and the operating liabilities incurred as a result. Employee related information is disclosed in the People and Relationships section.

Note 2.1: Financial Assets

	2021 $'000	2020 $'000
Note 2.1A: Cash and Cash Equivalents		
Cash on hand	**154,063**	147,005
Total cash and cash equivalents	**154,063**	147,005

Accounting policy

Cash is recognised at its nominal amount. Cash and cash equivalents include cash on hand and any deposits in bank accounts with an original maturity of 3 months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

Note 2.1B: Trade and Other Receivables		
Goods and services receivables		
Trade Receivables	**1,292**	57
Net GST receivable from the Australian Taxation Office	**2,915**	2,768
Other Receivables	**626**	812
Total goods and services receivable (gross)	**4,833**	3,637
Total trade and other receivables (net)	**4,833**	3,637

Credit terms for goods and services were within 30 days (2020: 30 days).

Accounting policy

Trade receivables and other receivables that are held for the purpose of collecting the contractual cash flows where the cash flows are solely payments of principal and interest, that are not provided at below-market interest rates, are subsequently measured at amortised cost using the effective interest method adjusted for any loss allowance.

Note 2.2: Non-Financial Assets

Note 2.2: Reconciliation of the Opening and Closing Balances of Property, Plant and Equipment and Intangibles

Reconciliation of the opening and closing balances for 2021

			Intangible assets		
	Buildings $'000	Property, plant & equipment $'000	Computer software[1] $'000	Data sets $'000	Total $'000
As at 1 July 2020					
Gross book value	**25,601**	**3,115**	**6,982**	**1,908**	**37,606**
Accumulated depreciation, amortisation and impairment	**(3,856)**	**(1,388)**	**(6,601)**	**(909)**	**(12,754)**
Total as at 1 July 2020	**21,745**	**1,727**	**381**	**999**	**24,852**
Additions					
Purchased	**-**	**1,314**	**587**	**720**	**2,621**
Revaluation increment recognised in other comprehensive income	**202**	**54**	**-**	**-**	**256**
Impairment recognised in net cost of services	**-**	**-**	**-**	**(167)**	**(167)**
Reversal of impairments recognised in net cost of services	**-**	**185**	**-**	**-**	**185**
Depreciation and amortisation	**(993)**	**(648)**	**(144)**	**(68)**	**(1,853)**
Depreciation on right-of-use assets	**(2,769)**	**(143)**	**-**	**-**	**(2,912)**
Other movements					
Intangible assets	**-**	**-**	**250**	**(250)**	**-**
Other movements of right-of-use assets	**29**	**2**	**-**	**-**	**31**
Disposals (Net Book Value)	**-**	**(14)**	**-**	**-**	**(14)**
Total as at 30 June 2021	**18,214**	**2,477**	**1,074**	**1,234**	**22,999**
Total as at 30 June 2021 represented by					
Gross book value	**23,692**	**2,900**	**7,819**	**1,847**	**36,258**
Accumulated depreciation, amortisation and impairment	**(5,478)**	**(423)**	**(6,745)**	**(613)**	**(13,259)**
Total as at 30 June 2021	**18,214**	**2,477**	**1,074**	**1,234**	**22,999**
Total intangible assets			**2,308**		

Carrying amount of right-of-use assets included in the above total	**13,344**	**106**	**-**	**-**	**13,450**

[1] The carrying amount of computer software in-use includes purchased and internally developed software.

Revaluation of non-financial assets

All revaluations were conducted in accordance with the revaluation policy stated at Note 2.2. On 31 March 2021, an independent valuer, Deloitte Touche and Tohmatsu, conducted the fair value assessment of the carrying values of all leasehold improvements and property, plant and equipment assets, excluding right of use assets.

There is no commitment or expectation to dispose or sell any leasehold improvement, property, plant and equipment or intangible assets within the next 12 months.

There is a capital commitment value of $35,000 expected within the next 12 months (2020: $226,000).

Accounting policy

Acquisition of Assets

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken. Financial assets are initially measured at their fair value plus transaction costs where appropriate.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and income at their fair value at the date of acquisition, unless acquired as a consequence of restructuring of administrative arrangements. In the latter case, assets are initially recognised as contributions by owners at the amounts at which they were recognised in the transferor's accounts immediately prior to the restructuring.

Asset Recognition Threshold

Purchases of property, plant and equipment are recognised initially at cost in the statement of financial position, except for purchases costing less than $2,000, which are expensed in the year of acquisition (other than where these items form part of a group of similar items which are significant in total).

Lease Right-of-use (ROU) Assets

Leased ROU assets are capitalised at the commencement date of the lease and comprise of the initial lease liability amount, initial direct costs incurred when entering into the lease less any lease incentives received. These assets are accounted for as separate asset classes to corresponding assets owned outright, but included in the same column as where the corresponding underlying assets would be presented if they were owned.

The initial cost of an ROU asset also includes an estimate of the cost of dismantling and removing the item and restoring the site on which it is located. This is particularly relevant to 'make good' provisions in property leases taken up by the Authority where there exists an obligation to restore the property to its original condition. These costs are included in the value of the Authority's ROU assets and leasehold improvements (recognised prior to the adoption of AASB 16) with a corresponding provision for the 'make good' recognised.

Accounting policy (continued)

Revaluation

Following initial recognition at cost, property, plant and equipment (excluding ROU assets) is carried at fair value less subsequent accumulated depreciation and accumulated impairment losses. Valuations are conducted with sufficient frequency to ensure the carrying amounts of assets do not differ materially from the assets' fair values as at the reporting date. The regularity of independent valuations depends upon the volatility of movements in market values for the relevant assets.

All leasehold improvements and property, plant and equipment assets were reviewed and assessed for fair value in March 2021 by an independent valuer, Deloitte Touche and Tohmatsu.

Revaluation adjustments are made on a class basis. Any revaluation increment is credited to equity under the heading of asset revaluation reserve except to the extent that it reverses a previous revaluation decrement of the same asset class that was previously recognised in the surplus/deficit. Revaluation decrements for a class of assets are recognised directly in the surplus/deficit except to the extent that these amounts reverse a previous revaluation increment for that class.

Any accumulated depreciation as at the revaluation date is eliminated against the gross carrying amount of the asset and the asset restated to the revalued amount.

Depreciation

Depreciable property, plant and equipment assets are written-off to their estimated residual values over their estimated useful lives using the straight-line method of depreciation.

Depreciation rates (useful lives), residual values and methods are reviewed at each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate.

Depreciation and/or amortisation rates applying to each class of asset are based on the following useful lives:

Asset Class	2021	2020
Computers and IT equipment	3-7 years	3-7 years
Office equipment	6-9 years	6-9 years
Leasehold improvements	Lease term	Lease term
Data sets	3-20 years	3-20 years
Software applications	2-4 years	2-4 years
Software licences	Length of licence	Length of licence

The depreciation rates for ROU assets are based on the commencement date to the earlier of the end of the useful life of the ROU asset or the end of the lease term.

Impairment

All assets were assessed for indications of impairment at 30 June 2021. Where indications of impairment exist, each asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount. The recoverable amount of an asset is the higher of its fair value less costs of disposal and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if the Authority were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Derecognition

An item of property, plant and equipment is derecognised upon disposal or when no further future economic benefits are expected from its use or disposal.

Intangibles

The Authority's intangibles comprise internally developed software, acquired data-sets for internal use and software licences. These assets are carried at cost less accumulated amortisation and accumulated impairment losses.

All intangible assets in use are amortised on a straight-line basis over its anticipated useful life. All intangible assets were assessed by the Authority for indications of impairment as at 30 June 2021.

Note 2.3: Payables

	2021 $'000	2020 $'000
Note 2.3A: Suppliers		
Trade creditors and accruals	**17,844**	21,176
Total suppliers	**17,844**	21,176
Note 2.3B: Other Payables		
Wages and salaries	**856**	1,193
Superannuation	**103**	77
Prepayments received/unearned income	**548**	639
Total other payables	**1,507**	1,909

Accounting policy

The Authority's financial liabilities consist of trade creditors and expense accruals. These liabilities are recognised at their nominal amounts, being the amounts at which the Authority expects the liabilities will be settled. Liabilities are recognised to the extent the goods or services have been received (and irrespective of having been invoiced).

Unearned income represents assets received from another party in advance of the Authority fulfilling its contracted obligations. The Authority releases unearned income to revenue when the services required to be performed have been performed.

Note 2.4: Leases

	2021 $'000	2020 $'000
Note 2.4: Leases		
Lease liabilities	**14,228**	16,693
Total leases	**14,228**	16,693

Total cash outflow for leases for the year ended 30 June 2021 was $2,784,538 (2020: $2,407,776).

Maturity analysis - contractual undiscounted cash flows		
Within 1 year	**2,754**	2,785
Between 1 to 5 years	**10,339**	10,613
More than 5 years	**1,912**	4,393
Total leases	**15,005**	17,790

The Authority in its capacity as lessee has leases for office accommodation in Griffith, Mildura, Murray Bridge, and at 33 Allara Street in Canberra. The leases at 33 Allara Street Canberra include office accommodation and carparking.

Lease payments are subject to annual increases of 3% in the Griffith, Mildura and Murray Bridge Offices, and a fixed annual rate increase of 3.75% in the Canberra premises located at 33 Allara Street. These lease agreements are non-cancellable in the normal course of business.

The above lease disclosures should be read in conjunction with the accompanying notes 1.1B, 1.1E and 2.2.

Accounting Policy

For all new contracts entered into, the Authority considers whether the contract is, or contains a lease. A lease is defined as 'a contract, or part of a contract, that conveys the right to use an asset (the underlying asset) for a period of time in exchange for consideration'.

Once it has been determined that a contract is, or contains a lease, the lease liability is initially measured at the present value of the lease payments unpaid at the commencement date, discounted using the interest rate implicit in the lease, if that rate is readily determinable, or the Authority's incremental borrowing rate.

Subsequent to initial measurement, the liability will be reduced for payments made and increased for interest unwound. It is remeasured to reflect any reassessment or modification to the lease. When the lease liability is remeasured, the corresponding adjustment is reflected in the right-of-use asset or profit and loss depending on the nature of the reassessment or modification.

Note 2.5: Other Provisions

	2021	2020
	$'000	$'000
Note 2.5: Other Provisions		
Provision for make good	**1,063**	1,205
Total other provisions	**1,063**	1,205

	Provision for make good	Total
	$'000	**$'000**
Carrying amount 1 July 2020	**1,205**	**1,205**
Unwinding of discount or change in discount rate	**20**	**20**
Changes in provision	**(162)**	**(162)**
Closing balance 30 June 2021	**1,063**	**1,063**

The Authority currently has 2 (2020: 2) agreements for the leasing of premises which have provisions requiring the Authority to make good the premises at the conclusion of the lease. The Authority has made a provision to reflect the present value of these obligations.

People and Relationships

This section describes a range of employment and post employment benefits provided to our people and our relationships with other key people.

Note 3.1: Employee Provisions

	2021 $'000	2020 $'000
Note 3.1: Employee Provisions		
Leave and other entitlements	**12,120**	10,921
Total employee provisions	**12,120**	10,921

Accounting policy

Liabilities for 'short-term employee benefits' (as defined in AASB 119 *Employee Benefits*) and termination benefits due within twelve months of the end of reporting period are measured at their nominal amounts.

The nominal amount is calculated with regard to the rates expected to be paid on settlement of the liability.

Other long-term employee benefits are measured at the present value of the defined benefit obligation at the end of the reporting period.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by employees of the Authority is estimated to be less than the annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will be applied at the time the leave is taken, including the Authority's employer superannuation contribution rates to the extent the leave is likely to be taken during service rather than paid out on termination.

The liability for long service leave has been determined using the Shorthand Method as per the *Public Governance, Performance and Accountability (Financial Reporting) Rule* (FRR) and Commonwealth Entity Financial Statements Guide. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Superannuation

The Authority's staff are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), the PSS accumulation plan (PSSap) or other employee nominated superannuation funds.

The CSS and PSS are defined benefit schemes for the Australian Government. The remaining funds are defined contribution schemes.

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported in the Department of Finance's administered schedules and notes.

The Authority makes employer contributions to the employees' superannuation schemes at rates determined by an actuary to be sufficient to meet the current cost to the Government. The Authority accounts for the contributions as if they were contributions to defined contribution plans.

The Authority also contributes to a number of complying funds to discharge the Authority's liability in regard to individual employees and the *Superannuation Guarantee (Administration) Act 1992* as well as to facilitate the salary sacrifice options of employees.

The liability for superannuation recognised as at 30 June represents outstanding contributions at the end of the reporting period. This amount is disclosed in Note 2.3B.

Note 3.2: Key Management Personnel Remuneration

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of that entity. The Authority has determined the key management personnel to include the Minister for Resources and Water, Authority members, the Chief Executive and Portfolio Leads within the Authority and any staff member who has acted in one of the portfolio lead roles for longer than three months. Key management personnel remuneration is reported in the table below:

	2021	2020
	$'000	$'000
Short-term employee benefits	**1,917**	2,086
Other long-term employee benefits	**65**	105
Post-employment benefits	**286**	302
Total key management personnel remuneration expenses[1]	**2,268**	2,493

The total number of key management personnel included in the above table is 10 (2020: 10).

[1.] The above key management personnel remuneration excludes the remuneration and other benefits of the Portfolio Minister. The Portfolio Minister's remuneration and other benefits are set by the Remuneration Tribunal and are not paid by the entity.

Note 3.3: Related Party Disclosures

Related party relationships:
The Authority is an Australian Government controlled entity. Related parties to this entity are Key Management Personnel (as detailed in Note 3.2), Minister for Agriculture and Northern Australia, Minister for the Environment, Cabinet Ministers, Members of the Ministerial Council, the Living Murray Initiatives & River Management Operations joint ventures and other Australian Government entities.

Transactions with related parties:
Given the breadth of Government activities, related parties may transact with the government sector in the same capacity as ordinary citizens. Such transactions include the payment or refund of taxes, receipt of a Medicare rebate or higher education loans. These transactions have not been separately disclosed in this disclosure note.
The Authority does not pay any member of the Ministerial Council for the services they provide to the Authority under the Murray-Darling Basin Agreement.

There were no transactions with related parties during the 2021 financial year (2020: Nil).

Managing uncertainties

This section analyses how the Authority manages financial risks within its operating environment.

Note 4.1: Contingent Assets and Liabilities

There are no contingent assets or liabilities in the current or prior financial year.

Quantifiable Contingencies

There were no estimated contingent liabilities as at 30 June 2021.

Unquantifiable Contingencies

There is one unquantifiable contingent liability that relates to a claim asserting negligence in relation to the Authority and Authority delegates' performance of function under the Water Act 2007 (Cth). Damages are unquantifiable. The Authority's insurer Comcover has been notified of this claim.

Under Section 239F of the *Water Act 2007,* the liabilities of the Murray-Darling Basin Commission (the Commission) became liabilities of the Authority. These liabilities pertain to the former Commission and include any liability, duty or obligation, whether contingent or prospective; but does not include a liability, duty or obligation imposed by:

- an Act; or
- regulations or other subordinate legislation made under an Act; or
- the *Murray-Darling Basin Act 1992* of New South Wales; or
- the *Murray-Darling Basin Act 1993* of Victoria; or
- the *Murray-Darling Basin Act 1996* of Queensland; or
- the *Murray-Darling Basin Act 1993* of South Australia; or
- the former Murray-Darling Basin Agreement.

There were no such unquantifiable contingencies during the 2021 financial year (2020: Nil).

Accounting policy

Contingent liabilities and contingent assets are not recognised in the statement of financial position but are reported in the disclosure notes. These may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

Note 4.2: Financial Instruments

	2021 $'000	2020 $'000
Note 4.2: Categories of Financial Instruments		
Financial assets measured at amortised cost		
Cash and cash equivalents	**154,063**	147,005
Trade and other receivables	**1,918**	869
Total financial assets at amortised cost	**155,981**	147,874
Total financial assets	**155,981**	147,874
Financial Liabilities		
Financial liabilities measured at amortised cost		
Trade creditors and accruals	**17,844**	21,176
Total financial liabilities measured at amortised cost	**17,844**	21,176
Total financial liabilities	**17,844**	21,176

Accounting policy

Financial Assets

The entity classifies its financial assets in the following categories:
a) financial assets at fair value through profit or loss;
b) financial assets at fair value through other comprehensive income; and
c) financial assets measured at amortised cost.
The classification depends on both the entity's business model for managing the financial assets and contractual cash flow characteristics at the time of initial recognition. Financial assets are recognised when the entity becomes a party to the contract and, as a consequence, has a legal right to receive or a legal obligation to pay cash and derecognised when the contractual rights to the cash flows from the financial asset expire or are transferred upon trade date.

Financial Liabilities

Financial liabilities are classified as either financial liabilities 'at fair value through profit or loss' or other financial liabilities.

The Authority only holds financial instruments carried at amortised cost.

Financial Assets at Amortised Cost

Financial assets included in this category need to meet two criteria:
1. the financial asset is held in order to collect the contractual cash flows; and
2. the cash flows are solely payments of principal and interest (SPPI) on the principal outstanding amount.
Amortised cost is determined using the effective interest method.

Effective Interest Method

Income is recognised on an effective interest rate basis for financial assets that are recognised at amortised cost.

Impairment of Financial Assets

Financial assets are assessed for impairment at the end of each reporting period based on Expected Credit Losses, using the general approach which measures the loss allowance based on an amount equal to lifetime expected credit losses where risk has significantly increased, or an amount equal to 12-month expected credit losses if risk has not increased.
The simplified approach for trade and other receivables is used. This approach always measures the loss allowance as the amount equal to the lifetime expected credit losses.
A write-off constitutes a derecognition event where the write-off directly reduces the gross carrying amount of the financial asset.

Financial Liabilities at Amortised Cost

Financial liabilities are recognised and derecognised upon 'trade date'. Financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective interest basis. Supplier and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

Note 4.3: Fair Value Measurements

Accounting policy

The Authority's assets are held for operational purposes and not held for the purposes of deriving a profit. The current use of all non-financial assets is considered their highest and best use.

The Authority's policy is to recognise transfers into and transfers out of fair value hierarchy levels as at the end of the reporting period. There have been no transfers between level 1 and level 2 of the hierarchy during the year.

Note 4.3: Fair Value Measurements

	Fair value measurements	
	2021	2020
	$'000	$'000
ASSETS		
Assets measured at fair value on a recurring basis		
Buildings	**18,214**	21,745
Other property, plant and equipment	**2,477**	1,727
Total assets measured at fair value	**20,691**	23,472
Assets measured at other than fair value, but approximate fair value[1]		
Cash and cash equivalents	**154,063**	147,005
Trade and other receivables	**4,833**	3,637
Total assets measured at other than fair value, but approximate fair value	**158,896**	150,642
Assets measured at cost		
Intangibles	**2,308**	1,380
Other non-financial assets	**468**	842
Total assets measured at cost	**2,776**	2,222
Total assets stated in the Statement of Financial Position	**182,363**	176,336
LIABILITIES		
Liabilities measured at fair value		
Provision for make good	**1,063**	1,205
Total liabilities measured at fair value	**1,063**	1,205
Liabilities measured at other than fair value, but approximate fair value[1]		
Suppliers	**17,844**	21,176
Other payables	**1,507**	1,909
Total liabilities measured at other than fair value, but approximate fair value	**19,351**	23,085
Liabilities measured at cost		
Lease liabilities	**14,228**	16,693
Employee provisions	**12,120**	10,921
Total liabilities measured at cost	**26,348**	27,614
Total liabilities stated in the Statement of Financial Position	**46,762**	51,904

1. These items' carrying amounts equate to their fair values.

Other information

Note 4.4: Current/non-current distinction for assets and liabilities

	2021 $'000	2020 $'000
Note 4.4: Current/non-current distinction for assets and liabilities		
Assets expected to be recovered in:		
No more than 12 months		
Cash and cash equivalents	**154,063**	147,005
Trade and other receivables	**4,833**	3,637
Prepayments	**465**	798
Total no more than 12 months	**159,361**	151,440
More than 12 months		
Buildings	**18,214**	21,745
Property, plant and equipment	**2,477**	1,727
Intangibles	**2,308**	1,380
Prepayments	**3**	44
Total more than 12 months	**23,002**	24,896
Total assets	**182,363**	176,336
Liabilities expected to be settled in:		
No more than 12 months		
Suppliers	**17,844**	21,176
Other payables	**1,507**	1,909
Employee provisions	**4,422**	3,933
Lease liabilities	**2,510**	2,483
Total no more than 12 months	**26,283**	29,501
More than 12 months		
Other provisions	**1,063**	1,205
Employee provisions	**7,698**	6,987
Lease liabilities	**11,718**	14,211
Total more than 12 months	**20,479**	22,403
Total liabilities	**46,762**	51,904

Budget Variances

Note 5: Explanations of Major Budget Variances

Variances are considered to be 'major' if these amounts are core to the Authority's activities and based on the following criteria:
• the variance between budget and actual is greater than +/- 10% of the Original Budget for a line item; and
• the variance between budget and actual is greater than $1,000,000; or
• an item is below this threshold but is considered important for the reader's understanding or is relevant to an assessment of the discharge of accountability and to an analysis of the Authority's performance.

The budget is not audited.

Budget Variance Explanation	Affected statements and line items
The Authority experienced significant fluctuations in its spending in comparison to the Original Budget due to the complex nature of the joint programs. This complexity reflects a high level of inherent risk associated with capital construction and environmental projects. The joint program variance to the budget was primarily due to the underspends relating to the State Constructing Authorities (SCA). These are uncontrollable items for the Authority and are heavily reliant on the capacity of each SCA to deliver routine maintenance and key construction and planned maintenance projects which can be impacted by procurement issues, environmental conditions, access to construction sites and technical resource availability. Underspends by SCA's are mostly delays in the completion of construction and maintenance projects and will require a carryover of the unspent budget appropriation funding. In addition, underspends in the joint programs were also due to the COVID-19 related restrictions in place which: - prevented timely procurement of resources, or conducting workshops across Jurisdictions - delayed delivery of vehicles, plant and equipment from overseas and its flow on impact on the activities dependent upon these items - limited availability of key building material such as steel and timber - limited access to appropriate resources to undertake a number of construction activities across various sites particularly where cross state border travel was required. During 2020-21, there were delays in the completion of major construction projects as described below: - challenges associated with the change in scope of Hume irrigation outlet Bell mouth & penstock repair work resulted in slowing down the Hume emergency closure gates and penstock work - The Hume gate painting due to Work Health and Safety issues related to transporting the gate. Lower water allocations resulted in less usage for The Living Murray program with an associated reduction in water usage fees. The underspend on the above projects is offset by additional expenditure on: - investigations on the replacement on the Hume concrete trash rack - completion of the Goolwa swing bridge upgrade - increased planned maintenance on the South Australian salt interception schemes - completion of the SA Berri Office upgrade - undertake the approved environmental watering event on the Chowilla floodplain - dredging at the Murray mouth. In preparation of the Budget, estimates were made for the allocation of expenses between suppliers and grants. Actual expenditure between these two categories were slightly different to the budget allocation. Employee benefits are lower than budget due to higher Voluntary redundancy (VR) payments than actual payments made. A new capability based operating model was implemented and as a result the number of VRs offered was reduced. Due to continued COVID restrictions, employee provisions are higher than budgeted as employees did not use as much leave entitlements as previous years. Revenue from contributions from jurisdictions is lower than budgeted due to some jurisdictions utilising prior year underspends.	Statement of Comprehensive Income: - Suppliers - Grants - Contribution from Jurisdictions - Employee Benefits Statement of Financial Position: - Cash and cash equivalents - Suppliers - Other payables - Employee provisions Cash Flow Statement: - Net GST received - Suppliers - Grants
For 2020-21 the Authority was allocated decentralisation capital funding for ICT and Data projects. The primary focus of this allocation was to complete the projects commenced under the ICT strategy in 2019-20, and to finalise a data strategy so that data projects can be commenced. Most of the ICT projects to support the Authority's regionalisation initiative were completed in 2020-21 with residual projects to be completed in 2021-22. Due to Data strategy not being finalised until December 2020, commencement of some of the data investments were delayed and not delivered in 2020-21 resulting in actual expenditure being lower than budgeted.	Statement of Comprehensive Income: - Supplier Statement of Financial Position: - Cash and cash equivalents - Intangibles Cash Flow Statement: - Purchase of intangible assets

Note 5: Explanations of Major Budget Variances - continued

The Authority received funding from arrangements with Department of Agriculture, Water, and the Environment (DAWE) during the year which were not in the 2020-21 Budget. These include: - Enhance Environmental Water Delivery - Northern Basin Camera Project The Authority received proceeds from sale of land for the Joint Venture that was not in the original budget Overall cash balance is higher than the budgeted amount due to lower than expected joint program expenditure and lower planned capital expenditure, and funding received under a number of Memorandum of Understanding (MOU) in 2020-21 to be spent in forward years. Despite the increase in bank balances, interest revenue significantly decreased during the year as a result of zero interest on funds held at Reserve Bank of Australia from November 2020.	Statement of Comprehensive Income: - Other revenue - Interest Statement of Financial Position: - Cash and cash equivalents - Trade and other receivables Cash Flow Statement: - Other cash received

Appendices

Glossary

Australian National Committee on Large Dams

An incorporated voluntary association of organisations and individual professionals with an interest in dams in Australia.

Barmah Choke

A narrow section of the River Murray that constrains the volume of water that can pass during major floods. During floods, large volumes of water are temporarily banked up behind the Barmah Choke, flooding the Barmah–Millewa Forest wetland system.

Barrages

Five low and wide weirs built at the Murray Mouth in South Australia to reduce the amount of sea water flowing in and out of the mouth due to tidal movement, and to help control water levels in the Lower Lakes and River Murray below Lock 1 (Blanchetown, South Australia).

Baseline

Conditions regarded as a reference point for the purpose of comparison.

Baseline diversion limit

The baseline limit of take from a sustainable diversion limit resource unit.

Basin governments

The Australian Government and the governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

Basin states

New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

Basin water resources

Water resources within or beneath the Murray–Darling Basin, except for resources that are prescribed by the regulations and groundwater that forms part of the Great Artesian Basin.

Cap (the Cap on Diversions)

A limit, implemented in 1997, on the volume of surface water that can be diverted from rivers for consumptive use. Under the Basin Plan, the Cap is replaced by long-term average sustainable diversion limits.

Connectivity

Connections between natural habitats, such as between a river channel and adjacent wetland areas. Connectivity is a measure or indicator of whether a water body (river, wetland, floodplain) has water connections or flow connections to another body.

Constraints

Anything that affects the delivery of water for the environment. Constraints can be physical, such as low-lying bridges and river channel capacity; or operational, such as river rules or operating practices that affect when and how much water can be delivered.

Conveyance water

The water needed to physically run the river system. Extra water must then be supplied on top of the conveyance water in order to meet deliveries along the river system. The conveyance reserve is water set aside for the next year to minimise the risk of not having enough conveyance water. Water is set aside water for conveyance and critical human needs to safeguard fundamental water requirements during a drought more severe than the Millennium drought.

Critical human water needs

Under the *Water Act 2007* (the Water Act), the minimum amount of water required to meet core requirements of communities dependent on Basin water resources. The definition also includes non-human requirements that, if not met, would cause prohibitively high social, economic or national security costs.

Cultural flows (or cultural water flows)

Water entitlements legally and beneficially owned by the Aboriginal Nations of the Murray–Darling Basin. They are of sufficient and adequate quantity and quality to improve the spiritual, cultural, environmental, social and economic conditions of Aboriginal people.

Electrical conductivity (EC)

A unit of measurement for electrical conductivity (1 EC = 1 µS/cm) measured at 25 degrees Celsius. It is commonly used as an indicator of water and soil salinity (salt concentration). Water and soil salinity levels are measured by passing an electrical current between the two electrodes of a salinity meter. EC is influenced by the concentration and composition of dissolved salts. Salts increase the ability of a solution to conduct an electric current, so a high EC indicates a high salinity level. Fresh water above 800 EC becomes marginal for drinking; above 1,600 EC it is brackish; and above 4,800 EC it is saline.

Entitlement (or water entitlement)

The volume of water authorised to be taken and used by an irrigator or water authority. It includes bulk entitlements, environmental entitlements, water rights, sales water and surface water and groundwater licences.

Environmental flow

Any river flow pattern provided with the intention of maintaining or improving river health.

Environmental water

Water used to achieve environmental outcomes, including benefits to ecosystem functions, biodiversity, water quality and water resource health.

Environmental water requirement

The amount of water needed to meet an ecological or environmental objective.

Fishway

A structure that provides fish with passage past an obstruction in a stream.

Flow

The movement of water – the rate of water discharged from a source, given in volume with respect to time.

Flow event

A single occurrence of water flow in a river, sometimes required to achieve environmental targets. A series of flow events comprises a flow history.

Groundwater

Water occurring naturally below ground level (in an aquifer or otherwise).

Held environmental water

Water that is available under a water access right, a water delivery right or an irrigation right for the purpose of achieving environmental outcomes.

Inflow

The source of the water that flows into a specific body of water. For a lake, the inflow could be a stream or river; for a stream or river, the inflow could be rain.

Irrigator

An irrigator is a primary producer who uses river water to irrigate crops or water livestock.

Irrigation infrastructure operator

An irrigation infrastructure operator owns or operates water service infrastructure for delivering water for the primary purpose of irrigation.

Modelling

Application of a mathematical process or simulation framework (e.g. a mathematical or econometric model) to describe various phenomena and analyse the effects of changes in some characteristics on others.

Murray Lower Darling Rivers Indigenous Nations (MLDRIN)

Confederation formed in 1998 of Indigenous Nations from the southern part of the Basin. It comprises representatives of the Barapa Barapa, Dhudhuroa, Dja Dja Wurrung, Latji Latji, Maraura, Mutti Mutti, Nari Nari, Ngarrindjeri, Ngaywang, Ngintait, Ngunawal, Nyeri Nyeri, Tatti Tatti, Taungurung, Wadi Wadi, Wamba Wamba, Waywurru, Wegi Wegi, Wergaia, Wiradjuri, Wolgalu, Wotjabaluk, Yaitmathang and Yita Yita.

Northern Basin Aboriginal Nations (NBAN)

Confederation formed in April 2010 that comprises Aboriginal Nation representatives from the northern part of the Basin. It comprises Traditional Owner nominated representatives from the Barunggam, Bidjara, Bigambul, Budjiti, Euahlayi, Githabul, Gomeroi, Gunggari, Gwamu (Kooma), Jarowair, Kambuwal, Kunja, Kwiambul, Mandandanji, Mardigan, Murrawarri, Ngemba, Ngiyampaa, Wailwan and Wakka Wakka Nations.

Ramsar Convention

The Convention on Wetlands of International Importance, an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Regulated

A water system in which water is stored and/or flow levels are controlled through the use of structures such as dams and weirs.

Salt interception schemes (SIS)

Large-scale groundwater pumping and drainage projects that intercept saline groundwater flowing into rivers, and dispose of the saline waters by evaporation and aquifer storage at more distant locations.

Surface water

Includes water in a watercourse, lake or wetland, and any water flowing over or lying on the land after having precipitated naturally or risen to the surface naturally from underground (see s 4 of the Water Act). The maximum long-term annual average quantities of water that can be taken, on a sustainable basis, from the Basin water resources as a whole, and the water resources, or particular parts of the water resources, of each water resource plan area.

Sustainable diversion limit (SDL)

The maximum long-term annual average quantity of water that can be taken, on a sustainable basis, from the Basin water resources as a whole, and the water resources, or particular parts of the water resources, of each water resource plan area.

Sustainable diversion limit adjustment mechanism (SDLAM)

Basin Plan provision that allows for adjustment of the sustainable diversion limit under certain circumstances.

Take [water]

Removal of water from, or reduction in flow of water into, a water resource.

Water accounting

A systematic process of identifying, recognising, quantifying, reporting and assuring information about water, the rights or other claims to water, and the obligations against water.

Water access licence

Water access licences entitle licence holders:

- to specified shares in the available water within a particular water management area or water source (the share component)
- to take water at specified times, rates or circumstances from specified areas or locations (the extraction component).

Water allocation

The water to which the holder of a water access licence is entitled from time to time under licence, as recorded in the water allocation account for the licence.

Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACCC	Australian Competition and Consumer Commission
ACIAR	Australian Centre for International Agricultural Research
ACSEES	Advisory Committee on Social, Economic and Environmental Sciences
AELERT	Australasian Environmental Law Enforcement and Regulators neTwork
APS	Australian Public Service
BCC	Basin Community Committee
BOC	Basin Officials Committee
BoM	Bureau of Meteorology
BSM2030	Basin Salinity Management 2030
BPIC	Basin Plan Implementation Committee
CEWH	Commonwealth Environmental Water Holder
CEWO	Commonwealth Environmental Water Office
CSIRO	Commonwealth Scientific and industrial Research Organisation
DAWE	(Australian Government) Department of Agriculture, Water and the Environment
EAP	emergency action plan
EWC	Environmental Water Committee
FNEWG	First Nations Environmental Water Guidance project
GL	gigalitre (one billion litres)
GW	groundwater
HEW	held environmental water
IAC	(Compliance) Independent Assurance Committee
IGA	Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin
IGWC	Inspector-General of Water Compliance
IRORG	Independent River Operations Review Group
KPI	key performance indicator
MDBA/ the Authority	Murray–Darling Basin Authority – the agency/the 7-member Authority

MD-WERP	Murray–Darling Water and Environment Research Program
Ministerial Council	Murray–Darling Basin Ministerial Council
ML	megalitre (one million litres)
MLDRIN	Murray Lower Darling Rivers Indigenous Nations
NBAN	Northern Basin Aboriginal Nations
NBEWG	Northern Basin Environmental Watering Group
NBPC	Northern Basin Project Committee
OECD	Organisation for Economic Co-operation and Development
PGPA Act	*Public Governance, Performance and Accountability Act 2013* (Cth)
PwC	PricewaterhouseCoopers
RAP	Reconciliation Action Plan
REO	Regional Engagement Officer
RMO	River Murray Operations
RMOC	River Murray Operations Committee
RMWQMP	River Murray Water Quality Monitoring Program
SCBEWC	Southern Connected Basin Environmental Watering Committee
SCC	Strengthening Connections Committee
SDL	sustainable diversion limit
SDLAM	SDL adjustment mechanism
SW	surface water
WQAP	Water Quality Advisory Panel
WRP	water resource plan

Annual report requirements

PGPA Rule reference	Part of report	Description	Requirement
17BE	**Contents of the annual report**		
17BE(a)	14	Details of the legislation establishing the body	Mandatory
17BE(b)(i)	14	A summary of the objects and functions of the entity as set out in legislation	Mandatory
17BE(b)(ii)	13, 23	The purposes of the entity as included in the entity's corporate plan for the reporting period	Mandatory
17BE(c)	14, 76	The names of the persons holding the position of responsible Minister or responsible Ministers during the reporting period, and the titles of those responsible Ministers	Mandatory
17BE(d)	95	Directions given to the entity by the Minister under an Act or instrument during the reporting period	If applicable, mandatory
17BE(e)	95	Any government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	If applicable, mandatory
17BE(f)	95	Particulars of non-compliance with: a. a direction given to the entity by the Minister under an Act or instrument during the reporting period or b. a government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	If applicable, mandatory
17BE(g)	22–72	Annual performance statements in accordance with paragraph 39(1)(b) of the Act and section 16F of the rule	Mandatory
17BE(h), 17BE(i)	91	A statement of significant issues reported to the Minister under paragraph 19(1)(e) of the Act that relates to non-compliance with finance law and action taken to remedy non-compliance	If applicable, mandatory
17BE(j)	77–78 150–153	Information on the accountable authority, or each member of the accountable authority, of the entity during the reporting period	Mandatory
17BE(k)	83–87	Outline of the organisational structure of the entity (including any subsidiaries of the entity)	Mandatory

PGPA Rule reference	Part of report	Description	Requirement
17BE(ka)	17 102–103	Statistics on the entity's employees on an ongoing and non-ongoing basis, including the following: a. statistics on full-time employees b. statistics on part-time employees c. statistics on gender d. statistics on staff location.	Mandatory
17BE(l)	17	Outline of the location (whether or not in Australia) of major activities or facilities of the entity	Mandatory
17BE(m)	87–103	Information relating to the major corporate governance practices used by the entity during the reporting period	Mandatory
17BE(n), BE(o)	N/A	For transactions with a related Commonwealth entity or related company where the value of the transaction, or if there is more than one transaction, the aggregate of those transactions, is more than $10,000 (inclusive of GST) a. the decision-making process undertaken by the accountable authority to approve the entity paying for a good or service from, or providing a grant to, the related Commonwealth entity or related company; and b. the value of the transaction, or if there is more than one transaction, the number of transactions and the aggregate of value of the transactions	If applicable, mandatory
17BE(p)	4–7	Any significant activities and changes that affected the operation or structure of the entity during the reporting period	If applicable, mandatory
17BE(q)	94	Particulars of judicial decisions or decisions of administrative tribunals that may have a significant effect on the operations of the entity	If applicable, mandatory
17BE(r)	94	Particulars of any reports on the entity given by: a. the Auditor-General (other than a report under section 43 of the Act); or b. a Parliamentary Committee; or c. the Commonwealth Ombudsman; or d. the Office of the Australian Information Commissioner	If applicable, mandatory
17BE(s)	N/A	An explanation of information not obtained from a subsidiary of the entity and the effect of not having the information on the annual report	If applicable, mandatory

PGPA Rule reference	Part of report	Description	Requirement
17BE(t)	N/A	Details of any indemnity that applied during the reporting period to the accountable authority, or any member of the accountable authority or officer of the entity against a liability (including premiums paid, or agreed to be paid, for insurance against the authority member or officer's liability for legal costs)	If applicable, mandatory
17BE(taa)	91–94	The following information about the audit committee for the entity: a. a direct electronic address of the charter determining the functions of the audit committee; b. the name of each member of the audit committee; c. the qualifications, knowledge, skills or experience of each member of the audit committee; d. information about each member's attendance at meetings of the audit committee; e. the remuneration of each member of the audit committee	Mandatory
17BE(ta)	103–105	Information about executive remuneration	Mandatory
17BF	**Disclosure requirements for government business enterprises**		
17BF(1)(a)(i)	N/A	An assessment of significant changes in the entity's overall financial structure and financial conditions	If applicable, mandatory
17BF(1)(a)(ii)	N/A	An assessment of any events or risks that could cause financial information that is reported not to be indicative of future operations or financial conditions	If applicable, mandatory
17BF(1)(b)	N/A	Information on dividends paid or recommended	If applicable, mandatory
17BF(1)(c)	N/A	Details of any community service obligations the government business enterprise has including: a. an outline of actions taken to fulfil those obligations; and b. an assessment of the cost of fulfilling those obligations	If applicable, mandatory
17BF(2)	N/A	A statement regarding the exclusion of information on the grounds that the information is commercially sensitive and would be likely to result in unreasonable commercial prejudice to the government business enterprise	If applicable, mandatory

Details of accountable authority during the reporting period 2020–21

Name	Qualifications of the accountable authority	Experience of the accountable authority	Position title/ Position held Executive/ Non-Executive	Period as the accountable authority or member within the reporting period		
				Date of commence-ment	Date of cessation	Number of meetings of accountable authority attended
Air Chief Marshal Sir Angus Houston hief Marshal Sir Angus Houston	Honorary doctorates from University of NSW, Australian National University, University of SA, Griffith University	Sir Angus is Chancellor for the University of the Sunshine Coast and chairs many boards including the Authority. He was awarded the Knight of the Order of Australia in 2015 for outstanding service to Australia. Sir Angus served for 41 years in the Australian Defence Force including holding the positions of Chief of the Australian Defence Force from 2005 to 2011 and Chief of the Air Force.	Chairman/ Non-Executive	8 August 2020	6 August 2024	13

Name	Qualifications of the accountable authority	Experience of the accountable authority	Position title/ Position held Executive/ Non-Executive	Period as the accountable authority or member within the reporting period		
				Date of commence-ment	Date of cessation	Number of meetings of accountable authority attended
Professor Stuart Bunn	PhD	Professor Bunn is Director of the Australian Rivers Institute at Griffith University, Chair of the Science Committee for Healthy Land and Water, and a member of the International Planning Committee for the Sustainable Water Future Programme. From 2008 to 2012 he was a National Water Commissioner. He has served as Chair of the Scientific Advisory Panel for the Lake Eyre Basin Ministerial Forum and the MDBA's ACSEES, on which he continues to play an observer role.	Member/ Non-Executive	29 May 2018	28 May 2022	15
Ms Joanna Hewitt AO	BE (Hons), MS, Honorary doctorate from University of WA	Ms Hewitt chairs the Scientific Advisory Group of the Department of Agriculture, Water and Environment. She has worked at senior levels in the Australian Public Service including Secretary of the Department of Agriculture, Fisheries and Forestry from 2004 to 2007 and Deputy Secretary in the Department of Foreign Affairs and Trade. She was Commission Chair of ACIAR from 2011 to 2014 and has worked at the OECD and consulted internationally.	Member/ Non-Executive	29 May 2018	28 May 2022	15

Name	Qualifications of the accountable authority	Experience of the accountable authority	Position title/ Position held Executive/ Non-Executive	Period as the accountable authority or member within the reporting period		
				Date of commence-ment	Date of cessation	Number of meetings of accountable authority attended
Ms Susan Madden	BA (Hons)	Ms Madden is Principal Economist with international consulting firm GHD. She is Chair of the Central West Local Land Services and sits of the Local Land Services Board of Chairs. Ms Madden has a background in family farming and extensive experience working in agricultural and natural resource management roles in the public and private sectors. Her leadership capabilities and contributions have been recognised through a number of awards. She is a Fellow of the Peter Cullen Trust.	Member/ Non-Executive	10 March 2016 (re-appointed 26 November 2020)	26 November 2024	9
Mr Rene Woods	Young Rural Leaders Course 2001, Canberra; Indigenous Governance Program, Australian Institute of Company Directors 2012, Melbourne; Healthy Country Planning Coaches Course 2019	Mr Woods is a Nari Nari man from Hay in south-west NSW. He has extensive experience in the management of Aboriginal culture, heritage and natural resources. He is a conservation officer with Nature Conservancy Australia and has previously been Chair of the Murray Lower Darling Indigenous Nations and Vice-Chair of the Nari Tribal Council.	Indigenous Member/ Non-Executive	18 December 2020	18 December 2024	6

Name	Qualifications of the accountable authority	Experience of the accountable authority	Position title/ Position held Executive/ Non-Executive	Period as the accountable authority or member within the reporting period		
				Date of commence-ment	Date of cessation	Number of meetings of accountable authority attended
Mr Phillip Glyde	BA (Hons), BE	Mr Glyde came to the MDBA from the Department of Agriculture, where he was a deputy secretary. He has been a member of the Australian Public Service since 1980, working in natural resource management, industry and environmental policies for a number of departments. Mr Glyde has also worked overseas with the OECD in Paris and the Department of Environment, Food and Rural Affairs in the United Kingdom.	Chief Executive/ Executive	4 January 2016	3 January 2024	13

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Connect with us.

The MDBA has offices in Adelaide, Albury–Wodonga, Canberra, Goondiwindi, Griffith, Mildura, Murray Bridge, Toowoomba, and regional engagement officers around the Basin.

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