The Murray–Darling Basin Water Compliance Review

Containing reports by the Murray–Darling Basin Authority and the Independent Review Panel
The Murray–Darling Basin Water Compliance Review was announced on 5 September 2017 by the Prime Minister and Deputy Prime Minister.

The terms of reference for the Review are below.

The Review comprises the two reports contained with this volume. Part A is the report of the Murray–Darling Basin Authority (MDBA). Part B is the report of the Independent Panel appointed to support the MDBA with the review, including its assessment of the MDBA’s role in compliance.

**Terms of Reference: Murray–Darling Basin Water Compliance Review**

**Purpose**

The Murray–Darling Basin Authority (the Authority) is requested to provide an independent, Basin-wide strategic review into compliance with state- and territory-based regulations governing water use in the Murray–Darling Basin (the Basin). This advice will inform governments on options for improvements to compliance regimes in the Basin, with the aim of providing Basin communities and all Australians with confidence that the rules that underpin fair and lawful water use throughout the Basin are being applied and followed.

The Authority will report to the Murray–Darling Basin Ministerial Council (the Ministerial Council) on its findings at the Ministerial Council meeting in November 2017. The Ministerial Council will subsequently provide advice on the outcomes to the following meeting of COAG.

The Authority will be supported in its review by an independent panel of experts who will provide advice on the methodology and approach used by the Authority. The panel of experts will also provide a separate report to the Ministerial Council on its assessment of the Authority’s report and on its assessment of the Authority’s own compliance and enforcement arrangements under the Commonwealth *Water Act (2007)*, the interactions of these arrangements with state laws and instruments, and options for improving the overall effectiveness of the arrangements in support of the Basin Plan.

In June 2017, COAG adopted the report of the Murray–Darling Basin Ministerial Council (Ministerial Council), Implementing the Basin Plan, and reaffirmed its commitment to ensuring the Basin Plan is implemented on time and in full. The review will support the achievement of Basin Plan outcomes and its implementation will not be delayed by the review.
Scope

The Authority will conduct the review in accordance with its functions and powers including under Sections 172 and 173 of the Water Act 2007.

The Authority will conduct a strategic review of state- and territory-based compliance and enforcement regimes in the Murray Darling Basin, and their support for Basin Plan implementation, advising on:

1. the appropriateness of and compliance with state laws and statutory instruments (including water resource plans), the terms and conditions of water licences and entitlements and any other relevant powers or approvals;

2. the adequacy of water measurement and monitoring arrangements, including metering;

3. the adequacy of penalty arrangements to suitably deter and punish non-compliant water use;

4. the adequacy of governance and institutional arrangements necessary to ensure legally compliant water use; and

5. steps required to improve confidence in water compliance and enforcement arrangements, sufficient to underpin the integrity of Basin Plan-compliant water resource.

In undertaking this review, the Authority is to have regard to the National Framework for Compliance and Enforcement Systems for Water Resource Management agreed by COAG in December 2009; relevant legislation and other statutory arrangements applicable in each state and the Australian Capital Territory; and relevant provisions of the Commonwealth Water Act 2007 and the Basin Plan 2012.

In addressing the terms of reference across the Basin, and given the limited time available, the review should place emphasis on identifying the highest areas of compliance risk – while ensuring coverage of relevant issues in each of the Basin states and the Australian Capital Territory.

The Authority should seek the cooperation of Basin jurisdictions and consult with key stakeholders in conducting the review.
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# Part B

## Murray–Darling Basin Water Compliance Review

Independent Panel Report

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Part A

The Murray–Darling Basin Authority
Water Compliance Review
24 November 2017

The Hon Malcolm Turnbull MP
Prime Minister
Parliament House
CANBERRA ACT  2600

Dear Prime Minister

Murray–Darling Basin Water Compliance Review

Thank you for the terms of reference for the Murray–Darling Basin Water Compliance Review.

In response, I am pleased to attach a copy of the report prepared by the Murray–Darling Basin Authority (MDBA). The report contains recommendations for governments and actions that the MDBA is committed to implementing. It should be read in conjunction with the report prepared by the Independent Panel.

I am proposing to release both reports shortly.

I would be pleased to provide a briefing to you on our report if this is of assistance, and look forward to continuing to work with you to implement the Basin Plan on time and in full.

Yours sincerely

Neil Andrew AO
Chair

cc. Assistant Minister for Agriculture and Water Resources,
Senator the Hon Anne Ruston
Report in brief

Background

An effective and fair compliance system is critical to a healthy, sustainable Murray–Darling Basin. It underpins the integrity of water resource plans, environmental watering, water property rights and the water market.

Being effective means that entitlement holders understand their rights and obligations, offences are promptly detected and investigated, and enforcement action pursued. The perception that wrong doers are not punished is corrosive to other entitlement holders, whose commitment to compliance is undermined, and to the broader community, which may doubt the appropriateness of the social licence under which water is taken.

The social authority of a compliance system depends critically on it being fair and seen to be fair. Fairness means that breaches are dealt with and that those who abide by the rules do not suffer any consequences from wrongdoers, whose actions go undetected or are not dealt with. This requires that the compliance system is effective. Fairness also means the same kinds of offences are dealt with in the same way, no matter who or where the offender is. This requires consistency of compliance arrangements and practices across the Basin.

On 24 July 2017 Four Corners broadcast a program about water in the Barwon-Darling titled *Pumped*. The program alleged that certain irrigators were taking water illegally and had not been prosecuted; that there has been misconduct and maladministration within the NSW Government in relation to water management and the investigation of allegations of illegality in the Barwon Darling; and that the rules in the Barwon-Darling water sharing plan allow water to be extracted from low flows, disadvantaging downstream communities and expropriating environmental water.

The Four Corners allegations resonated deeply with the community. In a world where water is finite and valuable, taking water in excess of an entitlement holder’s allocation is theft — theft of a common property resource that robs downstream communities and the environment of their rights to water.

Responding to the community concern, the program has triggered seven investigations federally and within New South Wales (NSW) and Queensland.

The day after the broadcast, the Secretary of the NSW Department of Industry referred the allegations about misconduct and maladministration to the NSW Independent Commission Against Corruption (ICAC).

On 2 August 2017 the NSW Government commissioned Mr Ken Matthews to undertake an ‘Independent Investigation into NSW Water Management and Compliance’. Mr Matthews released an interim report just over one month later. The interim report found NSW water compliance and enforcement arrangements to be ‘ineffectual’ and recommended structural
and operational reforms. Proposals were also made for the Murray–Darling Basin Authority (MDBA) to strengthen its compliance and enforcement role.

Mr Matthews suspended his investigatory work in relation to misconduct and maladministration by individuals on 24 August 2017, when ICAC advised him that it would investigate the Four Corners allegations in relation to these matters.

Following the interim report, the NSW Minister for Regional Water, Mr Niall Blair, announced the creation of a new Natural Resource Asset Division and an independent Natural Resources Access Regulator, the installation of water meters for all ‘large’ water entitlement holders within 12 months and the establishment of an investigative taskforce to progress action on a number of water theft allegations. Misconduct procedures were also commenced against certain staff members. It is understood that Mr Matthews’ final report will be published in late November 2017.

The MDB water compliance review

On 30 July the Prime Minister and Deputy Prime Minister requested that the MDBA undertake a Murray–Darling Basin Water Compliance Review (the Review). An Independent Panel (the Panel) was set up to advise the MDBA on the conduct of the Review and to report separately on the issues covered including the MDBA’s own compliance role.

The Panel members were selected for their independence and legal, public policy and technical expertise. They were Eammon Moran PSM QC, Abel Immaraj and Allan Holmes. The Panel was assisted by Megan Dyson.

The Basin Compliance Review has assessed three matters: the compliance and enforcement frameworks and practices of the Basin states and of the MDBA, and the appropriateness of water management rules for protecting environmental water.

State compliance and enforcement

There are significant variations between the Basin states in the degree to which there is a culture of compliance, the level of resourcing, the extent of transparency, the comprehensiveness and clarity of the policy framework and the kinds of challenges posed by compliance.

South Australia has had a long commitment to a compliance culture. Licensed take has been metered since 1994. Of all the Basin states, South Australia’s compliance framework is the most extensively codified by way of guidelines for staff and transparent, with detailed annual reports on compliance activity and outcomes. Accountabilities and decision-making responsibilities are clear. Perhaps the state’s biggest challenge is an aging meter fleet, ironically due to the early adoption of a metering requirement.

In Victoria, the compliance function has been undertaken since 1994 by regional water authorities. The Review examined compliance in the Goulburn Murray Water (GMW), the biggest of the water authorities serving the Basin in Victoria. The Goulburn Murray is a
networked, largely regulated system, served by modern, remote sensed meters. It shows all the benefits of modern technology. Remote sensed meters efficiently provide accurate, real-time data on take. As a networked system, the interdependence of irrigators yields a culture of compliance. Whereas excess take by an entitlement holder pumping from a river might be seen to be a victimless crime, in a network system it is a crime against neighbours. As a result GMW has a strong commitment to compliance underpinned by sound governance arrangements. The specific issue to be addressed in Victoria is the lack of a full suite of penalties and sanctions, which means compliance action can only occur administratively with limited penalties and sanctions, or by criminal prosecution requiring a very high standard of proof suited to serious breaches.

NSW faces the challenges of having the greatest number of licences (over 21,000) and volume of take (5,700GL), and of having to cover the most extensive geographic area in the Basin. NSW also has a significant volume of hard to measure unregulated water and floodplain harvesting, meaning it is difficult to determine if there has been a compliance breach. Although the task is difficult, tackling it has been a low priority in the 20 water agencies that have been responsible for compliance in the past 20 years. The absence of a culture of compliance, organisational instability and limited resourcing have meant that compliance has relied heavily on custom and practice, resulting in a lack of effectiveness, consistency and transparency.

Having only adopted the Cap on diversions in 2010, Queensland has had the least experience with developing a compliance culture. Overland flow harvesting is even more significant in Queensland than it is in NSW (where it is referred to as floodplain harvesting). This and the significance of unsupplemented water mean that getting accurate data, the most fundamental of the requirements for a compliance system, is very difficult. Like NSW, Queensland’s limited compliance resources face the challenges of distance and an industry with some very large entitlement holders. The Queensland Government is conducting a significant review of metering at present.

As a small system, with 192 licences and 33 GL of take, the Australian Capital Territory (ACT) has the most manageable of the compliance tasks in the Basin. All licensed water extraction must be metered. With a small area to cover, staff are able to audit meters regularly and monitor compliance effectively.

Reflecting the differences between states, there is a striking variation in enforcement activity. In 2016-17, NSW issued 44 warning letters and notices, Queensland 14, South Australia 355, Victoria 562, and the ACT 1. For advisory letters, the numbers were 122 in NSW, Queensland issued 12, Victoria 412, South Australia 9765 (the latter number is high because it includes pre-emptive letters associated with introducing self-reading of meters), with no advisory letters issued in the ACT. Although there are undoubtedly local explanations of variations in practice and the nature of offences, it seems likely the data reveals significant differences in compliance vigilance.

Across all Basin states, the end result of compliance activity is a very small number of prosecutions. In 2016-17 there were no prosecutions in NSW and Queensland, and six in the other states.
There is a notable lack of transparency in NSW, Queensland and Victoria. Transparency is necessary for the community to have confidence the compliance system is doing its job. As well, by exposing the level, pattern and outcomes of compliance activity, transparency exerts a pressure on water agencies themselves to work effectively. The lack of transparency reflects not only a closed culture, but is also the result of many aspects of compliance not being codified and therefore not able to be published. Good data is critical to compliance. For NSW and Queensland, water compliance is bedevilled by patchy metering, the challenges of measuring unmetered take and the lack of real-time, accurate water accounts.

NSW and Queensland both have a low level of compliance resourcing. One way of measuring compliance effort is to compare the number of staff in relation to the volume of water diversions. NSW has one compliance officer for 355GL of diversions, while in Queensland the number is one officer for 235GL. By comparison, South Australia has one officer for 56GL of diversions.

Undoubtedly, improvements in compliance will require additional resources. However, these would be modest in relation to the value of the Basin water resources and the $12.9 billion of Australian Government funding for Basin reforms. Tellingly, the NSW Ombudsman’s *Investigation into water compliance and enforcement 2007-17* has reported that over the five years to 2016 compliance expenditure in the state was $19.875 million, nearly $10 million less than the funding for compliance yielded from the prices set by the Independent Pricing and Regulatory Tribunal (IPART).

One key explanation for ineffective compliance systems is that the responsible organisation is not committed to compliance. Without a commitment to the function, compliance has no voice in an organisation’s budget debate; the work does not attract the interest and attention of management; and the necessary systems and transparency are not developed.

A second factor is the constraint on enforcement posed by the difficulty of proving water offences. Even for low-level breaches, offences must be proven and commonly those responsible are given an opportunity to take remedial action. There would seem to be considerable scope, and need, to reduce the burden of evidence and simplify offences. The kinds of changes that have occurred in the enforcement of road traffic rules, by way of strict liability and the use of technology, may suggest the direction of changes required for some water offences.

**MDBA compliance and enforcement**

The MDBA was established to be a ‘voice for the Basin as a whole’, to be given effect through a Basin Plan that set sustainable diversion limits (SDLs) on water take. In developing the Basin Plan, the MDBA has worked on the basis of compliance and enforcement against individuals being a matter for states. However, in the course of the Review, it has been made very clear that the community does not accept this arrangement. Numerous stakeholders have expressed considerable frustration that the MDBA did not respond adequately to allegations of serious breaches. They are looking to the MDBA to take more responsibility for compliance and enforcement.
The MDBA has not given sufficient attention to compliance, has not provided a clear statement of its compliance role, and has not dealt adequately with allegations of compliance breaches. The Review presents a program of actions the MDBA will undertake to redress these deficiencies and cement its role in compliance and enforcement.

Compliance with water resource plans

Full compliance with the Basin Plan cannot be achieved until state water resource plans have been revised and accredited in line with the Basin Plan requirements. The revision timetable allows seven years from 2012 for this work to be done. However, slow progress in NSW and Victoria means there is a risk the 30 June 2019 deadline will not be met. Further, it is important that current state plans are not amended during the transition to 2019 in a way that is counter to the intent of the Basin Plan. More vigilance and more transparency are needed to ensure this is the case.

Compliance to protect environmental water

Water management arrangements in the Basin have been developed historically to regulate the extraction of water for irrigation. Leaving water in rivers at volumes, times and locations to improve the health of the system is a relatively new concept. The rules for running the rivers need to adapt in order to allow both extractive use and environmental protection.

In the unregulated rivers of northern NSW and southern Queensland, existing rules are designed to achieve long-term average use levels. What is needed is the ability to manage flows on an event-by-event basis, and to improve the protection of low flows that are of most significance for downstream communities.

In relation to the Barwon–Darling, the Review finds that the current NSW water-sharing plan fails to provide adequate protection for environmental water, particularly during low flows. This plan was finalised a month before the Basin Plan came into effect, which meant that the MDBA had no formal ability to influence its content.

The Northern Basin Review, finalised late last year by the MDBA, proposed new measures to improve the protection of environmental flows in the north’s unregulated rivers, including the Barwon–Darling and the Lower Balonne. Similarly, the SDL adjustment mechanism operating in the southern Basin provides an opportunity to improve river operating rules to achieve better protection of environmental flows.
Tying it together – a COAG Compact

The Review presents actions the MDBA will implement and recommendations for Basin governments. These recommendations will need to be considered at the next Murray–Darling Basin Ministerial Council meeting and then submitted to the Council of Australian Governments (the COAG).

As the Basin states have different issues to address to improve their compliance and enforcement framework and practices, each will need to develop a compliance strategy implementation plan for the measures required.

A Basin Compliance Compact comprising implementation plans for the MDBA and each of the Basin states should be developed and released by 30 June 2018.

Yearly reports on progress with implementing the Compact should be released publically and provided to the Australian Parliament, the COAG and the MDB Ministerial Council.
Recommendations for governments and MDBA actions

This section assesses state and MDBA compliance and enforcement frameworks and practices. Recommendations for improvement are made for states, and actions to which the MDBA has committed, are presented for each element of compliance and enforcement.

State compliance and enforcement

Metering and measurement

A compliance system depends on accurate, reliable, tamper-proof meters, good data on river flows and groundwater, and modelling appropriate for annual auditing of water take. Accurate metering and measurement are fundamental for water management, compliance and community confidence. For these reasons, pumping must not occur without a meter.

The Australian Standard (AS4747) requires meters to be accurate to within +5% to -5%. However, the standard is not mandated and most meters sold in Australia have not passed the required testing. In 2008 it was estimated nationally that about 30% of extraction points had meters that comply with the Australian Standard. Consistent with this, a recent estimate for one state is that more than 60% of meters measure outside +5% to -5%.

Over the four years from 2012-13 to 2015-16, between 64% and 73% of Basin surface water was metered. Among the states, South Australia has the highest metering rate with 96% of take being metered. In the northern Basin between 25% and 51% is metered. Groundwater metering varies considerably. In Victoria, 91% is metered, with South Australia and NSW metering 88% and 83% respectively, and Queensland 28% (due in part to the high volume of overland flow harvesting).

A quantitative target is needed for the metering obligation. Setting a metering target of 95% per water resource area for meterable take would meet a ‘no meter, no pump’ principle, while avoiding undue cost burdens on small entitlement holders. In NSW, this target would equate to metering entitlement holders that take more than 20ML/year on average annually.

Industry sources suggest supply and installation of AS4747 meters costs $6,000 for a 100 mm pipe. For the common range of pipe sizes, costs are estimated at between $12,000 for a 350 mm pipe to $20,000 for a 600 mm pipe. Annual maintenance costs are around $500. As water is a critical input to production, metering of use is a fundamental part of an irrigation business.

The question of who should own the meter, government or the entitlement holder, has been strongly contested in recent times. The Review finds that either approach can work – the more important question is to ensure meters are of a suitable standard, installed correctly and audited for accuracy.
Accredited installers should install meters. Validation that a meter is correctly installed and performing as required, and ongoing audits of accuracy, should be the domain of the compliance agency. Reflecting AS4747, checks should occur every five years.

AS4747 meters are capable of having telemetry installed. Telemetry provides real-time, remote meter readings, and in this way is a powerful and efficient way of monitoring compliance. Increased use of telemetry is warranted in the Basin, particularly for larger entitlement holders and in more remote unregulated or groundwater systems. While telemetry does entail upfront costs, it also presents an opportunity to reduce ongoing costs of field visits. It is understood that adding a telemetry capacity would cost $3,000, with monthly operating costs of $10-20 if mobile coverage is available, and $50 to $100 in remote sites served by satellite coverage.

Meters can and do fail or lose their accuracy due to poor water quality, damage caused by water borne ‘trash’ and mechanical failure. There should be alternatives to metering when problems arise, as they will.

Along with improving the quality of the meter fleet, it is important that there is public access to a register of water entitlement and pump details.

In some water resource areas, the accumulation of many small water users can have adverse impacts, particularly during a drought. In these circumstances, new arrangements for ensuring compliance may be required.

*The numbered recommendations are for governments and the numbered actions are MDBA commitments.*

**Recommendation 1: To deliver a ‘no meter, no pump’ policy, it is recommended that governments:**

a) mandate that all new meters on sale in Australia must meet AS4747 from 30 September 2018

b) require that 95% of meterable take in each water resource area is metered using AS4747 compliant meters by 31 December 2022

c) require the installation of telemetry for all entities with an average annual take of more than 100ML by 31 December 2022. For all others the requirement to install telemetry would be subject to a published risk assessment

d) publish a mandatory protocol to be followed in the event of meter failure

e) require installed meters to be validated by the compliance agency and then checked every five years

f) require that all meters be easily identifiable by a unique reference number, and entitlement and pump details must be publically accessible

g) release a meter improvement plan by 1 July 2018 with annual reports on progress

h) audit water take by stock and domestic and other rights holders to identify areas of stress on water resources from the exercise of these rights, and put in place measures to monitor compliance.
Not all forms of water take can be metered. Floodplain harvesting, or overland flows, in the northern Basin are the most prominent example, with recent estimates at 210GL annual take (noting the high uncertainty of this estimate). In this regard, storage level recorders calibrated by volumetric survey data of individual storages are an important source of data. Farm dams and forestry plantations are also instances of non-metered take. For these forms of take, the hydrometric network and hydrological modelling are the way in which estimates are derived.

The hydrometric network provides information about river flows along the course of a river. This data is important to water resource assessment and for management purposes (such as declaring when commence or cease to pump rules apply, or to measure return flows into the system). Data from the network also infers information about extractions, and so is important for compliance and enforcement. The optimum location and number of gauging sites is different today than when much of the network was established – for example, due to the importance of measuring environmental water, and using the network for compliance purposes. An assessment of whether the current network is fit for purpose, and how it can be improved, is necessary. Alternative technologies such as satellite imagery and drones, should be considered as part of an assessment.

Hydrological models are a further important source of information about water take and availability for planning, river operations and compliance. Basin states committed in 2008 to transition from their ageing and incompatible suite of models to a single, modern modelling platform known as eWater Source, developed with significant Australian Government funding. This transition has been too slow. The MDBA river operations division will, and Basin states should, publish an assessment of their current planning and operational modelling tools, including when they expect to transition to eWater Source and an ongoing program of improvement.

Recommendation 2: To improve confidence in the measurement of take by floodplain harvesting in the northern Basin, it is recommended that NSW and Queensland:

a) include an updated assessment of water take by floodplain harvesting in their annual water accounts commencing immediately

b) require that 95% of take by non-metered floodplain harvesting is accurately measured, for example, by calibrated storage level recorders by 30 June 2022 and publish annual milestones towards this objective.

Recommendation 3: To achieve the coverage required to generate river flow data for compliance and enforcement purposes, it is recommended that each state review its hydrometric network to identify any gaps and maintenance backlogs and publish by 30 June 2019 a program for addressing any issues.

Recommendation 4: It is recommended that by 30 June 2018 states publish an improvement program for hydrologic models to account for water take including their plans for transitioning to eWater Source and ongoing improvement of model performance. If a decision is made not to transition to eWater Source, the reasons for this should be published.
Action 1. The MDBA will:

a) publish guidelines drawing on relevant standards for the requirements of hydrometric networks and hydrologic models for compliance and enforcement by 30 June 2018

b) publish annually from 2018 a report on the data quality and assurance processes for hydrometric data for Basin Plan reporting and river operations in the River Murray System.

Action 2. The MDBA will publish an improvement program for its hydrologic models, as per Recommendation 4, by 30 June 2018.

Frameworks and strategies

The right technology alone is not enough for effective compliance. It must be employed within a sound governance framework. Compliance staff must be properly supported, and the function must be recognised as a core responsibility. Community confidence also means placing a premium on transparency in the way compliance activities are performed.

In 2009, the COAG agreed to the National Framework for Compliance and Enforcement Systems for Water Resource Management. The Framework set out the elements of such a system, along with statements of best practice for each. In formulating a way forward, the Review has referenced the Framework.

Good governance for water compliance requires organisational stability, a strong culture of compliance, the clear assignment of responsibilities and accountabilities for decision-making, transparency and close connections between the steps in compliance decisions. The simplest way of establishing the connectedness of decisions is for the compliance function to be within one agency, with suitable separation between customer service and enforcement functions. As an example, this model is applied successfully in South Australia and Goulburn-Murray Water. If more than one agency is involved in aspects of compliance and enforcement then both need to be working to the same end with a clear division of labour.

Compliance budgets for most states have reduced in recent years. Adequate resourcing of compliance functions is clearly important, and budgets should reflect the efficient costs of achieving best practice and should be protected from being diverted to other priorities.

All states report that they have a risk classification of water sources and risk-based decision tools. However, the extent to which these tools are used is unclear. Transparency of compliance monitoring is the bedrock to community confidence. This means that the compliance risk tool, the risk classification of water sources and the annual audit priorities need to be public. Only South Australia publishes its compliance strategy.

Successful enforcement action requires well-trained staff with the knowledge and skill to identify offences, gather evidence, conduct interviews and manage administrative sanctions and contribute to the preparation of higher-level matters.

Enforcement action needs to follow a clear escalation pathway that sets out the steps through which an alleged offence is managed. As with compliance monitoring, the escalation pathway needs to be published. Only South Australia publishes its escalation pathway.
For most states, the last comprehensive reporting on compliance activity was in 2014-15. Only South Australia and the ACT have published more recent data. This is a serious problem. Good reporting is critical to the transparency of compliance frameworks and practices and is needed for community confidence in the effectiveness of the compliance system. Annual reporting should occur on numbers, types and locations of breaches, the actions taken, the outcomes achieved and the timeliness of each step in a compliance pathway.

A core role of a compliance system is ensuring that entitlement holders understand their rights and obligations. Good compliance practice is to provide entitlement holders with access to all the information they need for complying voluntarily.

It is also a matter of expressing the rights and obligations as simply and clearly as possible. Water resource plans are statutory instruments. While that does not preclude them being well expressed and easy to understand, usually that is not the case. Information that is central to compliance can be hard for the public to access.

Although states provide a variety of information materials, no state appears to conduct regular education sessions for entitlement holders, or deliver a standing strategy for education and community awareness.

**Recommendation 5:** It is recommended that by 30 June 2018 each state review its arrangements for compliance and governance to ensure they take account of the following principles:

- **a)** encouraging a strong culture of compliance that is led ‘from the top’
- **b)** clear assignment of decision making responsibilities at appropriate levels, with decisions made on the grounds set out in published compliance strategies
- **c)** a commitment to transparency
- **d)** compliance functions should preferably be undertaken by a single agency (with appropriate separation of enforcement and operational functions) or where this is not the case, the agencies should be well-aligned.

**Recommendation 6:** It is recommended that by 30 June 2018 each state publish compliance strategies that include:

- **a)** a risk-based strategy for guiding compliance monitoring effort
- **b)** annual audit priorities
- **c)** an escalation pathway to apply once non-compliance is detected
- **d)** a mandatory protocol for entitlement holders to follow in the event of meter failure
- **e)** a statement of the penalties and sanctions regime, and any improvements required
- **f)** annual reporting of data on compliance activities by location including the timeliness with which allegations are addressed
- **g)** provisions to ensure compliance staff are adequately trained
h) a program of community awareness and education including a program to ensure that water plans, licences and management rules are expressed as simply as possible and guides for these instruments are published

i) a program to ensure information about entitlements, allocations, licence conditions, meter readings, account balances and so on are easily accessible to the public in real-time

j) a program to ensure meters are identified by a unique reference number, and entitlement and pump details are publically accessible

k) a commitment to effectiveness and efficiency, including the adoption of new technologies

l) adequate resourcing based on a cost recovery pathway, with compliance budgets protected from the normal exigencies of government budgets.

Action 3. The MDBA will also review its arrangements as per Recommendation 5 and will prepare guidelines for consistent reporting of compliance activities by 31 March 2018.

Legislative improvement – penalties and sanctions

The penalty and sanction provisions of states' water legislation pose two challenges. The first is that penalties and sanctions vary considerably between states. For example, in NSW the maximum penalty for illegal take is $2.2 million for a corporation, whereas in Victoria it is $9,514 for a first offence. For the shared water resources of the Basin, there is a strong argument for consistency of penalties and sanctions, and to make penalties a decisive deterrent.

Second, it is important to have a full suite of administrative, civil and criminal penalties and sanctions so that the punishment can match the crime, and the compliance resources required to pursue a breach are proportionate to the offence. Victoria is notable for having very few administrative and civil penalties and sanctions, which means having to choose between low-level warnings and criminal prosecutions.

Recommendation 7: It is recommended that by 30 June 2018, states review their legislation and if needed propose any amendments necessary to ensure:

a) strong penalties and greater consistency between states

b) an appropriate range of administrative, civil and criminal sanctions and penalties.
MDBA compliance and enforcement

A resounding community response to the Four Corners program, also expressed in the Matthews Interim Report, has been the concern that the MDBA's powers are unclear, and that the MDBA should be doing more to enforce compliance with the Basin Plan.


The MDBA has a statutory function of taking action to enforce compliance with the Basin Plan and state water resource plans and is vested with powers for that purpose (see Attachment A). The application of these powers during the transition period to 30 June 2019 is limited by a part of the Water Regulations 2008, which the MDBA seeks to remedy. The MDBA's powers could also be strengthened, for example with the addition of appropriate provisions on evidentiary requirements and the inclusion of criminal sanctions.

Many Basin Plan requirements are achieved through provisions in state water resource plans that are to be assessed by the MDBA. Under these arrangements, states have the lead compliance and enforcement function against individual water entitlement holders. The MDBA is not resourced to take over this role, and it would be inefficient for the MDBA to do so.

That said, the MDBA's role is to hold states to account if they are not performing their compliance and enforcement functions effectively. The MDBA accepts that it has not adequately escalated allegations of water theft when the relevant state authorities have not dealt adequately with them. A more assertive and transparent approach to compliance by the MDBA is needed, including a proactive escalation strategy (set out in Attachment B), an audit and assurance program, better public reporting, and a willingness to employ its enforcement powers where necessary. For clarity it is worth noting that the MDBA would not take action against water entitlement holders that are complying with an accredited state water resource plan.

In addition to improving confidence that compliance is occurring at the individual level, it is also important to ensure that water accounting at the valley or aquifer scale is based on sound methods, timely, and appropriately audited.

The SDL water accounting and compliance framework puts in place limits and establishes a foundation for enforcement to ensure that, over time, annual actual take of Basin water resources for consumptive use does not exceed the SDLs. From 2019, annual water accounts will be prepared to keep track of the amount of water that is taken from each SDL resource unit and to monitor how this compares to the annual limit for each area. A trial of these new accounts was published by the MDBA in November 2017. Until at least 2019, the MDBA will continue to maintain and publish the historic cap register set out in the MDB Agreement.

The quality of SDL accounting will be directly dependent on accurate measurement of the amount of water taken and depends heavily on the nature and extent of the hydrometric gauging network throughout the Basin and on hydrological models using metered and measured data. These issues are addressed in recommendations to states above.
The governance arrangements between Australian Government and state agencies for implementing the Basin Plan need to be improved and streamlined to better reflect roles and responsibilities so as to ensure that all relevant agencies are engaged on issues for which they have responsibility and to avoid duplication. These arrangements should address the need to more closely integrate the work of river operators and environmental water managers including in relation to matters covered by the MDB Agreement for the River Murray System.

Action 4. The MDBA will take a more proactive approach to compliance and enforcement by:

a) immediately adopting the revised protocol for handling and escalating allegations of non-compliance at Attachment B
b) seeking a change to the Water Regulations 2008 to ensure uniform application of its compliance powers during the transition period to 30 June 2019.

Action 5. By 30 June 2018 the MDBA will revise and publish its compliance and enforcement strategy to ensure compliance with the Basin Plan. The strategy will include:

a) a clear statement of the MDBA’s expectations that compliance and enforcement is undertaken effectively by states, in line with best practice
b) a risk-based audit program to check that Basin Plan obligations are being met, including state compliance arrangements
c) guidelines or standards relevant to water measurement and compliance
d) improvements to the system of assurance statements made by states and Australian Government agencies in meeting their Basin Plan obligations
e) improved communication of the MDBA’s compliance activities.

Action 6. The MDBA will establish a dedicated compliance and enforcement branch, as well as an independent assurance committee to advise on the MDBA’s compliance and enforcement work.

Action 7. By 30 June 2018 the MDBA will prepare and publish an SDL reporting and compliance framework that includes:

a) an explanation of how the ‘reasonable excuse’ and ‘make good’ provisions in the Basin Plan will be applied for SDL accounting purposes
b) other lines of evidence, such as satellite data, crop returns and long term hydrologic models to complement self-reporting by states
c) SDL compliance, accounting and reporting within its audit and assurance program
d) improved public communication of SDL compliance and accounting arrangements.
Recommendation 8: It is recommended that Australian Government–state governance arrangements for implementing the Basin Plan are reviewed to ensure that all those with implementation obligations are engaged, statutory roles are respected, decisions are better integrated, and transparency is improved.

State water resource plans

Water resource plans outline how each part of the Murray–Darling Basin’s water resources will be managed to be consistent with the Basin Plan.

There are 36 water resource plans to be developed across the Basin, covering both surface and groundwater. NSW has the lion’s share, with 22 plans to be done. The Basin Plan requires that the plans are accredited by 30 June 2019, meaning they must be with the MDBA for assessment by the end of February 2019. To date, only one such plan has been accredited, for the Queensland Warrego-Paroo-Nebine.

The Basin Plan does not take full effect until all water resource plans have been revised and accredited, and the SDLs have commenced. Both of these things are scheduled to occur from 1 July 2019.

If state water resource plans are not accredited in the statutory timelines, the MDBA would either have to take compliance action where there are inconsistencies between Australian Government and state laws, or use the step-in provisions of the Water Act 2007 to develop its own enforceable plan. This would provide considerable uncertainty for water entitlement holders, and bring into question the level of commitment to the reform.

Progress with the development of water resource plans has not been adequate. At this stage, MDBA considers that South Australia, Queensland and the ACT are likely to meet the timeline for accreditation. While noting the efforts of many state officials thus far, MDBA is concerned at the rate of progress in NSW and Victoria.

Between the Basin Plan being made in 2012 and when state water resource plans should be accredited in 2019, transitional arrangements for current state plans were established. If current state plans are amended during this period they need to be reviewed by the MDBA to ensure they are no less consistent with the Basin Plan. This process has lacked transparency, and in one instance (the Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2016) the MDBA is concerned that amendments made by the NSW government have resulted in a reduced level of protection for environmental water.

Action 8. To meet the 30 June 2019 deadline for water resource plans the MDBA will:

a) develop and keep up to date a public register of progress with water resource plan development, including its assessment as to whether any replacements of or amendments to transitional water resource plans are ‘no less consistent’ than the Basin Plan

b) continue to work with states to find ways to streamline the accreditation process
c) increase its current level of resourcing for the assessment of state water resource plans

d) actively consider whether it should advise the Commonwealth Minister to agree to initiate the step-in provisions of the Water Act if there is insufficient progress on some water resource plans.

Recommendation 9: It is recommended that COAG reiterates its commitment to the 30 June 2019 deadline for water resource plan accreditation because of concerns arising from this review. It is further recommended that NSW and Victoria accelerate their work on preparing Basin Plan-compliant water resource plans.

Protection of environmental water

The Four Corners program raised questions about whether current management rules in the Barwon-Darling system allow environmental water to be taken by irrigators. The MDBA agrees that this is the case, and in its review of Basin Plan settings in the northern Basin last year recommended a number of improvements to the protection of environmental water.

The water entitlement system and rules governing access across the Basin have evolved primarily to allow the efficient extraction of water for irrigation or other purposes. Efforts to manage the system for both extractive use and environmental outcomes are in their infancy and are evolving. More effort is needed to improve the arrangements, to provide confidence that water that is being recovered for the environment will be available for this purpose.

When the Basin Plan was made, all Basin governments committed in the Intergovernmental Agreement on Implementing Water Reforms in the Murray–Darling Basin, June 2013 (IGA) to protect environmental water through measures such as water shepherding, while taking into consideration any third party impacts.

There are opportunities to improve the protection of environmental water in both the unregulated rivers in the northern Basin, and in the more regulated rivers of the southern connected Basin (ie. the Murray, Goulburn and Murrumbidgee rivers and their tributaries).

In the northern Basin, the NSW and Queensland governments have committed in principle to implementing the measures, known as ‘toolkit measures’ proposed in the MDBA’s Northern Basin Review for improved protection of environmental water, subject to Australian Government assistance. MDBA expects that these improved arrangements will provide for more active management of individual flow events and be included in the relevant state water resource plans scheduled for accreditation by 30 June 2019. Within the Barwon-Darling, the NSW government could immediately introduce Individual Daily Extraction Limits and encourage the development of voluntary agreements to protect low flows (of less than 2000ML/day at Bourke).

In the southern Basin, the SDL adjustment mechanism includes a number of measures designed to increase the environmental benefits yielded by the water recovery targets in the Basin Plan. The agreed measures on enhanced environmental water delivery, relaxing constraints and the reconfiguration of Menindee Lakes will be vital to this work, and must be in place by 2024 to lock in the recently announced adjustment to the SDLs of 605GL.
addition, Basin states must have implemented their respective policies for improved protection of environmental water by 30 June 2019.

**Action 9.** The MDBA will maintain a public register of state measures to improve the protection of environmental water and report annually on progress towards meeting this important Basin Plan milestone.

**Recommendation 10:** To improve protection of environmental water in the unregulated rivers of the northern Basin it is recommended that the NSW and Queensland governments revise their water resource plans to include effective policies for the protection of environmental water, particularly during low flows. These policies should include event-based management or other innovative policy tools capable of delivering equivalent environmental outcomes. In the Barwon-Darling it is recommended that immediate steps are taken to introduce Individual Daily Extraction Limits and voluntary mechanisms to protect individual low flow events.

**Recommendation 11:** To improve the protection of environmental water in the southern-connected Basin it is recommended that governments fully implement the SDL adjustment mechanism including:

a) state policies to improve protection of environmental water (also called prerequisite policy measures) as required under the Basin Plan by 30 June 2019

b) completion of supply, efficiency and constraints projects by 2024.

**Tying it together – a COAG Compact**

The review presents actions to which the MDBA has committed and recommendations for states. Subject to states’ decisions on the recommendations, it is proposed that each state develop a Compliance Strategy Implementation Plan setting out the actions to which each commits for strengthening their compliance arrangements.

Each Basin state needs to publish its own compliance strategy in line with the best practice arrangements covered in this Report, and provide regular progress reports. For its part, the MDBA is committed to revising its compliance strategy and improving reporting arrangements.

Annual reports on progress should be provided to the COAG, the Australian Parliament, the Murray–Darling Basin Ministerial Council and the public.

**Recommendation 12:** It is recommended that the COAG commit to a Basin Compliance Compact to implement the recommendations of the review initiated by the Prime Minister. The Compact would commit governments to the actions required to restore public confidence in water management within the Basin. The Compact would be published by 30 June 2018 with annual progress reports thereafter and would address:

a) progress with the roll out of improved metering and measurement arrangements outlined in this report

b) an update on each state’s compliance strategy addressing the issues contained in this report
c) a report on each state's compliance activities including the timeliness of handling allegations

d) the establishment of a network of water compliance practitioners to promote best practice approaches, to be coordinated by the MDBA

e) steps within each Basin state to ensure that Basin Plan-compliant water resource plans will be ready for accreditation within the agreed timelines

f) progress with measures to improve the protection of environmental water including the toolkit measures in the northern Basin, and relevant components of the SDL adjustment mechanism.
Report in full

1. Process and Work Program of the Review

The Review has required:

- understanding current compliance arrangements in each Basin state and the history of the National Framework
- gathering evidence about the way these arrangements work on the ground
- reviewing critically the MDBA’s record on compliance
- meeting with the Independent Panel to get their advice in relation to both the MDBA’s and Basin states compliance frameworks and practices
- consulting with stakeholders to obtain their views
- liaising with states to engage them in the Review and eliciting their views on what is needed to improve compliance.

The Review has examined the MDBA’s practices as much as those of the states. The Panel was established to critique the MDBA’s work and has been fundamental in pushing the MDBA to examine and report with a forensic honesty its past policies and practices, and to be open-minded about the changes required to improve compliance performance.

The process for consultation and evidence gathering

Six meetings were held with the Panel. These were full day sessions, at which the MDBA’s methodology, findings and recommendations were presented. The Panel gave detailed responses about findings and advice about what to do next.

The MDBA conducted three rounds of bilateral meetings with states. The first was in early August to discuss the method and process of the Review. This was followed by detailed discussions with compliance staff about frameworks and practices. The final bilateral round of discussions was in late October. These meetings were to test the MDBA’s recommendations.

Stakeholder consultation occurred in two ways – through discussions at three Basin Community Committee meetings and with peak stakeholders (representing Aboriginal communities, irrigators, farmers, floodplain interests and environmental groups). Stakeholder views were also gathered during the field work component of the work.

There was also an online survey which received 68 responses. Noting the small number of respondents, the survey’s principal finding was that 70% believed the current compliance and enforcement system was not deterring unauthorised take.
The published research and interviews with experts provided an understanding of best practice for compliance. State data was required for constructing snapshots of the level and pattern of compliance activity.

The field trips were to the Northern Adelaide Plains and the Riverland around Berri and Renmark in SA; the Goulburn Murray region in Victoria; the NSW Murrumbidgee centred on Leeton and the Barwon–Darling based in Bourke; and the Queensland visit was to the Condamine and Lower Balonne regions, around Toowoomba and St George. The trips comprised a ‘day in the ute’, a ‘day in the office’ and two days of visiting pump and meter installations and talking with irrigators and other community members about metering and compliance issues. The ‘day in the ute’ entailed spending time with compliance officers to understand the nature and pressures of their work. The day in the office was an opportunity to learn about compliance arrangements and examine case files on the investigation of breaches to understand the pathway by which they are managed, from initial detection to closure. These two days were conducted by an MDBA taskforce member. A Panel member joined the field trip for the two day program of inspecting pump and meter installations. As well as being an opportunity to talk with irrigators and other stakeholders, the site visits were highly informative about some of the technical issues of metering.

Each field trip included a roundtable meeting with stakeholders representing the environment, irrigation, farming and local government. More than 80 people attended roundtables in Berri, Shepparton, Leeton, Bourke, Tilpa and St George.

States committed significant resources to the trips. In every case, staff were helpful and supportive. The owners of the properties we visited were welcoming and engaged constructively with the project. The MDBA is grateful for this assistance, which has contributed greatly to the Review.

Historical Context

The collective management of the Basin dates from 1914, when NSW, Victoria, South Australia and the Australian Government signed the River Murray Waters Agreement. The Agreement was confined to the River Murray, which constitutes the border between NSW and Victoria, and then flows down through SA to the sea. It settled states’ shares of the water, a governance structure, and a capital works program to build locks, weirs and a major storage upstream from Albury. Everything else — the management of all the water sources within a state, licensing, works and compliance — was left with individual states. The Australian Government’s role was confined to providing a quarter of the funding and mediating disputes between states when called on.

The River Murray Waters Agreement established a consensual process for trying to reconcile the states’ competing interests in the River. As autonomous entities, the states were committed to retaining their independence and would only join in co-operative action when there was a benefit from doing so. For this reason, decisions required unanimity, giving each state a veto power. Governance of this kind was the only arrangement that could have been agreed in a political compact between the disputatious states, whose foundation stone is to serve their constituencies.

The Agreement was most effective from its commencement to the completion of the last regulating structure, Dartmouth Dam, in 1979. These were the building years, when the capital works program settled in 1914 was rolled out. This work occurred in the context of water take being well within the volume available, when water quality and riverine environmental health were neither significantly impacted nor well understood, and when social values embraced the extraction of water for irrigation. Most importantly, the Agreement yielded the economic benefits of the storage and regulation of River Murray water to each of the three states. The Agreement was about ways of sharing the benefits of regulating the water, and worked for that reason.

From the 1970’s on, as water allocations began to push against the limits of availability, the consequent environmental stresses became evident and of increasing social concern. Water quality challenged the Agreement. Addressing water quality entailed costs, by way of constraints on state prerogative, economic costs from limits on irrigation, and the financial costs of capital works projects like salt interception schemes, which yielded benefits outside the jurisdiction. The requirement for unanimity meant it was difficult to settle on the actions required to address water quality. The Agreement struggled to find ways of sharing the costs of improving water quality.
The Roles of MDBA and Basin states

On the eve of Australia Day 2007, then Prime Minister John Howard proposed that the Australian Government take over water management in the Basin and end the Agreement. The Australian Government argued that co-operative governance meant water availability and quality problems were not being tackled as they needed to be. A new Australian Government body was proposed, which would be a ‘voice for the Basin as a whole’.

The proposal required a referral of Constitutional powers from states to the Australian Government, which in the end did not occur. In response, with bipartisan Parliamentary support, the Australian Government proceeded with the Water Act that relied on its own powers. For that reason, the Act fell short of the comprehensive instrument the Australian Government had sought, the Murray–Darling Basin Agreement (the MDB Agreement) remained in place and states retained their water management powers. The Water Act installed a new body with a Basin-wide remit to sit over the top of the roles and responsibilities states had exercised for 100 years. The new entity was to be independent and expert.

The Basin is now managed under the Water Act and the MDB Agreement by an Australian Government body — the MDBA. As a result, the MDBA has two distinct roles and serves two masters. Under the MDB Agreement the MDBA is responsible for operating the dams, locks and weirs that regulate the River Murray and for managing joint natural resource programs on behalf of the states and the Australian Government. This work of the MDBA is overseen by a Basin Officials Committee of the states and the Australian Government, of which the MDBA is not a member, and by a Ministerial Council representing Basin governments.

In relation to the Water Act, the MDBA is responsible for developing a whole-of-Basin plan, which sets sustainable limits on the quantity of water that can be taken from surface and groundwater resources. The Australian Government funds the Basin Plan, and the Authority is accountable to the Commonwealth Minister for this work.

Delivering the Sustainable Diversion Limits (SDLs) is central to the Basin Plan. Because states have retained their water management powers, SDLs must be implemented through states’ water resource plans. Driven by Victoria’s water resource plans running to 2019, the Basin Plan allowed seven years, to 30 June 2019, for states to submit their plans to the MDBA for accreditation as being consistent with the Basin Plan.

The Water Act also established the statutory office of the Commonwealth Environmental Water Holder (the CEWH) who is responsible for managing the Australian Government’s environmental water holdings.

On 9 December 2016, noting that the Murray–Darling Basin is of vital economic and environmental significance to a large part of Australia, First Ministers declared that ‘it is critical that the Basin Plan is implemented on time and in full’. Six months later, with two years to go before the final date for accreditation, on 9 June 2017 Murray–Darling Basin First Ministers confirmed their commitment to the Basin Plan. Leaders noted the plan provided a credible and balanced pathway to implement the Basin Plan package agreed in 2012, and stressed the importance of maintaining momentum to ensure the Basin Plan is implemented ‘on time and in full’.
Water management in the Basin

During the past century or more each state has developed a system of water access entitlements and planning arrangements reflecting the nature of the river systems in each jurisdiction. Differing preferences for reliability of water supply and industries suited to the local climate have influenced water policies in each state. Large dams capture runoff from almost all of the western side of the Great Dividing Range, from around Kilmore in Victoria to Toowoomba in Queensland. These dams and associated auxiliary infrastructure provide a regulated water supply across extensive areas of the inland plains of the Basin. In general terms the level of regulation in the southern Basin is more extensive than in the north.

In the four years to June 2016 average water take in the Basin was around 12,700 GL per annum. This comprises 11,300 GL from surface water and 1,400 GL from groundwater.

Irrigation represents 90% of water take in the Basin. Predominant industries are cotton in the northern Basin and in the south are rice, horticulture and dairy, with a recent growing importance of almonds. Almost four million people rely on the Basin for their water supply including Canberra and Adelaide, which sources half of its water from the Basin.

Network irrigation systems are an important part of the industry, representing the majority of diversions in the southern Basin. Irrigation areas are variously government owned and operated through to those where private companies manage the network on behalf of the constituent water entitlement holders. Extensive irrigation areas exist in northern Victoria and southern NSW. Elsewhere, irrigation networks are more localised, reflecting the circumstances and opportunities afforded by the geography of the area.

Irrigation is also conducted on farms with direct access to water sources. This occurs throughout the Basin from rivers where the flow is controlled by dams (regulated rivers) and those where the flow is uncontrolled (unregulated, or in Queensland terminology, unsupplemented).

Groundwater systems vary widely across the Basin ranging from large alluvial aquifers with a high level of development (notably in parts of NSW) to extensive fractured rock and porous rock systems with low levels of development. While groundwater take represents a smaller proportion of overall use than surface water, it can be a more reliable source of water during dry times and is often relied upon in such times. It can be the only form of water available in some remote areas and is important for stock and domestic supplies.

The way in which water is shared amongst access entitlements is set out in statutory planning instruments, known generally as water resource plans. The arrangements have been drawn from an extended period of evolving custom and practice in water sharing. In recent decades, states have made these water sharing arrangements into statutory instruments.

Each water entitlement holder is bound to comply with the conditions of the entitlements issued by the relevant government. In regulated systems, this is the volume of water that can be taken over the water year (July to June). Each state has a system of making water available to entitlement holders, based on water availability. Through processes set out in water resource plans, states make water allocation announcements, which are updated...
monthly in the light of changes to availability compared with what had been forecast at the start of the water year. Entitlement holders can then order this water for extraction.

There is a range of entitlement products issued by states providing for higher or lower reliability of water access. For example, in NSW, high security and general security licences are issued with water being made available to high security as the priority with lower priority being given to other products. In Victoria, high reliability water shares and low reliability water shares are issued with similar cascading priority of access. In SA there is one major type of entitlement for water extraction, which is broadly comparable to the high reliability products in the NSW and Victorian Murray.

Unregulated systems are rivers where the level of infrastructure is limited or even absent and not sufficient to control flows in the river. In unregulated systems, in addition to the amount of water an entitlement may allow a user to take from the river, it is also necessary for there to be sufficient water in the river for this extraction to occur. This is managed through making the ability to take water conditional on specific flows being exceeded at various points along the river. These flows are sometimes referred to as ‘pumping thresholds’ and there may be several classes of licence that incrementally allow extraction as flows increase, or incremental steps in one class of licence as flow rates increase.
3. State compliance and enforcement

What is best practice compliance?

Compliance and enforcement arrangements for water in the Basin have evolved as the value of the resource and the demands placed on it have grown, and with the opportunities provided by new technologies. Conceptually, compliance arrangements for water are no different to those for other natural resources such as fisheries, native vegetation or wildlife.

The end point of compliance is not to penalise or disadvantage water entitlement holders, but to bring all into compliance. The compliance pyramid is highly relevant — with education and awareness at the bottom, warnings or other ‘soft’ compliance in the middle, and severe penalties and criminal prosecution for serial or material offenders at the top. The role of on-ground compliance officers will always be important — to make the right judgements about when to elevate issues, or when to conduct ‘soft’ compliance. However, it is also important to have comprehensive, risk-based systems in place so that judgement is exercised consistently and transparently.

Best practice compliance involves:

- an ethos or culture that does not tolerate stealing of water
- accurate, reliable tamper-proof meters that are monitored regularly to detect breaches
- a comprehensive, well-maintained hydrometric network and robust hydrological models
- an enforcement pathway that manages breaches
- penalties and sanctions that present a strong deterrent to non-compliance and involve compliance resources proportionate to the offence
- governance with a clear allocation of responsibilities and strong connections between each of the steps in decision-making
- comprehensive, regular reporting on compliance activity, offences and outcomes
- continuing programs of education and community awareness to help people comply.

These important elements are discussed throughout this Review, with a view to encouraging best practice approaches to compliance across the Basin.

Current Basin state compliance frameworks and practices are summarised in Attachment C, and general findings and recommendations to improve current practices are made in the following sections of the report.
State compliance and enforcement — metering and measurement

Knowing the amount and timing of water availability and the volume being taken are critical to properly managing the Basin’s water resources. Information is generated by meters, which measure the water taken by entitlement holders by gauging stations that measure flows in waterways and by modelling, which estimate the volume of unmetered take and check the accuracy of the measurements. All sources of information are brought together in water accounts that reconcile take with water availability and the amount left in rivers and aquifers.

Metering is critical to good water use management by irrigators, to water managers quantifying water volumes and the amount available for extraction, and for public confidence in the robustness of water sharing, by assuring the community that entitlement holders are extracting the volumes of water they have been allocated.

Metering is important to the social licence under which water is taken. It constitutes the way in which an entitlement holder demonstrates how they have acquitted themselves.

For these reasons, pumping should not occur without a meter.

Meter Standards

Under the 2009 National Framework for Non-Urban Water Metering, all Australian governments committed to new meters being compliant with the Australian Standard (AS4747) by July 2020. To meet the Standard, installed meters must be accurate to within plus or minus 5% and be capable of having a telemetry device fitted. By comparison, some common types of meters in the Basin, such as mechanical or impellor meters and the time and event meters employed in the Barwon–Darling, may misread — the latter by between 15% and 30% or more. In 2008 it was estimated nationally that only around 30% of extraction points had meters that comply with the Australian Standard.

In 2014-15, the commitment to AS4747 was diluted. At that time, states and territories advised the Australian Government that the Non-Urban Water Metering Framework was no longer necessary, as they had processes in place to ensure adequate metering, based on assessments of risk and costs. In place of their commitment to AS4747, states adopted a variety of milestones. Victoria extended their implementation timeframe. NSW developed an Interim Standard and Draft Water Take Measurement Strategy, and Queensland adopted its own non-urban water metering policy for unsupplemented extractions.

States were able to adopt alternatives to AS4747 because meters can be sold in Australia without complying with the standard. This is due to an exemption from pattern approval and verification under the National Measurement Act 1960 and the National Trade Measurement Regulation 2009 applying to all meters for pipes greater than 40mm, which is only slightly larger than the pipes for urban houses. Given the costs of submitting meters for pattern approval, it appears many manufacturers have chosen to market their products without it.
There are two AS4747 testing facilities in Australia, the Manly Hydraulics Laboratory and the University of South Australia, both of which may have been under-utilised in recent years. Testing can also be done in approved laboratories overseas.

As meters are installed on pumps extracting water from watercourses that carry a variety of ‘trash’ and are subject to flooding, they are vulnerable to being damaged. Keeping meters functioning requires service support and parts back-up. The experience of water licence holders, particularly in remote areas, is that there can be significant delays to getting replacement parts and a technician to make repairs.

Governments will need to undertake detailed follow-up work, in consultation with industry, to determine arrangements for efficient repair services and parts back-up. These arrangements should be included in the water service provider or jurisdictional maintenance plans called for by AS4747 (In-service compliance for non-urban water meters).

**Case study: old versus new meters**

On the field trip to the Murrumbidgee and Barwon-Darling within NSW, a number of different metering situations and approaches were observed.

The Murrumbidgee river pumpers have benefited from the installation of modern Magflow meters with telemetry, through a recent Australian Government funding program (in return for an agreed level of water savings). While the roll out of the program could have been improved in some areas (it was rolled out quickly, and there are some examples of poor installation), by and large the valley is now accurately metered in real-time, with irrigators able to access this valuable data. Compliance is much easier as a result.

By contrast, in the Barwon-Darling, metering of offtakes is by so-called ‘time and event’ meters. This technology dates back to the mid 1990s and is, according to all the people spoken to, quite inaccurate. Anecdotal estimates were that these meters under-measured the volume of water pumped by 15% or more under high flow conditions. Furthermore, they send information to data loggers on site that can only be read manually by one of only two ageing laptop computers available state-wide with the required, now obsolete, software.

There were a range of views on the history of why the meters were there and the implications of replacing them, and clearly stakeholders need to be consulted in any replacement program. However, it is time that metering in the Barwon–Darling is modernised. It is understood that a recently announced NSW program will address this.

Between 64% and 73% of annual Basin surface water take is metered. For regulated water, the percentage is 89% to 92%. Metering of unsupplemented (in Qld) and unregulated water (in NSW) is much lower. Thus in the northern Basin, only between 25% and 51% is metered. In the southern Basin between 77% and 84% of unregulated water is metered.
The obligation to install an AS4747 compliant meter should apply where there is no meter installed or when a replacement is required or the existing meter is not accurate within 5%.

Supply and installation of AS4747 compliant meters is estimated to cost $6,000 for a 100 mm pipe. For the common range of pipe sizes, costs are estimated between $12,000 for a 350 mm pipe to $20,000 for a 600 mm pipe. Annual maintenance costs are around $500.

Consistent with water charge rules under the Water Act, licence holders should pay the costs of meters directly or indirectly where they are publically owned, through a cost recovery pathway.

Meter management

The question of who should own the meter, government or the entitlement holder, has been strongly contested in recent times. The finding of the report is that:

- effective compliance requires certainty and consistency and that is engendered by stability
- a change of ownership, from state to private or the reverse, is disruptive and has high transaction costs
- neither approach is inherently superior to the other — with appropriate assurance systems, both can work well.

For these reasons, no change is recommended to existing ownership, maintenance responsibilities and reading arrangements. Instead, the recommendations are directed to making sure that both work equally well.

Regardless of who owns the meter, installation can be by accredited installers but validation and ongoing audits should be the domain of the responsible agency. This provides a clear line of sight between the initial verification, which establishes a benchmark, and subsequent readings and audits.

The meter reading system should be tamper-proof and true to what the meter records. For this, technology is the answer. Modern telemetry systems allow meters to be read remotely, as well as signalling faults with the meter and being tamper-proof. The benefits are readings in real-time, considerably reduced staff costs and effective compliance.

Remote sensing technology solves the problems of distance and remoteness. Where there are considerable distances between irrigation properties, compliance monitoring is expensive and slow. Where resources are limited, it can be difficult to conduct comprehensive monitoring.

Another benefit of the technology is that it depersonalises the task of monitoring. This can be an issue in smaller towns, where officers are part of a community. By removing the initial personal interface between the officer and the irrigation corporation, some of which are very large, the technology serves to offset what might be seen as a power imbalance between the two.
While AS4747 compliant meters must be capable of supporting telemetry (i.e., to send data in real-time back to base using mobile phone or satellite coverage), it is not mandated. The costs of telemetry are not insignificant. It is recommended that larger entitlement holders (above 100ML average take per annum) should all be required to have telemetry on their meters. Adding a telemetry capacity could cost $3000, with monthly operating costs of $10-20 if mobile coverage is available, and $50 to $100 in remote sites served by satellite coverage.

In relation to smaller licence holders, a risk assessment should be undertaken that takes into account remoteness, previous offences, the need to protect environmental flows, and the materiality of the take including for the protection of environmental water.

Meters can and do fail, either due to a fault with the meter itself or by being fouled. Depending on the nature of the problem, repairs can take time.

Recognising the risk of meter failure and the delays that can occur in making repairs, there should be an ‘action plan’ setting out alternative ways of measuring take while the meter is not working and the timeframes within which repairs must be completed. For consistency between entitlement holders, the action plan should be prepared by the compliance agency. The action plan will need to include incentives for making the required repairs expeditiously.

Finally, there does not appear to be a comprehensively applied and consistent system of identifying meters, let alone their location. Such a system would greatly assist compliance action. Making it publically accessible would provide transparency about the means by which take from a public resource is being measured.

Stock and domestic and riparian rights

These rights holders extract water under longstanding rights, the nature of which varies between states. In NSW, they comprise stock and domestic, riparian and landholder harvesting rights. In some areas, like the rural residential developments growing around regional centres, small rights holders cumulatively may impose stresses on water resources, particularly during a drought. Requiring metering for this group may be uneconomic. However, a way needs to be found of better managing take under these rights, and metering may be justified in high-risk areas.

A review of small take rights is needed to rationalise and volumetrically define them. These rights are often poorly understood. There is no reporting requirement in relation to water take, nor is there a compliance program in relation to the exercise of these rights. In NSW, landowners report annually on numbers of stock and pay a charge to the Local Land Services board. A similar system could be adopted for water take by rights holders.

Recommendation 1. To deliver a ‘no meter, no pump’ policy, it is recommended that governments:

a) mandate that all new meters on sale in Australia must meet AS4747 from 30 September 2018

b) require that 95% of meterable take in each water resource area is metered using AS4747 compliant meters by 31 December 2022
c) require the installation of telemetry for all entities with an average annual take of more than 100ML. For all others, the requirement to install telemetry would be subject to a published risk assessment

d) publish a mandatory protocol to be followed in the event of meter failure

e) require installed meters to be validated by the compliance agency, and then checked every five years

f) for transparency and to assist compliance, require that all meters be easily identifiable by a unique reference number, and entitlement and pump details must be publically accessible

g) release a meter improvement plan by 1 July 2018 with annual reports on progress

h) audit water take by stock and domestic and other rights holders, to identify areas of stress on water resources from the exercise of these rights, and put in place measures to monitor compliance.

Other water measurement

Non-metered take

Not all forms of water take can be metered – because the take occurs before water has found its way to a watercourse or other suitable location for a meter. Table 1 below indicates that around 70% of total surface water take, and 90% of take from watercourses, in the Basin is metered. Total surface water take is broken down by state in Figure 1. Harvesting of overland flows (also called floodplain harvesting) in the Northern Basin is the most prominent example of non-metered take - with recent estimates of annual take as high as 210GL. Farm dams and forestry plantations are also instances. For these forms of take, the hydrometric network and hydrological modelling are the way in which estimates are derived. It is important that there are accurate methods to quantify non-metered take.
Table 1: Basin and state scale percentage of surface water annual actual take that is metered

<table>
<thead>
<tr>
<th>State / Basin</th>
<th>Metered actual take from watercourses (%)</th>
<th>Metered actual take for all forms of surface water take (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensland</td>
<td>58%</td>
<td>31%</td>
</tr>
<tr>
<td>NSW</td>
<td>94%</td>
<td>92%</td>
</tr>
<tr>
<td>ACT</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Victoria</td>
<td>99%</td>
<td>98%</td>
</tr>
<tr>
<td>SA</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>Northern Basin</td>
<td>72%</td>
<td>63%</td>
</tr>
<tr>
<td>Southern Basin</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>Total Basin</td>
<td>91%</td>
<td>89%</td>
</tr>
</tbody>
</table>

**Average annual take (all forms) in Northern & Southern Basins (2012/13 to 2015/16)**

Pie chart size indicates relative volume of take (not to scale).

Figure 1: Average annual take (all forms) in Northern and Southern Basins (2012/13 to 2015/16)
Case study: Floodplain Harvesting

Floodplain harvesting or overland flow take is the collection, extraction or impoundment of water flowing across floodplains of the Northern Basin.

At the time the Basin Plan was made, the amount of floodplain harvesting in the Basin was estimated to be around 210 GL per year, although there was high uncertainty about the accuracy of this estimate.

Take by floodplain harvesting is not yet fully incorporated in annual accounting for water take in the Basin. However, Queensland and NSW have policies or regulations in place that control potential growth in floodplain harvesting. NSW is still working on fully implementing their policy.

Over recent years, in Queensland annual estimates are provided for each valley (based on regional surveys in the absence of metering), whereas in NSW long term average estimates are used. No data based on metering is currently reported to the MDBA for this form of take.

While this type of water take can be difficult to measure and track accurately, it is nevertheless a situation that must improve in order to ensure such extraction is managed within SDLs and to provide community confidence.

Hydrometric network

Gauging stations installed in watercourses measure flows at the gauge location. By measuring flows along a water course, this information provides the data required for water accounts that record water availability and take. Flow measurements assist with water management, and infer estimates of the volume of take for compliance purposes. In addition these estimates inform environmental water planning and inform models for defining permitted annual take. The hydrometric network was installed for water management purposes, and not to assist compliance monitoring or environmental water planning. Compliance is based on the annual permitted level of take, so if gauging is inaccurate or insufficient the integrity of the compliance regime will suffer.

Traditional river gauging is just one method of measuring flows. New technologies such as satellite imagery, drones and remote sensing or installing sensors on meters can provide the same information more cost effectively. New methods should be encouraged.

While gauging in highly regulated water courses is relatively comprehensive and well-maintained, elsewhere coverage is incomplete and a maintenance backlog exists. Further, the bulk of the gauging network was installed prior to the recent significant increases in environmental water management and new locations may be desirable for monitoring environmental water and for compliance purposes. The distribution of the gauging network has not been reviewed since the Basin Plan was made in 2012 and accordingly does not reflect any changes that may be desirable to monitor the new management practices coming into place under the Plan. Information on the accuracy of the data resides with the Basin states. The MDBA receives from Basin states final gauge data, which does not always
specify the data quality, process for quality assurance, or maintenance regimes of gauging networks. Improved management of data and reporting on the quality of data for Basin Plan implementation would assist better water resource management and compliance monitoring.

**Hydrologic modelling**

Hydrologic modelling capacity is needed to support long term planning decisions and the short term, operational management of rivers and aquifers to enable the most effective and efficient use of water for both extractive users and environmental outcomes.

Without good data to calibrate models, they can be inaccurate. Limited high-quality data will almost always be the greatest constraint on the accuracy of a model. The data of primary concern is river flow and diversions.

In many cases, the models for estimating water take for annual auditing and compliance purposes were originally to assist long-term water policy and planning. Their application to annual compliance checks has, in some cases, required model improvements to ensure they are adequate for the task. Further, the ability for models to accurately simulate end-of-system flows is of increased importance under the Basin Plan and is an area for improvement of some models.

Under subs.172(1)(ea) of the Water Act, the MDBA has the role of developing, in consultation with Basin states, an integrated water model for the Basin. Basin governments have committed to transitioning to the eWater Source model once this has been satisfactorily developed for each catchment. The commitment to this model is important as it means a consistent, robust modelling platform is available across the Basin, as opposed to the ageing and incompatible models currently used. The MDBA is well advanced in developing this model for application in the River Murray System.

**Table 2** provides an overview of model confidence indicators across the Basin. This provides an indication of the errors in the models.
Table 2: Cap model confidence indicators

<table>
<thead>
<tr>
<th>Valley</th>
<th>Correlation Coefficient ($r^2$)</th>
<th>Standard Error</th>
<th>Mean Error</th>
<th>Overall Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gwydir</td>
<td>0.59</td>
<td>95GL (28%)</td>
<td>+28GL (8.3%)</td>
<td>Low</td>
</tr>
<tr>
<td>Namoi</td>
<td>0.67</td>
<td>52GL (19%)</td>
<td>+28GL (10%)</td>
<td>Low</td>
</tr>
<tr>
<td>Macquarie / Castlereagh / Bogan</td>
<td>0.26</td>
<td>132GL (30%)</td>
<td>+75GL (17%)</td>
<td>Very Low</td>
</tr>
<tr>
<td>SA Murray</td>
<td>0.72</td>
<td>19GL (4.3%)</td>
<td>-1.8GL (-0.4%)</td>
<td>High</td>
</tr>
<tr>
<td>Goulburn / Broken / Loddon</td>
<td>0.93</td>
<td>121GL (6.0%)</td>
<td>+38GL (1.9%)</td>
<td>High</td>
</tr>
<tr>
<td>Campaspe</td>
<td>0.77</td>
<td>16GL (14%)</td>
<td>-4.8GL (-4.0%)</td>
<td>Fair-High</td>
</tr>
<tr>
<td>Lachlan</td>
<td>0.73</td>
<td>45GL (14%)</td>
<td>+15GL (4.7%)</td>
<td>Fair</td>
</tr>
<tr>
<td>NSW Murray</td>
<td>0.80</td>
<td>209GL (11%)</td>
<td>+82GL (+4.4%)</td>
<td>Fair</td>
</tr>
<tr>
<td>Victorian Murray</td>
<td>0.86</td>
<td>80GL (4.8%)</td>
<td>+9.9GL (+0.6%)</td>
<td>High</td>
</tr>
<tr>
<td>Lower Darling</td>
<td>0.61</td>
<td>58GL (43%)</td>
<td>+9.1GL (+6.8%)</td>
<td>Very Low</td>
</tr>
<tr>
<td>Murrumbidgee</td>
<td>0.80</td>
<td>249GL (11%)</td>
<td>+116GL (+5.0%)</td>
<td>Fair</td>
</tr>
<tr>
<td>Wimmera-Mallee</td>
<td>0.81</td>
<td>27.4GL (17%)</td>
<td>+0.2GL (+0.1%)</td>
<td>Fair</td>
</tr>
</tbody>
</table>

Recommendation 2. To improve confidence in the measurement of take by floodplain harvesting in the northern Basin, it is recommended that NSW and Queensland:

a) include an updated assessment of water take by floodplain harvesting in their annual water accounts commencing immediately

b) require that 95% of take by non-metered floodplain harvesting is measured by accurately calibrated storage level recorders by 30 June 2022, and publish annual milestones towards this objective.

Recommendation 3. To achieve the coverage required to generate river flow data for compliance and enforcement purposes, it is recommended that each state review its hydrometric network to identify any gaps and maintenance backlogs and publish by 30 June 2019 a program for addressing any issues.

Recommendation 4. It is recommended that by 30 June 2018 states publish an improvement program for hydrologic models to account for water take including their plans for transitioning to eWater Source and ongoing improvement of model performance. If a decision has been made not to transition to eWater Source, the reasons for this should be published.
Action 1. The MDBA will:

a) publish guidelines drawing on relevant standards for the requirements of hydrometric networks and hydrologic models for compliance and enforcement by 30 June 2018

b) publish, annually from 2018, a report on the data quality and assurance processes for hydrometric data used for Basin Plan reporting and river operations in the River Murray System.

Action 2. The MDBA will publish an improvement program for its hydrologic models as per Recommendation 4 by 30 June 2018.

State compliance and enforcement – frameworks and strategies

Governance

The right technology alone is not enough for effective compliance. It must be employed within a sound governance framework and appropriately resourced. Compliance staff must be properly supported and the function must be recognised as an equal part of an organisation.

Good governance for water compliance requires:

- stability within the organisation(s) responsible
- a strong, positive culture of compliance, which recognises compliance is an important part of its core business, and is led ‘from the top’
- clear assignment of responsibilities and accountabilities at appropriate levels of decision making
- decisions about compliance action should be timely and be made only on the grounds set out in the compliance strategy
- a commitment to transparency
- connectedness between each of the steps of compliance. Preferably, this means the compliance function should be undertaken by a single agency with ‘end to end’ responsibilities. If licensing, meter reading and low-level compliance are performed by a different agency to the agency with lead responsibility for investigations and higher level compliance and enforcement actions, the connections between the two agencies must be well aligned.

Compliance and enforcement costs should be based on the most efficient way of achieving best practice. Compliance budgets in most states appear to have reduced in recent years. The NSW Ombudsman has found compliance budgets in NSW to be inadequate. Further, in his Investigation into water compliance and enforcement 2007-17, the Ombudsman reports that over the five years to 2016 compliance expenditure in NSW was $19.875 million, nearly $10 million less than the funding for compliance yielded from the prices set by the Independent Pricing and Regulatory Tribunal.
Basin states and their respective economic regulators should publish information on the efficient level of costs. Compliance is funded through a cost recovery pathway and should be protected from the exigencies of state budgets. Compliance budgets should be accounted for as a separate line item in budgets, to prevent the possibility of being diverted to other purposes.

Monitoring and enforcement

**States should develop and publish a compliance strategy. Each strategy should include decision-making processes, reporting arrangements, escalation pathways and mechanisms for taking account of risks to water resources.**

Effective compliance monitoring has two functions. One is to guard against compliance breaches. Ensuring compliance requires an audit program. The other is to give the community confidence compliance is being actively policed. Community confidence is engendered by the perception that breaches will be detected and dealt with appropriately.

Transparency of compliance is the bedrock to confidence. In relation to compliance monitoring, this means that the compliance risk tool, the risk classification of water sources and the annual audit priorities should be public. This is the approach of the Australian Taxation Office, which announces periodically the classes of taxpayers that will be subject to particular attention, on top of a standing practice of random audits.

Public confidence in state compliance would be improved if information about individual entitlements, allocations, licence conditions, meter readings, account balances and so on, were easily accessible to the public, in real-time.

There is no point having a range of deterrents to non-compliance if they are not applied, and if water entitlement holders are not aware of how they will be applied.

Best practice enforcement means there is a clear and logical escalation pathway, once a compliance breach is identified. The pathway should show the steps that can be taken in response to a breach and the subsequent response, or lack of response by the alleged offender. The first step is usually an initial verbal advice to an entitlement holder about a possible breach. Currently states do not record the number, content or outcomes of verbal warnings. The experience of compliance officers is that, in very many cases, this is sufficient and the entitlement holder responds promptly and appropriately. Where this does not occur, a warning letter is usually sent, requiring that corrective action be taken, and advising of the next steps if no corrective action occurs.

The escalation pathway should be public. It would describe the penalties and sanctions applying at each stage, depending on the nature of the alleged offence.

The effectiveness of the enforcement pathway depends on staff being equipped with the required expertise to identify offences, gather evidence, interview people and contribute to the preparation of actions. For this, all staff should receive the requisite training. All staff should have appropriate certification for the skills and knowledge their job requires.
Public reporting

Currently, reporting on compliance activity is limited and can be difficult to locate. For most states, the last comprehensive reporting was in 2014-15. SA is the only state to publish its compliance strategy and enforcement pathway and its annual compliance statistics.

Easy to locate, good reporting is critical to the transparency of compliance frameworks and practices, and underpins community confidence in the effectiveness of the compliance system. It shows the level of activity, the ways in which it is allocated, the pattern of breaches and the outcomes achieved. This kind of data is also important information for governments about the areas that might require attention.

Reporting should include data on:

- alleged compliance breaches
- advisory letters issued
- formal warnings, specifying the offence
- administrative sanctions, specifying the offence
- criminal charges and proceedings
- civil enforcement actions and outcomes
- licence suspensions
- comparisons with previous years.

A further element is to report on the timeliness with which offences are dealt with by agencies. This is particularly important for public confidence, because the statute of limitations for offences in some jurisdictions is relatively short. For example, in Victoria there are some limitation periods of one year and in NSW the limitation period for water offences is three years.

Education and awareness

Community understanding is critical to a community culture of compliance. This requires a continuing program of information provision and interactive education opportunities. An effective compliance system needs to build community awareness about water resources, rights and responsibilities.

Licence holders were identified as a key group to receive targeted education materials. There is little evidence of active current education and community awareness programs. States do provide a variety of information materials, but none appear to conduct regular education sessions for entitlement holders, let alone a standing strategy for education and community awareness.

The need for education and awareness programs is particularly pressing for water compliance, because water resource plan rules and licence conditions are often complex. This means they can be difficult to understand or be open to interpretation.
Recommendation 5. It is recommended that by 30 June 2018 each state should review its arrangements for compliance and governance to ensure they take account of the following principles:

a) encouraging a strong culture of compliance that is led ‘from the top’

b) clear assignment of decision making responsibilities at appropriate levels, with decisions made on the grounds set out in published compliance strategies

c) a commitment to transparency

d) compliance functions should preferably be undertaken by a single agency with ‘end to end’ responsibilities, or where this is not the case, agencies should be well-aligned.

Recommendation 6. It is recommended that by 30 June 2018, each state will publish compliance strategies that include:

a) a risk-based strategy for guiding compliance monitoring effort

b) annual audit priorities

c) an escalation pathway to apply once non-compliance is detected

d) a mandatory protocol for entitlement holders to follow in the event of meter failure

e) a description of the penalties and sanctions regime, and any improvements required

f) annual reporting of data on compliance activities by location including the timeliness with which allegations are addressed

g) provisions to ensure compliance staff are adequately trained

h) a program of community awareness and education, including a program to ensure that water plans, licences and management rules are expressed as simply as possible and guides for these instruments are published

i) a program to ensure information about individual entitlements, allocations, licence conditions, meter readings, account balances and so on are easily accessible to the public in real-time

j) a program to ensure meters are identified by a unique reference number, and entitlement and pump details are publicly accessible

k) a commitment to effectiveness and efficiency, including the adoption of new technologies

l) adequate resourcing based on a cost recovery pathway, with compliance budgets protected from the normal exigencies of government budgets.

Action 3. The MDBA will prepare guidelines on reporting of compliance activities by 31 March 2018.
State compliance and enforcement – legislative improvement – penalties and sanctions

Penalties and sanctions for water-related contraventions should reflect the value the public places in water resources. The illegal taking of water is theft and should be treated as such. Regulators need access to penalties and sanctions of an appropriate type and level to reflect the significance of a breach in terms of its impact on the resource, the need for individual and general deterrence, and support of the regulatory framework. For example, a fine of multiple times the value of the crop grown using stolen water would be a clear deterrent. Further, the possibility of licences being cancelled for repeat offenders should be considered.

Water-related offences can be difficult and costly to prove. Even when contraventions are proved and penalties imposed, the public feeling can be that penalty levels are not meaningful, being treated by the offender as a ‘cost of doing business’.

Even for low-level breaches, offences must be proven and commonly those responsible are given an opportunity to take remedial action. There would seem to be considerable scope, and need, to reduce the burden of evidence and simplify offences. The kinds of changes that have occurred in the enforcement of road traffic rules, by way of strict liability rules and the use of technology, may suggest the direction of changes required for water offences.

Three types of proceedings have a role in enforcement of water management laws: administrative sanctions, civil court proceedings and criminal court proceedings.

Administrative sanctions are orders that can be made under a state law by a state water authority without needing to go to court. They are an effective form of deterrence because they can be imposed quickly. Such sanctions can include orders to stop work (for example, to stop pumping) or to undertake remediation (for example, to remove works from a floodplain or remove pipes and repair damage to river banks). Legislation in some states also allows financial penalties to be imposed by a state water authority. These include penalties calculated on the amount of water taken, and on-the-spot fines. Some state laws also enable state water authorities to suspend a water licence or reduce or suspend access to water allocations in response to contraventions.

Administrative action alone is often sufficient where a breach is not intentional and not grossly negligent or repeated, has no serious impact on resources or third parties, does not require significant deterrent or court-supervised remediation, and did not result in significant financial gain. However, where such factors are present, either civil or criminal proceedings are warranted.

There can be overlap in the application of administrative, civil and criminal sanctions. For example, a criminal or civil fine could be imposed through an administrative infringement order, or a stop work or remediation order can be imposed by a civil or criminal court, or, in some states, by an authorised officer. The accessibility of a sanction can also influence how often it is applied.
Civil penalty provisions can be accessed quickly and have a lower standard of proof than criminal penalty provisions. They must be proved on the ‘balance of probabilities’, making it easier to succeed than a criminal offence provision, which must be proved ‘beyond reasonable doubt’.

The choice between civil or criminal proceedings depends on a number of considerations including the severity of the breach and the type of order needed to address the consequences of the breach. Depending on the range of powers available to a civil court, civil orders can be as effective as criminal sanctions in deterring individuals from repeat offending, and can also provide a more practical result, such as an injunction or make-good requirements.

In some states, civil proceedings can also result in an order for payment of, for example, any financial benefit gained as a result of the contravention. For example, the SA Environment, Resources and Development Court can order a wrongdoer to pay an amount equivalent to the financial benefit or offence obtained through committing the offence. This is in line with Part 3 of the National Compliance Framework, which recommended the imposition of penalties related to the market value of stolen water, ‘with financial penalty reflecting the proceeds derived from the contravention and the harm caused’. As shown in Table 3, SA is the only state that explicitly calculates the criminal penalty per kilolitre of water stolen.

When factors such as the cost of prosecution, the likelihood of conviction (which will depend on the availability and strength of evidence to prove an offence beyond reasonable doubt), the timeliness of an outcome, and the range of orders available to the court, including the ability to make remediation and other orders, civil proceedings may often be considered to better serve the public interest than criminal prosecution.

A comparison of the availability of criminal penalties for a sample of key water related offences across states is available in Table 3.
Table 3: Comparison of criminal penalties for sample offences.

<table>
<thead>
<tr>
<th>Offence type</th>
<th>ACT</th>
<th>NSW</th>
<th>VICTORIA</th>
<th>SOUTH AUSTRALIA</th>
<th>QUEENSLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take of surface water or groundwater without an authorisation</td>
<td>$5,500 and/or 6 months imprisonment (ss 75 &amp; 77A(1))</td>
<td>$247,500 (Tier 2 penalty) or $1,100,000 (Tier 1 penalty) plus $66,000 (Tier 2) or $132,000 (Tier 1)/day or 2 years imprisonment (ss 60A(1) &amp; (2))</td>
<td>1st offence: $9514.20 $782.85/day up to $3,171.40 or 6 months imprisonment 2nd+ offence: $19,028 + $782.85/day up to $3,171.40 or 1 year imprisonment (ss 63(1), 63(1A), 289 &amp; 33E)</td>
<td>Greater of $35,000 or $25/ KL taken (ss 127(1) &amp; 127(6))</td>
<td>$210,039.75 (s 808(1)(3))</td>
</tr>
<tr>
<td>Take of water contrary to a license condition</td>
<td>$5,500 (ss 77F &amp; 77G)</td>
<td>$247,500 + $66,000/day or 2 years (Tier 2) (s 60B &amp; 91G)</td>
<td>$9514.20 (s 60AF)</td>
<td>Greater of $35,000 or $25/ KL taken (ss 127(6)) (ab) &amp; (b)</td>
<td>$210,039.75 (ss 812 &amp; 813)</td>
</tr>
<tr>
<td>Unlawful construction or altering of works (e.g. bores)</td>
<td>$5,500 and/or 6 months imprisonment (ss 77B &amp; 77D)</td>
<td>$247,500 + $66,000/day (Tier 2) (ss 91B(1) &amp; 346) Or $11,000 + $1,100/day (ss 113, 21B &amp; 117I(a))</td>
<td>1st offence: $3,171.40 + $782.85/day or 3 months imprisonment 2nd+ offence: $6,342.80+ $782.85/day or 6 months imprisonment (ss 75(1)(b) &amp; 75(2))</td>
<td>$35,000 (ss 127(3)(a), b 127(5a) &amp; (6))</td>
<td>$63,075 (s 816)</td>
</tr>
<tr>
<td>Interfering with a meter</td>
<td>$5,500 (s 77J)</td>
<td>$247,500 (Tier 2 penalty) or $1,100,000 (Tier 1 penalty) plus $66,000 (Tier 2) or $132,000 (Tier 1)/day or 2 years imprisonment (ss 91(k)(1) &amp; (2))</td>
<td>1st offence: $9514.20 $782.85/day up to $3,171.40 or imprisonment for 6 months 2nd+ offence: $19,028 + $782.85/day up to $3,171.40 or 1 year imprisonment (s 288)</td>
<td>$5,000 (Regulations 14 &amp; 17**)</td>
<td>$210,039.75 (s 811)</td>
</tr>
</tbody>
</table>

While the threat of imprisonment is a powerful deterrent, the availability of imprisonment as a criminal penalty varies across the states. Fines are the most common form of criminal penalty. Victoria is the only state to explicitly include in its water legislation increased fines for...
repeat offenders. The maximum value of these fines varies enormously between jurisdictions—often, the highest penalty is more than 100 times greater than the lowest. NSW generally provides for the highest fines, however s.295 of the Water Act (Vic) allows the imposition of a higher penalty for certain offences where a person has suffered substantial economic loss if there is serious damage to land, works or water, increasing penalties by up to 40 times, and imprisonment from a minimum of three months to up to ten years.

In jurisdictions where there are few administrative or civil sanctions available, state water authorities must choose between low-level fines or warning letters, or full criminal prosecution. If an appropriate choice of sanction is not available to suit the significance of the breach, the likely result is that no meaningful enforcement action is taken. A range of penalties and sanctions is necessary to ensure appropriate enforcement action.

The option to refer matters to specialised courts can also influence the penalties imposed. In NSW and SA breaches can be referred to environmental courts with specialist knowledge and the ability to give creative and bespoke orders to wrongdoers.

There remain significant inconsistencies between state legislation in the quantum and range of penalties and sanctions available. Civil remedies in particular are not available in all jurisdictions. As part of the development of the National Compliance Framework, a ‘model’ toolbox of penalties and sanctions was prepared in 2011 that could be updated and provided to states to work towards.

Alternatively, jurisdictions would achieve an equivalent outcome by incorporating an appropriate mix of elements of administrative, civil and criminal proceedings.

Having a suite of penalties does not guarantee they will be consistently and appropriately applied. The compliance activity table in Attachment D shows a decrease in compliance activities (for example, warning letters, infringement notices or prosecutions) in NSW and the ACT since 2014. While decreasing rates of compliance issues can indicate that a state compliance framework is effective, low rates of compliance activities could also be a result of insufficient staffing, training and resources for compliance, and indicate that more education about the value of protecting water resources. In addition, having a transparent and clear escalation pathway that mandates what action should be followed, by whom and in a set timeframe, can mitigate confusion or discretion for decision makers, mitigate opportunities for interference with the process, and increase consistency and public faith in the process.

Recommendation 7: It is recommended that by 30 June 2018 states review their legislation and if needed propose any amendments necessary to ensure:

a) strong penalties and greater consistency between states

b) an appropriate range of administrative, civil and criminal sanctions and penalties.
4. MDBA compliance and enforcement

A resounding community response to the Four Corners program, also expressed in Matthews’ interim report, has been the concern that the MDBA’s powers are unclear, or that the MDBA should be doing more to enforce compliance with the Basin Plan. This section outlines the MDBA’s powers, its current approach to Basin Plan compliance issues, and the interplay with state government responsibilities.

Note that the Independent Panel formed to assist with the review has written its own assessment of the MDBA compliance role in their report.

MDBA powers

While the Basin Plan was passed into law in late 2012, some important provisions did not take immediate effect: the trading rules commenced on 1 July 2014, the 36 water resource plans to be prepared by states and accredited by the Australian Government as meeting the Basin Plan’s requirements are not scheduled to be finalised until 30 June 2019, and the Sustainable Diversion Limits do not commence until 1 July 2019. For this reason the MDBA refers to the period from Basin Plan commencement until 30 June 2019 as the ‘transitional period’. Transitional water resource plans are existing state plans that have not yet been revised to reflect Basin Plan requirements (but are required to do so by 30 June 2019).

The MDBA is the enforcement agency for contraventions of the Water Act (Cwlth) provisions relating to the management of water resources. The Basin Plan and water resource plans are the key water management instruments. Australian Government agencies, state agencies, infrastructure operators and holders of water access rights must act consistently with the Basin Plan and water resource plans (refer s.35 and s.59 of the Act).

The MDBA has a statutory function to take action to enforce compliance with the Basin Plan and water resource plans. For that purpose, the MDBA is invested with powers to seek civil remedies under the Water Act (Cwlth). The MDBA is required to perform its functions and exercise its powers consistently with, and in a manner that gives effect to, the Basin Plan and water resource plans.

The MDBA has a broad range of tools to enforce compliance including injunctions, declarations, enforcement notices and civil penalties. Its authorised officers have power to enter premises to monitor compliance, obtain warrants to search for evidential material and require the giving of information. More information about the MDBA’s compliance powers is at Attachment A.

The application of these powers during the transition period to 30 June 2019 is limited by the Water Regulations 2008 (the Regulations). The Regulations provide that the state water plans specified in Schedule 5 to the Regulations are ‘transitional water resource plans’ (TWRPs) but only to the extent to which there is an inconsistency between the instrument and the Basin Plan. The Schedule 5 plans only cover part of the Basin.
The construction of the Regulations means that the MDBA only has power to enforce compliance with the parts of the Schedule 5 instruments that are inconsistent with the Basin Plan. An amendment to the Regulations would mean that the MDBA's compliance powers during the transition period are uniform.

In contrast to States, there are no criminal offences under the Water Act, nor are there evidentiary provisions to assist with bringing actions. The MDBA's powers would be strengthened by the inclusion in the Water Act of suitable provisions on criminal sanctions and evidentiary requirements.

**Interaction with state laws and responsibilities**

When the Water Act was drafted, there was clearly an intent by states to continue their water management functions, albeit within Basin Plan settings. In 2008 states referred limited powers to the Australian Government to ensure that certain provisions of the Water Act were workable, but this did not change the intent that states retain their water management and compliance functions. Part 11A of the Water Act deals with the interactions between Australian Government water legislation, including the Basin Plan, and state laws. Included in this Part is s.250E, which allows regulations to be made to modify the operation of Australian Government water legislation so that it does not apply to a matter dealt with by the law of a state, or so as to avoid inconsistency.

The working assumption of the MDBA has been that states will diligently enforce their own water laws, including matters covered by their current water plans. This arrangement is settled in the *Basin Plan Implementation Agreement*, as articulated in the following text:

> In undertaking its regulatory role to achieve the Plan outcomes, the MDBA will allow for differences in approach between Basin States to give effect to Plan outcomes. The MDBA will focus its efforts on promoting and monitoring compliance in areas where it has a reasonable belief that the underlying issue may impact materially on the achievement of Plan outcomes. If compliance issues arise, the MDBA would seek to resolve them in good faith, in a way that is proportional to the issue being addressed, considers the actions taken toward achieving compliance, and with a view to dealing effectively with the circumstance. The MDBA would only seek to exercise its powers under the Water Act 2007 (the Act) as a last resort.

This is a practical division of labour – the MDBA is not resourced to undertake on-ground compliance of individual water entitlement holders as performed by states, and it would be inefficient for the MDBA to duplicate this role.

The appropriate compliance role for the MDBA is to set regulatory standards and to ensure there are adequate public reporting and assurance mechanisms to provide confidence the Basin Plan is being implemented faithfully. **However, it is also clear that the MDBA should strongly assert its right to take enforcement action in cases of non-compliance in the face of inaction by states.** The MDBA would not take action against water entitlement holders that are complying with an accredited state water resource plan.
Governance of Basin Plan implementation

Implementation of the Basin Plan involves obligations on a range of parties including states, the Australian Government (including the CEWH and the MDBA), irrigation networks and water entitlement holders. The Department of Agriculture and Water Resources implements the Australian Government’s water recovery programs to support the Basin Plan.

The MDBA’s approach to engaging with states in respect of their obligations is set out in the Basin Plan implementation agreement signed with state agencies and the CEWH. The BPIA established the Basin Plan Implementation Committee (BPIC) as the main forum for working with the parties to the agreement on implementation issues.

The Basin Officials Committee (BOC) was established primarily to oversee the implementation of River Murray Operations and related joint-venture programs. For this function, the MDBA is a service provider for the joint governments, and a non-voting member. The BOC can also provide advice to the MDBA on its functions. The CEWH is not a member of the BOC.

A further committee – the Southern Connected Basin Environmental Watering Committee – was established by the MDB Ministerial Council to improve the coordination of environmental watering in the southern connected Basin. The Committee is chaired by the MDBA and includes river operators and environmental water managers, including the CEWH, the Victorian Environmental Water Holder, and the NSW Office of Environment and Heritage.

There are examples such as water resource plans, where issues are being considered in several committees, or the wrong committee. There are other examples where relevant agencies such as the CEWH are not present for key discussions concerning their responsibilities. Looking ahead, there is clearly a need for environmental water managers and river operators to work together more closely. There is a need to review and streamline these arrangements so that all relevant senior officials are engaged on Basin Plan implementation issues, while respecting the different responsibilities of each party. The transparency of decisions made in these fora could also be improved.

MDBA approach

The MDBA’s approach to Basin Plan compliance is set out in a Compliance Strategy (https://www.mdba.gov.au/publications/policies-guidelines/compliance-strategy) developed in 2014. The MDBA commenced a review of this Strategy in March 2017. The Strategy states that in undertaking our compliance functions the MDBA will have an emphasis on engagement, education, awareness raising, transparency and reporting. It also states that — depending on the circumstances of a particular case — the MDBA will employ the appropriate enforcement provisions of the Water Act.

The compliance program is based on an assessment of risk, including both the likelihood and consequence of non-compliance with the various obligations, enabling the MDBA to focus on material risks and cost-effective solutions.

Compliance activities within the MDBA are currently overseen by an Executive level committee chaired by the Chief Executive and including an independent adviser.
The key Basin Plan compliance or regulatory activities of the MDBA at present are:

- SDL accounting, including during the transition period
- handling of allegations of non-compliance against individuals
- implementation of the trade rules
- state and Australian Government agency assurance reports
- education and awareness.

Current practice in relation to these issues, and areas for improvement, are described below.

(i) SDL accounting including transition arrangements

The SDL framework is based on the historic MDB Cap on Diversions (the Cap) set out in the MDB Agreement. The Cap was intended to prevent further growth in water take by capping surface water diversion at 1993/94 levels of development (in NSW, Victoria and SA with other provisions applying in Queensland and the ACT).

The Cap was a substantial step, but was limited in that it has not yet been fully applied to all surface water diversions and did not apply to groundwater; provided for a significant increase in use by ‘late developers’ such as Queensland (who only fully entered into Cap arrangements in 2010); was based on the level of use at the time (rather than on a concept of sustainability); and was not legally enforceable.

The SDL framework is conceptually more robust in that:

- a) the level at which SDLs are set is based on a scientifically based, ‘triple bottom line’ assessment involving public consultation (rather than simply drawing a line under further development)
- b) it includes all forms of surface water take (from watercourses, regulated rivers, runoff dams, floodplain harvesting, net take from commercial plantations, and under basic rights) as well as groundwater take
- c) SDLs are legally enforceable on the terms in the Water Act and Basin Plan and the relevant WRP.

Accurate and comprehensive accounting is critical to implementing the SDLs because it will track actual take against diversion limits once SDLs commence on 1 July 2019. During the transition until SDL commencement, the MDBA is continuing to maintain the ‘cap register’ (ie the accounts for the Cap on surface water diversions established in 1993/94 under the MDB Agreement) while developing a new accounting framework suitable for SDLs. These arrangements are set out in more detail in the sections below.

The method for assessing compliance with the SDL is contained in Chapter 6 of the Basin Plan (see s.6.12). This method will operate annually from July 2019 to allow determination of compliance with the SDL. The method is applied for each SDL resource unit.

Within this method, there is scope for a Basin state to exceed the SDL in certain circumstances without being non-compliant. When an SDL resource unit in a Basin state has a cumulative debit of greater than 20% of the long-term SDL, but there is a legitimate reason for this excess take, the State may claim a reasonable excuse. Having a valid reasonable
excuse means the Basin state is deemed ‘compliant’. If there is no reasonable excuse, the Basin state is deemed ‘non-compliant’. In any case, a state must ‘make good’ any excess use.

Section 6.12(4) of the Basin Plan sets out two broad situations that are considered a reasonable excuse. These are:

a) Situation 1 — subs.6.12(4)(a) — when the Basin state has managed the water resources in accordance with the accredited water resource plan. This provision means that the Australian Government takes responsibility for any errors in a water resource plan’s ability to meet the SDL once it is accredited. It does not, for example, remove the obligation of the State to activate a ‘growth-in-use’ strategy included in a water resource plan under Basin Plan subs.10.12(1)(g) or

b) Situation 2 — subs.6.12(4)(b) — when there are circumstances beyond the Basin state’s control. One example provided is the Australian Government having not achieved the water recovery targets by July 2019.

The above list is not exhaustive and a Basin state may claim as a reasonable excuse a matter that is not covered under the two situations above.

The MDBA is preparing guidelines on how the issue of SDL non-compliance will be administered, including details on the steps, timeframes and responsibilities that will apply through the process of assessing ‘reasonable excuse’ proposals. These will be in place by 30 June 2018.

**Transitional period**

During the transitional period until 30 June 2019, the MDBA is continuing to maintain the Cap Register established under the MDB Agreement, while also preparing a new set of SDL accounting arrangements to commence formally on 1 July 2019.

**a) Preparing the SDL accounts**

A series of ‘trial’ SDL accounting reports (Transitional SDL Reports) are to be published for each year of the transition period to 2019. The first Transitional SDL Report, covering the initial four years of the transition period, was published in November 2017 (ie for 2012/13 to 2015/16). Subsequent reports will be published annually up to 2019.

The Transitional SDL Report is not a statutory requirement, but is a worthwhile exercise to ‘rehearse’ the reporting arrangements that will apply when the SDLs commence. The preparation of the first report has served as a useful vehicle to address important methodological issues (such as for environmental water accounting).

**b) Reporting of the historic cap register**

The MDBA’s compliance and reporting arrangements build on arrangements for the Cap.

Under the MDB Agreement Basin states must limit the volume of surface water diverted from
the rivers of designated valleys to ensure the relevant long-term Cap limit is not exceeded. States must also report annually to the MDBA on the permitted volumes of water take under annual Cap targets and the volumes that were actually taken.

Calculation of permitted annual take is based on the application of long-term hydrologic models to the weather and storage level conditions of the year. Cap accounts generally run on a cumulative basis from 1997.

Under the MDB Agreement, a small excess in actual take is allowable within a given year (a cumulative excess of 20% of annual Cap), beyond which a special audit is required to determine if a breach of the Cap has occurred. If a long-term problem is identified, a breach is declared and the relevant state must report to the Ministerial Council the measures it intends to take to remedy the situation.

Given that SDLs take legal effect from 1 July 2019, there is a seven-year transition between the old Cap accounting arrangements and the new SDL accounting arrangements. Once SDLs commence in 2019, the historic cap accounting arrangements will no longer be relevant for water management. Basin senior officials have agreed that the Cap accounting provisions of the MDB Agreement will come to an end after 2019.

States ceased funding the MDBA’s Cap accounting work in 2013 and the last formal Basin-wide Cap report was published for the water year 2011-12, though states are continuing to meet their obligations to provide Cap data to the MDBA, as required under the MDB Agreement. Using this data, the MDBA has continued to maintain the Cap Register and check for breaches, but is no longer funded by states to produce the annual Basin-wide Cap report. Publishing the Cap Register for 2014-15 and 2015-16 was delayed, however, the register is now up to date on the MDBA website.

The Cap Register indicates that the annual Cap target for the Qld Moonie valley was exceeded in 2014-15 and 2015-16. The Moonie valley is an example of where a cumulative balance is not maintained and compliance is assessed only against the annual Cap limit. In line with Cap rules, an Independent Audit Group has been commissioned to conduct a special audit to determine whether or not the long-term Cap limit has been exceeded. The findings of this audit are due by early 2018.

2019 onwards

From 2019 on the SDL accounts will commence and the SDL Report will be published annually. This will be the key reporting mechanism to assure the public about the integrity of the SDLs in each water resource area.

The accounting and compliance framework for SDLs currently envisaged involves:

a) states reporting on water usage in a water year — this is due by end October though states have difficulty meeting this deadline and the timeframe can mean that states provide coarser estimates of some data than might otherwise be provided. Further work is needed to establish the extent to which this is a resourcing issue in Basin states or due to other reasons.
b) MDBA quality assuring the state data and modelling output, including through bilateral 
discussions with each state

c) compiling data and subsequently publishing on the MDBA website.

The accreditation of Basin state hydrologic models for the purposes of determining the SDLs 
occurs when state water resource plans are accredited by the Australian Government. There 
are opportunities to improve the robustness of SDL reporting. For example, state data could 
be quality assured through reference to satellite imagery, industry reports on crop production, 
or other external data sources.

The MDBA is developing with Geoscience Australia the capability of using satellite data to 
remotely sense water in the landscape from 1997 and into the future to 25m² resolution. This 
technology can already be used to better target compliance activity and in future could play a 
more direct enforcement role. Water compliance agencies across the Basin could do more 
to co-develop this type of technology.

(ii) Compliance against individuals

The MDBA believes that it should be more proactive in addressing cases of non-compliance by individual water entitlement holders, if states are not prepared to do so.

Consistent with the principle mentioned earlier in this report that states should enforce their own water laws, the MDBA has a protocol for handling allegations of non-compliance involving:

1. establishment of an online portal, Report a breach, through which allegations can be made
2. once received, an acknowledgement receipt is sent as soon as practical when contact details are provided (usually within 7 days). Efforts are made to verify the data received if possible, or seek additional information when contact details have been provided
3. a response is given according to the nature of the alleged breach
4. where the MDBA is not the primary authority (eg an allegation of illegal take) the matter is referred to that authority (eg state agency) for consideration and advice. The MDBA follows up if advice is not forthcoming, but historically has not elevated allegations further
5. where the MDBA does have primary responsibility (eg. a breach of trade rules), a response is prepared for consideration by the Executive and the Regulatory Governance Committee.

The MDBA keeps a log of matters reported through this portal including what action was taken. Attachment E is a summary of allegations made since December 2015.

There are examples — such as in the Barwon–Darling in 2016 — where allegations were referred to state agencies but it was unclear what action was taken. The MDBA protocol for handling allegations of non-compliance should ‘close the loop’ by seeking confirmation from the state agency as to how an allegation is being treated and when it will be closed. The
status of each allegation should be reported on the MDBA compliance register (and ideally state registers) until the matter is closed. The MDBA protocol should be enhanced by indicating how allegations will be pursued if there is no satisfactory response from state agencies within a reasonable time. A revised protocol to this effect is at Attachment B.

(iii) Trade rules
MDBA is responsible for the regulation of the Basin Plan water trading rules. The Basin Plan water trading rules (Chapter 12 of the Basin Plan) regulate the conduct of all water market participants, including Basin states. Unlike other parts of the Basin Plan that will not take effect until 2019, the Basin Plan water trading rules have been in effect since 1 July 2014.

The MDBA regards the successful implementation of water trading rules as a high priority and acknowledges that lack of compliance can compromise both entitlement holders’ and traders’ confidence to invest in water access rights. Priorities for enforcing trade rules are outlined in the MDBA Strategic priorities for Basin Plan Water Trading Rules (https://www.mdba.gov.au/publications/policies-guidelines/strategic-priorities-basin-plan-water-trading-rules). As part of the annual statement of assurance process, the MDBA asks Basin states to provide information about how they have managed market sensitive information and how Basin states are meeting relevant obligations under the Basin Plan.

(iv) State and Australian Government agency assurance arrangements
The MDBA, the Commonwealth Environmental Water Holder and Basin state agencies are signatories to the 2013 Basin Plan Implementation Agreement (BPIA). The BPIA guides each of the parties in meeting their Basin Plan obligations (but does not override any Water Act or Basin Plan obligations).

The BPIA sets out the MDBA’s compliance principles and approach including that the MDBA would only seek to exercise its powers under the Water Act as a last resort. Under the BPIA, Basin states are to provide the MDBA with reasonable access to relevant officers, information, data and intelligence to assist the MDBA to deliver its compliance and assurance program. Each party to the BPIA, including the MDBA, publishes annual Statements of Assurance reporting on compliance with the Basin Plan obligations.

For example, the Basin Plan and Water Act include obligations in relation to water quality and salinity management. A combination of the assurance reports and Basin Plan reporting will assist the MDBA to identify any compliance issues and take action when appropriate.

There are four Basin Plan-related reporting requirements that apply to entities as shown in Table 4.
Table 4. Basin Plan reporting requirements

<table>
<thead>
<tr>
<th>Reporting requirement</th>
<th>Reporting requirement applies to:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MDBA</td>
</tr>
<tr>
<td>a. Statement of Assurance of compliance with the Basin Plan obligations under the Basin Plan Implementation Agreement</td>
<td>✓</td>
</tr>
<tr>
<td>b. Statement of Assurance under the National Partnerships Agreement (NPA)</td>
<td>N/A</td>
</tr>
<tr>
<td>c. Register of Take (Basin Plan s6.08) including data provided under ss.32 and 71 of the Water Act</td>
<td>✓</td>
</tr>
<tr>
<td>d. Annual and five yearly reports against Basin Plan schedule 12 matters are required under s.13.14 of the Basin Plan</td>
<td>✓</td>
</tr>
</tbody>
</table>

a) Under paragraph 9.1(iv) of the BPIA, the parties agreed to prepare annual public Statements of Assurance (SoA) of their compliance with the Basin Plan obligations. The statements have been provided to the MDBA by 31 October each year since 2014 and cover activities in the previous water year.

b) All Basin states are required to provide an annual SoA to the Department of Agriculture and Water Resources (DAWR) under the National Partnerships Agreement.

c) Basin states are required to provide data on water taken and water permitted to be taken under s.71 of the Water Act. Further, the MDBA is required to account for all held environmental water (HEW) in the Basin under s.32 of the Water Act. This information informs the Register of take that must be developed and published under Basin Plan s6.08.

d) The MDBA, Basin states, the DAWR and the CEWH are all required to prepare public annual and five yearly reports against Basin Plan schedule 12 matters under s.13.14 of the Basin Plan. This obligation is also captured by the BPIA under the Schedules of Basin Plan Obligations.

In addition, the Productivity Commission is required to audit Basin Plan implementation on a five yearly basis. The next Productivity Commission audit is scheduled for 2018.

One function envisaged but not yet progressed by the Authority is its audit role under the Basin Plan (13.10). The MDBA compliance strategy indicates that there will be a program of risk-based audits to assess the extent of compliance with the Basin Plan.

Further, the MDBA has the ability to develop report guidelines under the Basin Plan (Clause 13.16). The MDBA could ensure that these guidelines require increased transparency in reporting across the Basin on compliance matters.

Finally, the Authority could invite further scrutiny of its own performance in Basin Plan implementation through the appointment of an independent assurance committee. This would replace the existing internal compliance committee.
(v) Education and awareness
The MDBA conducts a number of activities intended to improve public awareness of water take in the Basin, and the importance of an integrated approach to management through the Basin Plan.

Action 4. The MDBA will take a more proactive approach to compliance and enforcement by:
   a) immediately adopting the revised protocol for handling and escalating allegations of non-compliance at Attachment B
   b) seeking a change to the Water Regulations 2008 to ensure uniform application of its compliance powers during the transition period to 30 June 2019.

Action 5. By 30 June 2018, the MDBA will revise and publish its compliance and enforcement strategy to ensure compliance with the Basin Plan. The strategy will include:
   a) a clear statement of the MDBA’s expectations that compliance and enforcement is to be undertaken effectively by states, in line with best practice
   b) a risk-based audit program to check that Basin Plan obligations are being met, including state compliance arrangements
   c) guidelines or standards relevant to water measurement and compliance
   d) improvements to the system of assurance statements made by states and Australian Government agencies in meeting their Basin Plan obligations
   e) improved communication of the MBDA’s compliance activities.

Action 6. The MDBA will establish a dedicated compliance and enforcement branch, as well as an independent assurance committee to advise on the MDBA’s compliance and enforcement work.

Action 7. By 30 June 2018, the MDBA will prepare and publish an SDL reporting and compliance framework that includes:
   a) an explanation of how the ‘reasonable excuse’ and ‘make good’ provisions in the Basin Plan will be applied for SDL accounting purposes
   b) other lines of evidence, such as satellite data, crop returns and long term hydrologic models to complement self-reporting by states
   c) SDL compliance, accounting and reporting within its audit and assurance program
   d) improved public communication of SDL compliance and accounting arrangements.

Recommendation 8: It is recommended that Australian Government–state governance arrangements for implementing the Basin Plan are reviewed to ensure that all those with implementation obligations are engaged, statutory roles are respected, decisions are better integrated, and transparency is improved.
5. State Water Resource Plans

A number of Basin Plan requirements including SDLs are delivered ‘on the ground’ through the accreditation of water resource plans (WRPs) developed by states that take on these requirements (see Chapter 10 of Basin Plan for further detail).

Transitional arrangements

The Water Act envisages that states would progressively revise all of their water resource plans in sufficient time that Australian Government accreditation can occur by agreed timeframes. During the transitional period until accreditation occurs, the Act includes a mechanism that declares state plans to be accredited for the purposes of the Act.

If these ‘interim’ or ‘transitional’ water resource plans are to be amended by states before 30 June 2019, then s.246(3) of the Act requires the Minister to accredit the amendments to the plan if satisfied that the amendment would make the plan no less consistent with the Basin Plan. This provision was included in the Act to ensure there was no ‘backsliding’ in the protection of environmental water or other Basin Plan matters before 30 June 2019.

The original timetable by which water resource plans were to have been accredited has slipped. The transitional status of plans has been extended by Australian Government regulation to 30 June 2019 when the Basin Plan sustainable diversion limits take effect. To inform the making of the necessary regulations, the MDBA provides advice to the Department of Agriculture and Water Resources concerning the recognition of Basin state water resource plans as transitional plans.

In one case to date, the MDBA advised that a proposed amendment to an existing state plan (the NSW Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2016) was ‘less consistent’ with the Basin Plan, because it reduced the level of protection for planned environmental water in the Namoi valley. Notwithstanding the MDBA’s advice, an Australian Government regulation was made to extend the transitional status of the amended Namoi plan until 30 June 2019. At the time, the Minister wrote to his NSW counterpart, noting that NSW had stated that the amended arrangements were made on a trial basis to run until 2019, and indicating that the issue would need to be addressed in the Basin Plan-compliant Namoi plan to be put forward for Australian Government accreditation prior to 30 June 2019.

The MDBA is also aware of instances where states have amended transitional plans but not sought the protection of an Australian Government regulation to provide ‘cover’ for the amendment (that is, protection from being found to be inconsistent with the Basin Plan). In such cases, it is assumed that states have judged it is unlikely such amendments would be found to be ‘no less consistent’ with the Basin Plan.
Accreditation of WRPs

The Council of Australian Governments has committed to implementing the Basin Plan in full and on time. States have undertaken to revise their 36 water resource plans by 30 June 2019, meaning they must be with the MDBA at latest by end February 2019 for assessment.

Preparing water resource plans and assessing them against the Basin Plan requirements is a complex task — there are 55 sections in Chapter 10 each plan must address and legislation in each state has its own requirements. Further, many current state plans are known to have particular issues needing to be addressed that are unrelated to Basin Plan requirements.

To date, only one state plan has been accredited — the Queensland Warrego-Nebine–Paroo water resource plan. Basin states are working to meet the deadline by progressing plan development and engaging with stakeholders. The MDBA provides updates to the MDB Ministerial Council on progress with the development of state plans.

In many instances, Basin state governments have taken longer than initially expected to develop water resource plans. At this stage, the MDBA expects that South Australia, Queensland, and the ACT are likely to be able to meet the timeline for accreditation. While noting the efforts of many state officials thus far, the MDBA is concerned at the rate of progress in NSW and Victoria.

The MDBA has taken a number of measures to provide clarity about the requirements for accreditation and to work cooperatively with states in progressing this work. These measures include:

- Completion plan and handbook
- Position statements
- Streamlined and detailed assessment criteria
- Guidelines on the application of Chapter 10, Parts 9 and 14 when developing WRPs
- Bilateral briefings with state planning officers
- Specific and detailed advice on draft or preliminary WRP material.

That said, there is room for the MDBA to improve the turnaround time for its advice to states on accreditation issues, and to provide clearer advice on some issues such as how the ‘no net reduction in planned environmental water’ provision will be assessed. Given the cascading effect of delayed plans, the MDBA is concerned about the high caseload of draft plans that will need to be assessed over the coming 18 months. The MDBA is currently looking at options to increase its resourcing of the case assessment team to manage this peak workload.

It would be highly undesirable for state water resource plans not to be accredited by the agreed timelines. This would open up the possibility of state water resource plans being inconsistent with Basin Plan requirements, and put the MDBA in the position of either having to take compliance action where there are inconsistencies, or to use the step-in provisions of the Water Act and develop its own enforceable plan for relevant areas. This would be unsatisfactory, and would generate considerable uncertainty for water entitlement holders.
In light of the seven years that has been available to prepare the state water resource plans, it would also bring into question the level of commitment to the reform.

The step-in provisions of the Water Act allow the Commonwealth Minister to request the MDBA to prepare a water resource plan meeting the Basin Plan requirements if a Basin state has failed to do so. The provisions were drafted to be used only as a last resort, and have a number of checks and balances included to ensure this is the case.

States have undertaken to provide all of their draft water resource plans to the MDBA for assessment of accreditation by end February 2019. Given the lengthy procedural requirements for the step-in provisions, the MDBA would need to consider whether it should commit resources to undertake the necessary pre-planning for this contingency well in advance. Clearly, it would be preferred if water resources plans were ‘back on track’ by this time, and the resources were applied instead to working with States to finalise the accreditation process.

**Action 8. To meet the 30 June 2019 deadline for water resource plans the MDBA will:**

a) develop and keep up to date a public register of progress with water resource plan development, including its assessment as to whether any replacements of or amendments to transitional water resource plans are ‘no less consistent’ with the Basin Plan

b) continue to work with states to find ways to streamline the accreditation process

c) increase its current level of resourcing for the assessment of state water resource plans

d) actively consider whether it should advise the Commonwealth Minister to agree to initiate the step-in provisions of the Water Act if there is insufficient progress on some water resource plans.

**Recommendation 9.** It is recommended that the COAG reiterates its commitment to the 30 June 2019 deadline for water resource plan accreditation because of concerns arising from this review. It is further recommended that New South Wales and Victoria accelerate their work on preparing Basin Plan-compliant water resource plans.
6. Protection of environmental water

Background

The terms of reference for this Review include consideration of the ‘… appropriateness of state laws and instruments’. While Part Three of this Report addresses this issue in terms of the adequacy of compliance arrangements, it is also relevant to examine whether state laws and instruments themselves will support implementation of the Basin Plan. In particular, do current state laws and instruments provide adequate protection for the increased volumes of water being recovered under the Basin Plan to improve the health of Basin ecosystems?

Water access entitlements and management rules across the Basin have evolved over the past 100 years to regulate the extraction of water for irrigation and other purposes. Although there have been significant reforms to these arrangements in recent times, their purpose has not changed — they define property rights and rules intended primarily for extracting water. In unregulated systems this right is to take water at the ‘farm gate’ with levels of take set by how much water is in the river at that point.

The concept of managing the water for both extractive take and environmental outcomes is in its infancy. Even though environmental water serves its purpose by being left in the river for delivery to environmental assets or to support ecological functions, it is managed under a regime designed for extraction. So, it is subject to laws and instruments with the opposite purpose. At root, this is a key source of the obstacles to protecting environmental water.

At the time the Basin Plan was made in November 2012, the need to protect environmental water was agreed by all Basin governments and reflected in the Intergovernmental Agreement on Implementing Water Reforms in the Murray Darling Basin, June 2013 (IGA). Under the IGA, governments made the following commitment:

5.3 The Parties will work to facilitate the use of environmental water by protecting environmental water in-stream and on land, and in consideration of any third-party impacts, where feasible and agreed by:

(a) implementing measures to enable the delivery of held environmental water in-stream through arrangements such as water shepherding to facilitate environmental flows

(b) enabling further use of environmental water at multiple locations along the river, such as through return flow provisions;

(c) enabling river operators to deliver specified flow rates at particular locations to meet environmental water requirements within capacity constraints and as efficiently and effectively as possible;

(d) working together to refine methods to accurately monitor, measure and account for environmental water use and return flows; and
(e) implementing measures to enable environmental water to be used to supplement unregulated flows, while addressing third party impacts.

Within the Basin, the roles in relation to the management of environmental water are as follows:

- the role of the MDBA is to:
  - set limits on the amount of water that can be taken (through the Basin Plan)
  - set the overall direction for allocation of environmental water by preparing the Basin-wide environmental watering strategy, and setting annual watering priorities that environmental water holders must have regard to
  - recommend the accreditation of state water resource plans that will provide for environmental watering
- the Commonwealth Environmental Water Holder, and state equivalents, hold environmental water by owning access entitlements and issuing delivery orders to state water operators
- State governments set the rules for river management, and operational decisions are made by river operators consistent with those rules.

The intent of the IGA is that environmental water holders, river operators and planners from all Basin governments work together to manage environmental water to achieve the best possible outcomes. In the southern connected Basin, the Southern Connected Basin Environmental Watering Committee shares information to coordinate environmental watering decisions. In the northern Basin, similar committees exist in individual valleys with significant storages — such as the Macquarie and Gwydir valleys.

To assess whether existing state laws and instruments are appropriate for protecting environmental water it is necessary to consider both unregulated rivers and regulated rivers.

Protecting environmental flows in unregulated rivers

Protecting environmental flows in unregulated or unsupplemented rivers (both referred to here as unregulated rivers) poses a particular challenge, highlighted by the Four Corners program for the Barwon–Darling but not unique to that system. The program raised questions about whether current management rules in the Barwon-Darling allow environmental water to be taken by consumptive licence holders.

Unregulated systems in the northern Basin are inherently challenging to manage because:

1. Flows are highly variable with long periods of low or zero flows
2. Storages tend to be privately owned ‘off river’ works meaning there are relatively few regulatory structures within the main river stem. Any active management must be exerted through largely privately-owned infrastructure.
3. Access arrangements tend to be ‘set and forget’ rules based on the achievement of diversion limits on a long-term average basis. Fixed rules for ‘commence to pump’ and ‘cease to pump’ are defined by the levels of water flows. Unless there are other
restrictions, if water is flowing above the cease to pump level, then entitlement holders can pump from the river. These rules are not suited to the management of individual flow events, particularly the low flows that are critical for communities and environmental outcomes further downstream. The application of these rules is also complex and can lack transparency.

4. Flow rules are vulnerable to changes in industry structure, irrigator behaviour and technology. For example, the consolidation of entitlements into larger holdings, construction of large private storages and bigger pump sizes increase the capacity to pump from individual flow events.

5. Measurement tends to be less accurate as there has been less investment in stream gauging and modelling. In addition, there are significant volumes of unmetered take such as harvesting of floodwaters before they enter the river channel and extraction data is not publically available nor used to adaptively manage flow events.

Notwithstanding these factors, management arrangements in unregulated systems can and should be improved. With technology getting cheaper all the time, the possibility of implementing management arrangements that can respond in real-time to individual flow events is well within scope. There may be a case for investing some of the public funds available for implementing the Northern Basin Review (see below) in improved public measurement and monitoring to establish such arrangements.

**Case Study on Protection of Environmental Flows in Lower Balonne, Qld**

Access to unregulated flows in the Lower Balonne is already actively managed. Entitlement holders can only divert flows at their entitlement diversion rate during periods announced by a local river operator. The operator determines these announcements based on the volume available for diversion for different flow ranges as set out in the Water Plan and on individual entitlements.

These current arrangements allow the protection of environmental water recovery in the Lower Balonne by ensuring that all entitlements are restricted to their share of a flow event, irrespective of whether the share is diverted or left in the river. However water recovered upstream of the Lower Balonne Water Management Area (ie. upstream of the Beardmore Dam storage) is not protected by these arrangements through the Lower Balonne.

As part of the Northern Basin Review conducted by the MDBA, the Queensland government agreed to work with entitlement holders and the community to develop revised management arrangements that better protect water recovered upstream of Beardmore Dam through the Lower Balonne. This undertaking provided the basis for the Australian Government to extend water recovery upstream from the original Lower Balonne target area.

Queensland is currently drafting provisions for their revised Water Plan (and related instruments) arising from targeted consultations carried out to date. The proposal involves all Australian Government-held entitlements recovered upstream of Beardmore Dam being relocated and combined into a single entitlement just above the Dam using...
the existing trading rules in the Water Plan. The new entitlement will then be included in revised access rules for the Lower Balonne. This will protect the held environmental entitlements from being diverted through the Lower Balonne to the Qld/NSW border.

Queensland intend to release their draft Water Plan for formal consultation early in 2018. A revised Water Resource Plan package (including the Water Plan and other necessary instruments and documents) that is suitable for Australian Government accreditation is proposed to be submitted in February 2019.

Queensland is also preparing further explanation on the implications for recovered water of relying on existing trade rules upstream of Beardmore Dam.

**Case Study on Protection of Environmental Flows in the Barwon–Darling, NSW**

The *Water Sharing Plan for the Barwon–Darling Unregulated and Alluvial Water Sources* (the Barwon-Darling Plan) was made by the NSW government in late 2012 just before the Basin Plan was finalised. The MDBA was consulted by NSW on the draft Barwon-Darling Plan during the public comment period in 2011. As the Basin Plan had not been finalised at this time, there was no legislative basis on which comment could be provided.

The draft Barwon-Darling Plan included total daily extraction limits for each class of licence, and the facility to introduce individual daily extraction limits. The final Plan contains a number of features that reduce the protection of low flows (below 2000ML/day at Bourke) including increased inflows to the valley from environmental water recovery further upstream.

The key features are:

- allowing transfer of B and C class licences to A class conditions (meaning that large diverters can pump at lower river heights, previously reserved for stock and domestic or small holdings)
- unlimited carryover with an individual take limit of 300% in any one year
- not setting individual daily extraction limits, although the plan does allow for limits to be set
- a discretionary power to allow individual entitlement holders to continue pumping in defined circumstances once the cease to pump level has been reached.

In combination, these arrangements can result in substantial diversion of low flows. It should be noted some large diverters in the Barwon-Darling choose not to exercise these rights at all times, and have in the past made active decisions not to divert low flows at important times for the communities downstream.

**The MDBA considers that the Barwon–Darling Plan does not adequately protect low flows (<2000 ML/d).** A recent analysis of gauge data in the Barwon-Darling River studying discrete flow events from 1990-2017 found 13 individual low flow events
Northern Basin Review

Between 2013 and 2016 the MDBA conducted a review of the Sustainable Diversion Limits in the northern Basin. This review was agreed at the time the Basin Plan was made, because the information base particularly in the Lower Balonne and the Barwon–Darling valleys was not as strong as elsewhere in the Basin.

The Northern Basin Review concluded that the environmental water recovery target in the north could be reduced from 390GL to 320GL on a long term average basis, provided the NSW and Queensland governments, with Australian Government support, adopted a number of so-called ‘toolkit’ measures designed to improve river management.

The measures recommended to governments include:

- improvements to state water management arrangements to safeguard low flows across the north (including the Barwon-Darling and Condamine-Balonne)
- an infrastructure measure to allow increased environmental flows to the Gwydir valley wetlands
- targeted recovery of water to improve environmental benefits
- the installation of fish passageways
- improving access to rivers, upgrading weir pools, and improving the engagement with Aboriginal people in water management
- further support for communities impacted by reduced water availability.
The November 2016 Northern Basin Review report provides further information about the toolkit. In June 2017, the Australian Government, NSW and Queensland governments gave in-principle support for this approach, subject to Australian Government funding being made available. These commitments are contained in a draft schedule to the Intergovernmental Agreement on Basin Plan Implementation. The intention of the three governments has been to settle this schedule in conjunction with an amendment to the Basin Plan that reflects the proposed change in SDLs.

In the draft schedule, the Queensland government has undertaken, as part of preparing its revised Condamine–Balonne water resource plan, to investigate options to protect additional flows through the Lower Balonne resulting from water recovery upstream of Beardmore Dam, and work towards incorporating any agreed arrangements in their water plan. In October 2017, the NSW government committed to implement the best available policy instruments to protect the flow of environmental water downstream. Among the policy instruments being considered are the introduction of individual daily extraction limits, as well instruments such as event-based management of a river. NSW has advised that the policy response will be finalised in time to enable inclusion in the relevant water resource plans for accreditation by the MDBA.

The NSW Department of Crown Lands and Water has also undertaken to convene a working group including the CEWH, the MDBA, the NSW Office of Environment and Heritage and relevant water entitlement holders to seek agreement on temporary measures to protect the passage of held environmental water.

In summary, there is an urgent need and there are significant opportunities to improve the protection of environmental flows in the northern Basin, particularly in the Barwon-Darling and lower Balonne systems. All relevant government agencies are encouraged to develop options and make the necessary improvements to relevant water resource plans to ensure they are suitable for accreditation by the Australian Government.

Case study: Impacts on Aboriginal communities in the Barwon-Darling of extractions from low flows

The iron law of water is that extractions upstream affect communities downstream. The need to address the conflicting interests of the two groups is why extraction is regulated. In a submission to the Northern Basin review, a group of young Aboriginal people from Wilcannia described what water means to them:

If we had no water, it would mean no life, or no food, and no culture, no river red gums and vegetation/shade, no wildlife for us to survive as the wildlife feeds from our water. There are no fish to feed our community as fish is a reliable source of food for our community, we cannot shower, we cannot wash our clothing, we cannot camp as there is no shade, no swimming as the non-flowing water is not safe (contamination), birds find it hard to find habitats, and there is no bush/tucker cooking.

In the Barwon Darling, there are Aboriginal communities living in Wilcannia, Brewarrina and Bourke. These are towns of considerable disadvantage. The average life expectancy of Aboriginal men born in Wilcannia is 37 years. For women it is 41 years.
Water and the connection to it are an important part of Aboriginal cultural identity and the quality of life. Brendon Adams, a Wilcannia Aboriginal man, has described the significance in the following way:

The river is a vital source for our everyday survival... When it is up we get together, we swim in the river, go fishing to feed our family and Elders... when the river is down our young people do not have a place to come together in a positive way: crime is up as much as 60%.

An Aboriginal Client Service Specialist, working in the Local Courts system, has observed:

When the [Darling] river is down, the crime rate is high. Most families spend weekends on the river – fishing, swimming and on boats. When there is no water in the river, they’re stuck in town, there is nowhere to go.

A Wilcannia Community Health Worker has reported the same connection between water in the river and the social wellbeing of Aboriginal communities:

What also affects the [Wilcannia] community is the river; it’s a really important one here. It takes you back to the cultural side, and how connection to our river and our land is really important...Early 90’s, we had a stage there when we were in a drought really bad, people were really down and crime rates right up. By the end of that year when the river had filled, friends of mine appeared, they’d come over for court...they only had one case. And the river was absolutely full, kids were swimming in the river, people were fishing, the spirit was just really high.

Fish traps constructed by Aboriginal people at Brewarrina are among the oldest man-made structures in the world. For Aboriginal people, the fish traps are a testament to the enduring strength of their relation to country and the continuity of practices. They provide a place at which young people can learn about how to live from the natural resources of their environment. Restricted low flows deny these opportunities.

Upstream extractions from low flows mean communities like Wilcannia and Brewarrina suffer. Restricted flows mean fewer fish, which reduces the capacity of families to feed themselves, limited recreation opportunities, and less relief from the extreme heat. The result is the increased social dysfunction and crime described here.
Protection of environmental flows in the regulated southern connected Basin

In contrast to unregulated rivers (largely in the northern Basin), in the southern connected Basin there is a growing body of experience with the delivery and protection of environmental water.

Establishing specific environmental water governance arrangements has been a key step in this process. The Southern Connected Basin Environmental Watering Committee was established by the MDB Ministerial Council as a mechanism to improve the coordination of environmental water delivery. The Committee is chaired by the MDBA and includes environmental water holders and river operators from each jurisdiction.

Notwithstanding the progress that has been made, more could be done to ensure the best outcome possible from the water available for the environment. For example, temporary rules have been made to facilitate environmental water delivery on an ad hoc basis for more than a decade. It is now time to adopt these arrangements on an ongoing basis.

The recent selection of projects to deliver supply measures under the SDL adjustment mechanism, outlined in the SDL Adjustment Mechanism Determination Report 2017, provide a perfect opportunity to progress this work. In addition to a number of works and measures to improve the delivery of environmental flows at several sites, the package of notified supply measures includes:

- **Enhanced environmental water delivery** aims to improve environmental benefits by reinstating more natural flow regimes and overbank flow events by aligning the delivery of held environmental water with natural flows, particularly in tributary streams. When applied in conjunction with the gradual relaxing of constraints, through constraints management projects, the benefits to the environment are substantial. Changed operating rules, combined with relaxed constraints, can also result in social and economic benefits through improved moderation of larger flood events.

- **Relaxing constraints** allows the better delivery of water for the environment when and where it is needed to maximise environmental outcomes. Projects contribute towards achieving ecological targets and flows in the southern connected Basin, which were considered important during the development of the Basin Plan. In particular, relaxing constraints provides opportunities for environmental watering of large areas of floodplain in NSW, Victoria and SA. This improves the health of forests, fish and bird habitats, the connection between the river and the floodplain, and replenishes groundwater. It also works to improve the capacity of other supply projects to achieve their intended environmental outcomes.

- **Reconfiguration of Menindee Lakes** is a project developed by the NSW government to reduce evaporative losses at Menindee Lakes through improved control structures and a different operating strategy at the Lakes.

In addition, the ability to recognise 605GL of supply measure rests on states implementing their so-called Prerequisite policy implementation plans, as assessed by the MDBA, by 30 June 2019. These plans set out how the states will operationalise arrangements for
re-crediting of return flows, and releases of held environmental water during higher flow periods (also called ‘piggybacking’ of environmental flows). The MDBA assumed that both of these practical measures would be in place when determining how much water recovery was needed to achieve the Basin Plan’s objectives.

A further important component of the SDL adjustment mechanism is the program of efficiency measures to recover 450GL of water by 2024 through investment in additional on or off-farm efficiency projects.

Action 9. The MDBA will maintain a public register of state measures to improve the protection of environmental water and report regularly on progress towards meeting this important Basin Plan milestone.

Recommendation 10: To improve protection of environmental water in the unregulated rivers of the northern Basin it is recommended that the NSW and Queensland governments revise their water resource plans to include effective policies for the protection of environmental water, particularly during low flows. These policies should include event-based management or other innovative policy tools capable of delivering equivalent environmental outcomes. In the Barwon-Darling, it is recommended that immediate steps are taken to introduce Individual Daily Extraction Limits and voluntary mechanisms to protect individual low flow events.

Recommendation 11: To improve the protection of environmental water in the southern-connected Basin, it is recommended that governments fully implement the SDL adjustment mechanism including:

a) state policies to improve protection of environmental water (also called prerequisite policy measures) as required under the Basin Plan by 30 June 2019

b) completion of supply, efficiency and constraints projects by 2024.
7. Tying it together — a COAG Compact

The MDBA recommends that each Basin state publishes its own compliance strategy in line with the best practice arrangements covered in this Report, and reports progress regularly. Similarly, the MDBA commits to revising its strategy and improving its reporting arrangements.

The Council of Australian Governments, the Murray–Darling Basin Ministerial Council and the public want to be kept informed of progress with implementing a renewed effort at compliance across the Basin.

Recommendation 12: It is recommended that the COAG commit to a Basin Compliance Compact to implement the recommendations of the reviews initiated by the Prime Minister. The Compact would commit governments to the actions required to restore public confidence in water management within the Basin. The Compact would be published by 30 June 2018, with annual progress reports thereafter, and would address:

a) progress with the roll out of improved metering and measurement arrangements outlined in this report
b) an update on each state’s compliance strategies addressing the issues contained in this report
c) a report on each state’s compliance activities including the timeliness of handling allegations
d) the establishment of a network of water compliance practitioners to promote best practice approaches, to be coordinated by the MDBA
e) steps within each Basin state to ensure that Basin Plan-compliant water resource plans will be ready for accreditation within the agreed timelines
f) progress with measures to improve the protection of environmental water, including the toolkit measures in the northern Basin and relevant components of the SDL adjustment mechanism.
Attachment A: Description of MDBA legal powers for Basin Plan compliance

The MDBA has a range of compliance and enforcement powers under the Water Act 2007. The powers enable action to be taken if needed against ‘a person’ – that is, the majority of irrigators, irrigation networks, state corporations and government agencies.

The MDBA has a broad range of tools to enforce compliance:

Injunctions

The MDBA may apply to a court for an injunction under ss.140 to 143 of the Water Act if a person has engaged in, is engaging in, or is proposing to engage in conduct that would be a contravention of the Basin Plan or an accredited water resource plan. Mandatory, prohibitory and interim injunctions are available. The Court has the discretion whether or not to grant an injunction.

Declarations

Under ss.144 to 145 of the Water Act, the MDBA may apply to a court for a declaration that a person has contravened a requirement of the Water Act. The Court may make the declaration if it is satisfied the person has contravened the Act. Declarations provide a clear statement from the Court that the person’s behaviour contravenes the Water Act.

Enforceable undertakings

Enforceable undertakings are voluntary agreements entered into between a person and the MDBA.

If the MDBA considers that an action taken by, or an omission of, a person constituted a contravention of the Basin Plan or an accredited water resource plan, it may accept certain enforceable undertakings from the person under ss.163 to 164 of the Water Act. If the MDBA considers that a person has breached the undertaking, it can apply to a court for orders directing the person to comply with the undertaking, to compensate another person or to make payments to the MDBA where a person obtains a financial benefit that is reasonably attributable to the breach.

Enforcement notices

An enforcement notice can instruct a person to take specific action. The MDBA can issue an enforcement notice to a person under ss.165 to 167 of the Water Act if satisfied that the person has contravened, is contravening or is likely to contravene sections of the Basin Plan or an accredited water resource plan or has engaged in, is engaging in or is likely to engage
in conduct that:

- was, is or would be inconsistent with the Basin Plan or a water resource plan or
- prejudiced, is prejudicing, or would prejudice, the effectiveness or the implementation of the Basin Plan or a water resource plan or
- had, is having or would have an adverse effect on the effectiveness or the implementation of the Basin Plan or a water resource plan.

The MDBA may also issue an enforcement notice where a person is omitting or is likely to omit to perform an act, where the omission:

- was, is or would be inconsistent with the Basin Plan or a water resource plan or
- prejudiced, is prejudicing, or would prejudice, the effectiveness or the implementation of the Basin Plan or a water resource plan or
- had, is having or would have an adverse effect on the effectiveness or the implementation of the Basin Plan or a water resource plan.

A breach of an enforcement notice gives rise to a civil penalty of up to 600 penalty units ($210 per penalty unit as at November 2017).

Information gathering

Sections 238 and 239 of the Water Act confer upon the MDBA a power to request information relating to the preparation and implementation of the Basin Plan, the investigation of possible contraventions of the Basin Plan or accredited water resource plans and associated regulations.

It is a civil penalty not to provide information requested or to provide false and misleading information. The civil penalty amounts are 50 and 60 penalty units. The information gathering provisions are subject to reasonable excuse and self-incrimination exemptions.

Monitoring and contravention related warrants

Sections 223 to 235 of the Water Act permit an authorised officer to enter onto land for the purposes of monitoring compliance with the Basin Plan, accredited water resource plans and relevant regulations or search for evidential material. However, entry onto land to monitor compliance can only occur:

- with the consent of the landholder
- pursuant to a monitoring warrant, or
- pursuant to a contravention-related warrant.
Entry onto land

The Water Act confers on the MDBA a power for an authorised officer to enter land for:

- compliance purposes (including monitoring compliance with the Water Act and the Basin Plan and searching for evidential material)
- other purposes (including where an authorised officer reasonably believes it is necessary for the performance of any of the MDBA’s functions which relate to the Basin Plan and accredited water resource plans, to measure, monitor and record the quality and quantity of the Basin water resources or the condition of water-dependent ecosystems associated with the Basin water resources) (Water Act ss.219 to 222)

Infringement notices

The MDBA can issue an infringement notice under ss.155 to 162 of the Water Act to a person if they have reasonable grounds to believe a person has contravened the water charge rules or the water market rules. Infringement notices are an alternative to the institution of proceedings in a Court.

Criminal provisions

The Water Act does not create criminal offences for contravention of obligations of the Basin Plan or accredited water resource plans. However, certain conduct may constitute an offence under other Australian Government legislation, including the *Criminal Code Act 1995* or the *Crimes Act 1914* or state or territory law and may be pursued as a criminal offence through that legislation.

Consistent with the Commonwealth Fraud Control Guidelines, the MDBA is responsible for investigating routine or minor instances of fraud, including providing false or misleading information to the Australian Government or failing to provide it when there is an obligation to do so.
Attachment B: MDBA Protocol for handling allegations of non-compliance

The MDBA will follow the below process in handling allegations of non-compliance.

1. Allegation is made to the MDBA
   a. The MDBA will acknowledge receipt of the allegation and use best endeavours to check the allegation’s credibility and validity. This will involve preliminary inquiries which may seek to confirm:
      i. that the allegation has been made in good faith and is not vexatious
      ii. whether the non-compliance can be substantiated
      iii. the relevant jurisdiction
      iv. whether there is any evidence of a contravention of a specific Act or regulation
      v. the harm involved in the contravention.

2. If the MDBA determines the allegation is not credible, the MDBA will inform the complainant that no further action will be undertaken.

3. If the allegation is found to be credible, the MDBA will:
   a. Include the allegation in the MDBA’s public register (de-identified as appropriate). As a breach of the Basin Plan water trading rules can have a commercial impact, the MDBA will publish generic information in relation to alleged breaches of the trading rules. Thus, the MDBA would publish the date an allegation was received, the section of the Basin Plan to which the allegation relates and the state in which the alleged breach occurred.
   b. Refer the allegation to the relevant referral agency. If it is an allegation against an individual, this will most likely be the state water agency. If the allegation involves a state agency, the MDBA will refer the issue to the most appropriate enforcement agency (which may be the MDBA). At this point, MDBA will include the issue on the public register as a matter for which it is responsible.

4. The MDBA will follow up with the referral agency one month after the allegation’s referral, seeking an update on the status of the management of the allegation including:
   a. What action has already been taken
   b. The referral agency’s proposed next steps to ensure the matter is resolved, including details about timing

5. Two months after the date the MDBA referred the allegation to the state agency, the MDBA will seek another update from the state agency about the management of the allegation.
6. If the MDBA is not satisfied with progress in the matter, the MDBA will refer the matter to senior state officials for their advice.

7. Three months after the date the MDBA referred the allegation to the state agency, should the matter still not have been adequately addressed, the MDBA will refer the matter to the Murray–Darling Basin Ministerial Council for their discussion and advice.

8. Should the referral to the Murray–Darling Basin Ministerial Council fail to result in adequate action, the MDBA will refer the matter to the relevant state anti-corruption body to investigate why the matter has not been progressed.

9. In the absence of satisfactory action from a state agency, the MDBA may instigate an MDBA investigation and possible action under the Water Act.

Note: Where circumstances are such that direct investigation by the MDBA is the most appropriate response to an allegation of non-compliance, the MDBA may, at any point, decide to investigate in place of the steps above. This decision will turn on the weight of evidence presented to the MDBA, the materiality of the non-compliance in the particular area or in relation to Basin Plan outcomes and the seriousness of the offence.
## Attachment C: Summary of state compliance arrangements

### Table 5: Summary of state compliance arrangements - ACT

<table>
<thead>
<tr>
<th>ACT</th>
<th>Compliance element</th>
<th>Current Arrangements</th>
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<tbody>
<tr>
<td></td>
<td>Metering and</td>
<td>Meters are installed, owned and maintained by entitlement holders, who must self-read their meters. All groundwater use requires a licence and a meter, including for stock and domestic purposes. Pattern approval and installation as per AS4747 is not compulsory. Priority meters (with a capacity of 5,000ML/year or greater) must comply with AS4747. New and replacement meters must meet the objectives of the National Non-Urban Water Metering Standards (NWMS). The majority of licences in the ACT are for small volumes of water. Telemetry is only where it is associated with another management operating system – e.g. sports ovals or utilities.</td>
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<tr>
<td></td>
<td>measurement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>Annual monitoring is outlined by the ‘Compliance and Enforcement Implementation Guide’ (2016). Risk assessment (based on water volume, compliance history, value of extraction area) of licence holders determines meter reading inspection frequency. The monitoring target is for meter inspections once in a three year period. This meets the 10% monitoring target from the National Framework for Compliance and Enforcement (NFCE).</td>
</tr>
<tr>
<td></td>
<td>Enforcement,</td>
<td>There is a mix of administrative, civil and criminal sanctions. The maximum fines for water offences are lower than other Basin states. Imprisonment is available as a penalty for water offences. Field officers do not give informal warnings.</td>
</tr>
<tr>
<td></td>
<td>penalties and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sanctions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>No funding is allocated to education and community awareness and there are no planned education initiatives. A student information portal and licensing and entitlement information is available online. Some online publications are available.</td>
</tr>
<tr>
<td></td>
<td>Reporting and</td>
<td>The ACT Water Resources Act Register is a public database containing licence, allocation and entitlement information. Annual compliance reporting per the NFCE is included in the ‘Chief Minister, Treasury and Economic Development Directorate Annual Report’. The ACT is the only Basin state to include comparison of compliance activities with previous years.</td>
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<tr>
<td></td>
<td>transparency</td>
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Resourcing

There were six Compliance Officers during the NFCE. This was reduced to four after Australian Government funding ended in 2016.

All staff are certified to investigate allegations.

Approximately $300,000 is spent annually on hydrometric monitoring contracts, vehicles, boats and misc. equipment.

Governance

Licences are administered by the Chief Minister, Treasury and Economic Development Directorate, which also conduct annual compliance reporting.

The ACT Environment Directorate is responsible for policy and programs, and not compliance.

Any proposed action above a warning letter is reviewed by the Access Canberra Regulatory Advisory Committee. The recommendation is then considered by the Environment Protection Authority.

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Table 6: Summary of state compliance arrangements - NSW

<table>
<thead>
<tr>
<th>NSW</th>
<th>Compliance element</th>
<th>Current Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metering and measurement</td>
<td>The majority of meters in NSW are owned, installed and maintained by entitlement holders. Irrigation corporations are likely to own the meters on their customer’s properties. NSW Interim Water Meter Standards cover new and replacement meters. Under the NSW Interim Standards, new or replacement meters must function within an accuracy range of +5% to 5% and be maintained in accordance with AS4747. A 2014-2015 meter accuracy study in the Murray and Murrumbidgee Rivers found that 1 in 3 meters were over 20% inaccurate. In 2010 the Australian Government provided $221 million for NSW metering projects. There was limited implementation of metering projects in northern NSW. The funds were allocated to other water savings programs such as the Sustain the Basin Project, including On-Farm Irrigation Efficiency Programs.</td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>WaterNSW conducts targeted audits of water take. Audits are based on field intelligence, spatial information, a previous history of non-compliance, and the volume of water involved in non-compliance. Currently, meter offences can only be reliably detected by unannounced compliance inspections. WaterNSW also routinely review licence holder water balances and take action if there has been an excess take of water.</td>
</tr>
<tr>
<td></td>
<td>Enforcement, penalties and sanctions</td>
<td>Broad range of enforcement penalties and sanctions following extensive legislative amendments since 2008. Water legislation has the highest penalties for offences of all Basin states, including imprisonment. There has been a decrease in compliance activities undertaken since the completion of the NFCE.</td>
</tr>
</tbody>
</table>
### NSW

<table>
<thead>
<tr>
<th>Compliance element</th>
<th>Current Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and awareness raising</td>
<td>Verbal and written communications by WaterNSW field officers about negative account balances. Customer Advisory Groups meet on a regular basis across the state. Flyers attached to water bills, guides, factsheets, updated webpages, and newspaper articles.</td>
</tr>
<tr>
<td>Reporting and transparency</td>
<td>Compliance statistics on the NSW Department of Primary Industries (Water) website have not been updated since 2014. WaterNSW have published their Compliance Framework and Prosecution Guidelines. Limited accessibility of the Water Access Licence Register. Searches can only be made over the counter at Land and Property Information Office in Sydney or through the authorised information broker network.</td>
</tr>
<tr>
<td>Resourcing</td>
<td>There are 16 Customer Field Officers and 4 investigators. There was a reduction in staff following completion of NFCE funding.</td>
</tr>
<tr>
<td>Governance</td>
<td>There have been 20 changes to the agencies responsible for water in NSW since 1997. Most recently, water responsibilities moved from the Department of Primary Industries (Water) to a new Crown Lands and Water Division, and a new independent statutory Natural Resource Access Regulator established following the Matthews Interim Report.</td>
</tr>
</tbody>
</table>

Table 7: Summary of state compliance arrangements - Vic

<table>
<thead>
<tr>
<th>VIC</th>
<th>Compliance element</th>
<th>Current arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metering and measurement</td>
<td>The water corporations for the Basin are Grampians Wimmera Mallee Water, Goulburn-Murray Water and Lower Murray Water. Meters are owned, installed, read and maintained by state water corporations. Meters are either read remotely on a continuous basis or at least twice a year in other instances. The Non-Urban Metering Policy (2014) requires all new extractions for commercial and irrigation purposes to be metered, and for the state to be AS4747 compliant by 2020. Existing licensed extraction sites must be metered if the licensed volume is 10ML or greater for surface water, and 20ML or greater for groundwater. Water corporations maintain asset databases about their meter fleets. They report that: 100% of usage is metered in Lower Murray Water’s (LMW) area, using 2954 telemetered with usage reported to the VWR daily and 4589 Pendant meters and 50mm Domestic and Stock meters. Goulburn-Murray Water (GMW) have 24,630 meters, some of which are telemetered, covering 84% of surface water and 91% of groundwater. Grampians Wimmera Mallee Water (GWMW) has 342 electromagnetic flow meters (excluding stock and domestic offtakes from the pipeline).</td>
</tr>
<tr>
<td>VIC</td>
<td>Compliance element</td>
<td>Current arrangements</td>
</tr>
<tr>
<td>-----</td>
<td>------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>Water corporation staff undertake inspections and spot checks for illegal bores/ infrastructure/ meter tampering, as well as stream surveys. There is a monitoring system, enabling regular reconciliations of usage against entitlement to determine if there has been excess take, followed by warning letters. Most LMW irrigation customer take is monitored by telemetry, and reported to the Victorian Water Register daily. The remaining are read manually monthly and Domestic &amp; Stock customers quarterly.</td>
</tr>
<tr>
<td></td>
<td>Enforcement, penalties and sanctions</td>
<td>Explicitly increases fines for repeat offenders. Maximum fine for criminal offences lower than other Basin states. The Water Act 1989 does not provide for civil enforcement actions or licence suspensions.</td>
</tr>
<tr>
<td></td>
<td>Education and awareness raising</td>
<td>Water corporations undertake education and community awareness raising activities such as: Newsletters, webpages, media releases, newspaper notices about prosecutions and advisory letters. Committee meetings, reach audits, and presentations Engagement teams.</td>
</tr>
<tr>
<td></td>
<td>Reporting and transparency</td>
<td>The latest compliance report on the Department of Environment, Land, Water and Planning (DELWP) website is for 2014-2015. Unable to locate compliance data from state water authorities. Water corporations have an interface with the Victorian Water Register, which is publically accessible and holds an Allocation Bank Account for each licence.</td>
</tr>
<tr>
<td></td>
<td>Resourcing</td>
<td>12 compliance and enforcement staff in , 6 in the Basin. Additional compliance activities are undertaken by field officers, diversions inspectors and meter reading maintenance staff.</td>
</tr>
<tr>
<td></td>
<td>Governance</td>
<td>Water corporations are statutory authorities that report to DELWP.</td>
</tr>
</tbody>
</table>
Table 8: Summary of state compliance arrangements - Qld

<table>
<thead>
<tr>
<th>Qld</th>
<th>Compliance element</th>
<th>Current Arrangements</th>
</tr>
</thead>
</table>
|     | Metering and measurement    | In 2014 meter ownership, installation and maintenance was transferred to entitlement holders, who must self-read their meters.  
Meters must function within an accuracy range of +5% to -5% and must be validated at least every five years by a validator, or as required.  
Surface water meters are a mixture of propeller activated, ultrasonic and electromagnetic meters, generally aged 5-15-years. Groundwater meters are propeller activated. 15% are 10-20 years-old. The rest are under 10-years-old.  
New and replacement meters must comply with the Qld Interim Standard and AS4747, unless a pattern approved meter is not available or not cost effective.  
A meter audit in 2017 found that up to 60% of meters in the region are outside of the +5% to -5% accuracy required. |
|     | Monitoring                  | A state compliance plan is developed each year with targets for desktop and field audits and informs regional specific plans. Criteria for audits include:  
Level of complaint/public interest  
Level of concern by irrigators  
Level of commitment/usage of resource  
Desktop audits are conducted to reconcile meter readings with previous readings and usage. Anomalies can trigger field audits. |
|     | Enforcement, penalties and  | Show cause, warnings, remedy requests are dealt with locally.  
Legislation mostly comprises of administrative and financial criminal penalties. Imprisonment is available as a penalty for water offences. |
|     | sanctions                   | $50,000 is allocated to education and awareness raising activities.  
Funds from NFCE were allocated to develop a Regulatory Officer Certification Course training framework, aligned to the national competencies in Cert IV (investigation).  
Water take audit training package and calculation toolkit developed.  
Post cards, fact sheets, mail outs, phone calls and meetings, Metering information package, YouTube videos, workshops and annual meetings with peak stakeholders. |
|     | Reporting and transparency  | Statewide reporting is provided through:  
Monthly compliance reports to Natural Resource Compliance Committee (NRCC), which notes regional compliance decisions  
Quarterly Compliance Plan Reporting.  
CIRAM database records all notifications and enforcement actions.  
Publically accessible database contains information about licences, permits, and allocations.  
Published Enforcement guidelines, compliance strategy and annual reports against the compliance and monitoring statistics in the NFCE. Only reports for 2012/13 and 2014/15 are publically available. Following completion of NFCE in 2016 a final report was published, but no reporting has occurred since. |
<table>
<thead>
<tr>
<th>Qld</th>
<th>Compliance element</th>
<th>Current Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resourcing</td>
<td>Staff reduction in Basin region from 8.75 FTE in 2014/15 to 4.5 in 2016/17. Current funding estimated at $450,000 for compliance.</td>
</tr>
<tr>
<td></td>
<td>Governance</td>
<td>Serious and/or repeat offenders referred to Executive Director for the region. These cases may be referred to the NRCC for advice.</td>
</tr>
</tbody>
</table>

Table 9: Summary of state compliance arrangements - SA

<table>
<thead>
<tr>
<th>SA</th>
<th>Compliance element</th>
<th>Current Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metering and measurement</td>
<td>Licensed water extractions are required to be metered. Licence holders are required to maintain their meters and report water usage on an annual or quarterly basis. Random and targeted meter audits are undertaken in high risk areas or to verify the accuracy of meter readings provided to the Department. The majority of extractions are relatively small and fitted with mechanical meters. The age of meters for larger irrigators in the SA Murray–Darling Basin region is five years or less, and for smaller irrigators the meter age is 10 to 15 years. Meters are required to be performing within +2% to -2% accuracy at the time of purchase, and +5% to -5% in situ. AS4747 Standards for meters not mandated.</td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>A compliance focus and targeted monitoring program is determined at the start of each water year. Techniques to monitor compliance include on-ground investigations, aerial imagery, an online data entry tool for collecting meter readings and data analysis to detect anomalies. At least 10% of water licences are inspected each water year.</td>
</tr>
<tr>
<td></td>
<td>Enforcement, penalties and sanctions</td>
<td>There is a broad mix of administrative, civil and criminal sanctions, available under the Natural Resources Management Act 2004 (the NRM Act). Imprisonment is not available as a penalty for water offences. The maximum fine for criminal offences is lower than for other Basin states. Should water take exceed allocation, administrative penalty rates apply in accordance with the NRM Act. SA is the only Basin state with the option to fine specifically based on the volume of water illegally taken. A Water Compliance Escalation Pathway Guideline determines how to manage allegations. The Department can make protection and reparation orders, or refer matters to a specialised Environment, Resources and Development Court.</td>
</tr>
<tr>
<td></td>
<td>Education and awareness raising</td>
<td>Letters of information and fact sheets are sent to customers and media releases, fact sheets, and annual public reporting are available online. Hosting of industry engagement sessions and workshops.</td>
</tr>
<tr>
<td>SA</td>
<td>Compliance element</td>
<td>Current Arrangements</td>
</tr>
<tr>
<td>----</td>
<td>------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td>Resourcing</td>
<td>There are currently 15 Assessment and Compliance Officers that are State Authorised Officers. The Compliance Unit includes six compliance/investigation staff who undertake investigations and prosecutions. One Policy Officer is dedicated to annual compliance reporting. The Department spends approximately $7.6 million managing water licensing, permitting, and compliance and trading systems, including $4.24 million in administration of water licences.</td>
</tr>
<tr>
<td></td>
<td>Governance</td>
<td>Water licensing activities, including compliance actions are coordinated through the Water and Fauna Permits Programme of the Department. A Prosecutions Steering Committee recommends to the Chief Executive and the Minister whether to prosecute.</td>
</tr>
</tbody>
</table>
## Attachment D: State compliance data

### Table 10. State water resources

<table>
<thead>
<tr>
<th></th>
<th>NSW</th>
<th>Queensland (MDB)</th>
<th>Victoria</th>
<th>South Australia</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Surface water take</td>
<td>4,649GL</td>
<td>871GL</td>
<td>2942GL</td>
<td>615GL</td>
<td>32GL</td>
</tr>
<tr>
<td>(Basin 2015-16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Ground water take</td>
<td>1,043GL</td>
<td>187GL</td>
<td>242GL</td>
<td>62GL</td>
<td>1GL</td>
</tr>
<tr>
<td>(Basin 2015-16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total annual water take</td>
<td>5,692GL</td>
<td>1,058GL</td>
<td>3,184GL</td>
<td>677GL</td>
<td>33GL</td>
</tr>
<tr>
<td>(Basin in 2015-16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of meters</td>
<td>12,855 meters state-wide, including 5,005 groundwater meters and 7,850 surface water meters.</td>
<td>400 surface water meters (excluding meters managed by SunWater) and 920 groundwater meters in the Basin.</td>
<td>32,515 meters in the Basin, including Lower Murray Water (LMW): 7,543 Grampians Wimmera Mallee Water (GWMW): 342 Goulburn-Murray Water (GMW): 24,630 metered service points.</td>
<td>Approximately 14,000 meters state wide. An estimated 5% of licences remain unmetered.</td>
<td>337 meters state-wide.</td>
</tr>
<tr>
<td>Percentage of metered take</td>
<td>Surface water: 54%</td>
<td>Surface water: 33%</td>
<td>Surface water: 83%</td>
<td>Surface water: 96%</td>
<td>Surface water: 63%</td>
</tr>
<tr>
<td>in 2015-2016</td>
<td>Groundwater: 83%</td>
<td>Groundwater: 28%</td>
<td>Groundwater: 91%</td>
<td>Groundwater: 88%</td>
<td>Groundwater: 100%</td>
</tr>
<tr>
<td>NSW</td>
<td>Queensland (MDB)</td>
<td>Victoria</td>
<td>South Australia</td>
<td>ACT</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Meter type / age.</strong></td>
<td>Meters installed under the NSW Metering Scheme the Aquamonix (formerly Tyco), Pentair I500, AquaMaster 3 FEV2 DN40 and the Siemens, MAG8000. They are approximately 2 to 6 years old.</td>
<td>Surface water: Mixture of propeller activated and ultrasonic. Meter age: 10-15 years old Groundwater: Propeller activated 15% 10-20 years old, 85% Meter age: &lt;10 years old.</td>
<td>LMW: 40% telemetered, 60% Pendant meters and 50mm Domestic and Stock meters. GMW: some telemetry. GWMW: electromagnetic flow meters.</td>
<td>The majority of extractions are relatively small and fitted with mechanical meters. The age of meters for larger irrigators in the SAMDB region is five years or less, and for smaller irrigators the meter age is 10 to 15 years.</td>
<td></td>
</tr>
<tr>
<td><strong># Compliance staff</strong></td>
<td>16 customer field officers state wide (CFOs), 4 have investigator functions. The National Framework funded 16 CFOs across the state.</td>
<td>Staff reduction in Queensland Basin from 8.75 FTE in 14-15 to 4.5 in 16-17.</td>
<td>12 compliance officers across the state in 16/17, including 6 dedicated compliance officers in the Basin. The National Framework funded 9 FTE across the state.</td>
<td>Since 2014 there have been 12 compliance staff including: 4 Assessment and Compliance Officers for the SAMDB region and 8 investigations staff across the state.</td>
<td>4 FTE, all with investigator qualifications.</td>
</tr>
<tr>
<td></td>
<td>NSW</td>
<td>Queensland (MDB)</td>
<td>Victoria</td>
<td>South Australia</td>
<td>ACT</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------</td>
<td>----------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Expenditure on compliance: staff, activities, resources, reporting, education.</td>
<td>$4,010,000 in 2016.</td>
<td>$100,000 per FTE (i.e. $450,000). This includes $50,000 on education activities.</td>
<td>Annual costs of Compliance are difficult to estimate as activities include the direct costs of compliance staff as well as numerous other functions across the businesses such as field staff, meter reading and maintenance staff, education, telemetry costs and the costs of maintaining the Victorian Water Register. Many of these activities are not undertaken solely for compliance.</td>
<td>Approximately $7.6 million managing water licencing, permitting, compliance and trading systems state wide. This includes $4.24 million in administration of water licences.</td>
<td>$300,000 for hydrometric monitoring contracts, vehicles, boats, and misc. equipment.</td>
</tr>
</tbody>
</table>

The Murray–Darling Basin Water Compliance Review—Part A

Murray-Darling Basin Authority

<table>
<thead>
<tr>
<th>Compliance Activity</th>
<th>Year</th>
<th>NSW (state wide)</th>
<th>Queensland</th>
<th>Victoria</th>
<th>South Australia</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Licences</td>
<td>2017</td>
<td>37,038 water licences (excludes work approvals) state wide, 21,362 in MDB.</td>
<td>24,354 state-wide, 5300 in MDB</td>
<td>46,743 total entitlements in the Basin area, including 8181 take and use licences.</td>
<td>14,196 state-wide, 5103 in SAMDB.</td>
<td>192</td>
</tr>
<tr>
<td>Warning letters / Notices issued</td>
<td>14/15</td>
<td>231</td>
<td>0</td>
<td>38</td>
<td>199</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>217</td>
<td>13</td>
<td>596</td>
<td>214</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>44 (Basin)</td>
<td>14</td>
<td>562</td>
<td>355</td>
<td>1</td>
</tr>
<tr>
<td>Advisory letters</td>
<td>14/15</td>
<td>334</td>
<td>1</td>
<td>143</td>
<td>445</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>330</td>
<td>9</td>
<td>399</td>
<td>88422</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>45 (Basin)</td>
<td>12</td>
<td>412</td>
<td>9765</td>
<td>0</td>
</tr>
<tr>
<td>Total breach reports received / complaints received</td>
<td>14/15</td>
<td>761</td>
<td>10</td>
<td>263</td>
<td>27</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>635</td>
<td>43</td>
<td>9461</td>
<td>37</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>191 (Basin)</td>
<td>90</td>
<td>1004</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Stop work orders</td>
<td>14/15</td>
<td>76</td>
<td>Nil</td>
<td>The Water Act 1989 does not provide for stop work orders. Water take was restricted for 22 entitlement holders.</td>
<td>Nil. Dealt with through other compliance mechanisms.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>22</td>
<td></td>
<td>Water take was restricted for 3 entitlement holders.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>1 (Basin)</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Compliance Activity</td>
<td>Year</td>
<td>NSW (state wide)</td>
<td>Queensland</td>
<td>Victoria</td>
<td>South Australia</td>
<td>ACT</td>
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<tr>
<td>---------------------</td>
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<td>------------------</td>
<td>------------</td>
<td>----------</td>
<td>-----------------</td>
<td>-----</td>
</tr>
<tr>
<td>Remediation notices</td>
<td>14/15</td>
<td>75</td>
<td>0</td>
<td>The Water Act 1989 does not provide for remediation notices. 43 entitlement holders received section 151 remediation directions.</td>
<td>Nil. Dealt with through other compliance mechanisms.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>74</td>
<td>0</td>
<td>3 entitlement holders received section 151 remediation directions.</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>6 (Basin)</td>
<td>8</td>
<td>4 entitlement holders received section 151 remediation directions.</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Investigations finalised</td>
<td>14/15</td>
<td>792</td>
<td>10</td>
<td>252</td>
<td>No data available. Data only kept for Prosecutions Brought and Convictions.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>787</td>
<td>43</td>
<td>949</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>175 (Basin)</td>
<td>90</td>
<td>975</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Penalty notices</td>
<td>14/15</td>
<td>98</td>
<td>1</td>
<td>The Victorian Water Act 1989 does not provide for the issuing of penalty notices.</td>
<td>34 (administrative sanctions)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>70</td>
<td>0</td>
<td></td>
<td>26 (administrative sanctions)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>6 (Basin)</td>
<td>0</td>
<td></td>
<td>17 (administrative sanctions)</td>
<td>0</td>
</tr>
<tr>
<td>Compliance Activity</td>
<td>Year</td>
<td>NSW (state wide)</td>
<td>Queensland</td>
<td>Victoria</td>
<td>South Australia</td>
<td>ACT</td>
</tr>
<tr>
<td>---------------------</td>
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<td>------------------</td>
<td>------------</td>
<td>----------</td>
<td>-----------------</td>
<td>-----</td>
</tr>
<tr>
<td>Prosecutions</td>
<td>14/15</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>1 criminal investigations in process, 1 charge and proceeding brought.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>0</td>
<td>0</td>
<td>4 commenced, 2 finalised</td>
<td>1 criminal investigations in process, 1 charge and proceeding brought</td>
<td>0</td>
</tr>
<tr>
<td>Convictions</td>
<td>14/15</td>
<td>5</td>
<td>0</td>
<td>1 conviction (12 month good behaviour bond and fine).</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>15/16</td>
<td>0</td>
<td>0</td>
<td>3 guilty without conviction.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>16/17</td>
<td>0 (Basin)</td>
<td>0</td>
<td>1 conviction And 1 no conviction recorded and received a fine, and ordered to pay compensation and costs.</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note 1: The increase in the number of reported breaches between 2014-15 and 2015-16 in Victoria is a result of a shift in the way ‘overuse’ against an allocation bank account is reported and treated. Since 2015 Victoria has reported on any instance where an entitlement holder has taken more water than that to which they were entitled. This means instances of ‘overuse’ are formally identified as breaches. Most of the matters identified are for amounts less than 10 ML of water.

Note 2: The increase in the number of reported breaches between 2014-15 and 2015-16 is because in late 2014 SA introduced an implementation meter self-read strategy and compliance escalation pathways, which include issuing pre-emptive letter before a requirement is due, as well as reminder and direction letters where licence conditions are not met initially.

<table>
<thead>
<tr>
<th>Year</th>
<th>NSW</th>
<th>Qld</th>
<th>Vic</th>
<th>SA</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/15</td>
<td>9,996 meter reads with usage entered by CFO</td>
<td>163 meter audits and 334 full entitlement audits in the MDB</td>
<td>Victoria has a metering and reporting system with real-time remote reading of telemetered meters, complemented by annual meter readings of all meters, rolling audits and verification of meters, ad hoc inspections by field officers. This enables identifying cases of ‘overuse’ against Allocation Bank Accounts via Victorian Water Register reports.</td>
<td>1,034 site visits, 825 in SAMDB</td>
<td>201 meters inspected</td>
</tr>
<tr>
<td>15/16</td>
<td>10,436 meter reads with usage entered by CFO</td>
<td>182 meter audits and 419 full entitlement audits in the MDB</td>
<td></td>
<td>1,507 site visits, 261 in SAMDB</td>
<td>117 meters inspected</td>
</tr>
<tr>
<td>16/17</td>
<td>12,836 meter reads with usage entered by CFO</td>
<td>684 meter audits and 368 full entitlement audits in the MDB</td>
<td></td>
<td>2,091 site visits, 652 in SAMDB</td>
<td>48 meters inspected</td>
</tr>
</tbody>
</table>
### Attachment E: Allegations of non-compliance made to the MDBA

#### Table 13: Allegations received 1 July 2015 - 15 November 2017

<table>
<thead>
<tr>
<th>Matter #</th>
<th>Allegation source</th>
<th>Date received</th>
<th>Date referred</th>
<th>Date closed by MDBA</th>
<th>Location</th>
<th>Description</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Community meeting</td>
<td>3 December 2015</td>
<td>8 January 2016</td>
<td>8 January 2016</td>
<td>Gwydir region, NSW</td>
<td>Allegation of water theft. MDBA contacted Tamworth Licensing Office who advised they were making their own enquiries.</td>
<td>Due to insufficient information and NSW making their own inquiries, the matter was closed.</td>
</tr>
<tr>
<td>2</td>
<td>MDBA Water Markets and Trade team</td>
<td>April 2016</td>
<td>N/A</td>
<td>Open</td>
<td>Vic</td>
<td>Allegation that water traders were not provided the reason for their trade refusal consistent with s.12.39 of the Basin Plan.</td>
<td>Matter investigated and considered a breach of s.12.39 of the Basin Plan. MDBA wrote to Vic seeking assurances that they had resolved the issue and information on the scale of the issue.</td>
</tr>
<tr>
<td>3</td>
<td>Email to MDBA officer</td>
<td>17 June 2016</td>
<td>11 August 2016</td>
<td>11 August 2016</td>
<td>Brewarrina, NSW</td>
<td>Allegations of unauthorised take in the region.</td>
<td>The matter was referred to NSW.</td>
</tr>
<tr>
<td>4</td>
<td>Individual</td>
<td>10 October 2016</td>
<td>-</td>
<td>20 November 2017</td>
<td>Oakey Creek, Qld</td>
<td>Allegation of unauthorised take</td>
<td>Qld Department of Natural Resources and Mines advised that a warning notice was issued.</td>
</tr>
<tr>
<td>5</td>
<td>Minister’s office to trade team</td>
<td>21 November 2016</td>
<td>N/A</td>
<td>23 November 2017</td>
<td>Northern Basin</td>
<td>Allegation that a water market announcement was wrongfully disclosed</td>
<td>Allegation investigated with no breach identified. As a result of the investigation recommendations were provided on how to improve the governance of MDBA committees.</td>
</tr>
<tr>
<td>6</td>
<td>Reported to MDBA Water Markets and Trade team</td>
<td>22 December 2016</td>
<td>N/A</td>
<td>Open</td>
<td>Vic</td>
<td>Allegation relating to possible breach of s.12.23</td>
<td>Possible breach. Matter is under investigation.</td>
</tr>
<tr>
<td>Matter #</td>
<td>Allegation source</td>
<td>Date received</td>
<td>Date referred</td>
<td>Date closed by MDBA</td>
<td>Location</td>
<td>Description</td>
<td>Outcome</td>
</tr>
<tr>
<td>---------</td>
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<td>---------</td>
</tr>
<tr>
<td>7</td>
<td>'Report a Breach' form</td>
<td>24 January 2017</td>
<td>20 February 2017</td>
<td>6 March 2017</td>
<td>Moama, NSW</td>
<td>Allegations of a neighboring property illegally discharging their sewerage into the Deep Creek Marina and Murray River.</td>
<td>The MDBA referred the matter to the relevant local council. The local council had investigated and determined no illegal activities were occurring.</td>
</tr>
<tr>
<td>8</td>
<td>'Report a Breach' form</td>
<td>28 February 2017</td>
<td>27 March 2017</td>
<td>4 April 2017</td>
<td>Qld</td>
<td>Allegations that the Qld government through their water buyback program are reporting false water savings.</td>
<td>The matter was referred to the Department of Agriculture and Water Resources.</td>
</tr>
<tr>
<td>9</td>
<td>'Report a Breach' form</td>
<td>2 April 2017</td>
<td>10 April 2017</td>
<td>27 April 2017</td>
<td>Darling River, NSW</td>
<td>Allegations of illegal discharge.</td>
<td>The MDBA investigated the data and determined there was no evidence of illegal discharge. The MDBA also referred the matter to NSW Department of Primary Industries.</td>
</tr>
<tr>
<td>10</td>
<td>'Report a Breach' form</td>
<td>25 July 2017</td>
<td>27 September 2017</td>
<td>Open</td>
<td>Wakool area, NSW</td>
<td>Allegations of unauthorised take.</td>
<td>The matter has been referred to NSW for investigation. MDBA has requested to be kept updated on the outcome. NSW has updated the MDBA on their on-going investigation.</td>
</tr>
<tr>
<td>11</td>
<td>Reported to MDBA Water Markets and Trade team</td>
<td>6 October 2017</td>
<td>N/A</td>
<td>Open</td>
<td>Vic</td>
<td>Allegation relating to possible breach of s12.23</td>
<td>Matter is under investigation.</td>
</tr>
<tr>
<td>12</td>
<td>'Report a Breach' form</td>
<td>17 October 2017</td>
<td>13 November 2017</td>
<td>Open</td>
<td>Mt Harris, NSW</td>
<td>Allegations of a property disconnecting all recording devices.</td>
<td>The matter has been referred to NSW for investigation. MDBA has requested to be kept updated on the outcome.</td>
</tr>
<tr>
<td>13</td>
<td>'Report a Breach' form (mail)</td>
<td>20 October 2017</td>
<td>14 November 2017</td>
<td>Open</td>
<td>Allora, Qld</td>
<td>Allegations of unauthorised take.</td>
<td>The matter has been referred to Qld Department of Natural Resources and Mines. MDBA has requested to be kept updated on the outcome.</td>
</tr>
</tbody>
</table>
Part B

Murray–Darling Basin Water Compliance Review

Independent Panel Report
24 November 2017
The Hon Malcolm Turnbull MP
Prime Minister
Parliament House
CANBERRA ACT 2600

Dear Prime Minister

Murray–Darling Basin Water Compliance Review

We are the Independent Panel appointed to advise the Murray–Darling Basin Authority (MDBA) on the conduct of its Murray–Darling Basin Water Compliance Review. We were also charged with assessing and reporting on MDBA’s compliance and enforcement arrangements and with evaluating the MDBA’s review report.

We are pleased to attach for your consideration our report in response to the terms of reference. Our report makes recommendations for action by the Council of Australian Governments, the Minister administering the Water Act 2007 and the MDBA. We also endorse all the recommendations and actions contained in the MDBA report.

Our report points out a series of deficiencies in current arrangements, a lack of leadership at the Commonwealth level and a falling short in commitment by Basin States. In particular, it is critical for the effective operation of the Basin Plan that the June 2019 deadline for accredited water resource plans is met. We are concerned that without real change that deadline will be missed.

We would be pleased to make ourselves available to brief you or other Ministers on our report, or to present our recommendations to either the Murray–Darling Basin Ministerial Council or the Council of Australian Governments should this be appropriate.

Yours sincerely

Allan Holmes  
Eamonn Moran PSM QC  
Abel Immaraj
Executive summary

Tasks for the panel

An independent panel was appointed to advise the Murray–Darling Basin Authority (MDBA) on its review of Basin state\(^1\) compliance and enforcement regimes for water management in the Murray–Darling Basin (the Basin) (task 1). Additionally, the panel was charged with assessing and reporting on MDBA’s compliance and enforcement arrangements (task 2). Finally, the panel was asked to evaluate MDBA’s own report on Basin states’ compliance and enforcement arrangements (task 3).

Inevitably, there is overlap between the MDBA and panel reports, particularly as MDBA could not avoid addressing its own performance.

While the panel has provided advice and guidance to MDBA in the preparation of its report (task 1), this report has been prepared to reflect the panel’s independent role (tasks 2 and 3).

This report combines two tasks. Most of the report is devoted to assessing MDBA’s compliance and enforcement arrangements. Section 7 is an evaluation of the MDBA’s report.

With the inclusion of additional recommendations in the panel’s report, which are set out below, the panel endorses the recommendations and actions contained in the MDBA report. The panel’s recommendations should be read in conjunction with those contained in the MDBA report.

Four Corners and the substantial issues

The *Four Corners*’ episode ‘Pumped’, which first aired on 24 July 2017, raised serious concerns about water management in the Murray–Darling Basin. Coverage of the alleged water theft quickly moved to the competence and commitment of the governing parties to meet and comply with their obligations for implementing the Basin Plan.

The public value of the river Basin is universally acknowledged. The health of this vital natural asset is central to the country’s cultural and economic wealth. A balance has had to be struck between competing needs and values. The achievement of the passage of the Water Act in 2007 and the approval of the Basin Plan in 2012 cannot be underestimated. An agreed Plan is a massive achievement. However, in stating this, the work and commitment required to implement the plan cannot be underestimated. It, too, is massive. The public investment in restoring the health of the river is unparalleled – more than $12 billion to date.

*Four Corners* has done us a great service by sounding a warning bell for what will happen if commitment waivers. Will the extraordinary gains be lost? Will the public’s remarkable investment be wasted?

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1 In this report, state or Basin state means each of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.
The challenge for all to act in the interests of the common good is substantial and it has always been so. The public, however, expects governments to meet that challenge.

The MDBA’s compliance and enforcement arrangements (task 2)

The Panel report divides the compliance issues in the following way:

- the requirements of governments and their agencies to implement the Basin Plan (an overarching piece) (Section 3)
- illegal take of water (Section 4)
- achieving sustainable diversion limits (SDLs) for each water resource in the Basin (Section 5)
- protecting environmental water (Section 6).

While illegal take — and how states respond to that illegal take — is the conspicuous and easily understood issue, other systemic and complex compliance issues are the more substantial threat. This is one of the Panel’s most important conclusions.

Compliance and accountability — implementing the Basin Plan (Section 3)

Findings

- It is difficult to gain an understanding of overall Basin Plan implementation and compliance at a Basin scale from the current suite of state, Commonwealth Environmental Water Holder (CEWH) and MDBA reports.
- Reporting requirements under the Basin Plan and Water Act are met by self-assessment by each reporting agency.
- Rigorous and consistent monitoring of compliance with accredited water resource plans, including provisions about illegal take and environmental water protection, is essential. Compliance monitoring must cover both individual entitlement holders and state agencies.
- The ‘register of take’ under the Basin Plan is an adequate measure for tracking compliance with SDLs.
- MDBA has the central leadership and coordinating role but has been unable to assert its authority during the development of water resource plans and transition to SDLs; the Australian Government Department of Agriculture and Water Resources (DAWR) and the Basin Officials Committee (BOC) also have important roles which are not being effectively discharged. The Panel notes an underlying lack of acceptance that the Water Act has fundamentally changed roles and responsibilities for management of Basin water resources: it is not business as usual.
- There has been insufficient progress on two important compliance areas — accreditation of water resource plans, and protection of environmental water.
Recommendations

The Panel endorses Recommendations 5 and 6, and Actions 3, 5 and 6, of the MDBA report. Together, these relate to improving clarity about states’ and MDBA’s compliance roles and compliance strategies, including reporting on compliance activities, and MDBA’s exercise of its audit role to check that Basin Plan obligations are being met.

The Panel makes the following additional recommendations:

1. MDBA to revise, and clearly and publicly communicate, its compliance and enforcement arrangements. Explicit guidance must be provided to all parties on their reporting obligations, how MDBA will assess compliance, and how it will report publicly.

2. Council of Australian Governments (COAG) to endorse a proposal to explicitly require BOC, as part of its Water Act function of facilitating cooperation and coordination between MDBA and all Basin governments, to assist in bringing about the timely development of water resource plans. An amendment of the Water Act is the most effective way to implement this proposal. MDBA’s authority as the relevant enforcement body for contraventions of the Water Act is to be maintained.

3. COAG to endorse a revision to BOC membership to:
   a. require BOC members to bring a whole-of-government view to the forum, which includes representing the interests of state river operators and environmental water managers
   b. allow MDBA to participate as a full member for matters relating to Basin Plan implementation, and as a non-voting member for river operations.

4. COAG to endorse an amendment to the Water Act to strengthen the standing of Authority members, restore public confidence and ensure greater transparency in and a bipartisan approach to, the appointment of Authority members. Amendments should include:
   a. to be eligible for appointment, an individual must have a high level of expertise, and be widely recognised as having high standing in, one or more fields relevant to the Authority’s functions (relevant fields are specified in Section 178 of the Act)
   b. in recommending members to the Governor-General for appointment, the Minister must endeavour to ensure that collectively among the members there is a high level of expertise across all the specified fields.
Illegal take (Section 4)

Findings

- States should continue to take responsibility for enforcement of their water laws. MDBA should assume a ‘last resort’ role for breaches that are also breaches of state law.
- Clarity is also needed about when MDBA will act in relation to illegal take.
- MDBA’s powers to take action against illegal take depend on there being a water resource plan in place.
- Sanctions, penalties and evidentiary provisions under the Water Act are limited.

Recommendation

The Panel endorses Recommendations 1, 2, 5, 6 and 7, and Actions 3 to 6 of the MDBA report. Implementing these recommendations and actions will improve the effectiveness of MDBA and states’ compliance and enforcement activities in relation to illegal take, and provide greater clarity from MDBA about how and when it will exercise its role as an enforcer of ‘last resort’.

The Panel makes the following additional recommendation:

5. COAG to endorse an amendment of the Water Act to provide a more comprehensive suite of sanctions and powers, such as appropriate evidentiary provisions and criminal sanctions.

Achieving compliance with SDLs (Section 5)

Findings

- It is critical that water resource plans are made on time.
- The June 2019 deadline is little more than 18 months away, and performance of the states, MDBA and the Commonwealth Department has not been adequate to ensure that all the plans will be in place by the deadline.
- Faced with the possibility of not meeting the deadline, MDBA must prepare for that contingency.
- Ensuring water resource plans accurately meet Basin Plan criteria for SDL implementation is a critical MDBA compliance function.
- Attention should be concentrated on elements of water resource plans that are high risk to achieving Basin Plan outcomes — SDL implementation and environmental water protection.
- Public confidence in SDL implementation requires unambiguous compliance arrangements.
- Ensuring compliance with SDLs and water resource plans requires more than tracking SDL compliance through the register of take.
- Implementing SDLs requires effective water accounting.
Recommendations

The Panel endorses Recommendations 1 to 4, 8 and 9, and Actions 1, 2, 3, 7 and 8 of the MDBA report. Together, these will provide for improved water accounting (measurement of the water resource generally as well as how much is taken by individual users) and ensure improved compliance reporting. In particular, states’ reporting on compliance with water resource plans will include compliance with provisions that support the SDL, and those that relate to environmental water management and protection. Action 7 will ensure that formal reporting about SDL compliance is audited and publicly communicated.

Recommendations 8 and 9, and Action 8, shine the spotlight on meeting the June 2019 deadline for water resource plan accreditation, and the need for commitment to this goal by COAG and government officials.

The Panel makes the following additional recommendations:

6. The Commonwealth Minister to direct the Commonwealth Department to take a more active role that reflects the significance of water resource plans to the administration of the Water Act.

7. MDBA, with states and the Bureau of Meteorology, to review the Basin’s hydrometric network to improve water management for the environment.

Environmental water management and protection
(Section 6)

Findings

- The Basin Plan provides a sound framework for protecting and managing environmental water, through the environmental watering plan (EWP) and accreditation requirements for water resource plans.
- States have already agreed to work to protect environmental water.
- There is a concerning systemic failure to protect low flows in unregulated rivers in the northern Basin, while existing rules in some New South Wales (NSW) transitional water resource plans could be applied to provide greater protection.
- Fully compliant water resource plans will protect environmental water.
- Water resource plans must be implemented and complied with, to manage and protect environmental water consistently with the EWP.
- NSW water take rules have contributed to loss of low flows in unregulated rivers.
- Current arrangements for making replacement transitional water resource plans lack transparency.
- Held environmental water is not properly protected from take.
- CEWH’s formal role in governance arrangements for the Basin is not commensurate with its role under the Water Act.
Recommendations

The Panel endorses Recommendations 10 and 11, and Actions 8 and 9 of the MDBA report. These relate to ensuring improved protection of environmental water, particularly low flows, and ensuring that necessary policy changes are included in water resource plans. They also include NSW taking immediate steps to introduce individual daily extraction limits and other measures that can be achieved under existing plans. In the case of the southern connected Basin, states will implement their so-called pre-requisite policy measures by 2019, including by incorporating these into water resource plans as required. Transparency in implementing these measures will be ensured by MDBA publishing a register of required measures and reporting annually on progress.

Under Action 8, MDBA will make public its assessment about whether replacement transitional water resource plans are consistent with the Basin Plan.

The Panel makes the following additional recommendations:

8. COAG to endorse a revision to the membership of BOC to include CEWH in matters relating to the Basin Plan.

9. MDBA to seek the formal advice of CEWH when assessing relevant provisions of water resource plans.

10. MDBA to ensure that accredited water resource plans include policies essential for the protection of environmental water, particularly low flows in the northern Basin, and the ‘pre-requisite policy measures’ for the southern connected Basin.

Review of the MDBA report (task 3 and Section 7)

The MDBA report sets out the context for the review, comments on both Basin state and its own compliance and enforcement arrangements, draws attention to the importance of state water resource plans and the protection of environmental water, contains recommendations for Basin states, lists a series of MDBA actions and proposes a COAG-endorsed Compact to deliver on the report and restore public confidence in Basin management.

The report is a valuable document. It draws together the background to the current arrangements, states the challenges that have been dealt with and those that are still to be overcome, and makes sound recommendations for government action and sensible proposals for MDBA action. In particular, it is open and honest in its evaluation of MDBA to date.

This Review was imperative. Without it, we were likely to be faced at 30 June 2019 with the prospect of the Basin Plan being placed in real jeopardy caused, in part, by a lack of action on the part of MDBA, but to a not insignificant extent by the failure of states to deliver on their commitments.
Concluding remarks

If participating governments could agree to the following six objectives, they would go a long way to fixing the public’s concern:

1. ‘No meter, no pump’, with urgent action in high-risk areas to prevent illegal take
2. Commitment and goodwill from Basin governments and their officials to implementing the Basin Plan and meeting the 2019 deadline for water resource plans
3. Public transparency and accountability for Basin Plan implementation and water management
4. Effective water accounting that truthfully accounts for all the water in the system and doesn’t rely on environmental water or deficient models to balance the accounts
5. Disciplined compliance and enforcement regimes with full public disclosure, that are fair and equitable across the Basin
6. An assertive MDBA that leads on Basin management.

The Panel endorses Recommendation 12 of the MDBA report, for COAG to commit to a Basin Compliance Compact to implement the recommendations of both the MDBA and Panel reports.
1. Introduction

1.1 The Panel and its terms of reference

An independent panel (the Panel) of three was established as part of the Murray–Darling Basin Water Compliance review initiated by the Prime Minister. The Panel was given three tasks:

1. To advise the Murray–Darling Basin Authority (MDBA) on the methodology and approach to the review of compliance
2. To assess MDBA's own compliance and enforcement arrangements
3. To make an assessment of MDBA's review report.

The Panel's members were Allan Holmes, Eamonn Moran PSM QC and Abel Immaraj. The Panel was assisted in its work by Megan Dyson, lawyer and policy consultant.

1.2 Methodology

The Panel convened on 30 August 2017 and through September, October and November, met on a regular basis with MDBA's water compliance review taskforce to fulfil the Panel's first term of reference — to advise on methodology for, and approach to, the review. The Panel met on its own and also participated in the taskforce.

Towards the end of the review process, panel members met with state representatives to discuss the preliminary review findings.

The MDBA report and the Panel's report are complementary and an attempt has been made to write both in a way that is not unduly repetitive or confusing.

1.3 Statement of problem

The Four Corners' episode Pumped, which aired on 24 July 2017, initiated these investigations and many others. The issues begin with the alleged illegal take of water and a lack of enforcement action. They extend to the performance of government departments in fulfilling their statutory and public service responsibilities. And further, they question the commitment of governments to the sustainable management of the Murray–Darling Basin (the Basin). Finally, they raise doubts about the security of public investment in restoring environmental flows.
1.4 Framing of report
The Panel has framed the issues around four themes:

1. compliance and accountability — implementing the Basin Plan
2. illegal take of water
3. achieving compliance with sustainable diversion limits (SDLs) through implementation of water resource plans, the cornerstones of the Basin Plan
4. environmental water management and protection.

The division is one of many possible but these four themes capture best the distillation of the issues from the Four Corners’ episode.

Compliance and enforcement in relation to each of these themes is dealt with by both reports. Compliance applies to observing entitlement conditions, developing and implementing water resource plans, implementing the Basin Plan, and protecting environmental water. Enforcement is the flip side — taking action to penalise or sanction non-compliance.

The final section of this report is a review of the MDBA’s report.
2. Background

The Murray–Darling Basin has been a major contributor to the prosperity of Australia and especially of the Basin states. For indigenous Australians of the Basin, it was, and still is, their lifeblood and country.

Today, we define the public value of the Basin along the following lines:

- a living river system with immense cultural and social value (where environment is a subset of culture)
- a productive Basin with immense economic wealth (dependent on water).

Fundamental to the issues addressed in this review is the notion of how the benefits of the Basin are shared; firstly, between states, and secondly, between economic, environmental and cultural interests. The tensions between these interests lie at the heart of the review.

There are more than 100 years of history of intergovernmental negotiation and agreement dealing with the management of the Murray–Darling Basin. State interests have been paramount. Today, we see a Commonwealth Water Act 2007, a consequent MDBA and Basin Plan; a Murray–Darling Basin Agreement with its Ministerial Council and Basin Officials Committee (BOC); and a number of intergovernmental agreements pertinent to these arrangements. Figure 1 provides an overview of these arrangements.
Governance in the Murray–Darling Basin

Figure 1: Governance in the Murray–Darling Basin
Implementation of the Basin Plan requires a unique and complex set of policy, regulatory and program arrangements involving six jurisdictions, 14 per cent of Australia’s landmass and diverse water resources. It involves imposing these arrangements on an existing system of rules and property rights, many of which have been in place for decades. It also involves a partnership between Commonwealth and Basin state governments, all of whom have statutory powers and responsibilities with respect to water.

The Basin Plan represents a consensus between governments on reforms to a natural and modified eco-system that has been detrimentally affected by past actions and inactions. We are five years into an ambitious reform process.

More detailed contextual information about water management in the Basin is contained in Part 2 of the MDBA report.
3. Compliance and accountability – implementing the Basin Plan

3.1 Overview

The MDBA has crucial accountability and compliance roles under the Water Act and Basin Plan, which include ensuring compliance by other government agencies with their responsibilities under those laws. This section of the report explores the Basin Plan implementation responsibilities of the MDBA, the Commonwealth and state governments and their agencies, the Murray–Darling Basin Ministerial Council and BOC.

Illegal take, compliance with SDLs and protecting environmental water are three issues critical to achieving the outcomes intended by the Water Act and Basin Plan. They are dealt with in more detail in Sections 4, 5 and 6 of this report.

3.2 Basin Plan and Water Act accountability measures

The Basin Plan includes formal measures to monitor the plan’s implementation:

   (a) monitoring, evaluation and reporting requirements imposed on the MDBA and a range of agencies
   (b) the register of take, which monitors SDL compliance.

The Water Act also includes reporting requirements, as well as a requirement for the Productivity Commission to conduct an inquiry every five years into the effectiveness of the Basin Plan and water resource plans. The first of these inquiries is to be commenced before the end of 2018.

Monitoring, evaluation and reporting requirements

Chapter 13 of the Basin Plan sets out a program for monitoring, evaluating and reporting on the effectiveness of the Basin Plan.

The MDBA, Basin states, the Commonwealth Environmental Water Holder (CEWH), and the Department of Agriculture and Water Resources\(^2\) all have obligations under Chapter 13 to report on a wide range of matters. Some reports are made annually, while others are made every five years. It is the MDBA’s responsibility to ensure that reports are made, and to publish them on its website.

\(^2\) The Department of Agriculture and Water Resources is responsible for administering the Water Act 2007 and will be referred to as ‘the Commonwealth Department’ in this document.
The MDBA is also responsible for evaluating the effectiveness of the Basin Plan and reporting annually on that evaluation, as well as conducting 10-yearly reviews of the Basin Plan, as required by the Water Act. The MDBA may carry out audits to check the extent of compliance with the Basin Plan, and has powers under the Water Act to support its audit function.

The CEWH also has reporting responsibilities under the Water Act relating to Basin Plan implementation. The CEWH must report annually on its operations, including achievements against the objectives of the environmental watering plan (EWP) which forms Chapter 8 of the Basin Plan.

Under the Basin Plan Implementation Agreement (BPIA), the states, CEWH and MDBA also agreed to make annual statements of assurance that specific Basin Plan implementation tasks or obligations under the Basin Plan are being fulfilled or met.

The MDBA report outlines these reporting arrangements in Part 4 under the heading *State and Commonwealth agency assurance arrangements*.

**Register of take**

Chapter 6 of the Basin Plan requires MDBA to maintain a ‘register of take’. The register tracks compliance with each SDL, by publishing the permitted take and actual take from each SDL resource unit for each year. A cumulative balance must be maintained, indicating the extent to which annual take is matching permitted take.

The register of take will commence with the 2019–20 water year, following accreditation of water resource plans.

**3.2 MDBA’s roles in compliance and accountability**

The MDBA was established to ensure that Basin water resources are managed in an integrated and sustainable way. Its main functions under the Water Act include preparing the Basin Plan, carrying out functions conferred on it by the Basin Plan, and advising the Commonwealth Minister 3 about the accreditation of state water resource plans.

The MDBA is also responsible under the Act for ensuring compliance with the Basin Plan and water resource plans.

Part 4 of the MDBA report sets out the MDBA’s approach to compliance. Amongst other elements of its compliance framework, the MDBA has a Compliance Strategy (2014) which is currently under review. It also has a Compliance Risk Management Framework (2016) which proposes an annual compliance risk assessment and is revised quarterly.

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3 The Minister for Agriculture and Water Resources is responsible for administering the *Water Act 2007* and will be referred to as ‘the Commonwealth Minister’ in this document.
Sections 4, 5 and 6 of this report look specifically at roles and performance of the MDBA in compliance activities relating to illegal take, SDL implementation and environmental water protection respectively. The remainder of this Section 3.2 summarises the MDBA’s role in the Basin Plan accountability measures: reporting, evaluation and audit, and maintaining the register of take.

Reporting, evaluation and audit

The MDBA report outlines in Part 4 the ‘assurance arrangements’ in place to ensure that the MDBA, states, the CEWH and the Commonwealth Department meet their obligations under the Basin Plan. Assurance arrangements include reporting requirements under the Basin Plan and Water Act, as well as under the BPIA.

The following reports are available on the MDBA website:


It is unclear from the webpage or the reports themselves whether these annual reports constitute the annual ‘analysis of the Basin Plan’s effectiveness’ that are required by Section 52A of the Water Act. Reports have been made each year since 2012.

*Statements of Assurance.* Statements of assurance are a requirement of the BPIA, and have been made by the MDBA, each state, the CEWH and the Commonwealth Department for each year since 2012. Statements of assurance for past years are not all located on or linked from the same page of the MDBA website. The 2015–16 statements are not individually identified, instead appearing within the page for Basin Plan annual report 2015–16, under a tab called ‘More information/supporting documents’ (see below).

*Basin Plan implementation reports* ([https://www.mdba.gov.au/publications/mbda-reports/basin-plan-implementation-reports-2015-16](https://www.mdba.gov.au/publications/mbda-reports/basin-plan-implementation-reports-2015-16)). From 2015–16, the Schedule 12 reporting requirements have been combined with statement of assurance requirements into a single reporting template. The MDBA webpage for Basin Plan implementation reports contains separate documents titled ‘Basin Plan implementation reports’, one for the MDBA, the CEWH and each state, as well as separate reports for each, titled ‘Environmental water use’. There is no overview or compiled report.

The MDBA has made guidelines under the Basin Plan (Basin Plan Schedule 12 Reporting Guideline 2015) that include detail about the MDBA’s content requirements for reports made under the Basin Plan. Guidelines are not legally binding, but states, the Commonwealth Department and the CEWH are expected to have regard to them. The 2015–16 implementation reports indicate that reporting entities are reporting in accordance with the guidelines. Publication of reports for 2016–17 is intended for later in 2017.

Reports provided under the Basin Plan are based on self-assessment of the reporting entity. The MDBA does not check information contained in the reports. The MDBA does not report in relation to implementation of its Compliance Strategy or Compliance Risk Management Framework, and has not yet exercised its audit function.

Assurance arrangements outlined in Part 4 of the MDBA report do not currently cover state agency compliance with water resource plans. While they indirectly monitor obligations of
state river operators to not act inconsistently with the Basin Plan (through reporting requirements about identifying environmental water and monitoring its use), they do not cover related BOC obligations.

Register of take
The MDBA's preparations for SDL accounting to commence from July 2019, including preparation of a ‘take report’ for the period 2012–13 to 2015–16, are outlined in Part 4 of the MDBA report. As well as maintaining the register (which has been published online), MDBA plans to publish an annual SDL report.

3.3 Roles of other parties
Basin states, the CEWH, the Commonwealth Department and the Commonwealth Minister also have responsibilities under the Basin Plan, and under the Water Act in relation to the Basin Plan.

Minister and Department
The Commonwealth Minister is responsible for administering the Water Act as a whole, and also has the pivotal implementation role of accrediting or adopting water resource plans. Water resource plans provide for the management of Basin water resources, and may only be accredited if they are consistent with the Basin Plan (including requirements to meet the SDL and other water resource plan accreditation requirements in Chapter 10 of the plan). Water resource plans are essential to the operation of the Water Act, and the Act requires that there must be a plan for every water resource plan area.

The relevant Commonwealth Department assists the minister in discharging his or her functions under the Act. Importantly, the department advises the minister in relation to the MDBA’s recommendations about whether to accredit each state-developed water resource plan. The department has to date adopted the role of observer rather than being actively involved in facilitating water resource plan development by states.

The department also purchases water entitlements and enters into other arrangements to recover water, to ‘bridge the gap’ between the SDLs and existing levels of consumptive use from the Basin. Water rights recovered through the department’s programs form part of the Commonwealth environmental water holdings managed by the CEWH.

The department’s reporting requirements under the Basin Plan reflect the Australian Government’s commitment to water recovery, and its interest in monitoring effects of the Basin Plan on social, economic and environmental outcomes in the Basin.
Commonwealth Environmental Water Holder

The CEWH is responsible under the Water Act for managing the Commonwealth environmental water holdings. Both the Water Act and Basin Plan impose reporting requirements on the CEWH in relation to the use of the holdings, in particular the environmental outcomes achieved.

The CEWH must manage its water holdings to give effect to relevant international agreements to which Australia is party, and in accordance with the EWP and the Basin-wide environmental strategy made by MDBA under the EWP. It must also have regard to the Basin annual environmental watering priorities which are prepared by MDBA.

Section 6 of this report discusses compliance issues relating to environmental water protection.

Shared responsibilities

State and Commonwealth governments also have some shared responsibilities for Basin Plan implementation, through the Murray–Darling Basin Ministerial Council and BOC.

The Murray–Darling Basin Ministerial Council is established under the Murray–Darling Basin Agreement as the body through which Basin governments reach consensus about matters covered by the Agreement. Reflecting its role in Basin water resource management, the Ministerial Council had to be consulted during preparation of the proposed Basin Plan and must be consulted about any subsequent amendment of it. MDBA must provide the Ministerial Council with advice about the impacts of the Basin Plan, by the end of 2020.

BOC is established under the Murray–Darling Basin Agreement to advise the Ministerial Council and to give effect to decisions of the Ministerial Council under the Agreement. The Agreement provides that both the Chair and Chief Executive can attend as observers, although in practice only the Chief Executive attends.

BOC has additional functions under the Water Act, namely to:

- advise MDBA about the performance of MDBA's functions under the Water Act
- facilitate cooperation and coordination between the Commonwealth, MDBA and states, in managing Basin water resources.

States

States have various responsibilities for Basin Plan implementation, and are obliged to report on their activities and whether they are achieving the purposes of the Basin Plan. Perhaps the most important of these functions is to develop proposed water resource plans. This function is discussed in more detail in Section 5 of this report.

The BPIA sets out the agreement of all states to their and the MDBA's respective implementation roles, and commits all parties to collaborative implementation of the Plan. The BPIA also establishes the Basin Plan Implementation Committee (BPIC) as a forum for coordinating Basin Plan implementation. BPIC is comprised of state officials from relevant agencies, generally at a lower level of seniority than BOC members.
3.4 Panel findings

It is difficult to gain an understanding of overall Basin Plan implementation and compliance at a Basin scale from the current suite of state, CEWH and MDBA reports. There are a number of different reporting requirements relating to Basin Plan implementation, and it is not clear what different purposes they are intended to serve. In spite of the large number of reports prepared, it is difficult to form an overall picture of compliance with obligations under and in relation to the Basin Plan. The MDBA does not provide an overview of the assurance reports or a compliance ‘snapshot’ for the year. There is a lack of clarity about which formal reporting requirement each document fulfils.

Reporting requirements under the Basin Plan and Water Act are met by self-assessment by each reporting agency. There is no requirement for audit or quality assurance in relation to reports, and none is carried out by the MDBA. External inquiry by the Productivity Commission into the effectiveness of implementation of the Basin Plan and water resource plans will occur five-yearly, with the first review to be completed by the end of 2018.

Rigorous and consistent monitoring of compliance with accredited water resource plans, including provisions about illegal take and environmental water protection, is essential. Compliance monitoring must cover both individual entitlement holders and state agencies. The Basin Plan contains only a bare requirement that states report annually on ‘compliance with water resource plans’. The MDBA's current reporting guidelines for this aspect state that the MDBA ‘does not propose reporting beyond the Statements of Assurance’. The only obligations under the BPIA are that states will develop water resource plans, and will adopt the eWater Source model. These are not adequate reporting requirements to monitor water resource plan compliance.

The ‘register of take’ under the Basin Plan is an adequate measure for tracking compliance with SDLs. The MDBA is taking appropriate steps to ensure that the register of take will operate as intended, including by preparing a trial ‘take report’ for the transitional period.

However, there are issues associated with SDL compliance relating to estimates of unmeasured take. These are discussed in Section 5 of this report.

The MDBA has the central leadership and coordinating role but has been unable to assert its authority during the development of water resource plans and transition to SDLs; the Commonwealth Department and BOC also have important roles which are not being effectively discharged. Shared responsibilities and joint commitment have been evident as the MDBA, the department and BOC have focused on water recovery and SDL adjustment measures to achieve stronger and more balanced environmental, economic and social outcomes. However, this sense of joint commitment has not extended to other areas of Basin Plan implementation — most critically the development of water resource plans. The Panel notes an underlying lack of acceptance that the Water Act has fundamentally changed roles and responsibilities for management of Basin water resources: it is not business as usual. The Commonwealth, represented by the MDBA and the department, has been unable to assert its leadership role in some areas central to Basin Plan implementation, while BOC
has not risen to its role of facilitating cooperation and coordination between the Commonwealth, the MDBA and states in managing Basin water resources.

There are some signs that the degree of BOC’s engagement is changing, with the recent inclusion of development of water resource plans and progress on implementing policy measures to protect environmental water in the southern Basin as standing BOC agenda items. It is critical that BOC members bring a whole-of-government view to discussions, including the interests of river operators and environmental water managers.

There has been insufficient progress on two important compliance areas — accreditation of water resource plans, and protection of environmental water. With only 18 months until SDLs commence in July 2019, and some five years since commencement of the Basin Plan, only one water resource plan has been accredited. In relation to Basin Plan objectives, while significant gains have been made by the Commonwealth Department in recovering water for the environmental water holdings, the utility of holdings in unregulated systems is diminished by continuing lack of protection under state laws for that water as it travels downstream.

In spite of recent positive signs, the commitments of states, the statutory role of BOC to facilitate cooperation and coordination between the governments, intergovernmental agreements and repeated commitments by state ministers and COAG to implementation of the Basin Plan, the fact is that there remains only one water resource plan in place, and inadequate protection of in-stream environmental water.
4. Illegal take

In this report, illegal take is the take or use of water without authorisation from the relevant state regulatory authority. It occurs when a person takes water when they do not have a water access right, or takes in contravention of conditions attached to a water access right (such as conditions as to total volume, rate or timing of take) or a works approval (such as location, pump size or use of a compliant meter). Illegally built works that interfere with the flow of water for the purpose of taking it (for example, bores or surface water diversion structures like levees) are also considered by this report as part of illegal take.

While there are other offences that affect water resources, such as discharging pollutants, this report concentrates on illegal take as the most significant in terms of drivers of the water compliance review. Findings in this section generally also apply to other water offences.

4.1 Legal provisions relating to illegal take

State laws

State water management laws directly govern the take of water. They set out when water may be taken, and under what conditions. In most states, a limited amount of water for non-commercial domestic or stock use may be taken without a licence. A person taking for any other purpose, including environmental, irrigation or other commercial purpose, must hold a water licence issued by the relevant state authority.

Taking water without, or in contravention of, the necessary licence, is an offence under state law. State agencies’ enforcement powers, including remedies available for illegal take, are summarised in Part 3 of the MDBA report.

Water Act and powers of the Murray–Darling Basin Authority

The MDBA has an enforcement role under the Water Act in respect of illegal take if water is taken by the holder of a water access right inconsistent with a water resource plan that applies to the water. Taking water in a way that is inconsistent with the Basin Plan may also amount to a contravention.

The MDBA also has an enforcement role under the Water Act if illegal take (including take by a person who does not have a water access right at all) prejudices, or has an adverse effect on, the effectiveness or implementation of the Basin Plan or a water resource plan.

The MDBA’s compliance and enforcement powers are outlined in Part 4 and Attachment A of the MDBA report. It is notable that they include only civil remedies (court orders or administrative sanctions); there are no criminal offences under the Water Act relating to non-compliance with the Basin Plan or a water resource plan.

The Water Act also contains no evidentiary provisions to assist in proving grounds for civil sanctions by reversing the onus of proof in certain circumstances.
Although the MDBA has wide compliance and enforcement powers, the use of those powers to enforce compliance with water resource plans is complicated, as not all of a state water plan is a water resource plan for the purposes of the Water Act. If the MDBA wishes to take action in respect of illegal take, it must first identify either the provision of the water resource plan with which the conduct is inconsistent, or the part of the water resource plan or Basin Plan whose implementation or effectiveness is jeopardised by the person’s illegal take.

Where a transitional water resource plan applies, there may be quite limited scope for enforcement. Due to the specific wording of the Water Regulations, the bulk of state water plans presently declared as transitional water resource plans are only transitional plans to the extent to which they are inconsistent with the Basin Plan. A provision of a state water plan which is consistent with the Basin Plan (for instance because it requires a person to comply with the conditions of their water access right) is not part of a transitional water resource plan, and the MDBA therefore cannot use its enforcement powers in respect of a contravention of that provision. However, the MDBA could take action if conduct was significant enough to be likely to prejudice or have an adverse effect on the effectiveness or implementation of the Basin Plan.

### 4.2 Current MDBA arrangements relating to compliance for illegal take, and interaction with state arrangements

#### MDBA current arrangements

The MDBA’s compliance arrangements in relation to illegal take are set out in Part 4 of the MDBA report. As outlined there, the MDBA has not taken an active compliance role in relation to illegal take, considering that it is not the ‘primary authority’ for allegations of illegal take. The MDBA provides an online portal for the public to lodge allegations of non-compliance by individual water users, and refers allegations to the relevant state agency. The MDBA’s intention is to follow up with the state if appropriate action is not taken; Attachment D to the MDBA report indicates the action taken in response to allegations made through the ‘report a breach’ portal. The MDBA has not, to date, exercised any of its enforcement powers in relation to illegal take.

As part of its water monitoring and investigation activities, the MDBA gathers information that may be evidence of take, and – depending on applicable state rules – illegal take. For example, satellite imagery acquired during a pilot study of remote sensing technology showed unexplained wetting of irrigation channels; in another example, analysed data relating to the Barwon–Darling and tributaries showed loss of river flows (including complete loss of low flows) in particular river reaches at certain times. Consistent with its approach in relation to direct allegations of illegal take, the MDBA’s practice has been to refer such information to relevant state agencies for their explanation and follow up.

As indicated in the MDBA’s report, its role in relation to illegal take has not been made sufficiently clear to the public.
State arrangements

State compliance arrangements relating to illegal take and other water offences are summarised in Part 3 of the MDBA report; the summary highlights significant inconsistency in approaches across the Basin. On a practical note, in many locations, effective enforcement action is likely hampered by the difficulty of collecting adequate evidence to support action, due to an inadequate meter fleet or absence of a requirement to be metered.

As also outlined in the MDBA report, enforcement options available under some states’ water management laws are quite limited, and do not make use of compliance tools recommended under the National Framework for Compliance and Enforcement Systems for Water Resource Management. In states where there is an appropriate range of options, there is seldom evidence that these are used. Only South Australia currently provides publicly available reporting on its compliance strategy and compliance action taken.

4.3 Panel findings

States should continue to take primary responsibility for enforcement of their water laws. The MDBA should assume a ‘last resort’ role for breaches that are also breaches of state law. The MDBA’s position that it is not the primary regulatory authority for illegal take is reasonable. The intention that states will continue to have primary responsibility for enforcing their water laws is reflected in the BPIA. Relevant factors include the breadth of state responsibility for natural resource management and administration of their own legislation, and the duplication of resources that would be caused by the MDBA entering into on-ground enforcement of water laws.

Nevertheless, there will be circumstances in which the MDBA should use its powers to enforce provisions of a water resource plan in respect of illegal take or works. For instance, if illegal take is of such magnitude as to have the potential to prejudice, or have an adverse effect on the implementation of, the Basin Plan or a water resource plan, the MDBA should take an active role.

Clarity is needed about when the MDBA will act in relation to illegal take. The MDBA should determine and publicise the criteria it will apply when considering whether to do so. The MDBA should also clarify how it will deal with allegations it receives about illegal take (and other contraventions of state water law), as well as what it will do with other information it acquires that indicates a potential contravention of state water law.

The MDBA’s powers to take action against illegal take depend on there being a water resource plan in place. In cases where it is appropriate for the MDBA to use its

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4 Paragraph 6.4 of the BPIA reads:

‘In undertaking its regulatory role to achieve the Plan outcomes, the MDBA will allow for differences in approach between Basin States to give effect to Plan outcomes. The MDBA will focus its efforts on promoting and monitoring compliance in areas where it has a reasonable belief that the underlying issue may impact materially on the achievement of Plan outcomes. If compliance issues arise, the MDBA would seek to resolve them in good faith, in a way that is proportional to the issue being addressed, considers the actions taken toward achieving compliance, and with a view to dealing effectively with the circumstance. The MDBA would only seek to exercise its powers under the Water Act 2007 (the Act) as a last resort.’ [Panel’s emphasis]
enforcement powers in respect of illegal take, the ability for it to do so depends (in relation to take that is not so significant as to be prejudicial to the effectiveness or implementation of the Basin Plan) on the existence of a water resource plan accredited or adopted under the Water Act. The MDBA’s powers after commencement of an accredited or adopted water resource plan are therefore clear. However, for most transitional water resource plans, current arrangements under the Water Act mean that the MDBA’s enforcement options are limited.

**Sanctions, penalties and evidentiary provisions under the Water Act are limited.** There are no evidentiary provisions to assist in establishing a contravention, and no criminal provisions. If the MDBA is to act effectively against illegal take it may require a wider suite of powers, in particular evidentiary provisions and the power to mount a criminal prosecution.
5. Achieving compliance with SDLs

Limiting the take or diversion of water to the SDL for each water resource in the Basin is essential to the purpose of the Water Act. SDLs are environmentally sustainable levels of take that limit the quantity of water that can be taken for consumptive purposes, so that environmental values of water resources are not compromised. Part 4 of the MDBA report provides an overview of SDLs for the Basin’s water resources, including the way in which they were set.

SDLs can only be given effect:

- through water resource plans that have been accredited to meet the requirements of the Basin Plan, and are operationalised by states, and
- by administering water laws according to the terms of the water resource plans, and not making decisions that affect water use in a way that undermines SDLs.

5.1 Legal provisions relating to SDL implementation and compliance

SDLs are given effect through the operation of water resource plans

SDLs can only be implemented through the operation of water resource plans that have been accredited to meet criteria set out in the Basin Plan, including criteria that ensure that SDLs are met every year from 1 July 2019.

Basin Plan criteria relevant to SDL implementation are complex. They include that a water resource plan must set out the method used to determine ‘annual permitted take’: that is, how much water can be taken by consumptive water users — both licensed and unlicensed — each year. The method to determine annual permitted take must account for a range of matters, and must result in meeting the SDL, as an annual average over the long term. The plan must also include rules (such as water allocation rules) that ensure the amount actually taken each year does not exceed the annual permitted take. The plan must set out how annual actual take, by all consumptive users, will be determined.

Recognising that some types of take have historically not been licensed or are poorly measured, and therefore present a risk in terms of uncontrolled or unquantified take, the Basin Plan includes specific provisions about how much water can be taken for basic rights (for example stock and domestic rights), runoff dams and commercial plantations. Water resource plans must ensure that these types of take are maintained at baseline diversion levels (in most cases, baseline diversion levels are levels of diversion at 30 June 2009). If there has been an increase in basic rights, runoff dams or commercial plantations since 2009, or an increase is expected, the water resource plan must provide for this by reducing...
the amount taken by other forms of take (i.e., licensed take) so that the long-term average SDL for the resource is still met. Other limitations also apply.

The Australian Government has committed to meeting water recovery targets needed to achieve SDLS. If states maintain long-term average take by all consumptive users at baseline diversion levels, and the Australian Government meets its water recovery target of 2750 GL, the SDLS will be met.

Interaction with state arrangements
State water management laws directly govern the take of water. State laws are intended to form the basis of water resource plans, and be designed to give effect to SDLS.

States are therefore expected by the Water Act to present proposed plans for accreditation. The Commonwealth Minister may ask the MDBA to prepare a water resource plan instead of a state (referred to in the Act as the ‘step-in’ power), but only after lengthy negotiations between the Minister and the relevant state.

Other state laws can also affect water take. For example, changes to land use or new developments can result in an increase in the quantity taken by unlicensed users (e.g. for stock and domestic purposes or by farm dams), or can reduce run-off to streams. When assessing proposed water resource plans for accreditation, the MDBA and the Commonwealth Minister must have regard to the legislative framework within which the water resource plan operates, which may include other laws.

Effective implementation of SDLS requires that state laws are administered consistently with requirements of accredited water resource plans.

Ensuring compliance with SDLS
SDL compliance occurs when a state administers rules for water take in accordance with an accredited water resource plan, and the Australian Government has met its water recovery targets.

From 1 July 2019, the MDBA will maintain a ‘register of take’ to track compliance with SDLS. The operation of the register and method for assessing compliance are set out in Part 4 of the MDBA report, under the heading ‘SDL accounting including transitional arrangements’.

The most likely cause of non-compliance with an SDL would be the conduct of a state agency. For example, a decision by a state that is not accounted for in the water resource plan (for example to allow exemptions from take rules) might result in more water being taken than the annual permitted take. Incorrectly applying the water allocation rules set out in the water resource plan could also cause non-compliance. It is possible, but very unlikely, that illegal take could cause non-compliance with an SDL. Such take would need to be a significant percentage of the SDL, and recorded in the determination of actual take for the relevant year.

Conduct by a state agency that does not result in SDL non-compliance within the meaning of the Basin Plan, could nevertheless still be inconsistent with provisions of a water resource plan and undermine SDL implementation. Such conduct would be a contravention of the Water Act.
The MDBA’s compliance and enforcement powers relating to SDL implementation

Assessing proposed water resource plans and accrediting plans

Assessing proposed water resource plans for accreditation is an essential compliance function in terms of SDL implementation. If a state administers water resources consistently with the water resource plan provisions, there is deemed compliance with the SDL, even if the SDL is not met.

The onus is on the MDBA during assessment of proposed plans, and the Commonwealth Minister making the accreditation decision, to ensure that provisions in each water resource plan will in fact result in achieving the SDL for the water resource. As mentioned above, accreditation criteria relating to implementation of the SDL are complex.

Reporting non-compliance with SDLs

If there is SDL non-compliance (that is, exceedance of 20 per cent or more of the SDL without reasonable excuse), it will be reported to the MDBA as part of a state’s annual reporting obligations under the Water Act. The state’s report must include actions that the state will take to ensure future compliance with the SDL. As the SDL is a long-term average, action is likely to include reduction in future water allocations until the exceedance is resolved.

The register of take, which will record any cumulative debits, will be published on the MDBA’s website, so incidences of potential non-compliance will be public. The MDBA has also committed to publish an annual SDL report.

Using enforcement powers

If a state reports an exceedance of 20 per cent or more of an SDL, it must set out what actions it will take to ensure that the SDL is complied with in future.

If the exceedance amounts to non-compliance, and non-compliance was due to a state agency or other person acting inconsistently with provisions of a water resource plan, or in a way that would be likely to prejudice or have an adverse effect on effectiveness or implementation of the water resource plan, the MDBA can exercise its enforcement powers under the Water Act.

The MDBA’s enforcement powers are set out in Part 4 and Attachment A of the MDBA report.
5.2 Current MDBA arrangements relating to SDL implementation and compliance

The MDBA's compliance arrangements in relation to SDL implementation and compliance are set out in Part 4 of the MDBA report.

SDL implementation – water resource plan assessment

Delays in accreditation is listed as a ‘significant' risk in MDBA’s risk management plan for 2016–17. The Panel notes issues with delays in accreditation outlined in Part 5 of the MDBA report, and the MDBA's concern that it may need to consider planning for potential exercise of the ‘step-in' power that will enable the minister to ask the MDBA to prepare water resource plans itself.

The Water Act's expectation is that states will prepare water resource plans for accreditation, and the MDBA has committed significant resources to helping states understand the Basin Plan requirements and to work with them to prepare compliant plans. The Commonwealth Department has taken an observer role rather than being actively involved in facilitating development of water resource plans by states. Given the significance of water resource plans to the administration of the Water Act, a more influential role would be appropriate.

In recent months the MDBA has made a number of changes in the way it engages with states over issues that are arising during development of water resource plans. Some state officials agree that there are early signs that this change in approach will bear fruit. The Panel noted mixed (and often privately expressed) views about the likelihood of water resource plans being in place by June 2019, but regardless of hopes and best intentions, there must be a real change of pace to realistically expect such an outcome. While acknowledging Victorian and NSW state officials’ advice about their efforts to date and intention to complete water resource plans within the remaining timeframe, the Panel shares the MDBA's concern about the rate of progress in those states.

Delays aside, the MDBA has also expressed concerns that deficiencies in measurement of water take (particularly take by unlicensed users and interception activities) and deficiencies in data for stream flows (mentioned in Part 3 of the MDBA report) may mean that modelling accredited as part of water resource plans will not provide confidence for SDL compliance.

SDL compliance

The register of take under the Basin Plan, which will provide accountability and transparency for SDL compliance, commences in July 2019. The MDBA's preparation for SDL accounting is outlined in Part 4 of its report.

The MDBA intends to exercise its compliance role by checking the quality and integrity of state data and model outputs through bilateral discussions with each state. The MDBA notes in its report that there are opportunities to check state data more thoroughly through external sources, such as satellite imagery or industry reports on crop production.
5.3 Panel findings

**It is critical that water resource plans are made on time.** The SDL for a water resource cannot be implemented, and compliance monitoring cannot begin, until there is a water resource plan in place for the resource. The primary responsibility for developing water resource plans falls to states, while the responsibility of assessing plans to ensure that they will provide a sound basis for environmental water protection is the MDBA’s. Accreditation of the plans themselves is the responsibility of the Commonwealth Minister on the advice of the Commonwealth Department. Each party must play their role.

**The June 2019 deadline is little more than 18 months away, and the performance of the states, the MDBA and the Commonwealth Department has not been adequate to ensure that all plans will be in place by this deadline.** It is concerning that only a single plan has been developed in five years; with little over 18 months remaining, 35 plans are yet to be presented for assessment. There are significant issues still to be resolved, particularly in relation to Victorian and NSW plans.

States and the MDBA have given varying views about the causes of delays and sticking points. Recent changes in the MDBA’s approach to water resource plan development, and significant announcements made by the NSW Minister in relation to water reforms, provide some hope that with the requisite degree of commitment, it is still possible for water resource plans to be prepared on time.

**Faced with the possibility of not meeting the June 2019 deadline, the MDBA must prepare for that contingency.** States’ undertaking to provide all proposed water resource plans to the MDBA by the end of February 2019 is unlikely to provide sufficient time to guarantee that plans will be in place before the end of June 2019, particularly as there is a risk that many plans will be presented towards the end of the permitted timeframe. Further there is a risk that one or more plans will be presented that are non-compliant and require amendment, or are not presented at all. Assessment is a complex task, which requires the MDBA to undertake additional consultation with relevant Indigenous groups prior to recommending accreditation to the Minister. If the ‘step-in’ powers need to be triggered, there will be further significant delays.

**Ensuring that water resource plans accurately meet Basin Plan criteria for SDL implementation is a critical MDBA compliance function.** Accreditation criteria that relate to SDL implementation are complex. If a water resource plan does not accurately meet all criteria, the result may be that SDL implementation is undermined, with no avenue for compliance activity because exceedance of the SDL is caused by the operation of the accredited plan. There are many difficulties that challenge the ability to be certain that a water resource plan will implement SDLs, including deficiencies and flaws in water measuring across all forms of take as outlined in Part 3 of the MDBA report.

**Attention should be concentrated on elements of water resource plans that are a high risk to achieving Basin Plan outcomes — SDL implementation and environmental water protection.** There has been suggestion by some states that ‘streamlining’ assessment using a risk-based approach is a reasonable and cost-effective way to achieve timely and fit for purpose water resource plans.
The Panel notes the MDBA’s stated intention to continue to work with states to find ways to streamline the water resource plan accreditation process, and agrees that efforts should be made to adopt fit for purpose assessment processes. However, rigorous and comprehensive assessment is required for elements that are critical to implementing Basin Plan outcomes – these most certainly include SDL implementation and environmental water protection. Areas of less overall significance may benefit from a ‘streamlined’ approach. However, as such areas are not likely to be contentious, streamlining may only offer potential for modest reductions in time and effort required to develop and assess plans.

**Public confidence in SDL implementation requires unambiguous compliance arrangements.** Ensuring compliance with SDLs and water resource plans requires more than tracking SDL compliance through the register of take. State agencies may make decisions that do not necessarily result in exceedance on the register of take, but are still inconsistent with provisions in a water resource plan that underpin SDL compliance – for example, decisions about administration of water allocation rules, control of unlicensed take, or exemptions from take rules. The MDBA’s proposed SDL compliance framework should indicate how the MDBA will detect and act on maladministration by a state agency or other conduct that is inconsistent with the water resource plan or Basin Plan, even where such conduct does not cause an exceedance on the take register.

**Implementing SDLs requires effective water accounting.** Achieving compliance with SDLs, protecting environmental flows and control of illegal take all require comprehensive water accounting supported by measurements, calculations, estimates and system modelling.

The effectiveness of the Basin Plan relies on comprehensive water accounting at three levels: daily river operations accounting for both consumptive use (meeting daily water orders) and the environment (e.g., end of system flows); intra-seasonal statements (e.g., to enable allocation adjustments); and end-of-year statements (aggregated actual take or diversion for the water accounting period). While there is considerable clarity of the water accounting requirements, the processes and systems for collecting, collating, testing and managing the data from Basin states are cumbersome and involve a great deal of effort.

The Bureau of Meteorology produces annual National Water Accounts and the annual water balance sheet for the Murray–Darling Basin in accordance with the National Water Accounting Standard. While the methodology is good, these annual accounts are solely based on reconciling aggregated volumes and are subject to considerable revisions. The methodology and the systems could be further developed for SDL water accounting. The Panel notes that the MDBA and the states are working on better methods to measure, estimate and model annual actual diversions to improve the ease and integrity of water accounting to ensure SDL compliance from 1 July 2019.
6. Environmental water management and protection

Effective arrangements for environmental water are vital to achieving the objectives of the Water Act and fulfilling the purpose of the Basin Plan.

Managing environmental water consistently with the Water Act and Basin Plan involves doing so in the way envisaged by the EWP, protecting environmental water from illegal take, and implementing the requirements of water resource plans relating to SDLs and environmental water. Clearly defined environmental watering rules and accountabilities, as well as good communication, enable compliance and reduce the likelihood of illegal take.

For these reasons, managing environmental water, including protecting it in-stream, is a central compliance issue for implementation of the Basin Plan. The Panel also notes that protecting river flows is essential to the wellbeing of Aboriginal communities, as illustrated in the case study in Part 6 of the MDBA report.

This section of the report sets out the responsibilities of the MDBA, states and the CEWH in relation to environmental water, and comments on performance of those responsibilities. Arrangements relating to illegal take and SDL compliance are discussed in Sections 4 and 5 of this report.

The term ‘environmental water’ in this section of the report means both planned environmental water (PEW) and held environmental water (HEW), as those terms are used in the Water Act.\(^5\) Different policies apply to the management and protection of the different types of environmental water. The challenges of environmental water protection in unregulated rivers are different from those in regulated rivers, as outlined in Part 6 of the MDBA report.

6.1 Legal arrangements for environmental water

The MDBA’s roles in management and protection of environmental water

Administering and ensuring compliance with the EWP

The MDBA is responsible for administering the EWP. The purpose of the EWP is to achieve certain objectives for water-dependent ecosystems, as measured against targets set out in a schedule to the Basin Plan. The targets include ensuring that during the transitional period,

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\(^5\) PEW is water that remains in the water resource for environmental purposes and cannot be taken for any other purpose; it is the water that SDLs prevent from being used. PEW is affected by the terms and conditions that limit take under water entitlements, and by operating rules for regulating infrastructure. HEW is a water entitlement, held by its owner in much the same way as any other type of water entitlement, but for the purposes of achieving environmental outcomes.
there is no loss of components of the flow regime, including low flows; the significance of low flows, including to Aboriginal communities, is well illustrated in the MDBA report. A longer term target (that is, after 2019) is to achieve improvements in restoration of natural flow regimes, including low flows.

Administering the EWP involves, among other things, the MDBA making a Basin-wide environmental watering strategy and annual environmental watering priorities, and ensuring that states meet their obligations under the EWP. State obligations include making long-term watering plans and identifying annual watering priorities. The MDBA must conduct a five-yearly review of the EWP to assess the effectiveness of its contribution to achieving objectives for water-dependent ecosystems, as assessed against the targets. The first of these will take place in 2020.

The MDBA is also responsible under the Water Act for ensuring that the CEWH acts consistently with the Basin Plan including the EWP, and that states, BOC and others do not act inconsistently with it. In addition to a number of specific obligations for states and the CEWH, the EWP also contains general provisions, such as objectives and principles.

Assessing water resource plans and ensuring compliance

The MDBA is responsible for both assessing proposed water resource plans to ensure that they meet Basin Plan accreditation criteria relating to environmental water, and ensuring that states, the CEWH and others act consistently with provisions of those plans.

Accreditation criteria for water resource plans include significant requirements designed to protect and manage environmental water consistently with the EWP. Accreditation criteria relating to SDL implementation (reviewed in Section 5 of this report) also underpin protection of environmental water. Fully implemented, these requirements should ensure that environmental water is well protected under water resource plans.

Appendix A summarises water resource plan accreditation requirements relating to protection and management of environmental water.

Reporting in relation to environmental water

Reports prepared under the Basin Plan must cover a range of matters relating to environmental water management and protection, including:

- the effectiveness of management of risks to Basin water resources (states and MDBA)
- achievement of environmental outcomes at a Basin scale (MDBA and CEWH)
- achievement of environmental outcomes at an asset scale (states)
- identification of environmental water and monitoring of its use (states, MDBA and CEWH)
- implementation of the environmental management framework (states, MDBA and CEWH).

The MDBA is responsible for ensuring that the reporting obligations are fulfilled.
States’ roles in management and protection of environmental water

State water management laws provide for PEW mainly through rules that circumscribe the take of water for consumptive uses, protecting certain quantities, or flow classes, for in-stream environmental use. There is considerable variation in the way state instruments achieve protection for PEW.

State laws also provide for HEW; again, there is variation in how such entitlements are described and managed.

Water resource plan accreditation will bring greater consistency to the protection of environmental water throughout the Basin, particularly through implementation of agreed measures in both the northern and southern connected parts of the Basin (outlined in Part 6 of the MDBA report). Once water resource plans are in place, state laws will have to be administered in accordance with those plans.

State agencies, including holders of HEW, managers of PEW and state river operators, must also not act inconsistently with the EWP.

States are required to report in relation to management and protection of environmental water as noted above.

The CEWH’s role

The CEWH is responsible under the Water Act for managing the Commonwealth’s environmental water holdings for the purposes of protecting or restoring the Basin’s environmental assets.

The CEWH must manage the holdings consistently with the EWP and the Basin-wide environmental watering strategy, and having regard to the Basin annual environmental watering priorities. It must also act consistently with and in a way that gives effect to the Basin Plan and water resource plans.

The CEWH must report under the Water Act on its achievements against the objectives of the EWP. It has additional reporting requirements under the Basin Plan in relation to environmental water management and protection, as noted above.

The MDBA, state river operator and BOC roles – river operations

The MDBA, BOC and state river operators carry out functions in the southern-connected Basin relating to river operations, which are relevant to management of environmental water. River operations under the Murray–Darling Basin Agreement are undertaken in accordance with the provisions of the Agreement, including an ‘objectives and outcomes’ document prepared by BOC. State river operators work closely with the MDBA in meeting requirements under the Agreement.
In carrying out river operations functions, the MDBA must act consistently with and in a manner that gives effect to the Basin Plan (including the EWP) and water resource plans. BOC and state river operators must act in a way that is not inconsistent with the Basin Plan (and EWP) or water resource plans.

A significant body of work has been undertaken by the MDBA, BOC and river operators to identify improved operation of the southern-connected Basin that will enable water delivery to help meet objectives of the EWP. These are outlined in Part 6 of the MDBA report.

6.2 Current MDBA, state and CEWH arrangements

MDBA and state arrangements for environmental water
The Panel notes arrangements of the MDBA and states for protecting and managing environmental water, as outlined in Part 6 of the MDBA report. Illegal take and non-compliance with SDLs also threatens environmental water; arrangements relating to these matters are outlined in Sections 4 and 5 of this report.

Administering and ensuring compliance with the EWP
The MDBA tracks compliance with obligations of states and the CEWH under the EWP through the reporting arrangements outlined in Section 3 of this report and Part 4 of the MDBA report.

Assessing water resource plans to ensure they provide for environmental water
Having accredited water resource plans in place is critical to managing and protecting environmental water consistently with the Basin Plan and EWP. Water resource plans protect environmental water by implementing long-term average limits on the overall quantity of water that may be taken (SDLs), and also by including provisions aimed at meeting real-time environmental water requirements consistently with the EWP.

Section 5 of this report outlines issues with implementing SDLs, including delays in water resource plan accreditation. The MDBA report raises concerns relating to current transitional plans that place environmental water and environmental outcomes at risk – evidence of reduction in protection of PEW, and lack of progress on shepherding of HEW.

Reduction in protection of planned environmental water
The Barwon–Darling water sharing plan was made by NSW immediately prior to commencement of the Basin Plan. It includes provisions that reduce the protection given to
environmental water that existed previously under the NSW Water Act 1912, as set out in Part 6 of the MDBA report.

The Namoi plan, as discussed in Part 5 of the MDBA report, is a transitional plan that has been recently replaced. It contains new ‘trial’ rules that in the MDBA’s assessment reduce the level of environmental water protection previously provided. As the new rules were part of a replacement plan rather than an amendment of an existing transitional water resource plan, there was no legal requirement for the MDBA to carry out an assessment or to provide a formal recommendation to the minister. Further, there was no process under which Parliament was made aware of the MDBA’s advice about consistency of the replacement transitional plan with the Basin Plan. Arrangements for making replacement transitional plans do not include the accountability and transparency measures that exist for amendments of transitional plans under s. 246 of the Water Act.

Protection of low flows in NSW unregulated rivers appears to have generally declined over the last 10 to 15 years. Data recently gathered and analysed by the MDBA indicates strongly that since the mid 2000s there has been significant loss of low flows, with low flows in some NSW river reaches completely disappearing. Either or both state water rules and compliance action have been unable to protect low flows; much greater effort is required to protect this important part of the hydrograph.

Shepherding held environmental water

Current arrangements for ensuring that HEW is available for its intended purpose in unregulated systems, as outlined in Part 6 of the MDBA report, are not adequate. The Panel notes the formal agreement of states in 2013 to protect environmental water through measures such as water shepherding, and recent efforts of the MDBA and Basin governments to agree on measures to improve protection for HEW as it travels downstream. These are outlined in Part 6 of the MDBA report, and include measures arising from the Northern Basin Review, and for the southern-connected Basin, completion of the so-called unimplemented policy measures and enhanced environmental water delivery as part of the SDL adjustment package of supply measures.

It is critical that all anticipated measures are included in accredited water resource plans.

Ensuring compliance with water resource plan provisions for environmental water

Commentary about the MDBA’s arrangements for ensuring compliance with water resource plans is included in Sections 4 and 5 of this report. The MDBA’s Compliance Risk Management Framework (2016) recognises that once water resource plans are in place, the MDBA will need to attend to assessing and managing the risk of non-compliance with those plans. Ensuring regular and consistent state reporting on compliance will also be necessary.
Ensuring reporting obligations relating to environmental water are met

The reporting performance of the MDBA, states and the CEWH is described in Section 3.2 of this report. The MDBA’s reporting guidelines (Basin Plan Schedule 12 Reporting Guideline, July 2015) include additional detail about reporting on achieving environmental outcomes at the Basin scale and asset scale (five-yearly reporting) and implementing the environmental management framework (in particular on the preparation of long-term watering plans and annual watering priorities).

However, the guidelines include no details for reporting on the effectiveness of operation of water resource plans, including in providing a robust framework under a changing climate (item 18 of Schedule 12). Reporting requirements for this five-yearly report item commenced in October 2017, and the MDBA advises that reporting indicators will be developed in consultation with states. Further, as mentioned in Section 3.4 of this report, the guidelines do not include details for reporting on compliance with water resource plans (item 19).

CEWH arrangements

The CEWH has no statutory enforcement powers to secure the delivery or protection of its water holdings in ways that benefit the environment. The CEWH works closely with state agencies and relies on arrangements negotiated with them for the delivery or protection of its water. In unregulated systems, the protection of the CEWH’s holdings from take by other rights holders depends entirely on the relevant state regulatory framework. The CEWH reports evidence of non-compliance to state authorities and expects them to pursue the allegations; the CEWH advises that it vigorously pursues matters that are not satisfactorily acted on by state agencies.

The CEWH’s decision-making processes ensure that its water portfolio is managed considering the Basin-wide annual environmental watering priorities and in accordance with the EWP. The CEWH uses a framework based on the environmental watering principles of the Basin Plan and publishes its annual business plan developed in accordance with Basin annual watering needs identified by the MDBA. The CEWH uses a portfolio management approach to maximise the use of its environmental water and to maintain the asset value of its water holdings.

The CEWH recognises that measurement (including metering) and water accounting are critical in the management of its holdings, but notes that the responsibility for measuring an entitlement as it moves downstream is a matter for state river operators.

The CEWH has identified difficulties with identifying and protecting its in-stream water holdings in unregulated systems. The CEWH notes state government commitments under the 2013 Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin, and the parties’ intention that arrangements such as shepherding rules are intended to be implemented through water resource plans. However, the CEWH also observes that there is currently a lack of recognition that the system needs to adjust to meet the requirements of national water reform.
The CEWH has suggested that implementation of the Basin Plan would be improved if the CEWH participated more extensively in governance structures, for example, as a member of BOC.

Purchases of Commonwealth environmental water holdings are made by the Commonwealth Department for the purposes of the water recovery program, and while the department takes account of the CEWH’s advice, the CEWH is not responsible for those decisions. Once entitlements become part of the holdings however, the CEWH is able to trade them. There are certain limitations on the CEWH’s trading activity, as set out in the Water Act.

6.3 Panel findings in relation to environmental water protection and management

The Basin Plan provides a sound framework for protecting and managing environmental water, through the EWP and accreditation requirements for water resource plans. Implementing the Basin Plan includes progressing towards meeting the environmental objectives set in the EWP, as measured by the targets including targets for low flows. It also includes the preparation and regular review of long-term watering plans for each water resource plan area, and identification of annual environmental watering priorities.

States have already agreed to work to protect environmental water, including by implementing measures to protect HEW in-stream. It is essential to progress this agreement, including by ensuring that the measures are incorporated in accredited water resource plans.

There is a concerning systemic failure to protect low flows in unregulated rivers in the northern Basin. Further, where HEW has been purchased in unregulated systems to supplement ‘planned’ environmental water and restore low flows, there has been a failure to ensure that the in-stream water holdings are protected from take. Effective protection of HEW requires that consumptive entitlements are adjusted so that the portion of the hydrograph that is constituted by entitlements left in-stream is not available for pumping by other water rights holders.

Existing rules in some NSW transitional water resource plans for unregulated rivers could be applied to provide greater protection. The Panel notes a recent commitment from the NSW government to work with water entitlement holders and other stakeholders on ‘temporary measures’ to protect the passage of HEW in unregulated systems. This work must proceed quickly and in good faith; there is no justification for failing to protect HEW. Under current arrangements, where the available rules are not being used to limit take by other entitlement-holders, HEW left in-stream for environmental objectives in effect simply increases the reliability of consumptive users’ entitlements. Measures should include full use of existing rules.

Fully compliant water resource plans will protect environmental water. Timely accreditation of water resource plans that contain all elements required to protect and manage environmental water (see Appendix A) is essential, and each agency must play its
role in ensuring such an outcome. Section 5 of this report contains related findings in relation to completion of water resource plans.

**Water resource plans must be implemented and complied with, to manage and protect environmental water consistently with the EWP.** It is the role of the MDBA to ensure compliance with water resource plans by state and Commonwealth agencies and others, including holders of water access rights.

Reporting of compliance with water resource plans, including provisions relating to environmental water protection, is essential. Reporting should be rigorous and conform to common requirements across the Basin. Guidelines made under the Basin Plan can provide a minimum standard for that reporting.

**NSW water take rules have contributed to loss of low flows in unregulated rivers.**

Two transitional water resource plans in NSW include rules that reduce protection provided for environmental water, in particular by permitting significant reduction in low flows. One of these (the Barwon–Darling) was made prior to the Basin Plan commencing. The other is a replacement transitional plan (Namoi regulated river) containing new rules which reduce protection compared with that provided under the previous transitional plan.

**Current arrangements for making replacement transitional plans lack transparency.**

It is of particular concern to the Panel that in the case of the Namoi plan, the MDBA advised that the effect of the plan was to reduce protection for environmental water, but regulations were nevertheless made giving the plan status under the Water Act as a transitional water resource plan. The MDBA report notes that ministerial correspondence between NSW and the Commonwealth indicated that the changes would exist on a ‘trial’ basis only until 2019. Nevertheless, making transitional water resource plans that reduce protection for environmental water undermines the intention that the transitional period was to progress towards Basin Plan consistency, not move further from it. Further, in the Panel’s view, it diminishes the MDBA’s authority in water resource plan assessment, and may create contention over the accreditation of proposed water resource plans when they are presented over the next 12 or so months.

**Held environmental water in unregulated rivers is not properly protected from take.**

The CEWH is the largest environmental water holder in the country, and in most cases the largest water holder in any river reach. Its holdings represent billions of dollars’ worth of taxpayer investment in achieving environmental outcomes, yet protection of that water to achieve environmental objectives in unregulated systems cannot be assured. It is not the only owner of HEW in the Basin – together, the CEWH, state agencies and non-government organisations held 2,783 GL in the year ending June 2016; 60% of this was the CEWH’s.

**The CEWH’s formal role in governance arrangements for the Basin is not commensurate with its role under the Water Act.** The CEWH should play a more active role.
7. Review of the MDBA report

The MDBA report sets out the context for the review, comments on both Basin state and its own compliance and enforcement arrangements, draws attention to the importance of state-developed water resource plans and the protection of environmental water, contains recommendations for Basin states, lists a series of MDBA actions, and proposes a COAG-endorsed Compact to deliver on the report and restore public confidence in Basin management.

7.1 Executive Summary

The report begins with an extensive Report in Brief that provides the background to the Water Compliance Review, highlights the main challenges, sets out recommendations for Basin governments and commits to a series of actions for the MDBA itself.

The Report in Brief usefully serves to give an overview of the report and draw together all the recommendations and proposed actions. A reader who did not proceed to read the balance of the report would still have a good picture of what the report contains merely from reading the Report in Brief.

7.2 Review: process, work program and context

The process and work program of the Review

Part 1 of the MDBA report details the process and work program of the Review.

The MDBA adopted as thorough an approach as was reasonably possible within the short timeframe available to it for the Review. This approach involved bilateral meetings with states, stakeholder and expert consultation, desktop research and field trips and meetings with the Panel.

A Panel member joined an MDBA taskforce member for the pump and meter inspection component of the field trips and had the opportunity for discussion with state officials who were also participating in the trip.

The Panel endorses the view expressed in the MDBA report as to the helpfulness and support received from state officials and the irrigators whose properties were visited.

Context for the Review — water management in the Basin

Part 2 of the MDBA report contains a concise history of water management in the Basin from the signing in 1914 of the River Murray Waters Agreement through to the new arrangements effected by the Water Act. The end product is a mixture of state and Commonwealth control and regulation. While the MDBA report mentions that the MDBA was intended to be a `voice
for the Basin as a whole’, it perhaps was inevitable that its voice would occasionally be drowned out, in the period leading up to full implementation of the Basin Plan, by the parties who had retained Basin water management powers.

The report mentions the repeated recent commitments by Basin governments to implementing the Basin Plan ‘on time and in full’. It is clear from the report as a whole that, without change and renewed commitment, that implementation outcome is far from certain.

The report outlines how water is made available for use, used and accounted for in the Basin, in both regulated and unregulated systems, and tracks the intended progression from the Murray–Darling Basin Cap on surface water diversions through to the 2019 system of SDLs for both surface water and groundwater take.

The Panel endorses Part 2 as providing a helpful helicopter view of present-day water management in the Basin and of how we got there.

7.3 State compliance and enforcement

Metering and measurement

Part 3 of the report makes the very valid point that knowing the amount and timing of water availability and the volume being taken is ‘critical to properly managing the Basin’s water resources’. Further reading of that part shows how far short of having that level of knowledge we are in the Basin.

The report puts the percentage of annual surface water take that is metered across the Basin at between 64 and 73 per cent, with a much lower rate of metering in unregulated areas (as low as 25 per cent in the northern Basin).

Basin states replaced an earlier commitment to having new meters compliant with AS4747 by July 2020 with a variety of measures. AS4747 compliant meters must be accurate to within plus or minus five per cent and be capable of having a telemetry device fitted. The MDBA report states that the reality is that there are meters in operation in the Basin that may be up to 30 per cent inaccurate. A case study is given contrasting the outcome of the use of modern Magflow meters along the Murrumbidgee River with that of the use of ‘time and event’ meters in the Barwon–Darling. To deal with the less than desirable current metering situation in the Basin, the report recommends that all new meters on sale must meet AS4747 from 30 September 2018 and that such meters must be used to measure 95 per cent of meterable take by 31 December 2022. The Panel endorses the recommendation.

The report highlights the advantages to be obtained from modern telemetry systems and recommends the installation of telemetry for all entities with an average annual take of more than 100 ML. The report does not set out the basis on which that number was arrived at, although it is acknowledged that it may be an appropriate threshold for the category of ‘large user’.

Part 3 highlights the importance of meter management and the need for repairs to be carried out efficiently. While remaining agnostic as to whether meters should be publically or
privately owned, the report recommends that the compliance agency be required to prepare an action plan about what to do in the event of a meter failure, that also contains incentives for repairs to be made expeditiously. The report gives no indication as to what those incentives might be. A possible incentive is to provide for a likely over-assessment of take to be made for the period during which the meter is not functioning.

The report recommends that all meters should be identified with a publically accessible unique reference number, thereby facilitating public knowledge of entitlement and pump details. A review of stock and domestic and riparian rights is recommended with a view to protecting water resources stressed by the exercise of such rights. The Panel endorses these recommendations and also endorses the recommendation that an annual report on progress with meter improvement across the Basin be prepared.

Part 3 stresses the need for monitoring overland flow take in the northern Basin and recommends that the northern Basin states submit an improvement program for hydrologic modelling to the MDBA by 30 June 2018. A review by 30 June 2019 of hydrometric networks is also recommended. These recommendations are endorsed by the Panel. The Panel notes that the MDBA has indicated that it will support the implementation of these recommendations through developing by 30 June 2018 guidelines on the requirements of hydrometric networks and hydrologic models and publishing related reports. The Panel supports this cooperative approach.

Frameworks and strategies

Part 3 correctly observes that compliance requires more than having the right technology but that there must also be a good governance framework in place with adequate resourcing available for the task. The report notes that compliance budgets in most states have been reduced in recent years, with NSW spending less on compliance than the funding for compliance yielded from the process set by the state’s Independent Pricing and Regulatory Tribunal.

The importance of community confidence in compliance is highlighted with transparency correctly identified as being the key to engendering that confidence. The report recommends a review by governments of their compliance arrangements and governance with a view to publishing by 30 June 2018 a revised compliance strategy. The report assigns an action to the MDBA of developing by 30 March 2018, in consultation with states, guidelines on the reporting of compliance activities.

This part of the MDBA report touches on matters that are at the heart of the issues that led to the establishment of the Review. Public confidence will build if there is awareness of the compliance and enforcement framework and strategy and knowledge of how it is operating in practice. The report recognises that current reporting on compliance activity is limited and difficult to locate.

The need for community education and awareness programs touching generally on the systems in place for controlling the use of water resources is adverted to.

This part of the report builds a sound case for change with transparency being at the heart of the change.
Legislative improvement

Part 3 comments on the range of sanctions available across jurisdictions to deal with the unlawful taking of water. They range greatly in scope and in strength. The report recommends that states review their relevant legislation by 30 June 2018 and amend it, as necessary, to ensure an appropriate range of administrative, civil and criminal sanctions and penalties.

While the report contains a useful description of the various sanctions and penalties, and of their pros and cons, it does not itself offer specific guidance as to what might be considered a model set.

7.4 MDBA compliance and enforcement

In Part 4 of the report, the MDBA turns the spotlight on itself. It states up front its working assumption to date that states would enforce their own water laws and that the MDBA would only seek to exercise its powers as a last resort. It highlights a compliance issue arising out of the manner in which certain transitional water resource plans are treated under the Water Regulations.

Reference is made to the BPIA and the establishment under it of a Basin Plan Implementation Committee. The report points to administrative deficiencies in how matters are dealt with by the various bodies with matters being considered by committees that are inappropriately constituted for the task.

The MDBA developed a Compliance Strategy in 2014 which, according to the report, is currently under review. It is clear that the MDBA has seen its role to date in relation to non-compliance by individuals as being essentially that of a referral body. It is also clear from Attachment D to the report that little or no follow up action was taken by the MDBA in respect of reported allegations. The report acknowledges that the MDBA needs to be more proactive in this regard.

It is apparent from Part 4 of the report that, with respect to compliance by states with the SDLs that commence on 1 July 2019, the MDBA has put itself on a firmer footing through preparing ‘trial’ accounting reports and preparing guidelines on SDL non-compliance.

Under the BPIA there is a requirement for parties to prepare annual public Statements of Assurance of their compliance with their Basin Plan obligations under Part 2 of the Water Act. The report gives no hint as to whether the MDBA, as the enforcement agency for Part 2, ever seeks to look behind those statements. It does acknowledge, however, that the MDBA has not sought to exercise its power to conduct audits of Basin Plan compliance or to publish guidelines in relation to the reporting requirements under Part 4 of Chapter 13 of the Basin Plan that relate to water resource plan compliance. This is not indicative of a strong compliance and enforcement culture.

Conscious of the need to improve its performance in relation to compliance and enforcement, Part 4 of the report proposes that the MDBA will take a range of actions including publishing a description of its compliance powers (Attachment A), developing a more assertive protocol for handling allegations of non-compliance (Attachment B), revising its compliance strategy...
and establishing an external audit committee to advise on its discharge of its Basin Plan obligations. A new compliance and enforcement branch will also be established within the MDBA.

The Panel welcomes these proposed actions.

Generally, in relation to compliance and enforcement by all parties, the report recommends the establishment of revised Commonwealth-state governance arrangements for implementing the Basin Plan. No timeline is set for the making of those revised arrangements and no indication is given as to the kind of revision that might be required other than that the aim is to ensure that all those with implementation obligations are engaged, statutory roles are respected, decisions are better integrated and transparency is improved. The aim is commendable but more guidance would be helpful.

### 7.5 State water resource plans

Given the continuing role of the states in water management in the Basin, developing and accrediting water resource plans that are consistent with the Basin Plan is a crucial requirement. Unfortunately, Part 5 of the report shows that we are still a long way from achieving that outcome despite five years of the near seven-year transitional period having expired.

To date only one of the required 36 plans has been accredited. The report acknowledges that plan preparation and assessment is a complex task and yet seems to contemplate that the process could be completed if all 35 remaining plans were received by the MDBA for accreditation assessment at the end of February 2019, a mere four months before the expiry of the deadline. This would seem to be an extremely difficult task despite any increased resourcing that might be made available by the MDBA.

While it would appear from the report that the MDBA has taken constructive measures to facilitate the process and has updated the Murray–Darling Basin Ministerial Council on progress, clearly alarm bells have not been ringing sufficiently loudly.

The report states that it would be ‘highly undesirable’ if state water resource plans were not accredited by the agreed timelines. The Panel views this as an understatement.

The Water Act laid out a clear alternative path to accreditation through the MDBA itself developing plans for approval by the minister. The report acknowledges that the MDBA will need to consider, well in advance of the deadline, whether to commit resources to pursuing that alternative path.

The report points to a serious issue arising out of the extension of the transitional status of the Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2016 (NSW) despite the MDBA’s advice that the plan reduced the level of protection for PEW in the Namoi valley. It further mentions that states have proceeded to amend recognised transitional plans without recourse to the MDBA. Such actions only serve to weaken the enforcement basis for the Basin Plan.
The MDBA report will serve to make public the increased seriousness of the threat to the implementation of the Basin Plan created by the slow progress of some states towards carrying through on their commitment to the Basin Plan.

The report acknowledges that there is room for improvement in the MDBA’s turnaround time to the states on draft plans submitted to it and the Panel was informed by some states of their frustration with aspects of the process followed by the MDBA.

The Panel recognises the openness with which the MDBA has described the challenges ahead but feels that overall these are a little underplayed.

The Panel does, however, endorse the future actions proposed by the MDBA to assist with the accreditation process and to make the community aware of progress. A renewed commitment by Basin states to delivering plans for accreditation within the agreed timeframes, as recommended in the report, is also endorsed by the Panel.

7.6 Protection of environmental water

Part 6 of the MDBA report deals with the important issue of the protection of environmental water. The report makes the very important point that the underlying purpose of current water access entitlements and management rules is to define rights and duties for extracting water and not to define rights and duties with respect to water left in a river to achieve environmental outcomes.

The report sets out the commitments with respect to the protection of environmental water made to date by Basin governments and the roles of the various players. It highlights in a clear manner the challenges faced in the unregulated systems in the northern Basin and uses the Water Sharing Plan for the Barwon–Darling Unregulated and Alluvial Water Sources as a case study of how those challenges can be increased through inappropriate management rules. The report sets out a very telling and moving account of the impact of the extraction of low flows on Aboriginal communities in the Barwon–Darling. In contrast, greater progress has been made in the southern-connected Basin through the establishment of the Southern-Connected Basin Environmental Watering Committee, which comprises environmental water holders and river operators from each jurisdiction.

The report acknowledges that more needs to be done in both the northern and southern Basin to protect environmental water. It highlights the assumption as to measures to be taken by states in operationalising certain arrangements that underpinned the determination of the volume of water needed to be recovered to achieve the Basin Plan’s objectives. If these measures are not taken, a key assumption underlying the Basin Plan is invalidated. This conclusion could have been put more forcefully in the report.

The report contains no recommendations for the CEWH, but proposes for the MDBA the action of publicising protection measures and reporting regularly on progress. This proposed action is welcomed by the Panel.

For the northern Basin, the report recommends the revision of water resource plans to include effective policies for the protection of environmental water, particularly low flows.
For the southern Basin, there is a recommendation for the SDL Adjustment Mechanism to be fully implemented within the agreed timeframe.

Given the massive public expenditure to date on acquiring water for the environment, it is to be queried why more was not done up to now by all parties, including the CEWH, to protect environmental water.

7.7 Tying it together – a Compact agreed by COAG

Part 7 of the MDBA report briefly sets out a coordinated way forward for Basin governments that involves COAG agreeing by 30 June 2018 to a Basin Compliance Compact that would cover not only improved compliance arrangements but also provide a path towards water resource plan accreditation within the remaining available timeframe and the taking of measures to improve the protection of environmental water.

The Panel is of the view that this is a sensible approach as the successful implementation of the Basin Plan requires a coordinated effort on the part of all parties.

7.8 Conclusion

The MDBA report is a valuable document. It draws together the background to the current arrangements, states the challenges that have been dealt with and those that are still to be overcome and makes sound recommendations for government action and sensible proposals for MDBA action. In particular, it is open and honest in its evaluation of the performance of the MDBA to date.

This Review was imperative. Without it, we were likely to be faced at 30 June 2019 with the prospect of the Basin Plan being placed in real jeopardy, caused, in part, by a lack of action on the part of the MDBA, but to a not insignificant extent by the failure of states to deliver on their commitments.
Glossary

**Basin state or state** — each of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

**BOC** — Basin Officials Committee. A committee of senior government officials representing each of the contracting governments under the Murray–Darling Basin Agreement; BOC has functions under both the Agreement and the Water Act.

**consumptive water user/consumptive water use** — the use of water for private benefit consumptive purposes including irrigation, industry, urban and stock and domestic use.

**EWP** — the environmental watering plan, comprising Chapter 8 of the Basin Plan.

**HEW** — held environmental water.

**PEW** — planned environmental water.

**priority environmental assets and priority ecosystem functions** — environmental assets and ecosystem functions identified in a long-term watering plan for a water resource prepared by a state under Chapter 8 of the Basin Plan as priority environmental assets or priority ecosystem functions.

**Statement of Assurance** — annual statement published by each state, the CEWH and MDBA, stating the entity’s compliance with particular Basin Plan implementation tasks.

**water access right** — a right conferred by or under state law, to hold or take water.

**water-dependent ecosystem** — an ecosystem that depends on periodic or sustained inundation, waterlogging or significant inputs of water for its ecological integrity.
Appendix A

Summary of water resource plan accreditation requirements relating to environmental water

Broadly, accreditation criteria include that a plan must:

- provide for environmental watering to occur consistently with the EWP (which includes the annual watering priorities) and in a way that contributes to meeting objectives for water-dependent ecosystems, as well as provide for coordination of environmental watering in rivers that cross water resource areas, including state boundaries
- identify planned environmental water (PEW) and the rules or arrangements associated with it, and ensure that there is no net reduction in the protection of PEW from the protection provided under state law immediately before the Basin Plan commenced
- include, if necessary, rules that protect certain environmental water requirements.6

Accreditation criteria in respect of provisions which implement SDLs, discussed in Section 5 of this report, also function to protect planned environmental water. A plan must require a register of held environmental water (HEW) to be kept, showing its characteristics and owners, but HEW receives no other special consideration in the accreditation criteria.

In summary, Chapter 10 of the Basin Plan provides that each water resource plan must:

- identify PEW and associated rules and arrangements relating to it
- provide for a register of HEW which records its characteristics and owner
- ensure that rules for take of water take account for acquisition or disposal of HEW
- ensure that the acquisition or disposal of HEW, or its use for consumptive purposes, is properly accounted for, for the purposes of the register of take
- include, if necessary, rules to ensure that the operation of the plan will not compromise the meeting of environmental watering requirements of priority environmental assets and priority ecosystem functions
- identify action to be taken if monitoring of interception activities shows that impacts (whether alone or cumulatively) compromise the meeting of an environmental watering requirement, or there is an increase in the quantity of water being intercepted (unless the outcomes are accounted for in the method for determining annual permitted take)
- provide for environmental watering to occur consistently with the EWP and the Basin-wide environmental watering strategy, and in a way that contributes to meeting the objectives for water dependent ecosystems set out in the EWP

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6 Environmental water requirements for priority environmental assets and priority environmental ecosystems identified by states are to be protected.
• where there is a surface water connection between water resource plan areas, the water resource plan for each area must provide for the co-ordination of environmental watering between the two areas
• ensure that there is no net reduction in the protection of PEW from the protection provided for under state water management law immediately before commencement of the Basin Plan
• be prepared having regard to risks, including risks to the capacity to meeting environmental watering requirements.

Accreditation criteria in respect of provisions which implement SDLs, discussed in Section 5 of this report, also function to protect planned environmental water.