

SUBMISSION TO THE SOUTH AUSTRALIAN MURRAY-DARLING BASIN ROYAL COMMISSION

PREPARED ON BEHALF OF THE STATE OF NSW

22 MAY 2018

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Attachments

A	NSW Water Reform Action Plan (December 2017)
B	Exposure Bill - Water Management Amendment Bill 2018
C	Exposure Bill - Fact Sheet
D	Consultation Paper - Better management of environmental water
E	Consultation Paper - Water take measurement and metering
F	Consultation Paper - Transparency measures
G	WRAP Progress report (April 2018)

Submission

Thank you for your invitation to make a submission and agreeing to the State of NSW to responding by 22 May 2018.

This submission provides the State of NSW's high level comments on some issues raised by the Royal Commission of relevance to NSW. Importantly, it also highlights the work that the State of NSW is doing in relation to water reform in NSW and reinforces the NSW government's commitment to transparency and accountability in delivering those reforms.

Response to Issue Papers

By letter dated 16 May 2018, the State of NSW has been invited to provide information about a number of matters the subject of focus in Issues Paper 1.

The State of NSW considers that in providing that information, the State of NSW will convey its views which would otherwise have been captured in this submission.

The State of NSW has no submissions to make in relation to those areas of focus in Issues Paper 1 which concern matters relying upon expert opinion.

The State of NSW does not intend to make a submission in response to Issues Paper 2. It is noted that Issues Paper 2 expands upon paragraph 28(a) of Issues Paper 1.

NSW commitment to water reform

The NSW government recognises that water is one of our most valuable natural assets. Every community in this State, including businesses and Aboriginal communities, and the environment rely on water.

The NSW Government has a responsibility to the people of NSW to ensure an equitable and transparent approach is taken in the management of our water now and for future generations.

The NSW Government's current water reforms are aimed at strengthening water management in NSW and restoring public confidence by placing a greater focus on compliance and enforcement, transparency and best practice management. A key component of the reforms is improving environmental water management in NSW, including working with the Commonwealth Environmental Water Office (CEWO) to ensure proposed changes enhance and assist the optimal use of water held by NSW and the CEWO. Information about the current NSW water reforms is provided below.

NSW Water Reforms

In December 2017, the NSW Government released the NSW Water Reform Action Plan (WRAP) (**Attachment A**) in response to the Independent investigation into NSW water management and compliance, conducted by Ken Matthews, AO (the Matthews' report) and the Murray Darling-Basin Water Compliance Review (MDBA Review). The WRAP sets out the NSW government's commitment to ensure that there is an equitable and transparent approach to the management of water now and for future generations. A key component is ensuring transparency in how we share, allocate and manage water.

The Government is dedicated to ensuring the reform program is high quality, enduring and developed in close consultation with stakeholders. It has recently sought public feedback on the key components of the WRAP, including the proposed measures for the interim environmental

water solutions package, alongside an Exposure Bill (exhibition closed on 15 April 2018) (**Attachments B and C**).

Three consultation papers have been released for community input on:

1. Better management of environmental water (**Attachment D**);
2. Water take measurement and metering (**Attachment E**); and
3. Transparency measures (**Attachment F**).

Analysis of the submissions and feedback received following the consultation process is underway. The views received are helping to shape the policy settings and legislation that will be introduced in NSW.

NSW is committed to ensuring environmental water, including water entitlements purchased or recovered through efficiency projects by the Commonwealth and NSW to maintain and enhance the health of our river systems, can be used for its intended purpose.

NSW Government agencies play an important role in managing and supporting the delivery of environmental outcomes from environmental water in NSW through:

- the development and application of state legislation and science-based policy;
- undertaking compliance and enforcement activities; and
- the management of held environmental water.

Both the Matthews' Investigation and the MDBA Review highlighted some of the problems and complexities of managing environmental water and stated the need for greater protections. A key component of the WRAP is the development of both interim and enduring solutions to better manage environmental water in NSW. This work is being undertaken by an interagency working group consisting of representatives from a range of disciplines from relevant NSW Government agencies, the Commonwealth and the CEWO.

Proposed options include measures to protect the use of environmental water held by both the Commonwealth and the State. Further information on the development of the interim solutions is outlined in the Better Management of Environmental Water, Consultation paper (see **Attachment D**). The options being considered are intended to enable the better management of environmental water so that the outcomes for environmental water can be maximised.

Enduring solutions will be developed over time as part of the water resource planning process. Under the WRAP, NSW has also committed to improving transparency in how we share, allocate and manage water and is in the process of developing a robust water measurement and metering framework to bolster compliance and enforcement around water take. These initiatives are aimed at improving public and industry awareness, engagement and confidence in water management by improving the quality and availability of water information and in turn, increasing voluntary compliance.

Increased voluntary compliance will support the success of new measures to protect environmental water under the WRAP, including held environmental water. Part of the environmental water work under the WRAP will include publishing further explanatory material for the public about how environmental water is managed. The NSW Government has committed to providing this explanatory material by the first quarter of 2019 and is continuing to work towards this target.

The first progress report on the WRAP was released in April 2018 (**Attachment G**). It demonstrates that the government has delivered on key objectives in the plan for the first quarter of 2018 as well as delivering many of the objectives outlined for the second quarter.

Key achievements include the establishment of the Natural Resources Access Regulator (NRAR), which commenced operation on 30 April 2018, and the establishment of the Lands and Water

Division within the Department of Industry, which is focused solely on the management of land and water resources.

A further example of the NSW Government's commitment to the reform program is its current collaboration with the Commonwealth Environmental Water Holder as well as the local communities and irrigator groups to deliver the Northern Basin connectivity event.

The CEWH has recognised the significant support that NSW has provided to enable this flow to be protected through the use of a section 324 Order to prohibit take. This current event is being treated as a pilot for how more active management of environmental water may occur in the future.

The Government will introduce a package of amendments to the *Water Management Act 2000* this session of Parliament that delivers on its commitment to the reform program. The Exposure Bill consulted on earlier this year included new tools for the implementation of more robust metering across the State and for the better protection of environmental water.

These tools include the ability to impose mandatory conditions through regulation and enabling section 324 water restrictions to be imposed specifically for environmental purposes. Improved evidentiary certificates in the Exposure Bill will also help facilitate NRAR in its compliance role and the strengthened transparency provisions will provide greater accessibility and understanding of water entitlements and use.

Further information on the NSW water reforms is available on the following website:
<https://www.industry.nsw.gov.au/water-reform>

Natural Resources Access Regulator (NRAR)

The NRAR was also established following the Matthews' report and commenced operation on 30 April 2018. The NRAR is an independent regulator established under the *Natural Resources Access Regulator Act 2017*. The current regulatory focus for the NRAR is water regulation. The principal objectives of the NRAR are to ensure effective, efficient, transparent and accountable compliance and enforcement measures and to maintain public confidence in the enforcement of the natural resources management legislation.

The NRAR has an independent board that is responsible for decisions relating to the regulator's compliance and enforcement functions. More information can be found on the NRAR website:
<https://www.industry.nsw.gov.au/natural-resources-access-regulator>

Murray-Darling Basin Plan (MDBP)

The management of environmental water across the MDB is a difficult and complex issue. Resolving these issues will be central to the ongoing success of the MDB Plan and requires action across the whole MDB.

In NSW, Water Sharing Plans (WSPs) provide the framework within which all water use is planned and coordinated. WSPs specifically share the water resource in each valley, including a proportion of water to support the environmental needs of NSW riverine and wetland systems.

The NSW Department of Industry is responsible for ensuring the rules in WSPs that provide water for the environment (i.e. planned environmental water) are applied. The *Water Act 2007 (Cth)* requires that the planning and management of environmental water in NSW must be consistent with the Basin Plan.

The NSW Office of Environment and Heritage (OEH) manages held environmental water, including environmental water licences held by the NSW Government and planned environmental water allocations made under water sharing plans. OEH works with the Commonwealth Environmental Water Holder on the management of environmental water held by the Commonwealth

Government. Information on the management of held environmental water by OEH is available at <http://www.environment.nsw.gov.au/topics/water/water-for-the-environment>.

Held environmental water includes:

- planned environmental water allowances (or environmental contingency allowances) accrued through the regulated river WSPs; and
- environmental water licences arising from the purchase of entitlements by governments and the recovery of water savings from infrastructure projects.

Water is made available to planned environmental water allowances by rules described in the WSP relevant to that valley. These valley specific allowances have various size limits and rules on how and where they can be used, which are also specified in the relevant WSP.

The Matthews' report draws attention to the complexity surrounding the management of environmental water and the need for a cooperative approach to solutions.

The Premier has written to the Chair of the MDB Authority to highlight the recommendations in the report, and reinforce the State's commitment to working with the MDB Authority and member states to improve the management of water resources.

Thank you again for the opportunity to make this submission. Responses to the matters requested in recent correspondence from the Commission are in preparation.

Securing our water

NSW Government water reform action plan

December 2017



Our water goals in NSW

Introduce best practice for water management



Ensure transparency in how we share, allocate and manage water



Build a compliance and enforcement regime that ensures strong and certain regulation



Build capability to support implementation of water reforms



Our priorities

Water is one of our most valuable natural assets. We have a responsibility to the people of NSW to ensure we have an equitable and transparent approach to the management of our water now and for future generations.

We will manage water to:

- support jobs, economic growth, the environment, and our health and wellbeing
- enable farmers and all water users to achieve and improve water efficiency with the available water, while supporting regional communities to adjust to a changing climate
- deliver efficient services with a focus on innovation, performance and affordability
- plan infrastructure that secures water supply and increases drought resilience across our communities
- improve the health of priority waterways and their catchments to support our environmental, social, cultural and economic needs and values
- support the wellbeing of rural and regional communities who enjoy the recreational benefits our regional waterways provide.
- support the sustainable use of and access to water

NSW Government's action plan to reform water management



Introduce best practice for water management

What are we doing	How we will do it	By when
Established a new Lands and Water division	<ul style="list-style-type: none"> • Create a division solely focused on the management of land and water resources 	Q4 2017
Establishing a new regulatory framework for water management	<ul style="list-style-type: none"> • Legislate to establish an independent regulator— Natural Resources Access Regulator (NRAR) • Appoint an interim chief regulatory officer • Appoint an independent board to oversee the NRAR • Appoint a chief regulatory officer • Develop and publish the Natural Resources Access Regulator Establishment Plan 	Q4 2017 Q4 2017 Q4 2017 Q2 2018 Q2 2018
Define and explain the specific roles of government bodies that have accountability for water management	<ul style="list-style-type: none"> • Clarify the accountabilities of departments and agencies with water management responsibilities in NSW • Create clear functional separation between those who provide and sell water to customers and those who oversee and regulate water as a public resource • Make information on accountability and roles publicly available 	Q2 2018 Q2 2018 Q2 2018



Build a compliance and enforcement regime that ensures strong and certain regulation

What are we doing	How we will do it	By when
Strengthening compliance and enforcement capacity	<ul style="list-style-type: none"> • Increase compliance and enforcement resourcing by \$9.5 million per year 	Q4 2017
	<ul style="list-style-type: none"> • Recruit additional compliance and enforcement officers 	Q2 2018
	<ul style="list-style-type: none"> • Conduct additional training for all compliance and enforcement staff including in investigation techniques 	Q3 2018
	<ul style="list-style-type: none"> • Invest in case management technology, databases and analytics to more effectively target compliance activity 	Q3 2018
	<ul style="list-style-type: none"> • Report annually on compliance and enforcement activities and publish on the Department of Industry website 	Q3 2019
Establish a new independent regulator with strong regulatory powers	<ul style="list-style-type: none"> • Natural Resources Access Regulator (NRAR) to lead on compliance matters 	Q2 2018
	<ul style="list-style-type: none"> • NRAR to take appropriate enforcement action, including penalty infringement notices and prosecutions 	Q2 2018
	<ul style="list-style-type: none"> • WaterNSW to implement mandatory immediate reporting to the NRAR of suspected breaches 	Q2 2018
	<ul style="list-style-type: none"> • NRAR to produce and publish clear and effective policies and processes for compliance that also address the recommendations of the Matthews and NSW ombudsman reports and the MDBA's water compliance review 	Q2 2018
	<ul style="list-style-type: none"> • NRAR to undertake proactive targeted compliance operations 	Q4 2018
Implement a robust metering framework	<ul style="list-style-type: none"> • Consult on a metering and water discussion paper for public consultation incorporating: <ul style="list-style-type: none"> ◦ an approach to implementing 'no meter, no pump' objectives ◦ identification of any necessary legislative reforms to support these changes ◦ how we monitor metering of water consumption ◦ policy on self-reporting and random checks 	Q2 2018
	<ul style="list-style-type: none"> • Finalise a timetable for implementing new metering requirements following consultation 	Q4 2018
Adopt innovative technologies to improve compliance effectiveness	<ul style="list-style-type: none"> • Seek proposals to pilot the use of technology for water monitoring and compliance activities, which could include remote sensing of on-farm water storages and indicators such as crop growth and telemetry 	Q2 2018
	<ul style="list-style-type: none"> • Develop a water monitoring technology plan 	Q1 2019



Ensure transparency in how we share, allocate and manage water

What are we doing	How we will do it	By when
Increase transparency in water management	<ul style="list-style-type: none"> Release a discussion paper on creating a public register of water information that could cover water entitlements, water licences and water work approvals 	Q2 2018
	<ul style="list-style-type: none"> Publish compliance and enforcement activities 	Q3 2018
	<ul style="list-style-type: none"> Publish information on the Department of Industry's website about activities in protecting environmental water 	Q4 2018
	<ul style="list-style-type: none"> Regularly report on progress implementing water inquiry reforms 	Q1 2018 onwards
	<ul style="list-style-type: none"> Have NRAR establish mechanisms for the public to report alleged breaches, including a statewide hotline and email channel 	Q3 2019
	<ul style="list-style-type: none"> Commission an annual, independent review of progress on this plan and publish the results 	Q1 2019
	<ul style="list-style-type: none"> Redesign the Department of Industry website to provide updated and more accessible information on water management 	Q1 2019
Create a stakeholder engagement framework	<ul style="list-style-type: none"> Implement a new stakeholder engagement framework 	Q1 2018
	<ul style="list-style-type: none"> Develop and publish a schedule of stakeholder engagement activities 	Q1 2018
Better manage environmental water	<ul style="list-style-type: none"> Establish an interagency working group to develop solutions to improve the management of environmental water 	Q1 2018
	<ul style="list-style-type: none"> Have the working group present interim solutions within 90 days of commencement 	Q2 2018
	<ul style="list-style-type: none"> Publish explanatory materials to inform the public on how environmental water is managed 	Q1 2019
	<ul style="list-style-type: none"> Have all NSW water resource plans accredited by the MDBA 	Q3 2019



Build capability to support implementation of water reforms

Build capability, improve standards and embed an ethical culture	<ul style="list-style-type: none"> Update staff induction processes to emphasise ethical and conduct obligations of staff 	Q1 2018
	<ul style="list-style-type: none"> Roll out department-wide ethics and professional standards training 	Q1 2018
	<ul style="list-style-type: none"> Commence a 'speak-up' service to enable anonymous reporting of suspected unsatisfactory conduct 	Q1 2018
	<ul style="list-style-type: none"> Develop the Department of Industry ethical framework to connect all training, systems and activities to embed ethical behaviour into departmental culture 	Q3 2018

Investing in a sustainable water future for NSW

The NSW Government is working to ensure a sustainable water future for NSW.

Key projects include:

Safe and Secure Water Program

The Safe and Secure Water Program is a \$1 billion NSW Government co-funding program that will target water and sewerage projects in regional NSW to ensure infrastructure meets contemporary standards for water security, public health, environmental and safety outcomes into the future.

The program will provide co-funding to successful applicants such as local councils, water utilities, water corporations and prescribed dam owners for detailed planning and construction activities to install, augment or decommission water and sewerage infrastructure.

Water resource plans

The NSW Government will develop 22 water resource plans (WRPs) to set out arrangements to share water for consumptive use. The WRPs will establish rules to meet environmental and water quality objectives and will take into account potential and emerging risks to water resources. WRPs will play a key role in ensuring implementation of limits on the quantity of surface and groundwater that can be taken from the Murray Darling Basin for consumptive purposes.

NSW Healthy Floodplains

The NSW Healthy Floodplains project will help drive reform in water management in northern basin floodplains. This includes managing development in floodplain areas and bringing water extractions from floodplains into a water licensing framework. The NSW Government is implementing the NSW Healthy Floodplains Project across five valleys in northern NSW: the Border-Rivers, Gwydir, Namoi, Barwon-Darling and Macquarie valleys. The project will help NSW meet extraction limits defined in WRPs and the Murray Darling Basin Plan.

Broken Hill Pipeline

Securing Broken Hill's water supply is the centrepiece of the NSW Government's \$1 billion Regional Water Security and Supply Fund.

A reliable water supply for Broken Hill will underpin business confidence in the region, support the full functioning of health infrastructure and the tourism industry, and improve employment outcomes in the region. The water security package represents one of the largest investments into regional water security on record and puts the region on a stable economic footing for generations to come.

Menindee Lakes

The new Broken Hill pipeline also means the Menindee Lakes can be managed more efficiently to balance the need for productive water, environmental flows and the importance of the lakes for the local community.



Edward River, Deniliquin. Credit: Destination NSW

Who's who in NSW water management

FEDERAL

Murray Darling Basin Authority (MDBA)

- Established as an independent, expertise-based statutory agency
- Responsible for planning the basin's water resources, with all planning decisions made in the interest of the basin as a whole
- Prepares, implements and reviews integrated plans for the sustainable use of the basin's water resources
- Operates the Murray River system and efficiently delivers water to users on behalf of partner governments, as well as measuring, monitoring and recording the quality and quantity of the basin's water resources
- Provides water rights information to facilitate water trading across the basin.

Commonwealth Environmental Water Holder

- Manages the Commonwealth's environmental water holdings so as to protect or restore environmental assets in the Murray Darling Basin and in other areas where environmental water is held.

Department of Agriculture and Water Resources

- Responsible for the management and use of water resources including the National Water Initiative, the Murray-Darling Basin Plan, urban water policy and reform, and water quality improvement
- Administer the key Commonwealth funding programs relevant to water management reforms.

STATE

Department of Industry—Lands and Water

- Responsible for surface and groundwater management including ensuring water security for NSW
- Ensures equitable sharing of surface and groundwater resources and that water entitlements and allocations are secure and tradeable
- Manages NSW's water resources through planning, policy and regulation
- Leads negotiations with the Commonwealth, including the MDBA and other jurisdictions.

WaterNSW

- The state's bulk water supplier and operational manager of surface water and groundwater resources
- Develops and operates infrastructure solutions for water supply security and reliability
- Conducts customer-facing functions such as the delivery of water and billing.

Office of Environment & Heritage

- Manages the state's environmental water holdings
- Develop a long-term environmental watering plan as required under the Basin Plan.

Natural Resources Access Regulator

- A new organisation to become operational in 2018
- Responsible for compliance and enforcement of NSW water law with powers for investigations and other strategies as part of providing quality regulation
- Determines when to commence prosecutions or uses other enforcement tools in the event of non-compliance
- Other functions include:
 - preparing policies and procedures relating to the enforcement powers under natural resources management legislation
 - advising and reporting to the Minister on matters relating to administration of natural resources management legislation
 - publishing details of convictions in prosecutions
- The NRAR will initially focus on water regulation, but as it matures other prescribed natural resource management areas may be added.

More information

NSW Department of Industry
industry.nsw.gov.au/water-reform
Ph 02 9338 6600



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NEW SOUTH WALES
DRAFT GOVERNMENT BILL

Water Management Amendment Bill 2018

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public consultation draft

NEW SOUTH WALES
DRAFT GOVERNMENT BILL

Water Management Amendment Bill 2018

No. , 2018

A Bill for

An Act to amend the *Water Management Act 2000* with respect to water management plans, conditions of approvals and licences, metering, the provision of information and measures to protect environmental water; and for other purposes.

Water Management Amendment Bill 2018 [NSW]

The Legislature of New South Wales enacts:

1 Name of Act

This Act is the *Water Management Amendment Act 2018*.

2 Commencement

This Act commences on a day or days to be appointed by proclamation.

Schedule 1 Amendment of Water Management Act 2000 No 92

[1] Section 66 Conditions of access licence generally

Insert after section 66 (1):

- (1AA) An access licence is subject to any mandatory conditions imposed by the regulations.

[2] Sections 66 (1A), 67 (3), 100 (1A) and 102 (3)

Insert “(other than conditions imposed by the regulations)” after “Mandatory conditions” wherever occurring.

[3] Section 71QA

Insert after section 71Q:

71QA Assignment of individual daily extraction component

- (1) For the purposes of this section, an *individual daily extraction component* means an entitlement of the holder of an access licence to take a specified volume of water on a specified day, whether or not it is limited to specified rates or in specified circumstances.
- (2) The holders of two or more access licences may apply to the Minister for consent to the assignment of the rights to individual daily extraction components between one or more of the holders.
- (3) An application may be made to assign an individual daily extraction component for a specified day or a specified period, or in specified circumstances, or both, and may relate to the whole or part of an individual daily extraction component.
- (4) An application may only be made if the licences are of the same category with respect to the same water source.
- (5) The Minister may consent to the assignment of rights between the access licences concerned by:
 - (a) a reduction or removal of the whole or part of one or more individual daily extraction components of one or more of the licences, and
 - (b) a corresponding increase in the individual daily extraction components of the others.
- (6) A reduction or increase may be specified by the Minister to have effect for a specified period, or in specified circumstances, or both.
- (7) The assignment of a right to an individual daily extraction component does not entitle the assignee to extract water in excess of the assignee’s water allocation.
- (8) A holder of an access licence may assign a right to an individual daily extraction component whether or not the holder has any available water allocation credited to the holder’s water allocation account.
- (9) An access licence is not cancelled merely because, as a result of an assignment under this section, it has a zero extraction component for the time being.

[4] Section 71U Interstate transfer of access licences

Insert “and Part 5 of Chapter 3” after “section 63 (4), (5), (6) and (7)” in section 71U (4).

[5] Section 71Y General

Insert “71QA,” before “71T” in section 71Y (1).

[6] Section 85AA

Insert after section 85:

85AA Daily extraction accounts

- (1) Individual daily extraction components imposed on an access licence are to be recorded in the water allocation account.
- (2) For each access licence, the Minister is to cause an account to be kept of:
 - (a) any individual daily extraction component that is acquired under section 71QA, and
 - (b) any individual daily extraction component that is assigned under section 71QA.
- (3) The regulations may make provision for or with respect to the particulars that are to be recorded in a water allocation account for the purposes of this section.

[7] Section 87D

Insert after section 87C:

87D Information about rights to take water from water sources

- (1) The Minister may arrange for the publication of the following information about a water source on a publicly accessible website approved by the Minister:
 - (a) whether or not water can be taken by access licence holders from a particular part of the water source on a particular day or at a particular time on a particular day, in accordance with an applicable water sharing plan or a particular condition of an access licence,
 - (b) the amount of water that can be taken from a particular part of the water source on a particular day or at a particular time on a particular day, in accordance with an applicable water sharing plan or a particular condition of an access licence.
- (2) For the purposes of this Act, a person is taken to be permitted to take water in accordance with a water sharing plan or a condition of an access licence if the person is entitled to take water under that plan or licence and takes water in accordance with information published under this section.
- (3) This section does not:
 - (a) permit a person to take water if to do so would contravene a condition of an access licence that is not the subject of information published under this section, or
 - (b) prevent a person from taking water if the person is otherwise permitted to do so under an access licence or under this Act.

[8] Section 91H Failure to install, use or maintain metering equipment

Insert “or use” after “install” wherever occurring in section 91H (1).

[9] Section 91H (1) (c)

Insert at the end of section 91H (1) (b):

or

(c) a regulation made under Part 6 of Chapter 3,

[10] Section 91J Metering records

Insert at the end of the section:

- (2) A person must not in or in connection with a metering record required to be kept under this Act, or a requirement of a regulation under Part 6 of Chapter 3, make a statement or furnish any information that the person knows to be false or misleading in a material particular.
Tier 2 penalty.

[11] Section 100 Conditions of approval generally

Insert after section 100 (1):

- (1AA) An approval is subject to any mandatory conditions imposed by the regulations.

[12] Chapter 3, Parts 5 and 6

Insert after Part 4 of Chapter 3:

Part 5 Conditions imposed by regulations

115 Regulations may impose mandatory conditions relating to metering equipment and ceasing to take water

- (1) The regulations may impose mandatory conditions on water supply work approvals relating to the following:
- (a) metering equipment,
 - (b) prohibiting or limiting the use of the water supply work to take water in specified circumstances,
 - (c) requiring notice to be given of a change to or the replacement of the water supply work, or any part of it, that results in an increase in the capacity to take water.
- (2) A mandatory condition prohibiting or limiting the taking of water may be imposed only for the purpose of protecting environmental water or managing water for environmental purposes.
- (3) A mandatory condition may be imposed on particular approvals or classes of approvals.

115A Regulations may impose mandatory conditions relating to extraction of water

- (1) The regulations may impose mandatory conditions on access licences limiting the extraction of water.
- (2) A mandatory condition may be imposed only for the purpose of protecting environmental water or managing water for environmental purposes.
- (3) A mandatory condition may be imposed on all access licences for a specified water source or access licences for water sources within a specified part of the State.

115B Mandatory conditions generally

- (1) The regulations may provide for the following:
 - (a) notification to holders of approvals or access licences of mandatory conditions imposed under this Part,
 - (b) the imposition of a mandatory condition under this Part on a licence or other entitlement in force under the *Water Act 1912* and deeming any such condition to be imposed under that Act,
 - (c) that a mandatory condition imposed under this Part has effect despite any other approval or licence or condition of an approval or licence under this Act or the *Water Act 1912* or any other instrument made under this Act or that Act.
- (2) The imposition of a mandatory condition on an access licence relating to the extraction of water does not give rise to a claim for compensation under Division 9 of Part 2 of Chapter 3.

Part 6 Regulations relating to water supply works

115C Metering equipment

- (1) This section applies to a water supply work, whether or not an approval is required to install or use the water supply work.
- (2) Regulations may be made for or with respect to metering equipment in connection with water supply works.
- (3) In particular, and without limiting subsection (2), regulations may be made for or with respect to the following:
 - (a) requiring the holders of water supply work approvals to install, use and maintain metering equipment,
 - (b) requiring persons who have control and management of water supply works to install, use and maintain metering equipment,
 - (c) setting out standards and other requirements for metering equipment to be used in connection with water supply works,
 - (d) setting out standards and other requirements for the location and installation of metering equipment,
 - (e) the keeping of metering records relating to maintenance of metering equipment and use of water during periods when metering equipment is not able to be used and to any other matters specified by the regulations.

[13] Chapter 7, Part 1, Division 2, heading

Insert “and metering” after “water”.

[14] Section 324 Temporary water restrictions

Insert after section 324 (1):

- (1A) If satisfied that it is necessary to do so for the purpose of managing water for environmental purposes, the Minister may, subject to any requirements of the regulations, by order in writing, direct that, for a specified period, the taking of water from a specified water source is prohibited, or is subject to specified restrictions, as the case requires.

[15] Section 324 (4)

Insert “, (1A)” after “subsection (1)”.

[16] Section 326 Directions relating to metering equipment

Insert “, use” after “replace” in section 326 (1).

[17] Section 367 Evidentiary certificates

Insert after section 367 (2) (v):

- (w) specified information relating to the taking of water from a specified water source under a specified water sharing plan or condition of an access licence was, or was not, displayed on a website approved by the Minister,

[18] Section 391B

Insert after section 391A:

391B Administration and transparency of water information

- (1) Regulations may be made for or with respect to the following:
 - (a) the disclosure of information held on a register established under this Act,
 - (b) the disclosure of information about water allocation accounts of individuals or corporations who hold access licences or approvals under this Act,
 - (c) the disclosure of information about the taking of water from particular water sources or water sources within a particular part of the State,
 - (d) the keeping and form of registers of information authorised to be disclosed under this Act,
 - (e) the fees payable for access to information.
- (2) Information may be disclosed in accordance with a regulation made under this section despite any prohibition in, or the need to comply with a requirement of, any Act or law (in particular, the *Privacy and Personal Information Protection Act 1998* (other than Part 6 of that Act)).

[19] Schedule 1B Provisions relating to exit from co-held access licence

Insert at the end of clause 3:

- (3) If an individual daily extraction component was imposed on the original licence, the water allocation accounts for the original access licence and the new access licence are to be adjusted to reflect the provisions made by this clause.

[20] Dictionary

Insert after paragraph (b) of the definition of *assignment dealing*:

- (c) an assignment of the whole or part of one or more individual daily extraction components as referred to in section 71QA.

[21] Dictionary, definition of “individual daily extraction component”

Insert in alphabetical order:

individual daily extraction component—see section 71QA (1).

Schedule 2 Amendment of Natural Resources Access Regulator Act 2017 No 64

Section 12 Regulator to determine whether proceedings for offences should be instituted

Insert after section 12 (3):

- (3A) Regulations may be made for or with respect to authorising the Regulator to publish information about the exercise of enforcement powers under the natural resources management legislation.
- (3B) Information may be disclosed in accordance with a regulation made under this section despite any prohibition in, or the need to comply with a requirement of, any Act or law (in particular, the *Privacy and Personal Information Protection Act 1998* (other than Part 6 of that Act)).

About the Water Reform Action Plan

Water is one of the most important natural assets in New South Wales. The community, business and the environment all rely on water to survive and prosper.

In December 2017, the NSW Government released the Water Reform Action Plan in response to the *Independent investigation into NSW water management and compliance*, conducted by Ken Matthews, AO (the Matthews Report) and the *Murray–Darling Basin Water Compliance Review*.

The plan will deliver on the state’s responsibility to ensure we have an equitable and transparent approach to the management of water for current and future generations.

As part of the development process for the water reforms being introduced, the NSW Government has released three consultation papers for community input on:

- Water take measurement and metering
- Transparency measures
- Better management of environmental water.

Exposure Bill

To support the implementation of the Water Reform Action Plan and the options proposed in the consultation papers, amendments will be required to the *Water Management Act 2000* and *Natural Resources Access Regulator Act 2017*.

The NSW Government has released an Exposure Bill, the draft Water Management Amendment Bill 2018, as an example of the mechanisms that could be enacted to enable key elements of the reform. The Bill that will be introduced into Parliament later this year will reflect the final policy positions that are developed following your input to the consultation papers listed above. Some policy elements will be enabled in the regulations that will be developed after the Bill has been considered by Parliament.

This fact sheet accompanies the Exposure Bill and should be read in conjunction with the consultation papers listed above. Your feedback on the options proposed in the consultation papers will help shape the final Bill that will be introduced into Parliament.

Table 1. Overview of draft Water Management Amendment Bill 2018

Relevant consultation paper	Water Management Amendment Bill 2018	Bill reference
Better management of environmental water	Assignment of individual daily extraction components (Individual Daily Extraction Limits or IDELs): <ul style="list-style-type: none"> • Amends the access licence dealings provisions to enable individual daily extraction components to be assigned between access licences. • Enables information about assignment of individual daily extraction components to be included in the water allocation account for an access licence. 	[3], [5], [6], [19], [20], [21]
	Temporary water restrictions: <ul style="list-style-type: none"> • Amends the existing temporary water restriction provision to allow the Minister to restrict or prohibit the taking of water where the Minister is 	[14], [15]

Relevant consultation paper	Water Management Amendment Bill 2018	Bill reference
	<p>satisfied it is necessary for the purposes of managing water for environmental purposes.</p> <p>Imposition of mandatory conditions:</p> <ul style="list-style-type: none"> • Enables regulations to impose mandatory conditions on access licences and approvals to limit, for environmental purposes, the taking of water in specified circumstances. • These mandatory conditions will override existing conditions in water sharing plans, access licences and approvals and are not subject to the general notification requirements. 	<p>[1], [2], [4], [11], [12]</p>
Transparency measures	<p>Including information in a public register:</p> <ul style="list-style-type: none"> • Enables regulations to be made that will authorise the disclosure of water information. This could include information already held on a water register about an access licence or approval, water allocation account information, as well as general information about water take from a specified area of the state. <p>Information about when water can be taken:</p> <ul style="list-style-type: none"> • Allows the Minister to authorise a website that provides information about whether take of water is or is not permitted at a specific location at a specific time. • The website will show whether the water sharing plan rules generally authorise take of water. However, some individuals' licence or approval terms and conditions may affect this authorisation, and need to be complied with. • Allows an evidentiary certificate to be issued for the purpose of legal proceedings that states what information was provided on the website at a particular time. <p>Publishing compliance information:</p> <ul style="list-style-type: none"> • Enables regulations to authorise the Natural Resources Access Regulator to publish details about enforcement actions that have been taken, such as the issue of penalty infringement notices (PINs) and stop work orders. 	<p>[18]</p> <p>[7], [17]</p> <p>Schedule 2</p>
Water take measurement and metering	<p>Imposition of mandatory conditions:</p> <ul style="list-style-type: none"> • Enables regulations to impose mandatory conditions on approvals relating to the use of metering equipment in connection with water supply works. • These mandatory conditions will override existing conditions in water sharing plans, access licences and approvals and are not subject to the general notification requirements. <p>Setting out metering requirements:</p> <ul style="list-style-type: none"> • Enables regulations to be made to require the use of metering 	<p>[1], [2], [4], [11], [12]</p> <p>[12], [13], [16]</p>

Relevant consultation paper	Water Management Amendment Bill 2018	Bill reference
	<p>equipment including requirements relating to the installation, use and maintenance of metering equipment.</p> <ul style="list-style-type: none"> Expands an existing power to enable a person to be directed to use metering equipment. <p>New offence provisions:</p> <ul style="list-style-type: none"> Includes a new offence provision with respect to providing false or misleading information in connection with metering records or the metering requirements that will be set out in the regulations. Expands an existing offence provision so that it is an offence where a person does not comply with the metering requirements that are in the regulations. 	[8], [9], [10]

Have your say

The community is encouraged to provide feedback. These responses will be due by Sunday 15 April at 11.59 pm and can be submitted in a number of ways, including:

Online: www.haveyoursay.nsw.gov.au

Email: water.reform@industry.nsw.gov.au

Website: www.industry.nsw.gov.au/water-reform/consultation

Post: Water Renewal Task Force, Department of Industry, GPO Box 5477, Sydney NSW 2001

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NSW WATER REFORM ACTION PLAN

Better management of environmental water

Consultation paper

Published by NSW Department of Industry

Better management of environmental water—Consultation paper

First published March 2018

More information

industry.nsw.gov.au

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Interagency Working Group for Better Environmental Water Management

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Introduction

Water is one of the most important natural assets in New South Wales (NSW). The community, business and the environment all rely on water to survive and prosper.

In December 2017, the NSW Government released the Water Reform Action Plan in response to the *Independent investigation into NSW water management and compliance*, conducted by Ken Matthews, AO (the Matthews Report) and the *Murray–Darling Basin Water Compliance Review* (MDB Compliance Review).

The plan will deliver on the state's responsibility to ensure we have an equitable and transparent approach to the management of water for current and future generations.

As part of the development process for the water reforms being introduced, the NSW Government has released three consultation papers for community input on:

- Better management of environmental water (this document)
- Water take measurement and metering
- Transparency measures

The Water Reform Action Plan sets out the government's commitment to improving how we share, allocate and manage water, including improvements to the management of environmental water. This paper seeks your views on options for how this might be achieved.

Background

The Matthews Report and MDB Compliance Review highlighted some of the problems and complexities of managing environmental water. Both reports stated that there was a need for greater protection of environmental water, particularly in the unregulated river systems in the Northern Basin.

Matthews' identification of the unregulated Northern Basin system as an area requiring urgent attention was supported by community concern regarding the long-term deterioration of riverine water quality and associated ecosystems, especially during dry periods when all water consumers (the environment, community, industry, and business) have important needs.

The NSW Government has established an Interagency Working Group (IWG) to help identify solutions for improving the management of environmental water (see key actions and indicative timeline in Figure 1). The initial focus of this group is to present a package of interim measures, focused on unregulated rivers in the Northern Basin that could be implemented in the period before Water Resource Plans (WRPs) come into effect in July 2019. Consultation on this paper will inform the development of those interim options.

The Interagency Working Group

Formed in February 2018 to advise the NSW Government on ways to better manage environmental water, the IWG includes representatives from:

- NSW Department of Industry—Water Renewal Taskforce (Chair)
- Commonwealth Environmental Water Office
- Murray–Darling Basin Authority
- NSW Department of Industry—Water
- NSW Office of Environment and Heritage
- NSW Department of Primary Industries—Fisheries
- NSW Department of Primary Industries—Agriculture
- NSW Natural Resources Commission
- WaterNSW.

This group is providing advice on an immediate response, interim solutions, legislative amendments and enduring measures as per the indicative timeline shown in Figure 1.

The IWG developed the following set of principles, which are being used to guide the assessment of the interim solutions package. :

- a) **Adverse impacts are mitigated**—impacts are identified and appropriate mitigation measures are put in place.
- b) **Unintended gains are avoided**—measures, where possible, should not contribute to an increase in water access reliability for downstream water users.
- c) **Evidence-based and outcomes focused**—measures that look to protect environmental water use best available information and deliver environmental outcomes with considerations of social and economic outcomes, where practical.
- d) **Feasible**—identify measures that are technically and operationally able to be implemented.
- e) **Value for money**—measures must present value for money and not be cost prohibitive.

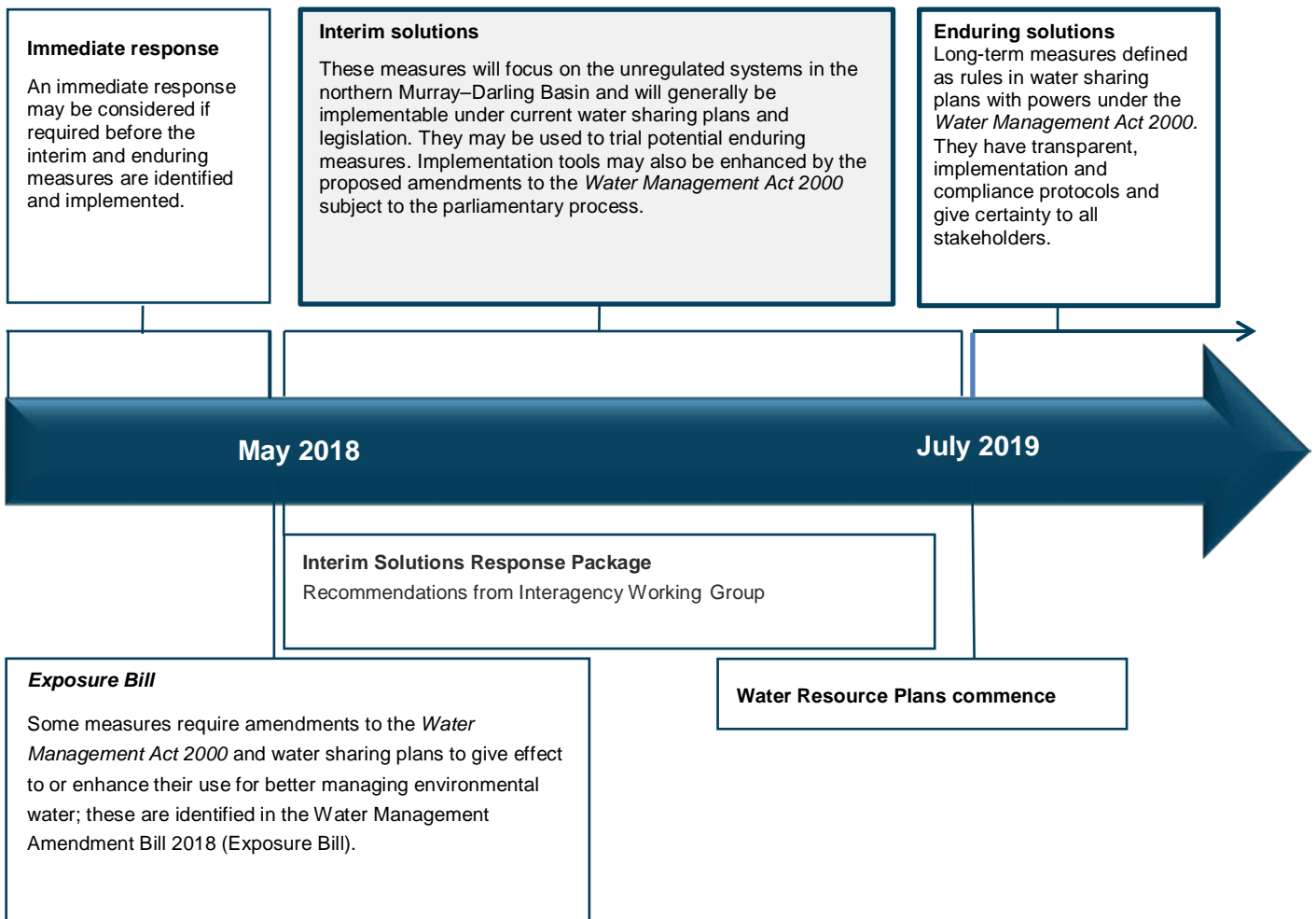


Figure 1. Indicative timeline for actions to improve the management of environmental water

Key terms

An unregulated river system is one without major storages or dams, where both licence holders and the environment rely on natural flows.

A regulated river system is one where downstream flows are regulated by a major storage or dam to supply water for multiple purposes, including the environment, basic landholder rights and downstream water access licences.

For the purposes of this consultation paper, **environmental water** can be divided into two broad categories:

- **planned environmental water**—water that is committed under the rules of a water sharing plan specifically for environmental purposes within the area covered by the plan (**Attachment A** provides a summary of types of planned environmental water rules).
- **held environmental water**—water access licences purchased for environmental use or licences for water recovered through water efficiency savings from improved infrastructure. In NSW, these licences are generally held by either the Commonwealth Environmental Water Holder or the NSW Office of Environment and Heritage. They are used for specific environmental purposes, for example, to water wetland areas, or replenish drought refuges.

Why is environmental water management challenging?

Environmental water management has evolved significantly over the past two decades through the establishment of water-sharing plans and investment in water for the environment. There has been significant investment in programs in NSW—for example, the NSW River Bank, the Rivers Environmental Restoration Program and NSW Wetland Recovery Program. In addition, in 2008, the Commonwealth Environmental Water Holder was formed to purchase and manage water for the environment in the Murray–Darling Basin (**Attachment A** shows the increase in this held environmental water from commencement of the water sharing plans to present day in the Northern Basin). More recently, the Basin Plan requires development of WRPs and Long Term Environmental Watering Plans (LTEWPs) to meet the requirements of the Murray–Darling Basin Plan.

The NSW water-sharing plan framework was not designed with Basin-scale outcomes in mind, nor the large volumes of held environmental water that governments now hold. Traditionally, each water sharing plan area (WSPA) was managed separately, with the assumption that once water (including held or planned environmental water released from an upstream storage) moved from an upstream WSPA to a downstream WSPA, it again contributed to the pool of available water in that downstream water source. This means that if held environmental water is released from an upstream regulated river storage into a downstream unregulated river, it contributes to keeping the flow above the commence-to-pump level, rather than being left instream for its intended purpose.

The Northern Basin presents particular challenges as the major regulated rivers in the northern portion of the NSW Murray–Darling Basin are connected to the southern Murray–Darling Basin by the unregulated Barwon–Darling River.

Consultation question

- The measures in this paper are focused on the unregulated systems of the Northern Basin – do you agree that this should be the main focus for the interim solutions package?

What outcomes are we seeking?

Improving the management of flows and extraction (the taking of water) within and between river systems will help to protect and improve aquatic ecosystems, while enhancing equitable cultural, social and economic outcomes from water. The frequency, timing and duration of flows are ecologically important for different reasons, but each is critical to achieving the objectives from improved management of environmental water, including:

- **breaking extended cease-to-flow periods**—cease-to-flow durations of 50 days at Bourke and 100 days at Wilcannia have been identified as critical ecological thresholds.
- **whole-of-river flow connectivity**—low flow connectivity is important for fish and invertebrate populations, and maintaining water quality.
- **flushing flows**—flow pulses up to approximately 2,000 megalitres per day (ML/d) are important for the spawning and migration of fish, nutrient cycling following the inundation of in-channel benches and in the movement of salt out of the system.
- **protection of held environmental water**—ensuring held environmental water is recognised and managed effectively to achieve identified ecological outcomes between river systems and within unregulated rivers, such as the Barwon–Darling.

Consultation question

- Do you agree with this mix of environmental outcomes? Are there others we should be considering?

How do regulated and unregulated rivers operate, and what does this mean for environmental water?

Regulated rivers

A regulated river is one where downstream flows are regulated by a major storage or dam to supply water for multiple purposes. The storage is operated in accordance with the rules set out in the relevant water sharing plan to ensure equitable access for the environment, basic landholder rights (BLR) and water access licences downstream within the regulated river water source. Regulated rivers allow orders to be placed for upstream storage releases of a licensed allocation.

The categories of access licence available in each valley are stipulated by the relevant water sharing plan. Water access licence categories help define the priorities between different access licences, the conditions that apply to them and, in the case of specific purpose category licences, define how water may be used.

The volume of water licensed users can have varies from year to year, based on the licence category and size of their individual share. This allocation is dependent on a range of factors including dam storage levels, river flows and catchment conditions.

Supplementary water is effectively unregulated, surplus flow in regulated systems that cannot be captured in storages. When storm events result in flows that cannot be captured (regulated) for future use, and the water is not needed to meet current demands or commitments, it is considered surplus to requirements. As soon as these conditions are identified for a particular river, a period of supplementary access is announced and details of the river reaches and time periods for supplementary access are published. Supplementary water access licence holders can only pump water against these licences during these announced periods. Supplementary flow events can occur in any regulated system at any time and therefore access is purely opportunistic.

Unregulated rivers

The term 'unregulated river' applies to rivers without major storages, or dams, as well as to rivers where the storages do not release water downstream. In unregulated rivers, orders cannot be placed for upstream release of a licensed allocation, and instead both licence holders and the environment rely on natural flows.

The water sharing plans for the unregulated rivers therefore require licence holders to stop pumping when the river flow falls below a certain level. When flows reach a certain level, they can commence-to-pump, referred to as commence-to-pump rules.

In addition, many of the plans set limits on how much water can be taken from different flow ranges or classes.

What does this mean for environmental water?

Regulated rivers are actively managed by releases from headwater storages and orders for water are met at any location along the river system. This means that environmental water holders can work with river operators to release flows from storages for a desired environmental outcome. In contrast, unregulated rivers are typically not managed actively, and are reliant on sporadic inflows, with access controlled by flow access rules. Upstream activity can influence river flows (and hence access) downstream. This presents an additional challenge for environmental water management because the nature of the access rules mean that any water in-stream contributes to keeping the flow above commence-to-pump levels, where access is still permitted. Accordingly the options probed in this paper target unregulated water sources.

A summary of the existing tools available to manage environmental water is set out at **Attachment B**. Other factors which can support better management of environmental water are set out in **Attachment C**.

How can we better manage environmental water?

A brief summary of possible measures that would help improve the management of environmental water is provided below and in the 'possible measures' section of this paper.

Table 1. Snapshot of measures for improving environmental water management of unregulated rivers

	Possible measure	Description
1	Impose restrictions when held environmental water is released from an upstream storage	Restrictions would be imposed on downstream licences to recognise held environmental water when it enters the unregulated system from a regulated system. This is additional water that would otherwise not have been in the system. Restrictions on licensees' ability to access the held environmental water would help ensure this water can serve its intended environmental purpose.
2	Change access rules for flows through the Barwon–Darling	In unregulated rivers such as the Barwon–Darling, commence-to-pump thresholds are the key way in which water is shared between extractive users and the environment. Changes to access rules could be either temporary (as a trial or to protect a particular flow) or permanent through a revision of access rules in water sharing plan. Changes could include: <ul style="list-style-type: none"> • review of commence-to-pump thresholds for each flow class • seasonal commence-to-pump thresholds set for wet vs dry conditions • first flush flow rule that restricts access sequentially as flow moves downstream to reconnect the system.
3	Use Individual Daily Extraction Limits (IDELs) to better manage flow sharing	IDELs are a framework which limits the daily take by individual licences. They can be used to allow flows to be better shared between users or between users and the environment. IDELs can be used as a standalone mechanism or could deliver additional benefits if combined with other tools such as trading (proposed amendments included in the Exposure Bill will enable this type of dealing) or active sharing of flows on an event basis.
4	Active sharing of flows on an event basis	Active sharing of flows on an event basis outside of the IDEL framework. This could be implemented through voluntary arrangements or a 324 order, or through sharing rules set through the WSP.
5	Use of downstream environmental requirements as a trigger to manage upstream access	This framework is currently used in some water sharing plans and is based on the downstream flow requirements in the Interim Unregulated Flow Management Plan for the North–West. This option proposes actively implementing this framework in the northern regulated tributaries and in the Barwon Darling.

Possible measures

1. Impose restrictions when held environmental water is released from an upstream storage

Environmental objectives: Designed to help protect held environmental water in transit.

This option would place restrictions on downstream licensees' ability to access held environmental water that is released from an upstream storage. This will better ensure this environmental water can move through the system so that it can achieve downstream environmental outcomes.

It is necessary because the held environmental water flowing through to the downstream unregulated water source is additional to that which would otherwise be in the system. Access rules in an unregulated river generally consider all water in-stream contributes to the total flow, and if flow is of a volume that triggers the commence-to-pump rules, licence holders can extract water. As a result, held environmental water entering unregulated systems from upstream tributaries can be extracted by licence holders, which reduces the effectiveness of this water for environmental purposes.

Implementation considerations:

- Voluntary agreements have been used in the past to manage access downstream. Ongoing use of such agreements is dependent on an environmental water holder's confidence in the success of such agreements.
- Operational protocols and guidelines would be required to ensure clarity and transparency of access, and to set out rules around the recognition of environment water downstream.
- Anticipated outcomes from the delivery of environmental water may not be realised if 'losses', as water moves through the system, are higher than expected.

2. Change access rules for flows through the Barwon–Darling

Environmental objectives: Help protect first-flush flows, improve whole-of-river connectivity and contribute to breaking extended cease-to-flow periods.

The Barwon–Darling water sharing plan sets out water access rules, including establishing flow classes that set thresholds for when access licences can take water, that is, sets commence-to-pump thresholds for all A, B and C class access licences, by management zone. This option would amend the licensed water access rules either temporarily or permanently to better manage water for the environment. Changes could include:

- **review of commence-to-pump thresholds for each flow class:** a review and revision of the current commence-to-pump thresholds could be undertaken based on the latest available information. Permanent changes could be put in place via amendments to the Barwon–Darling water sharing plan or temporary changes could be made to either implement a trial or protect a particular event. Raising the commence-to-pump thresholds would aim to provide for whole-of-river connectivity and contribute to breaking extended cease-to-flow periods.
- **seasonal commence-to-pump thresholds set for wet versus dry conditions:** as above, a review and revision of the current commence-to-pump thresholds could be undertaken, but with the aim of establishing different thresholds, which would operate in dry vs wet conditions.
- **first flush flow rule:** this measure suspends access sequentially in each management zone as a flow of a determined level moves downstream, to protect the first flush/recommencement flow following an extended low flow or cease-to-flow period. First flush rules are time/duration based and when determined, provide clear thresholds that licence holders can become familiar with at each gauging station.

Implementation considerations:

- Improvements to the water gauging infrastructure and online information systems, including increased availability of telemetry, would help to provide clarity to water users about when they can start pumping.

- Identification of the required flow to ensure re-connectivity of the system will be dependent on local conditions and may need to be actively managed for each event.
- Access rules will be needed for A, B & C class licences in the Barwon–Darling to restrict access to initial flows (for first flush rules) to reach agreed downstream flow thresholds to achieve specified environmental outcomes.

3. Use IDELs to better manage flow sharing

Environmental objectives: could be used to break extended cease-to-flow periods, whole-of-river flow connectivity and protection of held environmental water in transit.

IDELs work by capping the available water for extraction on any given day. They are mechanisms to share flows above the commence-to-pump threshold. Depending on how IDELs are distributed to individuals they can ensure the equitable sharing of flows on an event-by-event basis or they can just restrict individual access independent of flows. For example current IDELs in the Barwon–Darling Water Sharing Plan would restrict access to pre-water sharing plan pumping rates. Implementation of these may restrict an individual's access but not necessarily sharing of flows if the amount of available water above commence-to-pump is less than the Total Daily Extraction Limits (TDEL), that is a daily extraction limit for all users combined.

Greater benefits are likely to be obtained from the implementation of IDELs if they are combined with other measures including:

- **trading of IDELs**—allowing for trade of IDELs would provide a market-based mechanism for the protection of environmental flows and sharing of access above commence-to-pump thresholds. Amendment to the *Water Management Act* and individual water sharing plans are required to provide for a new dealing type and associated accounting.
- **trading of IDELs plus active sharing of flows on an event basis**—could allow for held environmental water in the Barwon–Darling and tributaries to be actively managed instream (noting operational difficulty and error margins around quantifying this volume in some instances). Implementing an active management approach would make it easier to introduce trading as each customer would be provided a volumetric share, which could be traded. Sharing of the extractive use would vary depending on each event and which tributary it originated from.

Implementation considerations:

- IDELs are enabled in the current Barwon–Darling Water Sharing Plan, however the current rules around how to distribute IDELs has unintended and perverse outcomes that would need to be addressed.
- IDELs can be implemented in other relevant unregulated water sources in accordance with the amendment provisions in those water sharing plans, TDELs would have to be established in the first instance and then the TDEL shared to assign an IDEL to each licence.
- Monitoring of IDELs requires accurate monitoring of daily extraction rates (the proposed options outlined in the *Water take measurement and metering* paper could assist with this).
- Water administration system changes would be required to support implementation of new dealing and accounting framework.
- If implementing active sharing of flows on an event basis real-time operating system would be required to monitor flows and implement actions to manage these flows. In general this is not currently in place for unregulated rivers.
- Additional telemetered hydrometrics stations may contribute to improved active sharing.

4. Active sharing of flows on an event basis

Environmental objectives: could be used to break extended cease-to-flow periods and whole-of-river flow connectivity, protection of held environmental water in transit.

This is similar to the final IDEL option above, but would be implemented outside of the IDEL framework. It could also allow for held environmental water flows in the Barwon–Darling and tributaries to be actively managed instream (noting operational difficulty and error margins around quantifying this volume in some instances). Sharing could be based solely on a licensee’s shares (e.g. announce access for all licences up to a percentage of an individual’s shares) or through a water ordering process where unregulated licence holders express interest in accessing the flows, with flows shared between those that want to take water. This measure is similar to what is in place for sharing supplementary access in the regulated rivers.

Implementation considerations:

- Monitoring required for accurate monitoring of daily extraction (the proposed options outlined in the *Water take measurement and metering* paper could assist with this).
- Active sharing of flows on an event basis would require a real-time operating system to monitor flows and implement actions to manage these flows. In general this is not currently in place for unregulated rivers.
- Additional telemetered hydrometrics stations may contribute to improved active sharing.

5. Use of downstream environmental requirements as a trigger to manage upstream access

Environmental objectives: Help protect first-flush flows, improve whole-of-river connectivity and contribute to breaking extended cease-to-flow periods.

This option is based on the approach taken in the *Interim Unregulated Flow Management Plan for the North–West*, as referenced in the water sharing plans for the regulated tributaries of the Border Rivers, Gwydir and Namoi, and the unregulated Barwon–Darling, which set targets in the Barwon–Darling system to meet minimum riparian flows, algal suppression and fish passage.

Implementation considerations:

- The downstream flow requirements will be included in the monitoring, evaluation and reporting (MER) plan for relevant water sources. These flow requirements should be reviewed over time, based on the information collected and analysed as part of this MER plan.

Consultation questions about the possible measures

- Do the measures in this paper adequately balance the needs of the environment with the needs of other water users?
- What do you see as the likely barriers to better management of environmental water, and do the measures presented in this consultation paper help to address these?
- Are there any other measures the Government should consider?
- If the measure(s) presented in this paper are implemented, what would be the likely social and economic impacts?
- Are there any practical or other issues with implementing any of the proposed measures which have not been captured in this paper?
- Do you agree that trialling measures in these priority areas is a useful approach?

- If you are a licence holder in an unregulated water system in NSW, would you be willing to participate in a voluntary agreement to limit your water extraction, either as part of a trial or pilot, or as part of an ongoing arrangement that targeted particular water flows?

Have your say

The community is encouraged to provide feedback. These responses will be due by 11.59 pm on Sunday 15 April 2018 and can be submitted in a number of ways, including:

Online: www.haveyoursay.nsw.gov.au

Email: water.reform@industry.nsw.gov.au

Website: www.industry.nsw.gov.au/water-reform/consultation

Post: Water Renewal Task Force, Department of Industry, GPO Box 5477, Sydney NSW 2001

Next steps

The NSW Government is committed to ongoing engagement with the community and business on the proposed water reform changes and to ensuring that water users and stakeholders understand the proposed measures and their potential impacts.

This consultation paper is the start of a conversation the NSW Department of Industry is having with the community on the development of water reforms in the area of better management of environmental water.

Your input on the questions throughout the paper will help to ensure that decisions about measures for better managing environmental water are well informed and consider potential impacts on water users.

Submissions received in response to this discussion paper will inform:

- further stakeholder consultation and communications
- possible legislative amendments to effect to some of the options under consideration (outlined below)
- development of the package of interim solutions being developed by the IWG
- where amendments to the water sharing plans are considered necessary to implement identified measures, consultation of these amendments will occur through the normal Water Resource Plan Stakeholder Advisory Panel consultation processes.

A summary of all community feedback provided as part of the consultation and submission process will be released by the NSW Government in the months that follow the close of the consultation period at 11.59 pm on 15 April 2018.

Proposed legislative amendments

The Exposure Bill includes amendments to the *Water Management Act* which reflect the measures proposed in this paper:

- **individual daily extraction limits**—amendments to the dealing provisions in the *Water Management Act* to enable IDELS to be assigned between access licences. This will enable IDELS to be used as market-based instruments for sharing flows above the CTP in each flow class and as such enabling protection of held environmental water. The Exposure Bill also includes amendments to allow for the assignment of an IDEL to be recorded in the water allocation account.¹

¹ Note: Implementation of IDELS in the Barwon–Darling will also require amendments to the *Water Sharing Plan for the Barwon–Darling Alluvial Water Sources 2012*, to avoid perverse outcomes associated with current distribution rules to avoid licenses being assigned a 0 ML/day IDEL.

- **mandatory conditions**—amendments to enable mandatory conditions to be imposed on access licences and approvals by regulation to limit, for environmental purposes, the take of water in specified circumstances.
- **section 324**—amendments to allow the minister to make an order for the purposes of managing water for the environment by restricting or prohibiting the taking of water from a specified water source for a specified period of time.

The feedback you provide in response to the questions in this paper will inform the content of the legislation introduced into Parliament by mid-2018.

Attachment A: What is held environmental water?

As stated, **held environmental water** is water access licences purchased for environmental use or licences for water recovered through water efficiency savings from improved infrastructure. In NSW, these licences are generally held by either the Commonwealth Environmental Water Holder or the NSW Office of Environment and Heritage.

Held environmental water represents a significant volume of water in the Northern Basin and has grown significantly since the original water sharing plans commenced (**Table 2**). Planned environmental water is more difficult to quantify.

Table 2. Growth in environmental water holdings since water sharing plan commencement Northern Basin

Source: NSW Environmental Water Register - <https://ewp.water.dpi.nsw.gov.au/ewr/main/erShSummary>, 6 March 2018

Environmental Water Holdings (unit shares)	WSP Commencement Date	Holdings at WSP Commencement	Current (as at 6 March 2018)
NSW Border Rivers	1 July 2009	0	4,243
Gwydir	1 July 2004	0	135,965
Namoi	1 July 2004	0	12,244
Macquarie	1 July 2004	0	184,387
Barwon-Darling	4 October 2012	24,073	30,170
TOTAL		24,073	367,009

Source: NSW Environmental Water Register - <https://ewp.water.dpi.nsw.gov.au/ewr/main/erShSummary>, 6 March 2018

What is planned environmental water?

As stated, planned environmental water is water that is prescribed under the rules of a water sharing plan specifically for environmental purposes. The environmental rules are designed to provide water for the environment across a range of flow events from floods to very low flows.

The environmental flow rules in water sharing plans vary from valley to valley, depending on which ecological objectives were considered most important for that valley. Management rules in regulated river systems have a lot of flexibility because of the ability of the major storages to provide for environmental flow management. Therefore rules may include controls on extractions under certain conditions as well as management of dam releases.

Flows in unregulated rivers can only be protected through controls on extraction. In most unregulated rivers, it is during drier periods when flows are naturally low that there is generally greatest concern for the health of the river. This is when pools contract, water quality deteriorates rapidly, algal blooms occur, oxygen levels decline and fauna compete for the reducing food supplies.

The range of rules which may apply are set out in **Table 3**.

Table 3. Examples of surface planned environmental flow rules

Environmental flow rules	Purpose	Applicability
Extraction limit	Sets a limit on the long-term average annual volume of water that can be extracted, thus protecting the major share of water for the environment.	Regulated rivers Unregulated rivers
End-of-system flow	Requires a flow to be achieved at the end of the river system (this may be specific to certain times of the year). This ensures that flow is maintained below the areas of major extraction. In regulated systems this can be achieved by using releases from storage to supplement natural flows. In unregulated systems this can only be achieved when there is flow in the system.	Regulated rivers Unregulated rivers (limited)
Transparent dam release	Requires all dam inflows occurring at certain times to be passed immediately downstream, as though no dam was present. This maintains natural flow variability for that part of the year (usually the winter months) when dam releases would otherwise be minimal.	Regulated rivers
Translucent dam release	Requires a proportion of dam inflows occurring at certain times to be passed immediately downstream. This restores the natural flow variability associated with specific flow ranges, usually freshes and minor floods.	Regulated rivers
Limits on taking high flows	Limits pumping when the dam spills (regulated rivers) or high flows enter the river from tributaries. This protects either some or all of these naturally occurring high flows which are important for flooding of wetland areas.	Regulated rivers Unregulated rivers
Limits on taking low flows	Limits pumping from lower flows that enter the river from tributaries. This ensures that sufficient water is retained in the river for the environment.	Regulated rivers Unregulated rivers
Supply minimum flows downstream of dam	Minimum release to maintain continuous low flow in the section of river immediately downstream of the dam wall.	Regulated rivers
Environmental water allowances or releases	Creates a 'bank' 'bank' or volume of water stored in the dam which that can be released for specific environmental purposes, such as flushing blue-green algal blooms, reducing salinity or supporting bird breeding or fish spawning events.	Regulated rivers

Attachment B: What existing tools can be used to better manage environmental water?

- **Section 324 orders**—this provision under the *Water Management Act* allows the minister to implement temporary water restrictions that restrict or prohibit the taking of water from a specified water source for a period of time if these restrictions are determined to be in the public interest. Use of section 324 orders would generally be used by exception where other tools may not be available.
- **Voluntary agreements**—agreements that are negotiated with individual access licence or approval holders to achieve specific environmental outcomes. These agreements require parties to act in good faith and are not enforceable under the *Water Management Act*. These agreements can be arranged independently by environmental water managers, if necessary, in conjunction with any approach used.
- **Mechanisms and rules in water sharing plans**—rules and/or mechanisms that can be implemented either under current WSP provisions or through plan amendments. Rules that relate to management of environmental water may include:
 - **TDELS and IDELS**—all unregulated river WSPs allow TDELS and IDELS to be imposed. TDELS and IDELS are a form of extraction component; daily extraction limits are intended as a way to share access to particular flow events between licensees and the environment, in addition to the commence-to-pump levels. The framework for TDELS and IDELS exists in most water sharing plans, but most would require amendments to the water sharing plans to enable implementation.
 - **Environmental flow rules**—such as rules that establish sharing arrangements between the users and the environment through the establishment of flow class and commence-to-pump rules, and/or rules that implement the Interim North–West Unregulated Flow Management Plan (see **Attachment A** for further examples of environmental water rules).
- **Water buybacks/conversions**—this involves the purchasing of licences or share components that may be deemed important for achieving desired environmental outcomes.

Attachment C: Other factors which can support better management of environmental water

The measures considered in the paper will be more effective should other improvements be put in place. Implementation of such improvements will be considered over the long-term, although most of these could be fulfilled sufficiently to undertake trials of measures in the short-term.

Table 4. Factors that contribute to improved environmental water management

Factor	Description
Transparency	Providing better and more transparent information about how environmental water is managed will be key to rebuilding public trust and confidence.
Strong and transparent regulatory and compliance framework	The establishment of the Natural Resources Access Regulator and the proposed metering reforms, will contribute to an improved regulatory and compliance framework.
Monitoring, evaluation and reporting of outcomes	Monitoring, evaluating and reporting on outcomes achieved is important for supporting adaptive management and decision-making about possible long-term solutions, i.e. to know what works and what doesn't. Monitoring and evaluation plans are being developed across the Basin.
Flow forecasting and event tracking	Forecasting flows and tracking events will help with both communication efforts and monitoring, evaluation and reporting. It is critical to inform the implementation of measures which manage water for the environment and flow sharing.
Improved measurement and contemporary information capture, including real-time operational systems	Use of more contemporary technologies, including telemetry could help improve data capture on water take and river gauging. Ideally, real-time operational systems would be in place to monitor flows and implement actions to manage these flows. Better infrastructure that supports increased levels of metering could help feed into an improved understanding of water take and better hydrometric networks to facilitate more effective monitoring of flows as they move through the system.
Accounting for environmental water	To allow for environmental water to be debited from accounts and to report on where environmental water was delivered, there needs to be rules that are agreed, transparent and consistently applied.
Improved modelling capability	Improved modelling capabilities are being progressively delivered as part of the eWater Source platform. The new model platform provides an improved ability to model connectivity across water sources and provides an important tool for analysing different scenarios for environmental water management. The new models will also be more accurate for compliance purposes, using updated flow and water usage information.

NSW WATER REFORM ACTION PLAN

Water take measurement and metering

Consultation paper

Published by NSW Department of Industry

Water take measurement and metering—consultation paper

First published March 2018.

More information

NSW Department of Industry—Lands & Water

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Introduction

Water is one of the most important natural assets in New South Wales (NSW). The community, businesses and the health of the environment all rely on our surface and groundwater.

In December 2017, the NSW Government released the Water Reform Action Plan in response to the *Independent investigation into NSW water management and compliance*, conducted by Ken Matthews, AO (the Matthews Report) and the *Murray–Darling Basin Water Compliance Review* (the MDB Compliance Review).

The plan will deliver on the state's responsibility to ensure we have an equitable and transparent approach to water management for current and future generations.

As part of the plan, the NSW Government has released three consultation papers for community input on:

- Water take measurement and metering (this document)
- Transparency measures
- Better management of environmental water

The NSW Government seeks to implement a robust framework to measure and meter water take, that meets the objective of 'no meter, no pump'. This paper seeks your views on particular aspects of this framework and the way in which it may be rolled out. In particular, the NSW Government recognises that it is impractical to immediately implement new statewide metering requirements, as it will rely on the market quickly responding to increased demand for meters.

Why do we need to measure and meter water take?

There are 40 water catchments across NSW which are critical to the social, economic and environmental wellbeing of the state.

The NSW Government has implemented a water-sharing framework across these catchments that includes water-sharing rules. These rules ensure water is shared sustainably and equitably between the environment and water users, including urban and rural communities, agriculture and other industries.

To support this framework, it is important that water taken is accurately and reliably measured and recorded. Accurately measuring water take provides benefits to communities, businesses and the environment:

- **Communities:** for the community as a whole, accurately measuring water take will contribute to a number of benefits. It can reduce overuse of water, increase water available to downstream users, ensure transparency and equity in how water is shared, allocated and managed in NSW, improve river operations and give greater confidence that water is being taken according to legal frameworks and licence conditions. It also ensures users who take water are properly charged for their take.
- **Businesses:** accurately measuring water take will help demonstrate that the majority of water users comply with the rules. Accurate water measurement can also provide important information to manage pump performance, irrigation system performance and farm water use. It can help measure water efficiency gains and allow businesses to more confidently participate in the water market.
- **Environment:** accurately measuring water take can help ensure that water take complies with any requirements put in place to better manage environmental water.

Accurately measuring water take is critical to maintaining the value and integrity of the water-sharing framework.

This paper applies to water which is taken from regulated rivers, unregulated rivers and groundwater systems under a licence and can be measured with a meter. Water will be measured at the time it is taken from the water source, and not at the time it is used by the licence holder. The section 'Type of water take not covered by this paper' sets out the water take that this paper does not apply to. All references to 'meters' in this paper refer to non-urban meters.

Background

Since 2009, water metering has been guided by the National Water Initiative, the National Framework for Non-urban Water Metering and the NSW Interim Water Meter Standards.

There are a number of meters across NSW in many irrigation communities. However, the standard of meters and their distribution is not uniform across the state, with limited metering in northern NSW and greater meter coverage in the south.

In 2014, as part of Murray–Darling Basin (MDB) Plan commitments, the NSW Government agreed to specify measures for maintaining and, if practicable, improving water take measurements and standards in water resource plans.¹

To inform the implementation of this, the NSW Government released a discussion paper for public consultation² on a draft water take measurement policy in 2015.

More recently, the Matthews Report and the MDB Compliance Review have highlighted the need for a more comprehensive and robust metering framework, and for further consultation with the community.

Both of these documents made consistent recommendations to implement a ‘no meter, no pump’ policy. The Minister for Regional Water has committed to making installation of meters for all large users a top priority and to implementing the ‘no meter, no pump’ objectives in a staged process based on risk.

What licences and approvals do you need to take water?

To take water in non-urban areas, generally three licences or approvals are needed:

- A water access licence entitles the holder to shares in the available water and also sets out the circumstances in which water can be taken and the locations from which water can be taken
- A water supply work approval authorises the holder to construct and use infrastructure to take water at a specified location, and
- A water use approval authorises the holder to use water for a particular purpose at a particular location.

How do different types of meters work?

Water meters quantify the volume of water flowing through a conveying work. A conveying work is generally an enclosed pipe, but may also include open channel type structures.

There are three standard types of water meters:

- mechanical—these use a rotating turbine, paddle wheel or propeller to measure the amount of water flowing through a pipe. These meters are considered an older technology
- ultrasonic—these use sound waves to measure the amount of water flowing through a pipe
- electromagnetic flow—these use electricity to measure the amount of water passing through a pipe.

Further information on water meters is in Attachment A.

Meter coverage

The extent of metering in NSW varies across the state, depending on geography (inland and coastal) and the water system (groundwater, regulated and unregulated rivers). Generally, metering in NSW:

¹ *Basin Plan 2012* (Cth), s10.45.

² Department of Primary Industries – Water (2015), *Discussion paper – Water take measurement in NSW, a way forward*.

- is not comprehensive—metering policies have been inconsistently applied and government-sponsored metering programs have clustered in the southern areas of the state
- does not meet consistent standards—not all meters meet the Australian standard.
the proportion of metering is highest in regulated systems and lowest in groundwater coastal and unregulated systems.

Objectives

The options in this paper seek to ensure that:

- the take of water can be accurately and reliably determined
- meters used to measure water take are auditable, verifiable and accurate
- data from meters can be easily communicated to relevant authorities
- mandatory requirements and resources are targeted to higher risk users, that is, those that have a greater capacity to take water and high risk water systems
- the benefits of water measurement (including risk management benefits) outweigh the costs
- the framework is simple to understand, comply with, administer and enforce.

Consultation question

- What, if any, additional objectives should be considered?

Consultation topic 1: When should a meter be required?

The NSW Government has committed to implementing a ‘no meter, no pump’ approach. All new water licences and approvals could be required to have a meter. For existing licences, this section presents a number of approaches for when meters could be required. We seek your views on these approaches.

The NSW Department of Industry (the department) engaged an independent consultant, Aither, to conduct a preliminary economic analysis of metering thresholds based on the risks and costs of metering. The consultant’s preliminary analysis has informed the options presented in this paper. The department recognises that there are limitations in the data available and further analysis will be required to inform the settled policy.

Option 1: No meter, no pump (‘universal’ metering)

The Matthews Report and the MDB Compliance Review recommended a policy of ‘no meter, no pump’ across NSW. However, both reports recognised that this should not cover 100% of water take. For example, the MDB Compliance Review considered a metering target of 95% per water resource area for meterable take would meet the no meter, no pump principle, while avoiding undue cost burdens on small entitlement holders.

Preliminary analysis indicates that metering 100% of water use would come at a very high cost. For users with very small and/or occasional water extractions, the costs of metering may outweigh the benefits.

In NSW a large proportion of water is extracted by a small proportion of water supply works. This means that most water use can be covered by metering a modest number of water supply works:

- metering 20% of water supply works would cover around 78% of water use
- metering 30% of water supply works would cover around 87% of water use
- metering 46% of water supply works would cover around 95% of water use.

The remaining 54% of water supply works are attached to licences with small share components. This is illustrated in Figure 1. Metering these last 54% of works to achieve universal metering would increase coverage of water use by only 5%, and would nearly double the cost.

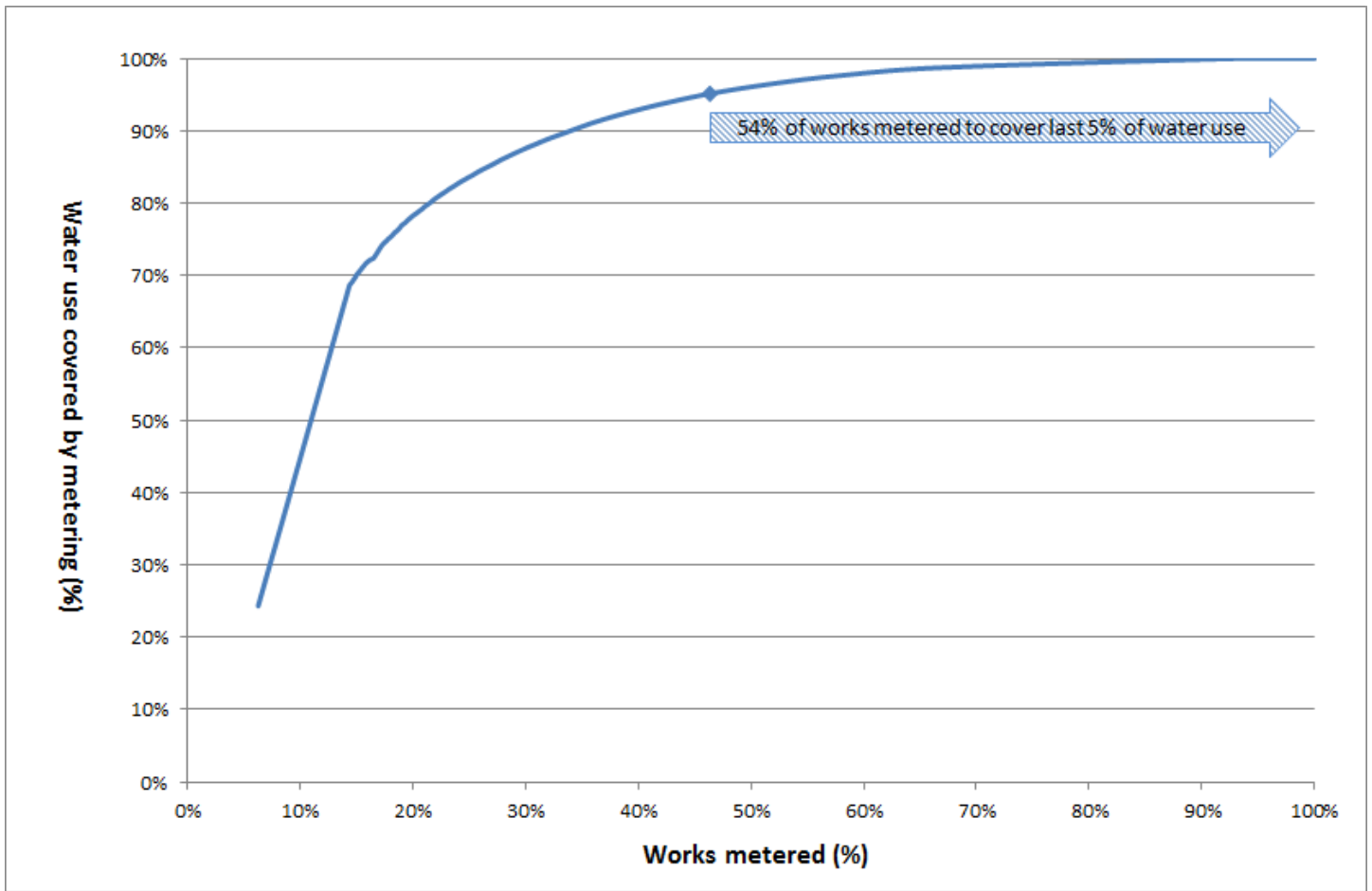


Figure 1. Proportion of water use compared to water supply works

Consultation questions

- Should every water user be metered, or should thresholds apply?

In order to balance the costs and benefits of metering, we have examined the potential for setting thresholds, above which all licensed water users would be required to have a meter. In line with our key objectives, the thresholds proposed are linked to the risks metering can mitigate:

- risks posed by individual water users—based on the capacity of individual water users to extract water (that is, large extractions impose a higher risk)
- risks associated with particular water sources, such as environmental and socio-economic risks, which may vary by water source.

There may be scope for different thresholds to be set for different water sources and/or for tiered thresholds to be set.

Option 2: Water share component

In NSW, the taking of water from a water source, such as a river or aquifer, requires a water access licence (unless otherwise exempt). Water access licences define the number of shares a licence holder holds in the available water in a water source.

The threshold for when a meter is required could be linked to a licence holder's share component, which is the number of shares they hold in a water source at any time.

The benefit of this approach is that it is a proxy for capturing the relative risk that the individual licence holder poses to the water source. It does this by linking the capacity of water a licence holder may legally take to the need for a meter, relative to other licence holders in the region or water system.

However, shares can be traded, so the number of shares attached to a licence can fluctuate. In addition, some licence holders can have water entitlements, but without any linked works approvals for infrastructure to extract this water.

Conversely, licence holders may sell their shares in some years and pump water in others. In such cases, a user may have a low number of shares, but a large pump. This could still present a compliance risk, as they would have the physical capacity to take water, despite not being legally entitled to do so.

What should the threshold be?

There could be a single threshold applied across the state. However, a statewide approach does not capture a consistent proportion of water users across NSW. For example, Table 1 shows that while setting the threshold at 370 shares captures 84% of users across NSW, only 47% of coastal groundwater users are captured.

Alternatively, the thresholds could vary by water source and location. For instance, to capture approximately 75% of the water use in each system, the threshold could be:

- 97 shares for all coastal regions
- 370 shares for inland groundwater and unregulated systems
- 5,800 shares for inland regulated.

Table 1. Thresholds based on licence share components

Region	System	5,800 shares		370 shares		97 shares		5 shares	
		Water use covered	Works metered	Water use covered	Works metered	Water use covered	Works metered	Water use covered	Works metered
NSW	All	54%	10%	84%	25%	94%	43%	100%	91%
Coastal	Regulated	6%	2%	51%	18%	86%	44%	100%	89%
	Unregulated	30%	2%	46%	5%	74%	21%	100%	89%
	Groundwater	16%	0%	47%	7%	78%	25%	100%	91%
Inland	Regulated	76%	38%	96%	57%	99%	70%	100%	93%
	Unregulated	37%	3%	78%	14%	91%	32%	100%	93%
	Groundwater	15%	3%	79%	34%	95%	57%	100%	92%

Consultation questions

- Should the metering threshold be linked to a licence holder's shares in a water source?
- What is a reasonable threshold to set?
- Should there be a different threshold for groundwater, regulated rivers and unregulated rivers?

Option 3: Infrastructure size

Metering requirements could be linked to the size of the infrastructure a licence holder uses to take water.

The benefit of this approach is that the metering requirement is linked to a licence holder's physical capacity to take water.

Ultimately, the infrastructure, or size of the pipe will constrain the volume of water that can be taken. In NSW, a landholder will generally be approved to install a certain size pump on their property. The pump size will relate to the size of the pipe. The threshold could then be linked to the size of the pump.

However, linking the threshold to pump size may not allow the regulatory framework to keep up with technology. In NSW the size of a pump is used as a proxy to estimate the capacity of the pump. Pumps have become more efficient over time and this trend is likely to continue into the future. Even with existing technology, two pumps of the same size might have different capacities.

In addition, it may be difficult to capture licence holders that have multiple pumps on the one property, which may be approved via different works approvals. In this circumstance, each individual pump may fall below the threshold, but the combined capacity of each pump will meet the thresholds. We seek your views on how to overcome this issue.

What should the threshold be?

As above, a state-wide threshold will disproportionately capture more inland regulated users at each threshold. Table 2 sets out indicative thresholds. For example, at a threshold of 251 mm pumps or 474 mm bores, only 9% of regulated coastal water use would be captured.

To capture at least 80% of use in each region, the following thresholds could apply:

- 110 mm pumps or 270 mm bores for inland regulated and unregulated systems, and
- 47 mm pumps or 152 mm bores for inland groundwater sources and all coastal water sources

Table 2. Thresholds based on pump/bore size (mm)

Region	Threshold System	500/759 mm pump/bore		251/474 mm pump/bore		110/270 mm pump/bore		47/152 mm pump/bore	
		Water use coverage	Works metered	Water use coverage	Works metered	Water use coverage	Works metered	Water use coverage	Works metered
NSW	All	41%	15%	52%	21%	73%	35%	97%	91%
Coastal	Regulated	6%	2%	9%	2%	29%	12%	94%	87%
	Unregulated	7%	3%	11%	3%	19%	8%	94%	87%
	Groundwater	29%	24%	30%	24%	34%	27%	87%	83%
Inland	Regulated	59%	37%	72%	52%	95%	75%	100%	98%
	Unregulated	45%	7%	61%	12%	81%	33%	99%	93%
	Groundwater	5%	12%	12%	17%	36%	36%	90%	91%

Consultation questions

- Should metering be linked to the size of the infrastructure that takes water? If so, what size thresholds should apply?
- Should there be different thresholds for inland and coastal regions? for regulated, unregulated and groundwater sources?
- How do you capture multiple works which effectively belong to one user?

Option 4: Risk of water sources

Metering requirements could be linked to risks associated with a particular water source. For example, if competition for water is high due to scarcity or high value of production in a particular water source, there may be greater risk of non-compliance with licence requirements. Similarly, over-extraction would pose a greater environmental risk in water sources with high ecological value.

Under this option, all water users captured under 'high-risk' water-sharing plans would be required to install and maintain a meter.

Preliminary analysis has indicated that 25 of the 57 water-sharing plan regions could be considered as high risk. These regions were identified through various processes:

- **regulated and unregulated rivers:** a high level risk assessment was undertaken of regulated and unregulated rivers. The risk assessment considered the competition for water, the value of production and an assessment of the ecological value in each water source. A summary of the approach to the assessment is in Attachment B.
- **groundwater:** the groundwater sources that were identified as high risk for inland regions were those that are at risk of over-extraction. Further information on this is in Attachment B. The risk assessment for coastal groundwater sources is ongoing. Usage is not known in these sources because of the low meter coverage. There are a number of coastal groundwater sources that are likely to be at risk of over-extraction.

Further work is underway to refine the assessment of risks associated with metering and ensure greater consistency across water sources.

Table 3: High-risk water-sharing plan regions—Preliminary analysis

Column 1: Unregulated inland	Column 2: Unregulated coastal	Column 3: Regulated	Column 4: Groundwater (inland)
<ul style="list-style-type: none"> • Barwon-Darling Unregulated Rivers • NSW Border Rivers Unregulated water sources • Castlereagh River Unregulated water sources • Macquarie Bogan Unregulated water sources • Murrumbidgee Unregulated water sources • Namoi Unregulated water sources • Peel Valley Unregulated Water 	<ul style="list-style-type: none"> • Bega and Brogo Rivers Unregulated water sources • Central Coast Unregulated water sources • Clarence River Unregulated water sources • Greater Metropolitan Region Unregulated water sources • Hunter Unregulated water sources • Lower North Coast Unregulated water sources • Macleay Unregulated water sources • Richmond River Unregulated water sources 	<ul style="list-style-type: none"> • Gwydir Regulated River • Macquarie and Cudgegong Regulated Rivers • Lachlan Regulated River/Belubula Regulated River 	<ul style="list-style-type: none"> • Lower Lachlan Groundwater Source • Upper and Lower Namoi Groundwater Sources • Lower Gwydir Groundwater Source' • Murrumbidgee Alluvial Water sources • Macquarie Bogan Alluvial Water Source • Lower Murrumbidgee Groundwater sources

The benefit of this approach is that take from the highest risk water sources would be closely monitored and regulated. However, this approach may not be able to be used in isolation. For example, it may not capture licence holders in lower risk areas that are large users and therefore pose a significant risk regardless of the water source.

In addition:

- the risk assessments may not be comparable across regions or water sources, and risks can change over time. The risk assessment would need to be periodically reviewed
- the risk assessment is a complex process and as a result it may be difficult to reach agreement on how to assess risks
- it is resource intensive, particularly if risks need to be regularly re-assessed
- there may be limited certainty for water users who may fall in or out of the system over time as risks change.

Consultation questions

- If a risk approach is adopted, should other types of risks be considered in the analysis?
- Should exemptions be applied to this approach? If so, how would we capture these users?

Option 5: combination of infrastructure, water shares and risk of water sources

The threshold could be linked to a combination of options 2–4. For instance, a licence could be required to have a meter if any of the following conditions are met:

- they are located in any of the regions listed in Table 3 above, or
- have a share component of 97 shares or more at any time, or
- have a pump size of 110mm / bore size of 270mm or larger.

The requirement would need to select the appropriate combination of risk, shares and infrastructure size.

The benefits of this option are that:

- it tailors metering requirements to the risk characteristic of a water user or a water source
- the threshold does not rely on one factor that could be subject to change over time (such as the efficiencies of pumps or the risks associated with individual water sources).

However, this option may be more complex for water users and the community to understand and may require more resources to administer and enforce.

Consultation questions

- Should metering be linked to a combination of infrastructure, water entitlement and risk of water sources?
- What is a reasonable combination of thresholds?

Consultation topic 2: What type of metering equipment and reporting will be required?

Currently in NSW, some water-sharing plans include requirements for metering. These requirements vary considerably depending on the water source, age of the water-sharing plan and individual water licence conditions.

Where metering rules are in place, they require installed meters to be pattern approved with data logging capability and to be compliant with Australian Standards. This requirement has been set by the NSW Interim Water Meter Standards, in accordance with the 2009 National Framework for Non-urban Water Metering.

Where a meter is not installed or is installed but does not include data logging capabilities, water take measurement must be recorded in a logbook and kept for five years.

Proposed future metering requirements

The principle underlying the metering requirements is that all meters should be **accurate, verifiable and auditable**.

To achieve this, it is proposed that all meters in New South Wales should meet the following requirements:

- **Accuracy:** meters must meet the Australian Standard 4747 Meters for non-urban water supply. This standard focuses on the accuracy of meters
- **Pattern approved:** all meters must be pattern approved. Pattern approval means the design of these meters has been verified by the National Measurement Institute (NMI) to meet national metrological specifications. There may not currently be pattern approved models for every type of meter, such as open channel meters. Interim arrangements may need to be developed for these meters until the market responds.
- **Installation and validation:** meters must be installed correctly. The NSW Government will develop an installer accreditation and competency framework with which all meter installers will be required to comply. While this is being developed, all meters must be installed or recertified by a Certified Meter Validator which appears on the Irrigation Australia Meter Validator/Installer list (see www.irrigationaustralia.com.au).
- **Seals:** all meters must have tamper-proof seals.
- **Maintenance schedule:** meters must be maintained by an accredited installer every five years. This ensures that meters are maintained to an acceptable standard and remain accurate.
- **Data capture:** the meter must have the capacity to record: volumetric flow rate and the date, time and duration of water taken. Data loggers allow for this data to be captured. This is important for the data to be auditable and verifiable.
- **Transmission of data:** it is proposed that all meters have telemetry, or some mechanism that allows for the information captured by the metering equipment to be remotely collected by WaterNSW and reviewed by regulators. The costs of telemetry have decreased over recent years, and many water users may use telemetry for other parts of their business.

Metering data needs to be collected by WaterNSW and reviewed by the Natural Resources Access Regulator (NRAR) at regular intervals and with sufficient precision for water management and billing purposes, and to allow breaches of compliance to be investigated.

As part of its compliance program, NRAR will audit compliance with metering requirements.

The department will also seek information from the market on techniques available to improve remote access to water data information, which will include telemetry. Further information on this technology challenge will be communicated shortly.

Consultation questions:

- Are the proposed metering requirements practical and effective?
- Should existing non-pattern approved meters be replaced with pattern approved meters?
- Are there any barriers to entry into the pattern approved meter market?
- Is telemetry practical in all situations? If not, please provide details of any constraints.
- Are there any other complementary measures that if implemented would encourage compliance with the metering requirements?

Self-reporting

Log books will be phased out

In NSW, if a licence holder does not currently have a meter or their meter is not connected to a data logger, any water taken from a water source must be estimated and recorded through a log book. There is limited scope for logbooks to be audited and the Matthews Report recommended that all scope for self-reporting be removed.

The NSW Government supports this position in principle and proposes to phase out log books. However, self-reporting may need to continue in limited circumstances. Any self-reporting will need to:

- be recorded at the same time (or within a reasonable timeframe) as the water take
- specify the purpose the water is taken for.

One option may be to require self-reporting through a digital online portal.

Consultation questions

- What is a reasonable time frame for self-reporting?
- Are there any additional criteria that should be applied to self-reporting?

When will self-reporting be permitted?

It is proposed that self-reporting is only permitted in certain circumstances:

1. Where the water user is not required to have a meter

Water users who are not required to have a meter will be able to self-report. This will include water users that fall below the metering thresholds or water users not captured by this paper. This would include water taken under:

- basic landholder rights
- floodplain harvesting.

2. When a water meter is not working

Currently, Section 91I of the *Water Management Act 2000* allows for a licence holder to take water when the meter is not operating properly, if they are authorised in writing to take water. There are concerns that this authorisation can take a significant amount of time to process and cannot be issued outside usual business hours.

To address this, it is proposed that water users can take water for a defined period, subject to the following conditions:

- The licence holder notifies the authority within 24 hours of becoming aware the meter is faulty and provides details of why the meter may be faulty
- The water user complies with any written direction requiring alternative water measurement methods to be used

- Records are kept of how much water is taken, the purpose for which the water is taken and the size of the pump or infrastructure used to take the water
- The faulty metering equipment is repaired within 21 days or another time frame authorised by the authority
- The licence holder provides evidence of how much water was taken, which could be by presenting energy data or fuel use.

We seek your views on whether these requirements balance the need for accurate measurement of water take, with the need for water users to maintain their meters and the practical issues businesses face when meters develop a fault.

3. When the licence holder has been given express permission in writing to self-report

This could be in instances where the meter needs to be taken off site for testing or recalibration.

Consultation questions

- Are there any other circumstances when self-reporting should be permitted?
- Are the proposed requirements around faulty meters practical?

Consultation topic 3: How should the metering requirements be rolled out?

It is impractical to immediately implement new metering requirements state-wide. Issues to consider include the availability of meters that can meet the required standard (that is, pattern approved) as well as the availability of suitably trained installers. Rolling out metering requirements in stages will have additional benefits by providing an iterative approach in which 'lessons learned' in one stage can be applied to later implementation stages.

The Minister for Regional Water has committed to a staged approach to rolling out metering requirements, with large users and high risk areas top priorities. The threshold options outlined in this consultation paper will help assist in identifying what a 'large user' means.

Why can't new metering be implemented immediately?

The proposed metering requirements will significantly increase demand for pattern-approved meters in NSW. A key issue is whether there will be enough pattern approved meters on the market, and certified installers to meet this demand.

Currently, there may not be a sufficient supply of pattern approved meters to meet the initial demand, and there are a limited number of Certified Meter Validators/Installers that reside in NSW.

Imposing a mandatory metering requirement through legislation will send a signal to the market. It is expected the market will respond to this and meet the future demand for meters.

The NSW Government will work with Irrigation Australia and other relevant providers to increase the number of Certified Meter Validators/Installers to meet the expected demand.

Consultation questions

- Will staging implementation be sufficient to address the supply of meters and certified installers?
- Are there any other market barriers that should be considered?
- Will manufacturers of pattern approved meters have the capacity to produce enough meters to meet the demand?
- Will the market signals be strong enough to encourage other manufacturers to seek pattern approval?

When would metering requirements be imposed?

It is proposed that the metering requirements are implemented in three stages:

- **Stage 1: 2019–20:** large users and selected high risk areas. Selected areas could be unregulated inland water sources.
- **Stage 2: 2020–22:** other high risk areas.
- **Stage 3: 2022–24:** the rest of the state

Consultation questions

- Are these timeframes achievable?
- Should the staging be based on the size of user and risk of region?

What are large users?

It is proposed to define large users as those falling within the top 20% of any metering threshold.

Consultation questions

- Is this an appropriate way to categorise “large users”?

What are high-risk areas?

High-risk areas are proposed to be inland unregulated regions where there are high risks to the ecology, high competition for water and high value of production.

Inland unregulated rivers are considered the highest risk relative to other water systems, because these systems have:

- **a low proportion of meters**—unregulated rivers have a low proportion of meters.
- **water is less reliable**—the amount of water that can be taken from an unregulated river is considerably less reliable than regulated rivers as they do not have a regulated flow.
- **competition between water users**—generally there are more users seeking to take water from inland water sources than coastal water sources. Where there is greater competition for water or a water user is taking more than their entitlement, it is likely to impact a larger number of other water users.
- **community confidence**—following the Four Corners’ report into water management in NSW airing in July 2017, there is less confidence in the management of water in inland unregulated systems. Focusing the first stage in these regions will help rebuild community confidence and a social licence for businesses in these regions.

The six water-sharing plan regions this would apply to are set out in Table 3 (column 1 unregulated - inland).

However, there may also be a case to include certain coastal and groundwater water sources in the definition of ‘high-risk areas’ because:

- there has historically been very low meter coverage in coastal regions, and
- over 60% of groundwater is taken from four groundwater sources.

Regulated systems are not intended to be defined as ‘high-risk’ because there is a larger proportion of metering in regulated systems and more certainty over water availability.

Consultation questions

- Do you agree that inland unregulated water sources should be prioritised?
- Should any groundwater and coastal water sources be considered as ‘high-risk’?
- Are there any other priorities that should be considered?

Consultation topic 4: Who should own meters?

The principle is that users will pay for the costs of installing and maintaining meters. This was recommended by the Matthews Report and has been accepted by the NSW Government.

The costs of meters vary by size, and location. As a broad estimate:

- the cost of meters can range from \$2,000 for small meters to over \$10,000 for larger or bespoke meters
- telemetry can cost approximately \$2,000 when installed with a new meter, or approximately \$12,000 when retrofitted to existing meters
- stock fences may cost in the order of \$1,500
- installation costs can vary from \$5,000 for standard small meters, to over \$40,000 for larger or complex installations.

Ownership

Currently, ownership of water meters in NSW is shared between WaterNSW and individual licence holders.

Precedents exist for both private and government ownership of meters throughout Australia. We can also look to other, similar industries, such as electricity, gas and urban water to examine the pros and cons of each approach when considering which model to adopt. Attachment C provides a summary of the meter ownership models in other jurisdictions and industries.

We seek your views on whether future meters should be owned:

- by government
- by individual licence holders, or
- mixture where:
 - all meters are owned by government unless licence holders request to own their own meters; or
 - smaller meters are owned by government, with larger meters owned by licence holders.

Option 1: Government ownership

Government ownership of meters would involve government coordinating the installation and maintenance of the meter infrastructure.

This is the model used in the metropolitan water supply industry, where Sydney Water Corporation and Hunter Water Corporation own and are responsible for installing and maintaining water meters. However, the key difference between metropolitan and regional water metering is:

- the concentration of meters in metropolitan areas
- there is less variation in water users and their metering needs, and
- the meters are generally connected to government-owned infrastructure.

Benefits of government ownership include:

- **Market certainty**—suppliers would have certainty about the demand for meters in a given period. This would help ensure a sufficient supply of meters and a more efficient roll-out
- **Costs**—water users would not face high up-front costs associated with purchase and installation of new meters, as costs would be recovered over time through water charges. However, this could be the case regardless of ownership

- **Coordinated program**—government will be able to roll out a coordinated program and there will be efficiencies of scale

Potential disadvantages of government ownership include:

- **Complicates compliance**—there may be a public expectation that the onus to maintain meters and report defects is on the government and not the water user, despite regulations in place
- **Limited consumer choice**—as meters installed will be bulk purchases and customers will have limited ability to tailor the meter to their individual business requirements
- **May stifle innovation**—if a particular technology is chosen
- **Costs**—shifts business cost of compliance from the user to government. In addition, government bears the risk of funding the costs of the meter if the expenditure cannot be recovered from the water user

Option 2: Private ownership

Private ownership of meters would involve licence holders owning, installing, validating and maintaining meters in accordance with guidelines or regulations. This is the model used in South Australia which has the highest metering rate of the Murray–Darling Basin states, with around 96% of surface water take and 88% of groundwater take currently metered.

The benefits of private ownership are:

- **Greater customer choice**—licence holders will have the flexibility to tailor their meters to their needs subject to the minimum requirements for meters. For example, larger businesses may choose to invest in more sophisticated technologies that allow them to access data that can be used to inform and improve their business operations
- **Clear compliance responsibilities**—there would be greater clarity on responsibility for maintaining meters with all requirements relating to meters falling on the licence holder
- **Costs**—the decisions surrounding the costs of installing and maintaining meters lies with the individual or business that benefits from the water take.

Potential disadvantages of private ownership include:

- **Upfront costs**—there may be a significant upfront investment from licence holders to pay for meter installation which could be prohibitive for smaller businesses. This could be addressed by the market, or government:
 - the market may respond by establishing metering lease arrangements, similar to the solar panels market where customers can choose to buy or lease solar panels
 - the NSW Government is exploring options for how the barrier of upfront costs could be addressed. This could include low interest loans and/or recovery of costs through IPART water pricing determinations
- **Reduced visibility**—while metering and installation standards will be mandated by government, there will be less government visibility over the installation and maintenance of meters. The correct installation and maintenance of meters is critical to ensuring meters work effectively. However this could be addressed through regular audits of the installation and maintenance of meters.

Option 3: Mixed ownership model

Under a mixed ownership model, government could coordinate the installation and maintenance of meters, however customers will have the option of opting out and installing their own meters. The costs would be recovered from users over time through prices or other charges determined by IPART.

Alternatively, a mixed model may be that large users own their own meters and government coordinates the installation and maintenance for smaller users.

The benefits of mixed ownership are:

- **Greater flexibility**—water users would have greater flexibility to tailor their meters to their individual business requirements
- **Efficiency of scale**—this option may allow for efficiencies of scale with government coordinating meter installation (depending on the uptake).

Potential disadvantages of mixed ownership include:

- **Complex pricing**—a mixed ownership model may complicate the meter ownership arrangement in NSW and the ability to recover costs through IPART water pricing determinations.

Consultation questions

- Should meters be owned by government, licence holders, or both?
- Is the market likely to respond with creative solutions to the increased demand for meters?

Water take not covered by this paper

This paper is focused on how best to implement the 'no meter, no pump' objectives identified in both the Matthews Report and the MDB Compliance Review.

With this focus in mind, the options in this paper apply to water which is taken from regulated rivers, unregulated rivers and groundwater systems under a licence and can be measured with a meter

This paper does not apply to circumstances which are already captured through other regulatory processes or are being considered as part of other consultation processes, which includes:

1. Water taken under **Basic Landholder Rights**

- Basic landholder rights allows water to be taken for stock and domestic purposes, harvestable rights (water that runs off a property and is stored in a dam) and water taken as part of an individual's Native Title Rights.
- Sections 52 to 55 of the *Water Management Act 2000* exempt water users from the need to hold certain licences or approvals for water taken under some Basic Landholder Rights.
- Reasonable Use Guidelines will be developed to provide guidance on how much water can reasonably be taken under basic landholder rights. We intend to talk to stakeholders about these guidelines in 2019.

2. Water taken from internal infrastructure within **irrigation corporations, private irrigation districts, trusts and urban water supply systems**

- This water take is already metered at the point where the water enters the corporation/district/trust or urban water support system.

3. Water taken from a water source under a **floodplain harvesting** access licence

- Floodplain harvesting measurement and monitoring is being consulted on as part of the Implementing the NSW Floodplain harvesting policy.

4. **Environmental water, unless it is taken via a pump**

- Because of the way in which environmental water is used (for example, allowing water to flow through the system to improve whole-of-river connectivity), it is generally not extracted from a single point that could be metered.
- This paper will apply to environmental water which can be measured 'conventionally' using a pump and meter.

5. **Some State Significant Development (SSD) and mining and gas activities**

- This paper will not apply to instances where water take cannot be measured through a meter, and needs to be estimated. For example, in sand quarries or mining activities the amount of water taken is estimated based on a number of sources of information. This includes evaporation rates, comparing the weight of wet and dry sand, and groundwater monitoring and modelling plans. Metering will not apply to these circumstances.
- SSD activities are primarily governed by the *Environmental Planning & Assessment Act 1979* which sets out a rigorous regulatory framework for approving and licensing these activities.
- This paper may apply to SSD, mining and gas activities where the water taken as part of these activities can be measured 'conventionally' using a pump and meter.

Have your say

The community is encouraged to provide feedback. These responses will be due by 11.59 pm on 15 April 2018 and can be submitted in a number of ways, including:

Online: www.haveyoursay.nsw.gov.au

Email: water.reform@industry.nsw.gov.au

Website: www.industry.nsw.gov.au/water-reform/consultation

Post: Water Renewal Task Force, Department of Industry, GPO Box 5477, Sydney NSW 2001

Next steps

This consultation paper is the start of a conversation the NSW Department of Industry is having with the community on the development of water reforms in the area of water take measurement and metering.

Community submissions will be a critical element to inform the next steps in determining solutions to introduce best practice water management to NSW.

A summary of all community feedback provided as part of the consultation and submission process will be released by the NSW Government in the months that follow the close of the consultation period at 11.59 pm on 15 April 2018.

The NSW Government is committed to ongoing engagement with the community and business on the proposed water reform changes and to ensuring that water users and stakeholders understand the changes being proposed and their potential impacts.

This submission process will inform the legislation to be brought to the Parliament by mid-2018. This legislation will allow the NSW Government to implement key elements of water reform required to address the recommendations of the Matthews Report.

Where actions to deliver on water reform will be implemented by regulation, consultation will be undertaken.

Attachment A—Background on meters

Water-sharing rules and metering

Water-sharing plans have been progressively implemented in NSW since 2001. Water-sharing plans establish rules for sharing water between different types of water users, and provide a framework for trading water.

Metering requirements within water-sharing plans vary considerably depending on the water source, age of the plan and individual water licence conditions.

Where metering rules are in place, they outline metering equipment requirements to ensure installed meters are pattern approved with data logging capability and are compliant with Australian Standards.

Water sharing rules may also outline logbook reporting requirements which include specific time and event information, such as the volume taken, duration of the pump and purpose of the take. This information must be kept for five years. Where a meter is installed and a data logger is used, logbook reporting requirements are exempt.

Metering standards

National metering requirements

In 2009, in response to the National Water Initiative, nationally consistent non-urban water meter standards were introduced in Australia to enable water used in riverine and groundwater systems around Australia to be measured more accurately. More accurate measurement assists water managers and users to identify areas where efficiency can be improved, and minimise water lost through delivery systems.

The 2009 National Framework for Non-urban Water Metering sets out the National Water Meter Standard for metering in Australia. A key requirement is that meters must be pattern approved by the National Measurement Institute, and installed in accordance with Australian Standard 4747 Meters for Non-urban Water Supply (AS4747). The National Framework specifies that:

- all non-urban meters shall comply with the national metering standards by 1 July 2020, unless otherwise exempted by the relevant jurisdictional government department or agency
- any meter installed after 30 June 2010 must comply with the national metering standards
- any meter installed prior to 1 July 2010 shall be replaced with a compliant meter by 1 July 2020. Replacement shall be undertaken at the earliest opportunity, such as when major maintenance is required on the non-compliant meter.

State metering requirements

In 2009, NSW Interim Water Meter Standards were developed to cover new meters installed in NSW prior to the effective operation of the National Water Meter Standards on 1 July 2020. This included grandfathering arrangements for existing meters to transition to meet the National Standard by 1 July 2020.

Currently, in NSW meters are required to be within 5% accuracy (in-situ), be pattern approved and installed in accordance with Australian Standard 4747 Meters for Non-urban Water Supply, by a duly qualified person. Where installed, a pattern approved meter must be constructed so as to allow the incorporation or connection of data logging equipment.

Data loggers allow for meters to capture the time and date the water was taken including instantaneous flow rate, flow totals, status and error messages.

How do meters work?

Water meters record the volumetric flow of water through a conveying work. A conveying work is generally an enclosed pipe, but may also include open channel type structures.



Water meter types

Water meters are generally broken into three types: mechanical, ultrasonic and electromagnetic flow.

Mechanical meters:

- Mechanical meters use a rotating turbine, paddle wheel or propeller to measure the amount of water flowing through a pipe.
- Mechanical meters generally only record the cumulative total and do not record the time or date. They are manually read.
- Some mechanical meters can have a reed switch fitted, which allows a data logger to be connected and telemetry to be used. This is not a common install, however if used, the volume, date and time information is able to be recorded and transmitted remotely.
- Mechanical meters are generally the cheapest meter on the market, but require higher maintenance to maintain accuracy and are easy to tamper if tamper proof fittings were not attached originally.



Ultrasonic meters

- Ultrasonic meters use sound waves to measure water flowing through a pipe.
- Ultrasonic meters generally have the capacity to record the time and date, flow rate, velocity and cumulative total.
- The data can be transferred to a computer.
- The meter itself can be tampered with - however this is not as easy to do as the seal on the meter probe can easily detect interference. The data from the meter is protected through data protocol transfers.
- Tamper proof fittings can be attached to the meters.
- Telemetry can be installed on these meters
- Ultrasonic meters are generally available in three forms:
 - Clamp on: removable transmitter/receiver pairs are clamped to the outside of a pipe and positioned to measure water velocity across the whole pipe.
 - Inline: the sensor is fixed to the inside bottom of the pipe.
 - Insertion: a probe is inserted into the centre of the pipe and measures the velocity at a particular point in the pipe. To operate effectively, these meters typically require bubbles or particles in the water.



Ultrasonic meters

Electromagnetic flow meters

- Electromagnetic flow meters use electricity to measure the amount of water passing through a pipe.
- Piped water is exposed to a magnetic field which creates an electric field in the flowing water as it moves through the pipe. The meter measures the electric field strength.
- The meters have inbuilt data loggers that measure the time and date and total volume of water taken.
- The meters are generally available as an insertion (a probe installed in the pipe), or full bore.
- Telemetry can be installed on these meters.
- The meter itself it not easy to tamper with and the data from the meter is protected through data protocol transfers. Tamper proof seals are used to detect any outside interference.



Ancillary metering equipment

Data loggers

Data loggers allow for meters to capture the time and date the water was taken including instantaneous flow rate, flow totals, status and error messages. They may have an internal modem to communicate data out, or may be used in tandem with telemetry.

Telemetry

Telemetry allows for data from meters to be remotely communicated to a central location, without a physical meter reading.

Telemetry is typically a digital data radio, which gives the data logger the ability to send its information to a centralised control centre. Information can be communicated by radio, mobile or satellite networks or using a combined approach, directed to a point that is connected to the internet.



Telemetry

Remote meter reading

Meters with data loggers and telemetry allow for remote meter reading.

Attachment B—Description of preliminary risk assessment for surface water

Surface water

A high level risk assessment was undertaken for regulated and unregulated rivers. The assessment examined risks in terms of competition between users, or between users and the environment (scarcity of supply, which increases the chance of over-extraction) and ecological and production value (consequence of over-extraction) in the different types of water sources. The table below describes the risk indicators for each type of water source.

Table 4. Surface water

Rational for indicator	Likelihood of competition <i>This indicator is a social measure of need for metering. It reflects the likelihood that water users have low levels of water availability.</i>	Risk to riverine ecology <i>This indicator is an environmental measure of need for metering. It reflects the risk to riverine ecological values.</i>	Compliance risk <i>This indicator is an economic measure of need for metering. It reflects the compliance risk based on competition for water and production value.</i>
Regulated rivers	<p>The indicator is an estimate of the likelihood of low levels of water being available in the regulated river, termed the regulated Drought Security Index (DSI). The regulated DSI is the modelled frequency of water allocation announcements above 80%.</p> <p><i>Where competition for water is high the dam is drawn down more often and water allocations will be lower, and vice versa.</i></p>	<p>The indicator combines the likelihood that key ecosystem functions (KEF) will be impacted by changes in river flows, and the ecological value of aquatic ecosystems. The likelihood of impacts is estimated by the level of hydrologic alteration. The ecological value is rated on ecological parameters: degree of naturalness; the river's distinctiveness, the level of biodiversity and vital life cycle processes (HEVAE framework).</p> <p><i>Where the likelihood of impact is high and the ecological value is high the risk is high, and vice versa.</i></p>	<p>The indicator combines the likelihood of low levels of water availability (DSI) and the value of irrigation production. The regulated DSI is the modelled frequency of water allocation announcements above 80%. Irrigation production is from ABS estimates of irrigated production value in each region for the 2014-15 and 2015-16 financial years.</p> <p><i>Where the likelihood of lack of water is high and the production value is high the compliance risk is high, and vice versa.</i></p>
Inland Unregulated rivers	<p>The indicator is an estimate of the likelihood of low levels of water being available in the unregulated river. For inland unregulated rivers this likelihood is reflected in hydrologic alteration metrics (i.e. KEF metrics), as flows are significantly reduce due to the high demand for watering crops in low flow periods.</p>	<p>The indicator is developed in the same way as the risk to ecology indicator for regulated rivers.</p> <p><i>Where the likelihood of impact is high and the ecological value is high the risk is high, and vice versa.</i></p>	<p>The indicator combines the likelihood of low levels of water being available and the level of irrigation entitlement. For inland unregulated rivers this likelihood is reflected in hydrologic alteration metrics (i.e. KEF metrics). The level of irrigation (production) is indicated by the level of water entitlement (in the absence of suitable data on production</p>

Rational for indicator	Likelihood of competition	Risk to riverine ecology	Compliance risk
	<p><i>This indicator is a social measure of need for metering. It reflects the likelihood that water users have low levels of water availability.</i></p>	<p><i>This indicator is an environmental measure of need for metering. It reflects the risk to riverine ecological values.</i></p>	<p><i>This indicator is an economic measure of need for metering. It reflects the compliance risk based on competition for water and production value.</i></p>
<p>Coastal Unregulated rivers</p>	<p>The indicator is an estimate of the likelihood of low levels of water being available in the unregulated river, termed the unregulated Drought Security Index (DSI). For coastal unregulated rivers the unregulated DSI is the ratio of water available for irrigation during the peak demand months and the amount of water entitlement along the river.</p> <p><i>Where the entitlement is high compared to the available water, competition for water is high, and vice versa.</i></p>	<p>The indicator combines the likelihood that extraction will reduce low river flows, and the ecological value of aquatic ecosystems. Where expected demand for irrigation water is high compared to the 80th percentile river flow, more frequent periods of very low or zero flow are likely. Where data on reduction in low flows was not available (40% of sources), the Unregulated DSI was used to estimate chance of low flows. The ecological value is assessed using the HEVAE framework.</p> <p><i>Where the likelihood of impact is high and the ecological value is high the risk is high, and vice versa.</i></p>	<p>value).</p> <p><i>Where the likelihood of lack of water is high and the water entitlement is high the risk is high, and vice versa.</i></p> <p>The indicator combines the likelihood of low levels of water availability (DSI) and the level of irrigation entitlement. The unregulated DSI is the ratio of water available for irrigation during the peak demand months and the amount of water entitlement along the river. The level of irrigation (production) is indicated by the level of water entitlement (in the absence of suitable data on production value).</p> <p><i>Where the likelihood of lack of water is high and the water entitlement is high the risk is high, and vice versa.</i></p>

Groundwater

The preliminary risk assessment for inland groundwater was based on the five year rolling average of water extraction compared to the long term average annual extraction limit. This is an indicator of the extraction risk for each of the water sources.

The high risk groundwater sources are those where the five-year rolling average extraction is above 80% of the long term average annual extraction limit in water-sharing plans.

There is limited data available for water extraction from coastal groundwater sources, although it is likely that extraction in a number of these sources is close to capacity.

Next steps

Further work will be undertaken to refine the risk assessments to inform the final metering policy.

Attachment C—Summary of metering ownership

	Electricity metering NSW	Electricity metering Victoria	Gas metering NSW	Non urban water metering in Queensland (unsupplemented systems)	Non urban water metering South Australia	Non urban water metering Victoria	Metropolitan water metering NSW
Ownership of meters	<p>The ownership of meters is mixed. Meters are now contestable. Energy retailers can own the meters and arrange installation for residential users and small businesses. Prior to 1 December 2017 meters were owned and installed by energy distributors.</p> <p>Large businesses may own their own meters. In NSW the threshold for large businesses is energy use of >100,000 kWh pa</p>	<p>Smart meters are owned and installed by Victoria's five electricity distributors. Distributors own and manage the poles and wires</p> <p>Large businesses may own their own meters. In Victoria the threshold for large businesses is energy use of >160,000 kWh pa</p>	<p>Distributors own meters.</p> <p>Distributors are responsible for service line and meter installations. Gas plumbers are responsible for meter only installations. Customers are responsible for finding a gas plumber to install a meter</p>	<p>The water entitlement holder is responsible for purchasing a meter, arranging for its installation and certification, and arranging for maintenance of the meter.</p> <p>Ownership of meters is negotiated between water supply authorities and users for supplemented systems (owned by a water provider)</p>	<p>All meters are privately owned (or leased) and licensed water holders are responsible for ensuring that meters are installed according to manufacturer's specification and minimum standards in the South Australian licensed water use specification.</p> <p>Any existing Government meters are offered to users at no cost</p>	<p>Meters are owned by the Rural Water Corporations – Melbourne Water, Coliban Water and Lower Murray Water.</p>	<p>Utilities own meters – measurement of use is critical to supply-demand balance (water planning) and revenue</p> <p>Water authorities arrange (and pay for) installment of meters up to 40mm. For larger meters, customers are responsible for ensuring they are installed by a licensed plumber</p>
Payment	Users pay for meters through retail	Users pay through retail	For basic connections and	Users pays up-front for meters	Owners are responsible for	Users pay through water	Meters are owned by the

	Electricity metering NSW	Electricity metering Victoria	Gas metering NSW	Non urban water metering in Queensland (unsupplemented systems)	Non urban water metering South Australia	Non urban water metering Victoria	Metropolitan water metering NSW
model	<p>electricity prices</p> <p>Prices charged by the distribution businesses for metering services are regulated by the Australian Energy Regulator (AER). These prices are passed through to retail prices.</p> <p>Customers can shop around for different metering packages from their retailer – could be combined meter and tariff package, or separate</p>	<p>electricity prices</p> <p>During the mandatory roll-out of smart meters (2.75 million meters) the cost of installing meters was charged separately to network charges determined by the AER.</p> <p>Flexible pricing plans are available through retailers</p>	<p>meters, the cost is incorporated into gas prices</p> <p>Usage and supply charges are charged by the retailer to recover costs</p>	<p>and associated costs as well as ongoing maintenance and replacement</p>	<p>installation and maintenance costs</p>	<p>prices as established by the Essential Services Commission.</p> <p>Rural Water Corporations decide how they recover costs of metering</p>	<p>utility companies. Costs are recovered from users through water prices.</p>

NSW WATER REFORM ACTION PLAN

Transparency measures

Consultation paper

Published by NSW Department of Industry

Transparency measures—Consultation paper

First published March 2018

More information

industry.nsw.gov.au

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Introduction

Water is one of the most important natural assets in New South Wales (NSW). The community, business and the environment all rely on water to survive and prosper.

In December 2017, the NSW Government released the Water Reform Action Plan in response to the *Independent investigation into NSW water management and compliance*, conducted by Ken Matthews, AO (the Matthews Report) and the *Murray–Darling Basin Water Compliance Review*.

The plan will deliver on the state's responsibility to ensure we have an equitable and transparent approach to the management of water for current and future generations.

As part of the development process for the water reforms being introduced, the NSW Government has released three consultation papers for community input on:

- Water take measurement and metering
- Transparency measures (this document)
- Better management of environmental water.

The NSW Government has committed to improving transparency in how we share, allocate and manage water. The purpose of increasing transparency is to give all stakeholders confidence that water is being used (whether for production or the environment) in accordance with adopted water sharing laws, plans and licences. Confidence is a prerequisite for sustainable communities, jobs and the environment.

We are progressing several initiatives to improve the transparency of water management in NSW including:

- creating a public register of water information that could cover water entitlements, water licences and water work approvals
- improving the transparency of when take of water is permitted
- publishing compliance and enforcement activities undertaken by the Natural Resources Access Regulator.

This consultation paper seeks your feedback about how these measures can best be developed to meet the information needs of industry and the wider community, and increase public confidence that water users are complying with the rules.

Background

One of the flagship recommendations of the *Independent investigation into NSW water management and compliance* conducted by Ken Matthews, AO (the Matthews Report) was to improve significantly the transparency and public accessibility of information about NSW water use and regulation. The *Murray–Darling Basin Water Compliance Review* drew similar conclusions.

The Matthews Report proposed that, as water generally is a community-owned resource, members of the public have a right to satisfy themselves that it is being used in compliance with the law. The overall objective of publishing water management information and data in a transparent way that is accessible to the public is to improve compliance effectiveness and public confidence in the regulation of our water resources. Ken Matthews concludes that full transparency would add considerably to a more compliant culture among water users.

This paper covers three initiatives in particular that will improve transparency about water regulation and use, and outlines some proposed legislative amendments that will allow them to be implemented.

The first is the commitment in the Water Reform Action Plan to release a discussion paper on creating a public register of water information that could cover water entitlements, water licences and water work approvals. This seeks to implement the recommendations of the Matthews Report and the *Murray–Darling Basin Water Compliance Review* to provide easy public access to information about water entitlements and how they are being used.

This paper also discusses initiatives to improve the transparency of when water take is permitted. This will make it easier for water users and members of the public to access and understand information about when water can be taken, which will also contribute to greater voluntary compliance and assist with enforcement.

Finally, this paper explains the Water Reform Action Plan commitment to publishing compliance and enforcement activities undertaken by the Natural Resources Access Regulator (the Regulator). This is intended to improve public confidence that the regulatory arrangements in NSW are being enforced, while also encouraging voluntary compliance.

The Matthews Report also recommended improving the transparency of environmental water entitlements and flow. There is a separate project to improve the management of environmental water, which will include publishing explanatory material for the public about how environmental water is managed.

Consultation topic 1: What information should be included in a public register and why?

The Matthews Report and *Murray–Darling Basin Water Compliance Review* recommend that all details of water entitlement information should be available to the public from a single source. It was recommended that this should include the name of holder, licence details and conditions, water entitlements, water allocations, meter readings, real-time water account balances and all trading activities.

There is a range of water information already available to the public in NSW. However, it is not all available in one place, and is not always easily accessible to the community. The Matthews Report and Murray–Darling Basin Authority recommendations also suggest publishing some information that is not currently in the public domain. This raises two key issues:

- the ease of public access to currently available water information
- the potential consequences of making new information public.

What information is already available and how is it accessed?

All Australian jurisdictions have a form of water register, with each state and territory taking a different approach to what information is contained in the register and how it is accessed. There are three key sources of water information in NSW that can be accessed by the public:

- the NSW Water Register amalgamates information from several public registers and provides public access to information about water licences, approvals, water trading, water dealings and other matters related to water entitlements in NSW
- the Water Access Licence Register (WAL Register)¹ has a separate record for each Water Access Licence issued (WAL folio) which shows water access licence details, including the name of the licence holder. To search the WAL Register the relevant WAL number is required, with each search incurring a fee of \$14.20
- the NSW Environmental Water Register (which is accessible from the NSW Water Register), which provides information on environmental water holdings.

A summary of legislative requirements, available information and how it can be accessed from these registers is included in Attachments A and B. Table 1 shows the categories of information that have been recommended for inclusion in a public register, and where the information can currently be found.

While much of this information is already in the public domain, currently its accessibility and usability is limited. The information is disparate and there are constraints to accessing certain types of information. For example, an identifying reference (a WAL number or a lot/DP number) is usually needed to conduct a search and the ownership of a licence can only be found via a search of the WAL Register, which attracts a fee.

Also, real-time information about water use is not currently publicly available, as metering information and water account balances are not currently published. In many areas this information is not available because metering is not universal. However, in time, meter coverage will improve which will make this information more readily available.

The Matthews Report also recommended arrangements be put in place for the public to readily identify any specific pump, off-take or works, for example, by posting an identifying number on all river pumps and making the mapping of pump locations more readily available. While physical identifiers for pumps and other works could contribute to improving public confidence that all activity is appropriately authorised, there are some risks. For example, generally works will be on private land and therefore will not be able to be accessed by the general public without trespassing.

¹ The WAL Register is maintained and operated by *Australian Registry Investments* as part of a 35 year concession granted by the NSW Government.

The NSW Water Register can currently be searched with a Lot/DP number to get details of any approvals and the work types, including a reference number for the approval. While this gives a general indication of where the works are located, it does not provide a specific location within the Lot and DP. Improving information about approved works through a map-based solution and identification scheme may provide an appropriate alternative for achieving this objective.

Consultation questions

- Is the information already available on the NSW Water Register and Water Access Licence Register enough to provide greater transparency of water use? If not, what else is needed and why?
- Is the currently available information too complicated and difficult to access? How could it be simplified?
- What information should be prioritised for access?

Table 1: Currently accessible NSW water information

Information recommended to be readily accessible	Information currently accessible in the NSW Water Register	Information currently accessible in the WAL Register (in a WAL folio)
Name of holder	Not available	<ul style="list-style-type: none"> • current holder(s)
Licence number (WAL number)	Lists of WAL numbers can be generated by water source or licence category. <i>Water Act 1912</i> licence numbers can be searched by a particular property (Lot/DP)	<ul style="list-style-type: none"> • WAL number (this number is used to conduct the search)
Licence conditions	A particular water licence or approval (including conditions), provided that the licence number or approval number is known	<ul style="list-style-type: none"> • expiry date • conditions • tenure type
Water entitlement	Share components of a WAL can be identified if the WAL number is known, or share components of all WALs can be found for a certain licence category and water source	<ul style="list-style-type: none"> • category (that is, unregulated river, aquifer etc.) • share component (volume) • water source • water sharing plan
Water allocations	Water allocations (available water determinations), searched by either water source or specific WAL number	<ul style="list-style-type: none"> • extraction component (including conditions about extraction and extraction zone)
Meter readings	Not available	Not available
Real-time water account balance	Not available	Not available

Information recommended to be readily accessible	Information currently accessible in the NSW Water Register	Information currently accessible in the WAL Register (in a WAL folio)
Trading activities	<p>Water trading statistics for:</p> <ul style="list-style-type: none"> • water allocation assignment trading, by water source (updated monthly). Total number of assignments and volume of water traded (updated weekly) • share assignment trading, by water source (updated weekly) or by WAL • transfer trading, by water source (updated weekly) or by WAL • tagged trading (updated weekly). <p>Processing times for:</p> <ul style="list-style-type: none"> • water allocation assignment trades, and • transfer and share assignment trades. 	
Water works approvals	<p>An approval (and conditions) can be identified if the approval number is known or by property (if Lot/DP is known). Also, a list of approvals can be searched, based on kind and/or region and/or date of application</p>	<ul style="list-style-type: none"> • Nominated works (including work approval numbers)

Are there risks associated with publishing some water information and how can these be managed?

The Matthews Report and the *Murray–Darling Basin Water Compliance Review* recommend that meter readings and real-time water account balances be available for the public to readily access. This information is not currently published.

Some stakeholders have suggested that disclosure of water account balances could be commercially sensitive and pose risks to operation of the water market. The information could reveal operational strategy by providing a detailed pattern of water use and, if in real time, would provide a clear indication of the value of water to the individual or enterprise at a particular time. Further, water brokers or other water suppliers could inflate or depress buy and sell offers based on irrigators' account balance information.

There are options which could mitigate risks to privacy and commercial sensitivity, while also meeting the objectives of greater transparency. For example, account balances and meter reading information could be provided on the public register at an aggregated level or at a time when the information was no longer commercially sensitive.

Water information in existing NSW water registers already includes certain personal information. For example, the available information includes the names of licence and approval holders, the share component associated with the licence as well as licences and approvals linked to a particular property or region. However, this information is disparate and there are currently some barriers to determining easily the ownership of an access licence or approval and the associated terms and conditions. In particular, the name of a licence holder can only be obtained via a search of the Water Access Licence Register, if the licence number is known and at a fee.

The disclosure of personal information associated with access licences and approvals needs to be balanced with the need to improve transparency of the water management framework. A decision to make this information more readily available would be aimed at increasing confidence in the community that the water management framework is being complied with as well as to encourage voluntary compliance.

Amendments to the *Water Management Act 2000* are proposed to authorise the disclosure of personal information. The *Water Management Amendment Bill 2018* (Exposure Bill) includes a provision allowing regulations to be made that will authorise the disclosure of information (including personal information) about water licences and approvals. This information could include information already held on a water register, water allocation account information and information about water take from a specified area of the state.

Consultation questions:

- Are there categories of information that should not be made public? What are they and why?
- Are there ways that sensitive information can be managed and still made public? For example, by publishing account balances quarterly?

How should information be provided on a public register?

Other Australian jurisdictions generally provide the same types of information in their public water registers. The main difference between jurisdictions is how the information is accessed. For example, Western Australia's Water Register provides a web mapping tool which displays areas where surface water and ground water licences exist. Clicking on one of these licences provides a summary of water entitlement information including holder name and convictions.

Similarly, formats of access vary between comparable NSW resource industry registers. For example, the Environment Protection Authority uses a single web page to provide access to its *Protection of the Environment Operations Act 1997* registers, including a public register of information about Environmental Protection Licences, a public register of related convictions and results of civil proceedings and a public register of enforceable undertakings.

Typically, there are two main access formats for public registers—online search portals or web mapping tools. A summary of the information available from water registers in other jurisdictions and comparable NSW resource industry registers, and how they can be accessed is included in Attachment C.

A web mapping tool may be suitable to provide greater accessibility to water information in NSW. For example, the NSW Department of Planning and Environment Planning Portal uses a web mapping tool to provide simple summaries of information relevant to users and the public. Users can drill down to the detail contained in those information sources, if required. The planning tool also provides access to legislation and rules related to information displayed on the mapping platform. This access format could provide a user friendly way to access water entitlement information in NSW, for example, by clicking a map to find Water Access Licence information connected to a property, water source or region.

Consultation questions:

- How would you like to be able to search for details and/or data in a public register of water information?

Consultation topic 2: How to improve information about when water can be taken

Access rules governing when water can be taken can be complex. This is particularly the case in unregulated systems where there may be different categories of licences whose daily access is dependent on the flow at a flow reference point (often a river gauge), the year of the plan and other factors.

Unregulated water sharing plans specify the flow and flow reference point. However, they do not specify from where flow information is accessed or what data is to be relied upon to determine if take is or is not permitted.

Improved transparency of when take is permitted will enable members of the public to better understand the rules governing when water can be taken. It will also clarify for licence holders the rules with which they must comply. This, in turn, will contribute to greater voluntary compliance and assist in compliance enforcement activities.

The NSW Government has recognised the need for a single source of information, for example on a dedicated web page, to make it easier for licence holders and the public to understand when the flow conditions allow for water take at a particular point in time. WaterNSW has developed a system with this functionality for the Barwon–Darling that will be released shortly, which will reflect the water sharing plan access rules.

To support compliance activities, an amendment to the *Water Management Act 2000* is proposed which allows information to be included on an authorised website that identifies whether take of water is, or is not, permitted at a specific location at a point in time. The Exposure Bill includes a provision which allows the Minister to approve a website that includes this information.

The website will reflect whether the water sharing plan rules generally authorise take of water. However, some individuals' licence or approval terms and conditions may impact on this authorisation, and need to be complied with.

The Exposure Bill also includes amendments to the *Water Management Act 2000* to allow an evidentiary certificate to be issued for the purpose of legal proceedings that states what information was provided on the website at a particular point in time.

Consultation questions

- What issues should be considered in developing a single source of authority on when take of water is permitted and how could those issues be managed? For example, how would this operate in areas with limited internet coverage?

Publishing compliance information

Transparency is critical in encouraging and supporting voluntary compliance and underpins public confidence in the integrity of the regulatory regime. The Natural Resources Access Regulator Board has adopted this principle in its Code of Conduct.

Under the *Natural Resources Access Regulator Act 2017*, the Regulator is required to publish information on convictions arising from prosecution action. Additionally, the Board has determined that it will seek to deliver on the full intent of the Matthews Report recommendations on transparency as a pillar of how it intends to transform the way water compliance and enforcement activities are designed, delivered and reported on.

The Regulator Board determined at its inaugural meetings in January 2018 its intent to proactively publish an extensive range of information. This will not only include compliance-related policies, procedures, guidance, data and reports when these become available, but its own governance and performance information.

The Regulator recognises that information needs to be timely, accessible and relevant. It has been actively considering available technologies that may be able to provide real-time data and analysis at a catchment, water sharing plan and individual level and how these could be used to support voluntary compliance, inform its regulatory operations and support transparency and confidence with all stakeholders and the community.

In addition, the Regulator's Memorandum of Understanding with the Murray–Darling Basin Authority will further promote transparency through information sharing and publication to inform regulatory activities and community confidence in achieving higher levels of compliance.

It is proposed that the Regulator will be authorised to publish details of proceedings and compliance actions that have been taken under the *Water Management Act 2000*. These details may include personal information. The publication of this information will be an important tool in building and maintaining public confidence in the enforcement of the water management framework and it is considered appropriate that relevant personal information is included in any publication.

The Regulator is currently authorised in section 11 of the *Natural Resources Access Regulator Act 2017* to publish details of convictions in prosecutions for offences under the natural resources management legislation (which includes the *Water Management Act 2000*). However, it is also proposed that the Regulator will be authorised to publish other information relating to compliance actions, such as penalty infringement notices (PINs), and stop-work orders.

The Exposure Bill includes a draft provision allowing regulations to be made that will authorise the publication of information (including personal information) about the exercise of enforcement powers under the *Water Management Act 2000*.

Have your say

The community is encouraged to provide feedback. These responses will be due by 11.59 pm on Sunday 15 April 2018 and can be submitted in a number of ways, including:

Online: www.haveyoursay.nsw.gov.au

Email: water.reform@industry.nsw.gov.au

Website: www.industry.nsw.gov.au/water-reform/consultation

Post: Water Renewal Task Force, Department of Industry, GPO Box 5477, Sydney NSW 2001

Next steps

This consultation paper is the start of a conversation the NSW Department of Industry is having with the community on the development of transparency measures for water management.

Community submissions will be a critical element to inform the next steps in determining solutions to introduce best practice water management to NSW.

A summary of all community feedback provided as part of the consultation and submission process will be released by the NSW Government in the months that follow the close of the consultation period at 11.59 pm on 15 April 2018.

The NSW Government is committed to ongoing engagement with the community and business on the proposed water reform changes and to ensuring that water users and stakeholders understand the changes being proposed and their potential impacts.

This submission process will inform the legislation to be brought to the Parliament by mid-2018. This legislation will allow the NSW Government to implement key elements of water reform required to address the recommendations of the Matthews Report.

Where actions to deliver on water reform will be implemented by regulation, consultation will be undertaken.

Attachment A—NSW legislative requirements

Table 2. Water Management Act 2000

Section	Summary	Requirement
Section 71	Water Access Licence Register	<p>(1) The Minister is to keep a Water Access Licence Register for the purposes of this Act (the Access Register).</p> <p>(2) In the Access Register, there is to be a division recording the matters specified in section 71A(1) (the General Division) and a division recording the matters specified in section 71A(2) (the Assignment Division).</p> <p>(3) The Access Register is to be kept in the form and manner determined by the Minister.</p> <p>(4) Without limiting subsection (3), the Access Register may be kept in the form of a computer record.</p>
Section 71A	Dealings and other matters that must be recorded in the Access Register	<p>(1) The following matters relating to an access licence (including a replacement access licence) or a holding in an access licence must be recorded in the General Division of the Access Register:</p> <ul style="list-style-type: none"> (a) Ministerial action in relation to the licence or holding, (b) any general dealing in the licence or holding, (c) any dealing on default in relation to the licence or holding, (d) any caveat lodged in relation to the licence or holding, (e) any security interest held over the licence or holding, (f) any devolution of the licence or holding as referred to in section 72, (g) any alteration in co-holder's tenancy arrangements in relation to the licence or holding, as referred to in section 73, (h) any other matter prescribed by the regulations. <p>(2) The following matters are to be recorded in the Assignment Division of the Access Register in such manner as the Minister considers appropriate:</p> <ul style="list-style-type: none"> (a) any assignment dealing in an access licence, (b) any other matter prescribed by the regulations.
Section 71J	Access to the Access Register	<p>(1) The Minister is to make the information recorded in the Access Register available to any member of the public at the times and in the manner and on payment of the fee (if any) approved by the Minister.</p> <p>(2) The information may be made available in accordance with such conditions as are determined by the Minister.</p> <p>(3) The conditions may:</p> <ul style="list-style-type: none"> (a) require the payment, whether on a periodic or other basis, of fees and charges, and (b) restrict access to information in the Access Register or any part of the Register.
Section 84	Register of available	<p>(1) The Minister is to cause a register to be kept of each available water</p>

Section	Summary	Requirement
	water determinations	determination made under section 59. (2)The regulations may make provision for or with respect to the form in which such a register is to be kept and the particulars that are to be recorded in such a register. (3) The register must be made available for public inspection during normal business hours at such places as may be prescribed by the regulations.
Section 113	Register of approvals	(1) The Minister is to cause a register to be kept of: <ul style="list-style-type: none"> (a) every application for an approval that is duly made under this Act, and (b) every approval that is granted, extended, amended, transferred, surrendered, suspended or cancelled under this Act, and (c) every agreement entered into by landholders under section 101(2). (2) The regulations may make provision for or with respect to the form in which such a register is to be kept and the particulars that are to be recorded in such a register. (3) The register must be made available for public inspection during normal business hours at such places as may be prescribed by the regulations.

Table 3. Water Management (General) Regulation 2011

Section	Summary	Requirement
Clause 14	Register of available water determinations	(1) The following particulars must be recorded in the register of available water determinations kept under section 84 of the Act in relation to each available water determination made under section 59 of the Act: <ul style="list-style-type: none"> a) the terms of the determination, b) the date on which it was made, c) the water source or sources (or the parts of the water source or sources) to which it applies, d) in the case of a determination referred to in section 59 (1) (a) of the Act, the categories or subcategories of access licence to which it applies, e) in the case of a determination referred to in section 59 (1) (b) of the Act, the individual access licences to which it applies. (2) For the purposes of section 84 (2) of the Act, the register of available water determinations may be kept in written or in electronic form. (3) For the purposes of section 84 (3) of the Act, the register of available water determinations is to be made available for public inspection at each office of the Department. (4) The Director-General may also make the register of available water determinations, or parts of the register, available on the Department's website.
Clause 11	Matters to be included in Water Access Licence Register	(1) For the purposes of section 71A (1) (h) of the Act, the matters to be recorded in the General Division of the Access Register include any memorandum of terms and conditions:

Section	Summary	Requirement
		<p>(a) that is lodged with the Minister by the holder, or prospective holder, of a security interest, and</p> <p>(b) that is, or is intended to be, adopted by or incorporated in an instrument evidencing the existence of a security interest, as referred to in section 71D (1) (a) of the Act.</p> <p>(2) For the purposes of section 71A (2) (b) of the Act, the matters to be recorded in the Assignment Division of the Access Register include any agreement in the approved form that is signed by all the holders of an access licence and is submitted to the Minister, being an agreement that the person or persons specified in the agreement may, on behalf of the holders of the access licence, apply for an assignment dealing.</p>
Clause 27	Register of approvals	<p>(1) For the purposes of section 113 (2) of the Act, the register kept under that section may be kept in written or in electronic form.</p> <p>(2) For the purposes of section 113 (3) of the Act, the register kept under that section is to be made available for public inspection at each office of the Department.</p> <p>(3) The Director-General may also make the register, or parts of the register, available on the Department's website.</p>

Attachment B—Current registers of water information in NSW

Table 4. NSW water information registers

Register	Information	Access to information
NSW Water Register Link: http://archive.water.nsw.gov.au/all-archived-content/licensing-and-trade/trade/register	<ul style="list-style-type: none"> Water Access Licences (WAL), information includes: category/subcategory, status, water source, tenure type, management zone, share component (units or ML), extraction times or rates, nominated works approval(s), licence conditions, water sharing plan conditions and other conditions. 	<ul style="list-style-type: none"> Need to input a WAL number
	<ul style="list-style-type: none"> <i>Water Act 1912</i> licences and authorities 	<ul style="list-style-type: none"> Need to input a licence number or land reference (Lot/DP). Provides Lot/DP information associated with <i>Water Act 1912</i> licence.
	<ul style="list-style-type: none"> Approvals issued under the <i>Water Management Act 2000</i>, information includes: kind of approval, issue/expiry date, approval number, status, water source, work type, description, number of works, location (Lot/DP), conditions, water sharing plan conditions and other conditions. 	<ul style="list-style-type: none"> Need to input an approval number
	<ul style="list-style-type: none"> Water licence conversion status (if a <i>Water Act 1912</i> licence has been converted to a WAL). 	<ul style="list-style-type: none"> Need to input <i>Water Act 1912</i> licence number
	<ul style="list-style-type: none"> Water licences or approvals related to a particular property 	<ul style="list-style-type: none"> Need to input Lot/DP or SP reference number
	<ul style="list-style-type: none"> WALs, water usage and status approvals related to a particular water source. Searches can be made for: <ul style="list-style-type: none"> Water access licences (including conditions) for a water source Total number of WALs and water usage for a water source Status of approvals 	<ul style="list-style-type: none"> Need to input licence category and water source Need to input water source, Licence Category and Period (Financial Year) Need to input kind of approval, date of approval (month, year)
	<ul style="list-style-type: none"> Flood work approvals in relation to a particular floodplain management plan or land declared to be a floodplain, including information about status and conditions 	<ul style="list-style-type: none"> Need to input Flood Management Plan and date of approval (month/year)
	<ul style="list-style-type: none"> Water allocation (available water determinations), a list of allocations including information such as: announcement date 	<ul style="list-style-type: none"> Need to input water source or WAL number

Register	Information	Access to information
	<p>and volume, access licence category and water source</p> <ul style="list-style-type: none"> • Approval applications and advertisements can search for the status of a particular approval application, for the status of approval application for a water source or region, for the status of flood work approval applications for a floodplain management plan or land declared to be a floodplain, advertisements for all approval applications that are currently being advertised 	<ul style="list-style-type: none"> • For the status of a particular approval application (including water source, information about the type of work and location), the application number needs to be input • By inputting the kind of approval (i.e. water use, water supply work etc.), the region (including other states) and the date of application (month, year) a list of approval numbers are provided • By inputting the Floodplain Management Plan or the Land declared to be a floodplain and date of approval (month, year) a list of flood work approvals are provided
	<ul style="list-style-type: none"> • Water trading statistics and processing times. <ul style="list-style-type: none"> ○ Statistics about Water Allocation Assignment Trading can be searched for: <ul style="list-style-type: none"> ▪ a particular water source ▪ a particular access licence ▪ total number of water allocation assignments and volume of water traded within a water source ▪ total number of water allocation assignments and volume of water traded between water sources ('intervalley' and interstate). ○ Share assignment trading statistics can be searched by: <ul style="list-style-type: none"> ▪ water source for a certain period (up to this week) ▪ WAL ○ Licence transfer statistics can be searched by: <ul style="list-style-type: none"> ▪ Water source, transfer type or for a certain period (up to this week) ▪ WAL ○ Tagged trading statistics can be searched by: <ul style="list-style-type: none"> ▪ period (Water year) (up to this week) • Processing times for water allocation assignment, transfer and share assignment trades. 	<ul style="list-style-type: none"> • for a certain licence category, within a water year or month of allocation • need to know WAL number • need to know WAL number • need to know WAL number

Register	Information	Access to information
<p>WAL Register</p> <p>Link: http://www.nswlrs.com.au/land_titles/wal_register_fees</p>	<ul style="list-style-type: none"> WAL number current ownership details (holders) category share component (volume) extraction component nominated works water source expiry date conditions mortgages, charges and related information 	<ul style="list-style-type: none"> Searches of the WAL Register can be made over the counter at NSW Land Registry Services office at Queens Square Sydney, or can be searched via an information broker. The fee for WAL search is equivalent to Torrens Title searches (\$14.20 for 2017 financial year).
<p>NSW Environmental Water Register</p> <p>Link: https://ewp.water.dpi.nsw.gov.au/ewr/main/ewrHome</p>	<ul style="list-style-type: none"> licensed environmental water including part held licences (where only a part of the entitlement is held for the environment) Environmental Water Use Plans approved by the Minister the assignment of water allocations to and from environmental access licences changes in the share component of environmental access licences over time 	<ul style="list-style-type: none"> Can search for a specific WAL if number is known. Or able to limit search by choosing fields in Water Sharing Plan, source, management zone, SDL Resource Unit, Licence category, Environmental Licence Type, water type, use type, environmental holder group or program name Environmental summary can be searched by Water Sharing Plan, Water Source and Date of Report. Can search a specific WAL if the WAL number is known, or can limit search for water allocation trades by water sharing plan, water source, water management zone, SDL Resource Unit, Licence category, Environmental holder group and water year. This is presented in an annual summary dashboard

Attachment C—Water registers in other Australian jurisdictions and registers in NSW resource industries

Table 5. Water registers in other Australian jurisdictions

Jurisdiction	Information in public water register	Access
Australian Capital Territory Link: http://www.environment.act.gov.au/environment/legislation_and_policies/act_water_resources/epa_search	<ul style="list-style-type: none"> • Water Resources Act Register <ul style="list-style-type: none"> ○ Water allocation (including name of holder) ○ Water Access Entitlements ○ Drillers/bore work licence ○ Licence to take water ○ Waterway works licence 	<ul style="list-style-type: none"> • Online search portal • Free
Northern Territory Link: https://nt.gov.au/environment/water/water-licences/approved-water-extraction-licences	<ul style="list-style-type: none"> • Public register for approved water extraction licences <ul style="list-style-type: none"> ○ Approved water extraction licences with details (including name of holder) 	<ul style="list-style-type: none"> • Online search portal • Free
Queensland Link: https://www.business.qld.gov.au/industries/mining-energy-water/water/water-markets/register	<ul style="list-style-type: none"> • Water Licence Register • Water Allocation Register <ul style="list-style-type: none"> ○ Water allocation title record (including name of holder) 	<ul style="list-style-type: none"> • Accessed face-to-face via the Land Information and Titles Office (Qld) • Fee charged
South Australia Link: https://www.waterconnect.sa.gov.au/Pages/Home.aspx	<ul style="list-style-type: none"> • Water Connect <ul style="list-style-type: none"> ○ Water Licence (including name of holder – licence number must be known) ○ Site use approvals ○ Water resource works approvals ○ Water allocations ○ Daily updated list of approved trade by area by financial year in SA. 	<ul style="list-style-type: none"> • Online search portal • Free

Jurisdiction	Information in public water register	Access
<p>Tasmania</p> <p>Link: http://wrt.tas.gov.au/wist/ui?command=content&pageSequenceNo=16&click=[1].Name#opt</p>	<ul style="list-style-type: none"> • Water Information System of Tasmania <ul style="list-style-type: none"> ○ Water entitlement search ○ Allocations and entitlements map 	<ul style="list-style-type: none"> • Online search portal (water entitlement search) • Web mapping tool (allocations and entitlements) • Free
<p>Victoria</p> <p>Link: http://waterregister.vic.gov.au/index.php?option=com_copyofrecord&etype=WEE&view=payment&Itemid=175</p>	<ul style="list-style-type: none"> • Victorian Water Register <ul style="list-style-type: none"> ○ Water shares recorded by the Victorian Water Registrar, together with relevant mortgages and leases ○ Records of licences to take and use surface water/groundwater ○ Works-related licences ○ Water allocations ○ Tracks and reconciles volumes of water entitlements by water system and trading zone ○ Water-use licences and delivery shares ○ Workflows to process water dealings ○ Generates statistics and reports on levels of use, directions of trade and prices paid. 	<ul style="list-style-type: none"> • Online search portal • A fee is charged to download any water entitlement record from the site (except for bulk and environmental entitlements and trading history)
<p>Western Australia</p> <p>Link: http://www.water.wa.gov.au/maps-and-data/maps/water-register</p>	<ul style="list-style-type: none"> • WA Water Register <ul style="list-style-type: none"> ○ Can search for current licences associated with a licence holder or property ○ Can identify water resources on a property (for determining availability for new licences) ○ Identify all the current water licences in a resource (to identify trading opportunities) ○ Can click any region to identify water source, whether allocations are available, as well as current licences. <p>Clicking on licence provides water entitlement information including name of holder and any convictions</p>	<ul style="list-style-type: none"> • Web mapping tool • Free

Table 6. Registers in NSW resource industries

Other NSW resource industry registers	Information	Access
<p>Land Registry Services - Online Portal</p> <p>Administered by: NSW Land Registry Services</p> <p>Link: https://online.nswlrs.com.au/</p>	<ul style="list-style-type: none"> Allows search for titling records which help confirm ownership of property, along with obtaining copies of related documents Plans, cadastral records & survey marks Deeds (general register): For images of Old System land transactions and deeds linked to a person or company such as a Power of Attorney Specialised searches: For information on commercial leases, security on goods and Orders from courts. 	<ul style="list-style-type: none"> Online search portal Fee applies for Torrens Title searches Searches require specific referencing information (i.e. DP plan number, survey mark number etc.) and often only yield evidence of whether a record exists (rather than the record itself).
<p>Environment Protection Authority – Protection of the Environment Operations Act (POEO) public register</p> <p>Administered by: NSW Environment Protection Authority</p> <p>Link: https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers</p>	<p>POEO public register—PRPOEO:</p> <ul style="list-style-type: none"> allows searches for information about Environmental Protection licences, applications, notices, audits or pollution studies and reduction programs. Includes the name of holder. <p>POEO public register—CaseApp:</p> <ul style="list-style-type: none"> allows searches for information about convictions and results of civil proceedings under the POEO Act <p>POEO public register: Enforceable undertakings</p> <ul style="list-style-type: none"> allows searches for all enforceable undertakings entered into by the EPA. 	<ul style="list-style-type: none"> Online search portal Free PRPOEO searches can be made for specific licences or searched by holder or catchment. Can search by party name, court name, act/regulation and date of sentence/final orders. Can search by notice number, who issued to, suburb, LGA and/or catchment.
<p>Department of Planning and Environment (Resource and Energy) Common Ground</p> <p>Administered by: NSW Department of Planning and Environment (Resources and Geoscience)</p> <p>Link: http://commonground.nsw.gov.au/#/</p>	<p>Provides information about current exploration and mining activity in specific areas.</p> <p>Common Ground provides explanations of mining and production titles.</p> <p>Using the map to click on a specific title provides a summary of the status, resource and holder. From here, able to drill down to a title overview which provides more detailed information holder (i.e. other</p>	<ul style="list-style-type: none"> Provides an interactive map with information geo-spatially represented Free Able to search NSW title maps by resource (i.e. coal, minerals or petroleum/gas) or by stage (i.e. exploration application, exploration licence, mining or production lease etc.).

Other NSW resource industry registers	Information	Access
	holdings), location and area of title, stage, resource type, title type, important dates and documents (linked to Digital Imaging of Geological System (DIGS) archive).	
<p>Department of Planning and Environment Planning Portal</p> <p>Administered by: NSW Department of Planning and Environment</p> <p>Link: https://www.planningportal.nsw.gov.au/find-a-property</p>	<p>Planning layers:</p> <ul style="list-style-type: none"> • key planning layers (such as floor space ratio, height of building etc.) • administration information (suburbs, local government areas etc.) • Primary Planning matters (heritage, min lot size etc.) • development control (Foreshore building line, Development Control Plans etc.) • land use (key sites, precincts, transport and arterial road infrastructure etc.) • hazard (bushfire prone land, flood planning, mining subsidence) • protection (environmental conservation area, acid sulphate soils etc.) <p>Also provides access to Legislation information, State Environmental Planning Policies, Development Control Plans and Contribution plans.</p>	<ul style="list-style-type: none"> • Provides an interactive map with information geo-spatially represented • Free • Able to search by address or Lot/Section/DP or click a location on the map. Planning layers and any other information (i.e. legislative information, development control plans etc.) associated with that property are able to be accessed from the web mapping tool.
<p>Office of Environment and Heritage eSPADE</p> <p>Administered by: Office of Environment and Heritage</p> <p>Link: http://www.environment.nsw.gov.au/eSpade2WebApp</p>	<p>Site layers:</p> <ul style="list-style-type: none"> • soil profiles <p>Landscape layers:</p> <ul style="list-style-type: none"> • soil map index • soil landscapes • soil and land resources • acid sulphate soil risk mapping • hydrogeological landscapes 	<ul style="list-style-type: none"> • Provides an interactive map with information geo-spatially represented. • Free • Reports can be downloaded from the various information layers

Water Reform Action Plan

Quarter 1 progress report (January—March 2018)

April 2018



Our water goals in NSW

Introduce best practice
for water management



Ensure transparency in
how we share, allocate
and manage water



Build a compliance and
enforcement regime
that ensures strong and
certain regulation



Build capability to
support implementation
of water reforms



Water is one of the most important natural assets in New South Wales (NSW). The community, business and the environment all rely on water to survive and prosper.

In December 2017, the NSW Government released the Water Reform Action Plan to reform water management. The government committed to:

- introduce best-practice water management in NSW
- establish a compliance and enforcement regime that delivers strong and certain regulation
- ensure transparency and equity in how water is shared, allocated and managed in NSW
- build capability across the NSW Department of Industry to support effective implementation of water reforms.

Progress to date

This is the first progress report on the NSW Government's Water Reform Action Plan. It demonstrates that the the government has delivered on key objectives outlined in the plan for the first quarter of 2018, as well as delivering many of the objectives outlined for the second quarter.

To ensure best-practice water management in NSW, we have established a new Lands and Water division. Additionally, we have created a new, independent, regulatory body to oversee the compliance and enforcement of NSW water law in the state, the Natural Resources Access Regulator (NRAR).

The principal objectives of the NRAR are to:

- ensure effective, efficient, transparent and accountable compliance and enforcement measures for the natural resources management legislation
- maintain public confidence in the enforcement of the natural resources management legislation.

We are building a compliance and enforcement regime that ensures strong and certain regulation for industry and the people of NSW by boosting resources. An additional \$9.5 million per year has been allocated to the NRAR to ensure that they are sufficiently resourced.

Community feedback

Industry and community feedback is crucial in building a strong compliance system that is fair and equitable. Consultation has occurred in three key reform areas with the release of consultation papers for community input: water-take measurement and metering, transparency measures and better management of environmental water.

A series of roadshows in key regional areas was held throughout March and April to ensure communities can provide comment and input into the development of water policy. Analysis of the submissions and feedback received is underway, and these views will help shape the policy settings and legislation to be introduced into NSW Parliament in the first half of 2018.

To ensure transparency in how we share, allocate and manage water, a new stakeholder engagement framework is being implemented and a schedule of stakeholder engagement activities is published on the **Department of Industry website**¹.

Building capability

The NSW Government has committed to build capability, improve standards and embed an ethical culture to support the implementation of water reforms. In the first quarter of 2018, the Department of Industry has updated the staff induction process to emphasise the ethical conduct obligations of staff. Further to this, the department-wide ethics and professional standards training will be rolled out from May 2018.

Next steps

Early in the second quarter of 2018, interim solutions to better manage environmental water will be presented to the Minister for consideration. The focus for the remainder of 2018 will be the introduction of legislation into Parliament, and further consultation with community on regulations to implement the metering reforms. Delivery of other actions within the Water Reform Action Plan will continue throughout 2018 and 2019, with the NSW Government committed to regular progress reports.

¹ www.industry.nsw.gov.au/water-reform/stakeholder-and-community-engagement

Water Reform Action Plan deliverables



Introduce best practice for water management

What we are doing	How we will do it	By when	Status
Established a new Lands and Water division	<ul style="list-style-type: none"> Create a division solely focused on the management of land and water resources 	Q4 2017	Complete
Establishing a new regulatory framework for water management	<ul style="list-style-type: none"> Legislate to establish an independent regulator—Natural Resources Access Regulator (NRAR)² Appoint an interim chief regulatory officer⁴ Appoint an independent board to oversee the NRAR⁵ Appoint a chief regulatory officer⁶ Develop and publish the Natural Resources Access Regulator Establishment Plan⁷ 	<p>Q4 2017</p> <p>Q4 2017</p> <p>Q4 2017</p> <p>Q2 2018</p> <p>Q2 2018</p>	<p>Complete</p> <p>NRAR Act 2017³</p> <p>Complete</p> <p>Complete</p> <p>Complete</p> <p>Complete</p> <p>Information about the NRAR including its legislation, its board, the Establishment Plan and the board's code of conduct are available at the NRAR website⁸.</p>

² www.industry.nsw.gov.au/natural-resources-access-regulator

³ www.legislation.nsw.gov.au/#/view/act/2017/64

⁴ www.industry.nsw.gov.au/__data/assets/pdf_file/0007/136546/Niall-Blair-med-rel-NSW-water-reform-package1.pdf

⁵ www.industry.nsw.gov.au/__data/assets/pdf_file/0007/136546/Niall-Blair-med-rel-NSW-water-reform-package1.pdf

⁶ www.industry.nsw.gov.au/media/media-releases/2018-media-releases/executive-team-appointed-for-new-independent-water-regulator

⁷ www.industry.nsw.gov.au/__data/assets/pdf_file/0007/145546/NRAR-Establishment-Plan-2018.pdf

⁸ www.industry.nsw.gov.au/natural-resources-access-regulator



Build a compliance and enforcement regime that ensures strong and certain regulation

What we are doing	How we will do it	By when	Status
Strengthening compliance and enforcement capacity	<ul style="list-style-type: none"> Increase compliance and enforcement resourcing by \$9.5 million per year 	Q4 2017	Complete
Implement a robust metering framework	<ul style="list-style-type: none"> Consult on a metering and water discussion paper for public consultation incorporating: <ul style="list-style-type: none"> an approach to implementing 'no meter, no pump' objectives identification of any necessary legislative reforms to support these changes how we monitor metering of water consumption policy on self-reporting and random checks 	Q2 2018	Complete The consultation paper is available at Water reform ⁹
Adopt innovative technologies to improve compliance effectiveness	<ul style="list-style-type: none"> Seek proposals for pilot technology to be used for water monitoring and compliance activities¹⁰, which could include remote sensing of on-farm water storages and indicators such as crop growth and telemetry 	Q2 2018	Complete The Water Pilot Technology Program opened for applications in March 2018. Information about the program is available at Water pilot technology program ¹¹ .

⁹ www.industry.nsw.gov.au/water-reform

¹⁰ www.industry.nsw.gov.au/___data/assets/pdf_file/0017/145421/better-management-of-environmental-water-consultation-paper.pdf

¹¹ www.industry.nsw.gov.au/water-reform/water-pilot-technology-program



Ensure transparency in how we share, allocate and manage water

What we are doing	How we will do it	By when	Status
Increase transparency in water management	<ul style="list-style-type: none"> Release a transparency measures discussion paper¹² for public consultation on the creation of a public register of water information that could cover water entitlements, water licences and water work approvals 	Q2 2018	Complete The consultation paper is available at Water reform ¹³
	<ul style="list-style-type: none"> Regularly report on progress implementing water inquiry reforms 	Q1 2018 onwards	First report complete (this report)
Create a stakeholder engagement framework	<ul style="list-style-type: none"> Implement a new stakeholder engagement framework¹⁴ 	Q1 2018	Complete
	<ul style="list-style-type: none"> Develop and publish a schedule of stakeholder engagement activities¹⁵ 	Q1 2018	Complete The stakeholder engagement framework and schedule of activities are available at Stakeholder and community engagement ¹⁶
Better manage environmental water	<ul style="list-style-type: none"> Establish an interagency working group to develop solutions to improve the management of environmental water¹⁷ 	Q1 2018	Complete A consultation paper was released for community feedback. It is available at Water reform ¹⁸ .

¹² www.industry.nsw.gov.au/__data/assets/pdf_file/0019/145423/transparency-measures-consultation-paper.pdf

¹³ www.industry.nsw.gov.au/water-reform

¹⁴ www.industry.nsw.gov.au/__data/assets/pdf_file/0011/148529/IND-I-245-Water-Stakeholder-and-Engagement-Policy.pdf

¹⁵ www.industry.nsw.gov.au/water-reform/stakeholder-and-community-engagement

¹⁶ www.industry.nsw.gov.au/water-reform/stakeholder-and-community-engagement

¹⁷ www.industry.nsw.gov.au/__data/assets/pdf_file/0017/145421/better-management-of-environmental-water-consultation-paper.pdf

¹⁸ www.industry.nsw.gov.au/water-reform



Build capability to support implementation of water reforms

What we are doing	How we will do it	By when	Status
Build capability, improve standards and embed an ethical culture	<ul style="list-style-type: none"> Update staff induction processes to emphasise ethical and conduct obligations of staff 	Q1 2018	Complete
	<ul style="list-style-type: none"> Roll out department-wide ethics and professional standards training 	Q1 2018	Online course available. Face-to-face will start in May.
	<ul style="list-style-type: none"> Commence a 'speak-up' service to enable anonymous reporting of suspected unsatisfactory conduct 	Q1 2018	Complete Information about the 'speak up' service and how the public can lodge reports is available at Preventing fraud and corruption ¹⁹ .

¹⁹ www.industry.nsw.gov.au/about/our-business/preventing-fraud-and-corruption

More information

NSW Department of Industry
industry.nsw.gov.au/water-reform
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